

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 11931 - L2 Version 4
Chandra X-Ray Center

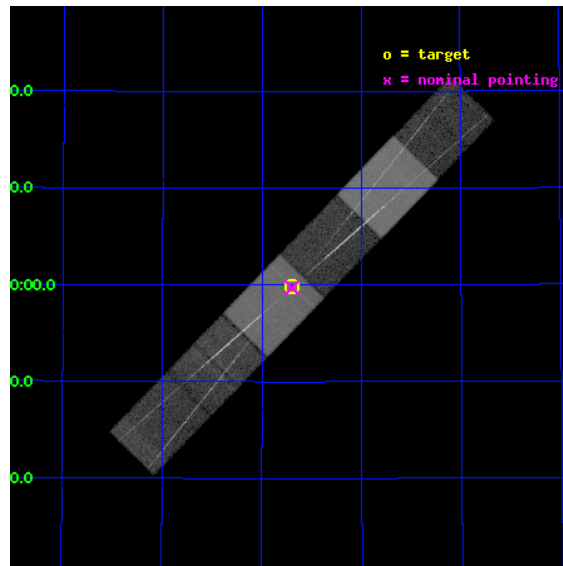
L2 Processing Date : Jun 18 2012

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1 Front

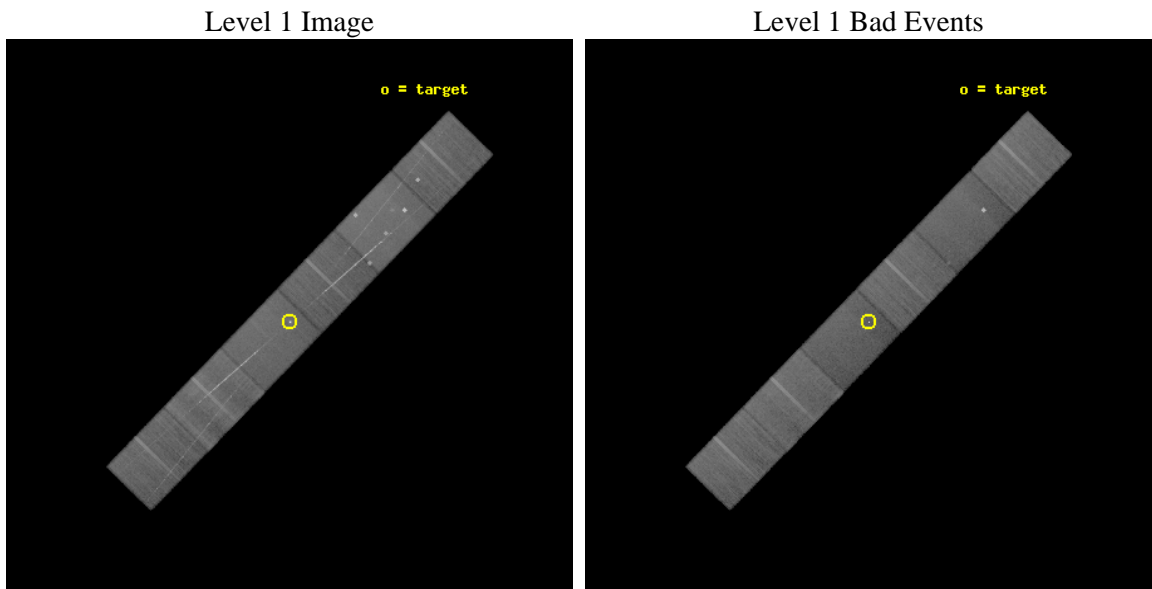
seq_num	290920	Sequence number
obs_id	11931	Observation id
title	AO-11 Calibration Observations of Capella	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	Capella	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	79.17625	Observer's specified target RA [deg]
dec_targ	45.997889	Observer's specified target Dec [deg]
ra_nom	79.174954679285	Nominal RA [deg]
dec_nom	45.99513506446	Nominal Dec [deg]
roll_nom	134.1536057988	Nominal Roll [deg]
revision	4	Processing version of data
ontime	30037.5	Sum of GTIs [s]
liveltime	29552.368321632	Livetime [s]
ontime4	30037.5	Sum of GTIs [s]
ontime5	30037.5	Sum of GTIs [s]
ontime6	30037.5	Sum of GTIs [s]
ontime7	30037.5	Sum of GTIs [s]
ontime8	30037.5	Sum of GTIs [s]
ontime9	30037.5	Sum of GTIs [s]
l2events	404637	Number of level 2 events



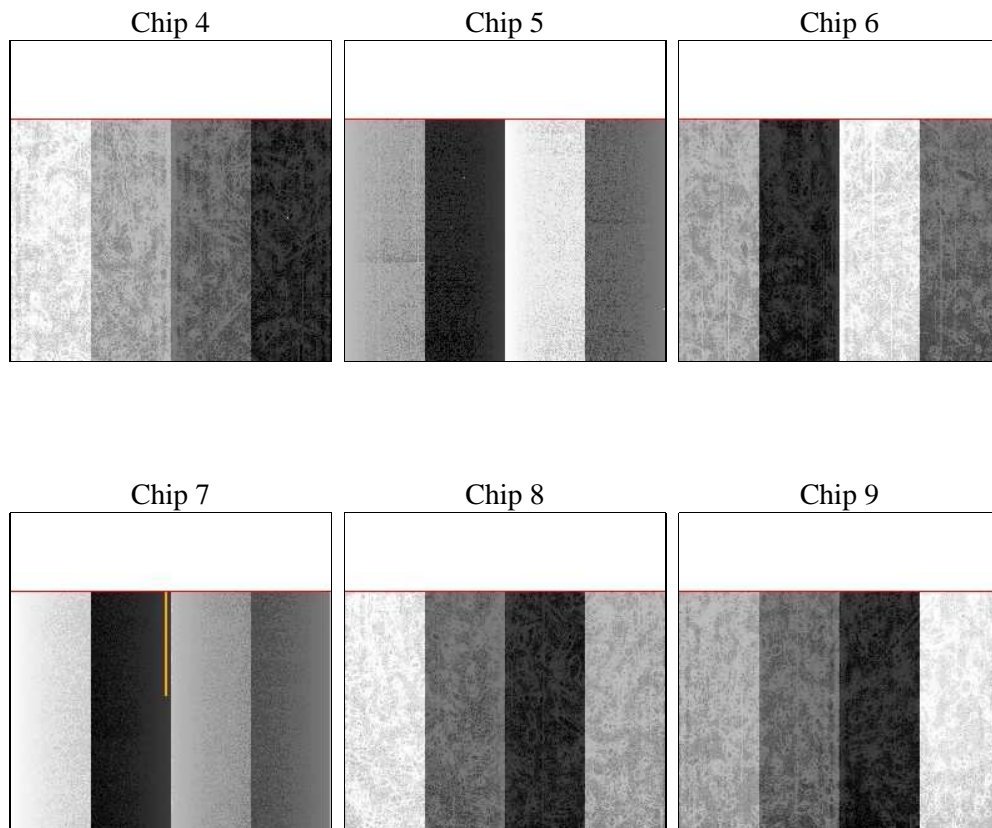
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	30037.5	Sum of GTIs [s]
caldsver	4.4.10	 	ontime4	30037.5	Sum of GTIs [s]
date	2012-06-17T13:46:37	Date and time of file creation	ontime5	30037.5	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	30037.5	Sum of GTIs [s]
			ontime7	30037.5	Sum of GTIs [s]
			ontime8	30037.5	Sum of GTIs [s]
			ontime9	30037.5	Sum of GTIs [s]
			l1events	1539780	Number of level 1 events

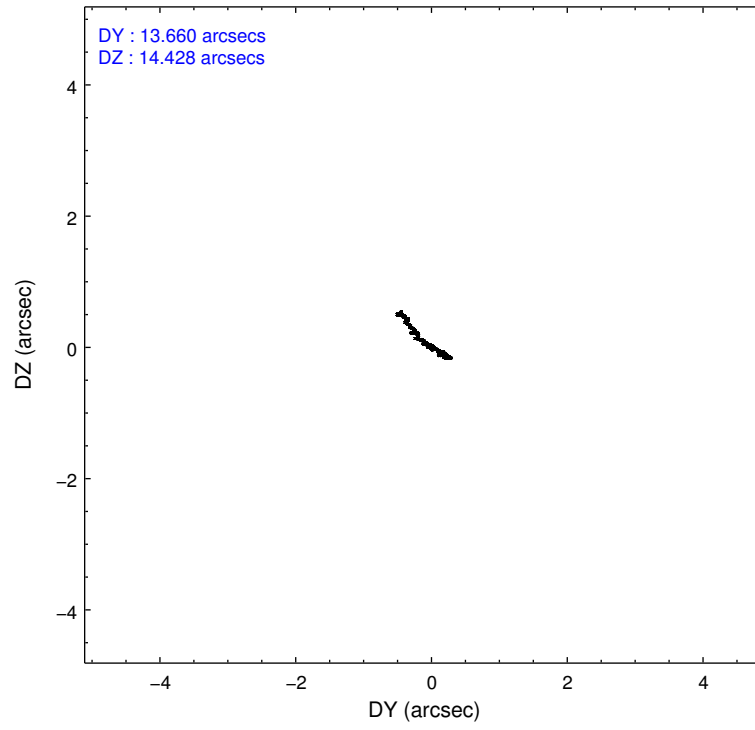
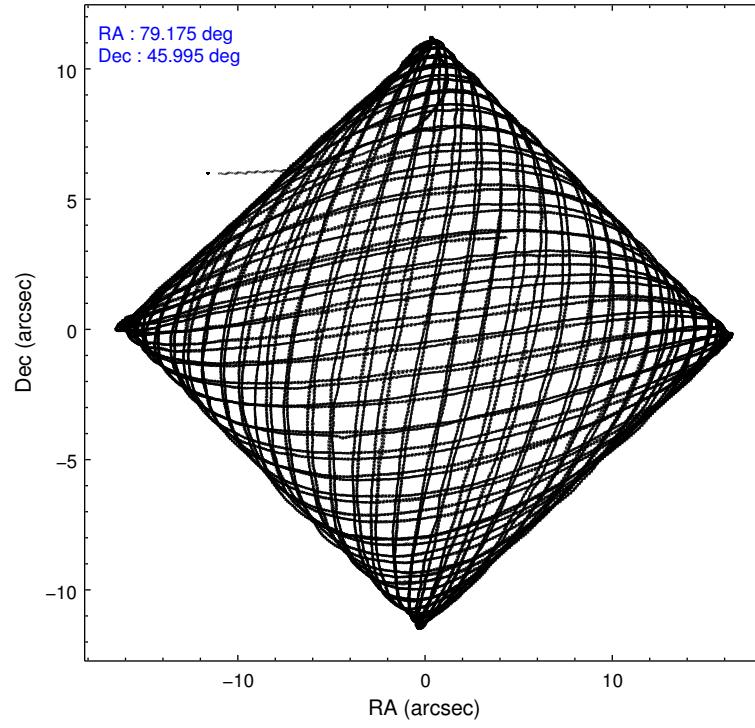
2.1.4 Events

