

V&V Reference Report

L2 ASCDS Version : 7.6.10

Observation 1651 - L2 Version 001
Chandra X-Ray Center

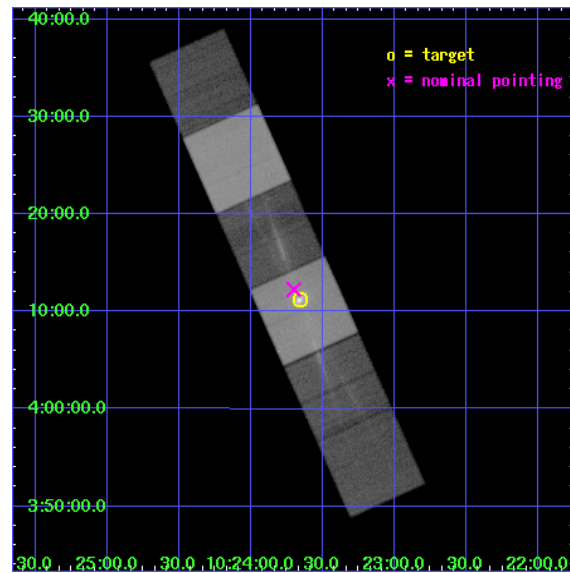
L2 Processing Date : Jun 22 2007

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

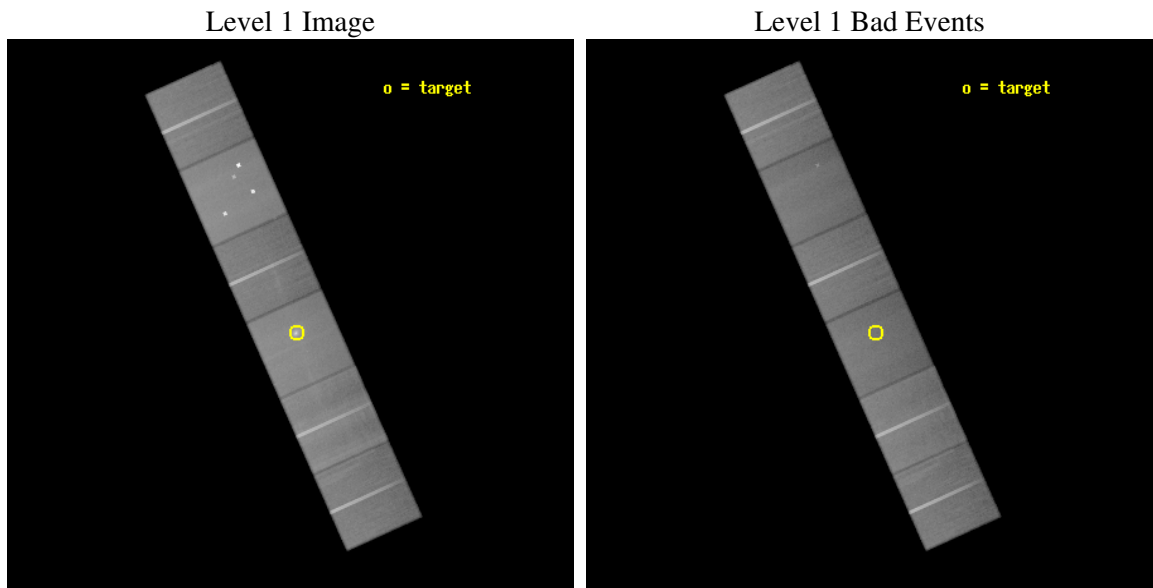
seq_num	800119
obs_id	1651
title	HETG OBSERVATIONS OF THE DISTANT MASSIVE COOLING FLOW ZW3146
observer	Prof. Claude Canizares
object	ZW3146
dtcycle	0
cycle	P
ra_targ	155.915
dec_targ	4.186111
ra_nom	155.92521833644
dec_nom	4.2043940941355
roll_nom	65.806491703353
revision	2
ontime	167932.8001564
livetime	165806.33392383
ontime4	167926.31820598
ontime5	167932.8001564
ontime6	167932.8001564
ontime7	167932.8001564
ontime8	167926.31822591
ontime9	167929.55919616
l2events	1518713



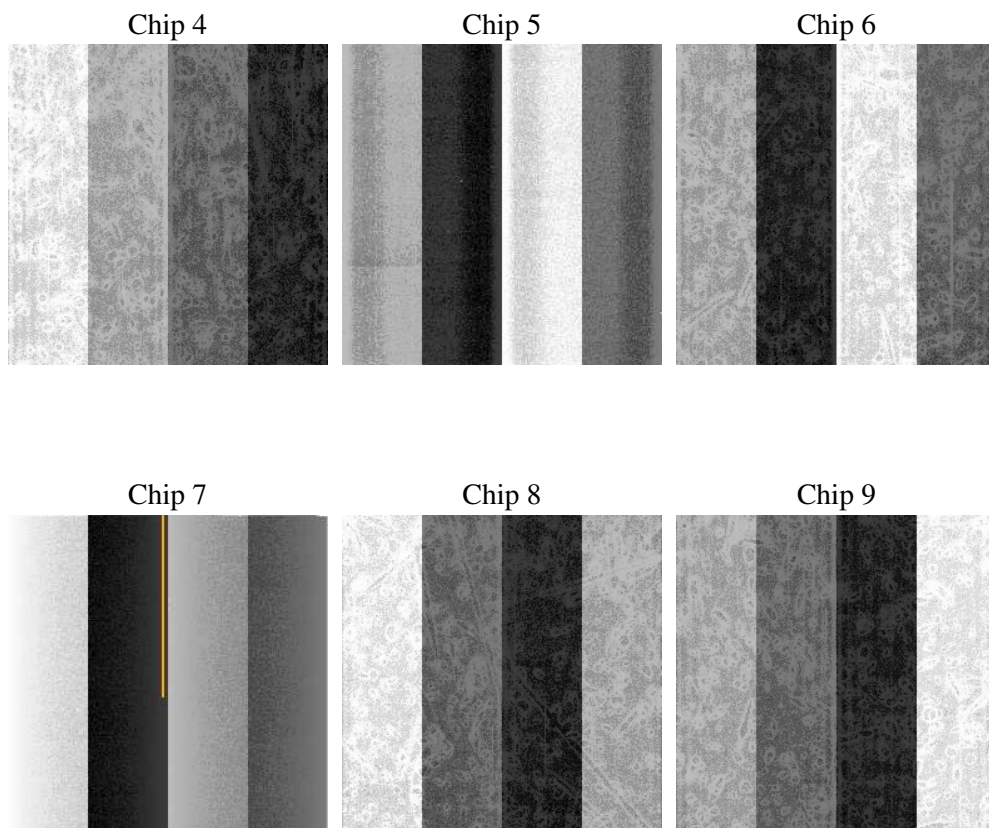
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0
ascdsver	7.6.10
caldbver	3.4.0
date	2007-06-22T07:06:15
revision	2

sched_exp_time	167833.990000
ontime	167932.8001564
ontime4	167926.31820598
ontime5	167932.8001564
ontime6	167932.8001564
ontime7	167932.8001564
ontime8	167926.31822591
ontime9	167929.55919616
l1events	6914633

2.1.4 Events

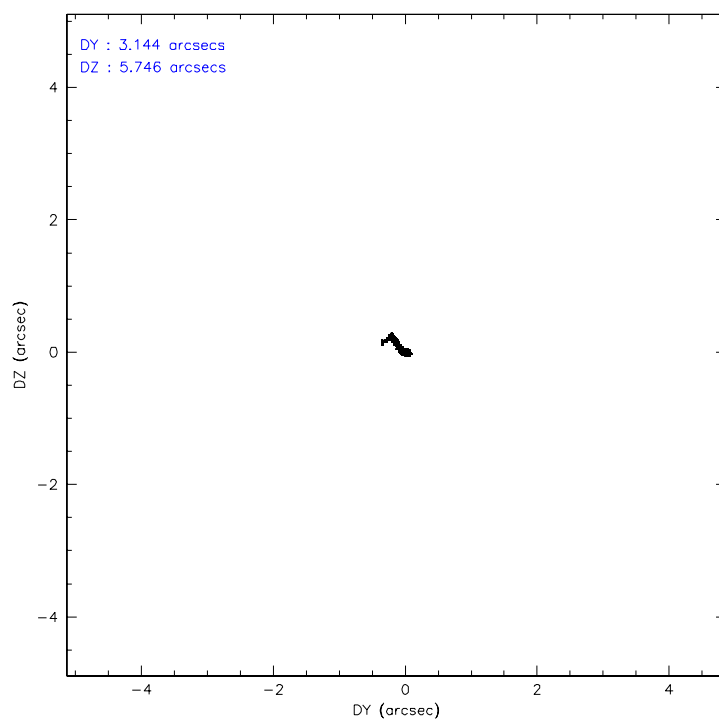
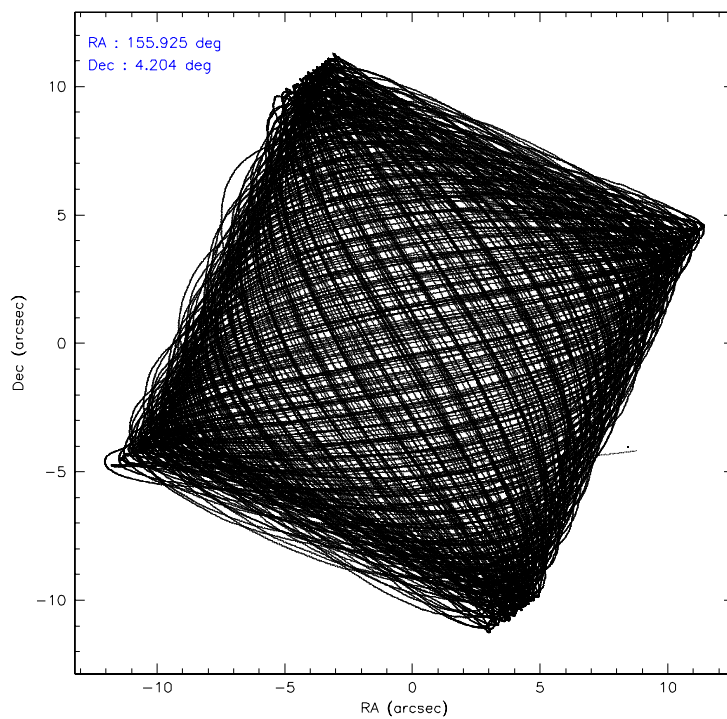
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	1065253	1407611	987113	1266333	1222591	965732
rejected events	951952	727957	861524	718724	976417	853333
rejected %	89%	51%	87%	56%	79%	88%

