

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 2464 - L2 Version 5
Chandra X-Ray Center

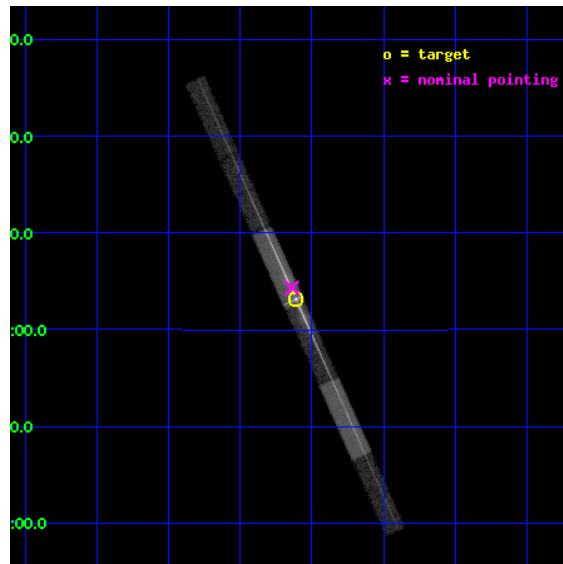
L2 Processing Date : Sep 18 2012

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1 Front

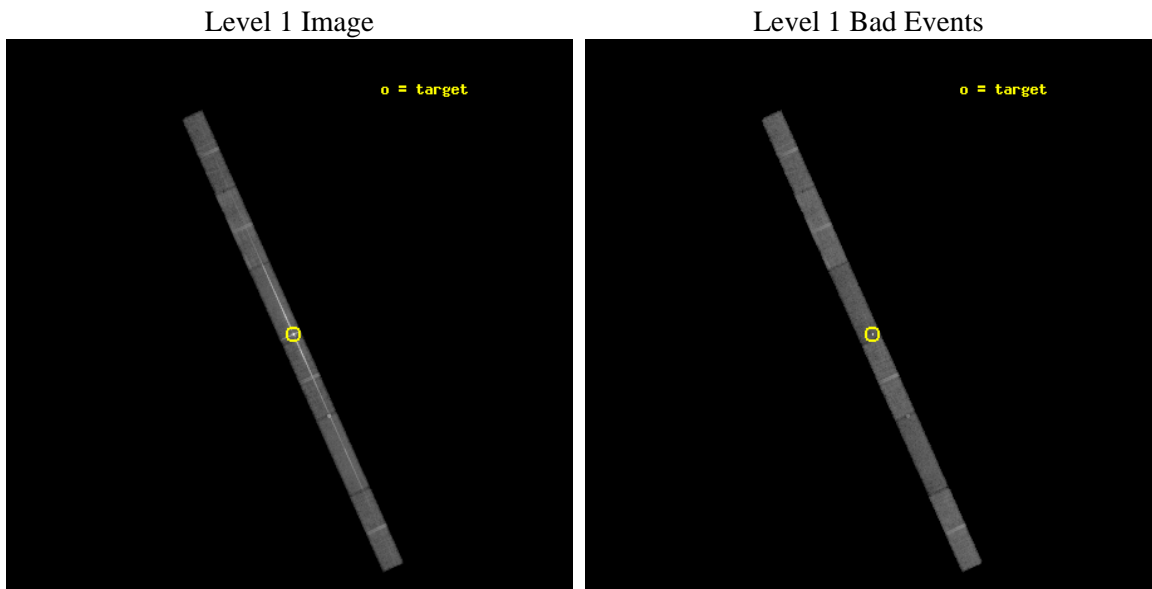
seq_num	790058	Sequence number
obs_id	2464	Observation id
title	AO3 CALIBRATION OBSERVATIONS OF 3C273	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	3C273	Source name
dtycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	187.277917	Observer's specified target RA [deg]
dec_targ	2.052389	Observer's specified target Dec [deg]
ra_nom	187.28498936975	Nominal RA [deg]
dec_nom	2.0721077701498	Nominal Dec [deg]
roll_nom	245.74303287262	Nominal Roll [deg]
revision	5	Processing version of data
ontime	30560.046903938	Sum of GTIs [s]
lvertime	29460.887956892	Livetime [s]
ontime4	30560.087943941	Sum of GTIs [s]
ontime5	30560.005863935	Sum of GTIs [s]
ontime6	30559.964823946	Sum of GTIs [s]
ontime7	30560.046903938	Sum of GTIs [s]
ontime8	30559.923783943	Sum of GTIs [s]
ontime9	30559.88274394	Sum of GTIs [s]
l2events	240565	Number of level 2 events