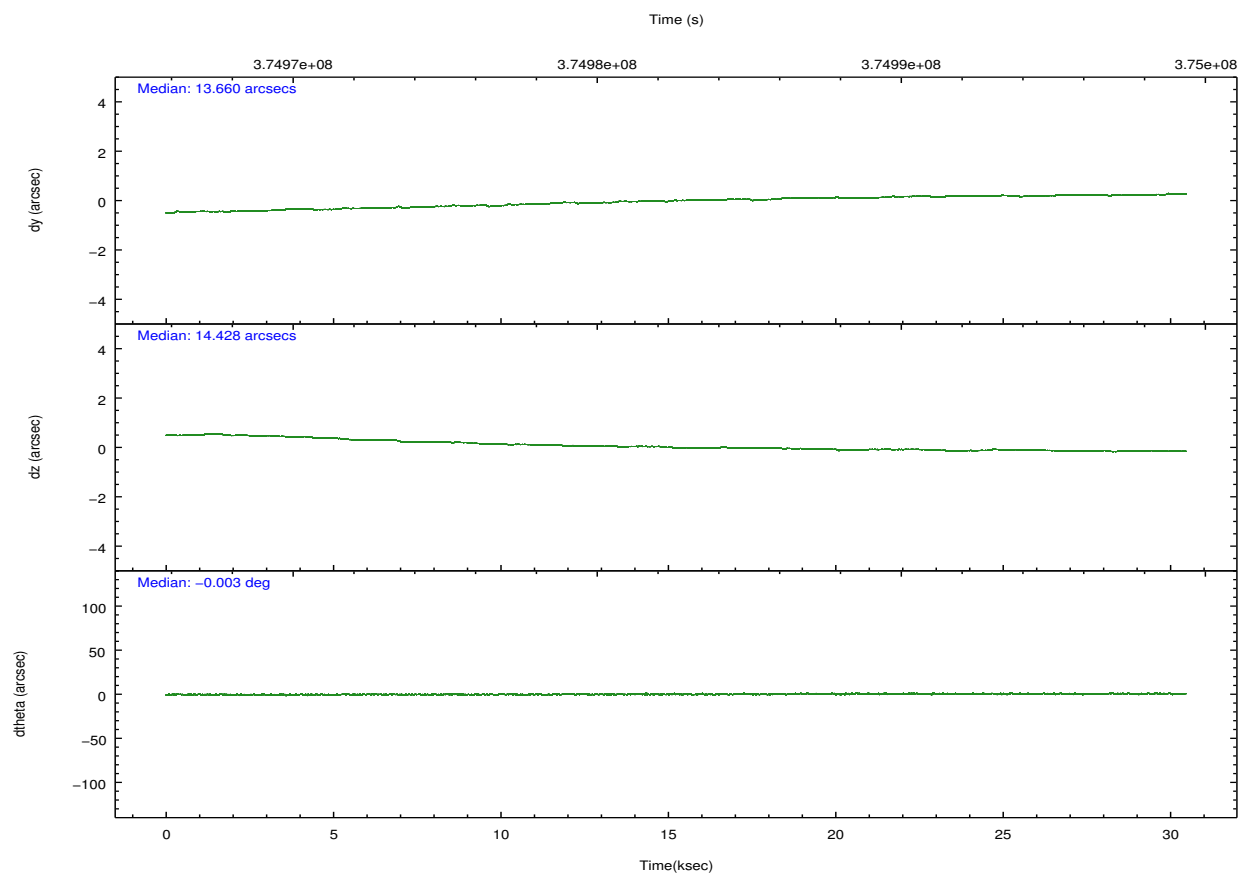
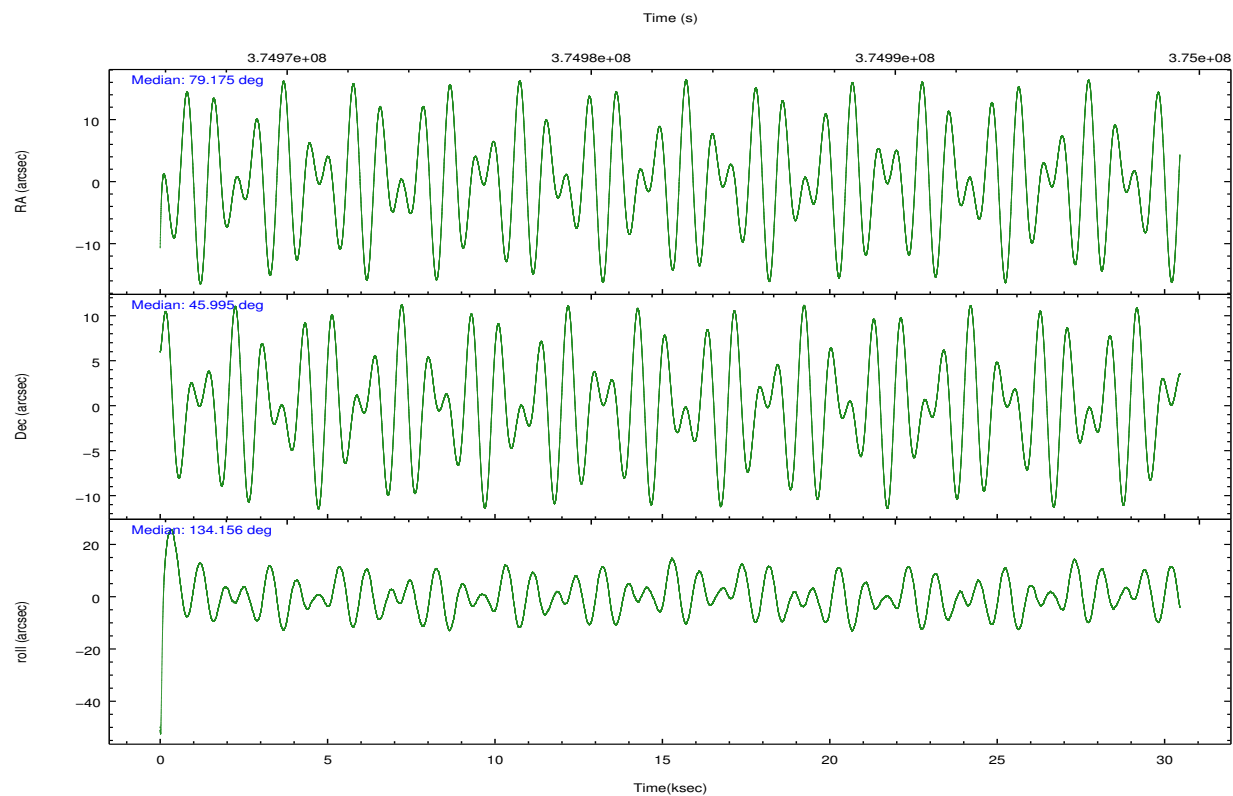
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	240225	326809	226477	258821	282043	205405	grade 0 events	17400	31916	24791	14417	37677	12598
rejected events	207685	151172	183957	132755	194879	177484		7%	9%	10%	5%	13%	6%
rejected %	86%	46%	81%	51%	69%	86%	grade 1 events	221	858	199	552	281	127
								0%	0%	0%	0%	0%	0%
							grade 2 events	6057	50701	6886	26641	17006	5312
								2%	15%	3%	10%	6%	2%
							grade 3 events	2557	8777	2948	11988	7683	2704
								1%	2%	1%	4%	2%	1%
							grade 4 events	2550	8429	3030	11898	7032	2611
								1%	2%	1%	4%	2%	1%
							grade 5 events	8097	24002	8164	25422	12120	9214
								3%	7%	3%	9%	4%	4%
							grade 6 events	3980	75844	4875	61141	17776	4697
								1%	23%	2%	23%	6%	2%
							grade 7 events	199363	126282	175584	106762	182468	168142
								82%	38%	77%	41%	64%	81%

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	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	79.212988	79.17495467928545	CCD I2 on	N	N
[deg] Pointing Dec	45.988004	45.99513506445981	CCD I3 on	N	N
[deg] Pointing Roll	133.969656	134.1536057988019	CCD S0 on	O1	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-187.132523	-187.1228876879999	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-3	-3.009634895007935	CCD S4 on	Y	Y
[s] Observation start time (MET)	374967817.184000	374966495.07366	CCD S5 on	Y	Y
Observation start date	2009-11-18T21:42:31	2009-11-18T21:21:35	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	374997817.184000	374998791.28779	On-chip summing requested	N	N
Observation end date	2009-11-19T06:02:31	2009-11-19T06:19:51	Subarray requested	CUSTOM	CUSTOM
Read mode	TIMED	TIMED	Subarray start row	1	1
			Subarray row count	774	774
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2.5

