

V&V Reference Report

L2 ASCDS Version : 7.6.9

Observation 2705 - L2 Version 001
Chandra X-Ray Center

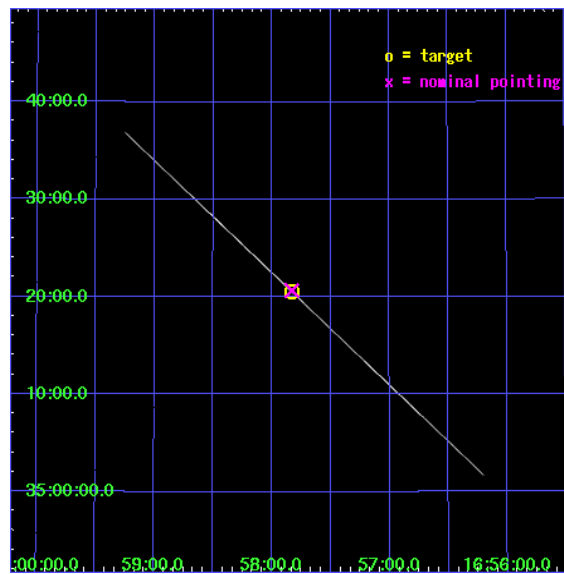
L2 Processing Date : Dec 28 2006

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1 Front

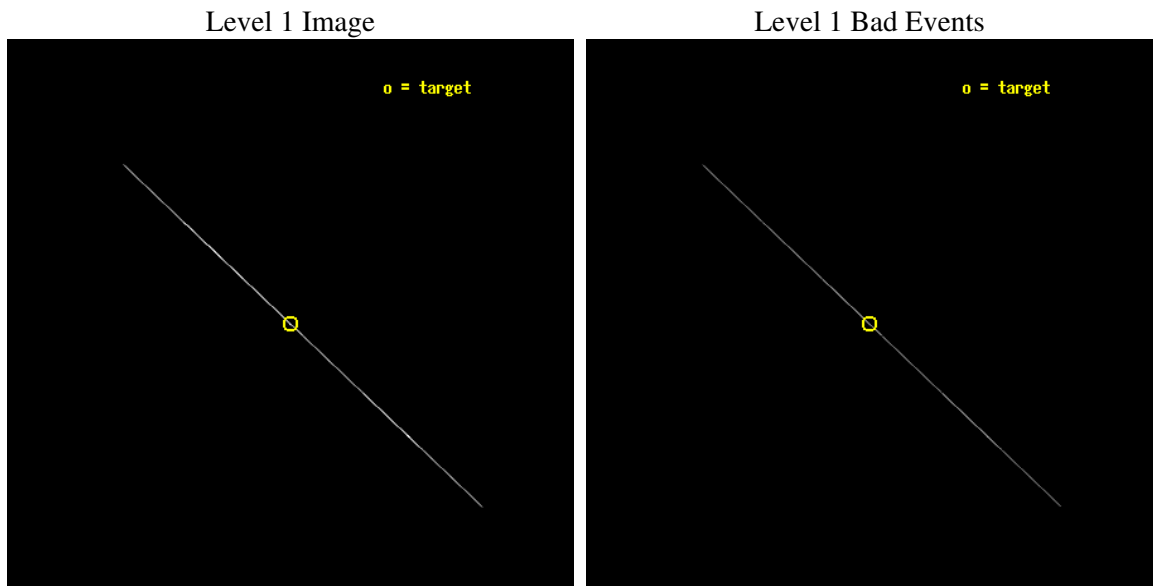
seq_num	400185
obs_id	2705
title	HIGH RESOLUTION SPECTROSCOPY OF HERCULES X-1
observer	Dr. Daniel Scott
object	HER X-1 SHORT HI
ra_targ	254.4575
dec_targ	35.342472
ra_nom	254.4574120011
dec_nom	35.344691564216
roll_nom	223.21064245083
revision	3
ontime	19067.75
livetime	18993.266601562
ontime4	19067.75
ontime5	19067.75
ontime6	19067.75
ontime7	19067.75
ontime8	19067.75
ontime9	19067.75
l2events	289710



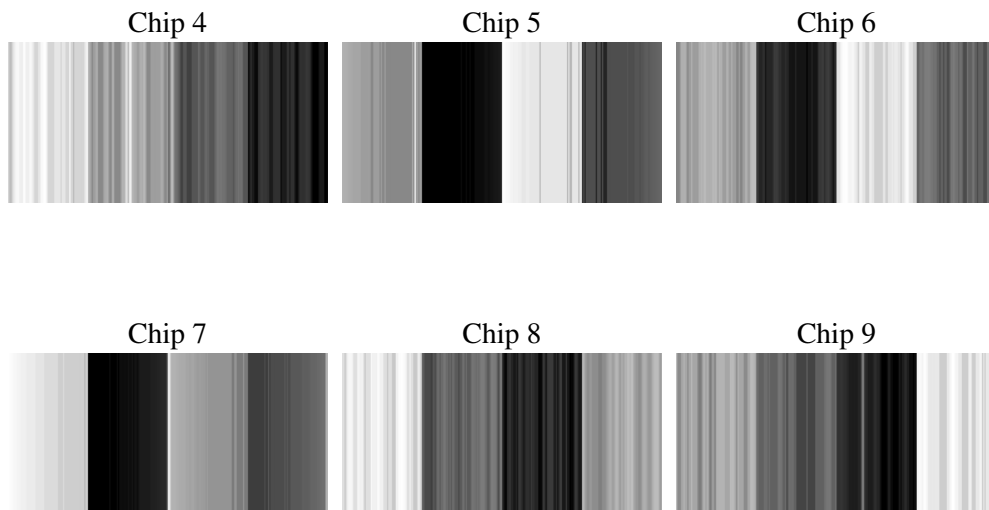
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1
ascdsver	7.6.9
caldsver	3.2.3
date	2006-09-26T08:29:37
revision	2

sched_exp_time	19000.000000
ontime	19786.560894102
ontime4	19350.266177654
ontime5	19806.989764988
ontime6	19392.582170308
ontime7	19786.560894102
ontime8	19392.582209498
ontime9	19388.204619139
l1events	576126

2.1.4 Events

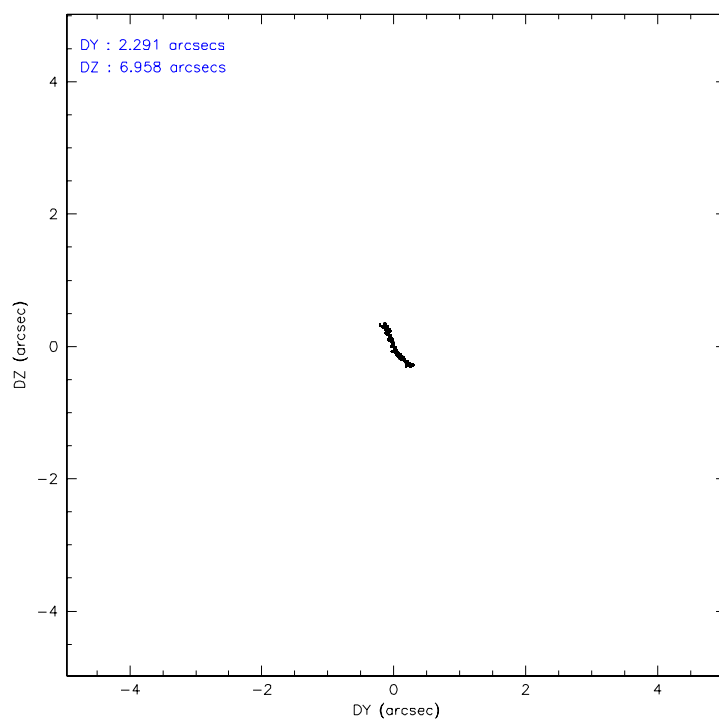
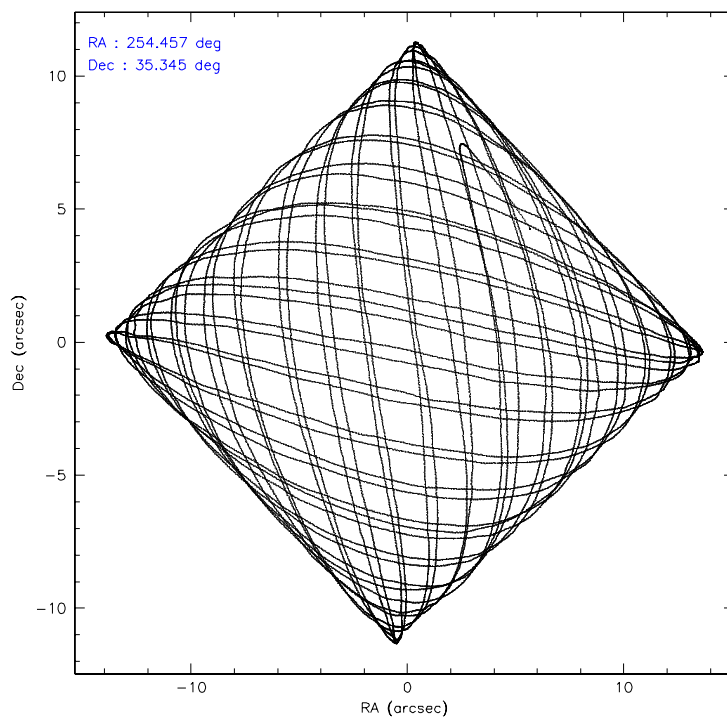
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	35693	155338	40470	112948	193046	38631
rejected events	11041	29974	14125	32368	18527	13940
rejected %	30%	19%	34%	28%	9%	36%