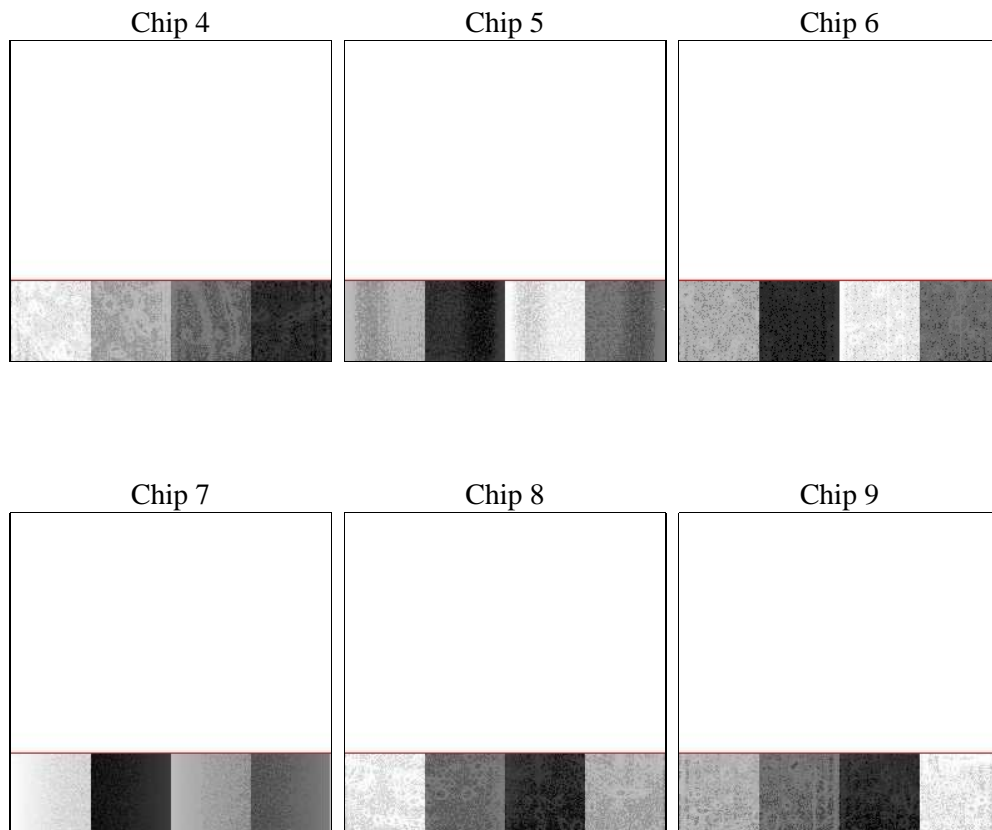
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	30560.046903938	Sum of GTIs [s]
caldbver	4.5.1.1	 	ontime4	30560.087943941	Sum of GTIs [s]
date	2012-09-17T22:22:33	Date and time of file creation	ontime5	30560.005863935	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	30559.964823946	Sum of GTIs [s]
			ontime7	30560.046903938	Sum of GTIs [s]
			ontime8	30559.923783943	Sum of GTIs [s]
			ontime9	30559.88274394	Sum of GTIs [s]
			l1events	574912	Number of level 1 events

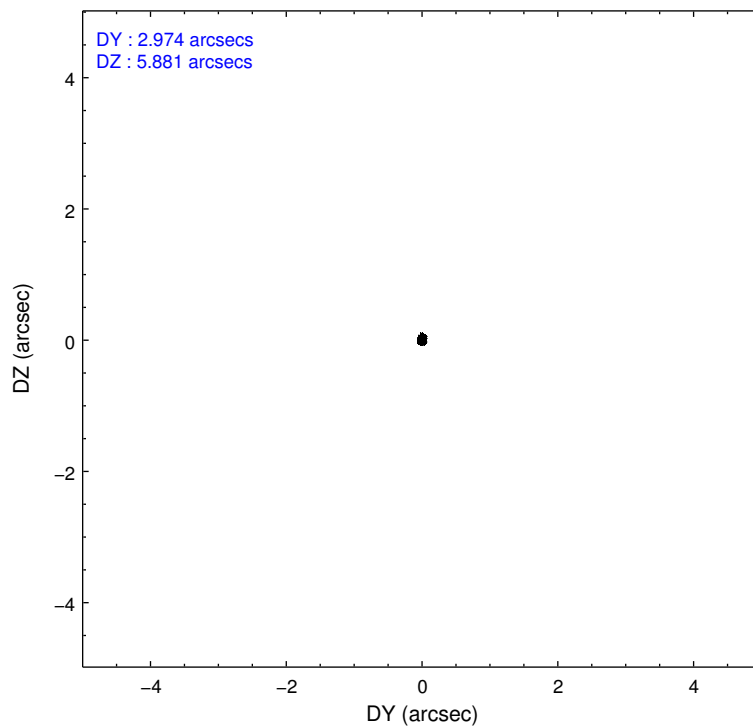
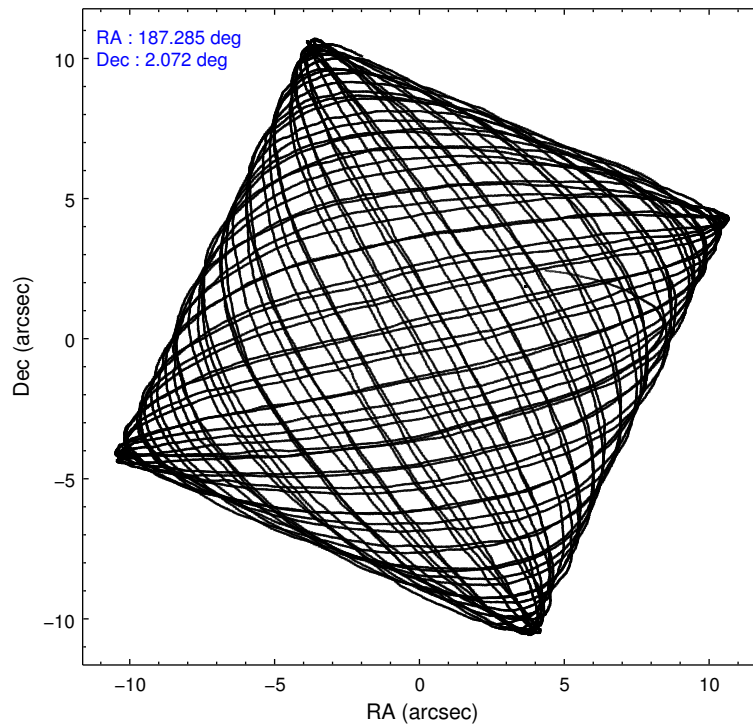
2.1.4 Events