2.3 Aspect



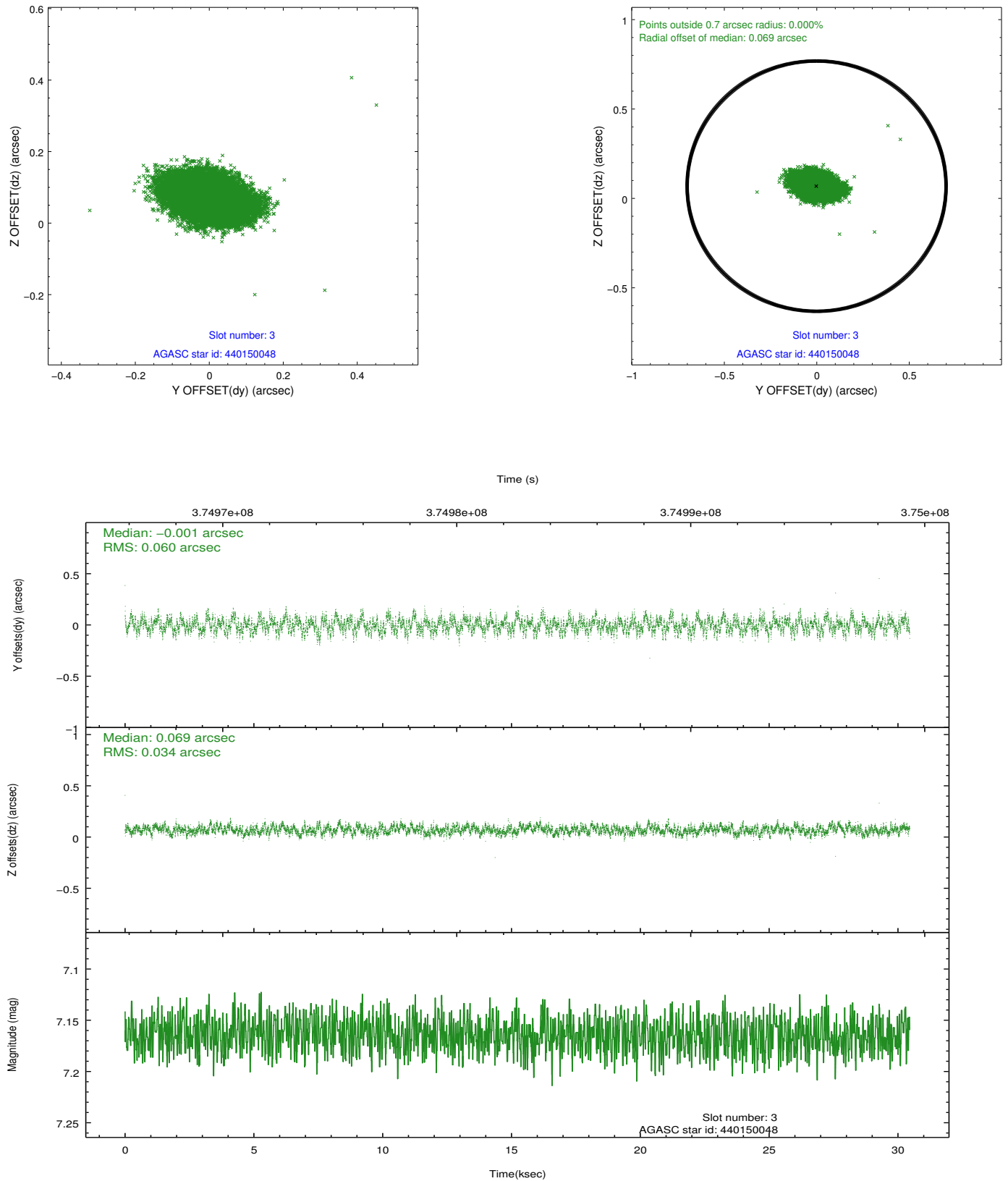


Slot Statistics

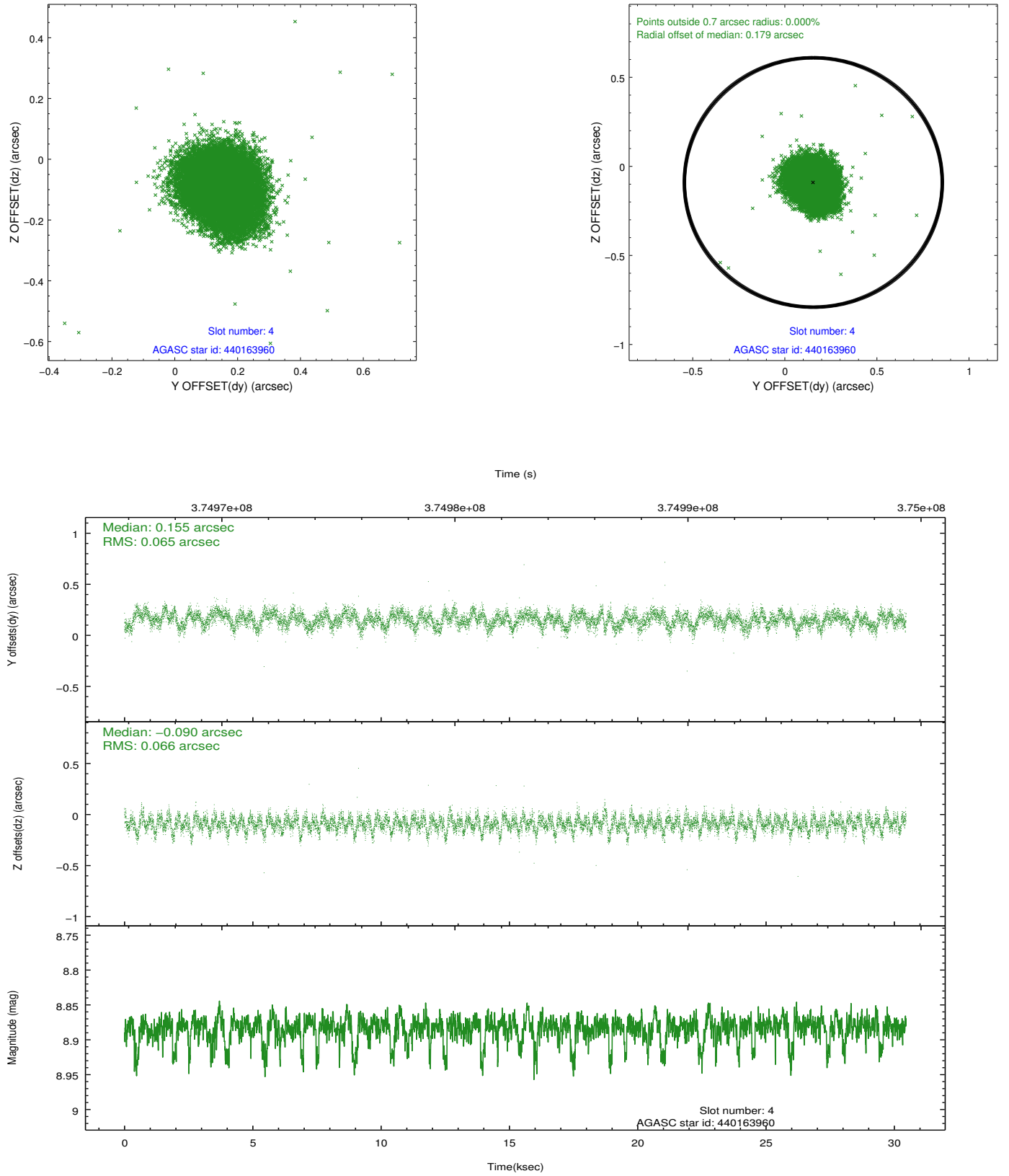
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.89	7429	-0.135	-0.093	0.007	0.012	0.000000	0.000000	-766.50	-1798.09
1	FID	ACIS-S-4	6.97	7429	0.140	0.073	0.007	0.011	0.000000	0.000000	2147.05	110.42
2	FID	ACIS-S-6	7.13	7429	-0.032	0.028	0.008	0.013	0.000000	0.000000	395.72	747.88
3	GUIDE	440150048	7.16	14859	-0.001	0.069	0.072	0.121	79.112838	46.416060	1282.04	-890.88
4	GUIDE	440163960	8.88	14851	0.155	-0.090	0.098	0.156	79.298370	45.827072	-565.04	247.87
5	GUIDE	440164960	8.28	14852	0.086	0.113	0.080	0.131	79.132526	46.140947	535.57	-237.24
6	GUIDE	438441368	9.99	14701	-0.326	0.198	0.127	0.206	78.646413	46.420494	2100.33	-72.13
7	GUIDE	438450792	8.81	14846	0.088	-0.289	0.065	0.107	78.654240	46.382628	1988.71	9.55

2.4 Star Slots

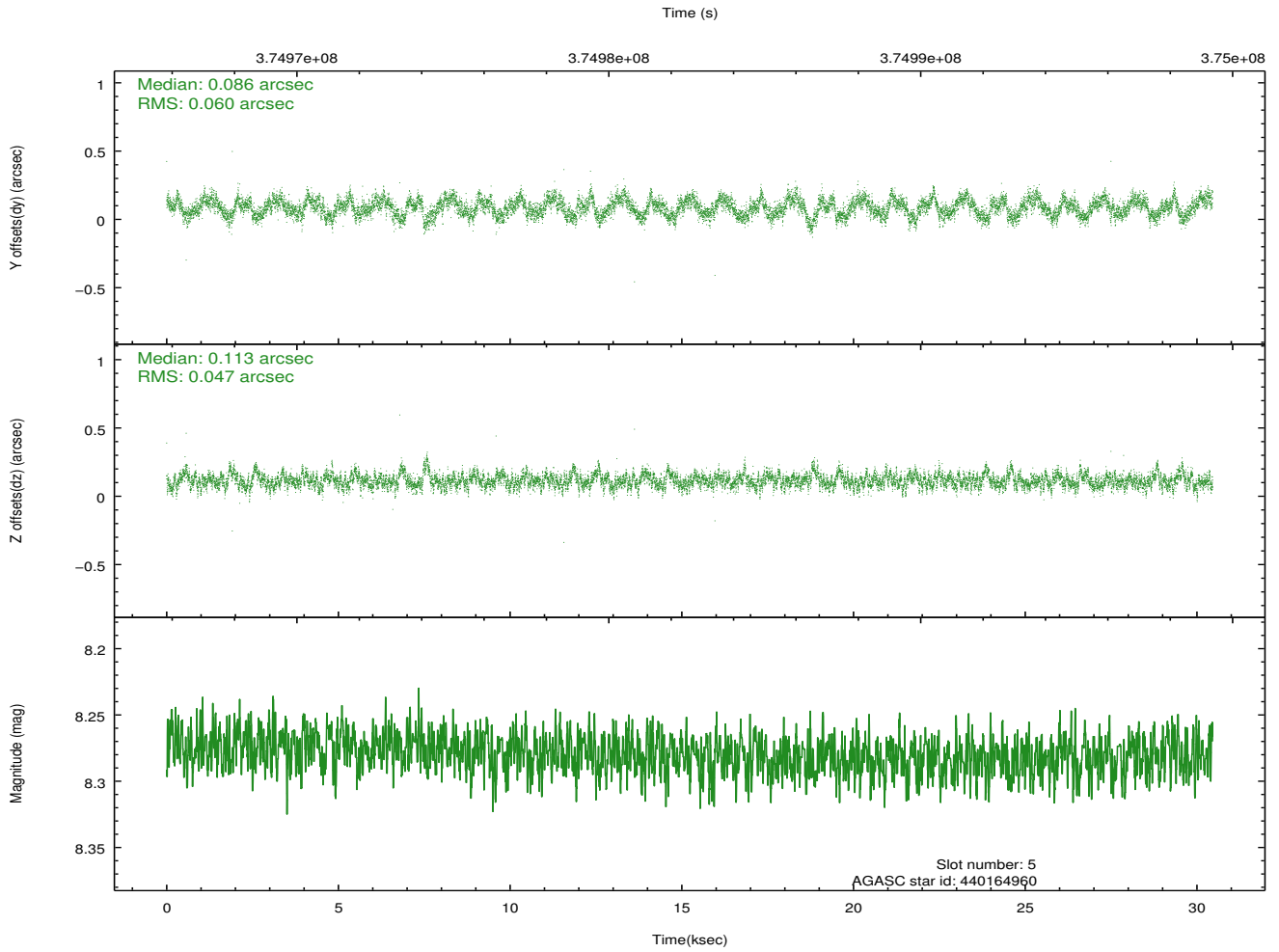
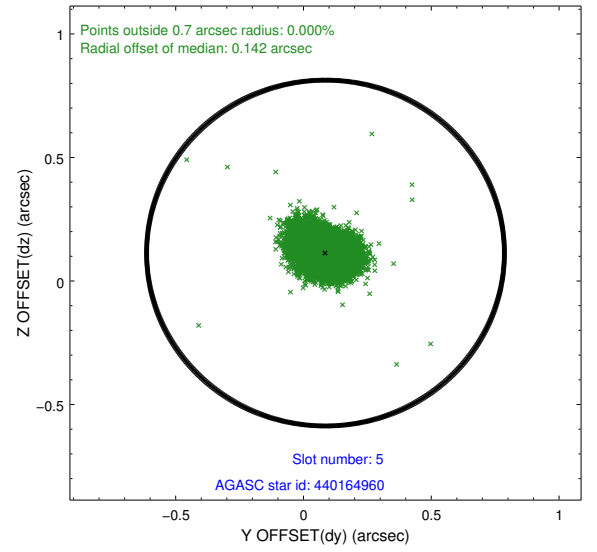
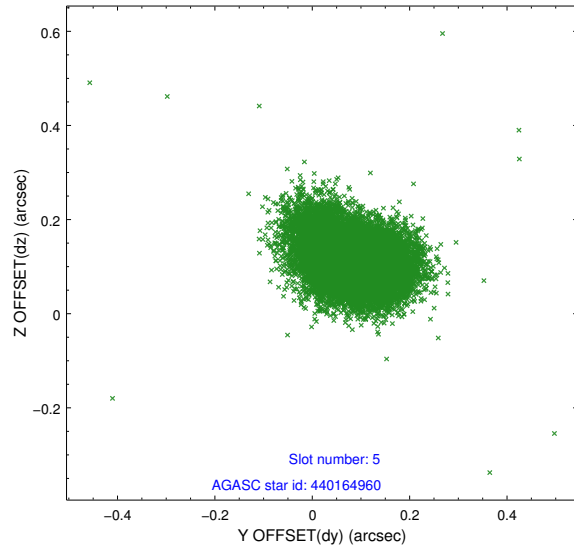
2.4.1 Slot 3



