

V&V Reference Report

L2 ASCDS Version : 8.5.1.1

Observation 5173 - L2 Version 4
Chandra X-Ray Center

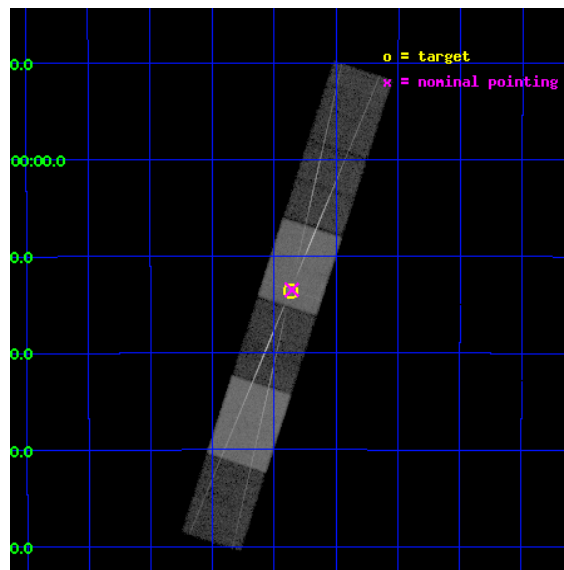
L2 Processing Date : Apr 17 2013

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

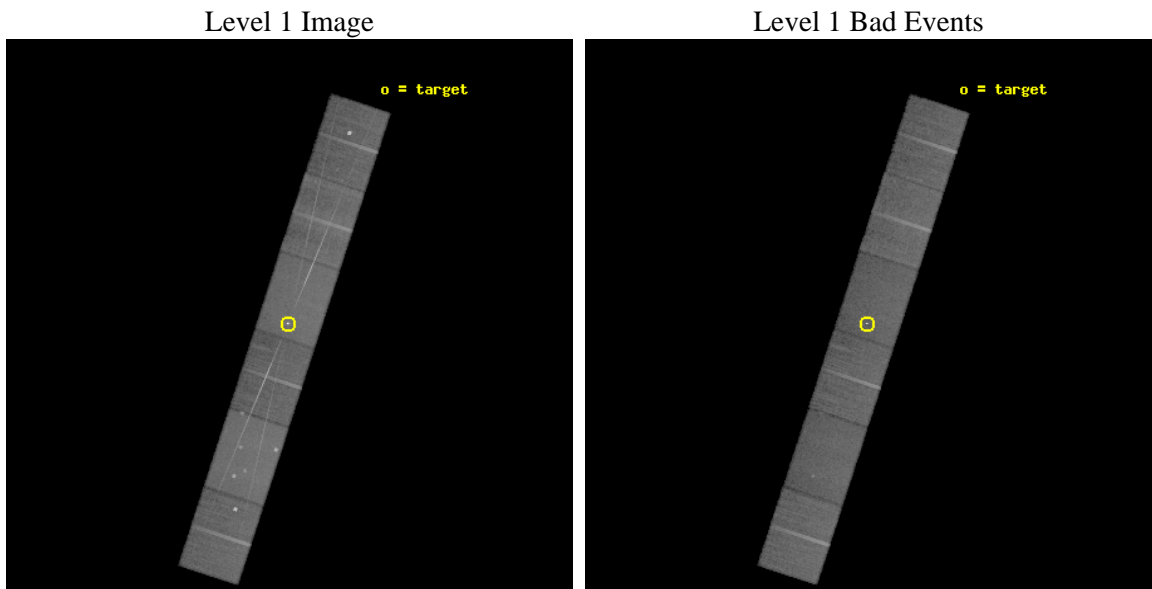
seq_num	790093	Sequence number
obs_id	5173	Observation id
title	AO5 Calibration Observations of PKS2155-304	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	PKS2155-304	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	329.716667	Observer's specified target RA [deg]
dec_targ	-30.225556	Observer's specified target Dec [deg]
ra_nom	329.71431923582	Nominal RA [deg]
dec_nom	-30.224667630451	Nominal Dec [deg]
roll_nom	288.08882728698	Nominal Roll [deg]
revision	4	Processing version of data
ontime	27145.0	Sum of GTIs [s]
livetime	26706.584705475	Livetime [s]
ontime4	27145.0	Sum of GTIs [s]
ontime5	27145.0	Sum of GTIs [s]
ontime6	27145.0	Sum of GTIs [s]
ontime7	27145.0	Sum of GTIs [s]
ontime8	27145.0	Sum of GTIs [s]
ontime9	27145.0	Sum of GTIs [s]
l2events	321139	Number of level 2 events



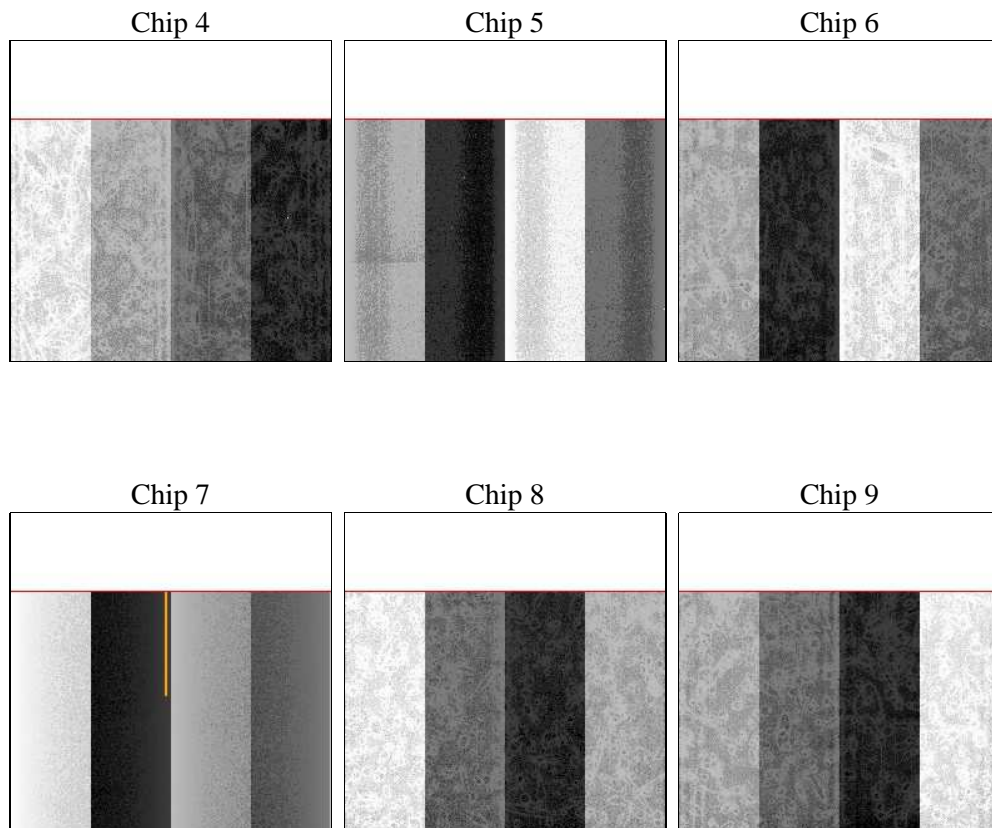
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	27000.000000	[s] Scheduled observation exposure time
ascdsver	8.5.1.1	Processing system revision	ontime	27145.0	Sum of GTIs [s]
caldbver	4.5.6	 	ontime4	27145.0	Sum of GTIs [s]
date	2013-04-17T21:28:05	Date and time of file creation	ontime5	27145.0	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	27145.0	Sum of GTIs [s]
			ontime7	27145.0	Sum of GTIs [s]
			ontime8	27145.0	Sum of GTIs [s]
			ontime9	27145.0	Sum of GTIs [s]
			l1events	1276610	Number of level 1 events

