

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 1018 - L2 Version 3
Chandra X-Ray Center

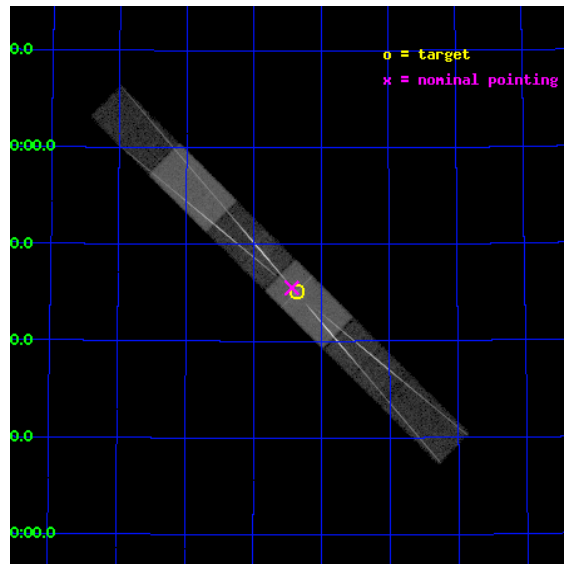
L2 Processing Date : Sep 18 2012

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

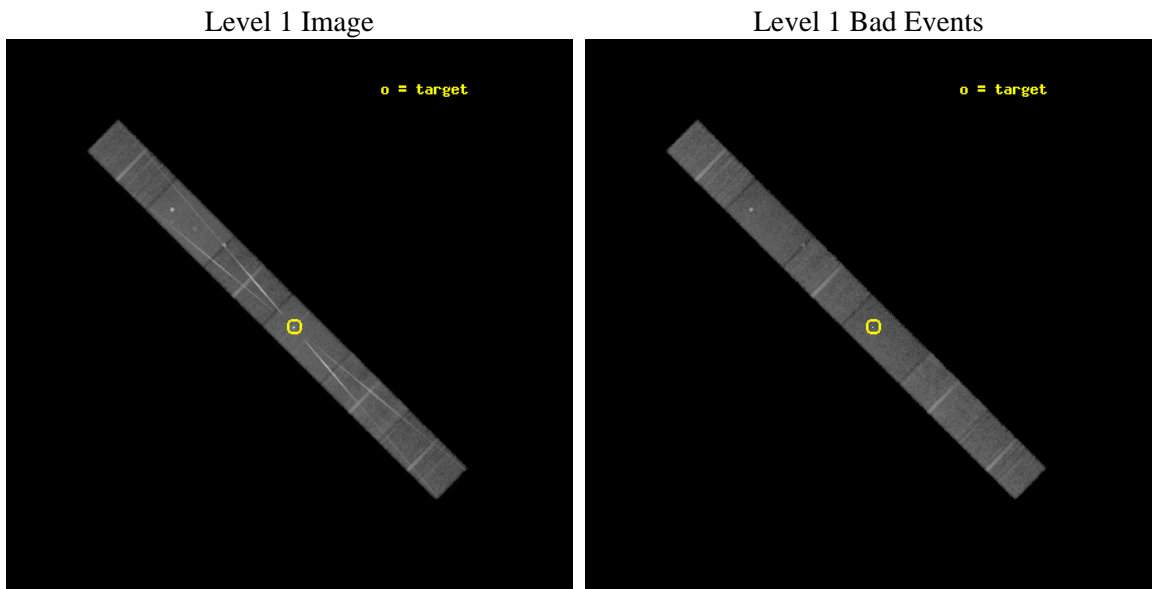
seq_num	400096	Sequence number
obs_id	1018	Observation id
title	THE ANOMALOUS X-RAY PULSAR 4U 0142+61	Proposal title
observer	Prof Claude Canizares	Principal investigator
object	4U 0142+61	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	26.591667	Observer's specified target RA [deg]
dec_targ	61.753333	Observer's specified target Dec [deg]
ra_nom	26.608758279094	Nominal RA [deg]
dec_nom	61.758860042303	Nominal Dec [deg]
roll_nom	44.59029049867	Nominal Roll [deg]
revision	3	Processing version of data
ontime	25365.090676188	Sum of GTIs [s]
livetime	24799.658463227	Livetime [s]
ontime4	25365.131686255	Sum of GTIs [s]
ontime5	25365.049636185	Sum of GTIs [s]
ontime6	25368.69056654	Sum of GTIs [s]
ontime7	25365.090676188	Sum of GTIs [s]
ontime8	25368.649526536	Sum of GTIs [s]
ontime9	25364.92651619	Sum of GTIs [s]
l2events	282285	Number of level 2 events



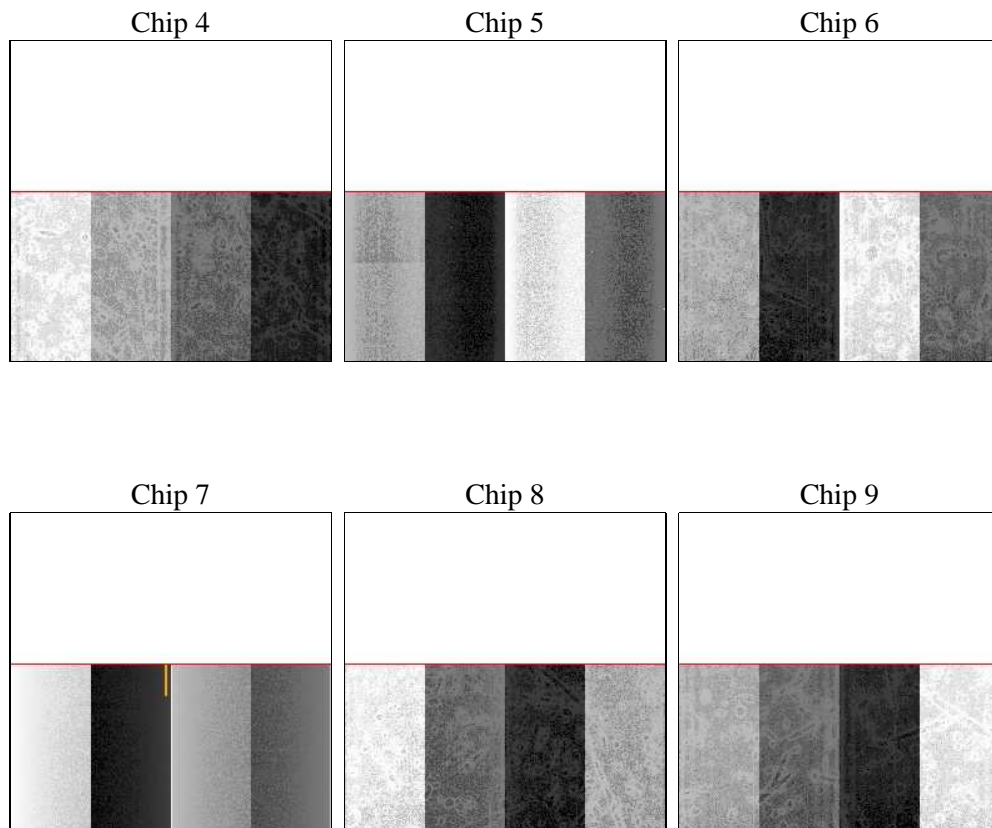
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	25000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	25365.090676188	Sum of GTIs [s]
caldsver	4.5.1.1	 	ontime4	25365.131686255	Sum of GTIs [s]
date	2012-09-16T23:28:02	Date and time of file creation	ontime5	25365.049636185	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	25368.69056654	Sum of GTIs [s]
			ontime7	25365.090676188	Sum of GTIs [s]
			ontime8	25368.649526536	Sum of GTIs [s]
			ontime9	25364.92651619	Sum of GTIs [s]
			l1events	818725	Number of level 1 events

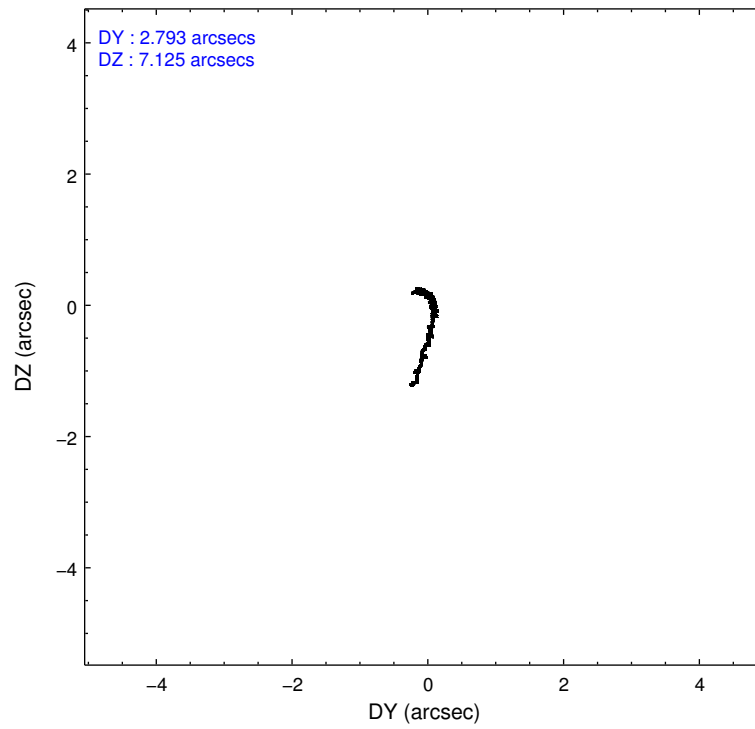
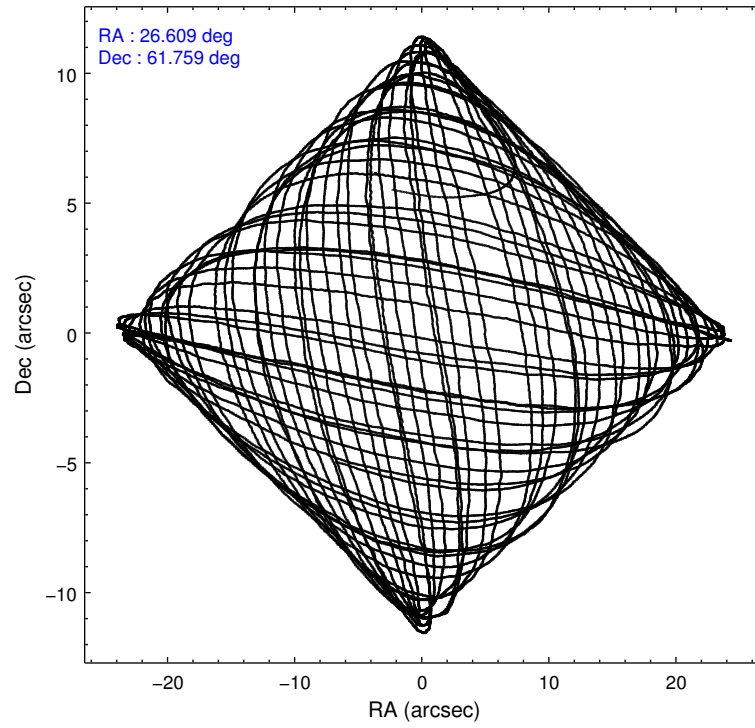
2.1.4 Events