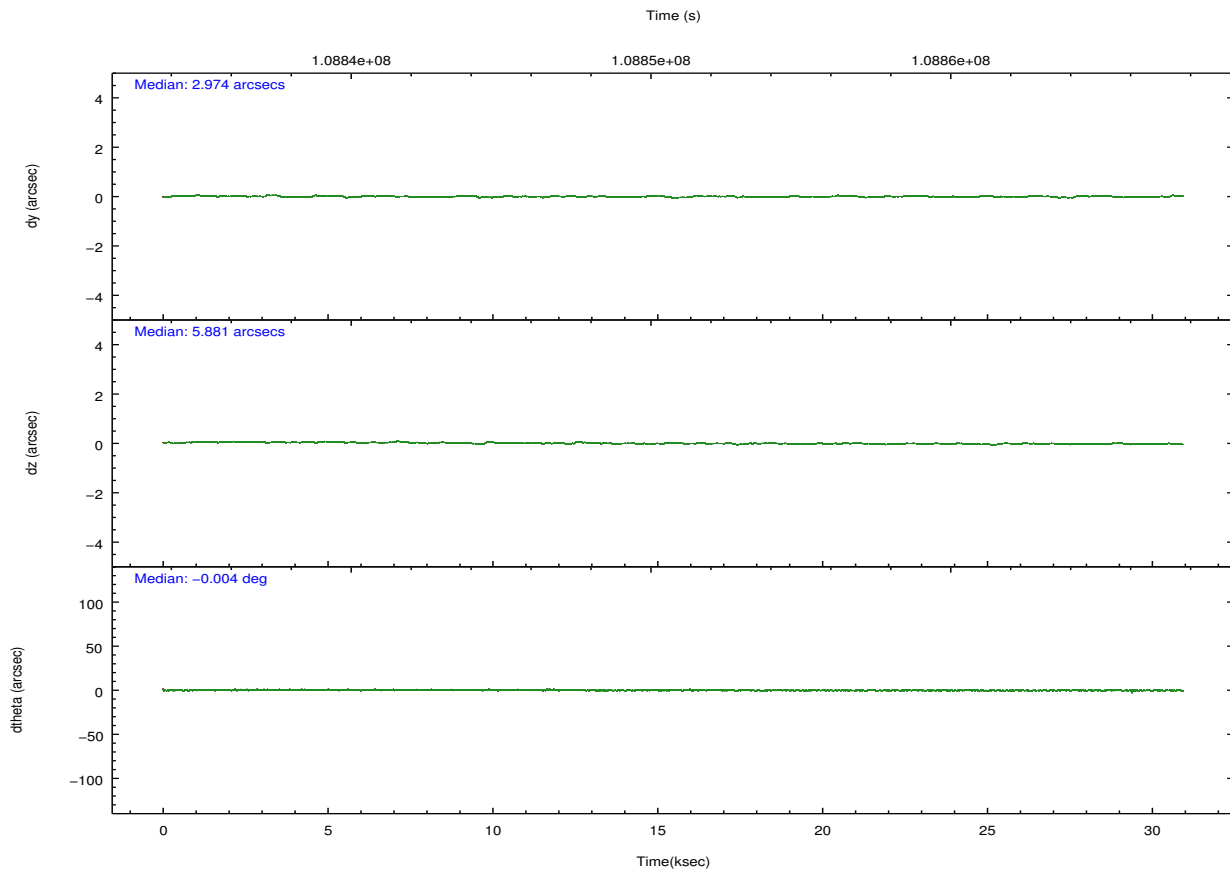
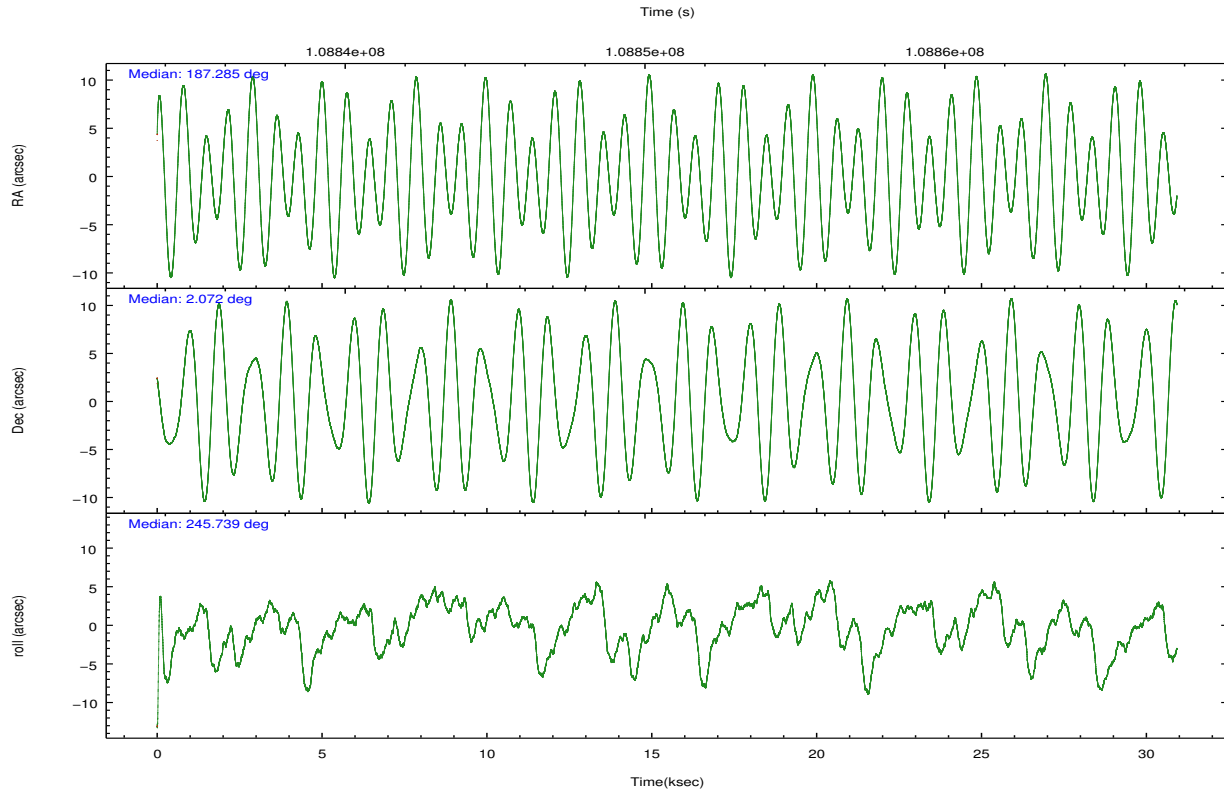
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	67808	81733	108206	178837	82160	56168	grade 0 events	3704	11648	41068	28022	7462	3483
rejected events	59652	36197	53698	52614	63569	48398		5%	14%	37%	15%	9%	6%
rejected %	87%	44%	49%	29%	77%	86%	grade 1 events	21	520	114	952	31	14
								0%	0%	0%	0%	0%	0%
							grade 2 events	1458	10596	6037	29713	3102	1233
								2%	12%	5%	16%	3%	2%
							grade 3 events	975	3321	2516	13718	1944	947
								1%	4%	2%	7%	2%	1%
							grade 4 events	920	3319	2482	13458	1844	925
								1%	4%	2%	7%	2%	1%
							grade 5 events	1677	6152	1885	9899	2391	1917
								2%	7%	1%	5%	2%	3%
							grade 6 events	1100	16657	2407	41321	4239	1183
								1%	20%	2%	23%	5%	2%
							grade 7 events	57953	29520	51697	41754	61147	46466
								85%	36%	47%	23%	74%	82%