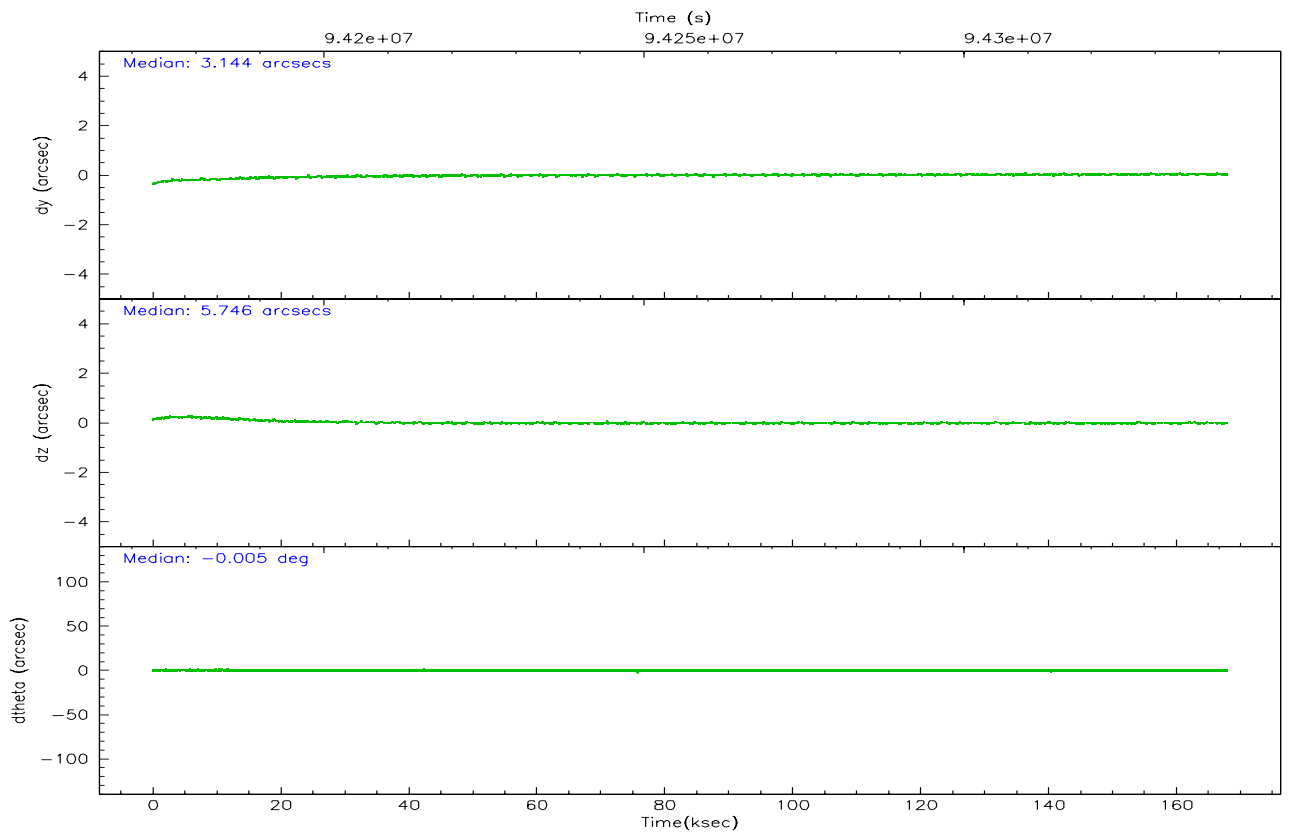
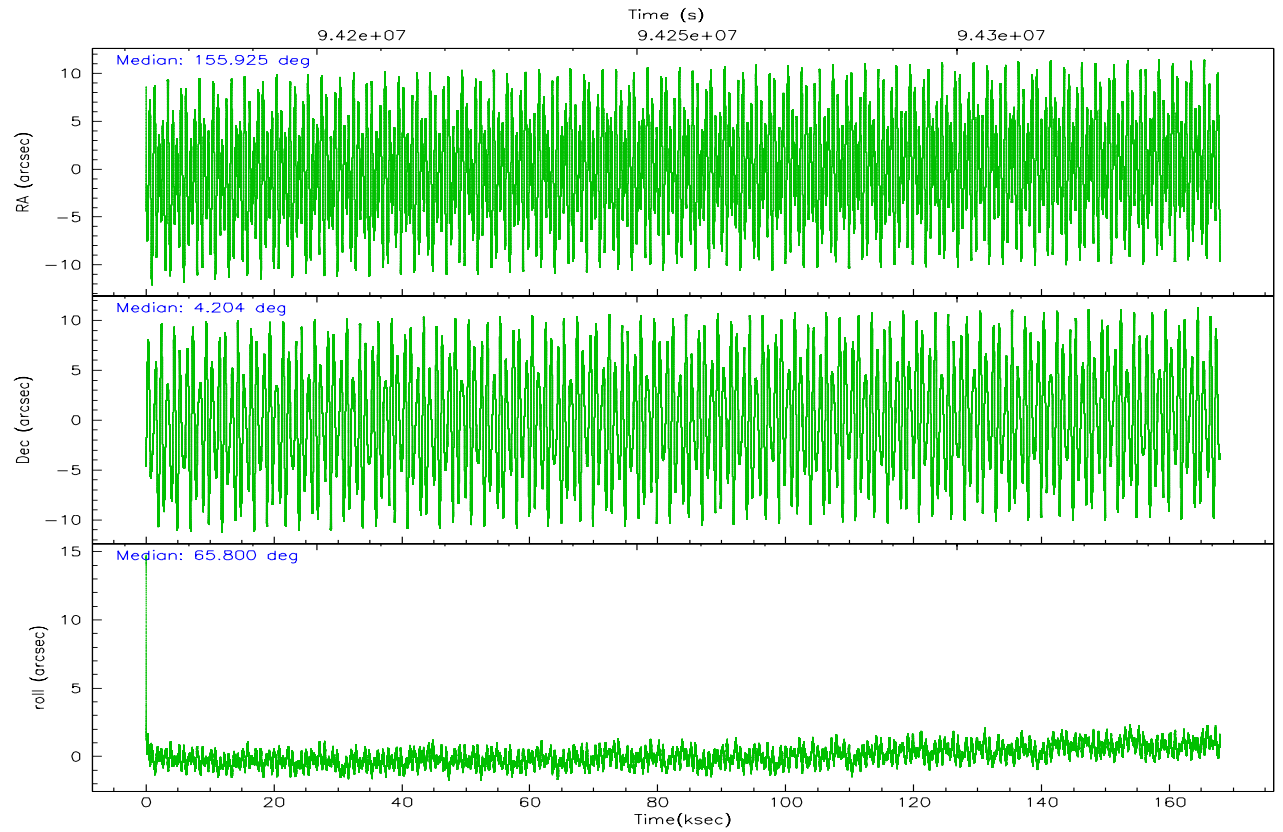
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	45490	111724	56263	57478	82919	45044
	4%	7%	5%	4%	6%	4%
grade 1 events	489	2746	466	1148	696	409
	0%	0%	0%	0%	0%	0%
grade 2 events	26672	199637	23605	110125	52071	22611
	2%	14%	2%	8%	4%	2%
grade 3 events	10697	26793	11839	50780	26032	11412
	1%	1%	1%	4%	2%	1%
grade 4 events	10325	26053	11620	50873	23940	10853
	0%	1%	1%	4%	1%	1%
grade 5 events	34355	102260	40629	117946	51612	41690
	3%	7%	4%	9%	4%	4%
grade 6 events	20118	315462	22266	278357	61214	22479
	1%	22%	2%	21%	5%	2%
grade 7 events	917107	622936	820425	599626	924107	811234
	86%	44%	83%	47%	75%	84%

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	155.928216	155.9252183364383	Subarray requested	NONE	NONE
Pointing Dec	4.177220	4.204394094135496	Alternating exposures requested	N	N
Pointing Roll	65.649650	65.80649170335346	Primary exposure time	0.000000	3.2
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-190.132523	-190.1400660498719			
SIM translation stage offset (mm)	0	0.00754346686406393			
Observation start time	94173367.184000	94172262.118774			
Observation start date	2000-12-25T23:15:03	2000-12-25T22:57:42			
Observation end time	94341201.184000	94341515.76275299			
Observation end date	2000-12-27T21:52:17	2000-12-27T21:58:35			
Read mode	TIMED	TIMED			