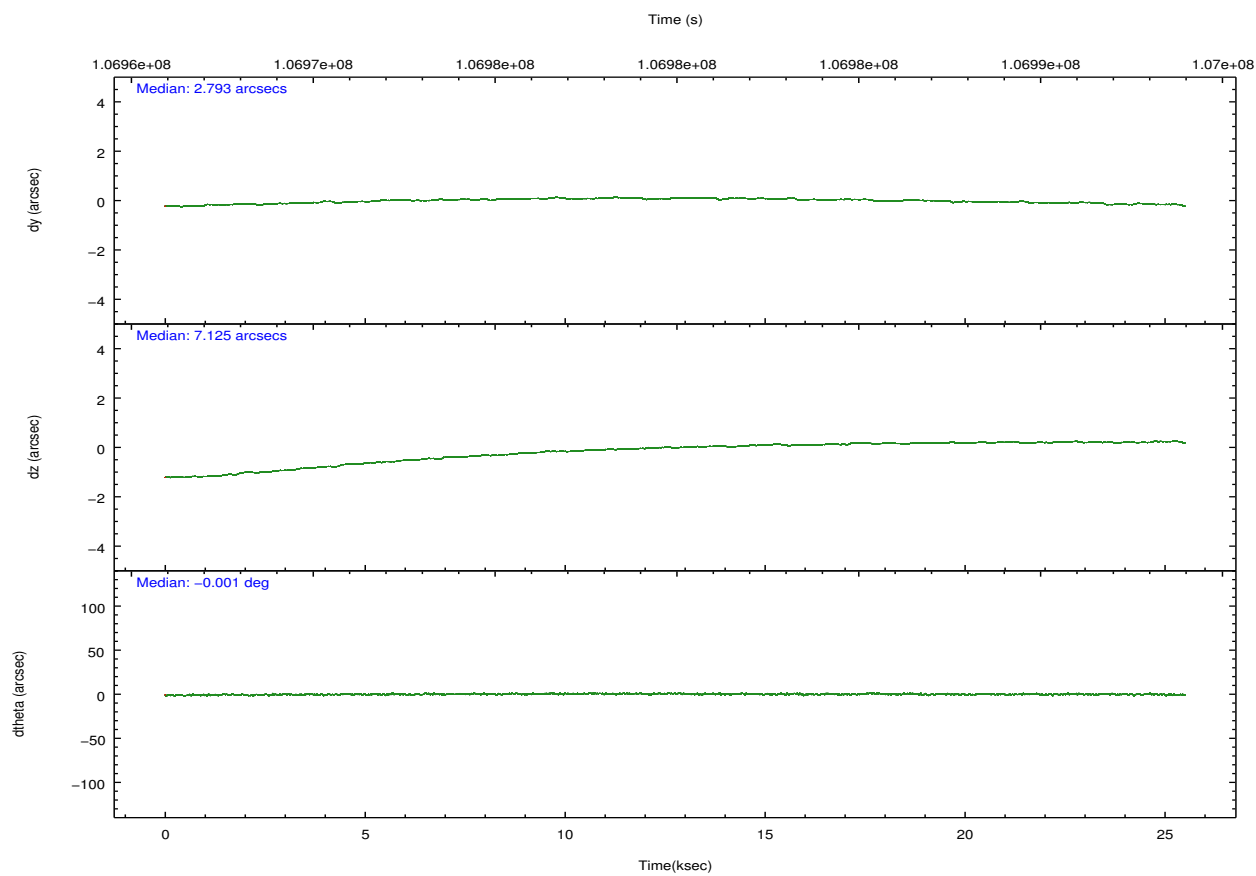
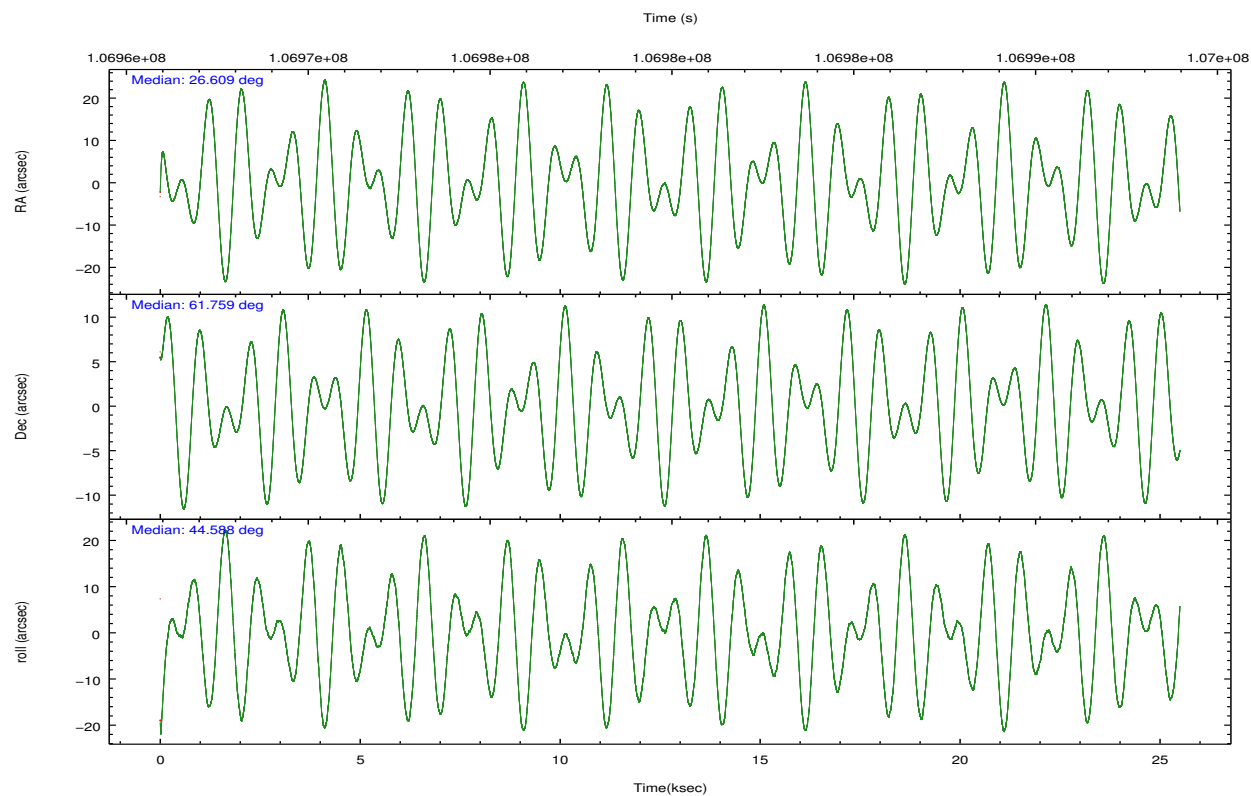
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	106554	143834	148286	168948	152577	98526	grade 0 events	6385	11562	46448	14313	33667	8685
rejected events	92862	69143	84824	74719	96321	81965		5%	8%	31%	8%	22%	8%
rejected %	87%	48%	57%	44%	63%	83%	grade 1 events	35	343	214	396	139	41
								0%	0%	0%	0%	0%	0%
							grade 2 events	2776	22963	7827	20818	8203	2760
								2%	15%	5%	12%	5%	2%
							grade 3 events	1357	4904	3043	9712	3813	1478
								1%	3%	2%	5%	2%	1%
							grade 4 events	1305	4678	2983	9649	3570	1413
								1%	3%	2%	5%	2%	1%
							grade 5 events	2930	11853	3620	12385	4563	3625
								2%	8%	2%	7%	2%	3%
							grade 6 events	1870	30592	3166	39742	7005	2227
								1%	21%	2%	23%	4%	2%
							grade 7 events	89896	56939	80985	61933	91617	78297
								84%	39%	54%	36%	60%	79%

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	26.593995	26.60875827909446	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	61.732455	61.75886004230346	Subarray start row	1	1
[deg] Pointing Roll	44.446677	44.59029049867017	Subarray row count	542	542
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	1.8
[mm] SIM translation stage pos	-184.532523	-184.52811429679			
[mm] SIM translation stage offset	-5.6	-5.604408286217847			
[s] Observation start time (MET)	106967697.184000	106966585.26296			
Observation start date	2001-05-23T01:13:53	2001-05-23T00:56:25			
[s] Observation end time (MET)	106992697.184000	106993601.70151			
Observation end date	2001-05-23T08:10:33	2001-05-23T08:26:41			
Read mode	TIMED	TIMED			