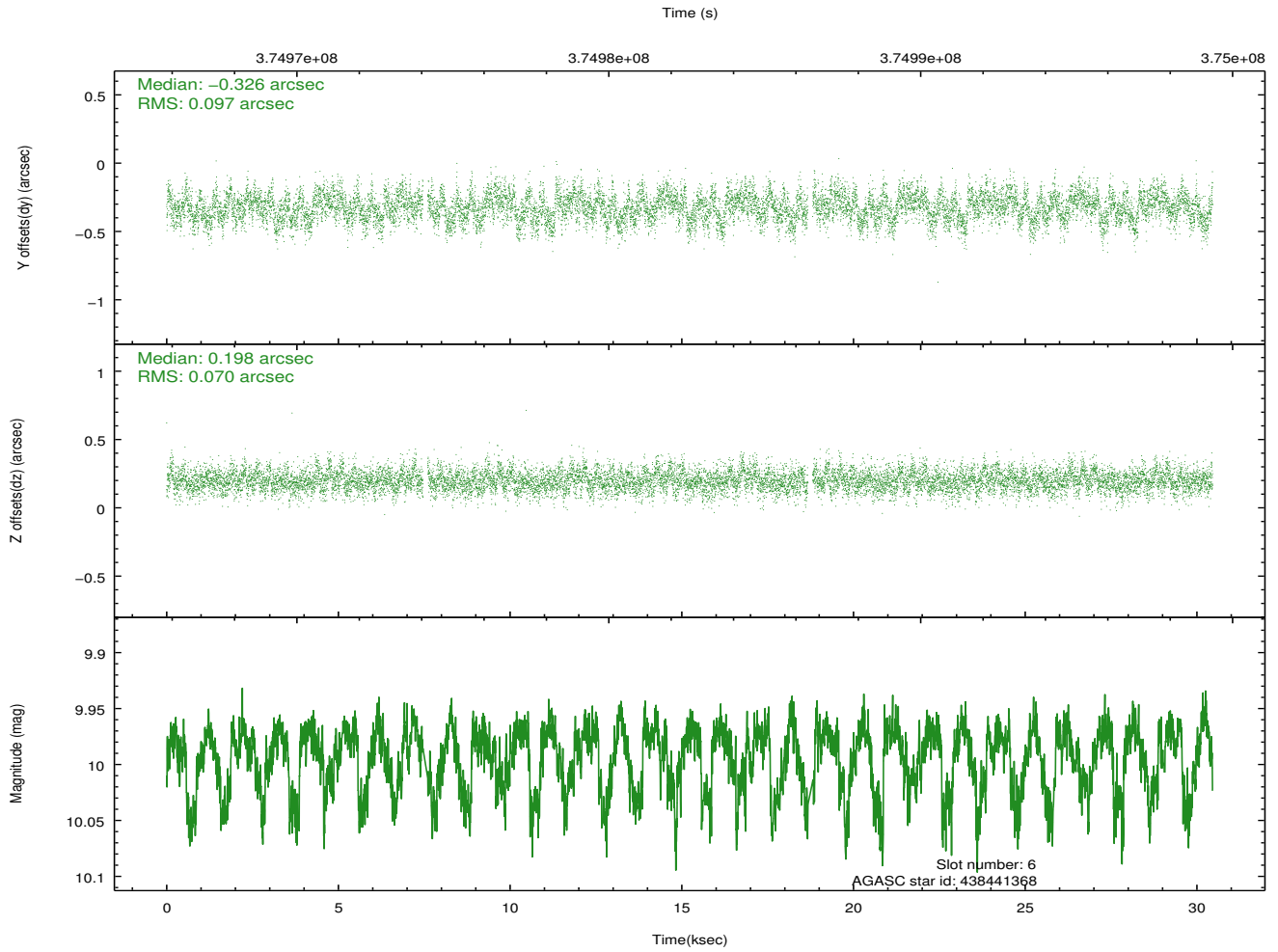
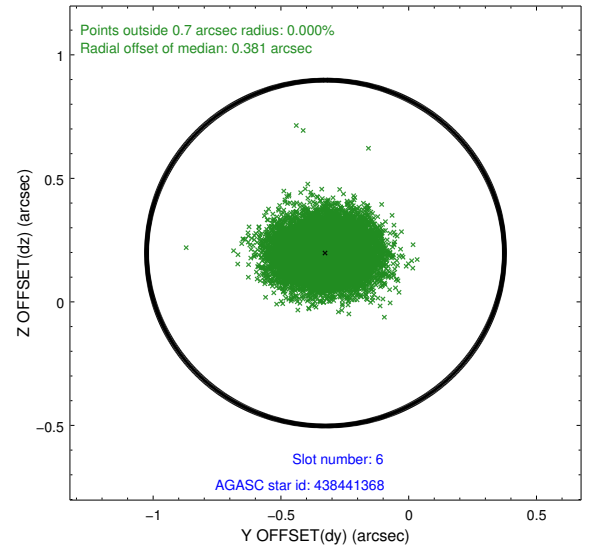
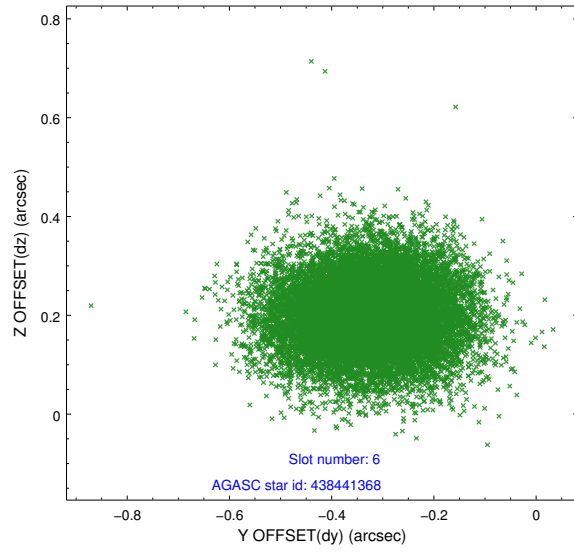
2.4.2 Slot 4