2.3 Aspect



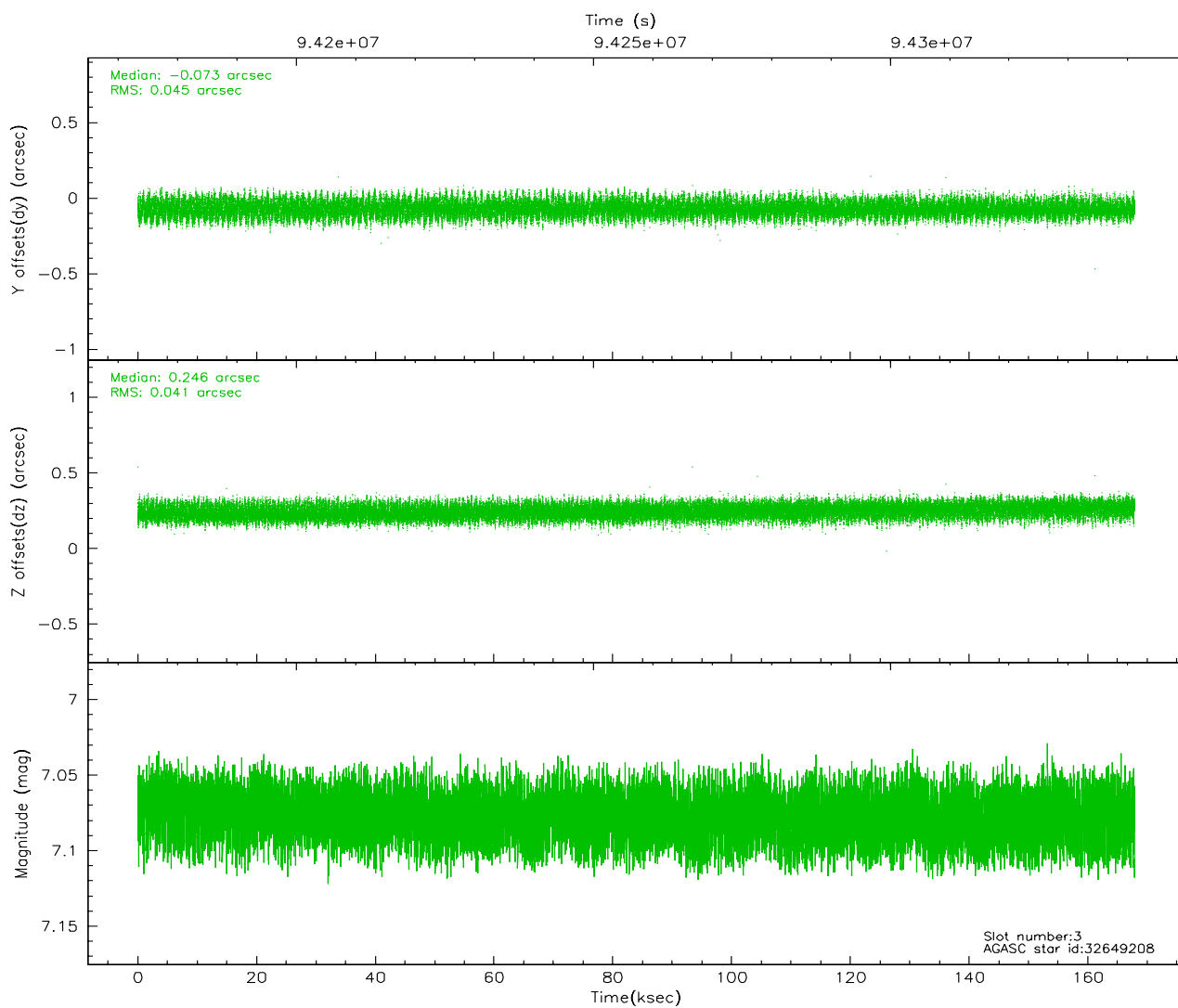
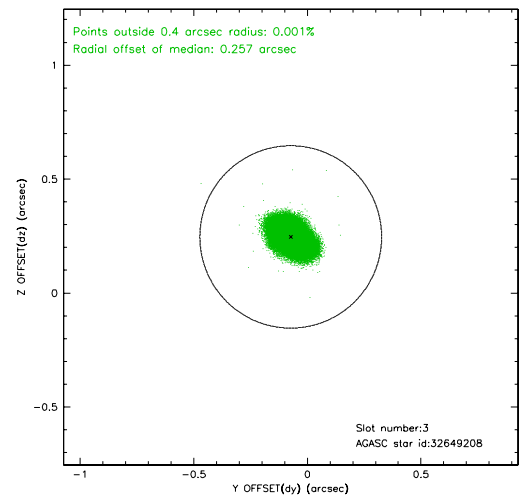
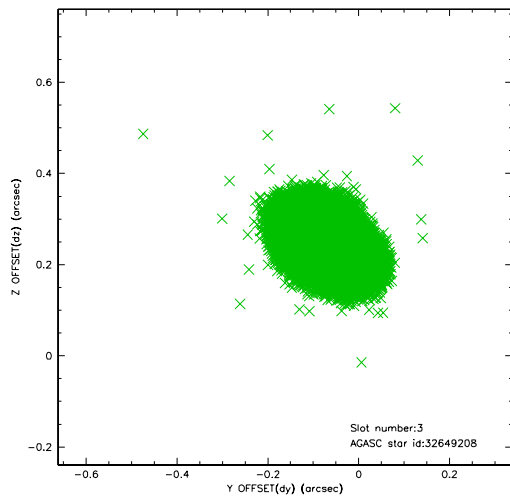


Slot Statistics

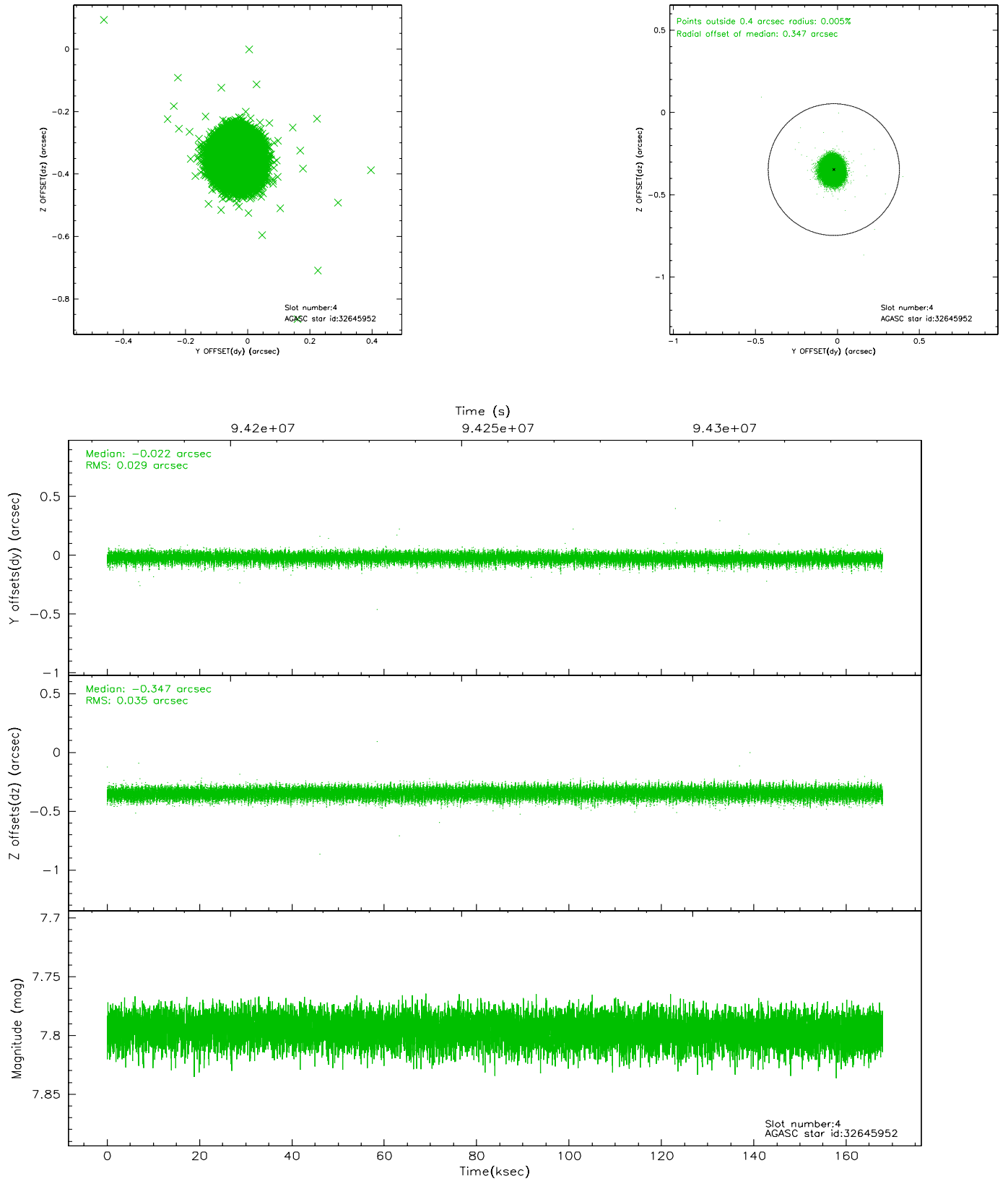
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	40957	-0.018	0.035	0.007	0.012	0.000000	0.000000	-755.76	-1726.88
1	FID	ACIS-S-4	7.21	40951	-0.053	-0.001	0.006	0.012	0.000000	0.000000	2157.50	181.74
2	FID	ACIS-S-5	7.24	40954	0.039	-0.025	0.007	0.013	0.000000	0.000000	-1808.72	175.19
3	GUIDE	32649208	7.08	81906	-0.073	0.246	0.065	0.105	156.538344	3.932532	102.12	-2358.89
4	GUIDE	32645952	7.79	81902	-0.022	-0.347	0.047	0.079	155.433347	4.300135	-328.95	1800.84
5	GUIDE	32640752	8.23	81906	-0.129	0.123	0.066	0.100	156.390412	4.571973	1979.18	-924.46
6	GUIDE	32643784	8.43	81905	0.258	0.117	0.053	0.086	155.795621	3.651776	-1919.23	-345.99
7	GUIDE	32639096	8.82	81890	-0.033	-0.138	0.080	0.127	155.596152	4.431941	344.17	1464.01