2.3 Aspect



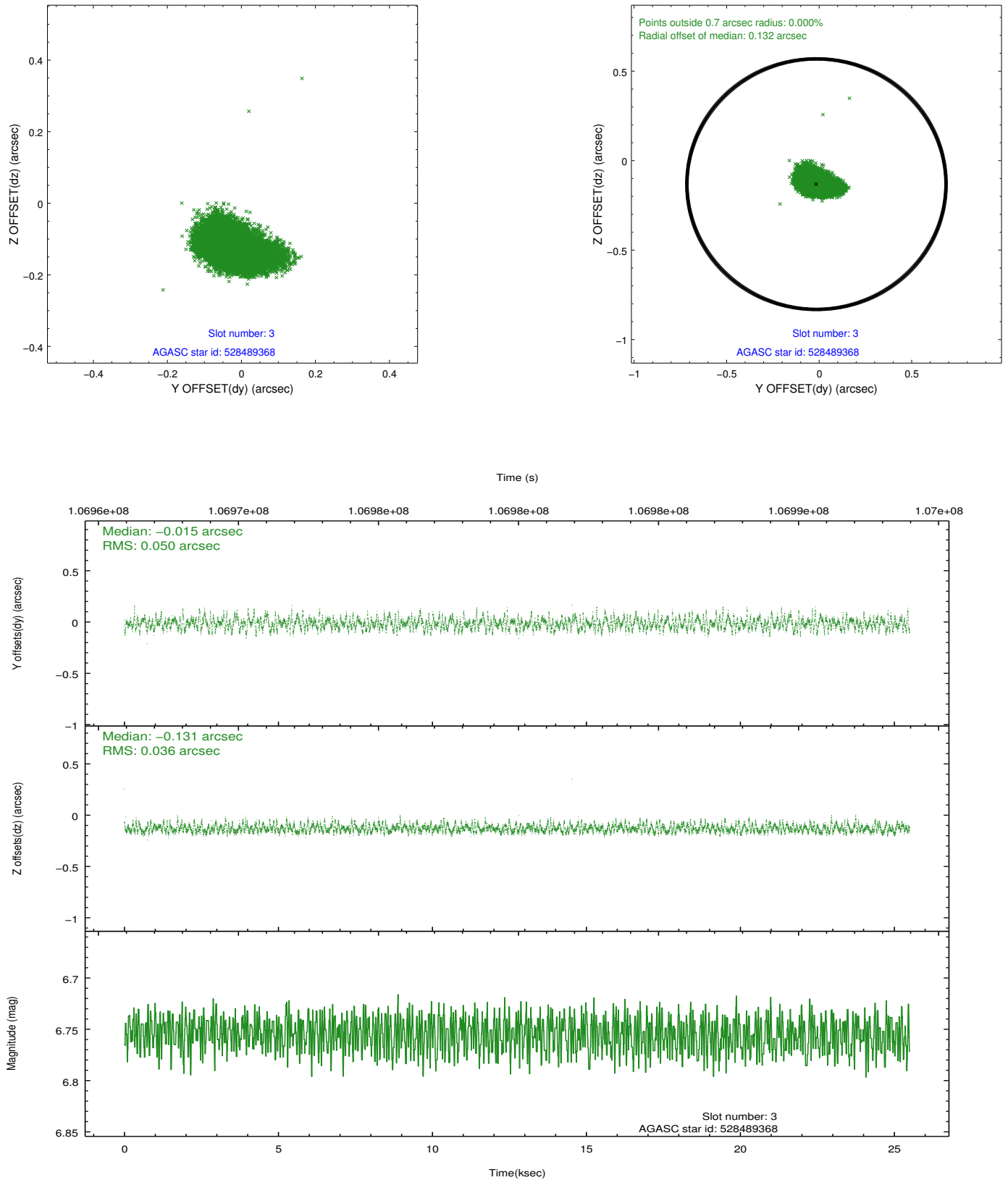


Slot Statistics

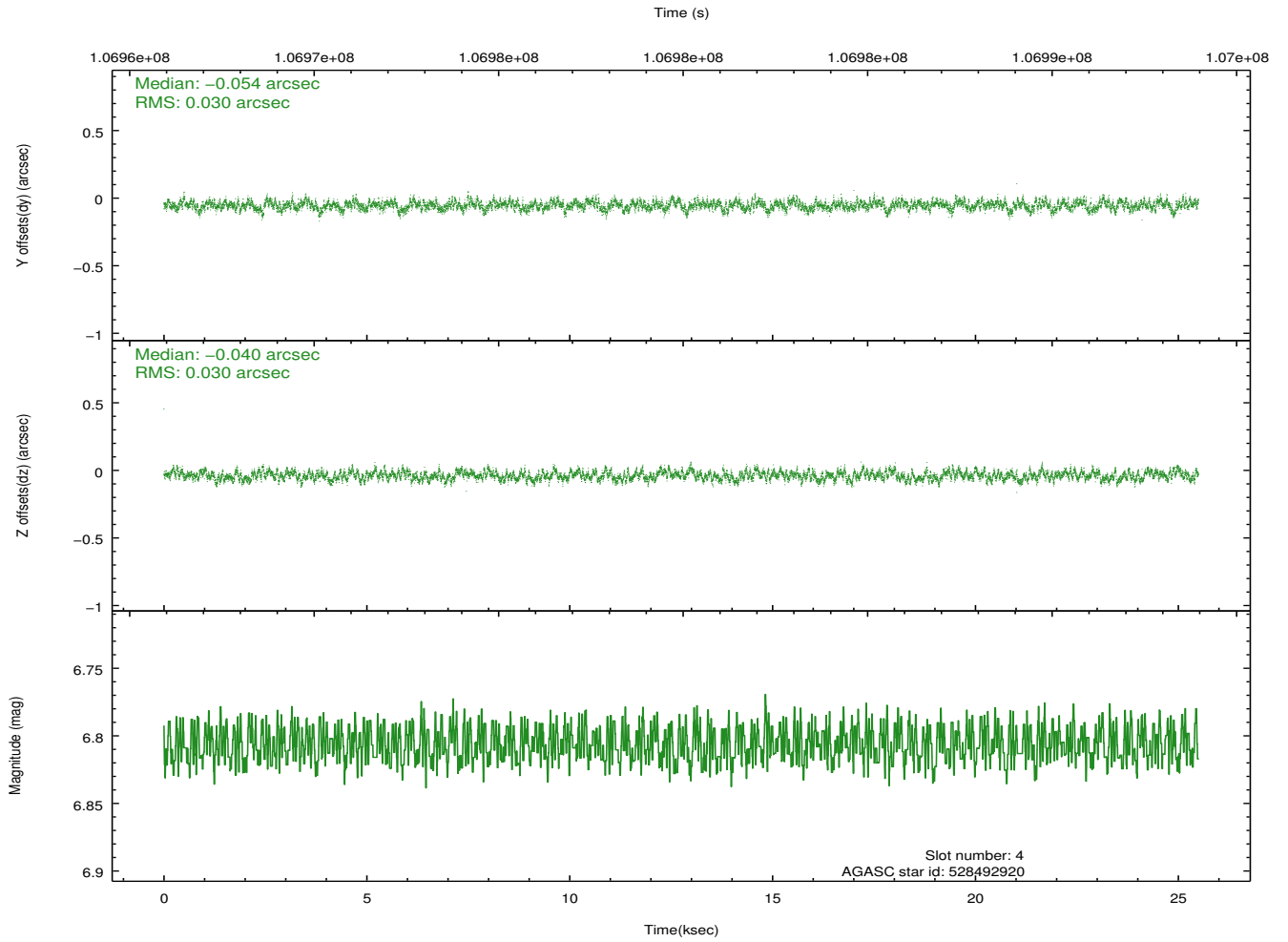
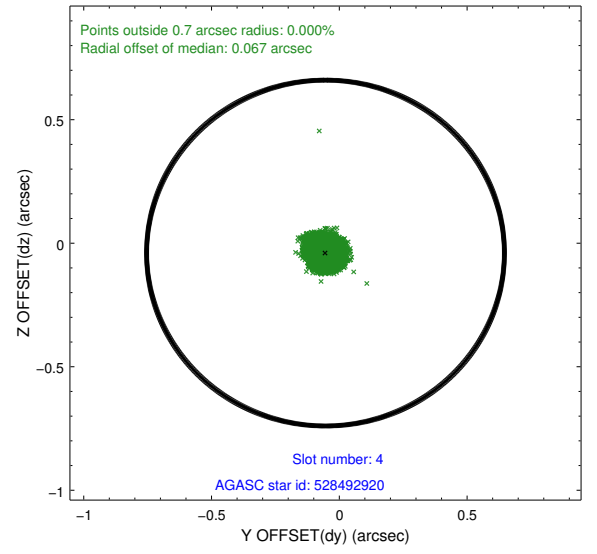
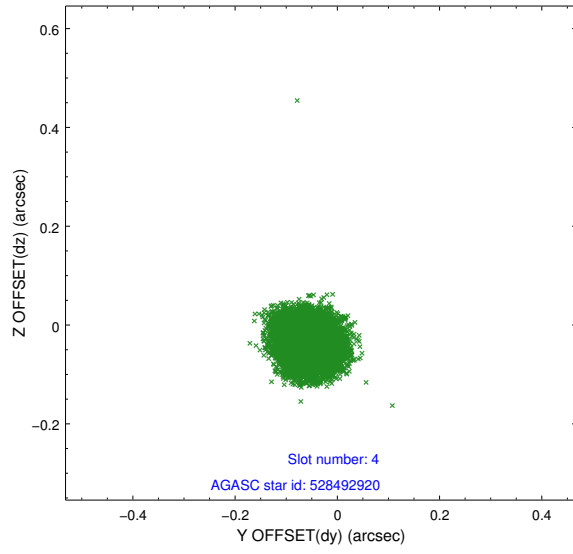
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-3	7.36	6219	-0.021	0.020	0.017	0.046	0.000000	0.000000	58.07	-1972.68
1	FID	ACIS-S-5	7.23	6218	0.031	-0.003	0.008	0.012	0.000000	0.000000	-1808.02	58.27
2	FID	ACIS-S-6	7.40	6219	-0.033	-0.007	0.014	0.041	0.000000	0.000000	406.47	702.22
3	GUIDE	528489368	6.75	12436	-0.015	-0.131	0.066	0.107	25.743005	61.421072	-1824.96	233.74
4	GUIDE	528492920	6.81	12437	-0.054	-0.040	0.045	0.072	26.048398	61.849802	-363.70	954.36
5	GUIDE	528494712	7.09	12434	-0.020	0.116	0.039	0.063	26.522817	60.993527	-1951.95	-1810.78
6	GUIDE	529024856	8.79	12436	-0.016	-0.051	0.062	0.097	26.625085	62.150671	1090.94	1039.21
7	GUIDE	529020200	9.46	12432	0.106	0.101	0.086	0.139	26.674470	62.603538	2290.87	2146.91