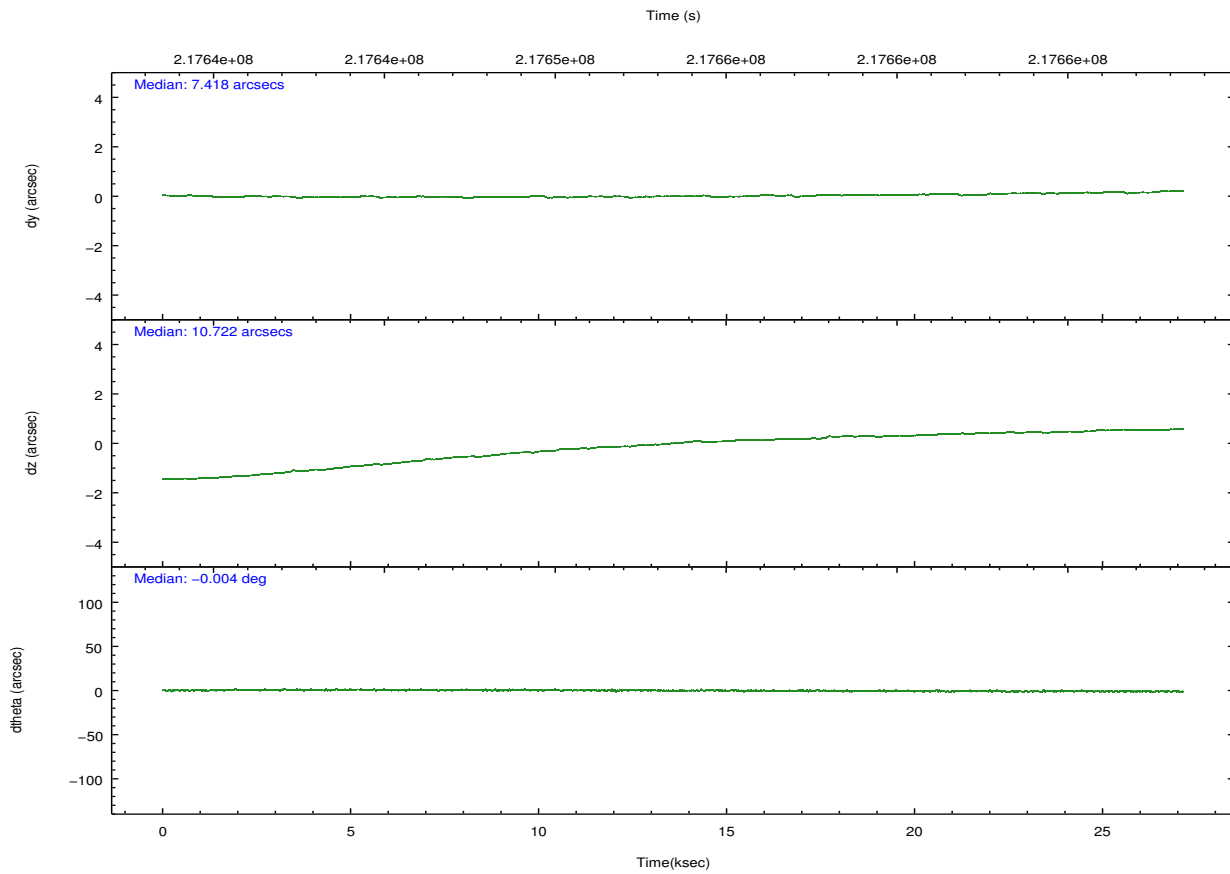
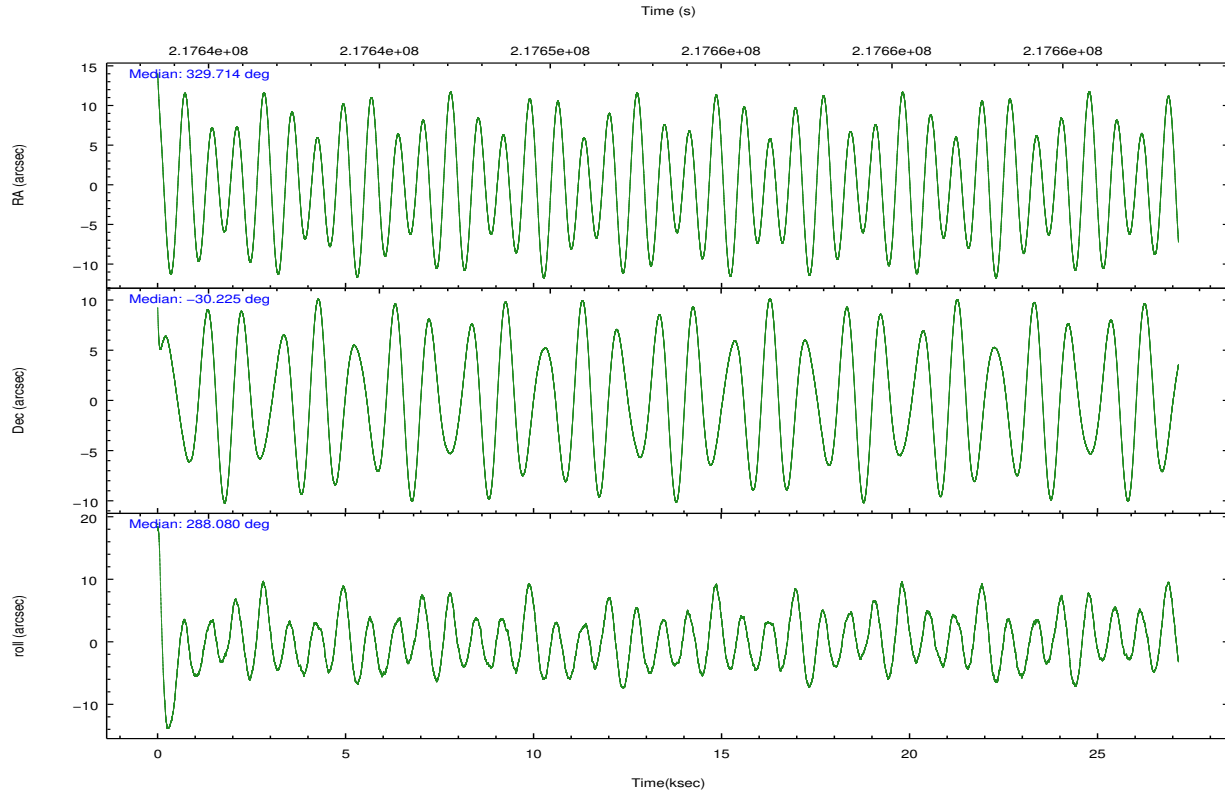
2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	196888	256080	184317	244727	220776	173822	grade 0 events	18952	20956	21591	12666	23929	10552
rejected events	165871	130677	147926	133735	164443	140884		9%	8%	11%	5%	10%	6%
rejected %	84%	51%	80%	54%	74%	81%	grade 1 events	162	759	123	481	170	82
								0%	0%	0%	0%	0%	0%
							grade 2 events	4665	34759	5909	23158	10916	14497
								2%	13%	3%	9%	4%	8%
							grade 3 events	2257	6216	2536	10318	5086	2162
								1%	2%	1%	4%	2%	1%
							grade 4 events	2053	6117	2489	10337	4769	2084
								1%	2%	1%	4%	2%	1%
							grade 5 events	7115	18764	7260	21867	9718	7738
								3%	7%	3%	8%	4%	4%
							grade 6 events	3325	58347	4126	55374	11989	3873
								1%	22%	2%	22%	5%	2%
							grade 7 events	158359	110162	140283	110526	154199	132834
								80%	43%	76%	45%	69%	76%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
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
[deg] Pointing RA	329.690572	329.7143192358175	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-30.206748	-30.22466763045112	Subarray start row	1	1
[deg] Pointing Roll	287.920248	288.0888272869785	Subarray row count	774	774
[s] Window start time (MET)	215654464.184000	215654464.184000	Alternating exposures requested	N	N
[s] Window stop time (MET)	220838464.184000	220838464.184000	[s] Primary exposure time	0.000000	2.5
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-187.132523	-187.127916318603			
[mm] SIM translation stage offset	-3	-3.004606264404799			
[s] Observation start time (MET)	217640025.184000	217638972.31413			
Observation start date	2004-11-23T23:32:41	2004-11-23T23:16:12			
[s] Observation end time (MET)	217667025.184000	217667515.49041			
Observation end date	2004-11-24T07:02:41	2004-11-24T07:11:55			
Read mode	TIMED	TIMED			

2.3 Aspect

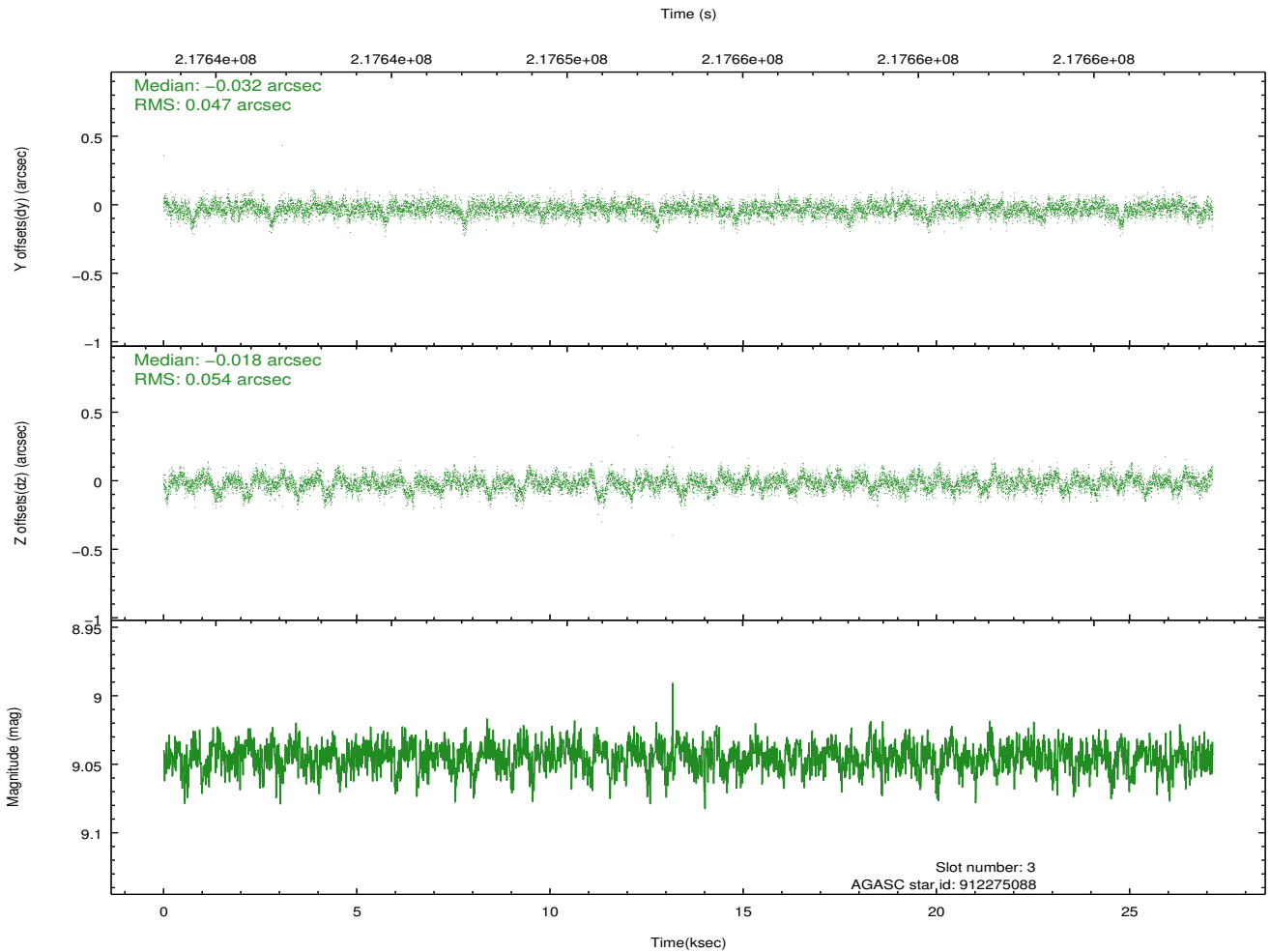
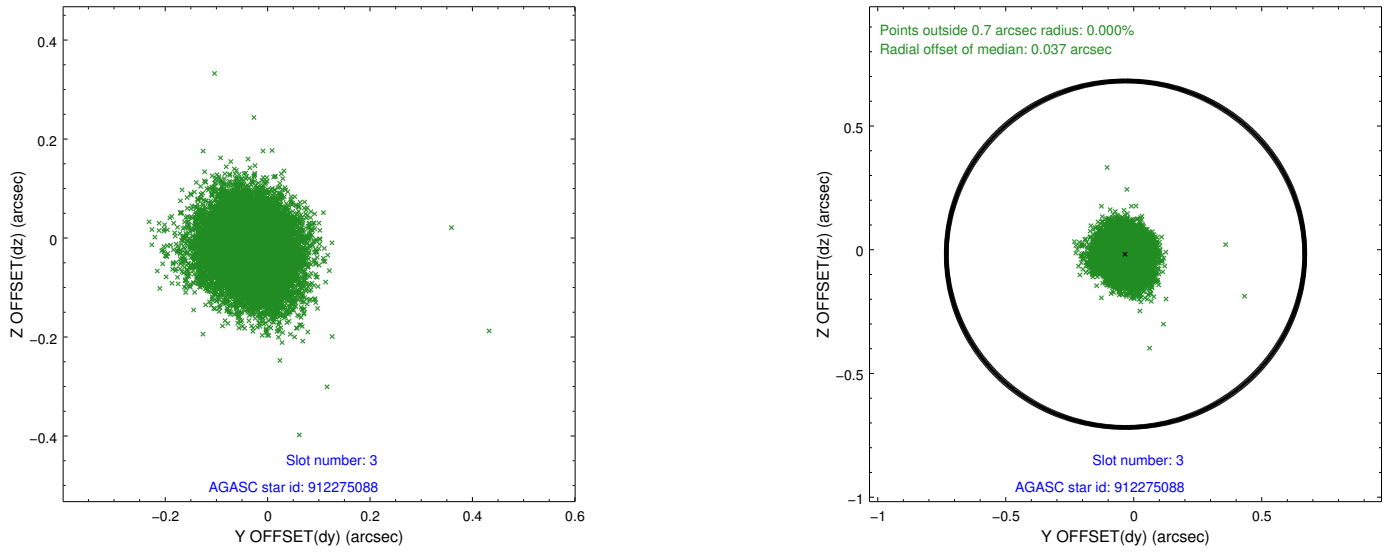