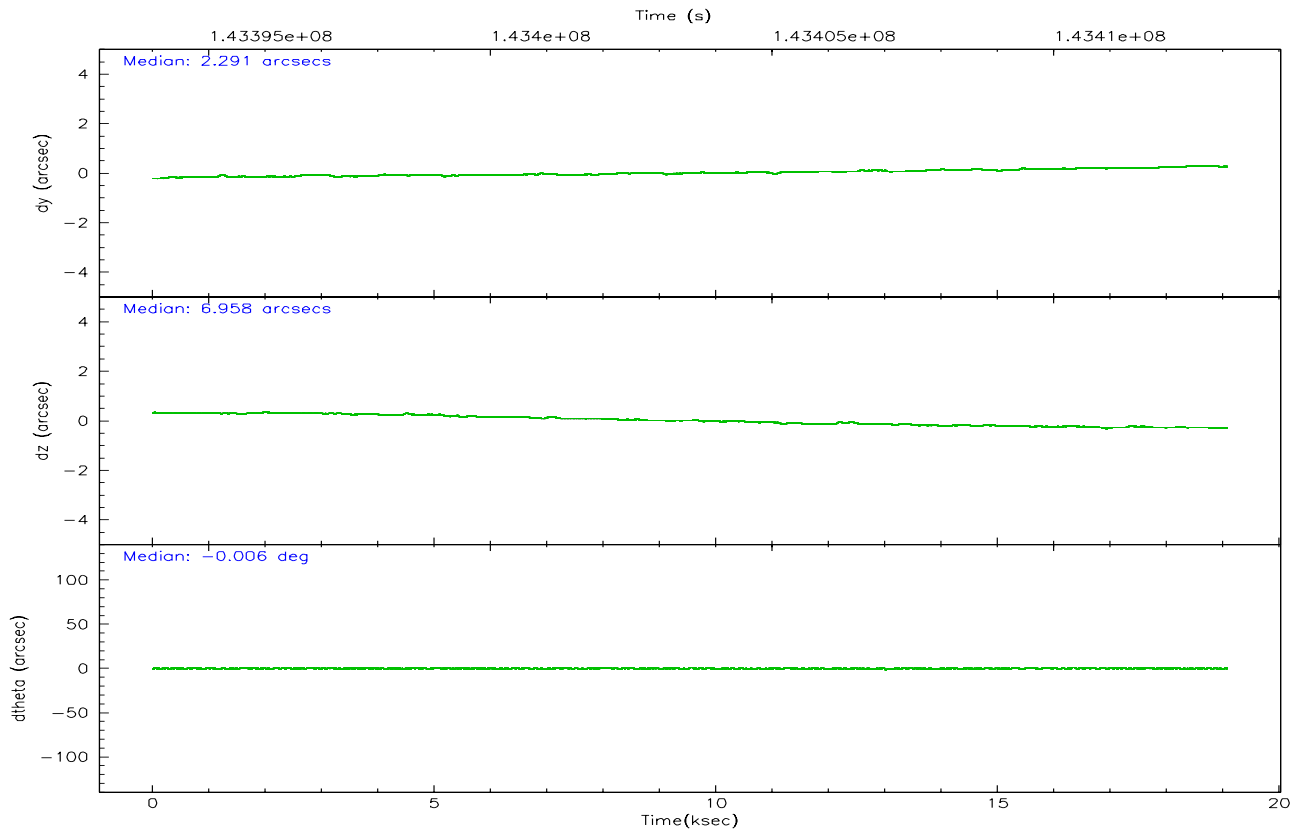
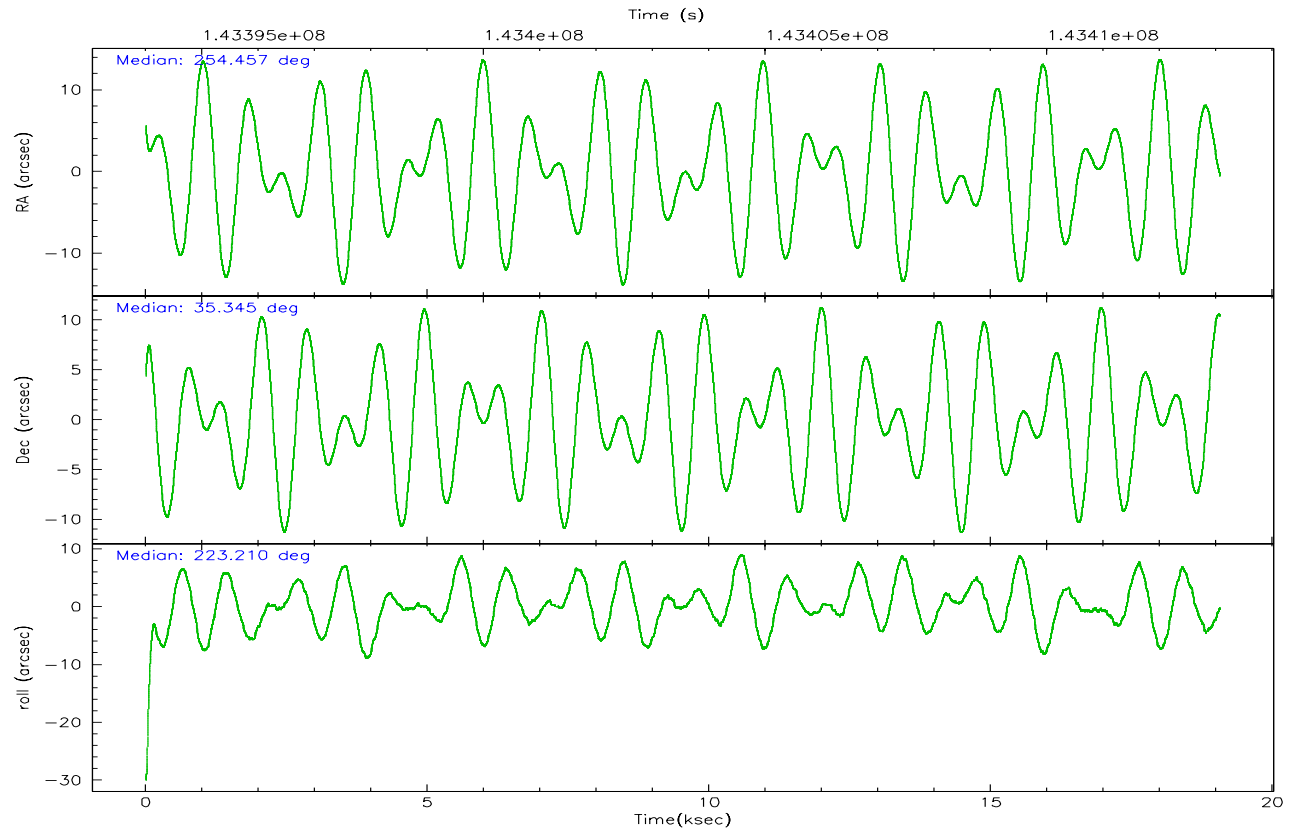
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	3306	36802	4137	8131	57864	4103
	9%	23%	10%	7%	29%	10%
grade 1 events	89	163	84	193	527	91
	0%	0%	0%	0%	0%	0%
grade 2 events	15465	43416	17569	29531	30639	15442
	43%	27%	43%	26%	15%	39%
grade 3 events	3216	2910	3025	4959	35705	2846
	9%	1%	7%	4%	18%	7%
grade 4 events	3206	2724	2955	4919	31993	3141
	8%	1%	7%	4%	16%	8%
grade 5 events	4195	10017	5058	12085	7967	5279
	11%	6%	12%	10%	4%	13%
grade 6 events	6216	59306	7642	53130	28351	7729
	17%	38%	18%	47%	14%	20%
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_FAINT	CC33_FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	254.466631	254.4574120010963	Subarray requested	NONE	NONE
Pointing Dec	35.370864	35.34469156421584	Alternating exposures requested	N	N
Pointing Roll	223.048691	223.2106424508309	Primary exposure time	0.000000	0
Window start time	143326864.184000	143326864.184000			
Window stop time	143910064.184000	143910064.184000			
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-186.132523	-186.1372760897884			
SIM translation stage offset (mm)	-4	-3.99524649321944			
Phase constraints	Y	Y			
Phase period	34.853430	34.853430			
Phase epoch	52242.791000	52242.791000			
Phase start	0.600000	0.600000			
Phase end	0.700000	0.700000			
Phase start error	0.001000	0.001000			
Phase end error	0.001000	0.001000			
Observation start time	143394093.184000	143393189.95904			
Observation start date	2002-07-18T15:40:29	2002-07-18T15:26:29			
Observation end time	143413093.184000	143414038.97239			
Observation end date	2002-07-18T20:57:09	2002-07-18T21:13:58			

