

V&V Reference Report

L2 ASCDS Version : 7.6.9

Observation 4375 - L2 Version 001
Chandra X-Ray Center

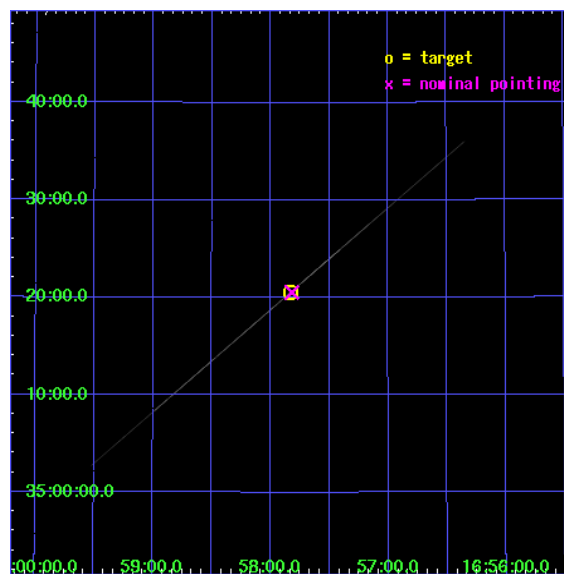
L2 Processing Date : Dec 6 2006

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

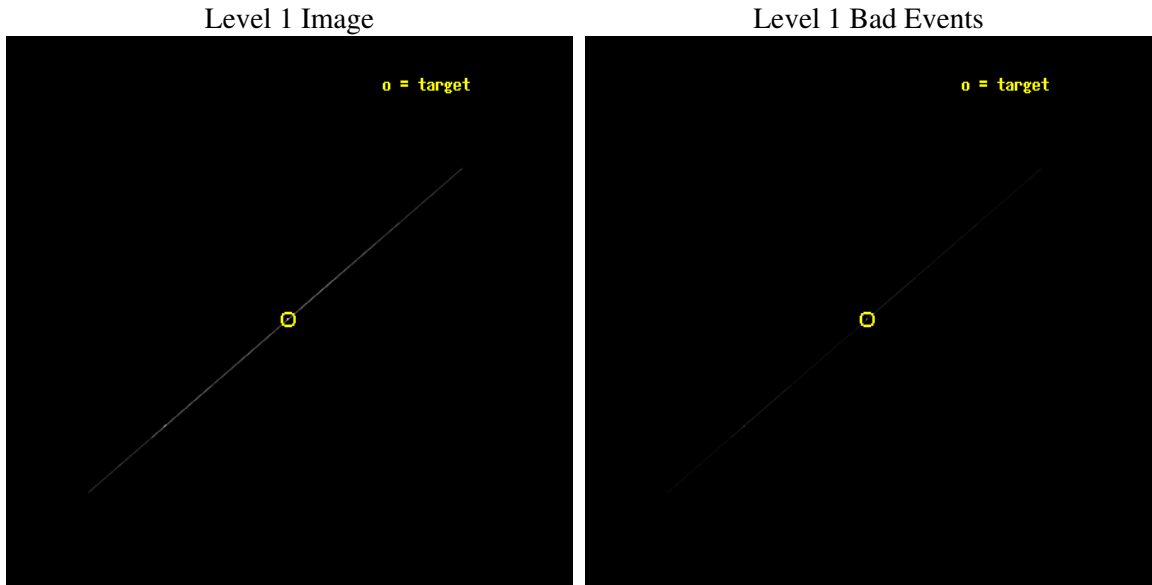
seq_num	400317
obs_id	4375
title	HIGH RESOLUTION SPECTROSCOPY OF HERCULES X-1
observer	Dr. Daniel Scott
object	HER X-1 SHORT HI
ra_targ	254.4575
dec_targ	35.342472
ra_nom	254.45475477084
dec_nom	35.342165510878
roll_nom	319.41883419537
revision	3
ontime	20360.25
livetime	20280.717773438
ontime4	20360.25
ontime5	20358.791286558
ontime6	20360.25
ontime7	20360.25
ontime8	20360.25
ontime9	20360.25
l2events	648722



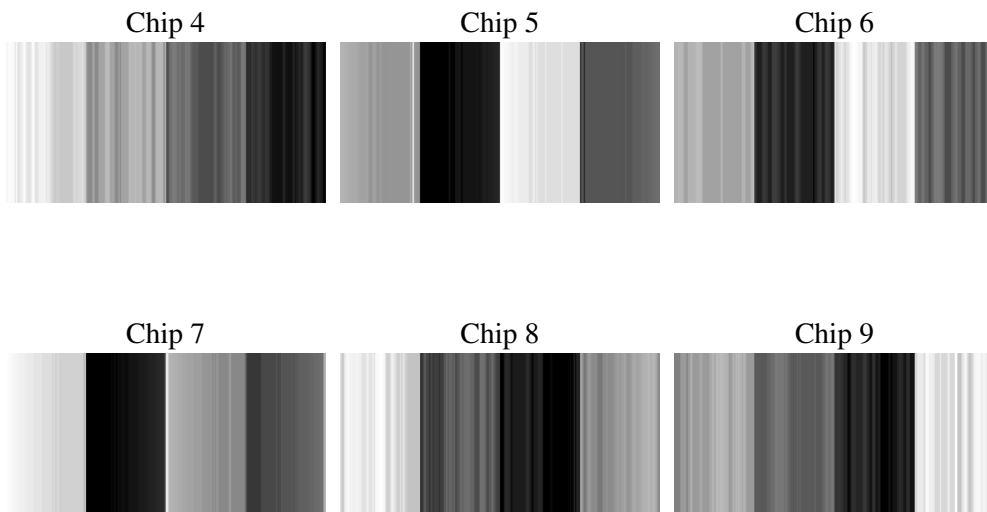
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1
ascdsver	7.6.9
caldbver	3.2.3
date	2006-10-30T13:22:31
revision	2

sched_exp_time	20000.000000
ontime	21051.5879457
ontime4	21051.588561565
ontime5	21048.67045787
ontime6	21051.588146478
ontime7	21051.5879457
ontime8	21051.587742358
ontime9	21051.587539792
l1events	793608

2.1.4 Events

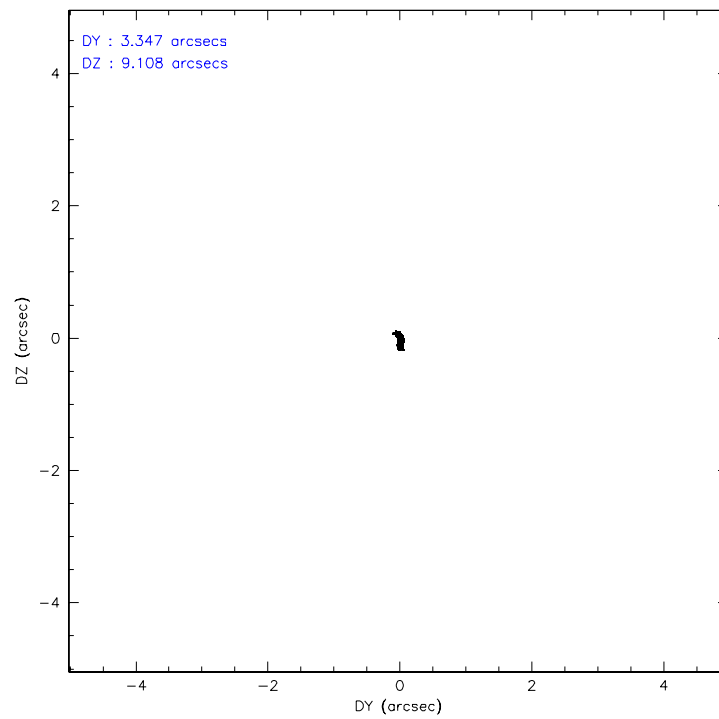
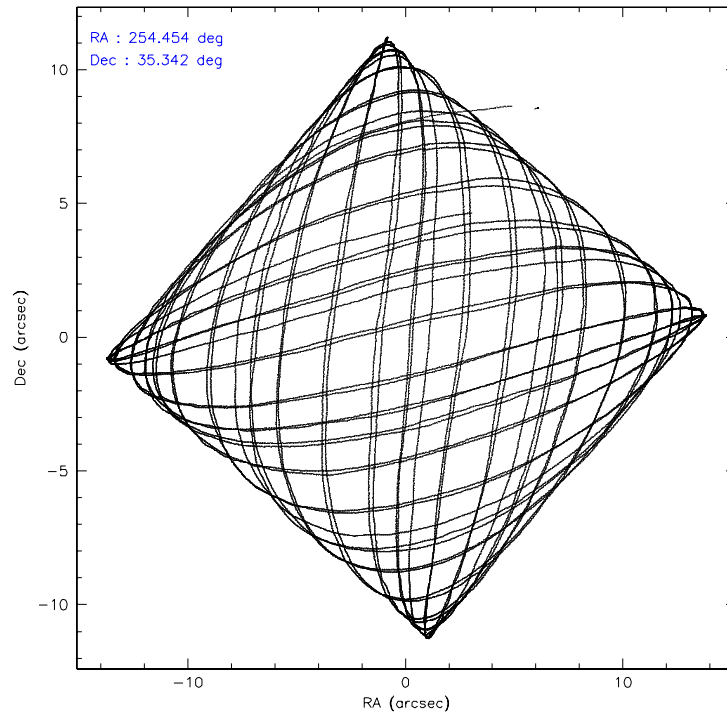
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	33067	148109	107125	374102	93984	37221
rejected events	5567	13980	6960	21222	9596	6479
rejected %	16%	9%	6%	5%	10%	17%