2.4 Star Slots

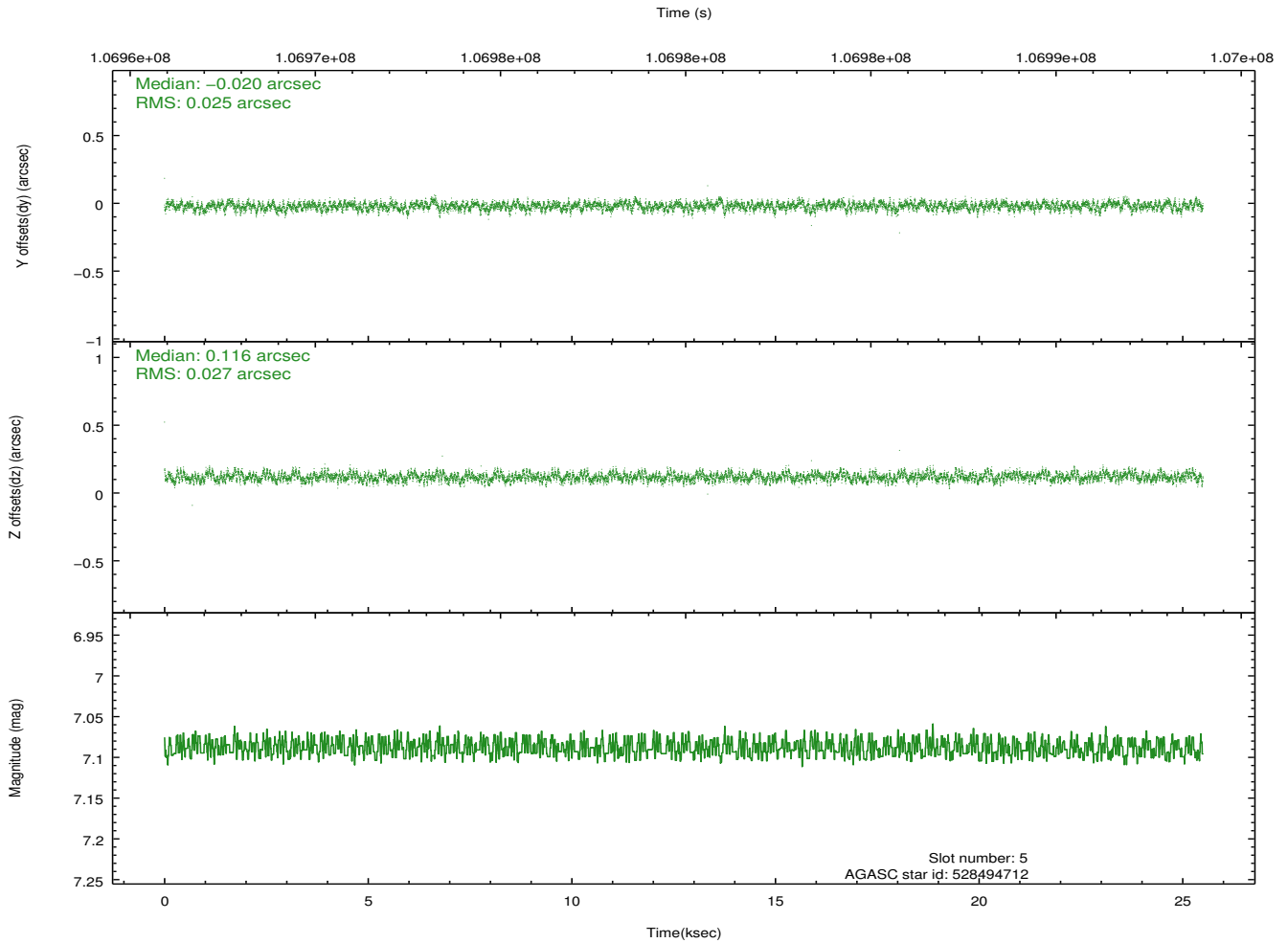
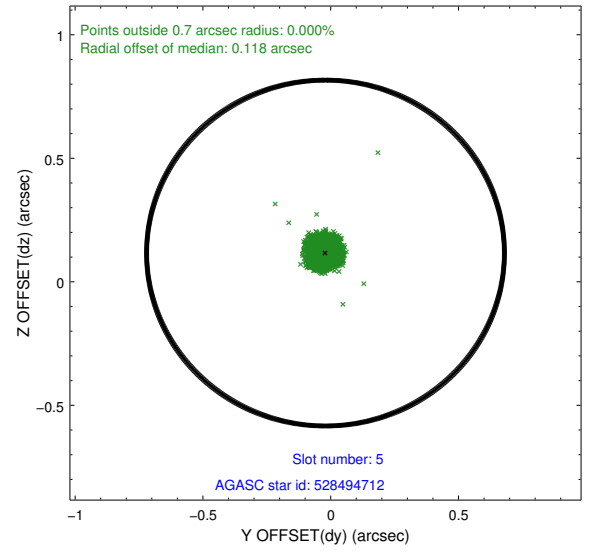
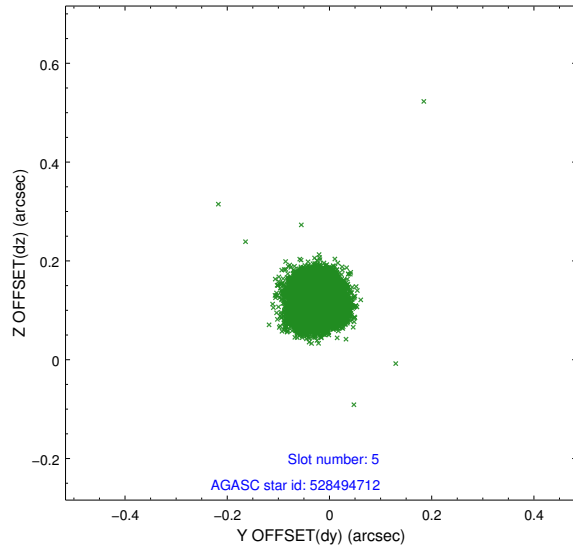
2.4.1 Slot 3



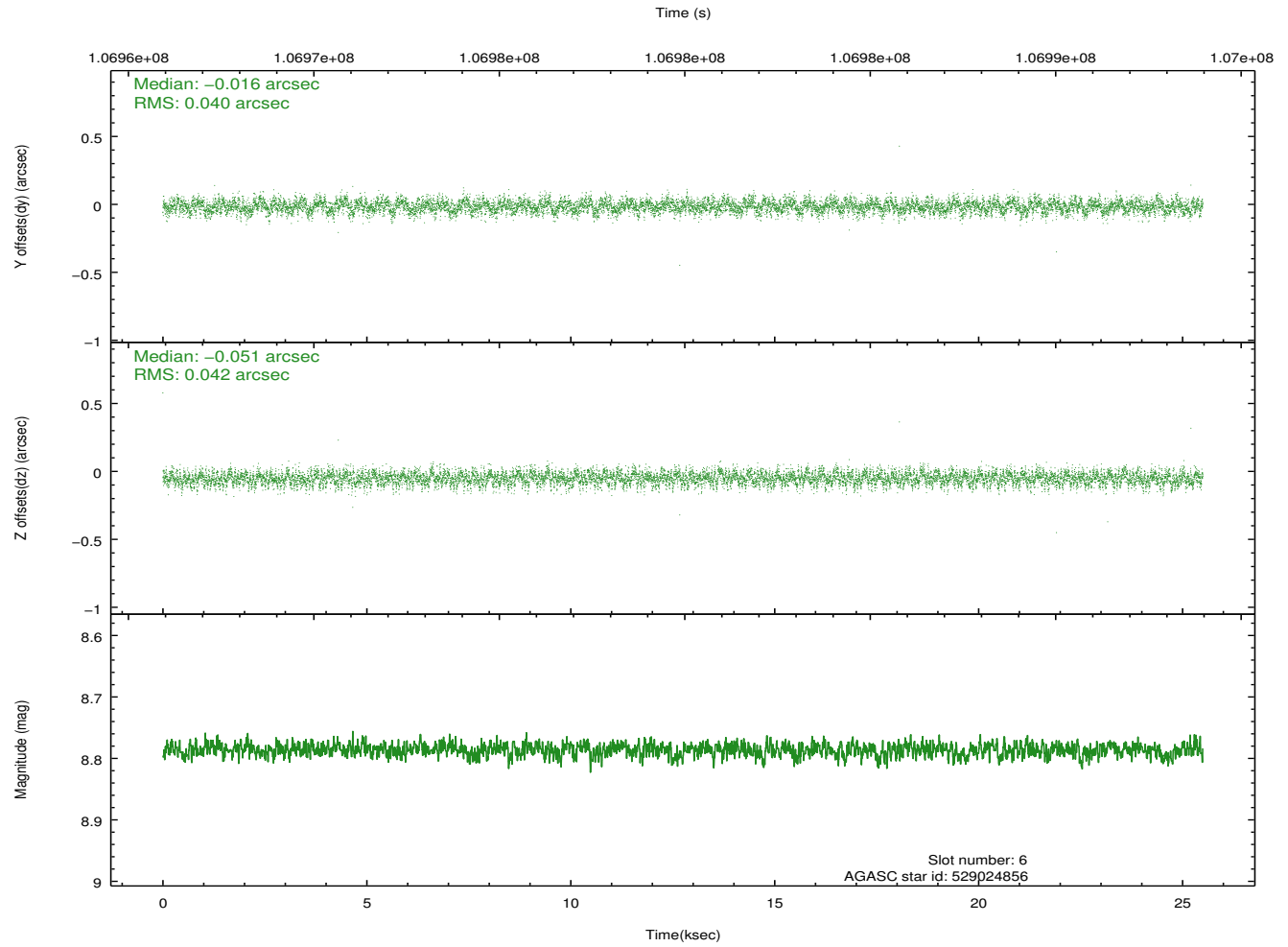
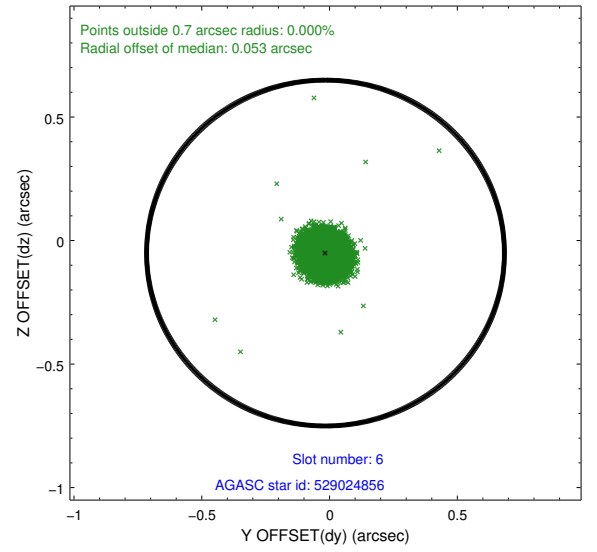
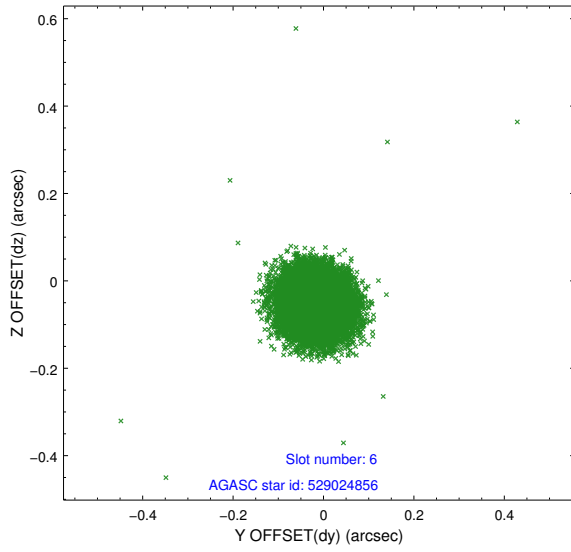
2.4.2 Slot 4