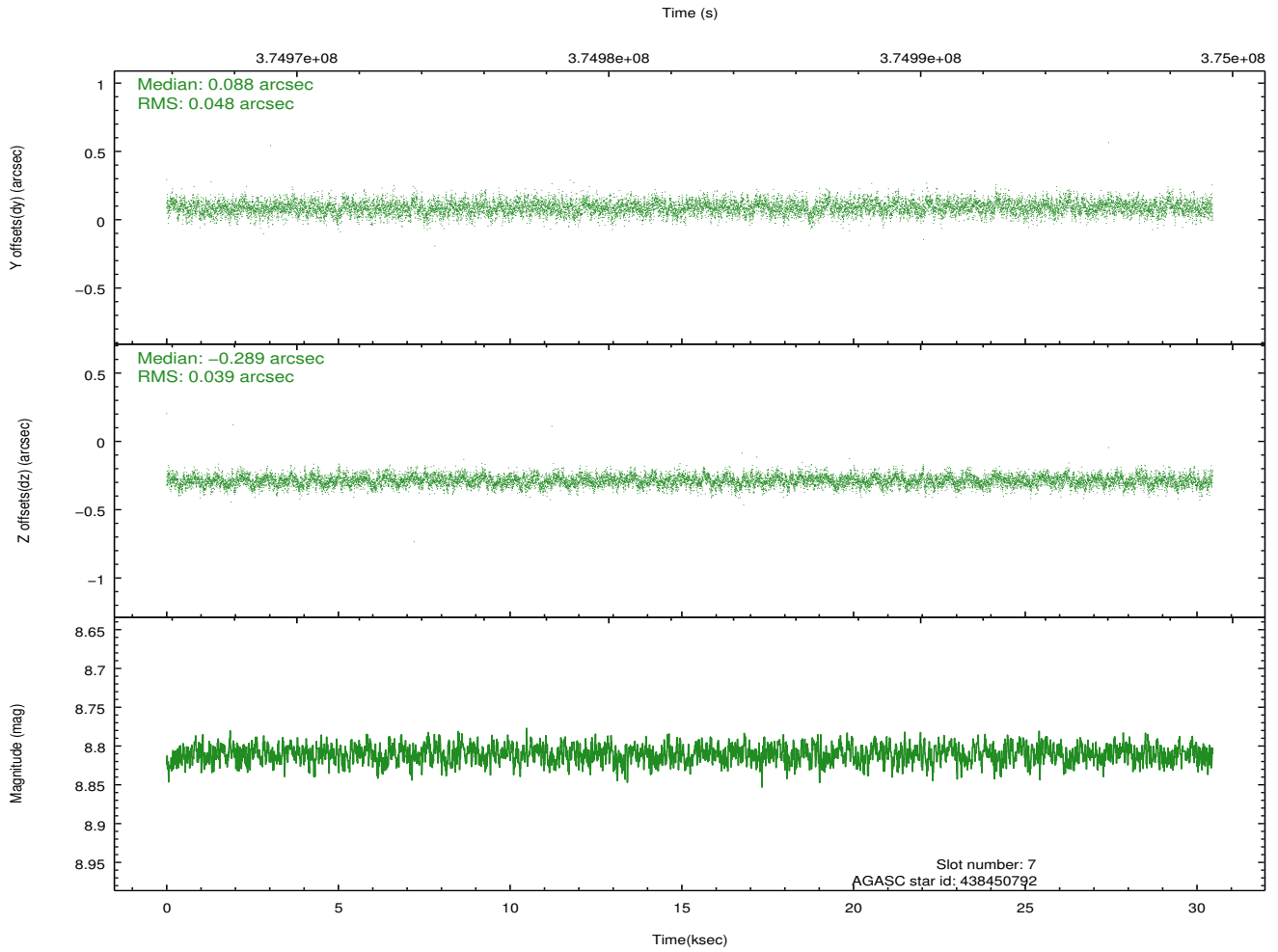
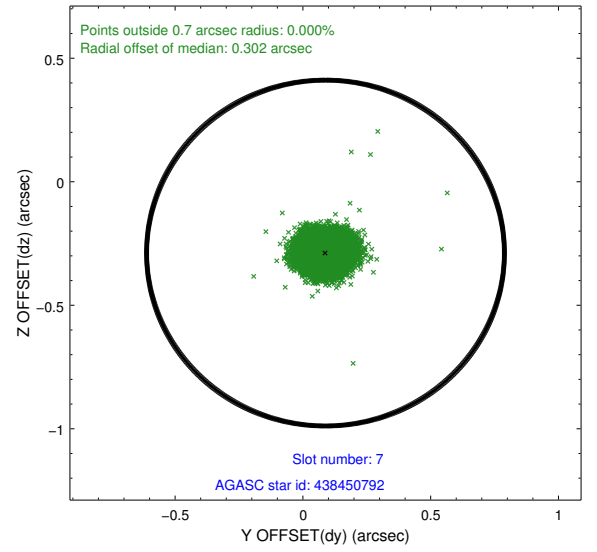
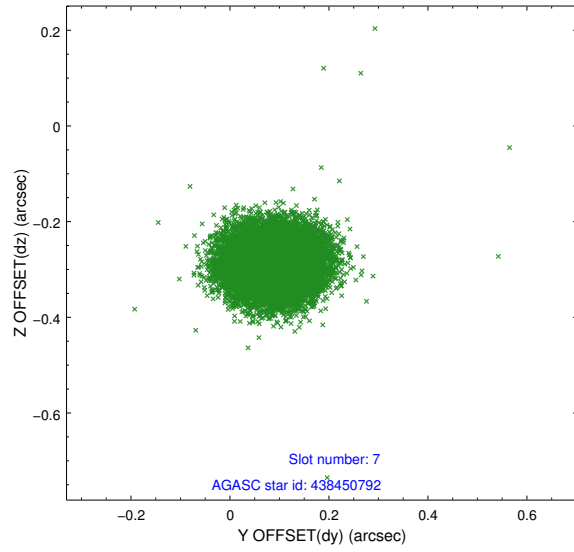
2.4.3 Slot 5