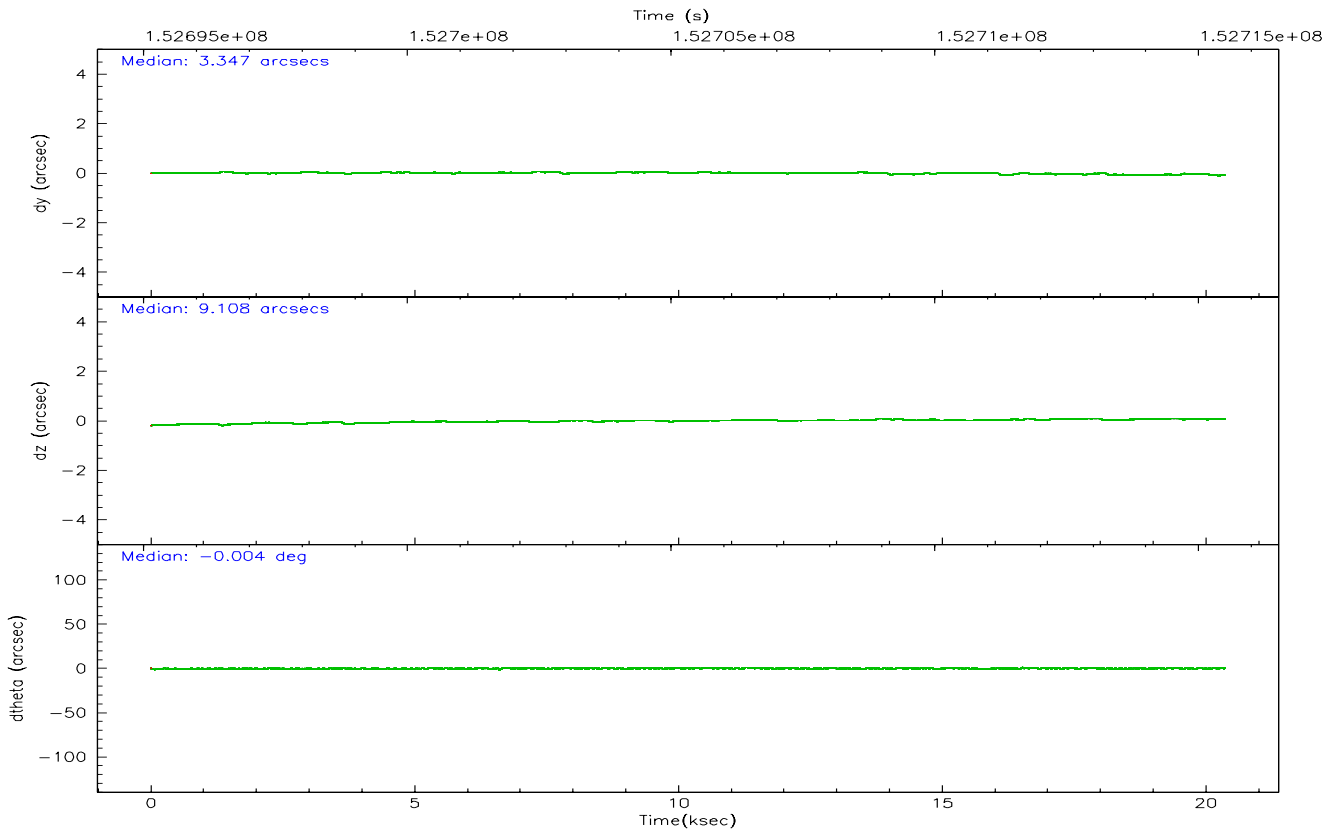
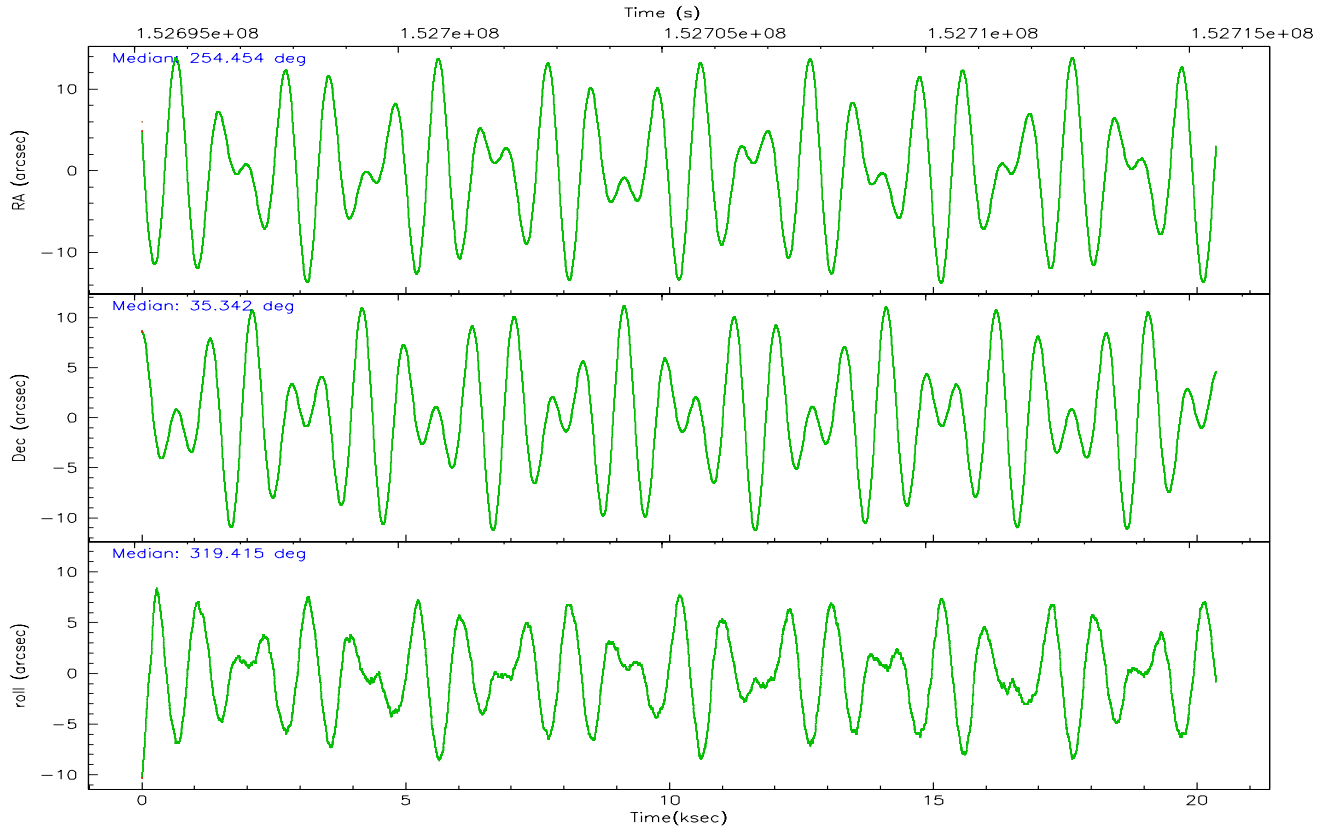
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	5326	32004	12962	64512	28655	7150
	16%	21%	12%	17%	30%	19%
grade 1 events	120	122	122	739	239	120
	0%	0%	0%	0%	0%	0%
grade 2 events	11631	40511	68900	103543	30994	12307
	35%	27%	64%	27%	32%	33%
grade 3 events	3238	3723	3335	27719	6884	3016
	9%	2%	3%	7%	7%	8%
grade 4 events	3419	3617	3354	27415	6574	3311
	10%	2%	3%	7%	6%	8%
grade 5 events	4674	9997	5564	16226	7281	5463
	14%	6%	5%	4%	7%	14%
grade 6 events	4659	58135	12888	133948	13357	5854
	14%	39%	12%	35%	14%	15%
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	254.421892	254.4547547708441	Subarray requested	NONE	NONE
Pointing Dec	35.346810	35.34216551087798	Alternating exposures requested	N	N
Pointing Roll	319.281224	319.418834195374	Primary exposure time	0.000000	0
Window start time	152537104.184000	152537104.184000			
Window stop time	153164284.184000	153164284.184000			
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-186.132523	-186.1397904050899			
SIM translation stage offset (mm)	-4	-3.992732177917873			
Phase constraints	Y	Y			
Phase period	34.853430	34.853430			
Phase epoch	52489.316000	52489.316000			
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	152695504.184000	152694454.44337			
Observation start date	2002-11-03T07:24:00	2002-11-03T07:07:34			
Observation end time	152715504.184000	152715746.76926			
Observation end date	2002-11-03T12:57:20	2002-11-03T13:02:26			