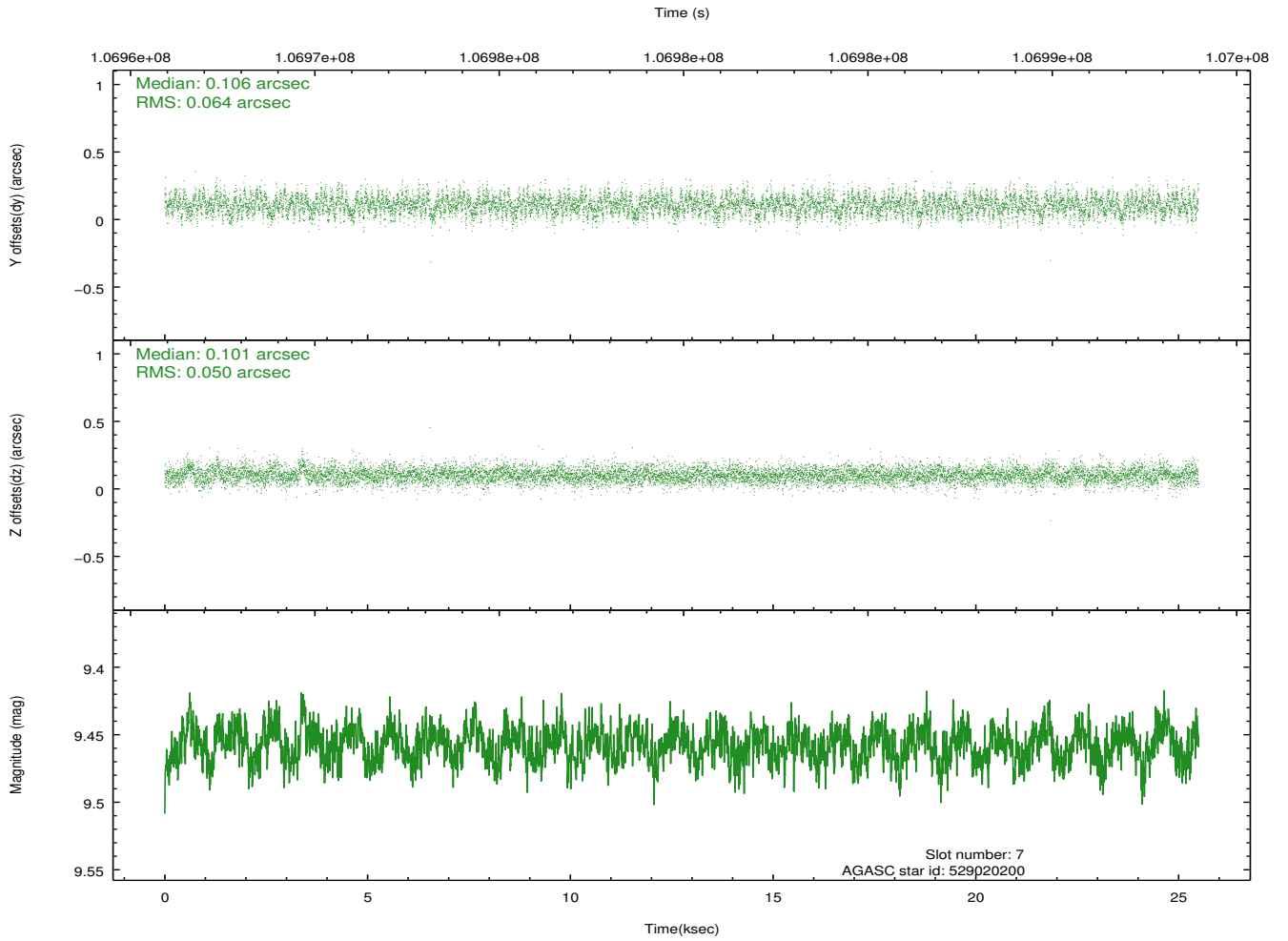
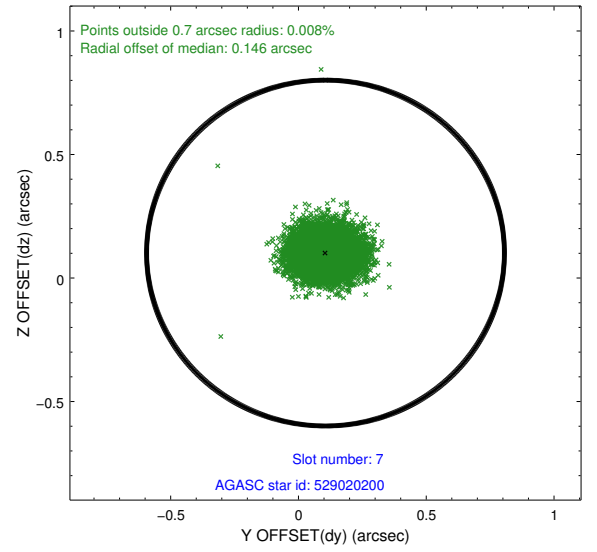
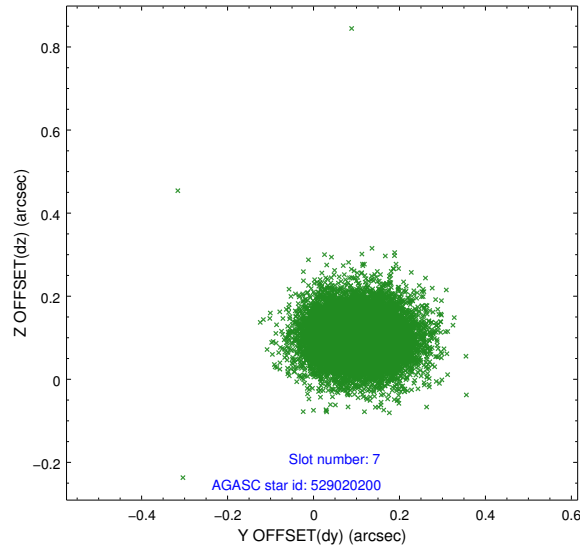
2.4.3 Slot 5