2.3 Aspect



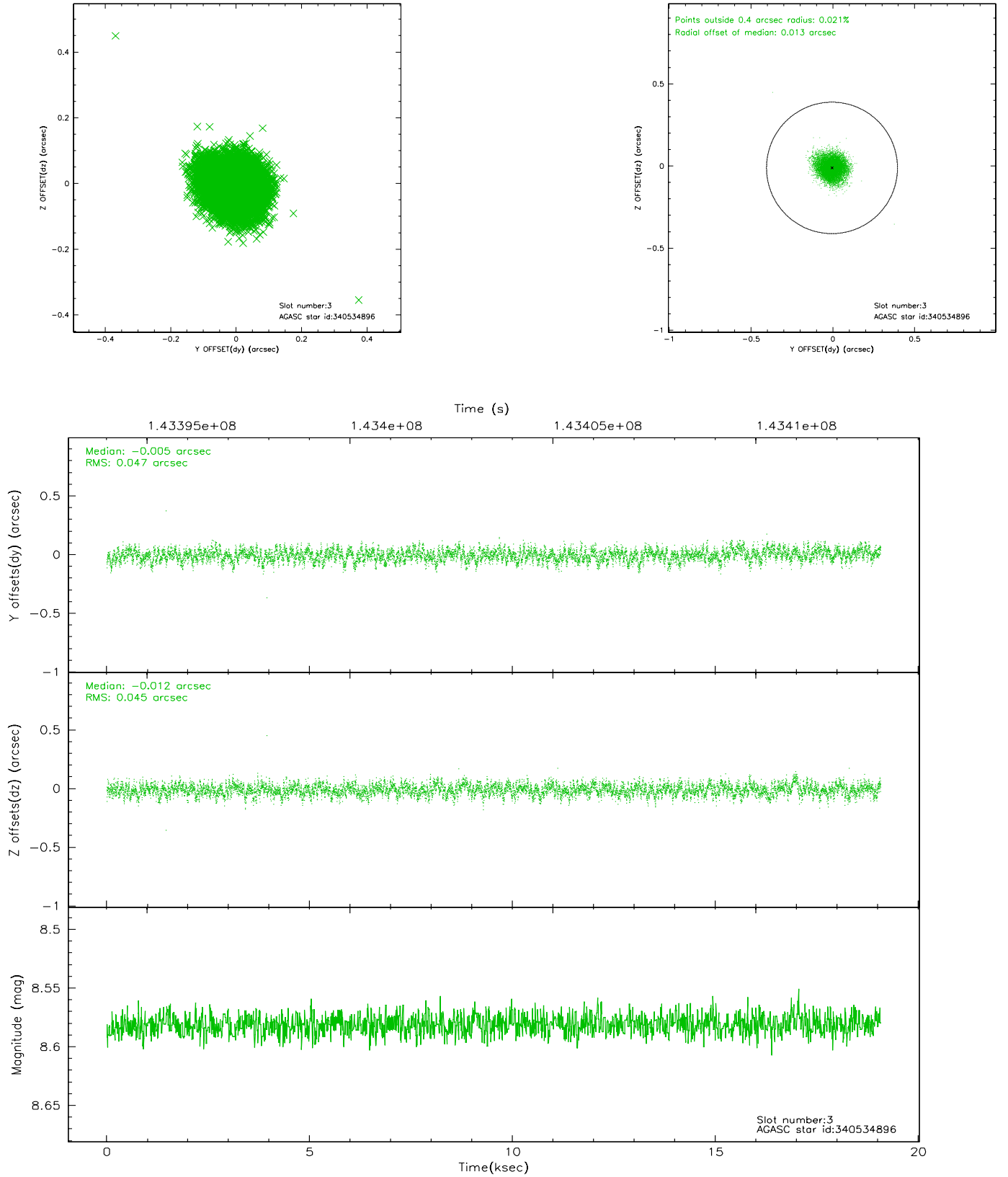


Slot Statistics

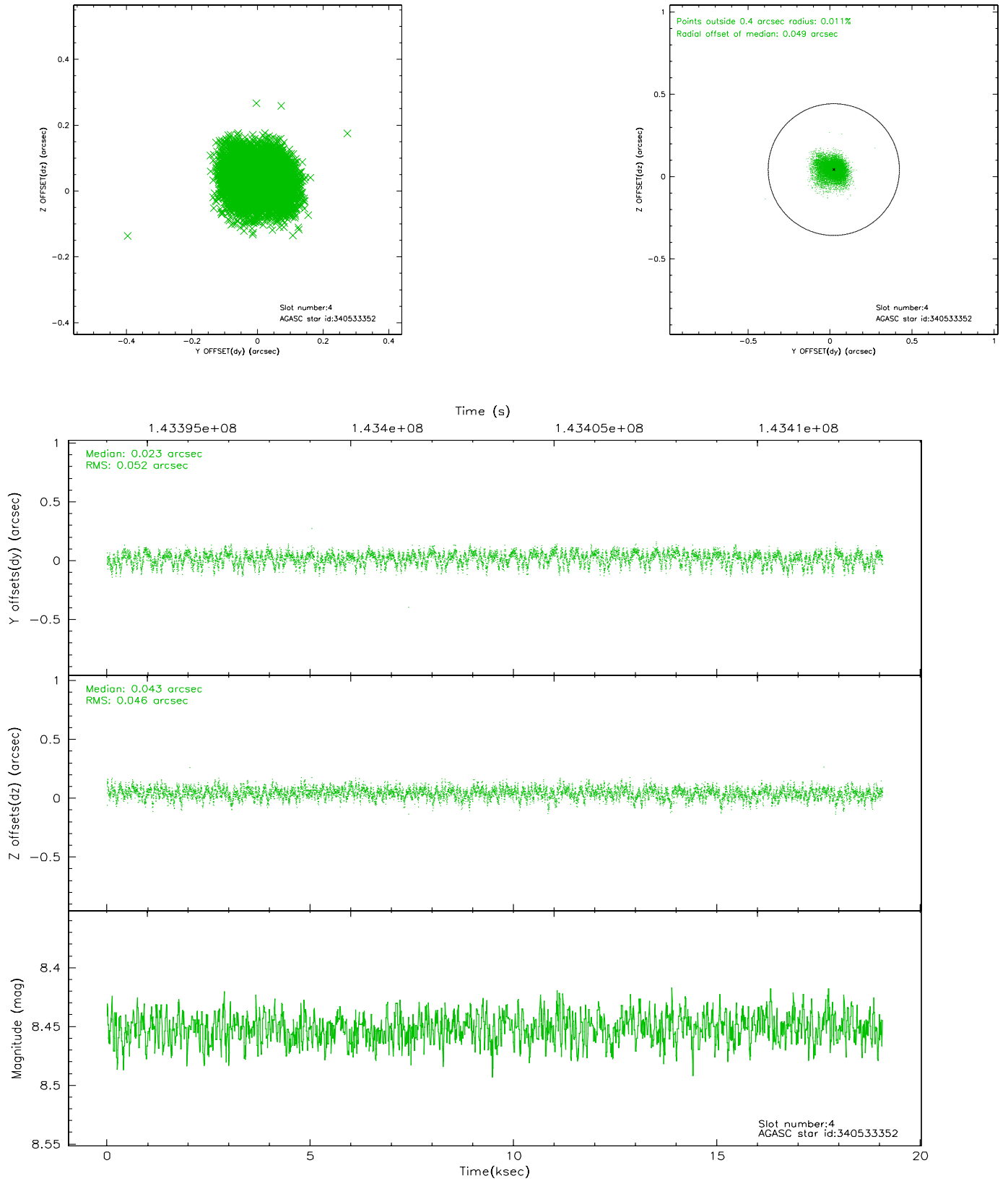
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.18	4652	-0.046	0.105	0.012	0.024	0.000000	0.000000	941.37	-1806.07
1	FID	ACIS-S-5	7.24	4652	0.040	-0.003	0.011	0.017	0.000000	0.000000	-1807.46	91.10
2	FID	ACIS-S-6	7.39	4652	-0.015	-0.091	0.017	0.034	0.000000	0.000000	406.69	735.23
3	GUIDE	340534896	8.58	9302	-0.005	-0.012	0.070	0.111	255.288450	35.541682	-2185.97	1187.26
4	GUIDE	340533352	8.45	9303	0.023	0.043	0.073	0.123	254.563691	34.717962	1394.24	1914.48
5	GUIDE	340529672	8.78	9303	0.009	-0.058	0.098	0.155	254.827180	34.864332	465.22	2059.02
6	GUIDE	340536192	7.71	9297	0.015	-0.001	0.056	0.088	254.294567	35.286536	576.38	-122.74
7	GUIDE	340534080	8.82	9297	-0.038	0.029	0.084	0.135	255.228954	35.471551	-1886.71	1255.22