2.3 Aspect



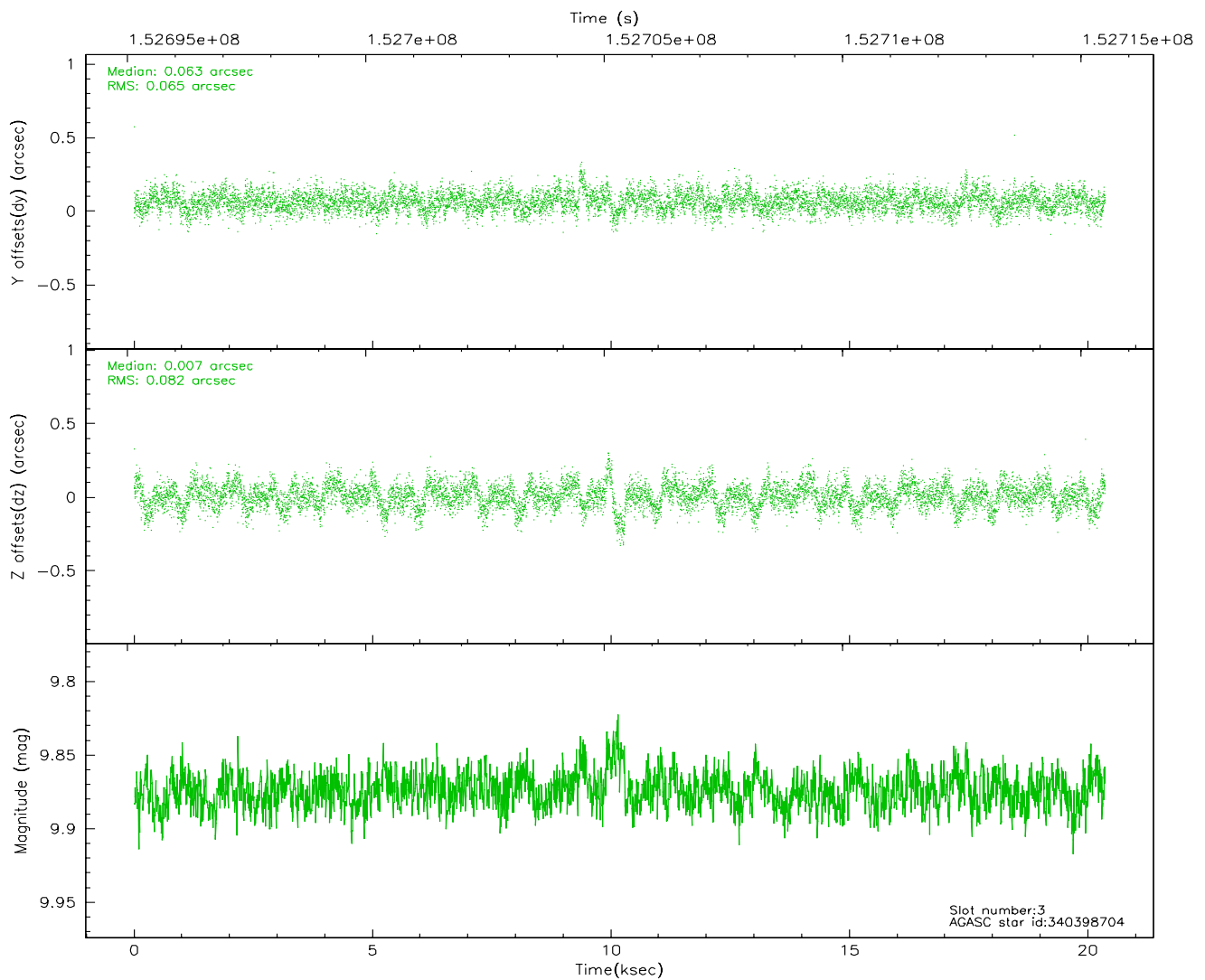
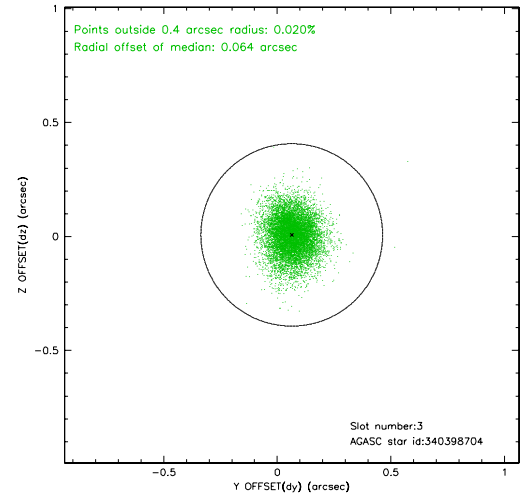
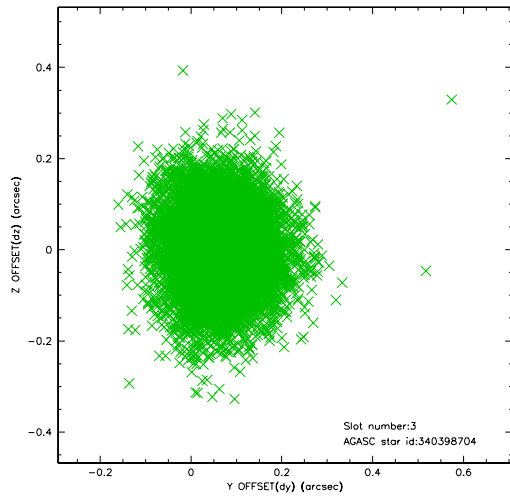


Slot Statistics

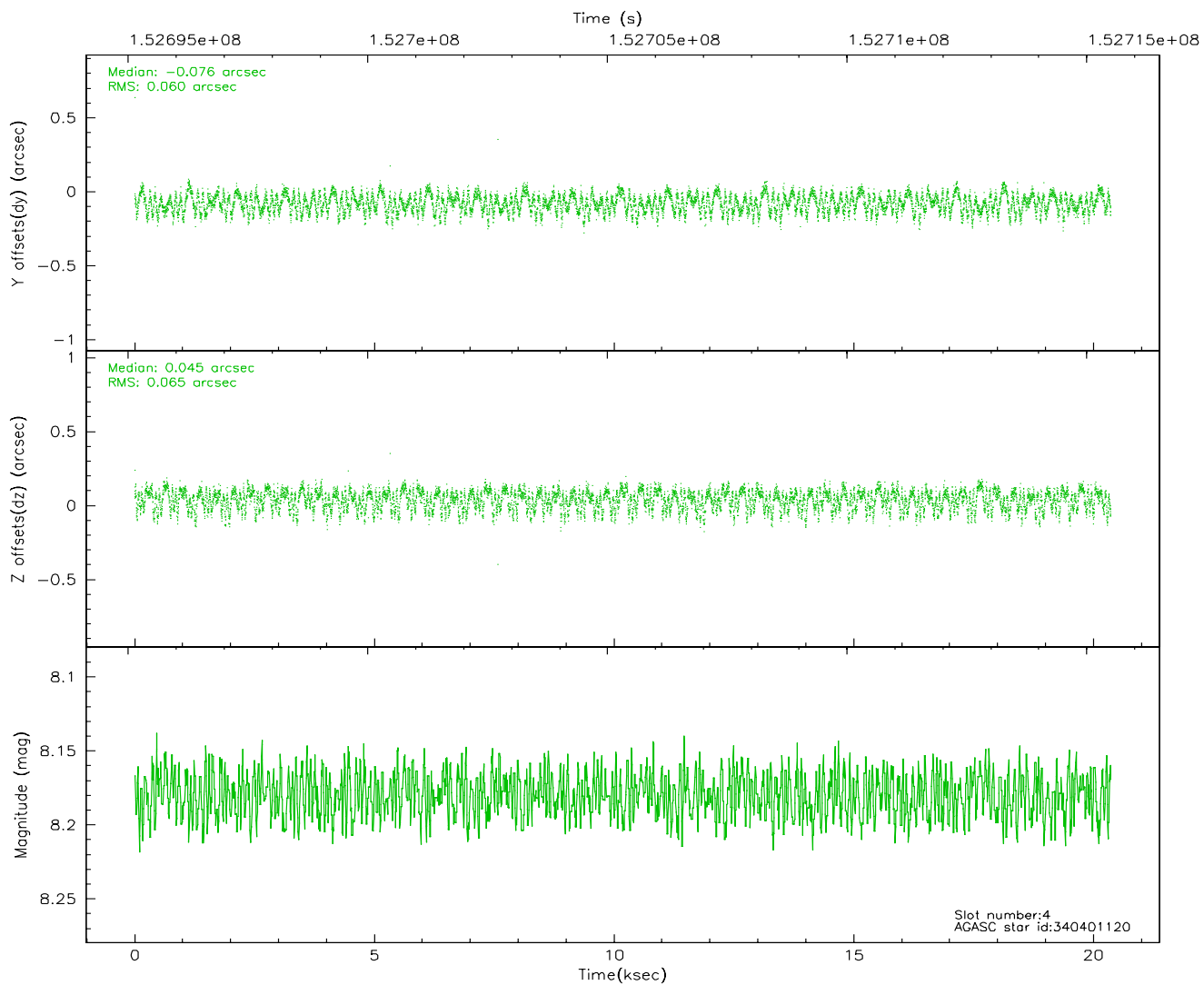
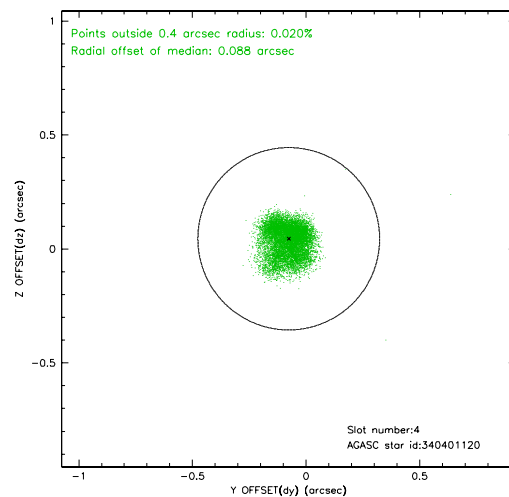
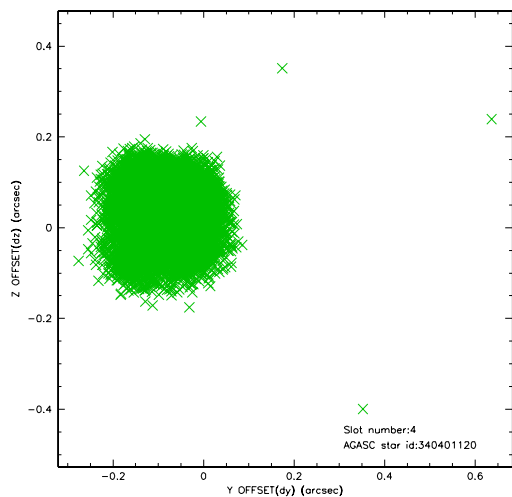
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	4968	-0.011	-0.020	0.006	0.011	0.000000	0.000000	-755.73	-1812.71
1	FID	ACIS-S-4	7.18	4967	-0.032	0.011	0.006	0.011	0.000000	0.000000	2157.44	95.60
2	FID	ACIS-S-5	7.23	4967	0.012	0.017	0.006	0.011	0.000000	0.000000	-1808.32	89.47
3	GUIDE	340398704	9.87	9925	0.063	0.007	0.109	0.182	253.783062	35.459063	-1685.97	-911.02
4	GUIDE	340401120	8.18	9934	-0.076	0.045	0.095	0.147	253.574895	35.128140	-1382.33	-2215.33
5	GUIDE	340533352	8.46	9933	0.063	0.062	0.061	0.099	254.563691	34.717962	1795.94	-1441.76
6	GUIDE	340534896	8.58	9933	-0.099	-0.101	0.075	0.115	255.288450	35.541682	1460.20	2196.19
7	GUIDE	340534080	8.83	9929	0.050	-0.000	0.071	0.112	255.228954	35.471551	1495.51	1891.84