2.4.4 Slot 6

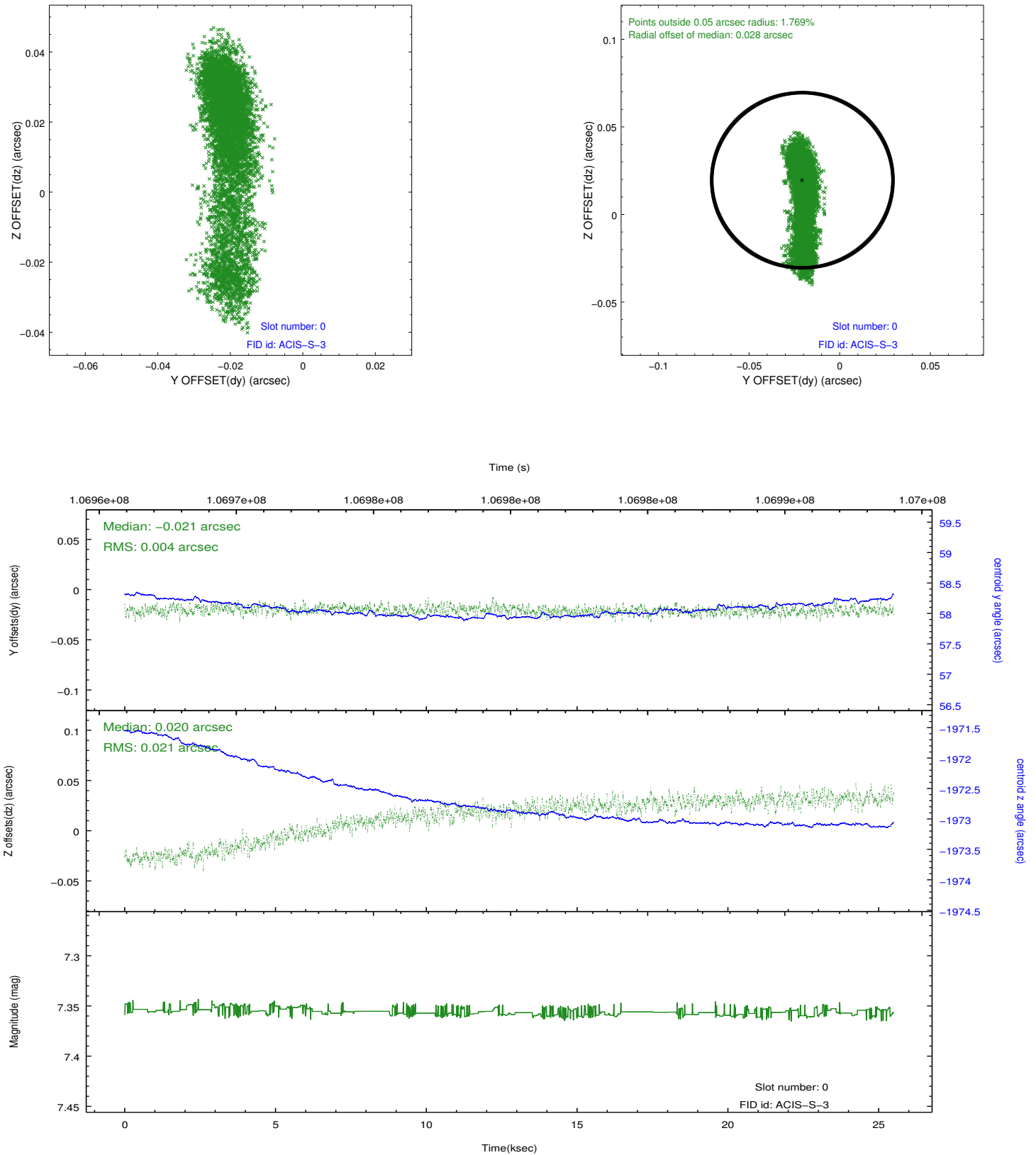


2.4.5 Slot 7

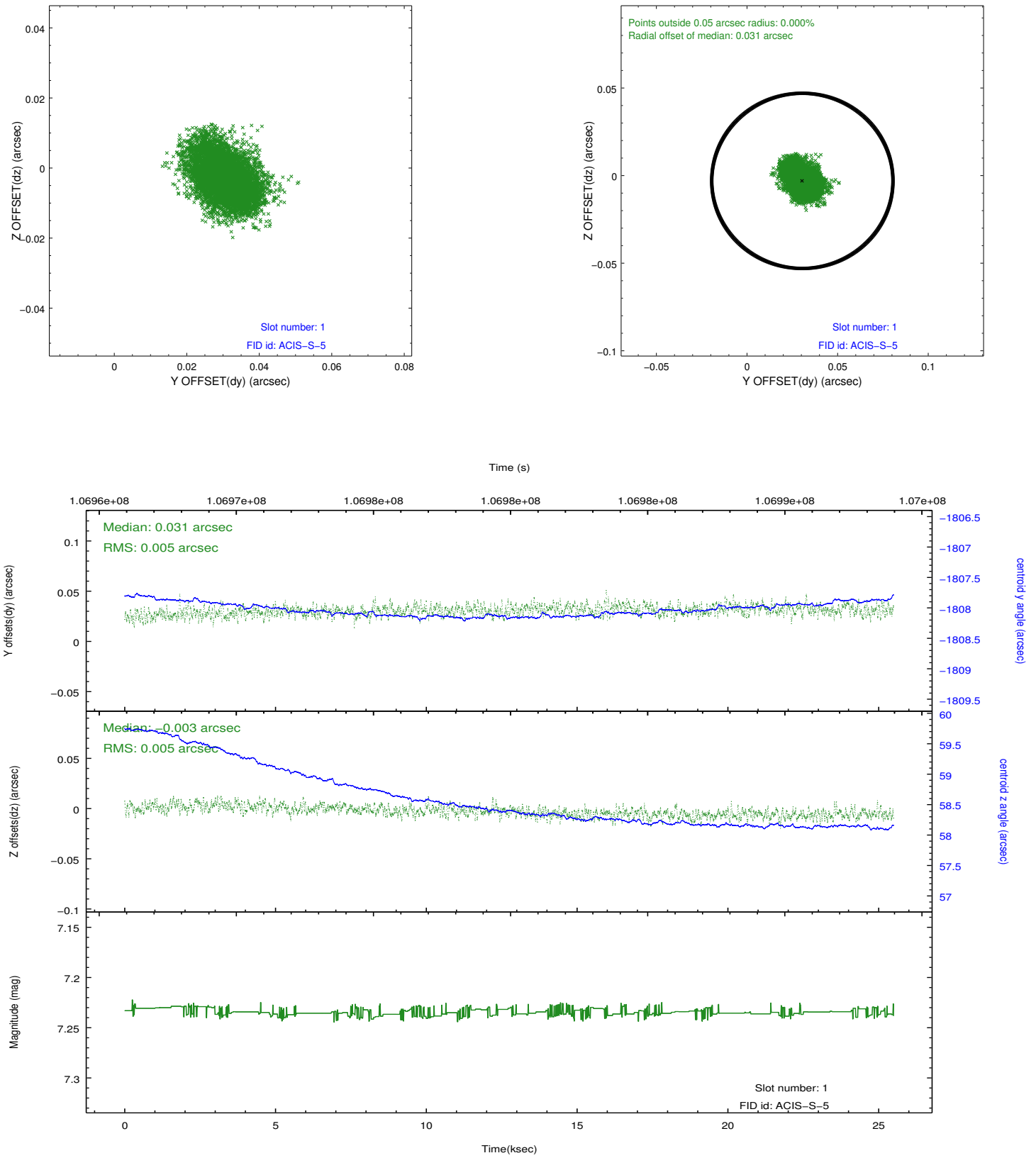


2.5 FID Slots

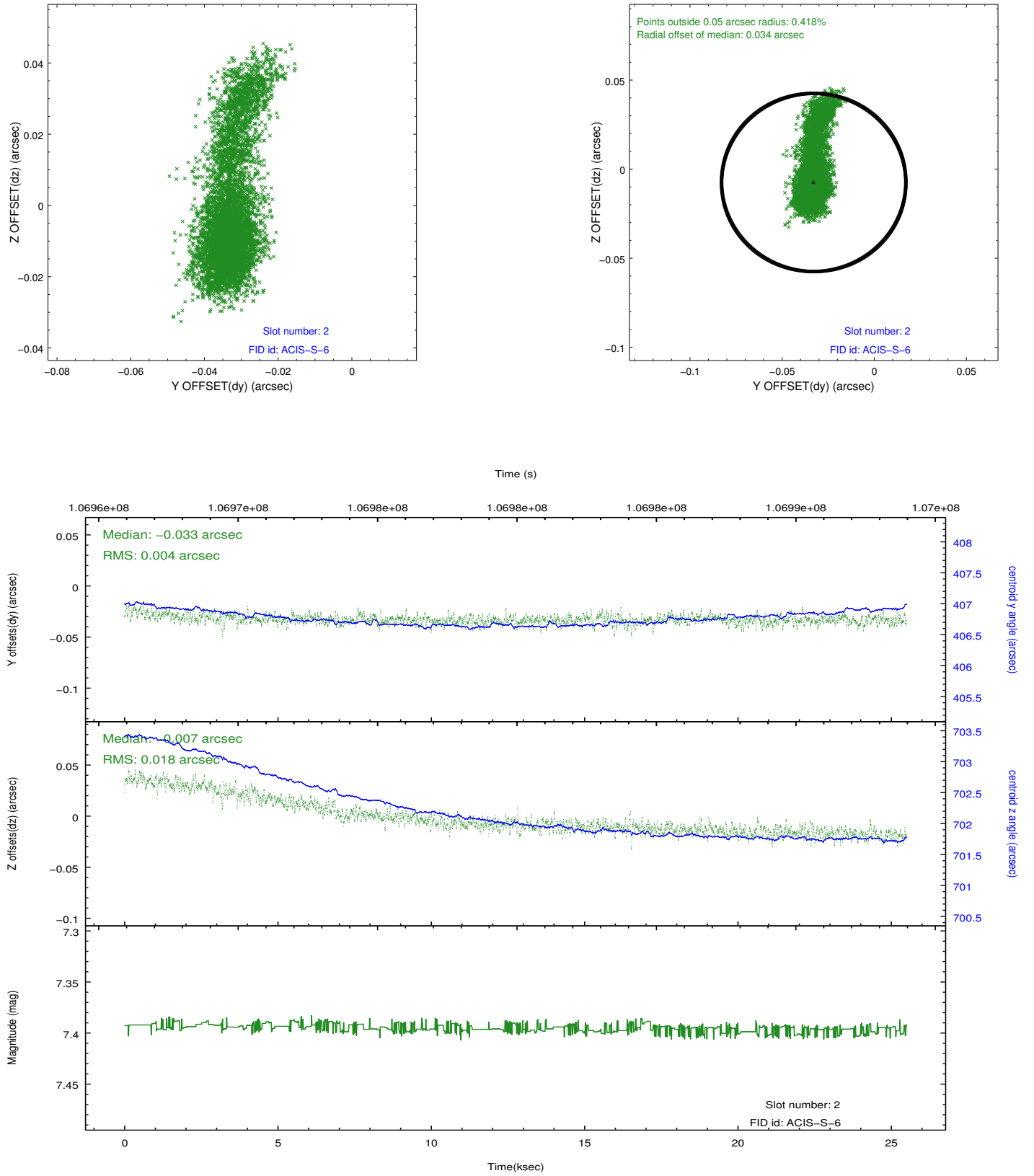
2.5.1 Slot 0



2.5.2 Slot 1

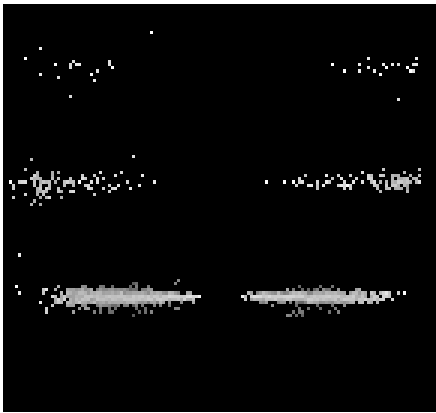


2.5.3 Slot 2

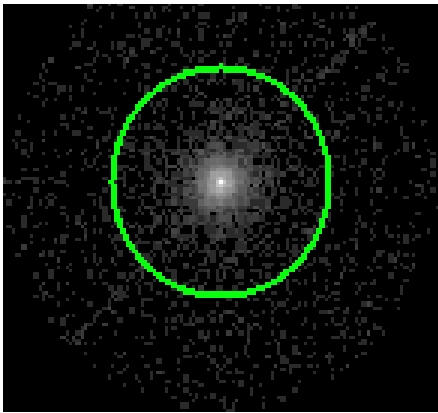


3 Gratings

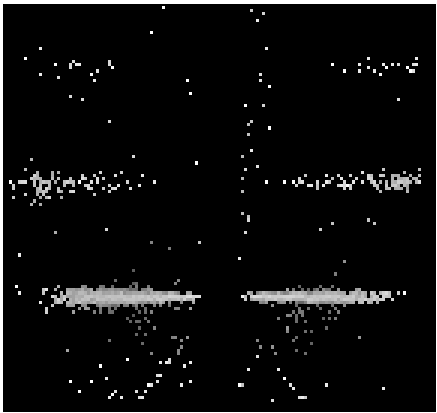
3.1 HEG Arm



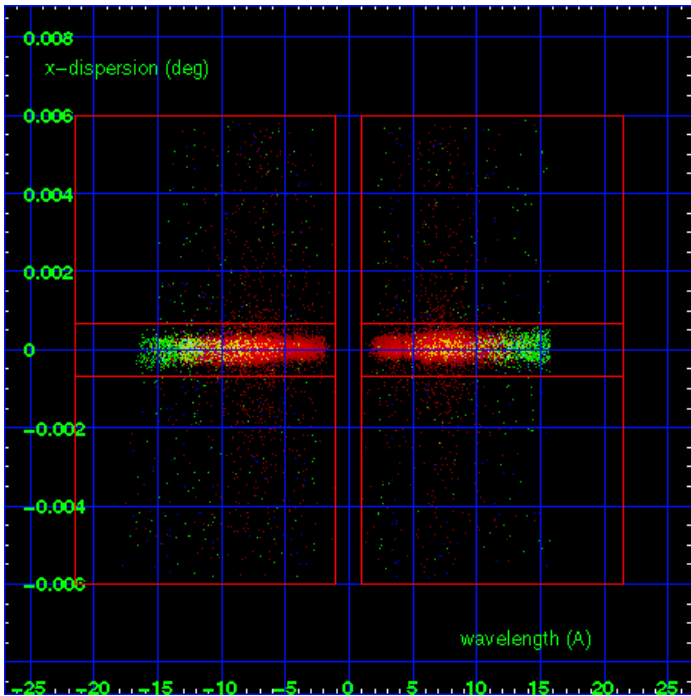