2.4 Star Slots

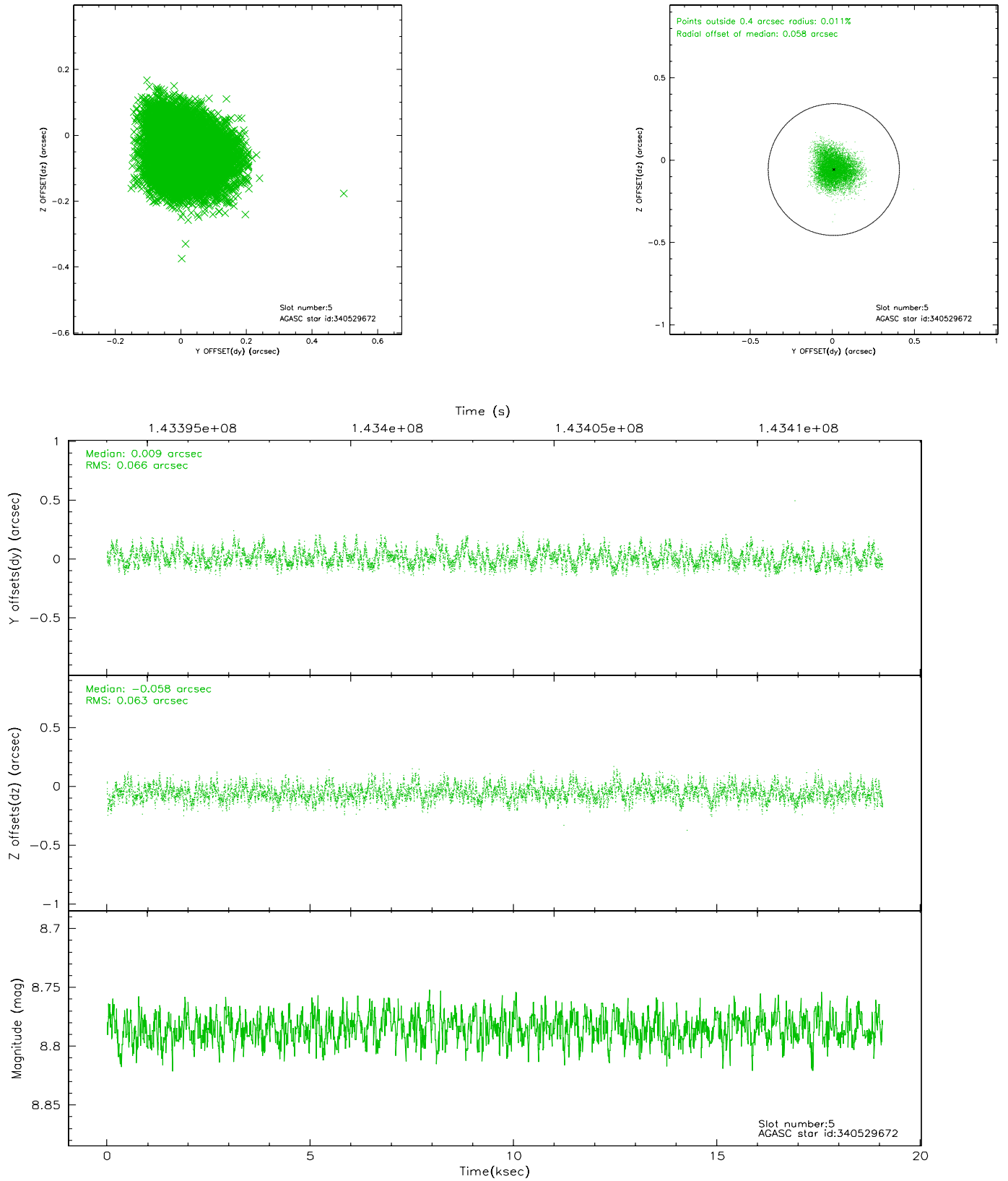
2.4.1 Slot 3



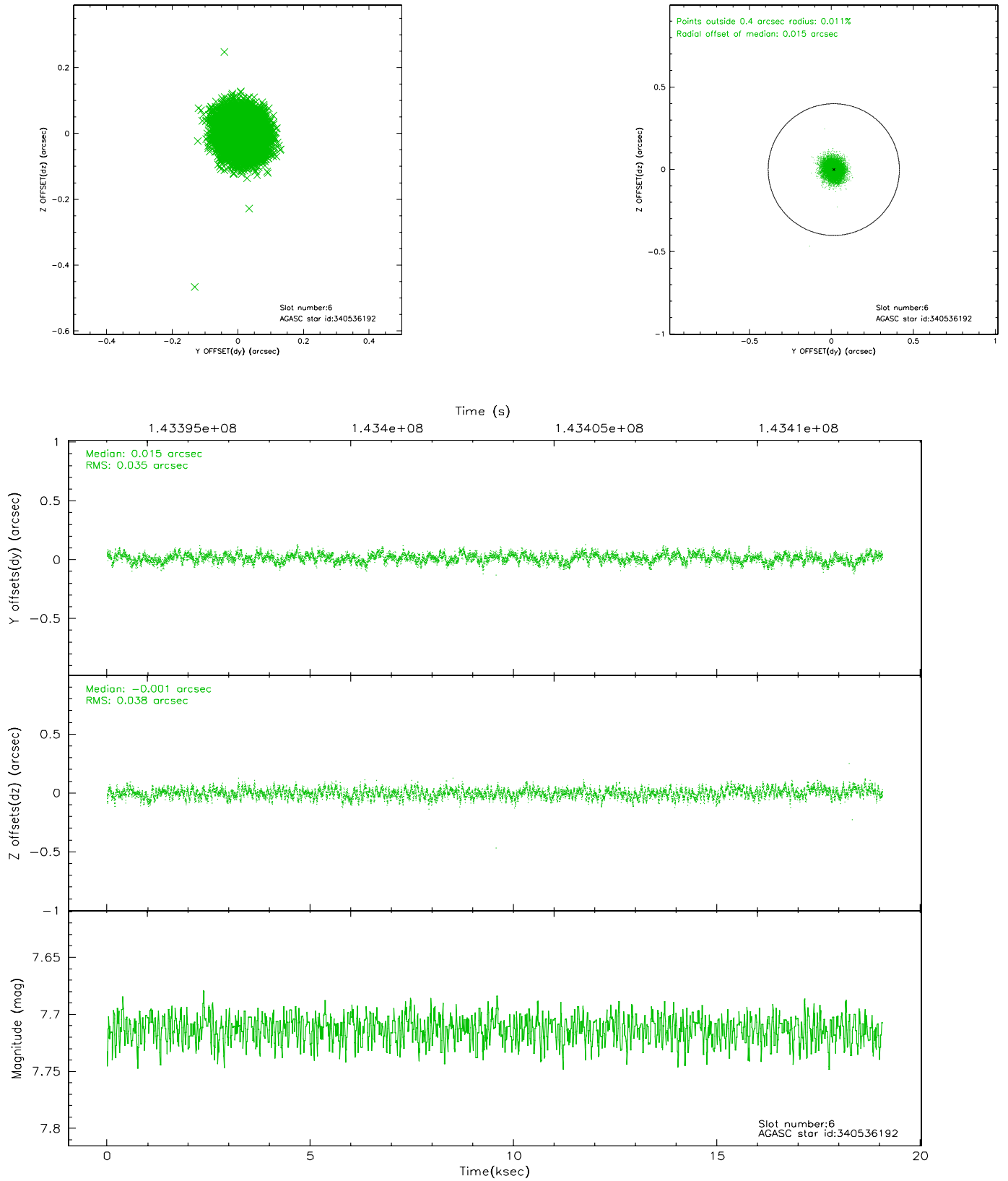
2.4.2 Slot 4



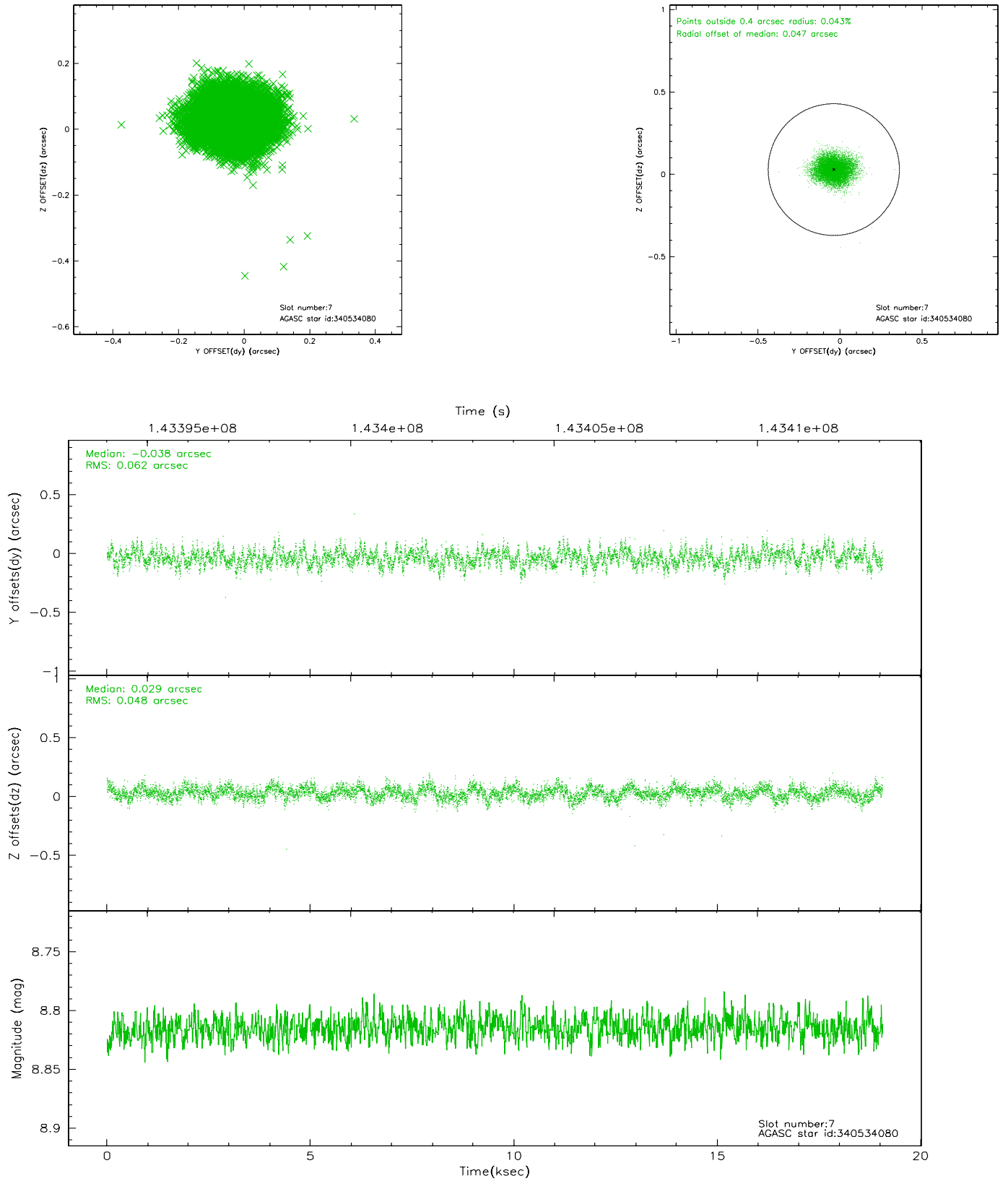
2.4.3 Slot 5



2.4.4 Slot 6

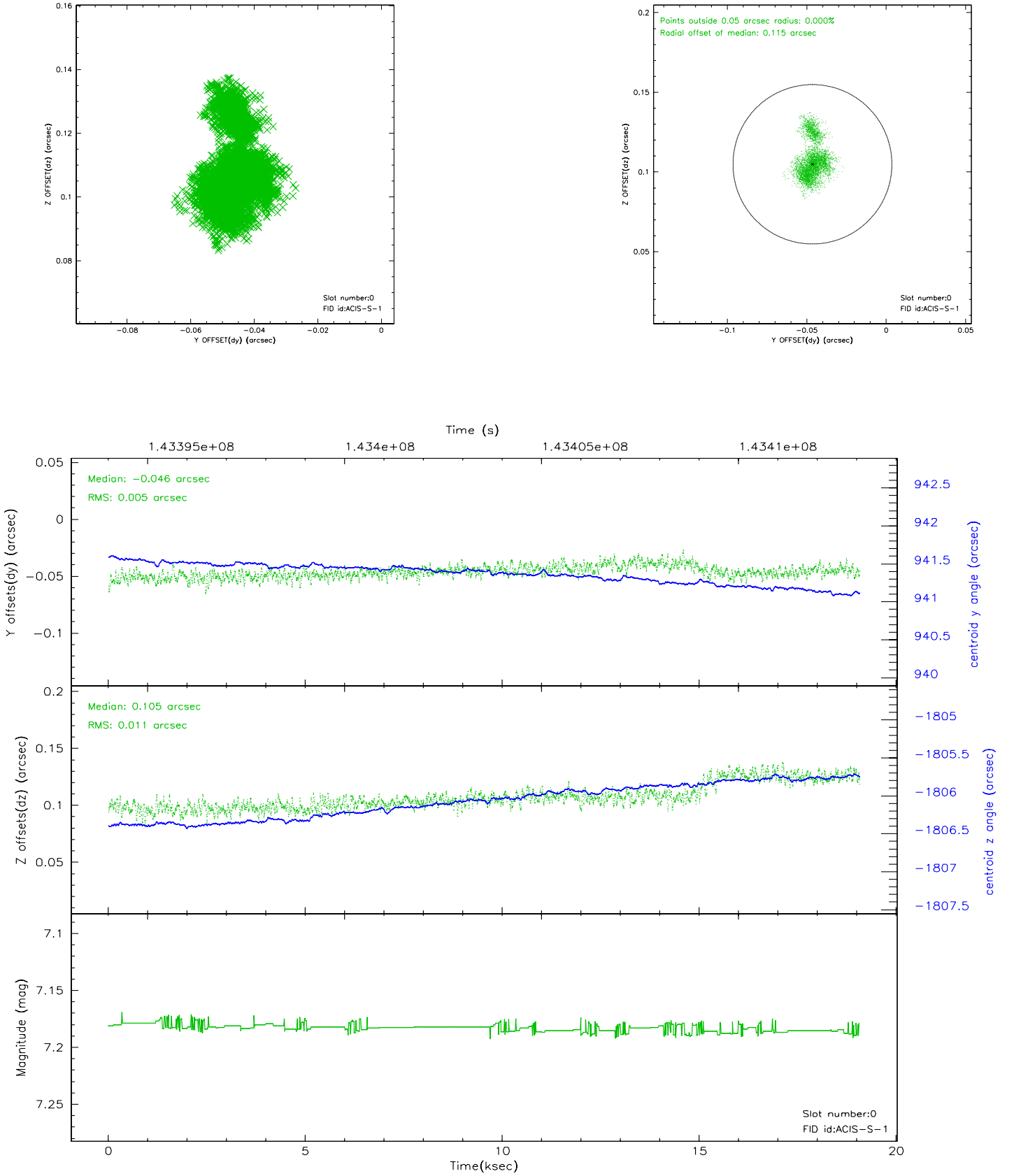