2.4 Star Slots

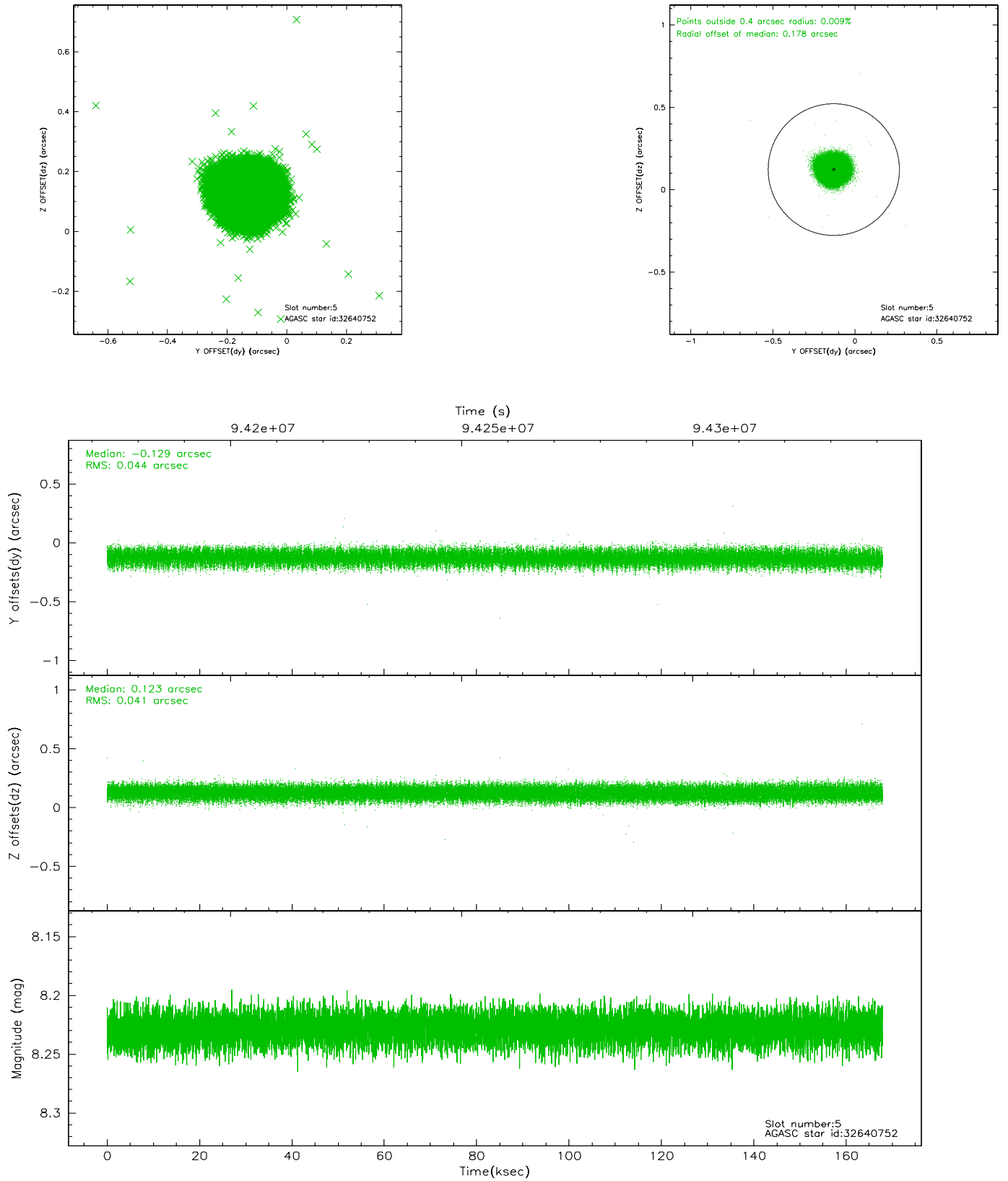
2.4.1 Slot 3



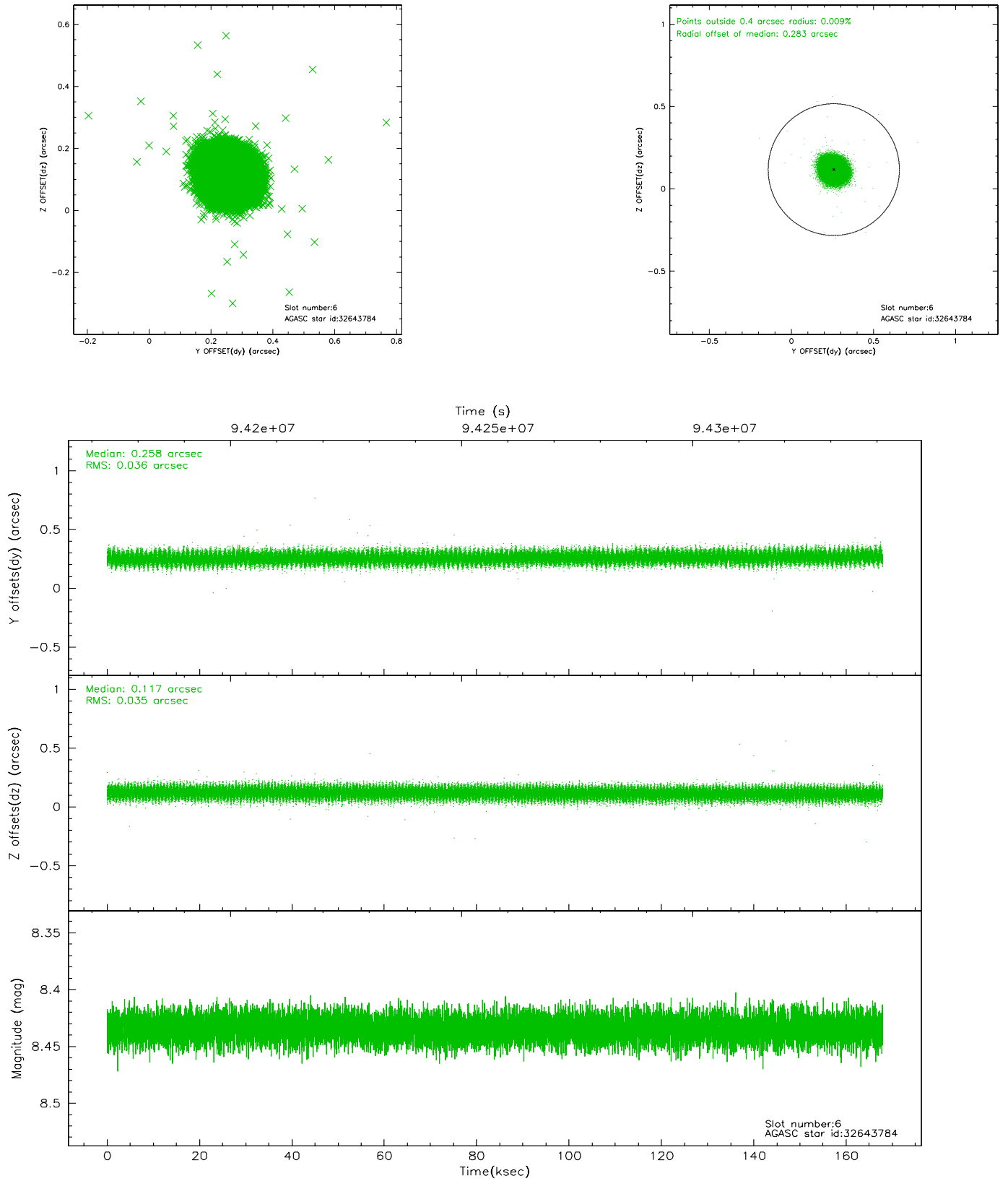
2.4.2 Slot 4



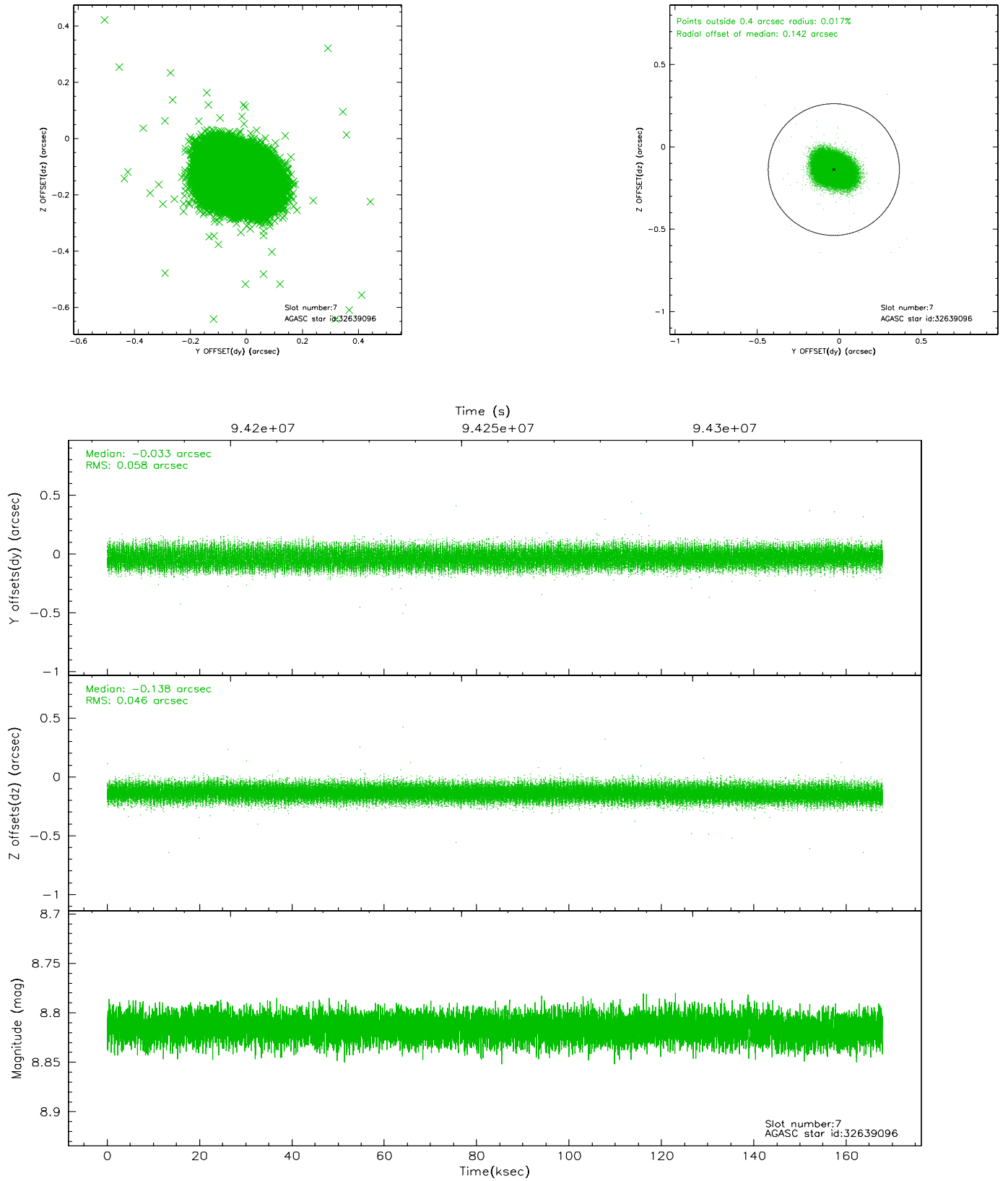