2.4 Star Slots

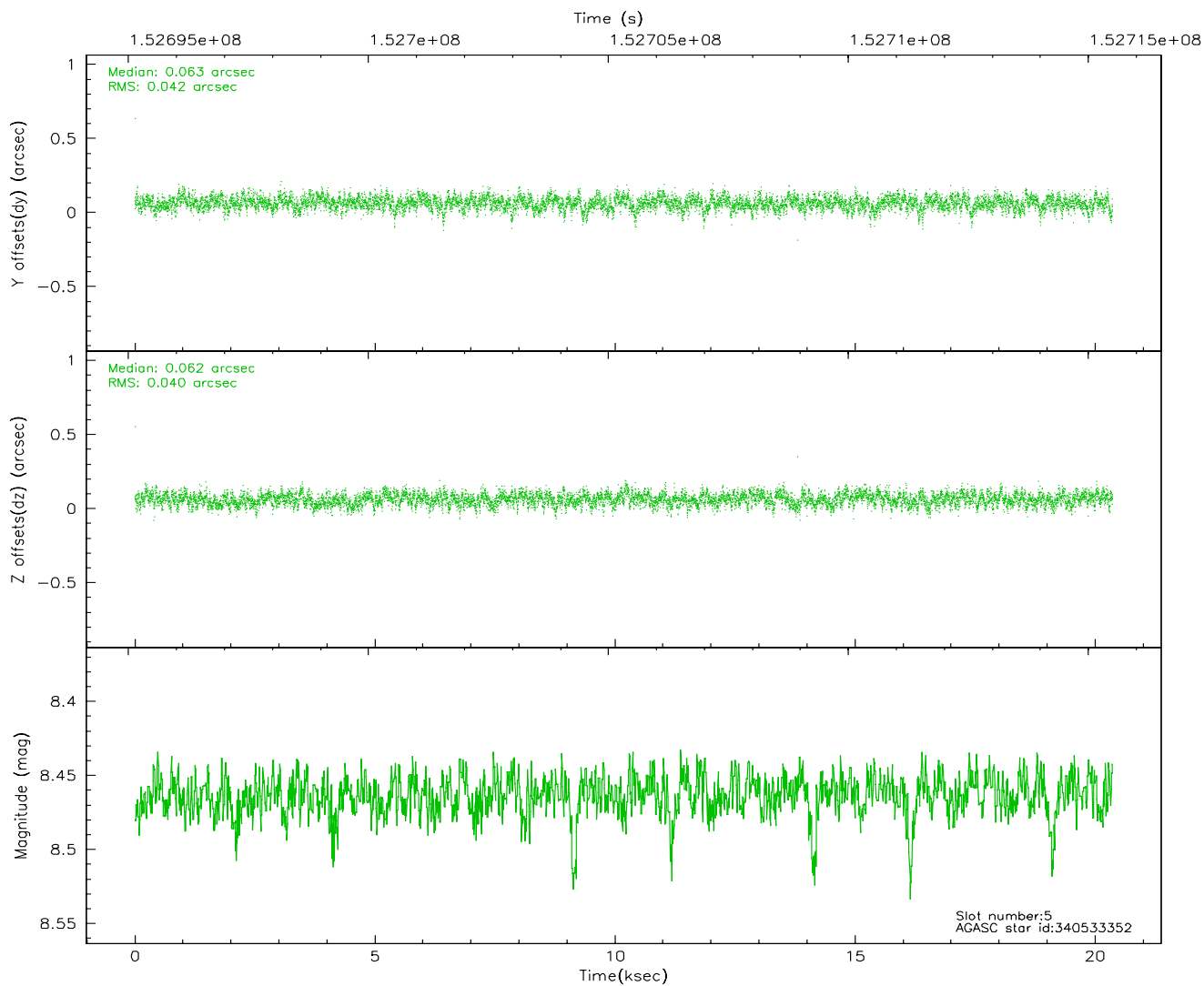
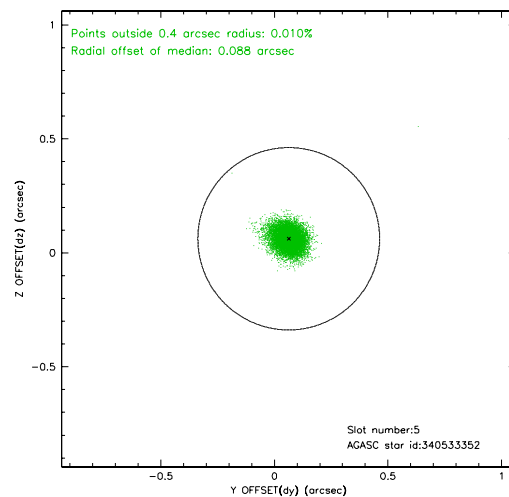
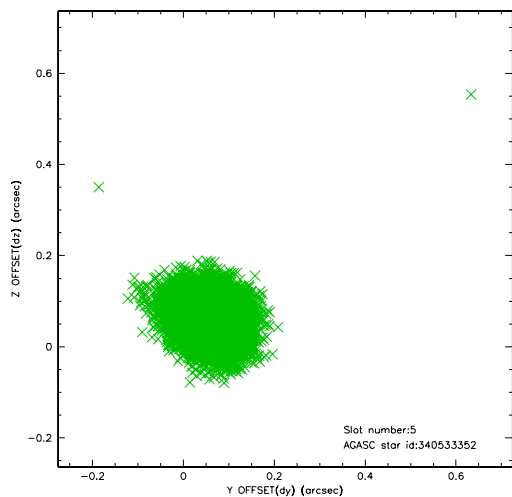
2.4.1 Slot 3



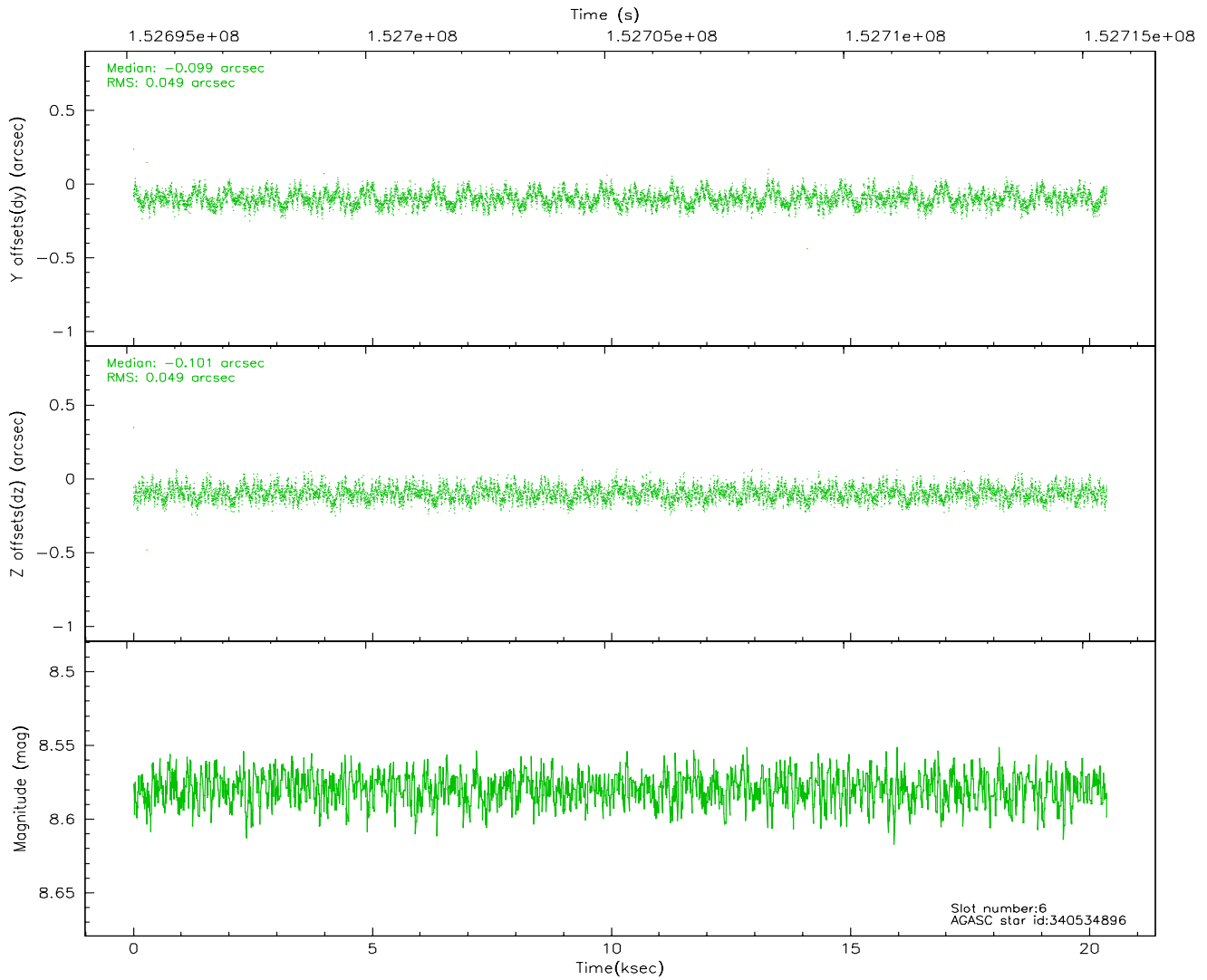
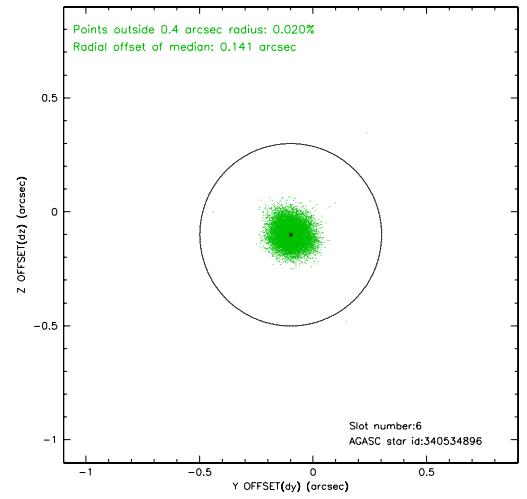
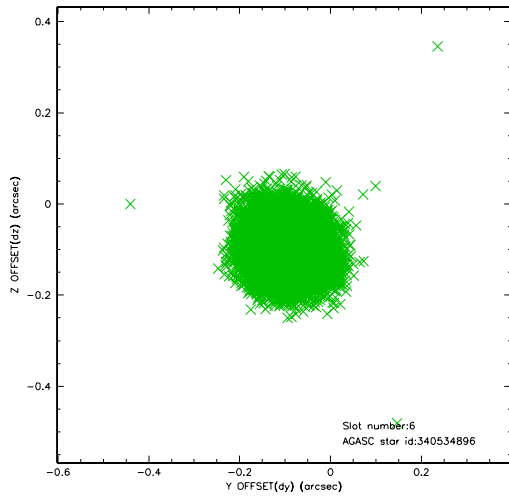
2.4.2 Slot 4