Slot Statistics

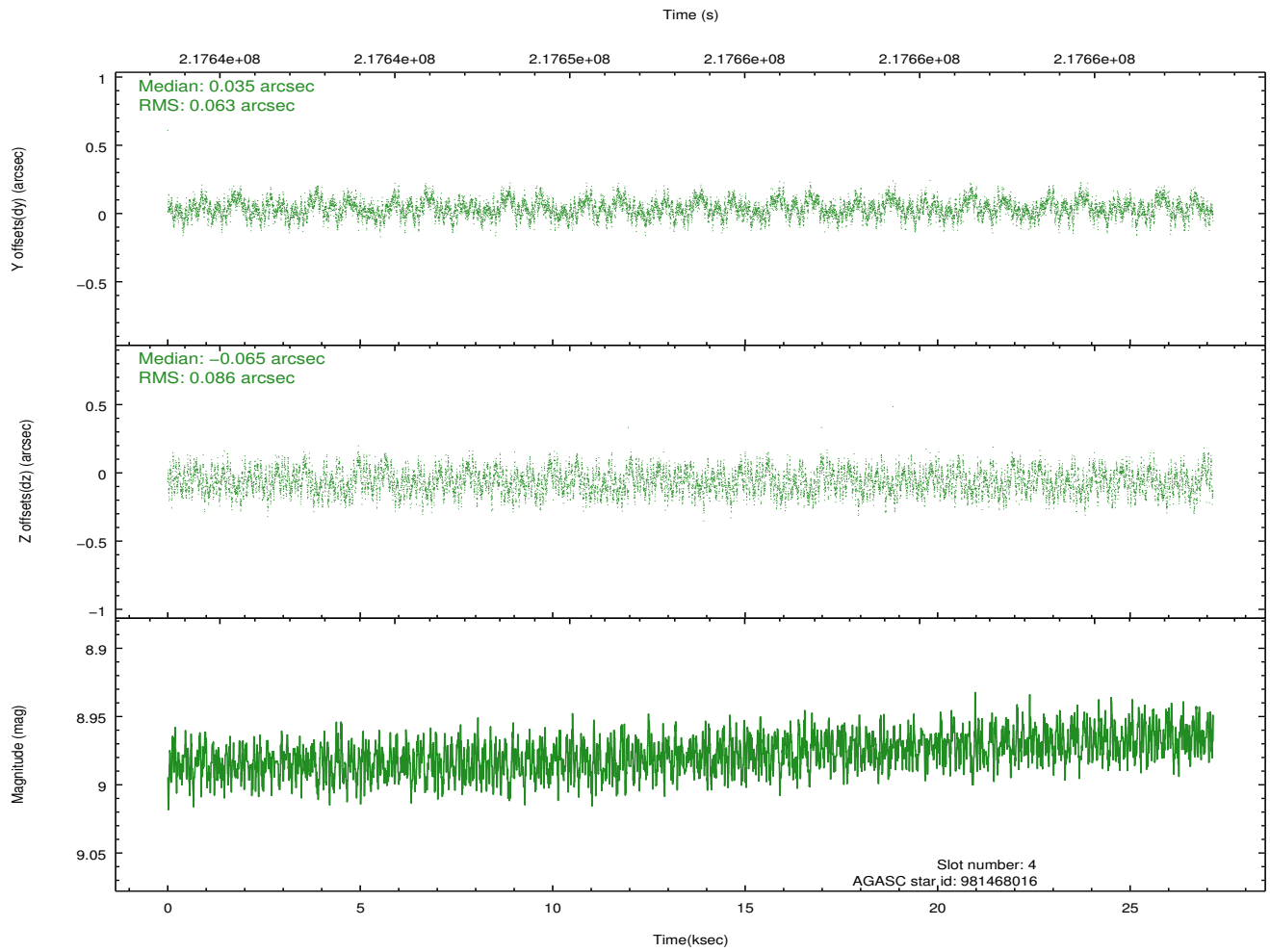
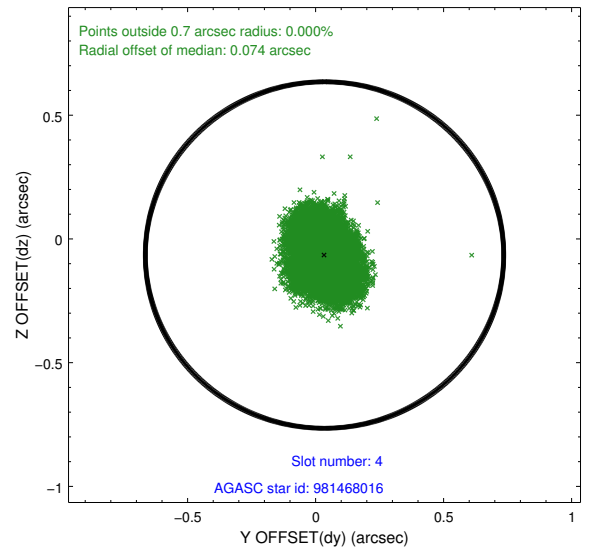
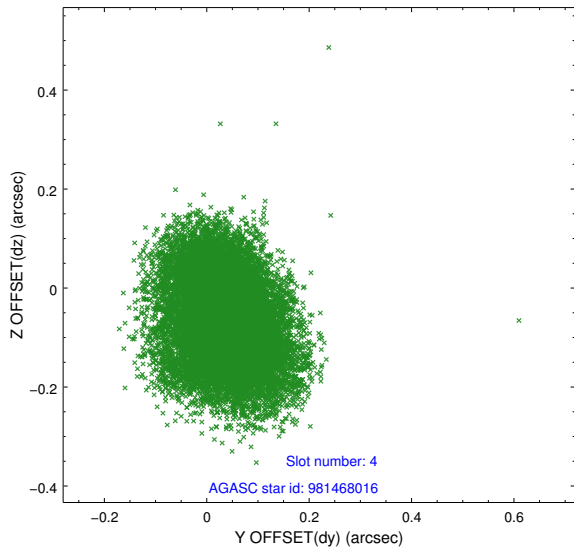
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.09	6621	-0.096	-0.071	0.007	0.012	0.000000	0.000000	-760.10	-1793.88
1	FID	ACIS-S-4	7.18	6622	0.081	0.051	0.007	0.012	0.000000	0.000000	2153.31	114.60
2	FID	ACIS-S-6	7.37	6622	-0.013	0.027	0.007	0.011	0.000000	0.000000	402.10	752.09
3	GUIDE	912275088	9.04	13231	-0.032	-0.018	0.075	0.124	329.619228	-29.738698	-1671.52	306.38
4	GUIDE	981468016	8.98	13234	0.035	-0.065	0.117	0.179	328.842457	-30.034984	-1391.69	-2327.59
5	GUIDE	981468128	9.36	13231	0.084	0.024	0.091	0.148	329.756350	-30.158334	-102.39	248.73
6	GUIDE	981478152	9.40	13238	0.004	0.126	0.093	0.148	329.415589	-30.057192	-774.49	-649.48
7	GUIDE	912131856	9.76	13229	-0.087	-0.064	0.118	0.186	328.758728	-29.933690	-1817.81	-2467.15

2.4 Star Slots

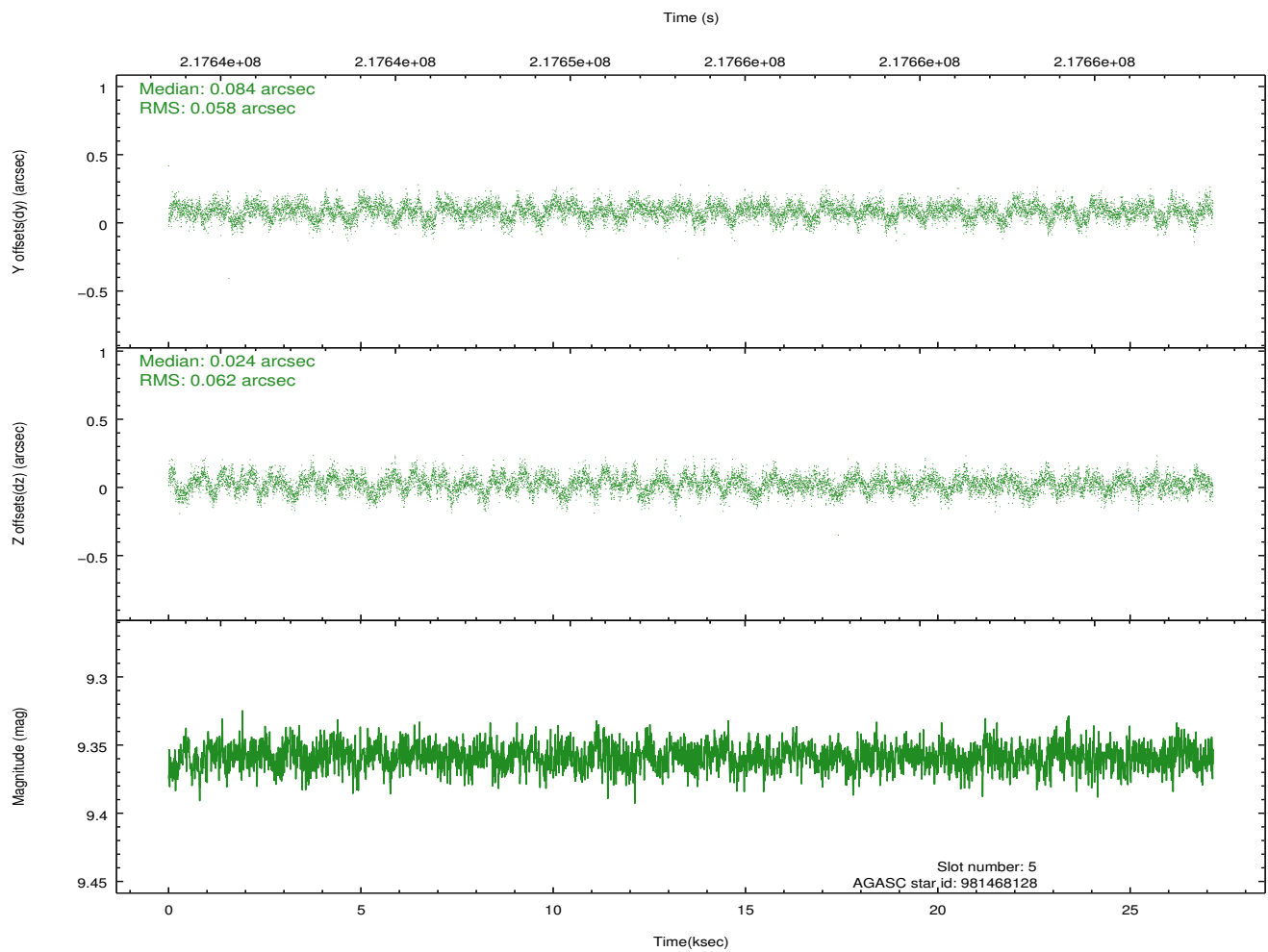
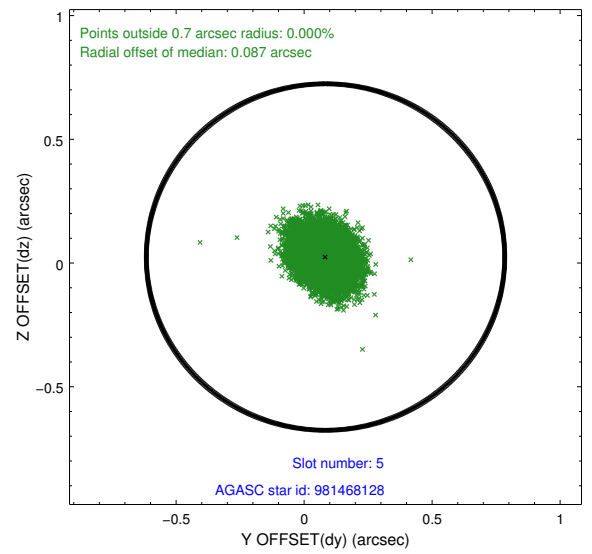
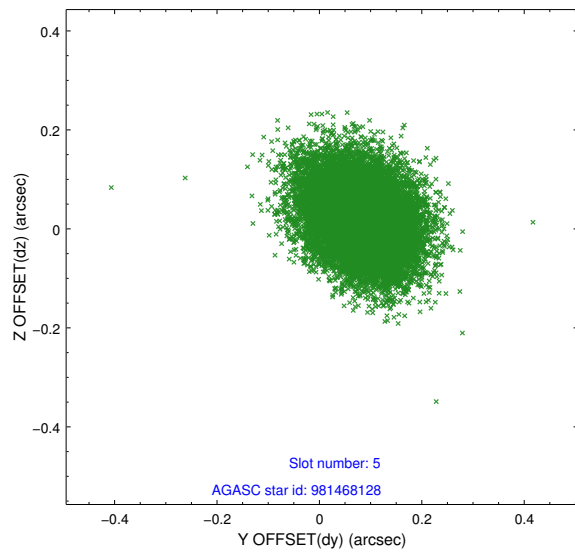
2.4.1 Slot 3