2.4.3 Slot 5



2.4.4 Slot 6

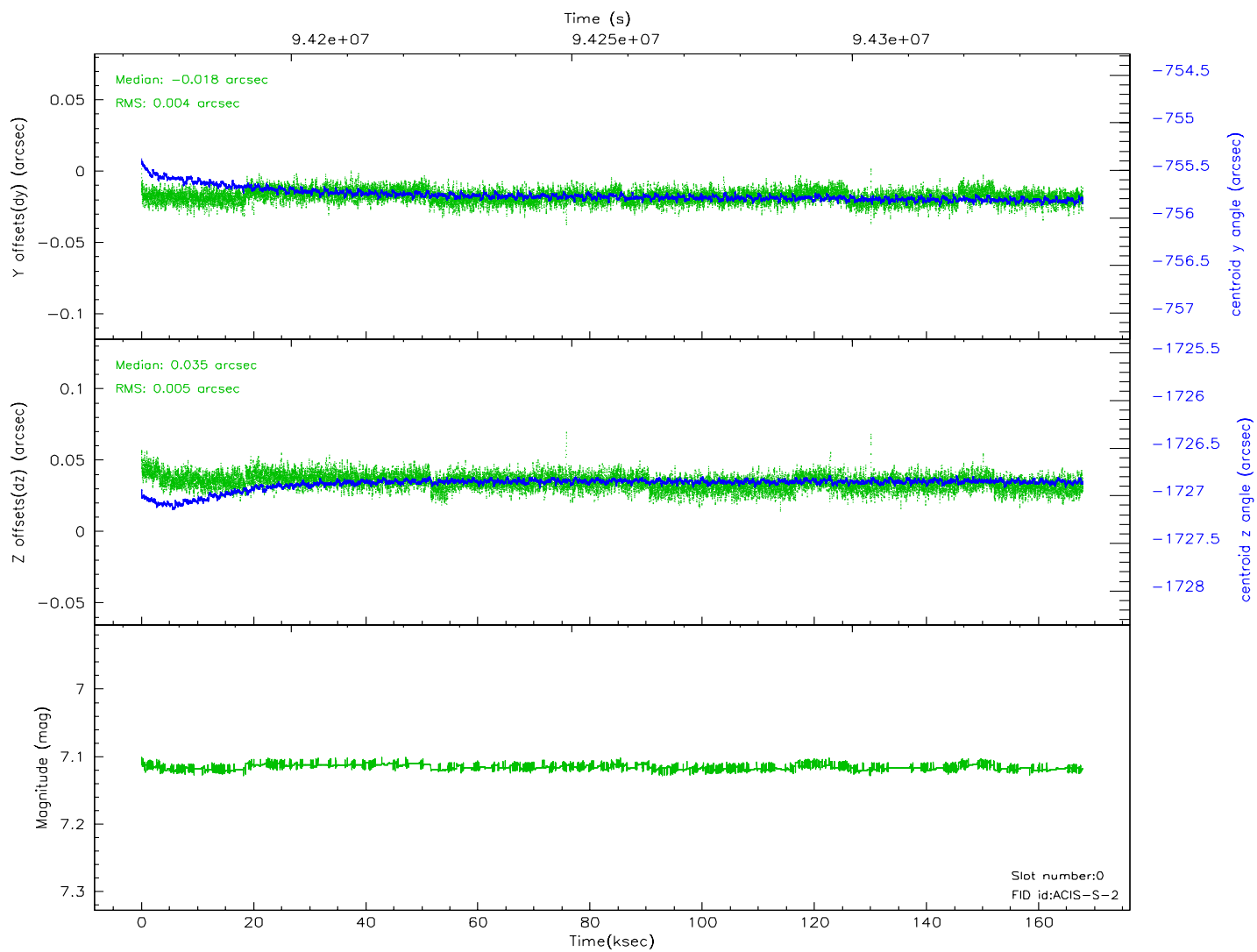
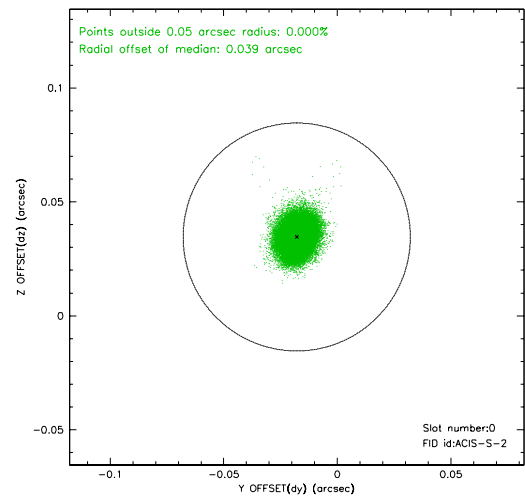
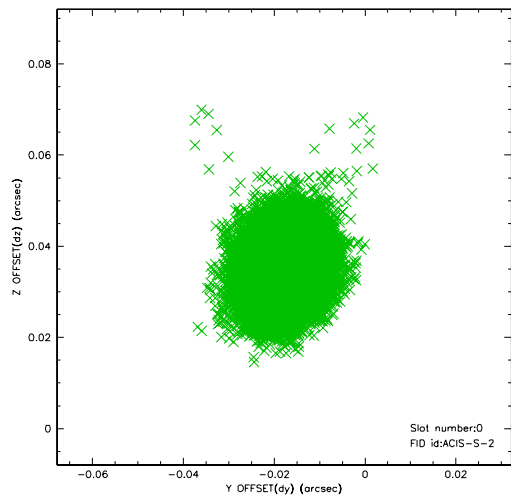