2.4.5 Slot 7

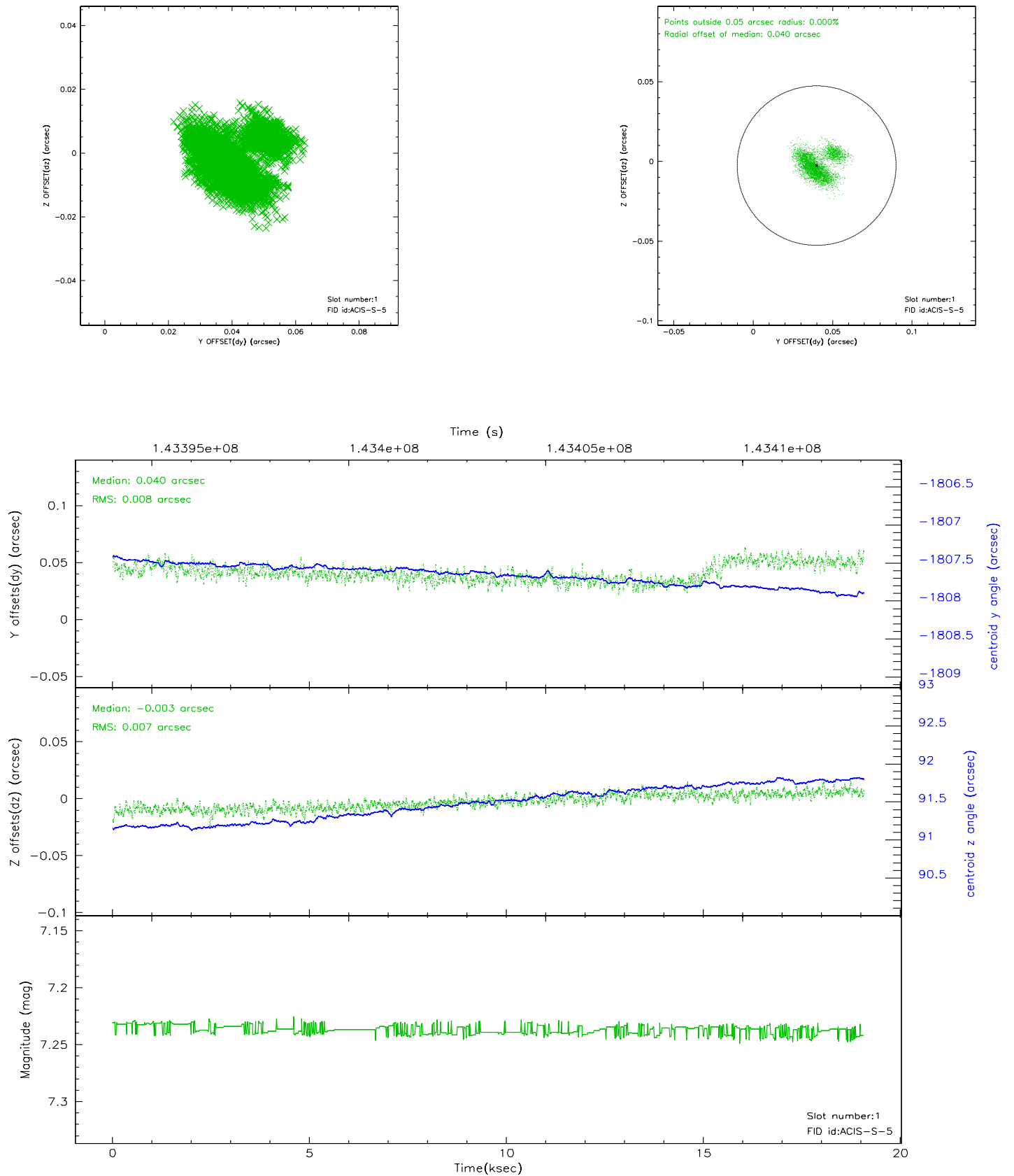


2.5 FID Slots

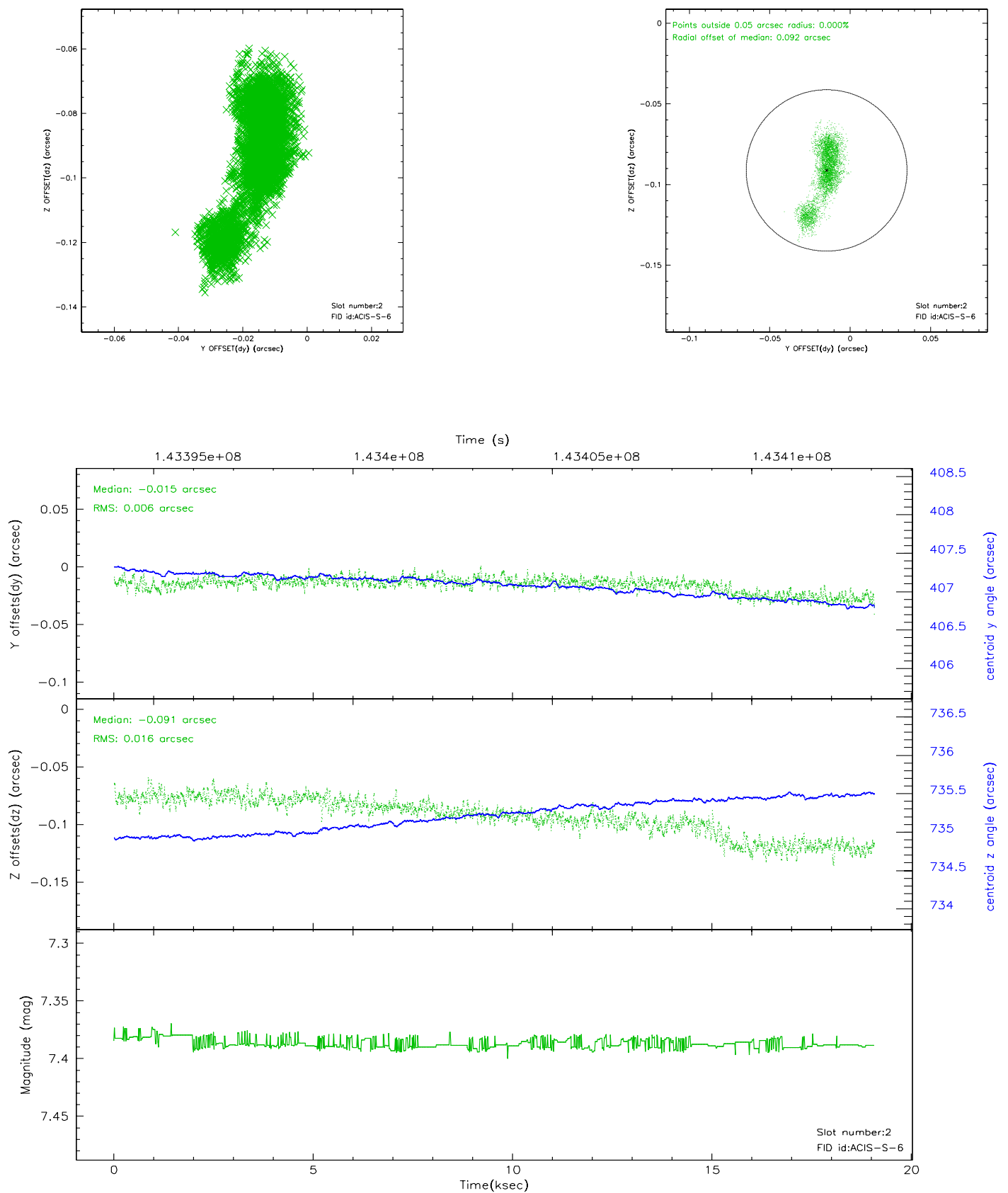
2.5.1 Slot 0



2.5.2 Slot 1

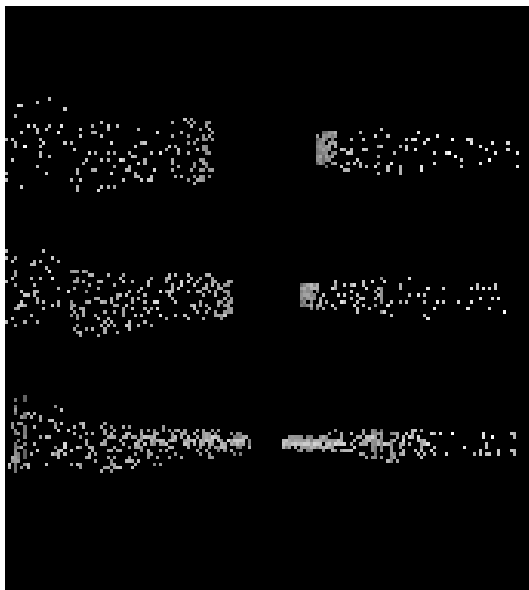


2.5.3 Slot 2