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	LETG	LETG	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	187.281976	187.2849893697502	Subarray requested	CUSTOM	1/4
[deg] Pointing Dec	2.099227	2.072107770149836	Subarray start row	1	1
[deg] Pointing Roll	245.586521	245.7430328726207	Subarray row count	256	256
[s] Window start time (MET)	108792064.184000	108792064.184000	Alternating exposures requested	N	N
[s] Window stop time (MET)	108936064.184000	108936064.184000	[s] Primary exposure time	0.000000	1.1
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
[s] Observation start time (MET)	108836199.184000	108834869.74824			
Observation start date	2001-06-13T16:15:35	2001-06-13T15:54:29			
[s] Observation end time (MET)	108866199.184000	108866414.12447			
Observation end date	2001-06-14T00:35:35	2001-06-14T00:40:14			
Read mode	TIMED	TIMED			

2.3 Aspect



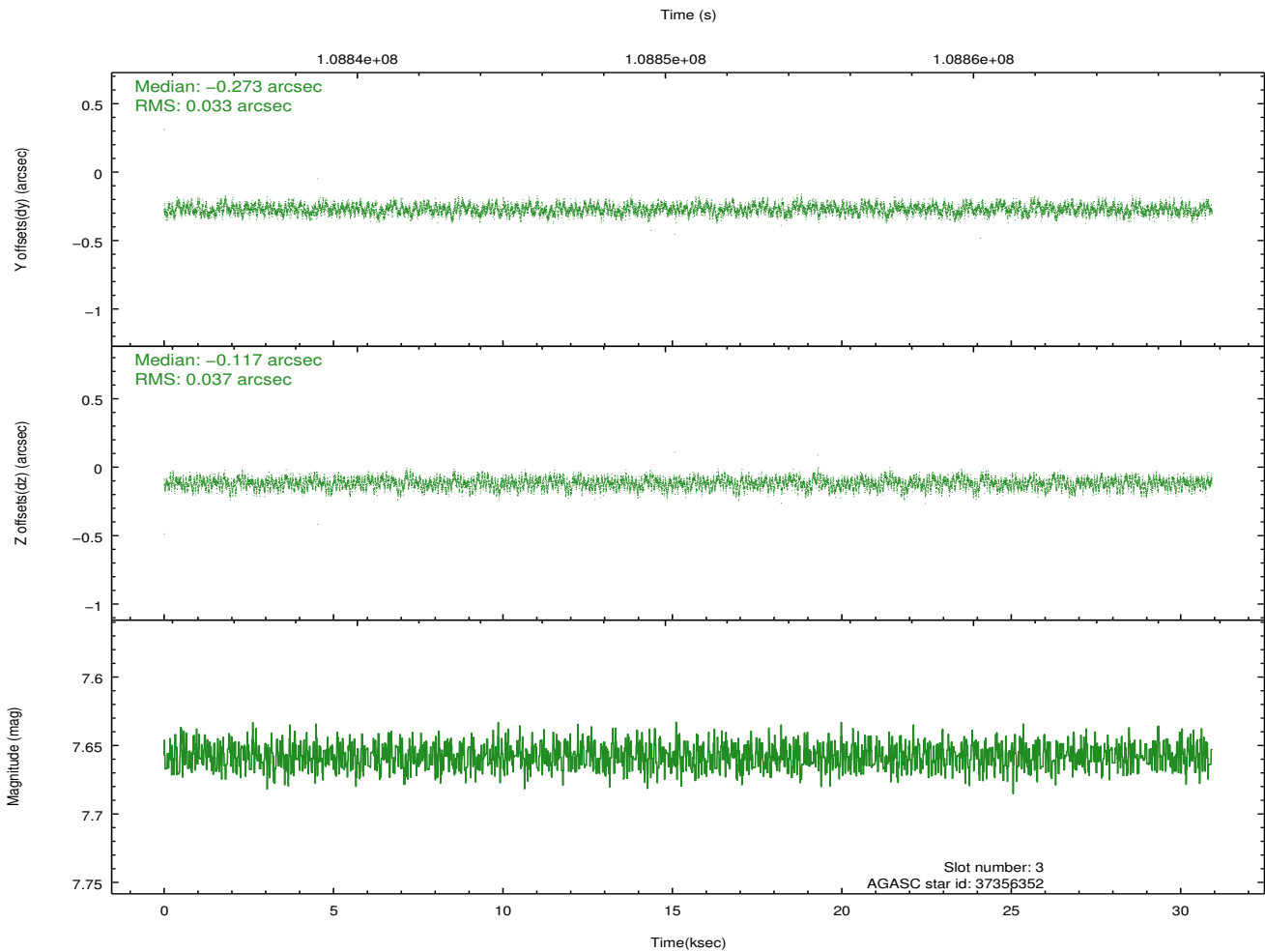
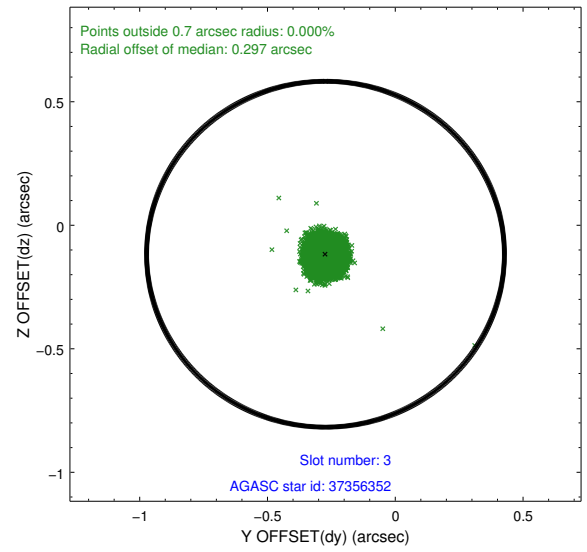
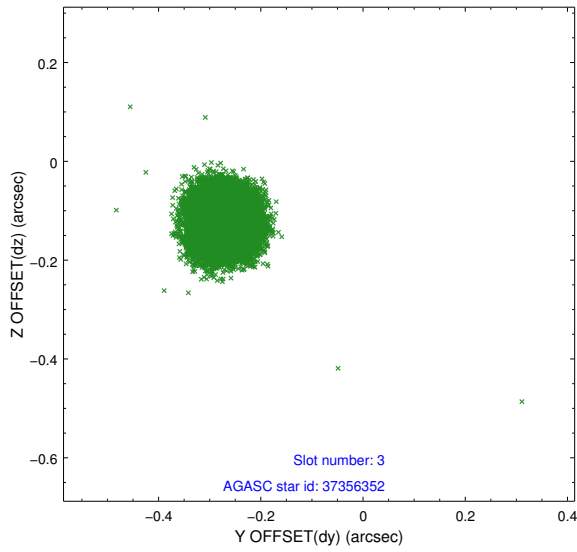