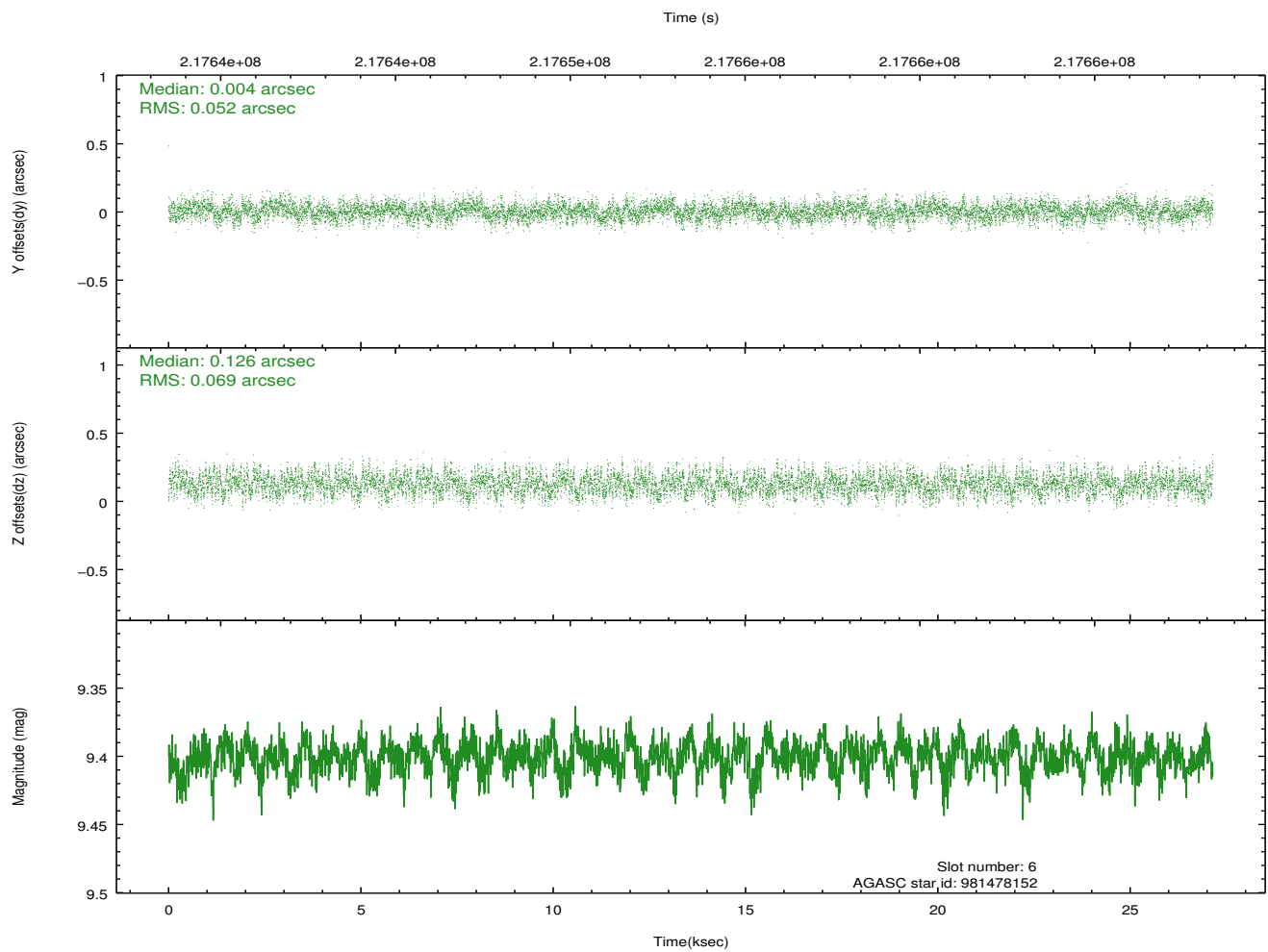
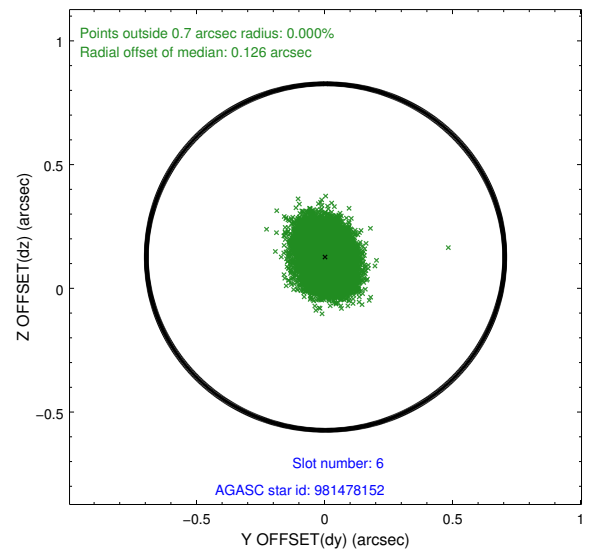
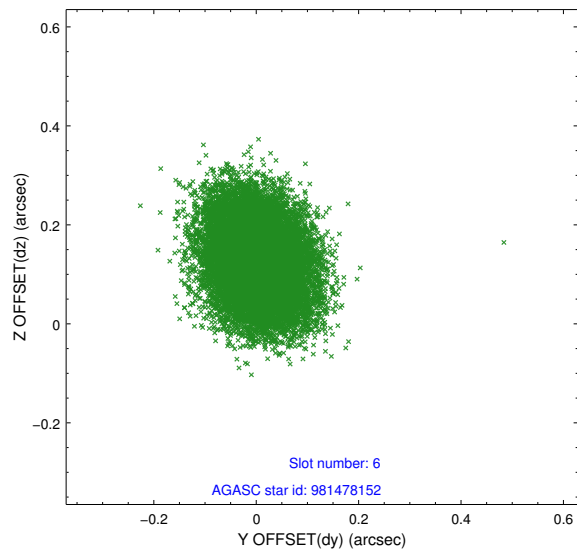
2.4.2 Slot 4