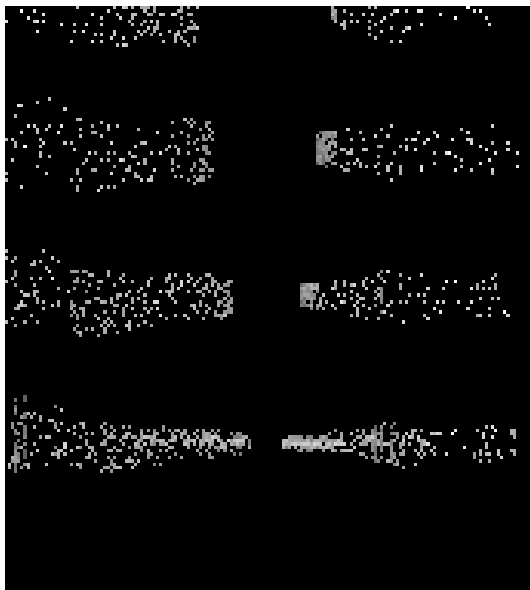


3 Gratings

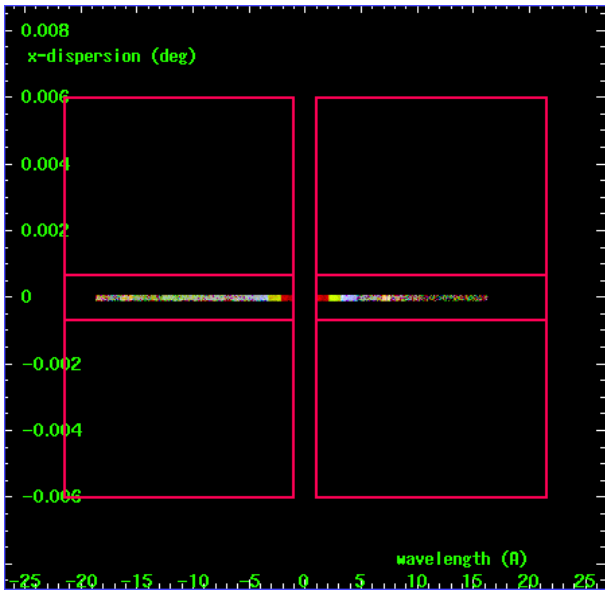
3.1 HEG Arm



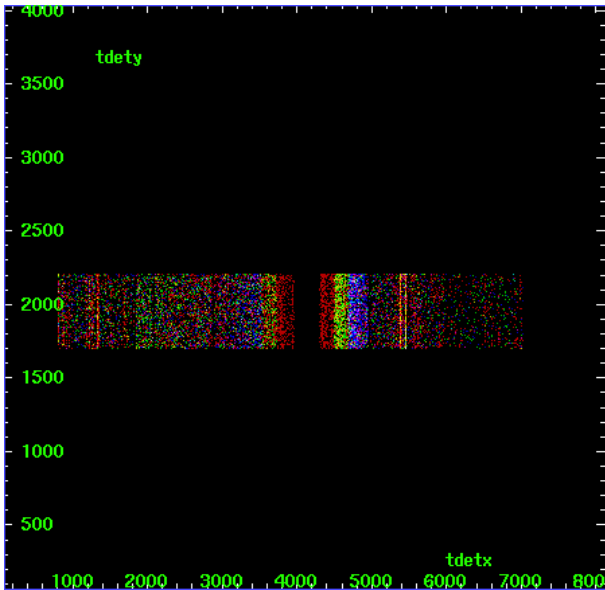
HEG Order Sort 123



HEG Order Sort ALL

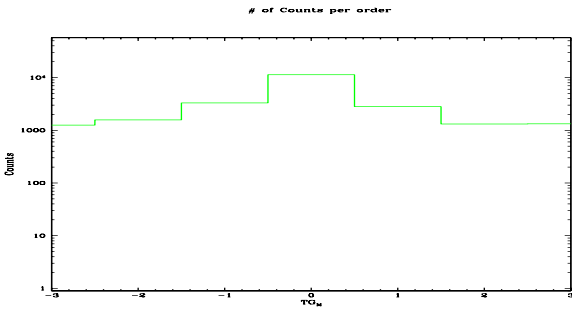