Slot Statistics

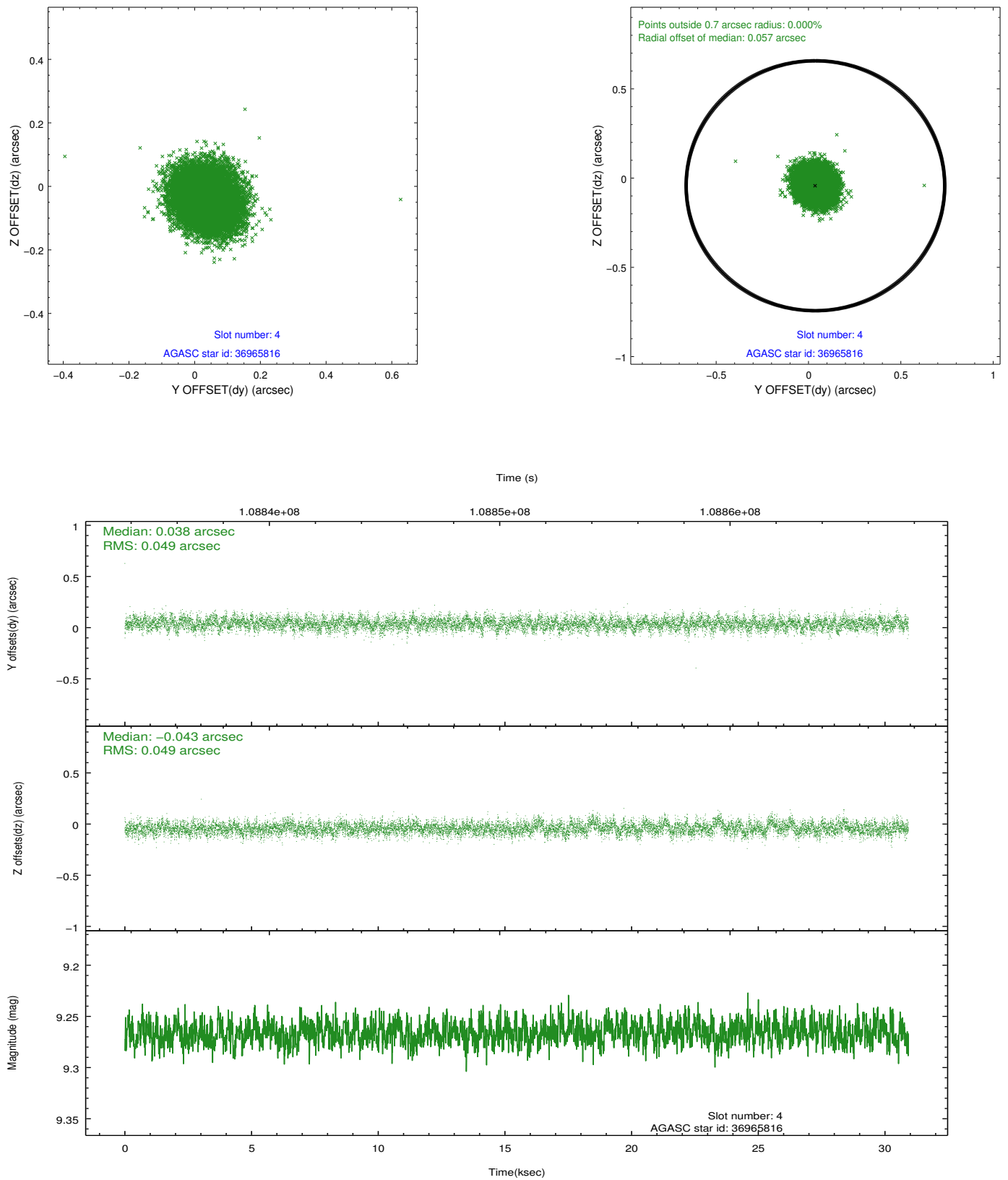
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	7543	-0.038	-0.070	0.007	0.012	0.000000	0.000000	-755.08	-1891.80
1	FID	ACIS-S-4	7.18	7544	0.013	0.037	0.005	0.010	0.000000	0.000000	2158.22	16.68
2	FID	ACIS-S-5	7.23	7543	-0.006	0.041	0.007	0.012	0.000000	0.000000	-1807.80	10.44
3	GUIDE	37356352	7.66	15081	-0.273	-0.117	0.053	0.083	187.433784	2.618460	-1928.02	-274.97
4	GUIDE	36965816	9.27	15082	0.038	-0.043	0.073	0.119	186.823353	1.771455	1756.35	-1014.30
5	GUIDE	36965296	9.09	15077	0.095	-0.063	0.064	0.106	186.926292	1.837429	1387.33	-775.22
6	GUIDE	37880408	10.08	15076	-0.150	0.050	0.118	0.193	187.758191	2.290324	-1334.83	1276.00
7	GUIDE	37883040	10.03	15025	0.290	0.178	0.122	0.199	187.575516	1.280402	2247.62	2181.67