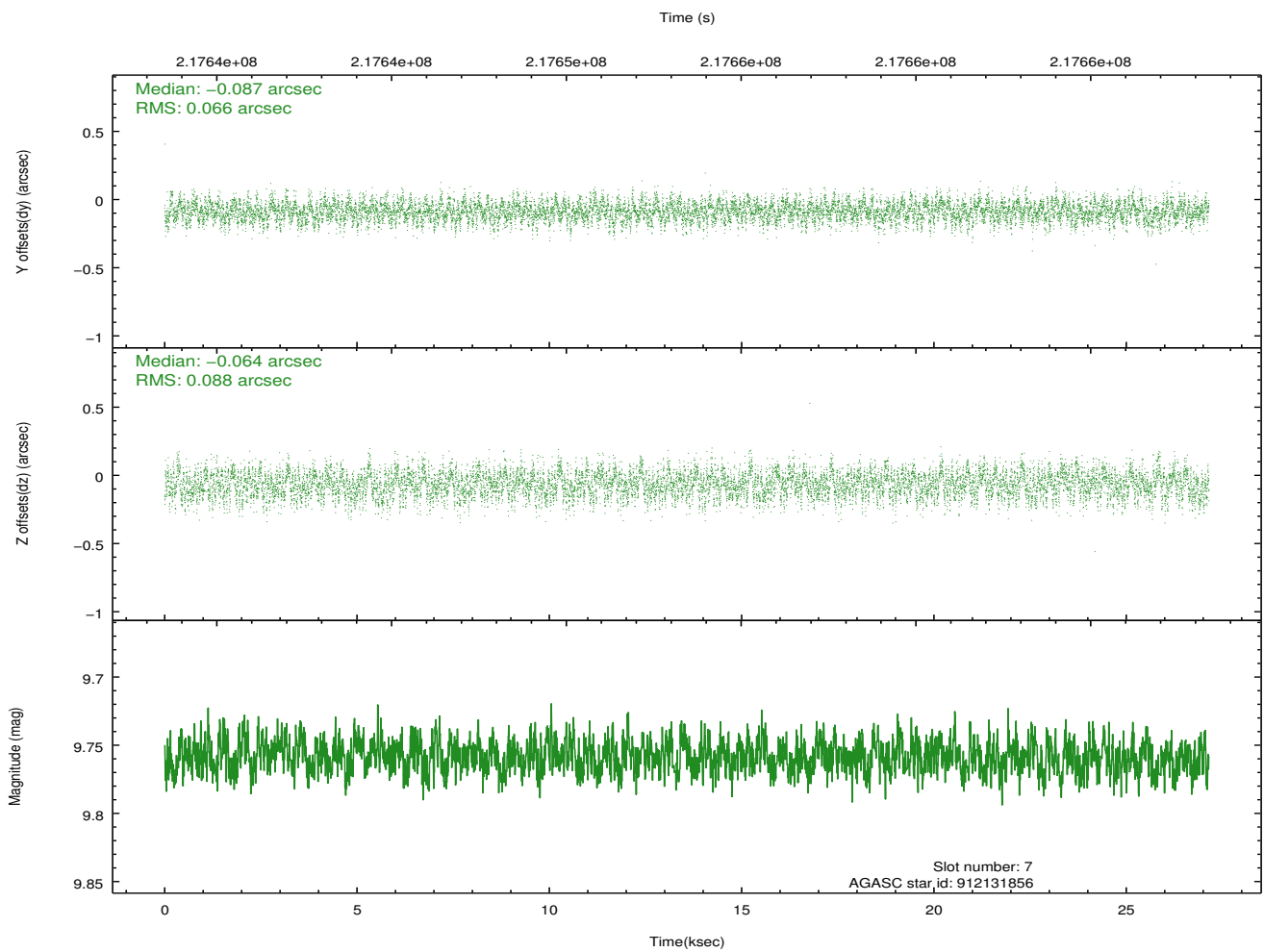
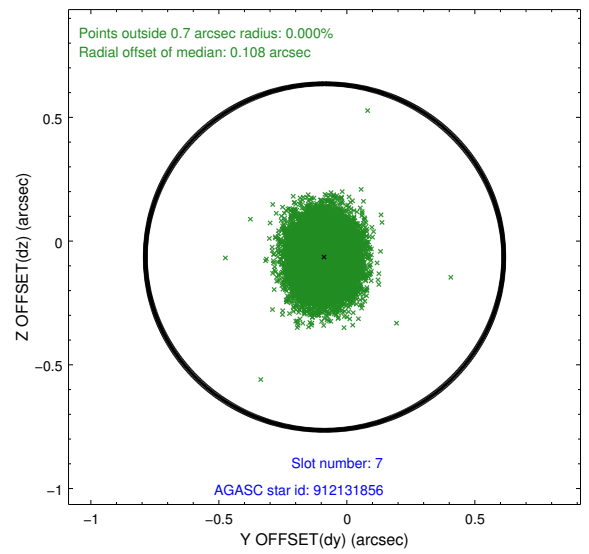
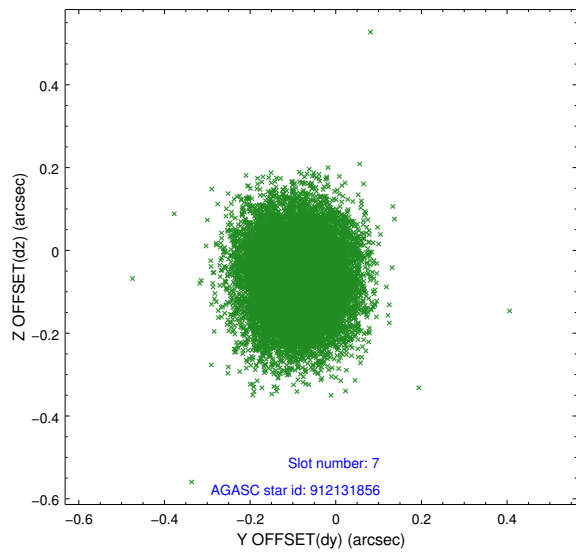
2.4.3 Slot 5



2.4.4 Slot 6

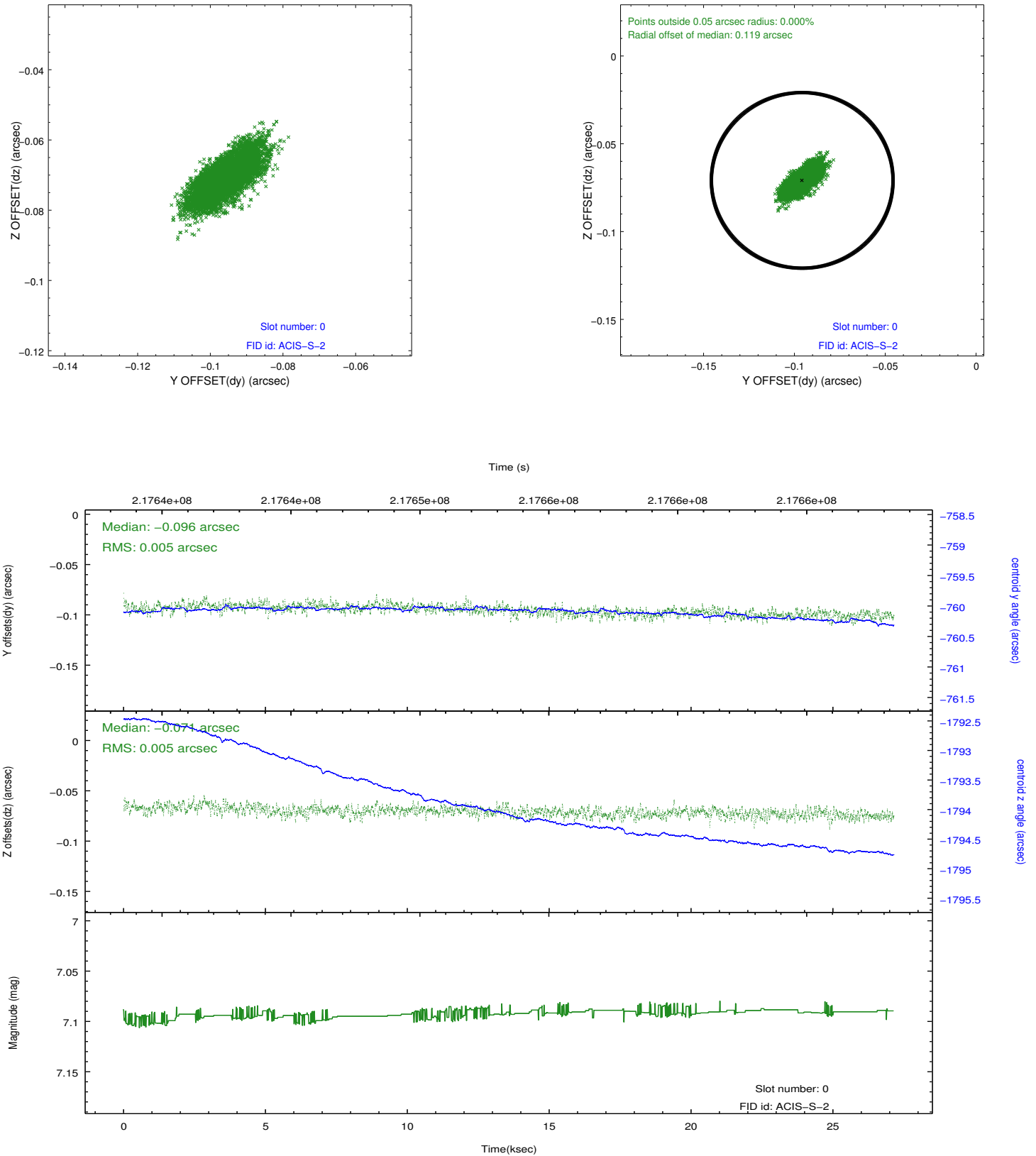


2.4.5 Slot 7

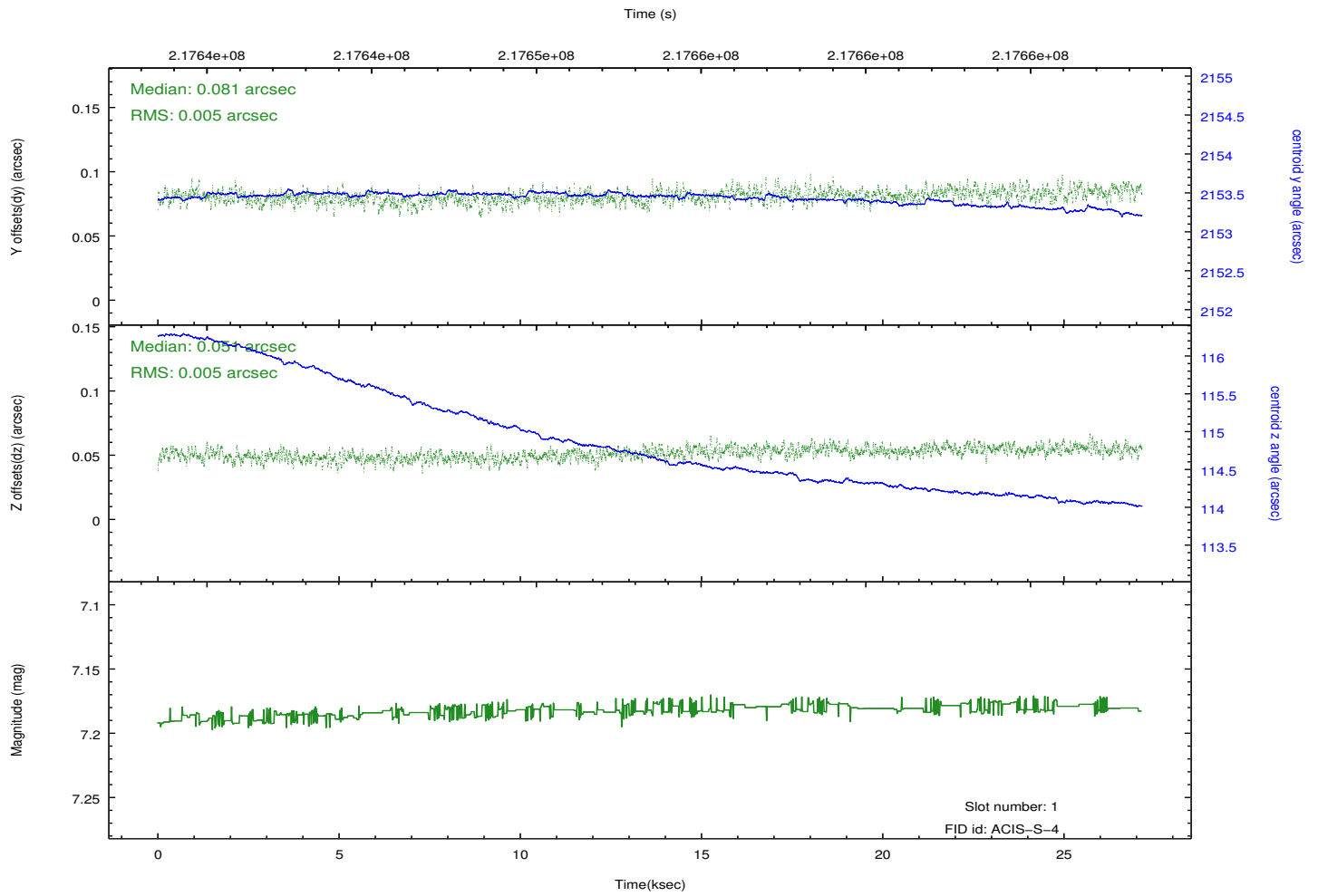
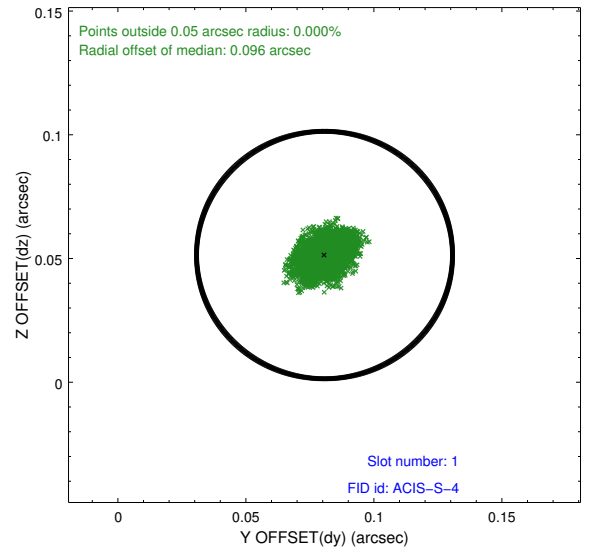
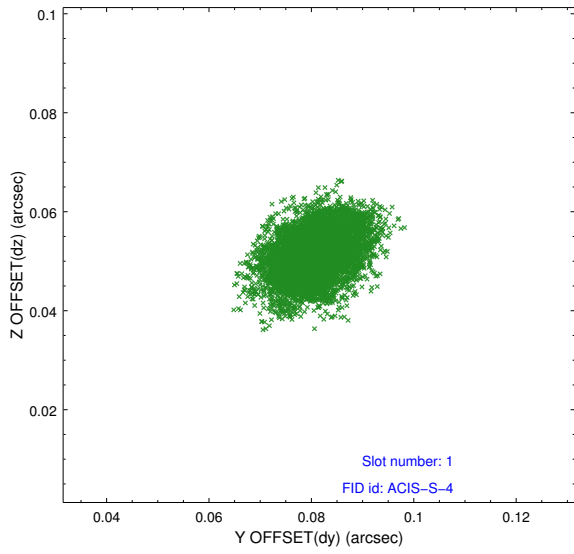