2.4.4 Slot 6

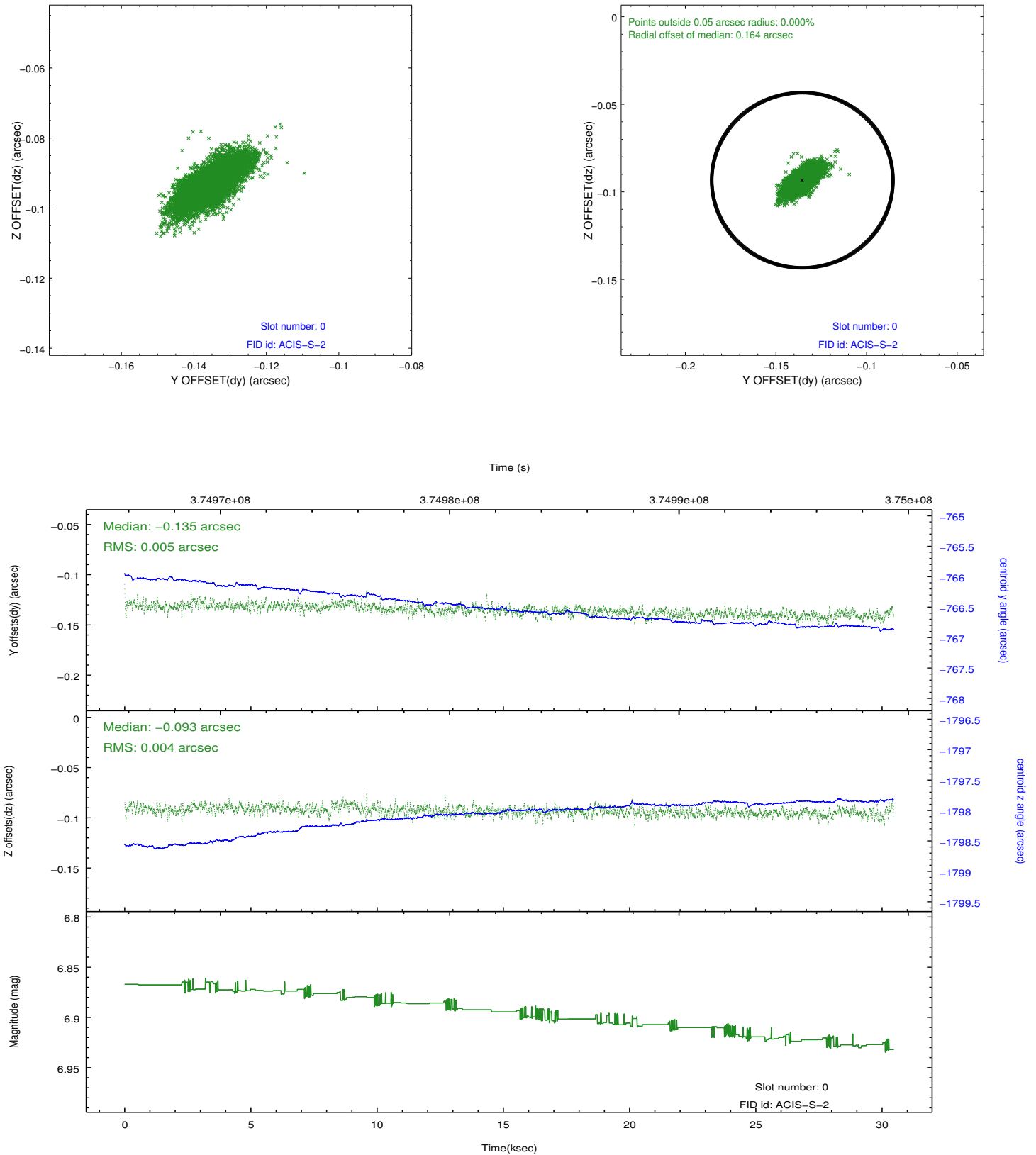


2.4.5 Slot 7

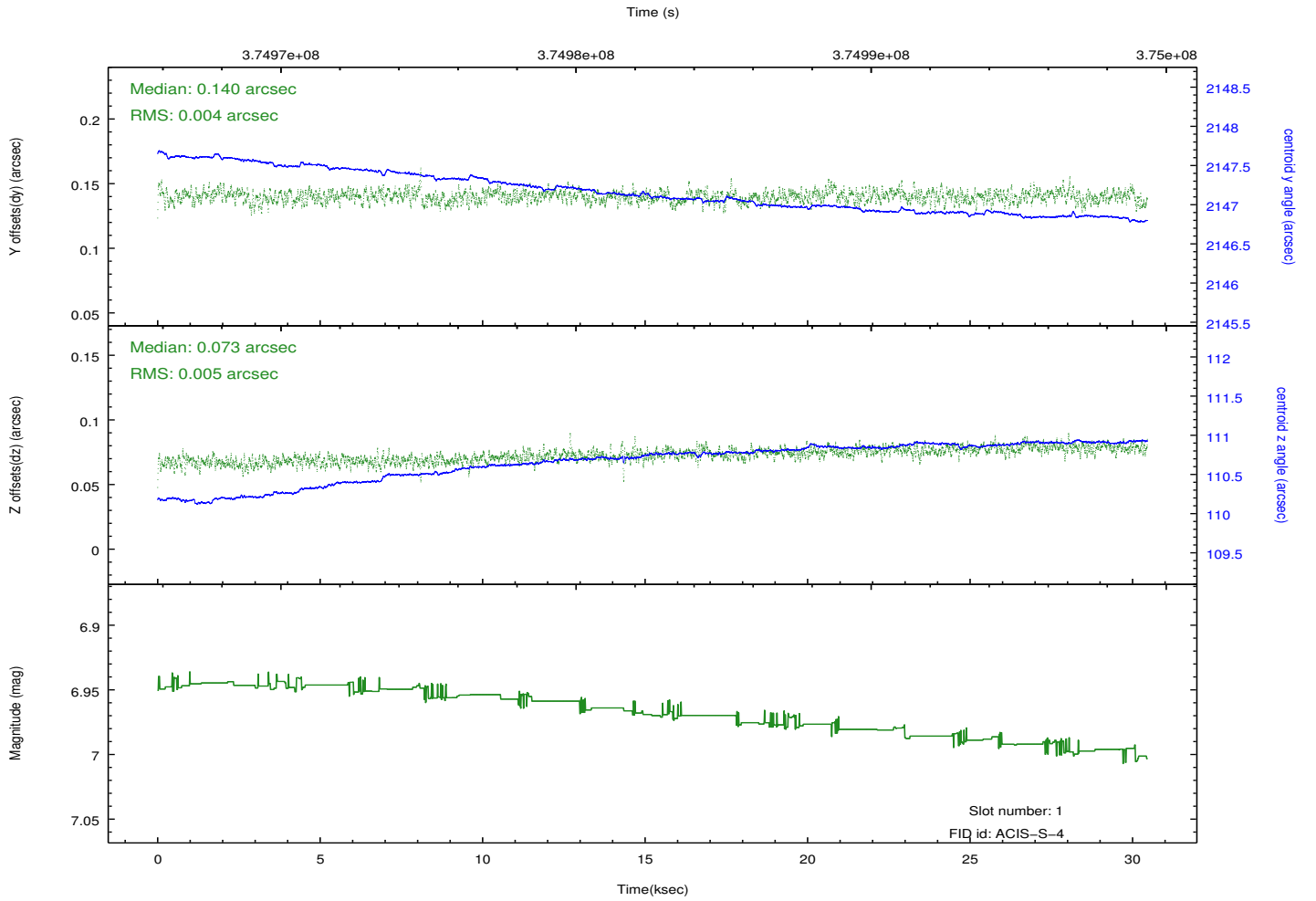
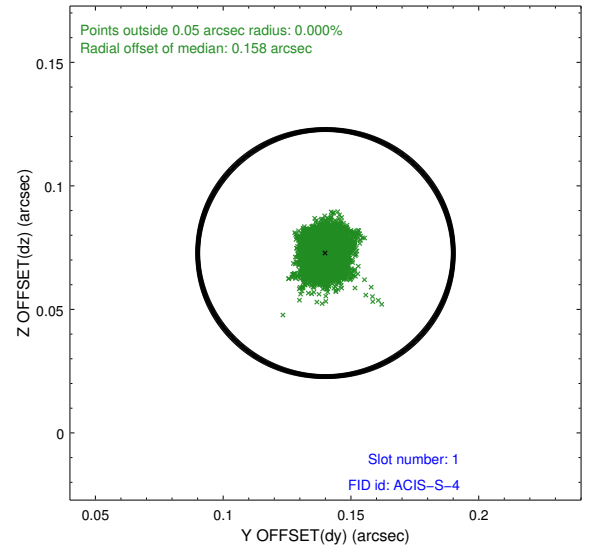
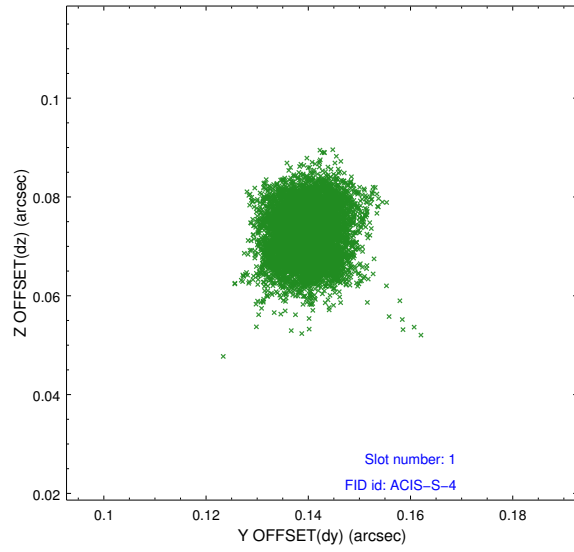