Spot Image HEG

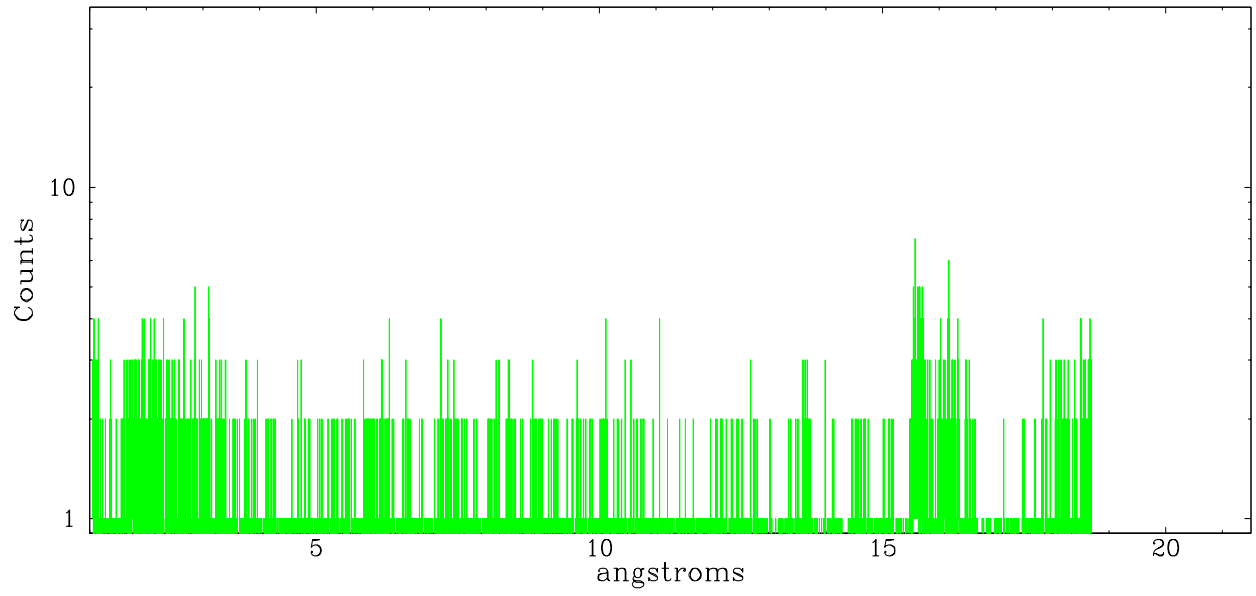


Full Detector HEG

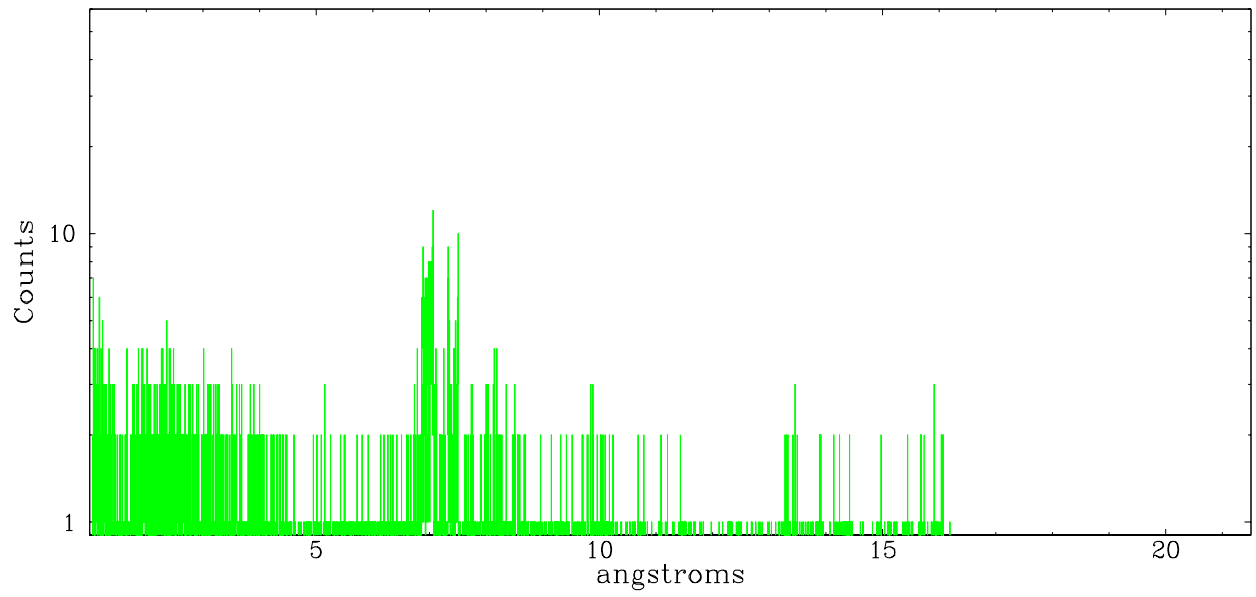
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1250	1575	3314	11337	2808	1313	1327