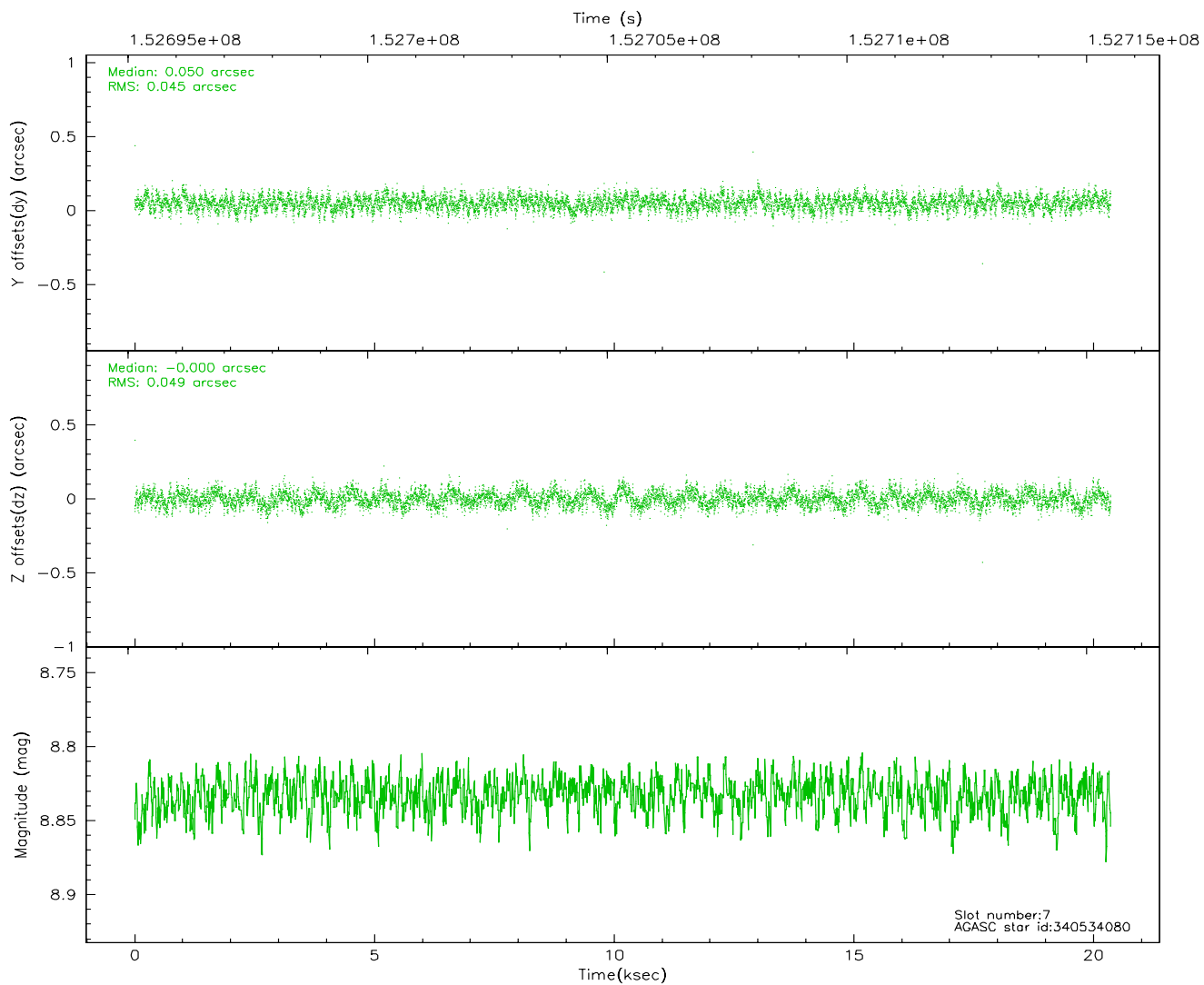
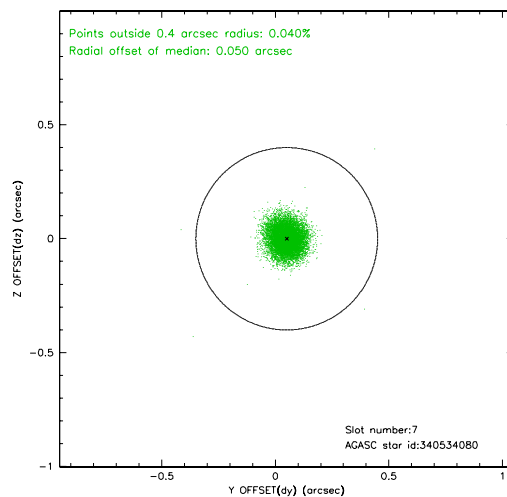
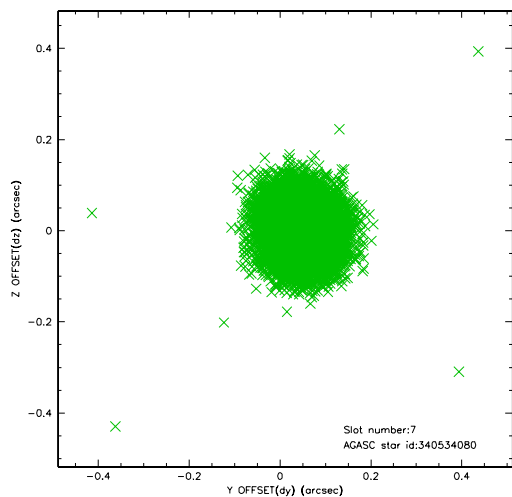
2.4.3 Slot 5



2.4.4 Slot 6

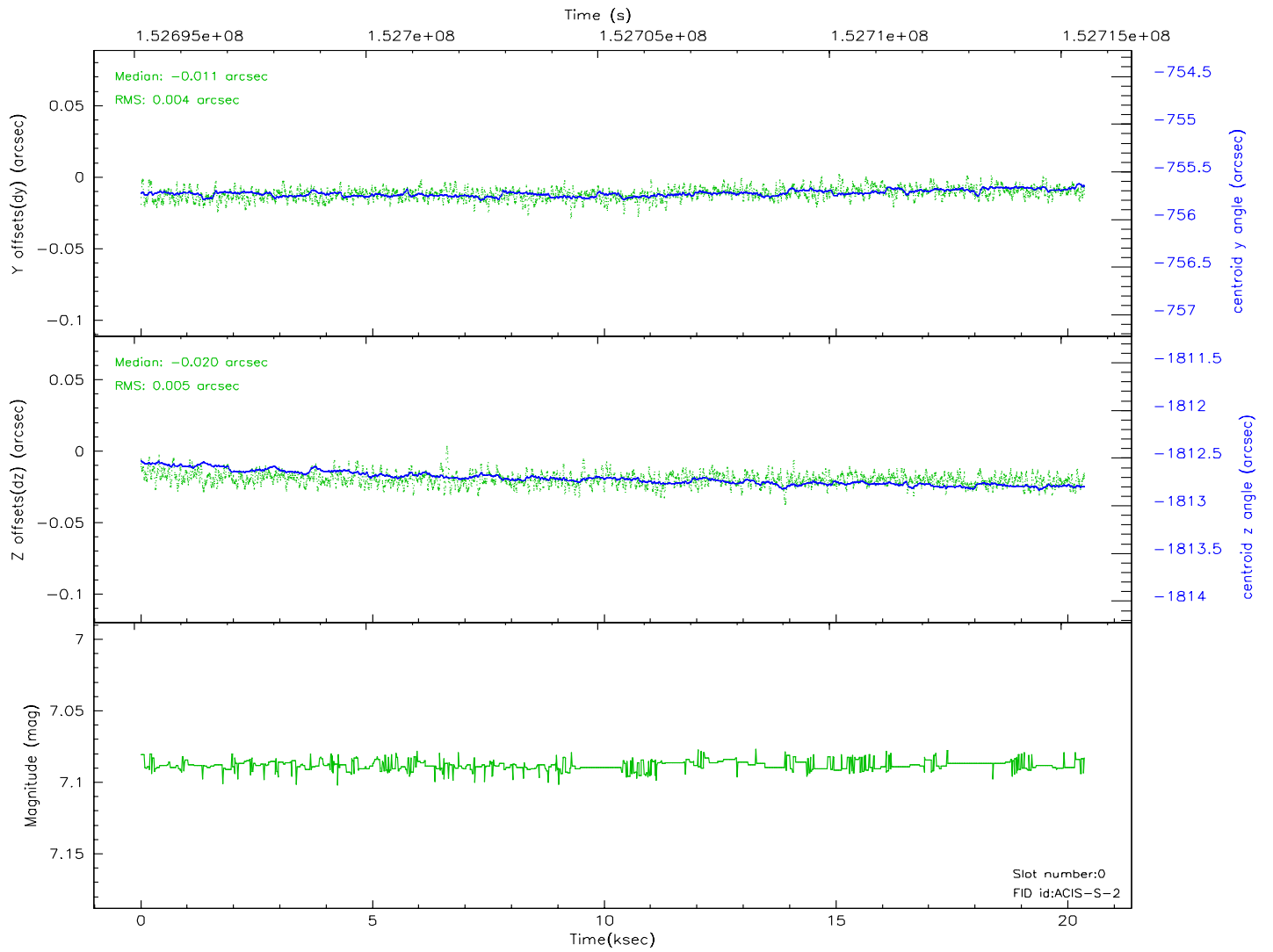
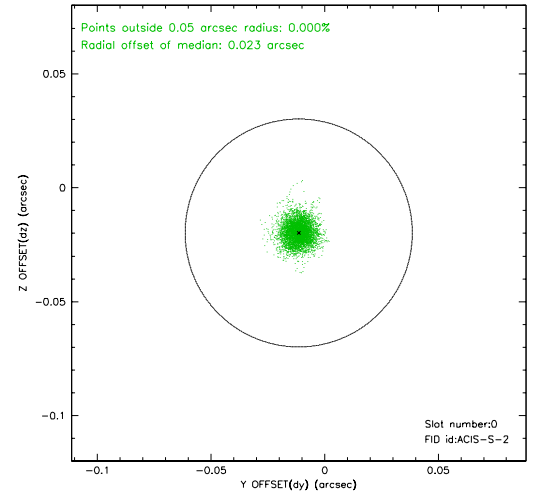
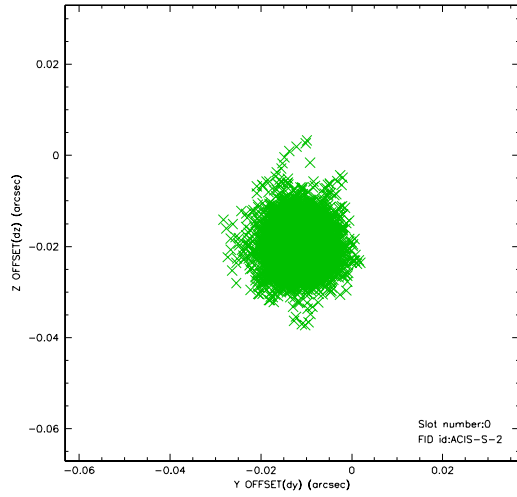