2.4.5 Slot 7

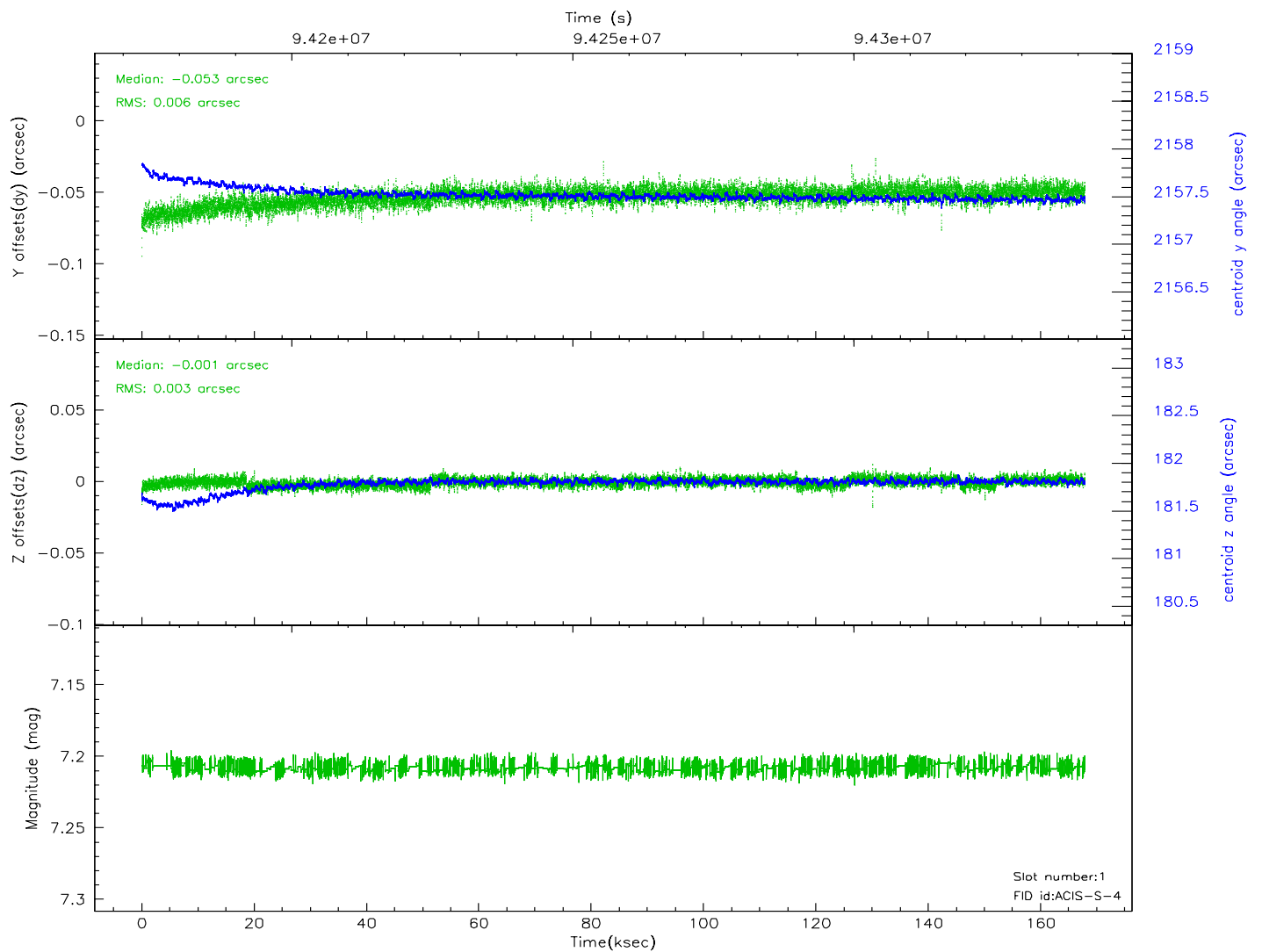
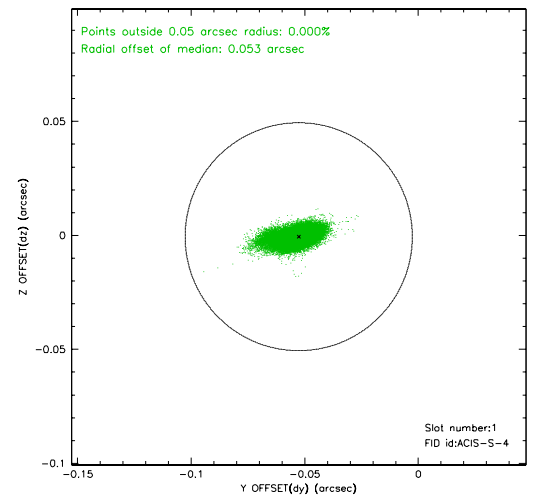
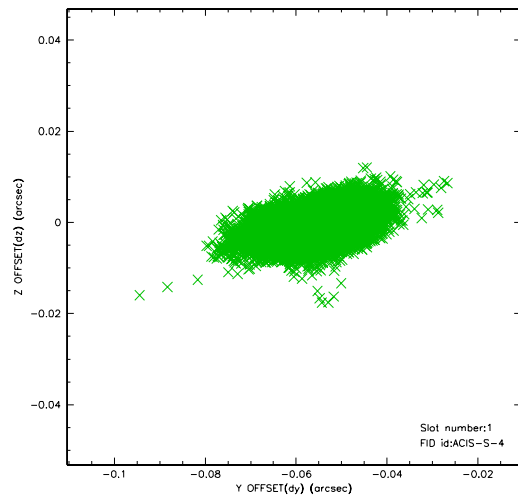


2.5 FID Slots

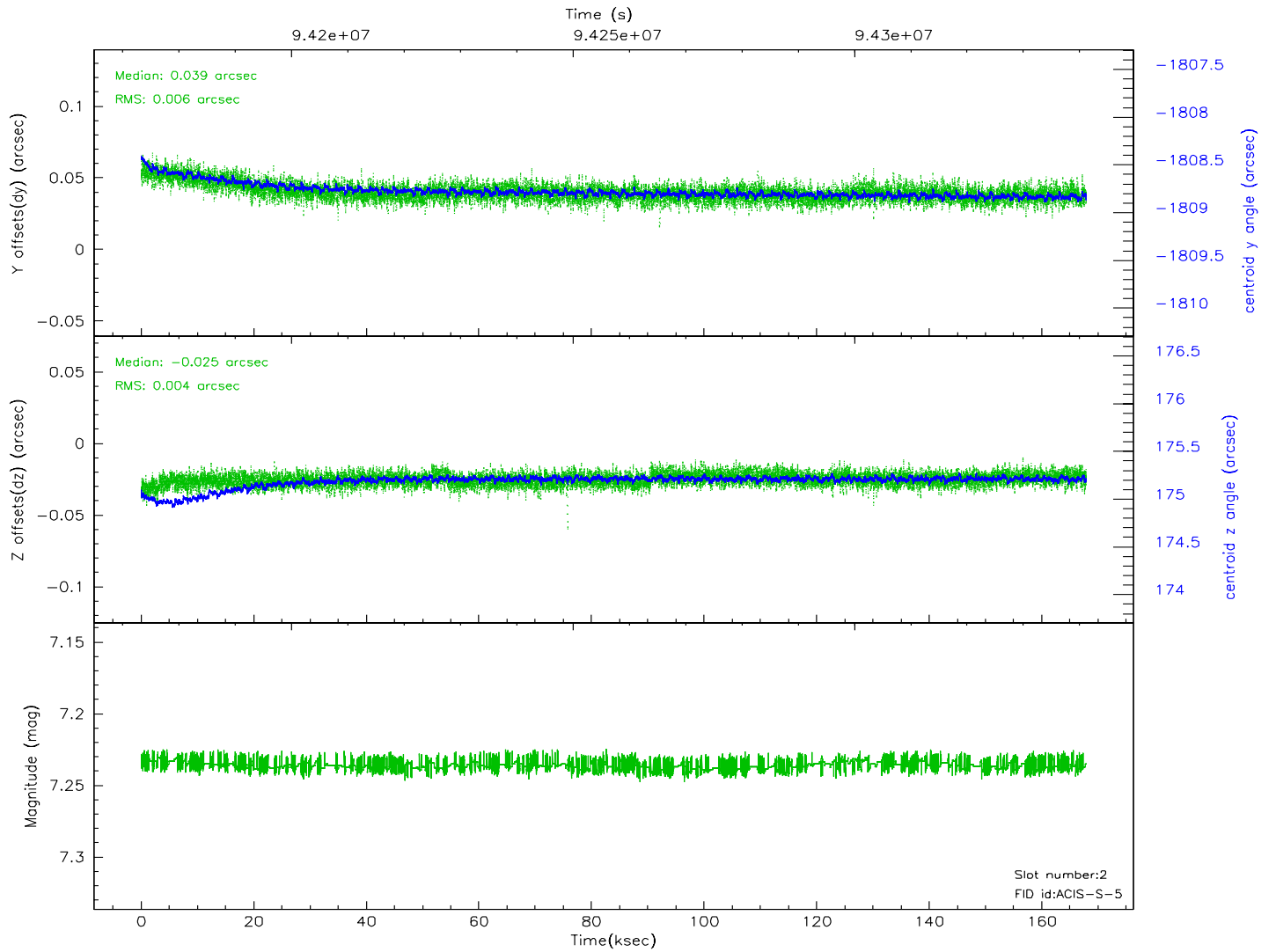
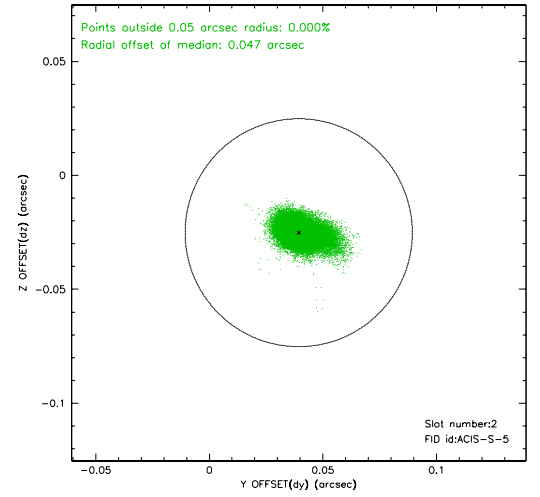
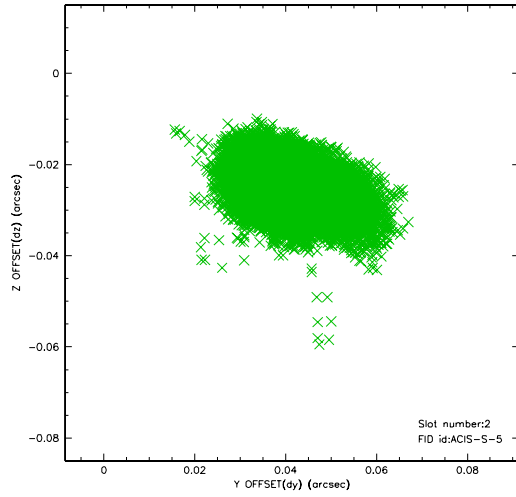
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