HEG Order Sort 123



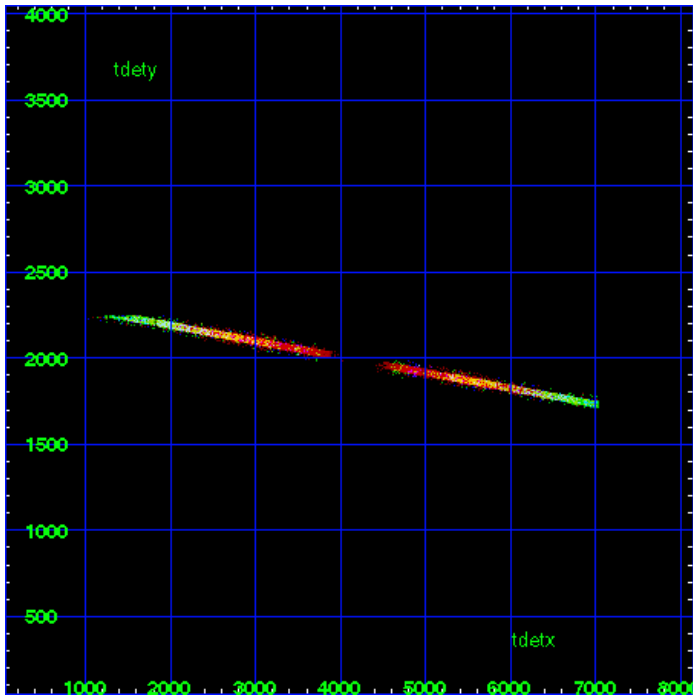
HEG Zero Order



HEG Order Sort ALL

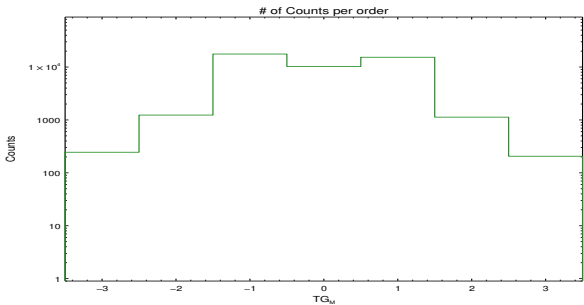


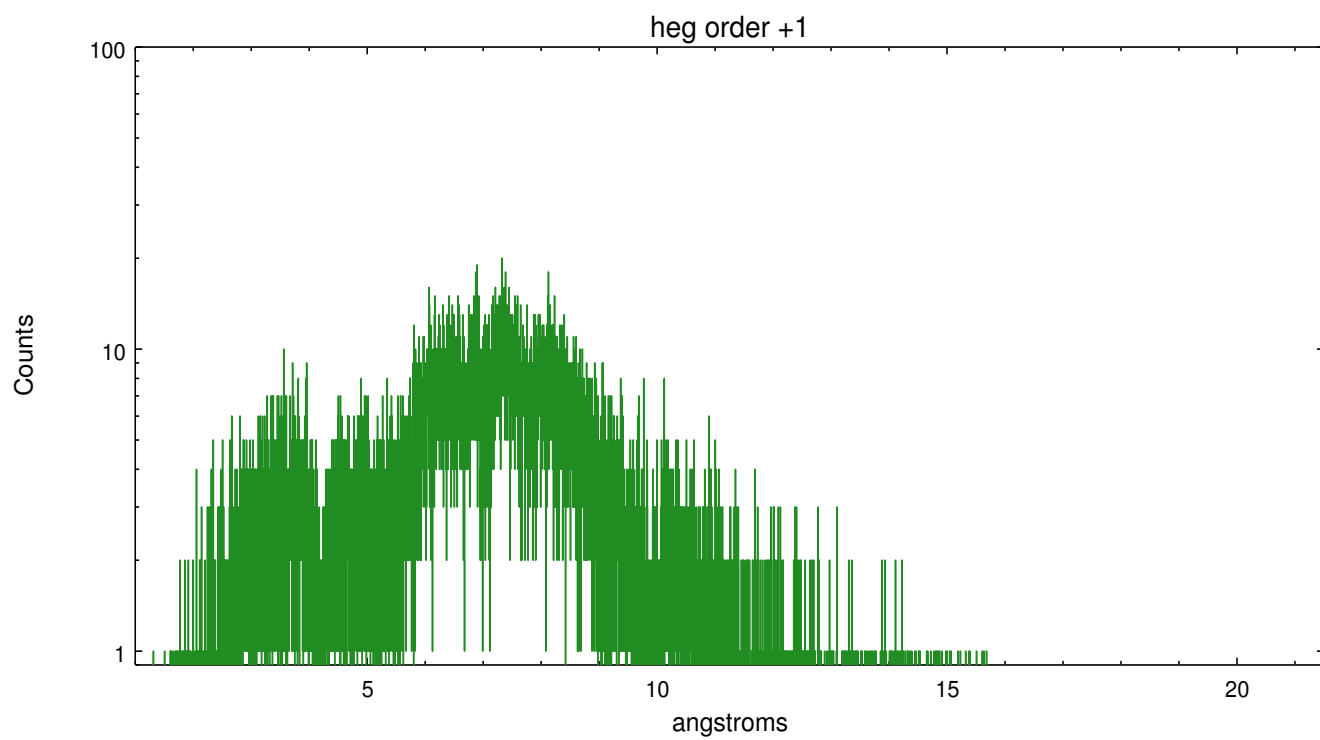
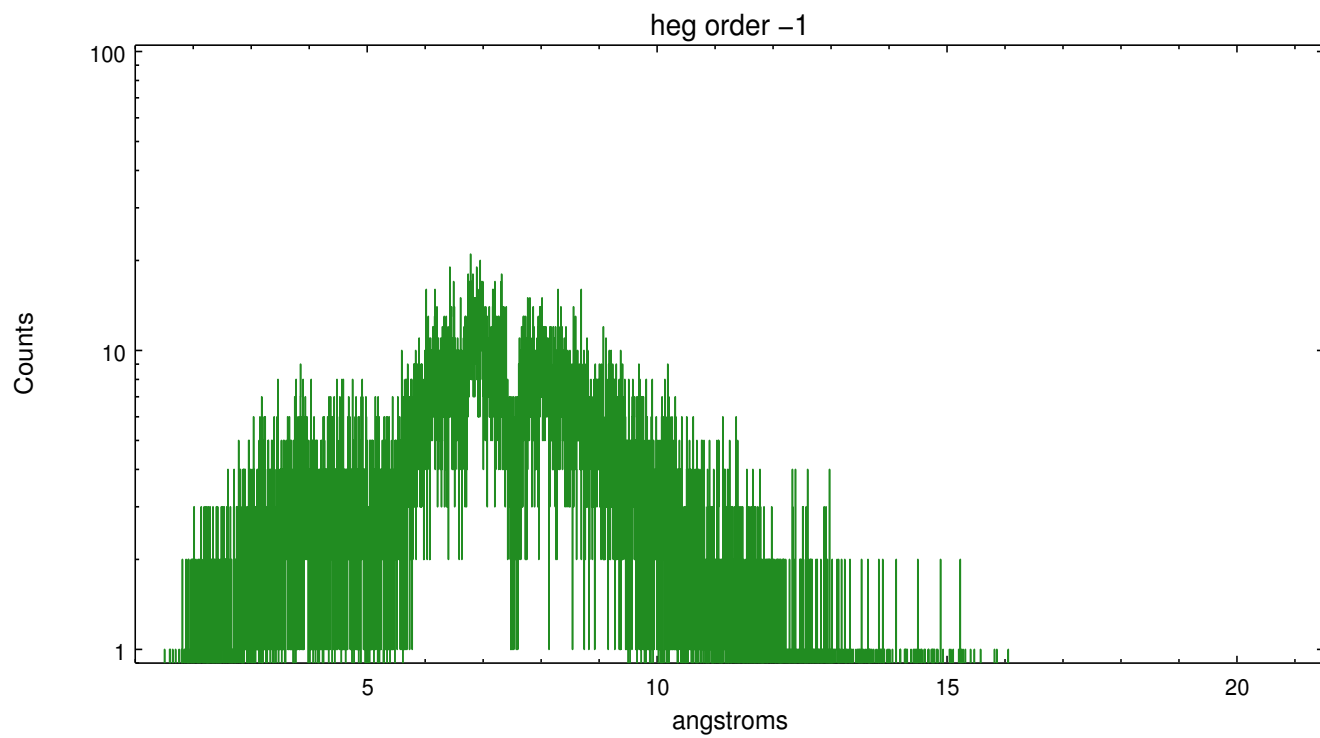
Spot Image HEG



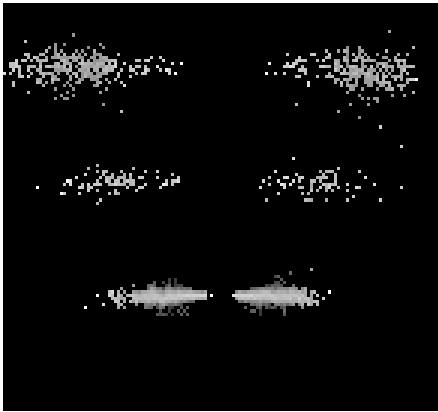
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	245	1236	17633	10243	15314	1129	206