2.4.5 Slot 7

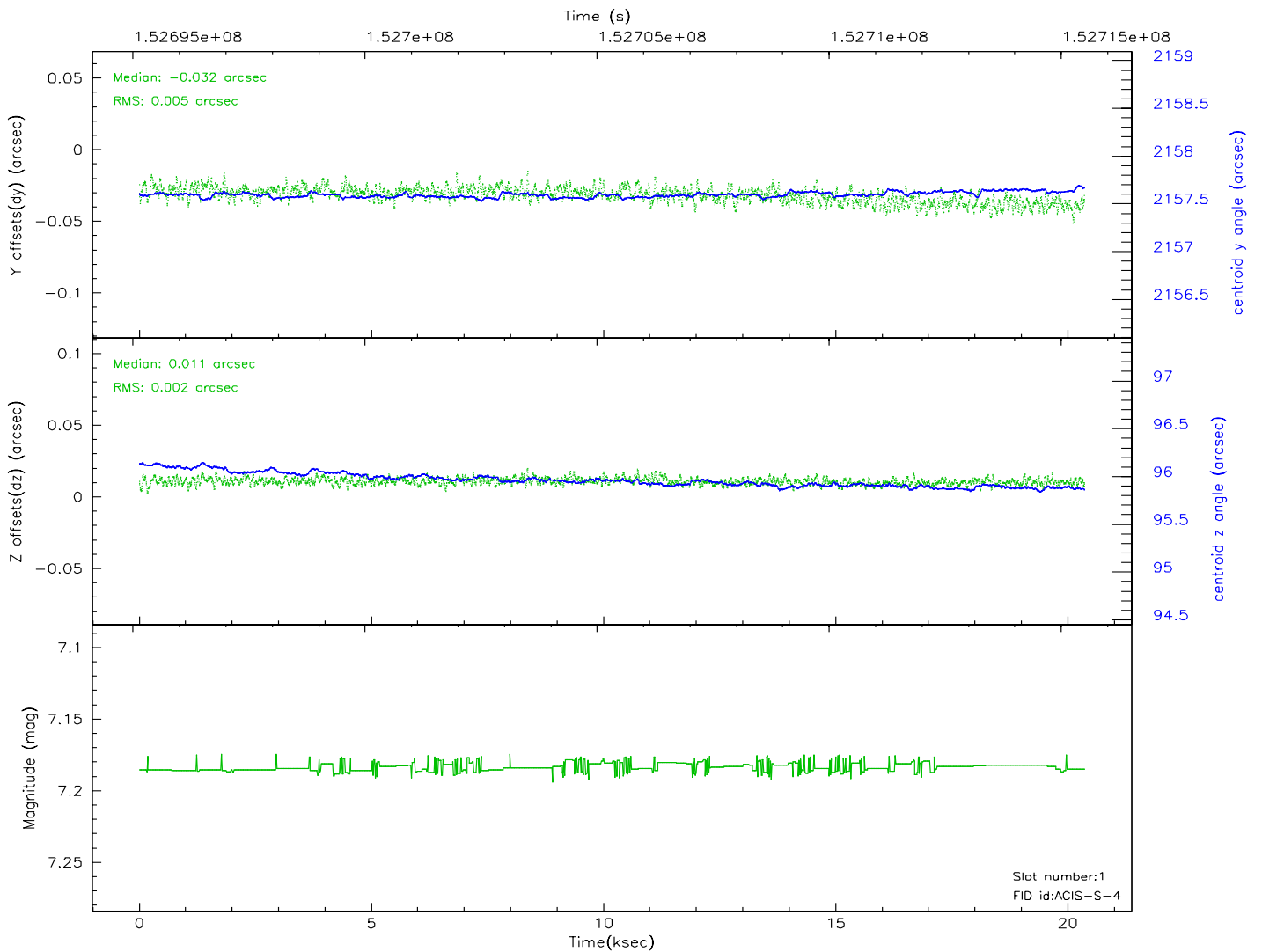
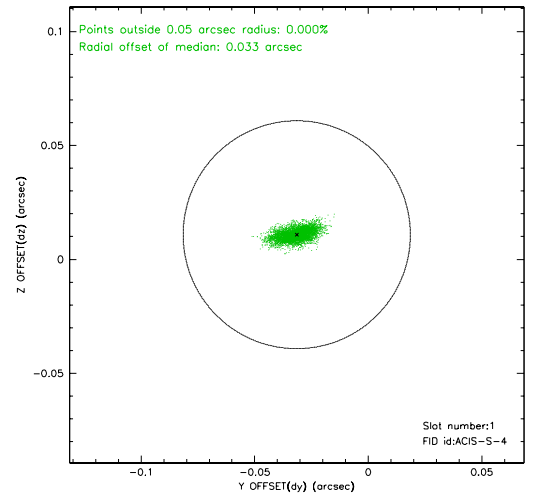
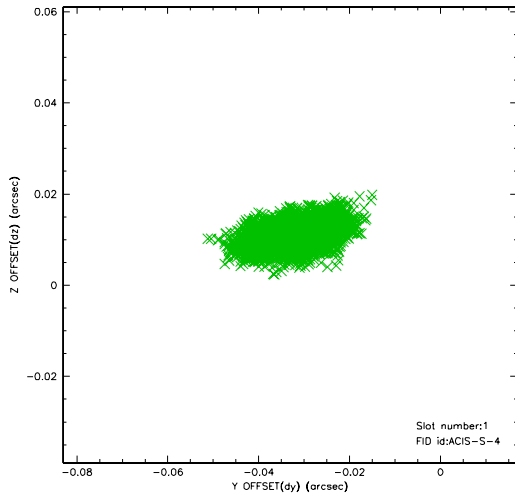


2.5 FID Slots

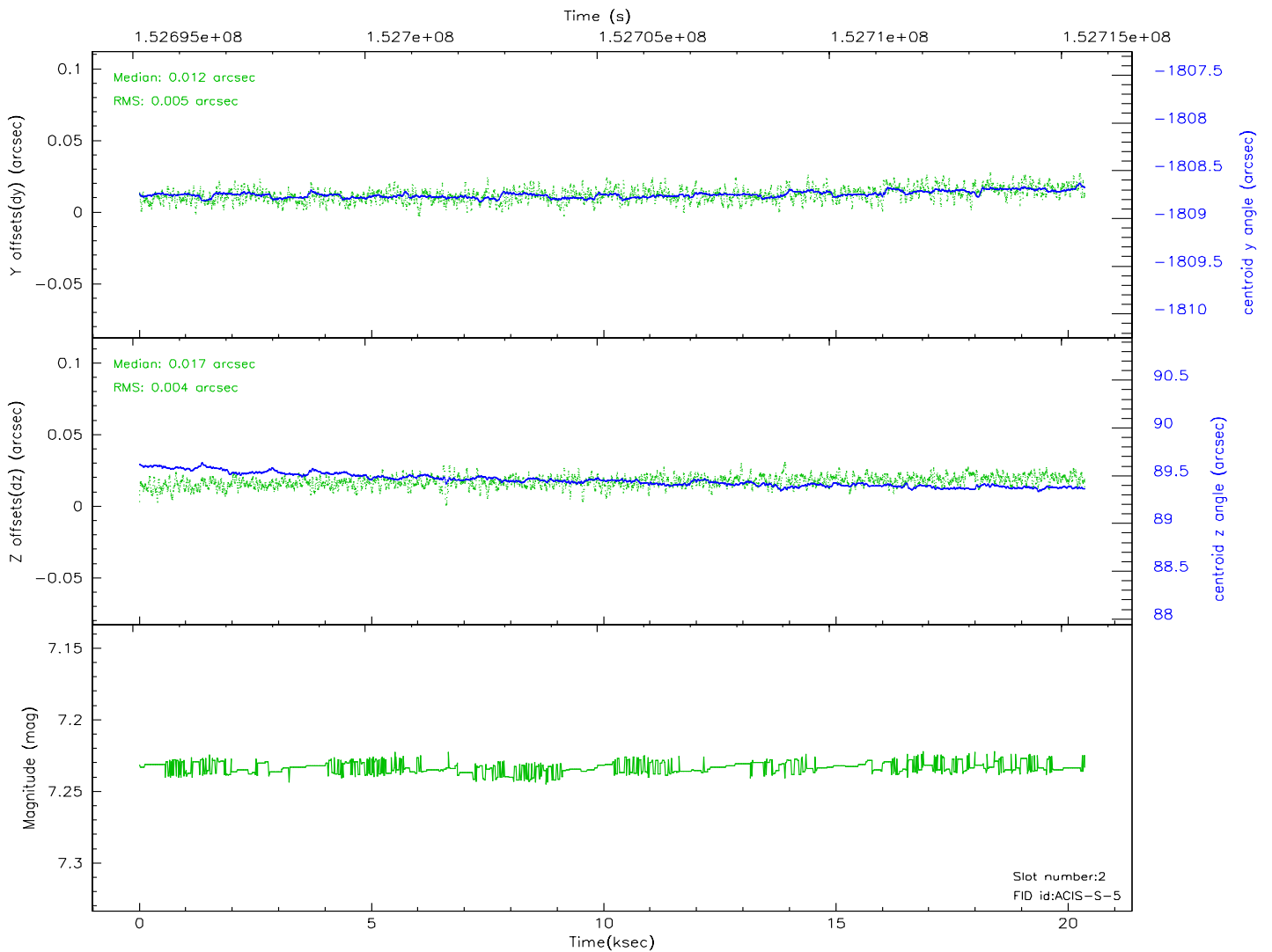
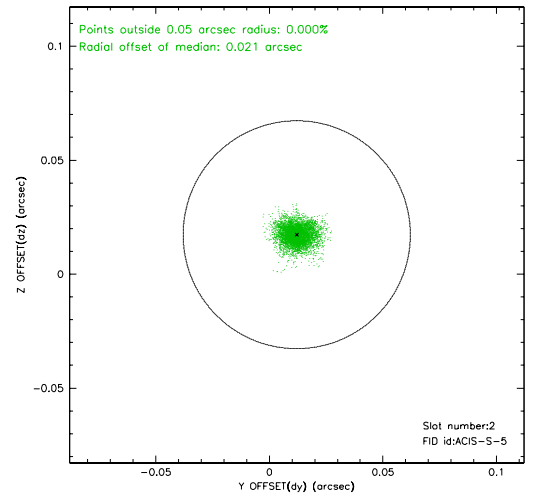
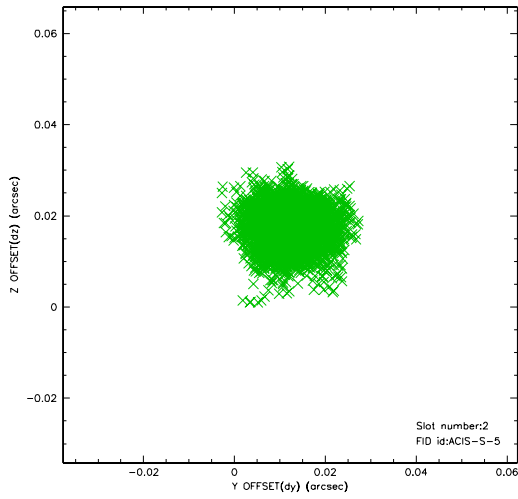
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