2.5 FID Slots

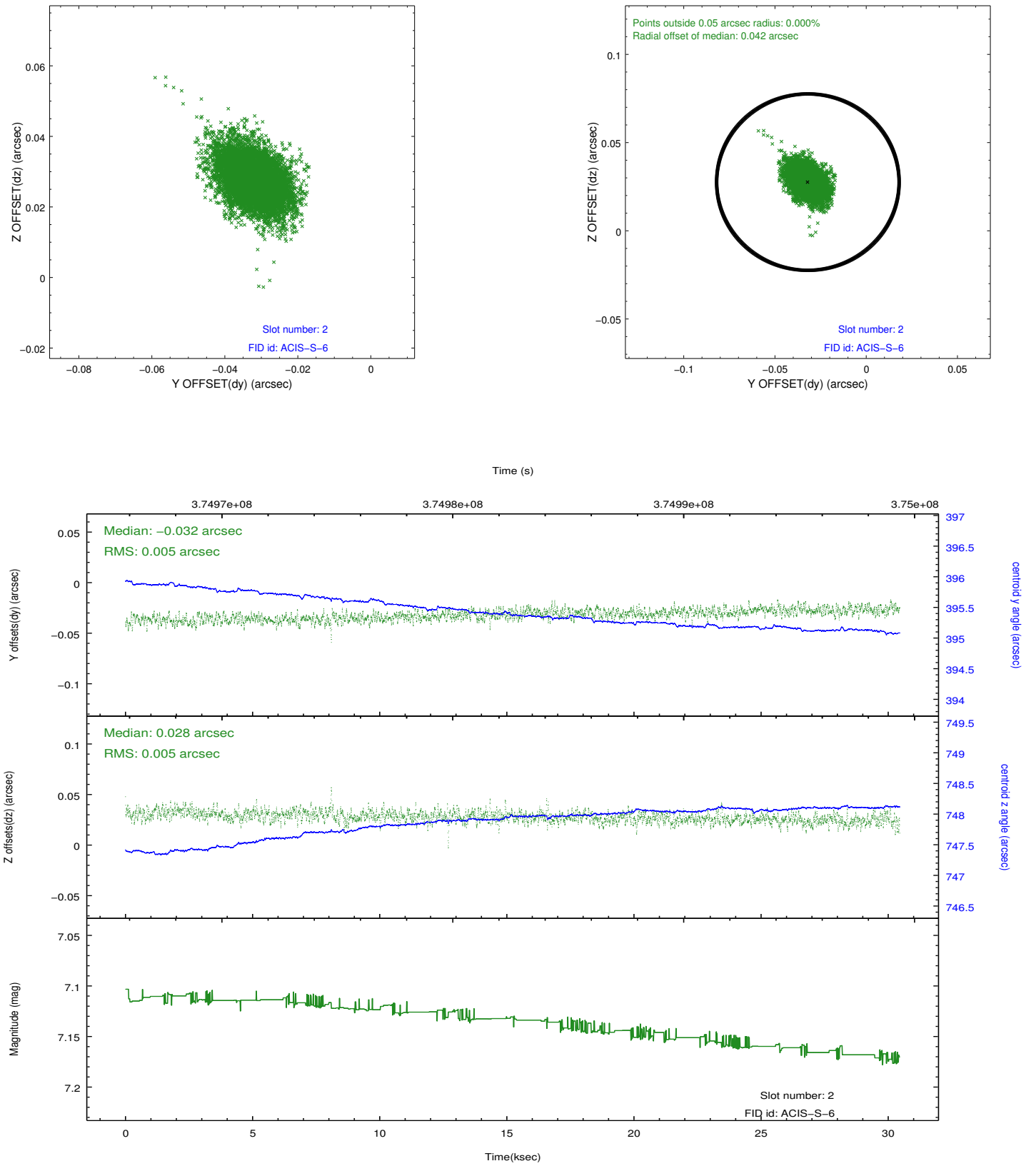
2.5.1 Slot 0



2.5.2 Slot 1

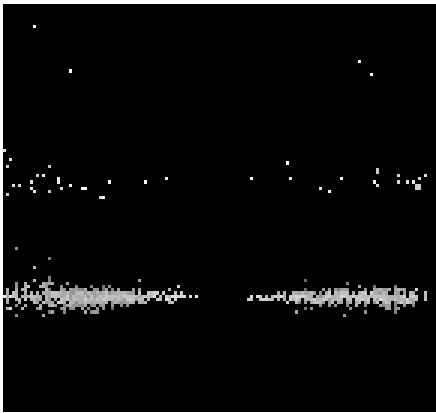


2.5.3 Slot 2

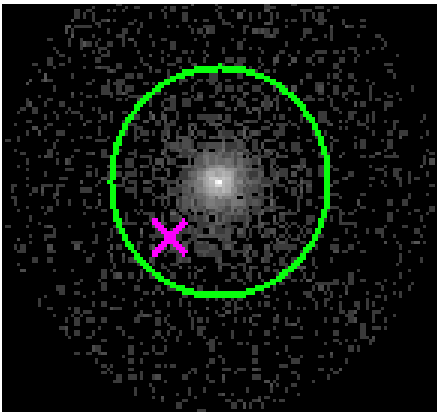


3 Gratings

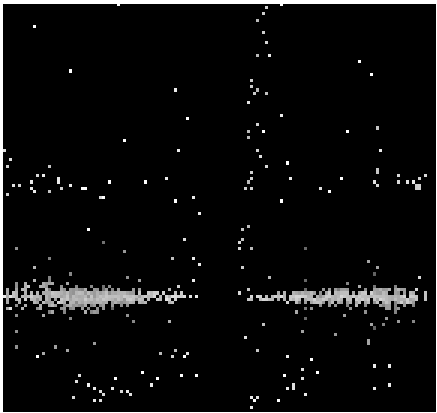
3.1 HEG Arm



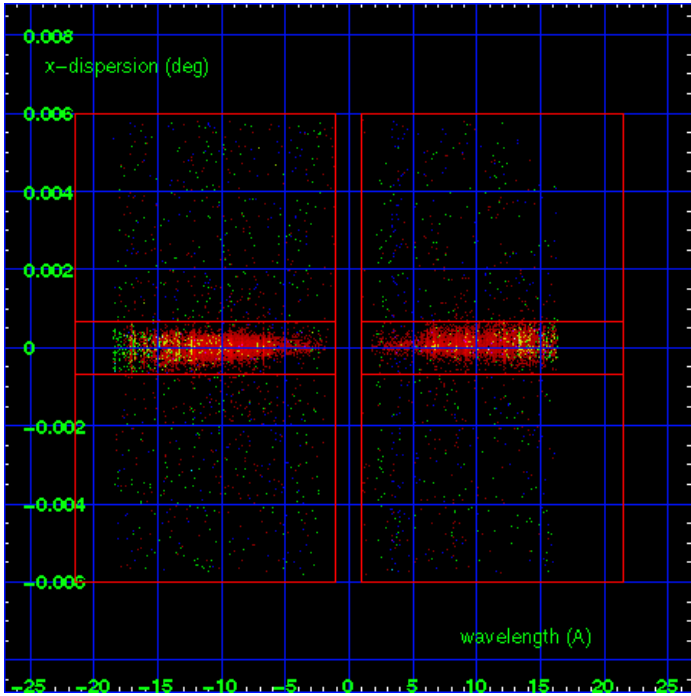
HEG Order Sort 123



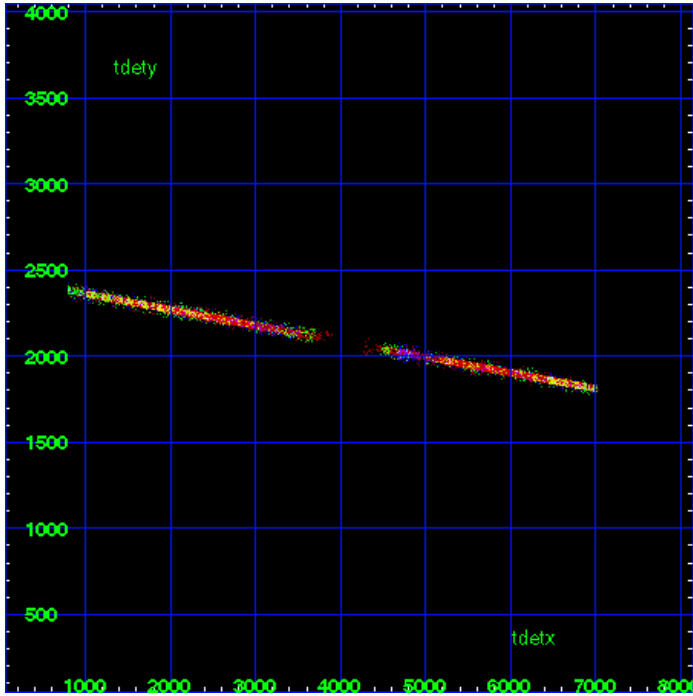
HEG Zero Order



HEG Order Sort ALL

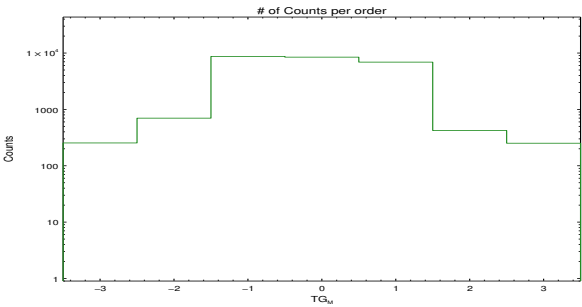


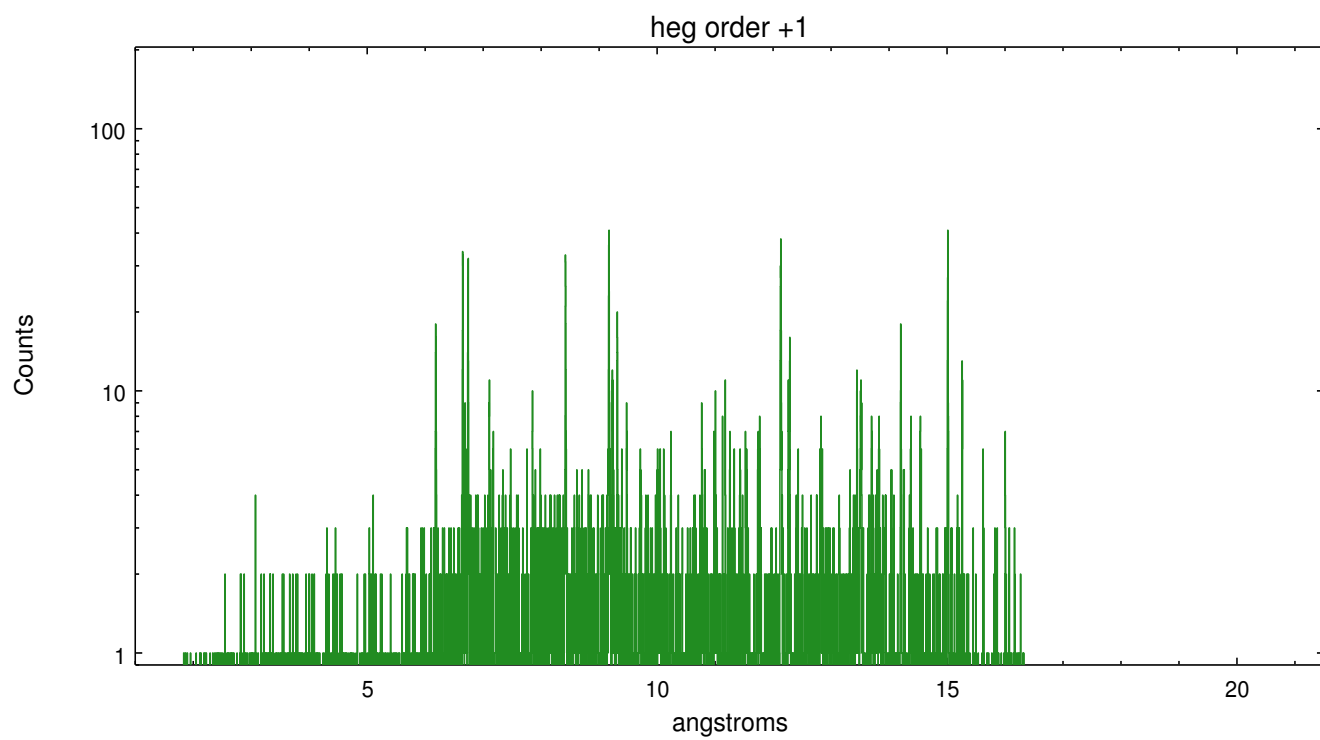
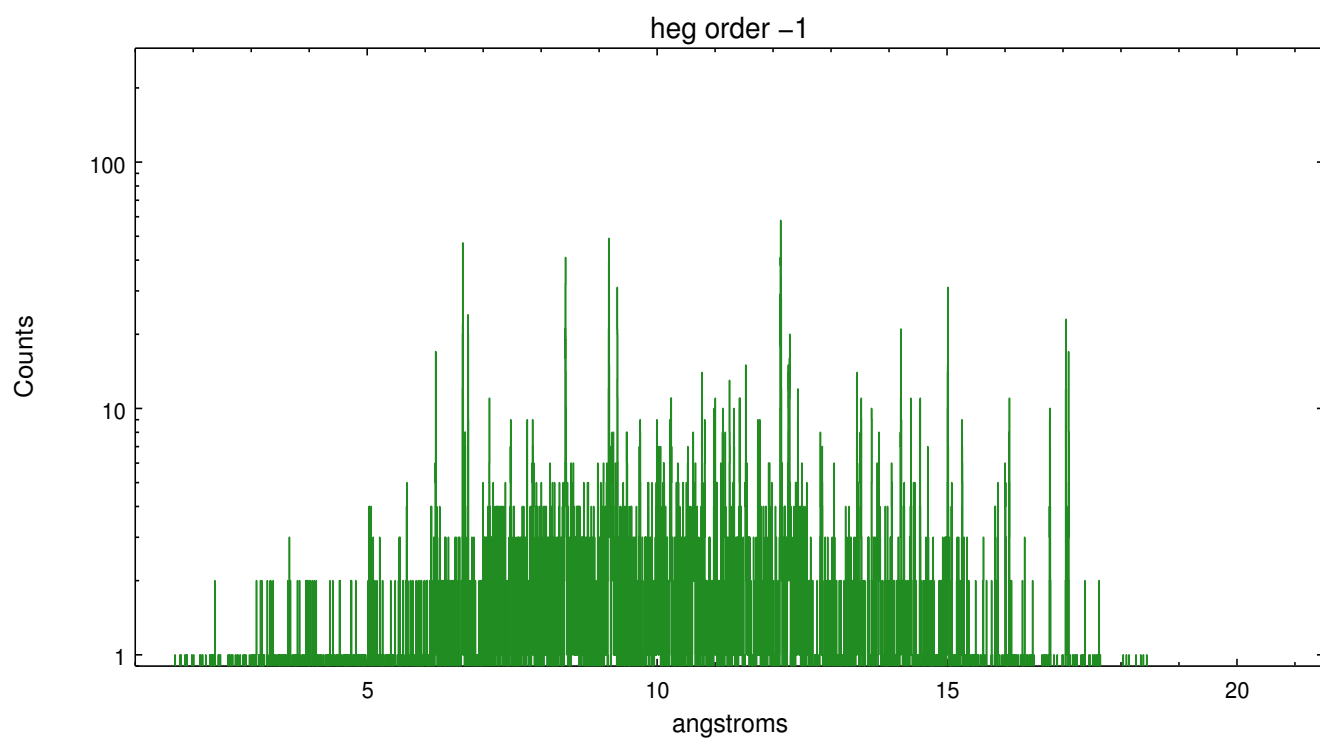
Spot Image HEG



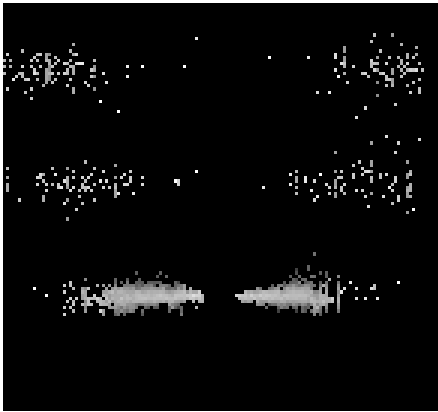
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	254	699	8707	8455	6899	422	251