2.5 FID Slots

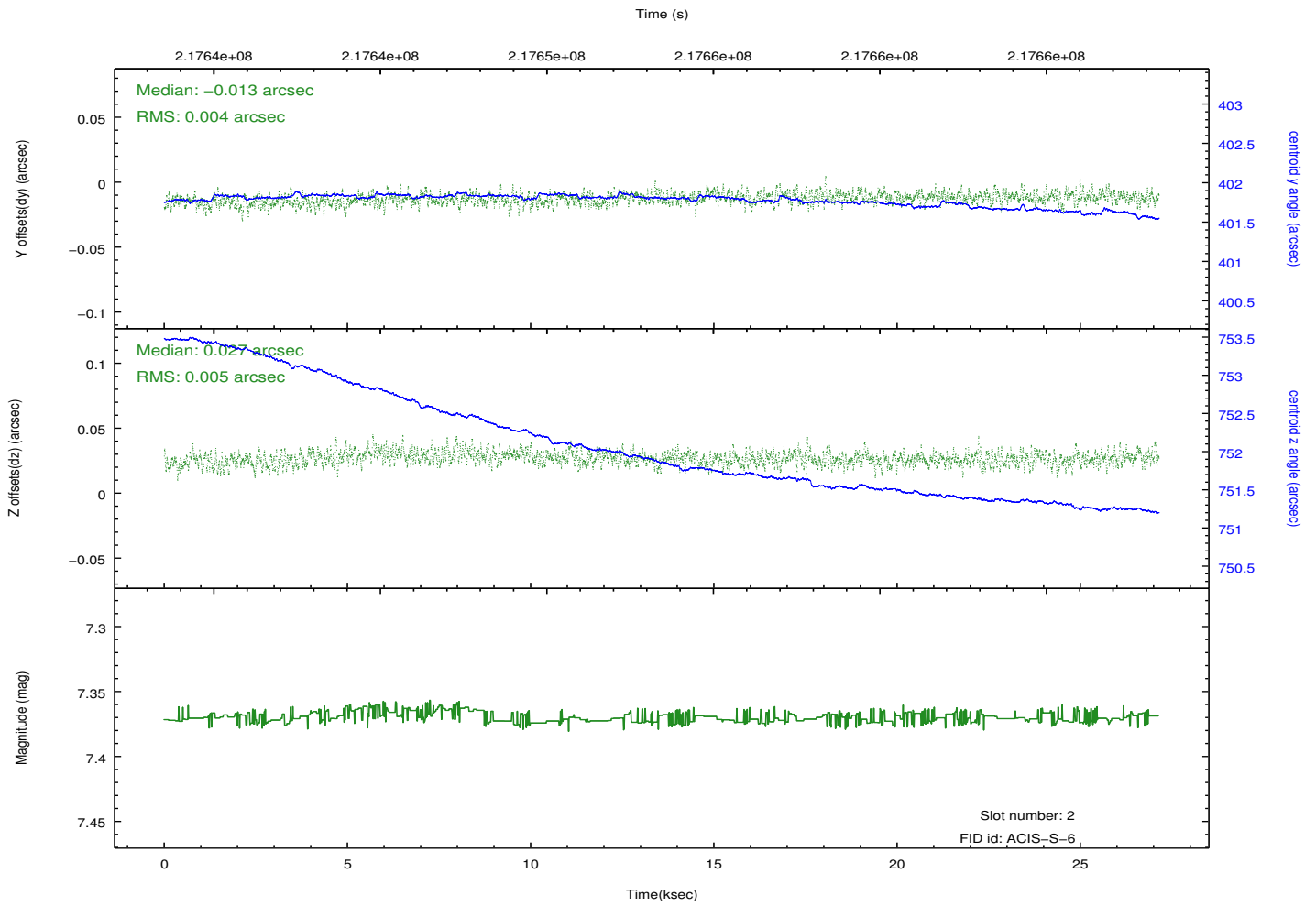
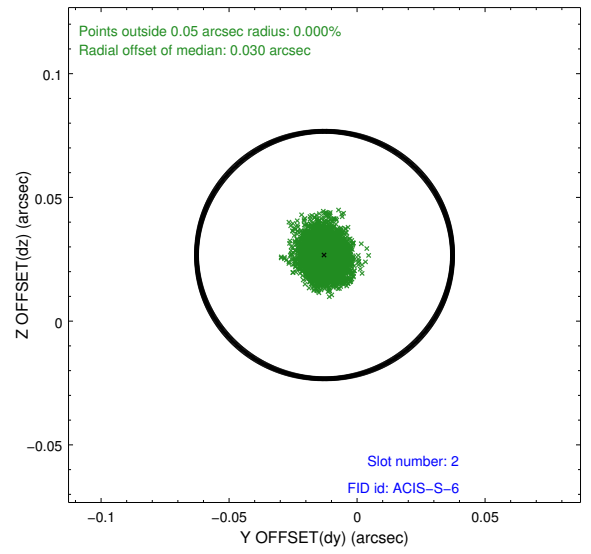
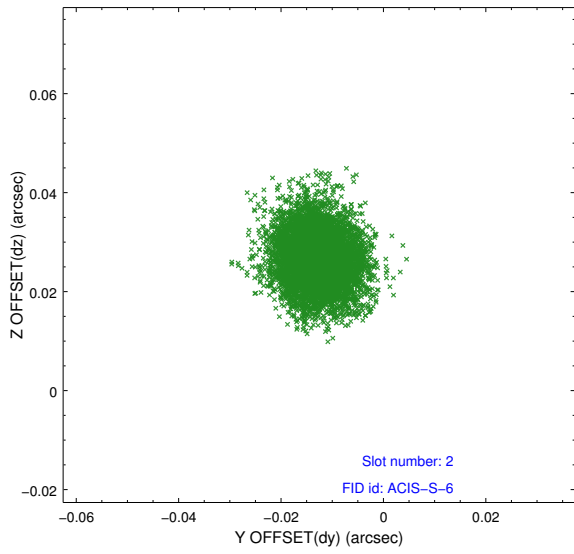
2.5.1 Slot 0