3 Gratings

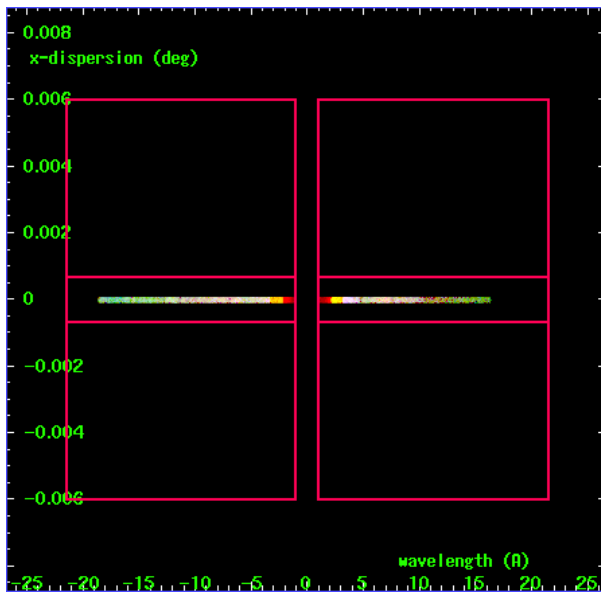
3.1 HEG Arm



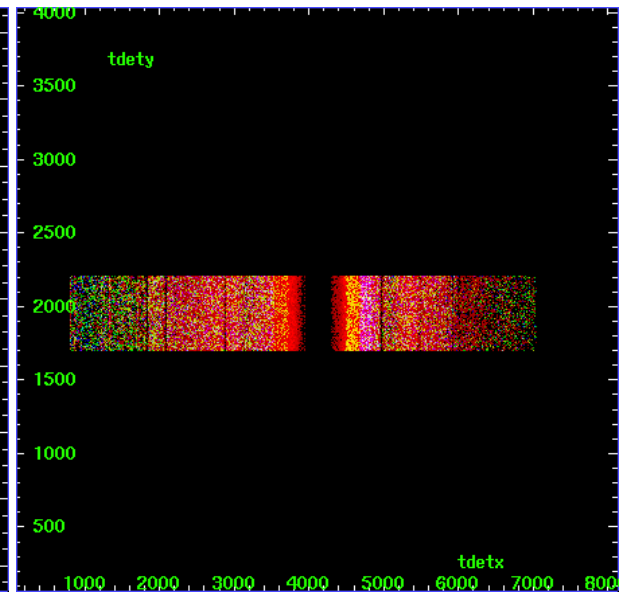
HEG Order Sort 123



HEG Order Sort ALL

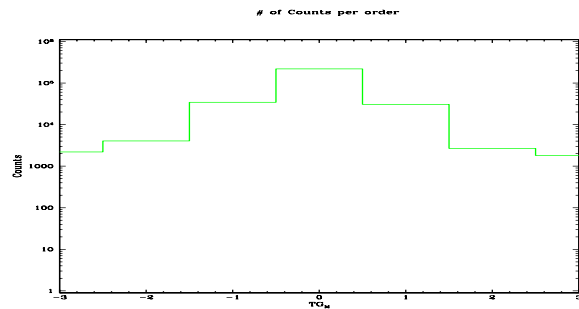


Spot Image HEG

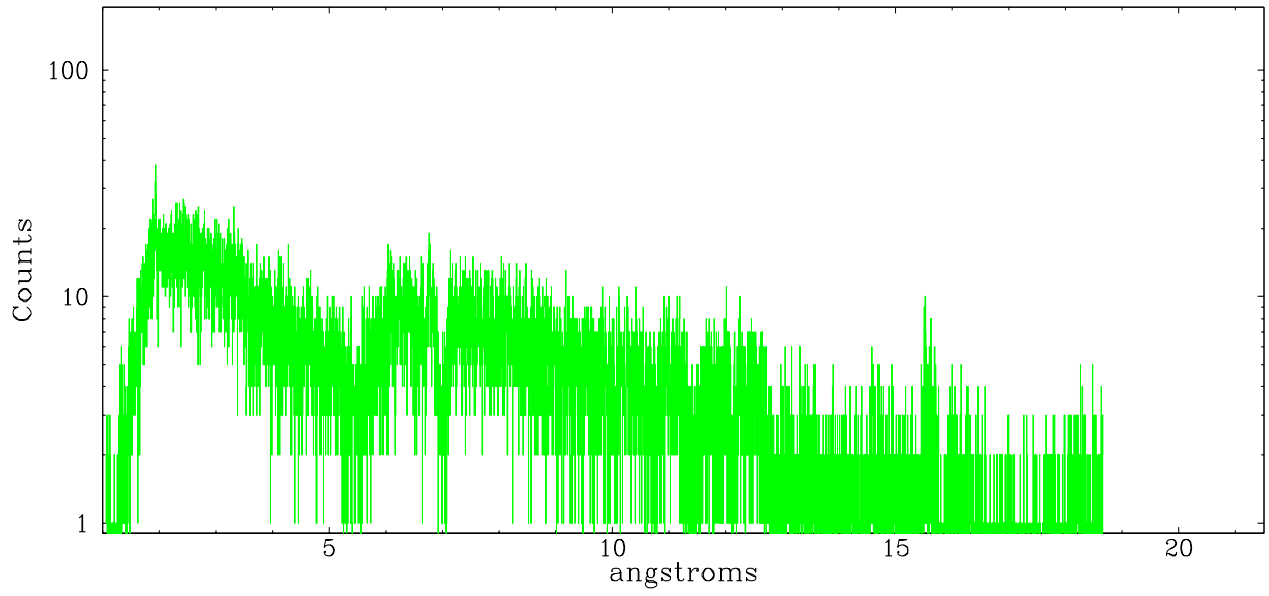


Full Detector HEG

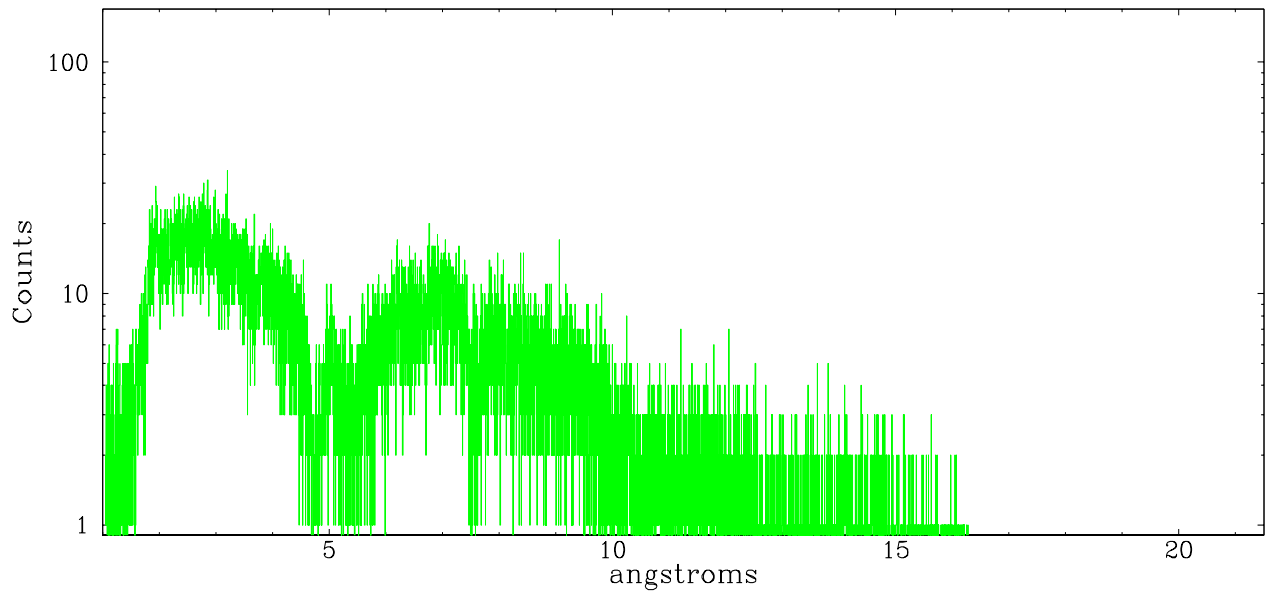
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	2195	4032	34280	218133	30517	2672	1802