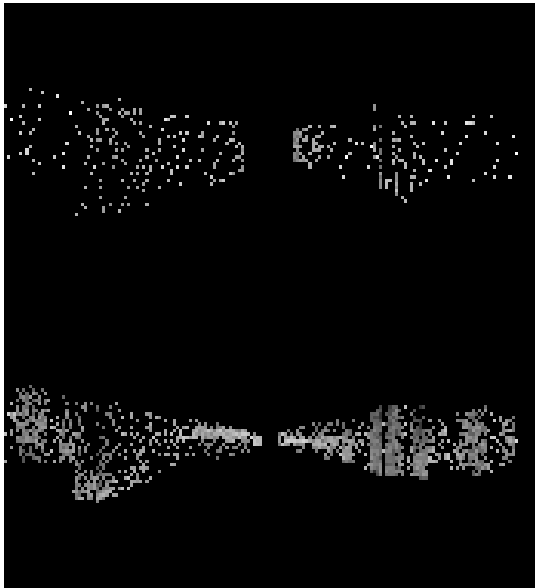
neg order -1



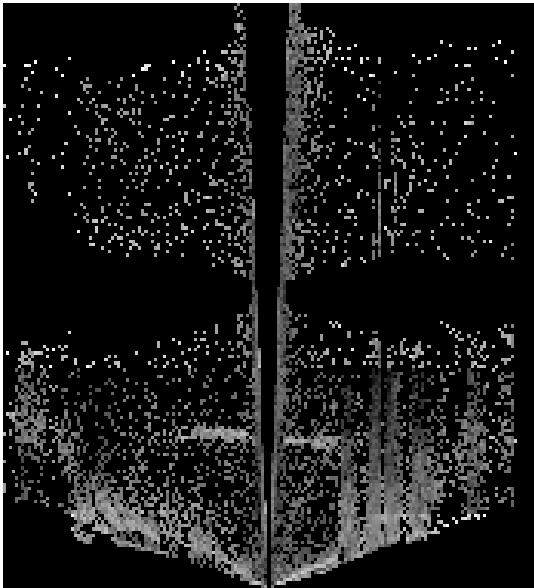
neg order +1



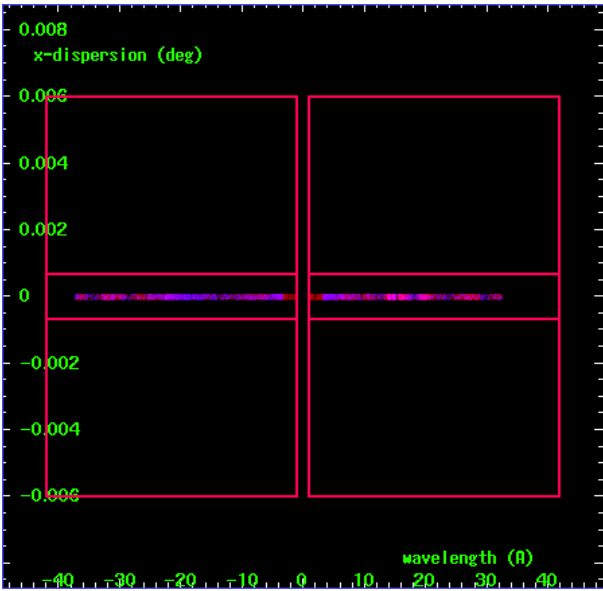
3.2 MEG Arm



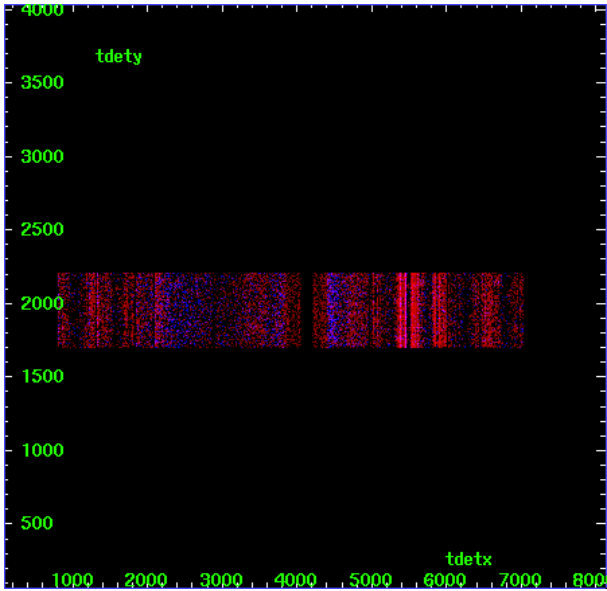
MEG Order Sort 123



MEG Order Sort ALL

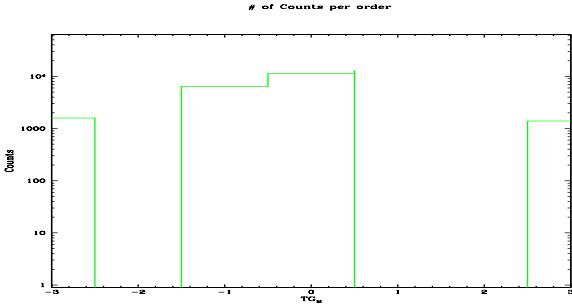


Spot Image MEG

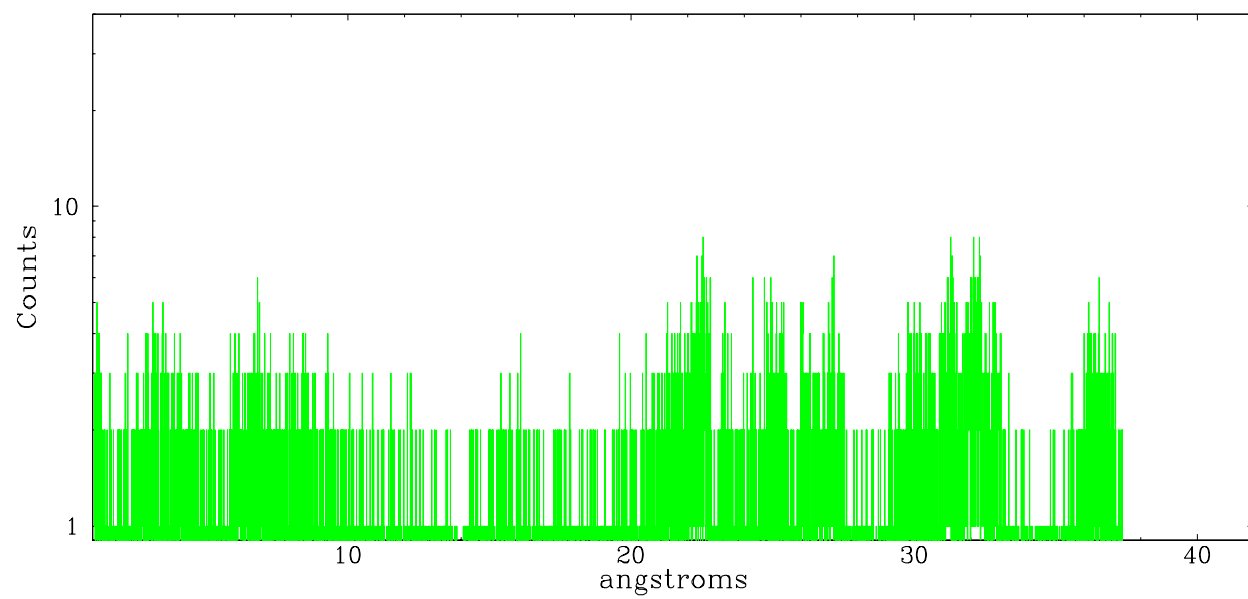


Full Detector MEG

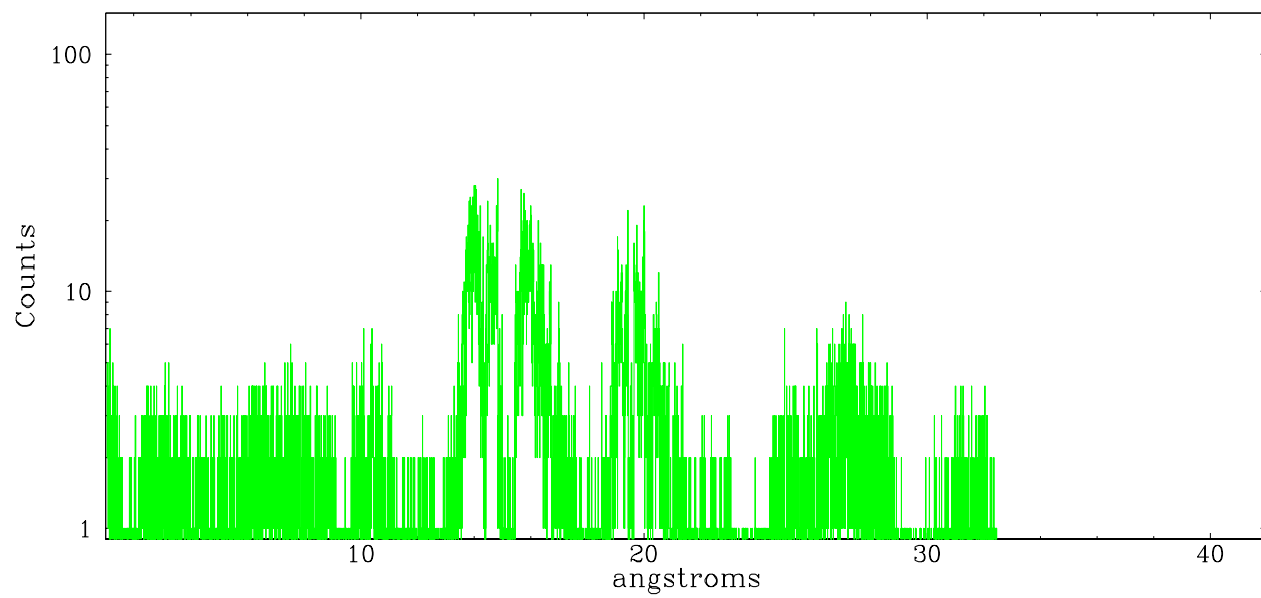
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1594	0	6403	11337	12681	0	1397



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2007.01.24
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.07

A.2 Comments

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.)

Phase constraint met.

Streak correction (destreak tool) did not do a very good job in removing the column-to-column streaking in chip 8. It might be helpful to use the destreak tool on the Level 2 event data.

There is apparently a strong source in the field of view that falls on the plus side of the spectral arms and contaminates the spectral data at about 7-8 A in heg and 14-16 A in meg.