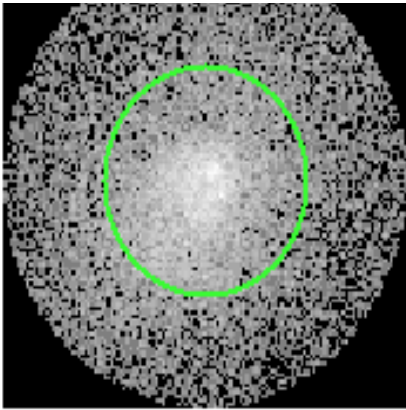


3 Gratings

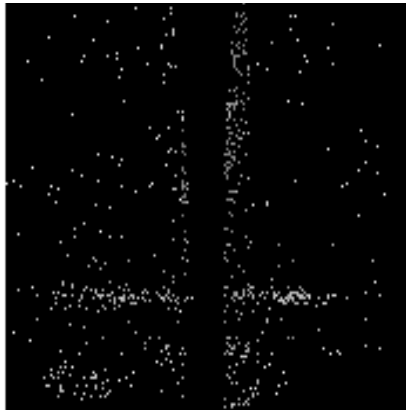
3.1 HEG Arm



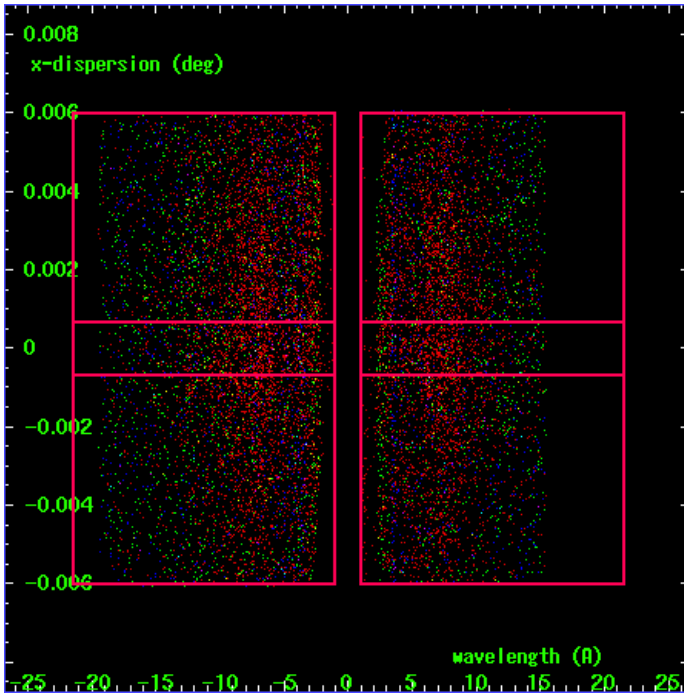
HEG Order Sort 123



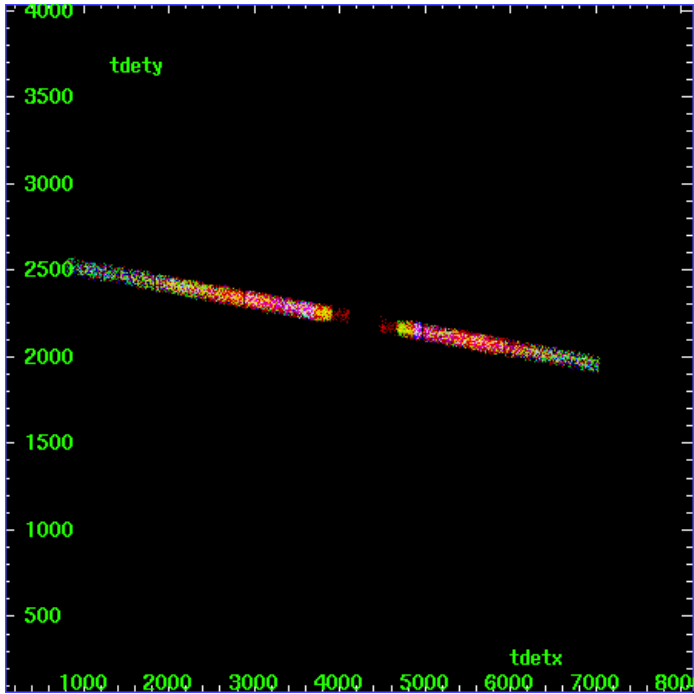
HEG Zero Order



HEG Order Sort ALL

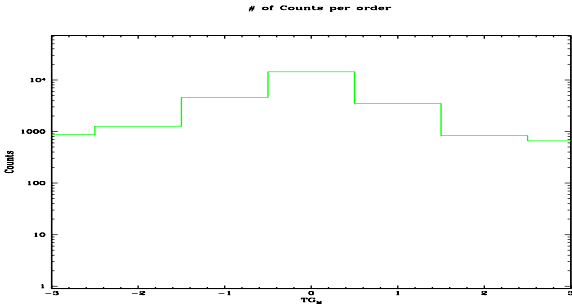


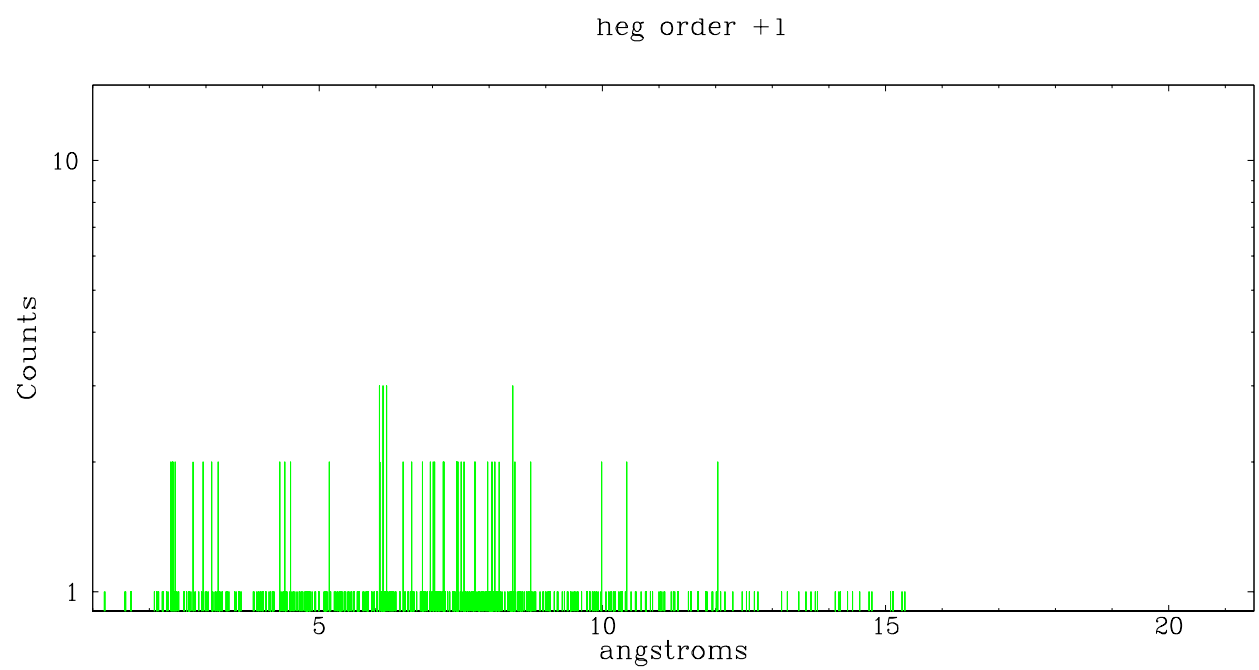
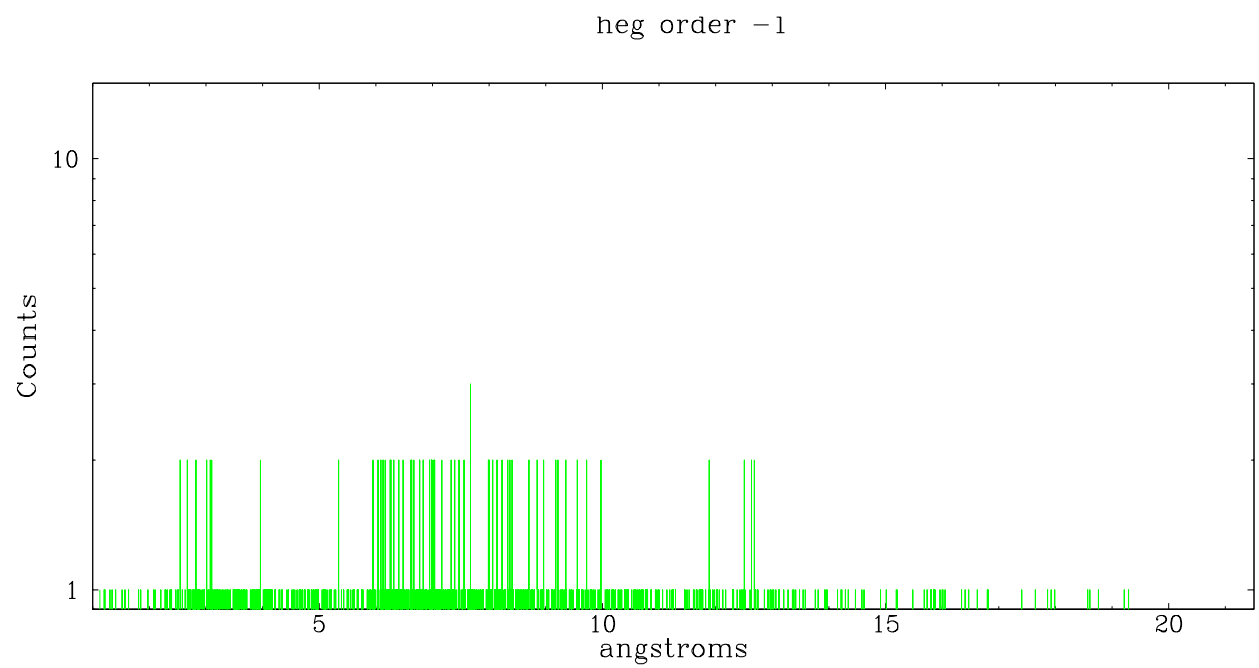
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	867	1261	4588	14424	3491	829	660