2.5.2 Slot 1

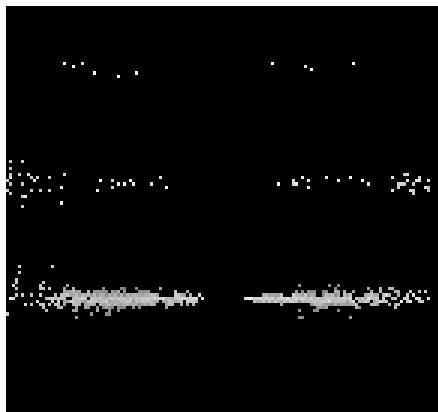


2.5.3 Slot 2

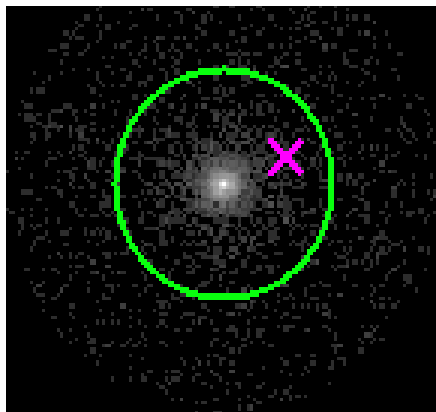


3 Gratings

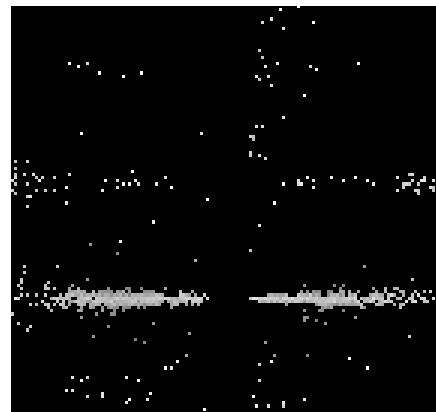
3.1 HEG Arm



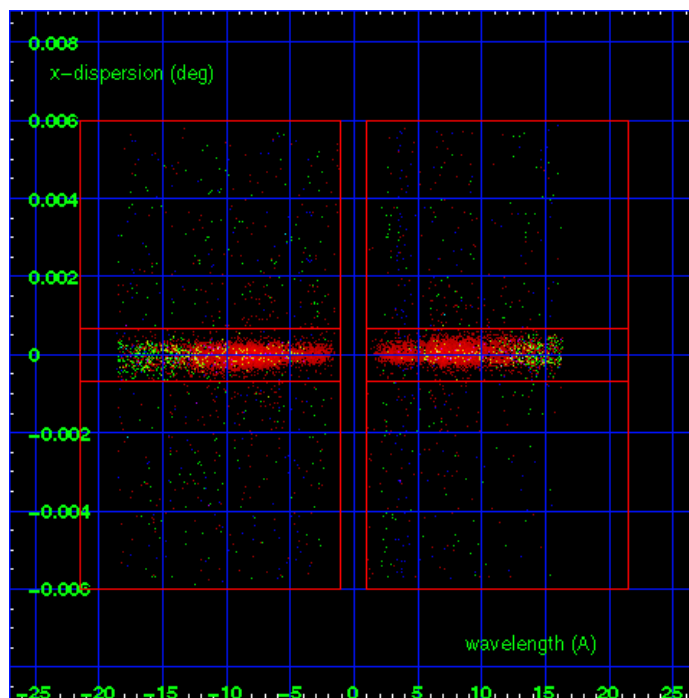
HEG Order Sort 123



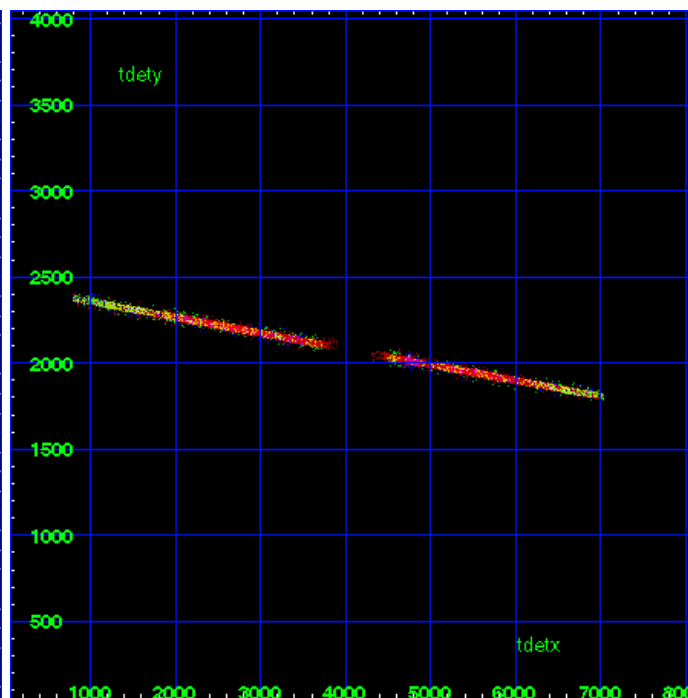
HEG Zero Order



HEG Order Sort ALL

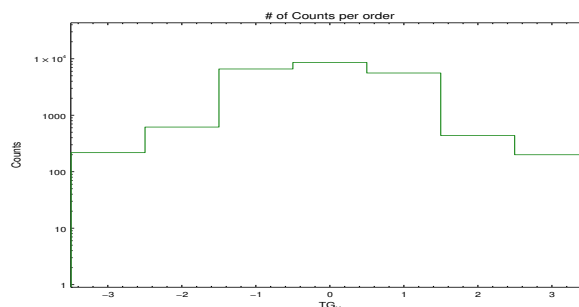


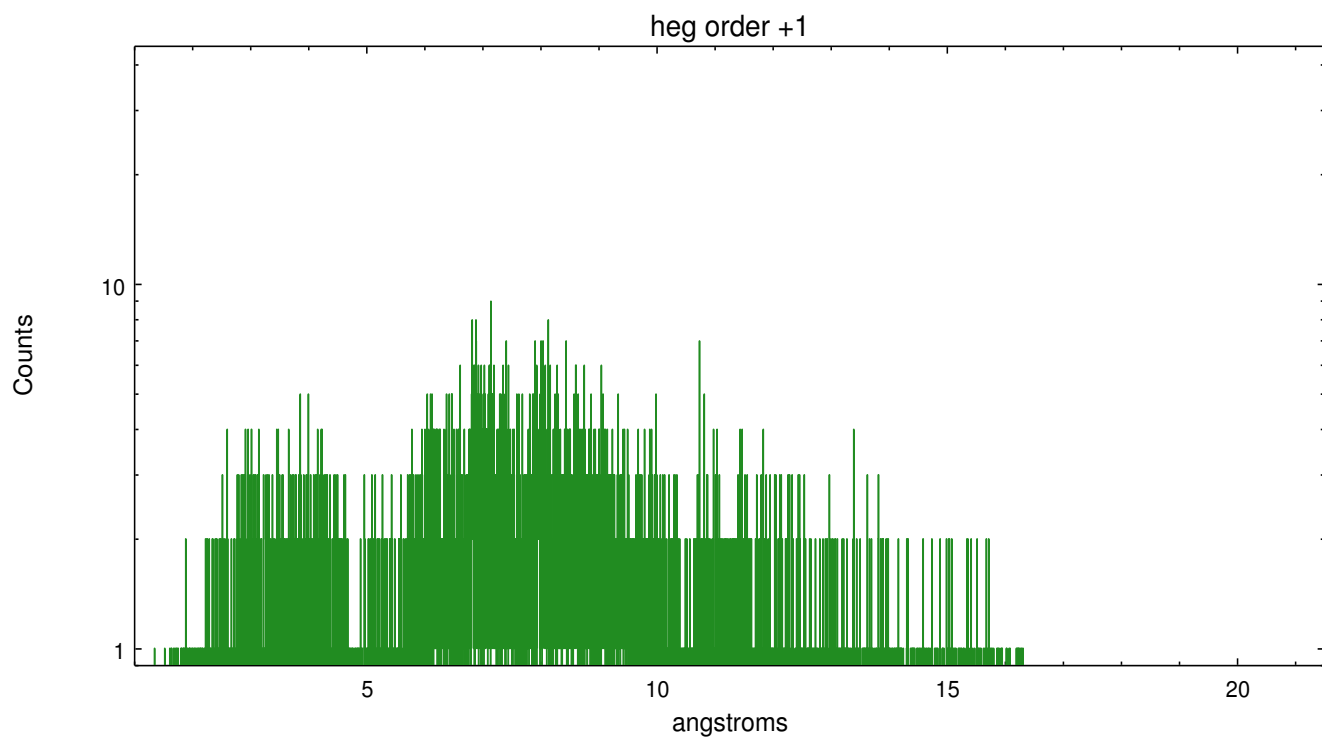
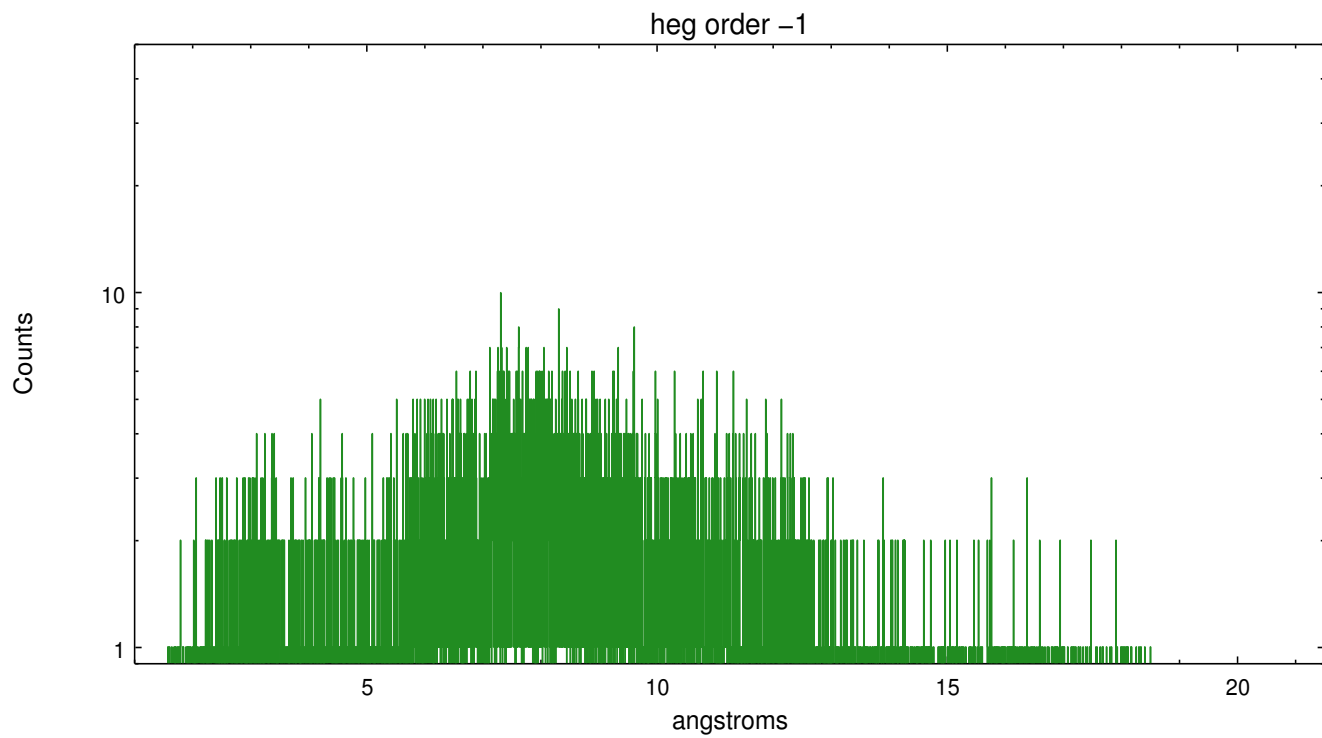
Spot Image HEG



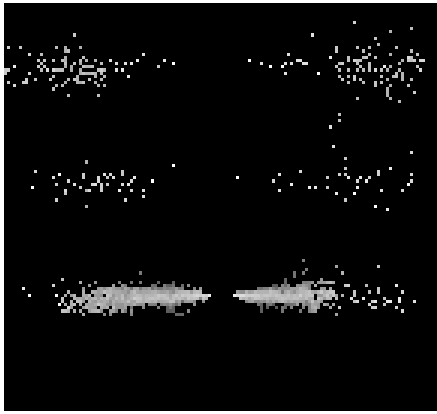
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	218	619	6637	8663	5631	438	200