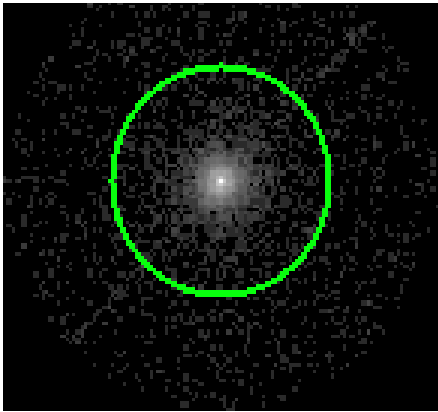




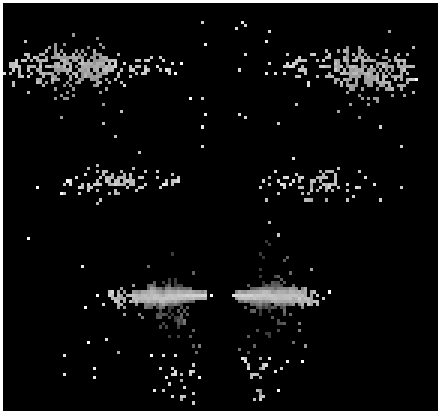
3.2 MEG Arm



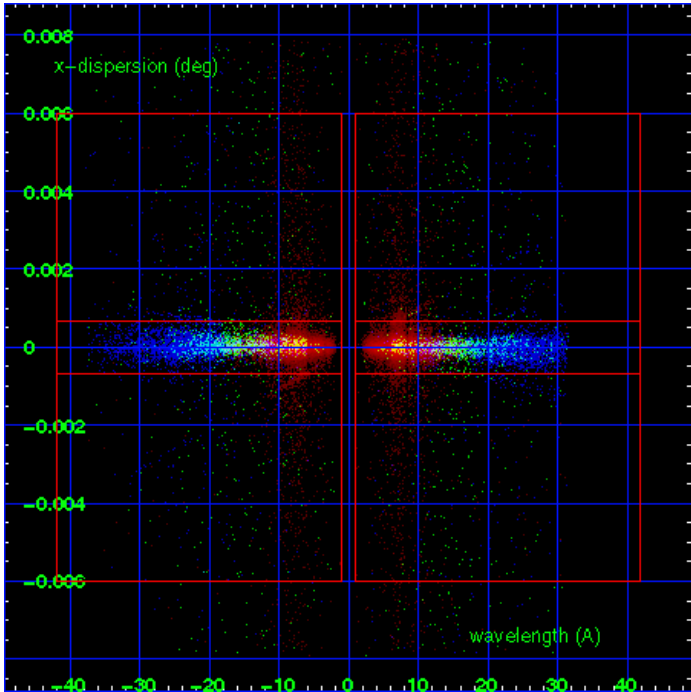
MEG Order Sort 123



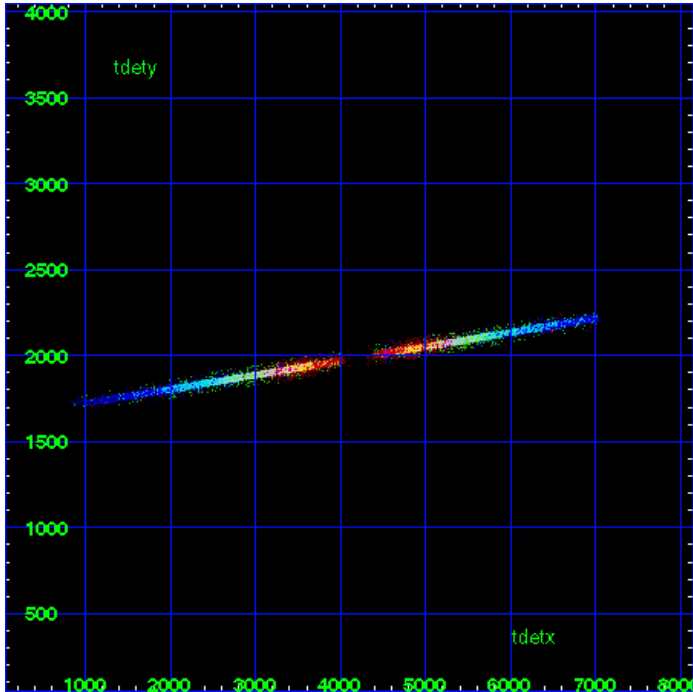
MEG Zero Order



MEG Order Sort ALL

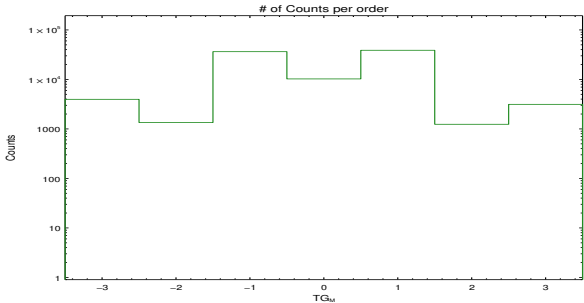


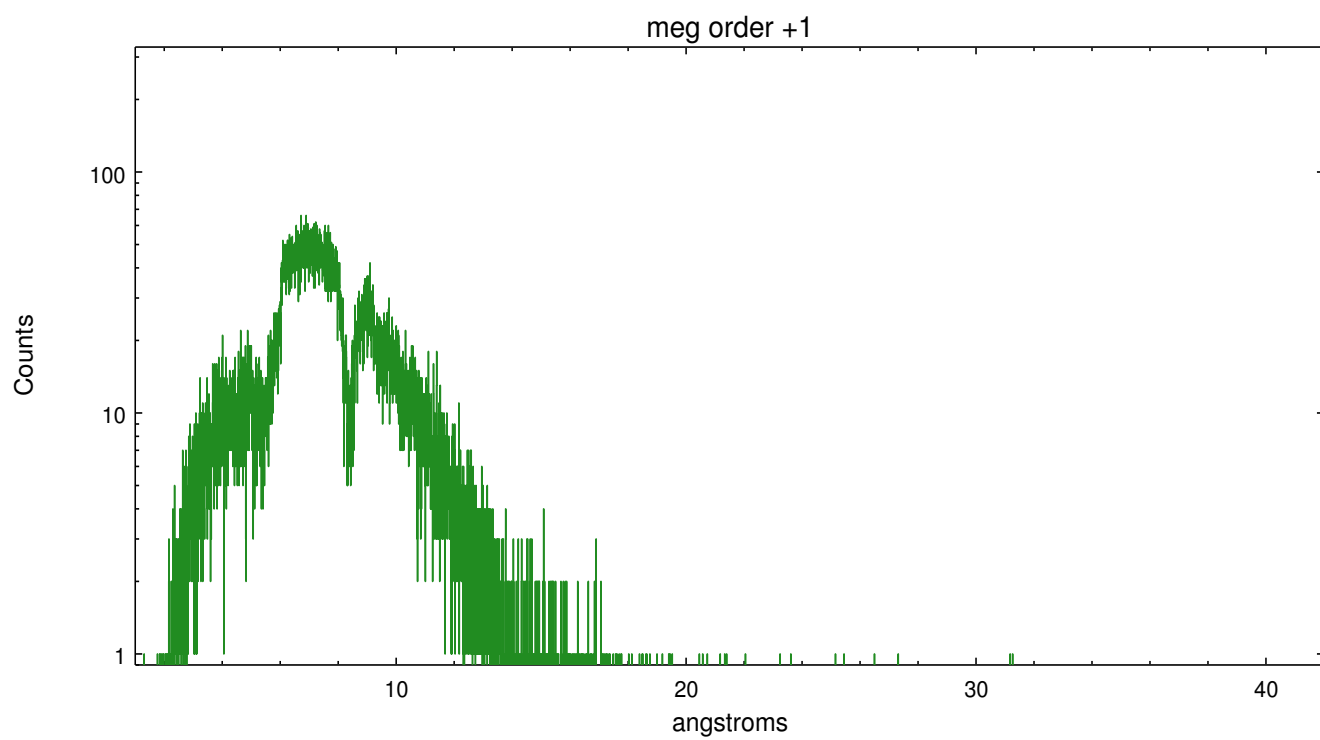
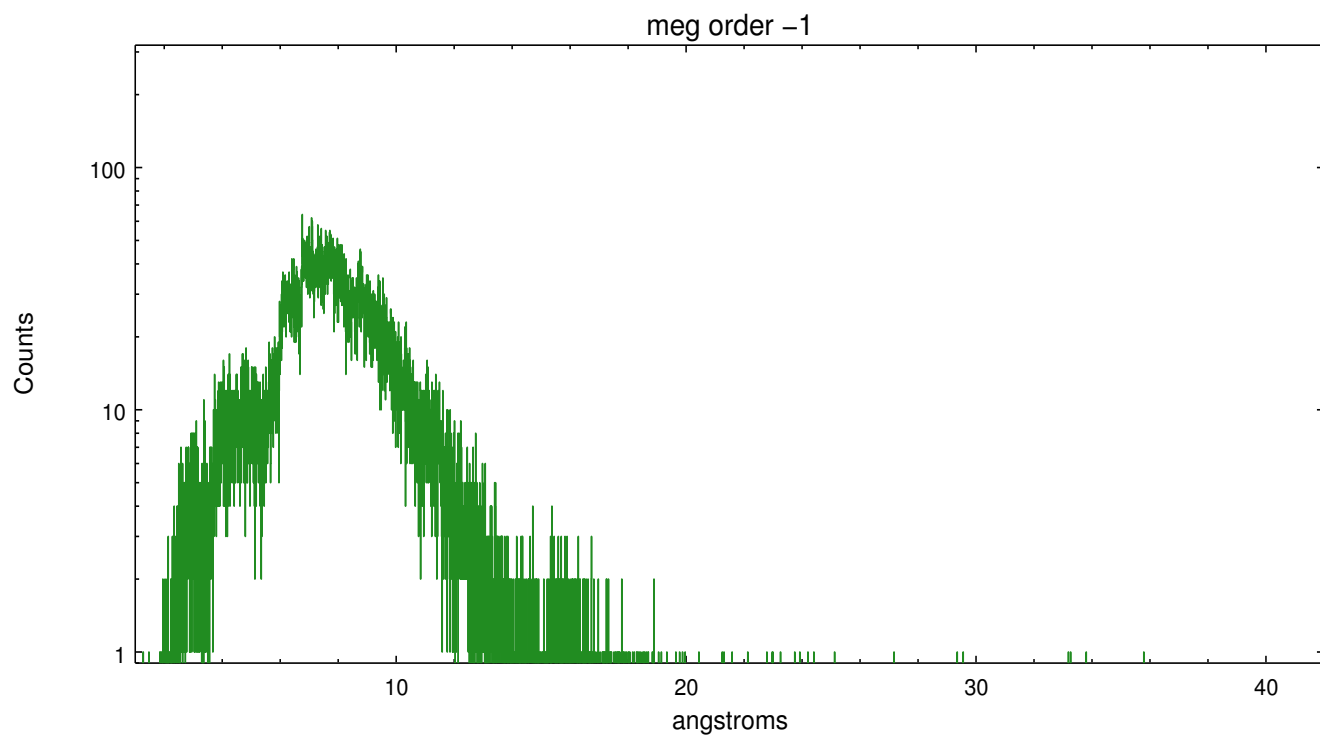
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	3961	1346	36381	10243	38788	1240	3135





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.09.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	25.362

A.2 Comments

Zeroth order piled up. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates (x=4150.44, y=4038.07) into the *src1a.fits file table. These corrected coordinates were determined using a software tool developed by CXC called findzero, which is expected to be released in CIAO as tg_findzo (currently in ISIS as findzo). The tool calculates the point of intersection of the readout streak and the meg arm. The zeroth order source position determined by the standard pipeline processing using the tool tgdetect was not used in this processing. The newly determined zeroth order coordinates have been placed in the *src1a.fits file, replacing the coordinates determined by tgdetect. Note that these corrected coordinates of the zeroth order cannot be reproduced by running tgdetect on the data.