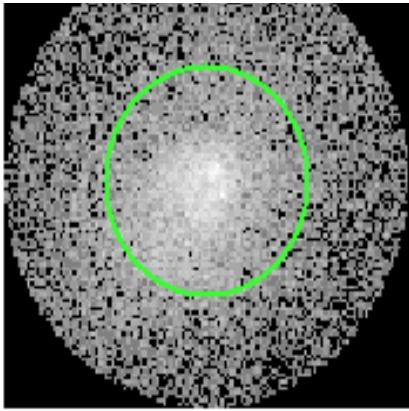




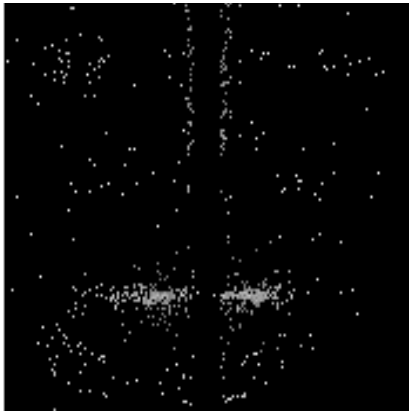
3.2 MEG Arm



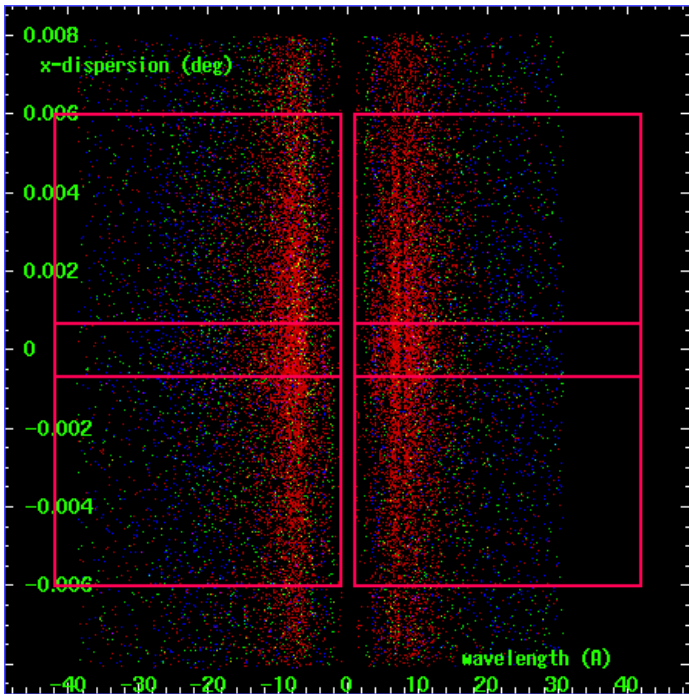
MEG Order Sort 123



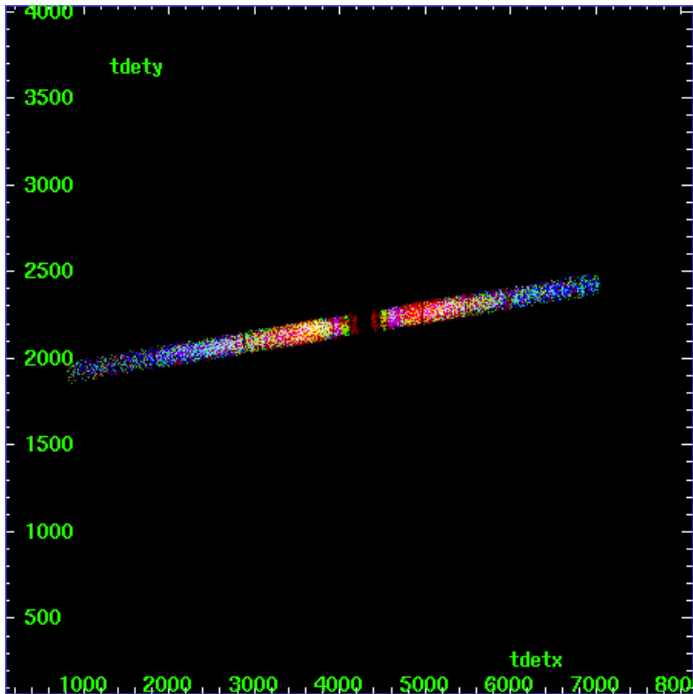
MEG Zero Order



MEG Order Sort ALL

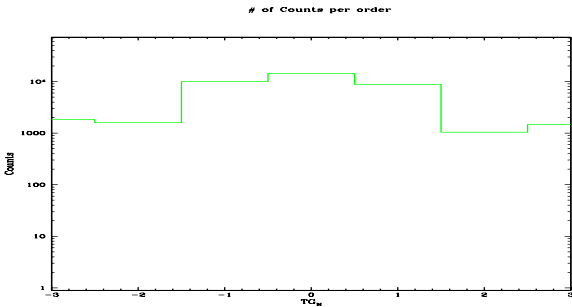


Spot Image MEG

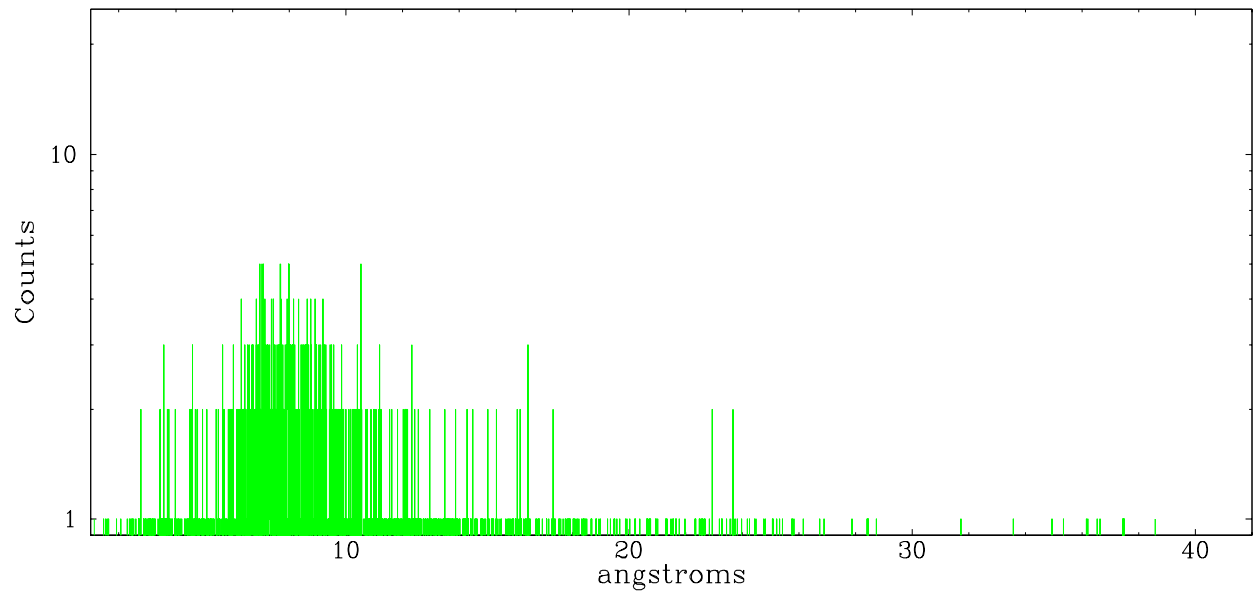


Full Detector MEG

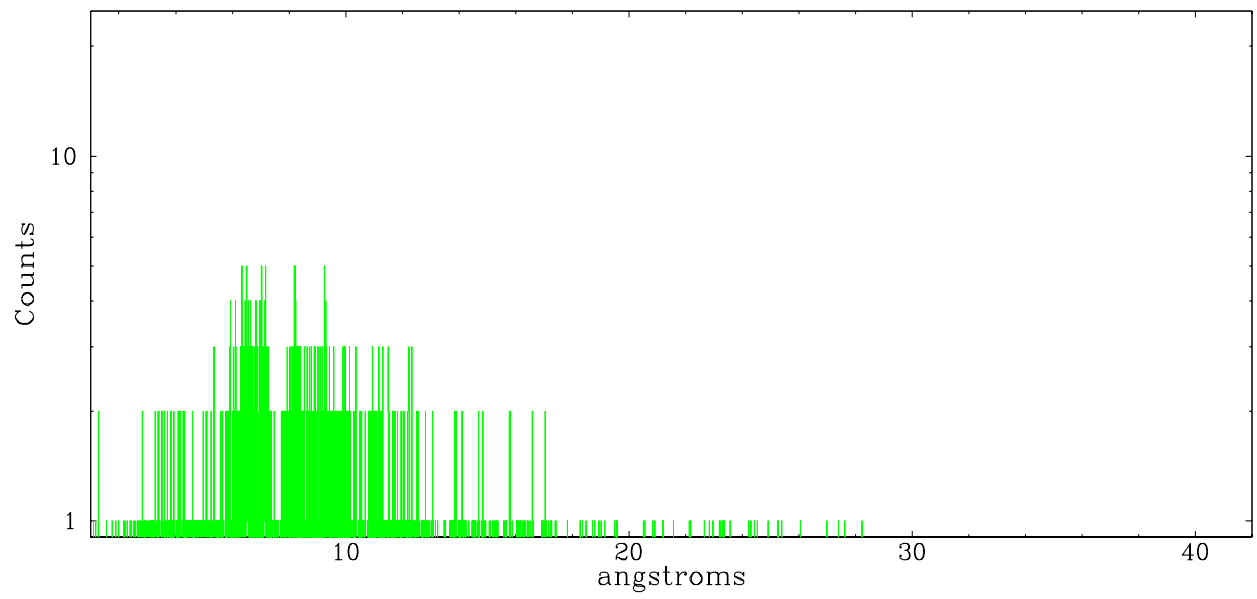
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1831	1588	9980	14424	8826	1044	1464



meg order -1



meg order +1



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2007.07.02
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	167.83

A.2 Comments

WARNING: there are no standard ciao tools for analysis of grating spectra from extended sources. The shape of an emission 'line' will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle. The user will need to select a region or source of interest, then use software tools such as CIAO to specify the coordinates of the zeroth order source of interest before running the tools to resolve the dispersed events.