2.4 Star Slots

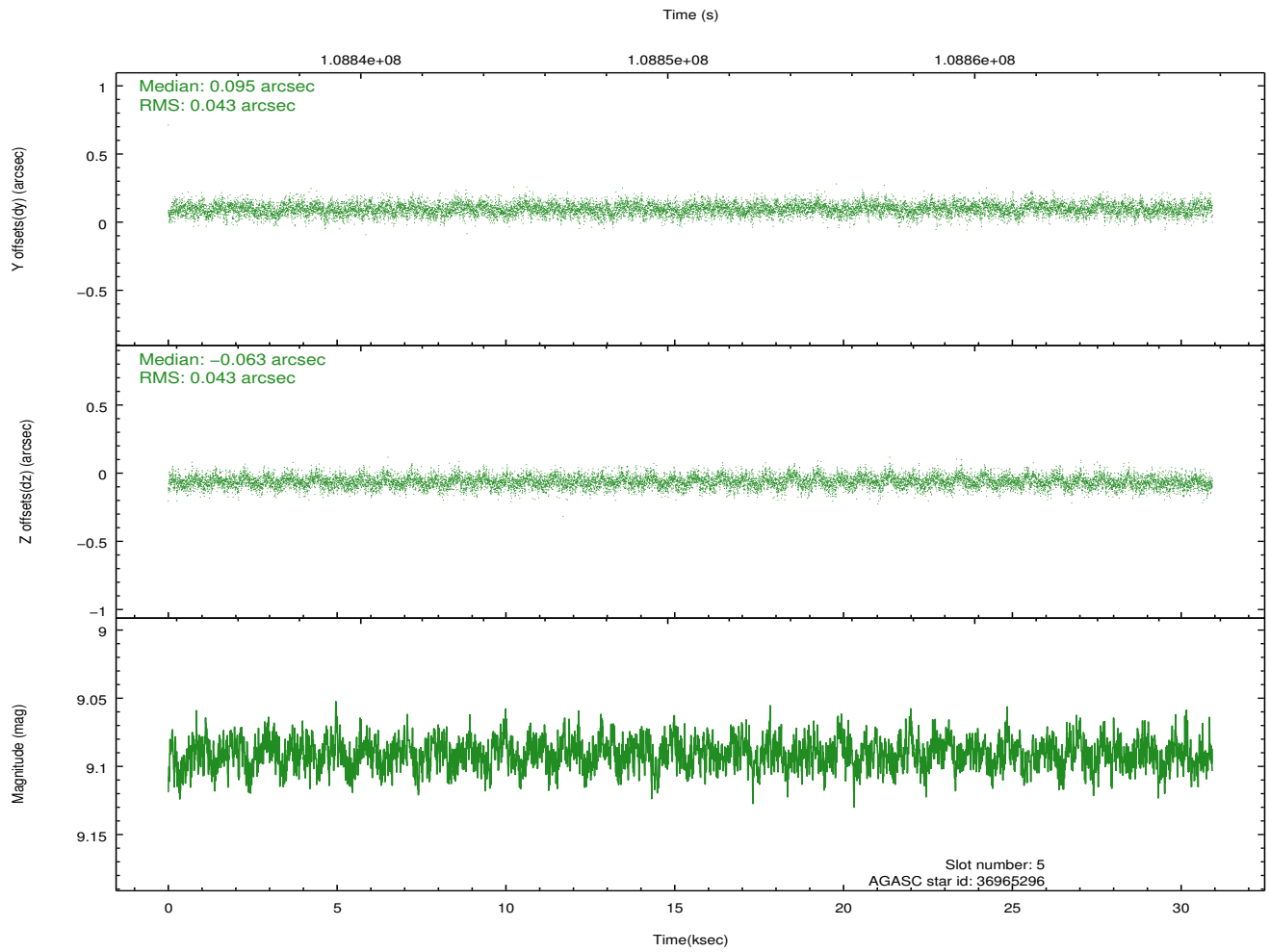
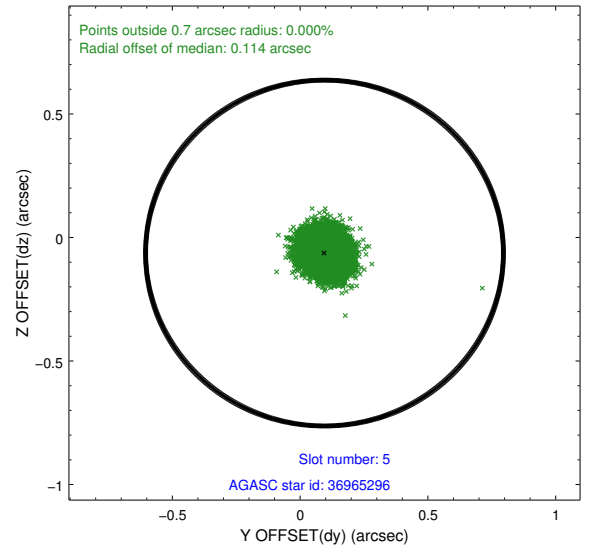
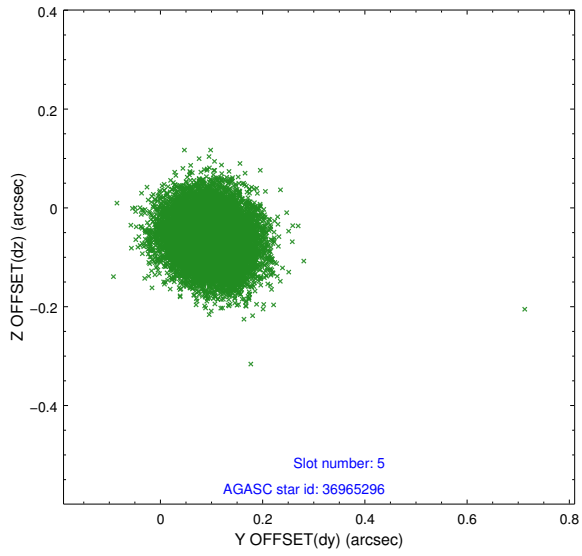
2.4.1 Slot 3