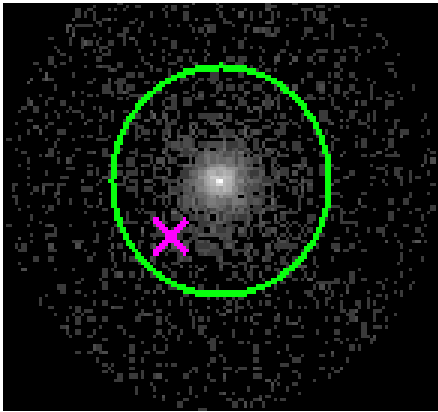




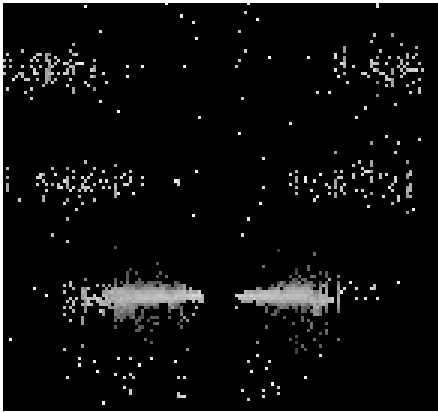
3.2 MEG Arm



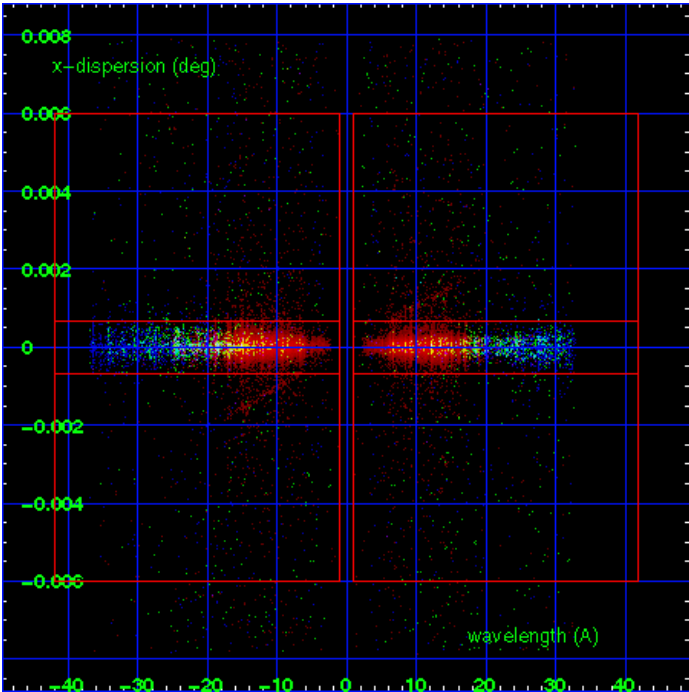
MEG Order Sort 123



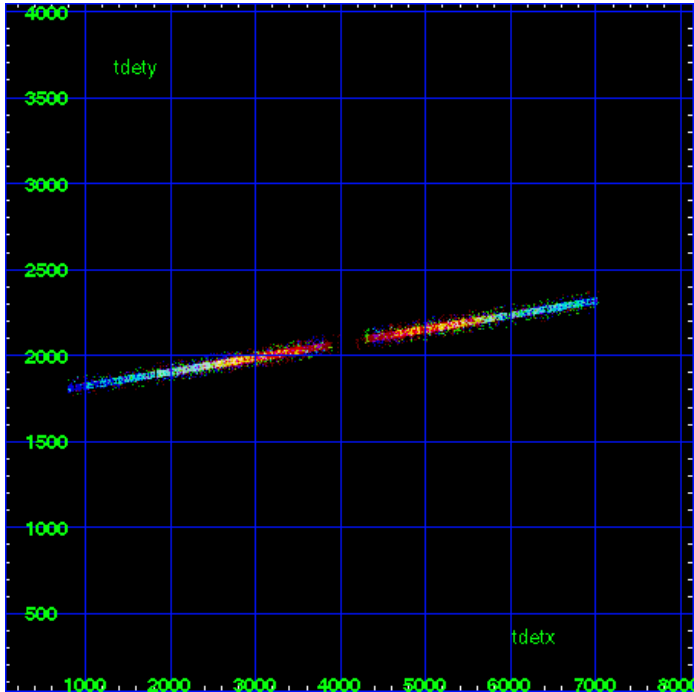
MEG Zero Order



MEG Order Sort ALL

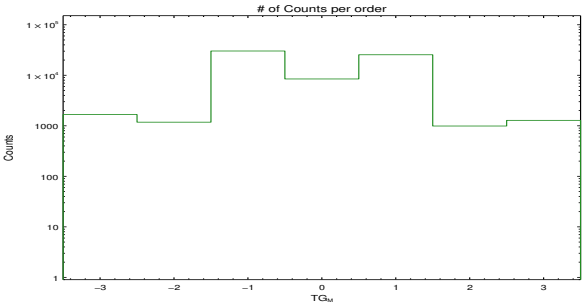


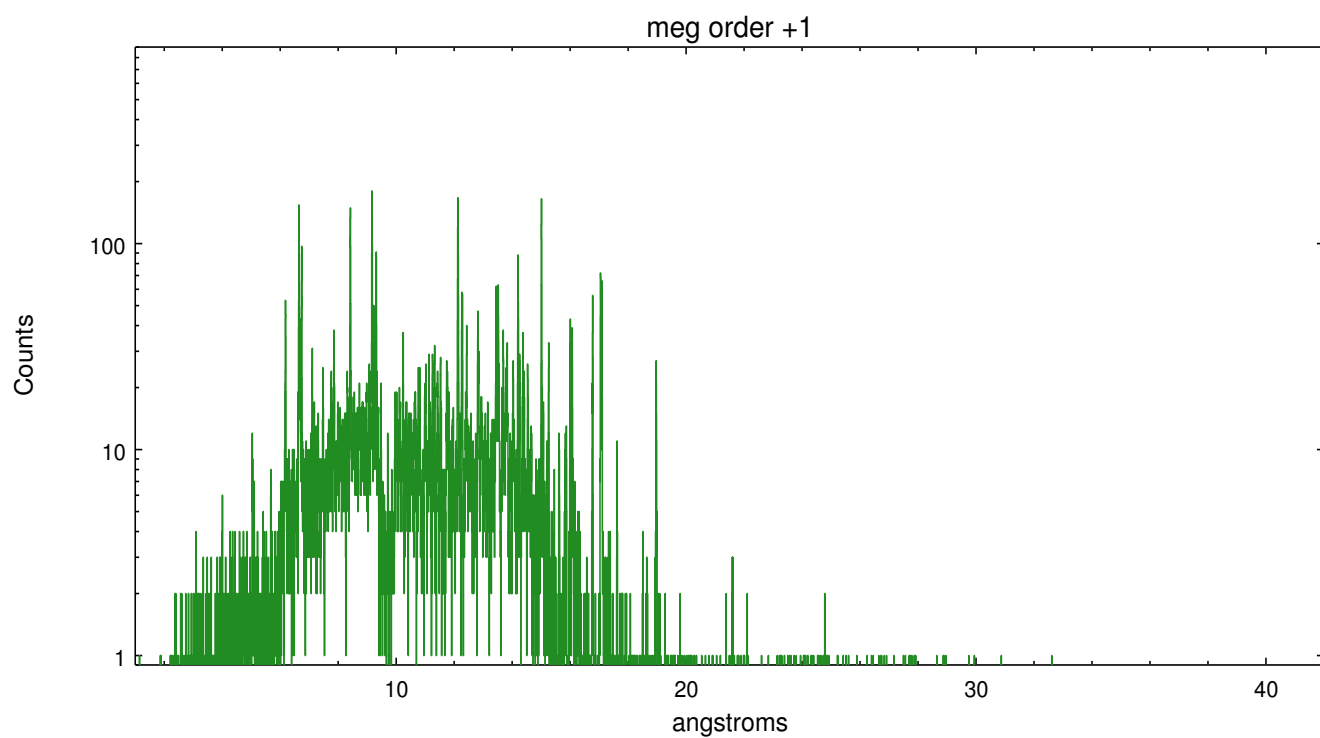
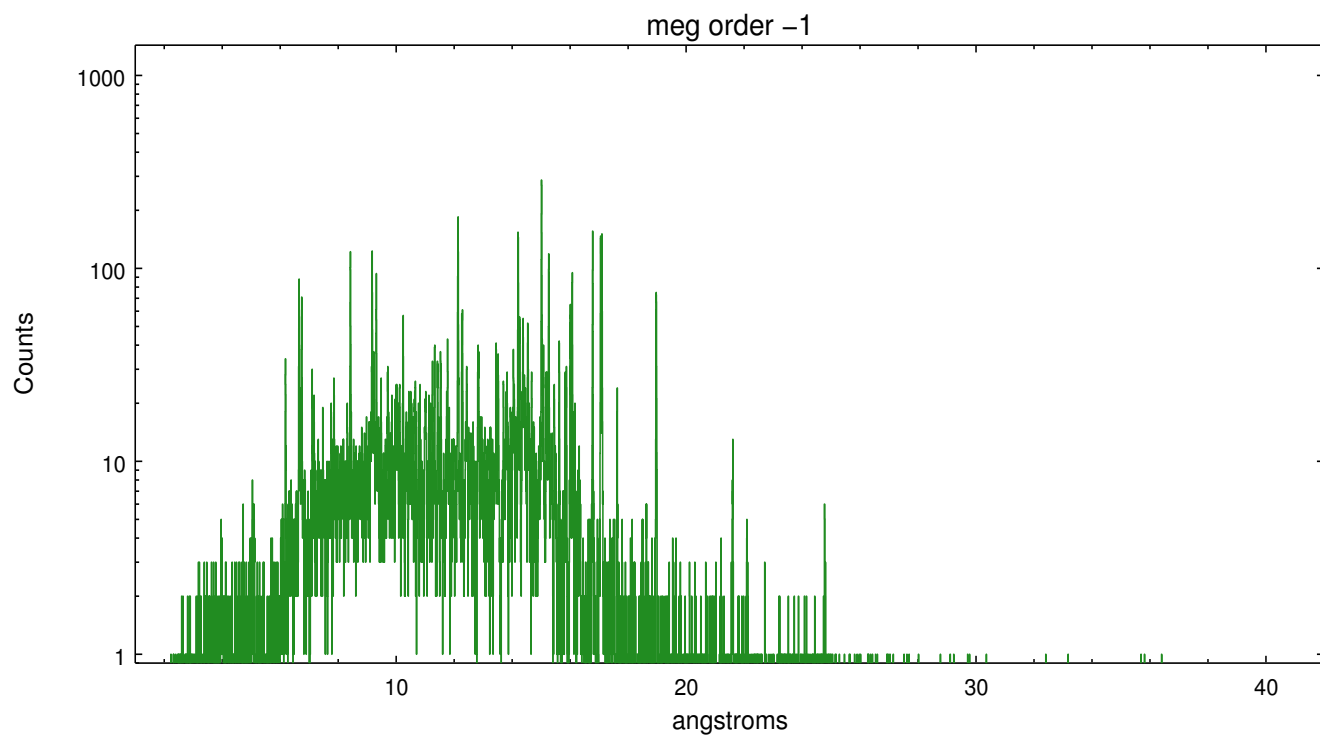
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1669	1179	30233	8455	25484	990	1281





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.06.22
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.0375

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=4108.76, y=4109.0) 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 (currently in ISIS). The tool calculates the point of intersection of the readout streak and the meg arm (preferred position), or the readout streak and the heg 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.

=====

A spatial region of the original bias map for CCD = 8 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 map for CCD = 8 has 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:
(79.42399,45.82315),(79.42875,45.81971),(79.45327,45.83621),(79.45091,45.84126)