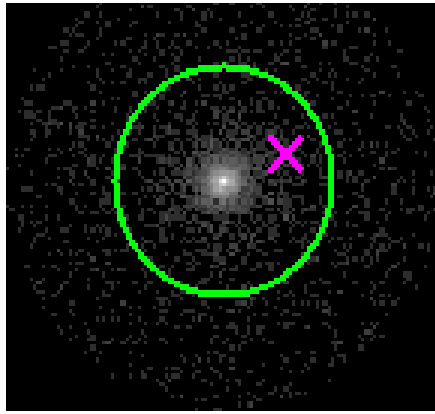




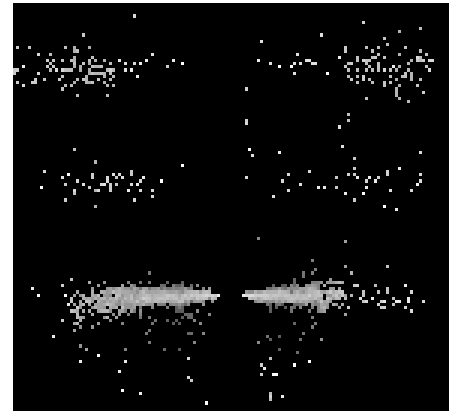
3.2 MEG Arm



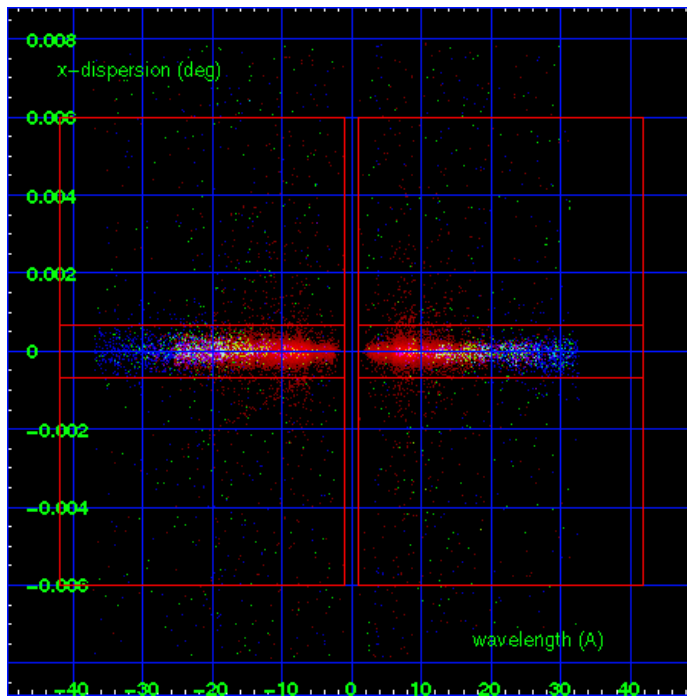
MEG Order Sort 123



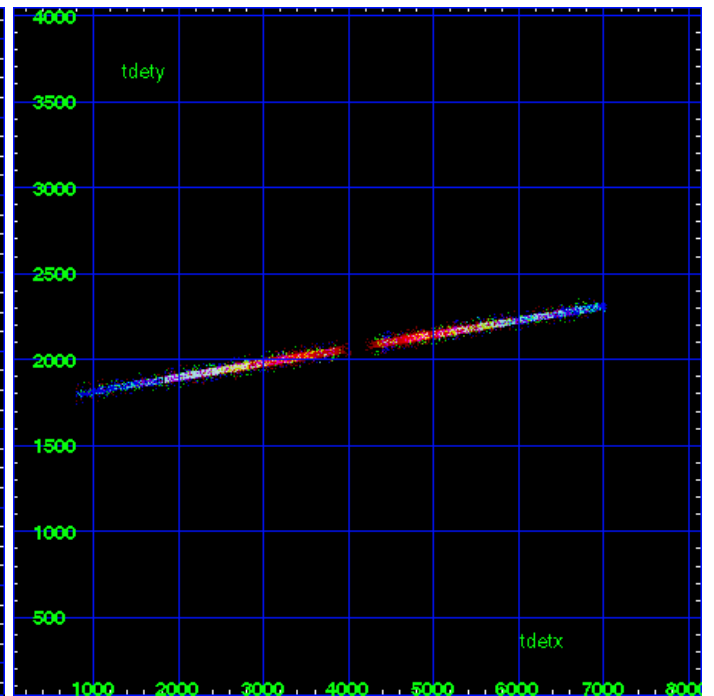
MEG Zero Order



MEG Order Sort ALL

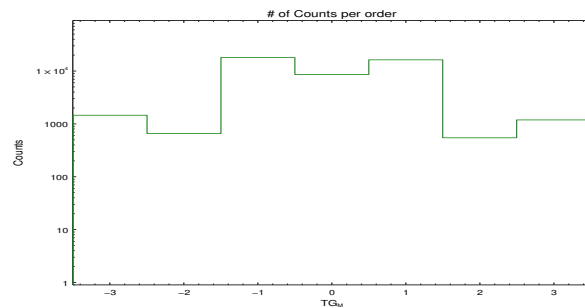


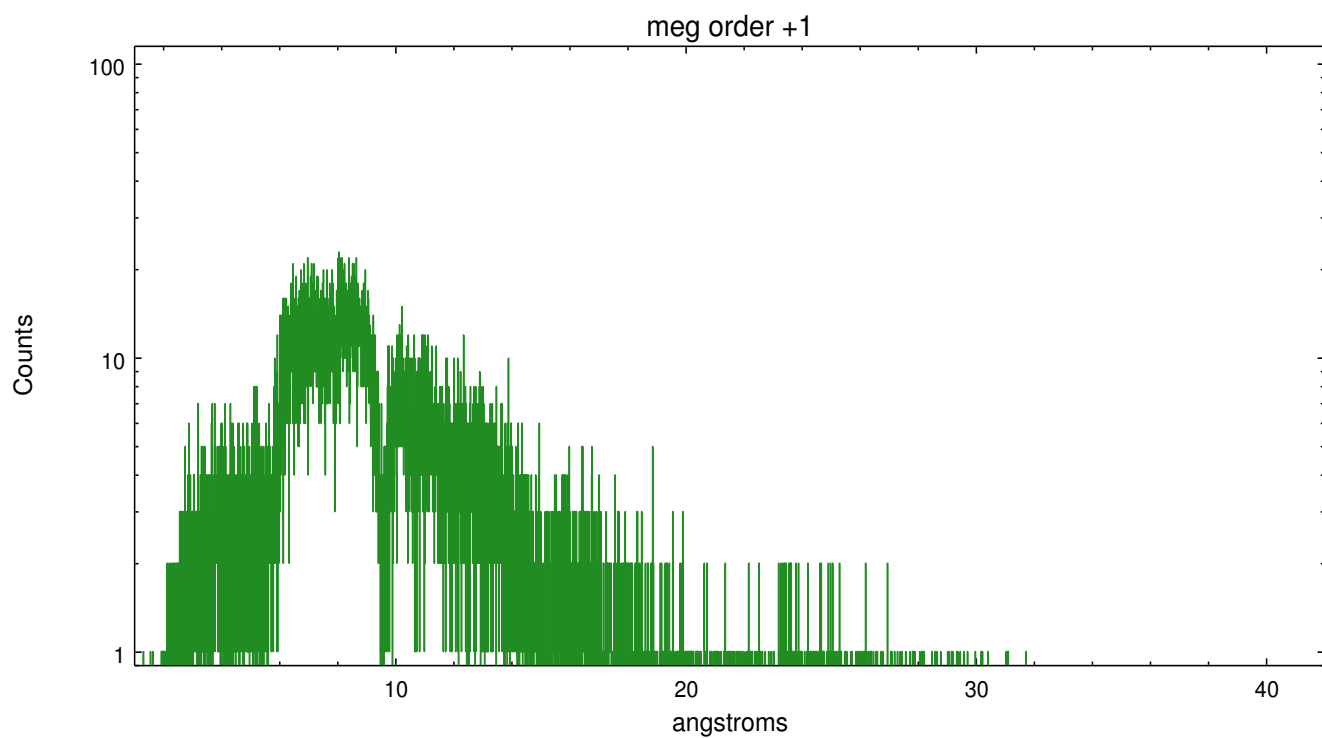
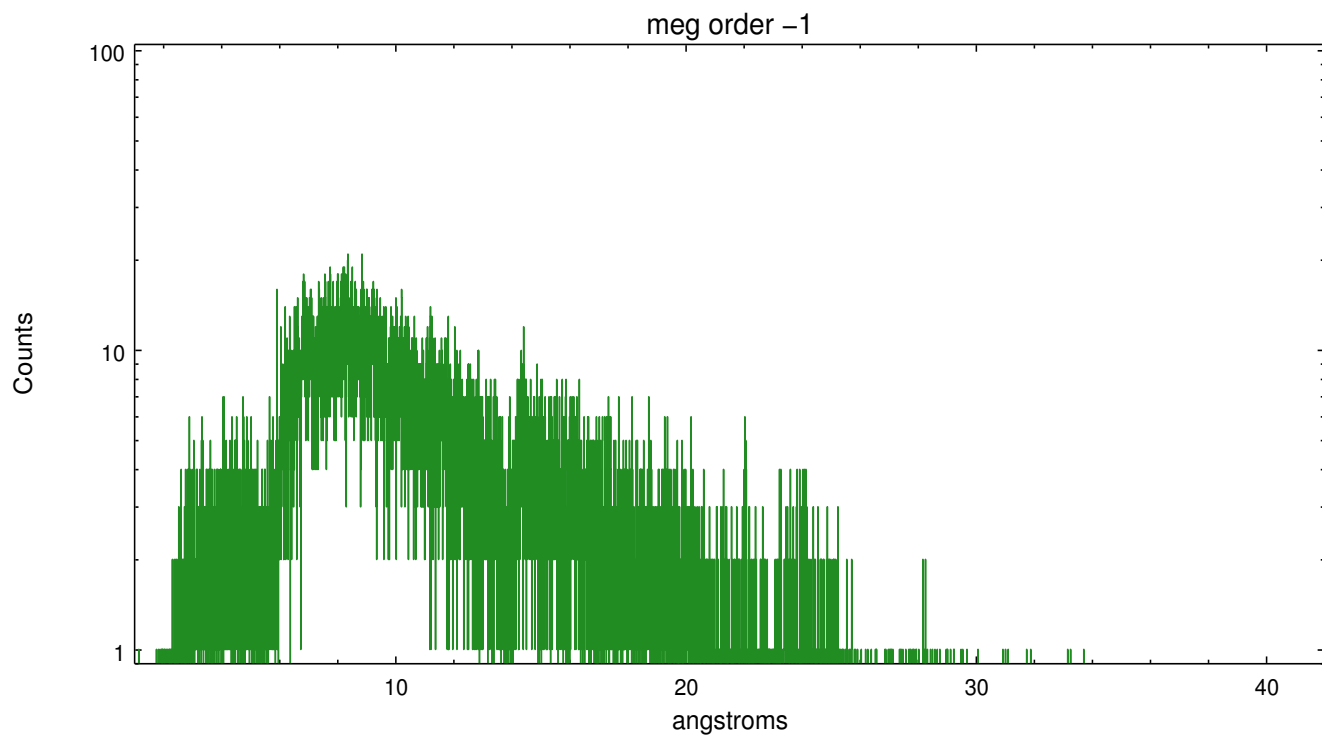
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1462	660	18117	8663	16418	547	1193





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.05.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	27.145

A.2 Comments

Spatial regions of the original bias maps for CCD = 8 and 9 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~ 20 eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias maps for CCD = 8 and 9 have been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords:

CCD 8:

(329.69812, -30.01348), (329.69709, -30.01075), (329.67087, -30.01817), (329.67190, -30.02090)

=====

The region on CCD 9 crosses a spectral arm.

CCD 9:

(329.62741, -29.92622), (329.62643, -29.92363), (329.54482, -29.94668), (329.54579, -29.94927)