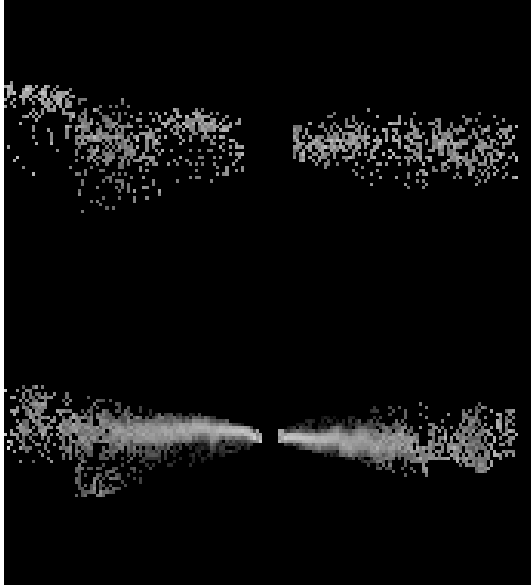
heg order -1



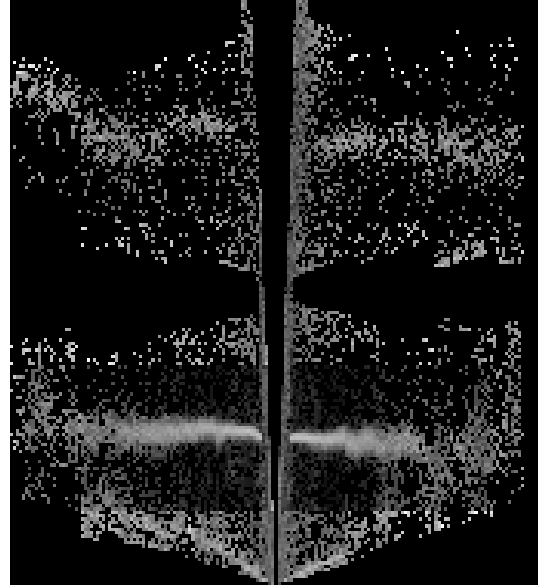
heg order +1



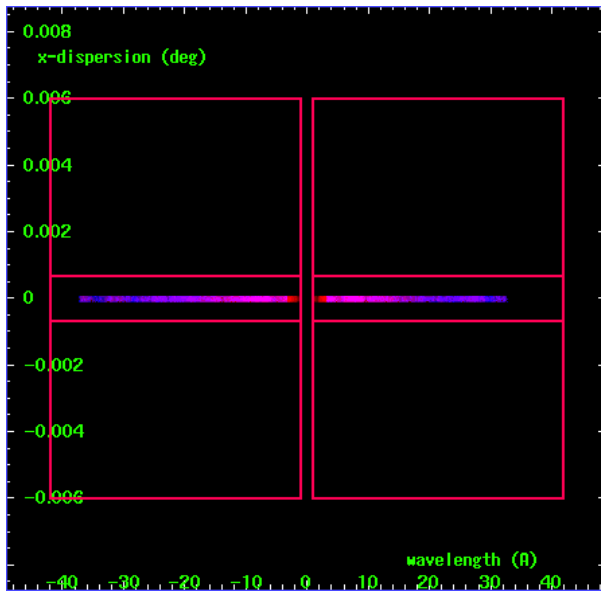
3.2 MEG Arm



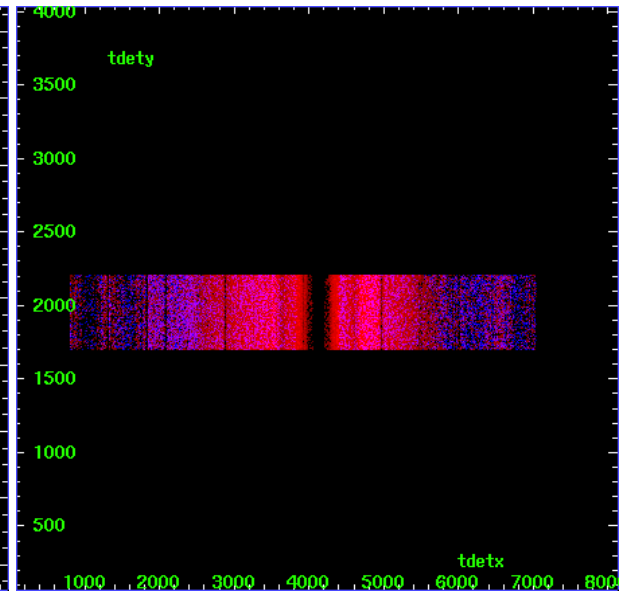
MEG Order Sort 123



MEG Order Sort ALL

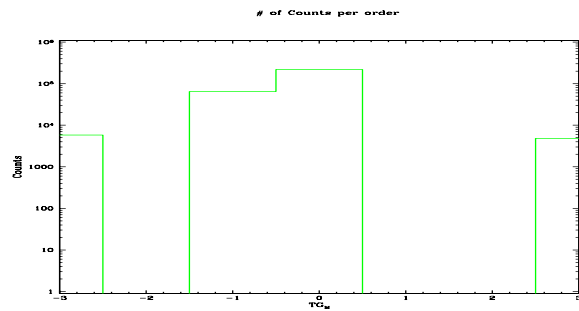


Spot Image MEG

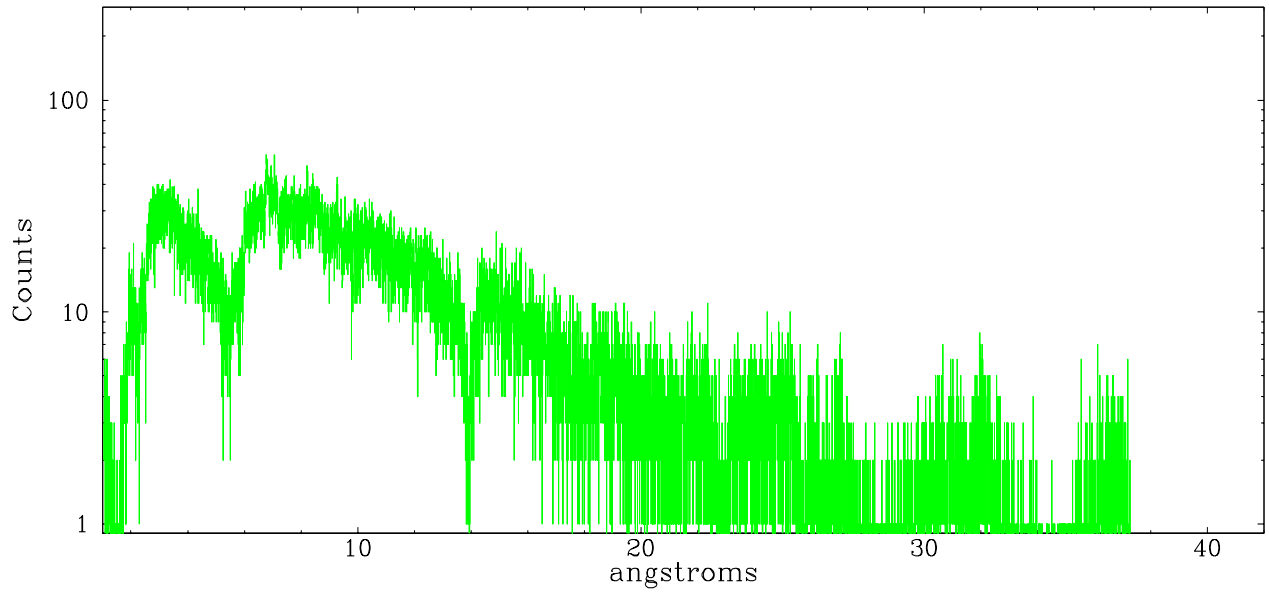


Full Detector MEG

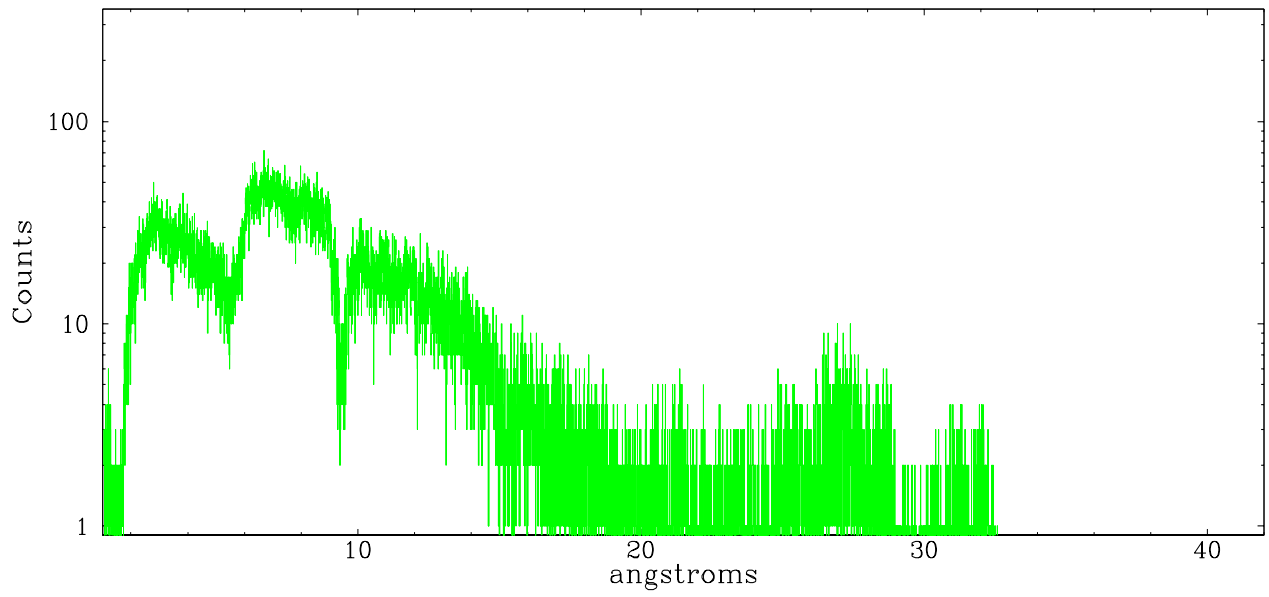
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	5799	0	64552	218133	64852	0	4846



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	20.365

A.2 Comments

Time constraint: OK

Request: Nov 1 2002 11:24AM Nov 8 2002 5:37PM

Actual: 2002-11-03T07:07:34 2002-11-03T13:02:26

Note: for cc-mode w/ HETG, there are no MEG even order counts. MEG even orders overlap with HEG orders in energy, but MEG even order efficiency are very low. Since HEG and MEG cannot be spatially separated, events are preferentially assigned to HEG. MEG odd orders can be resolved.