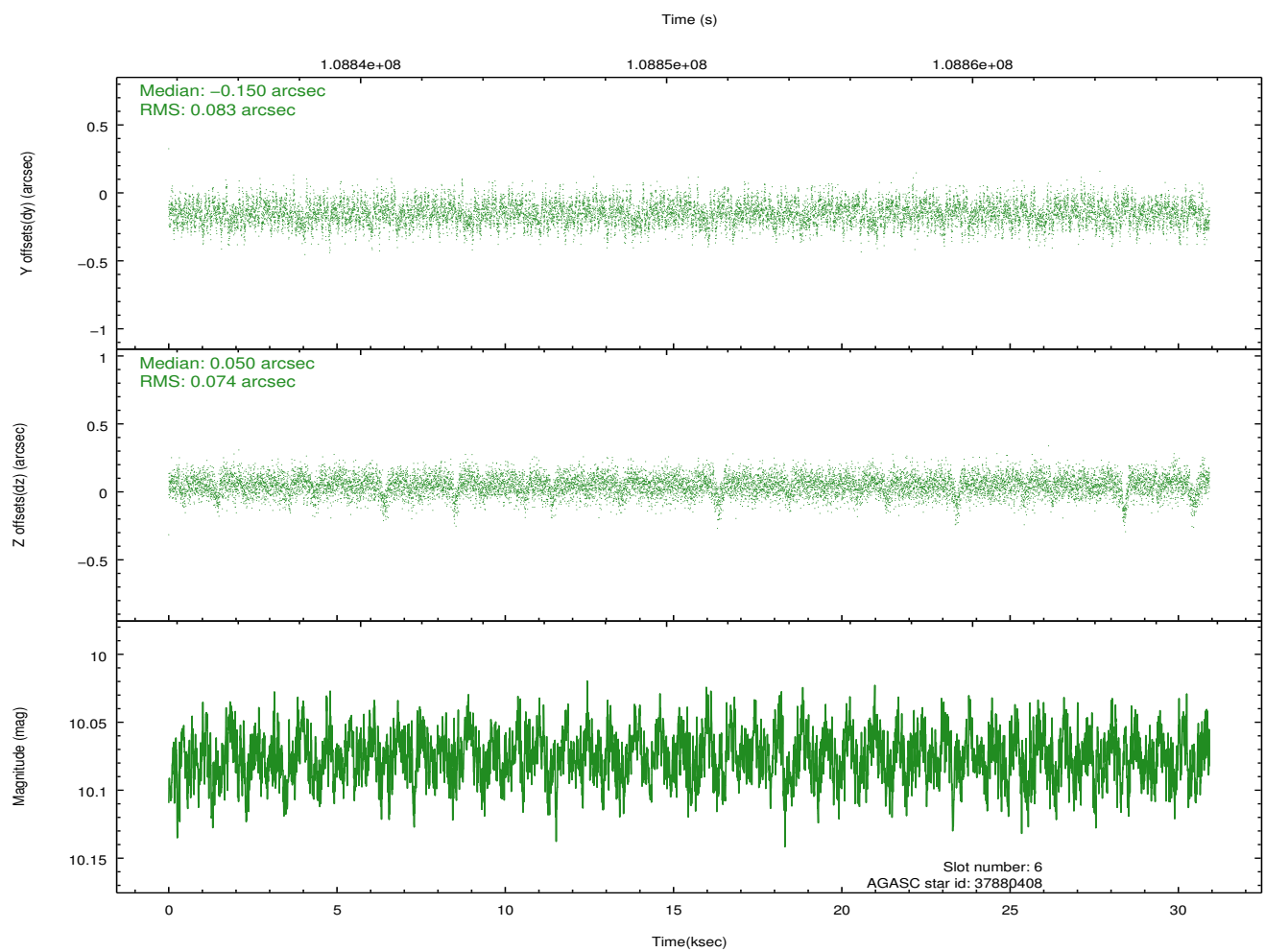
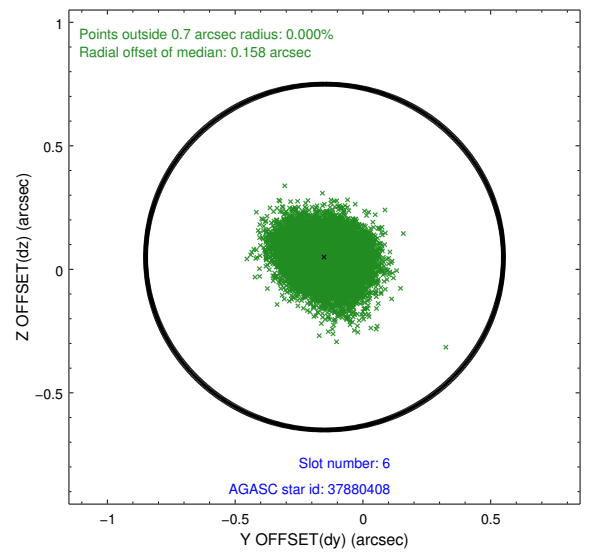
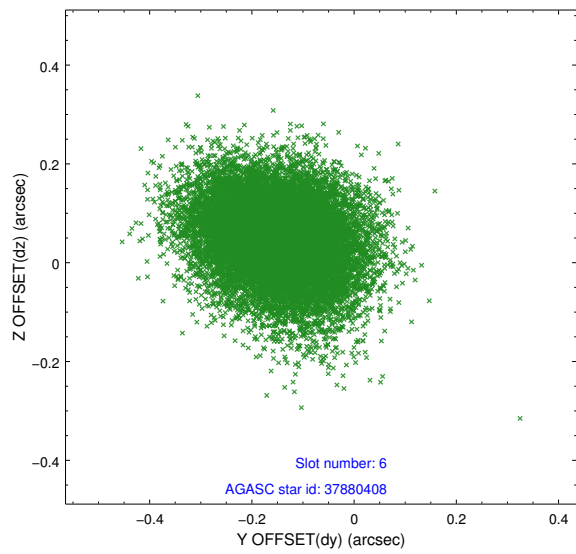
2.4.2 Slot 4



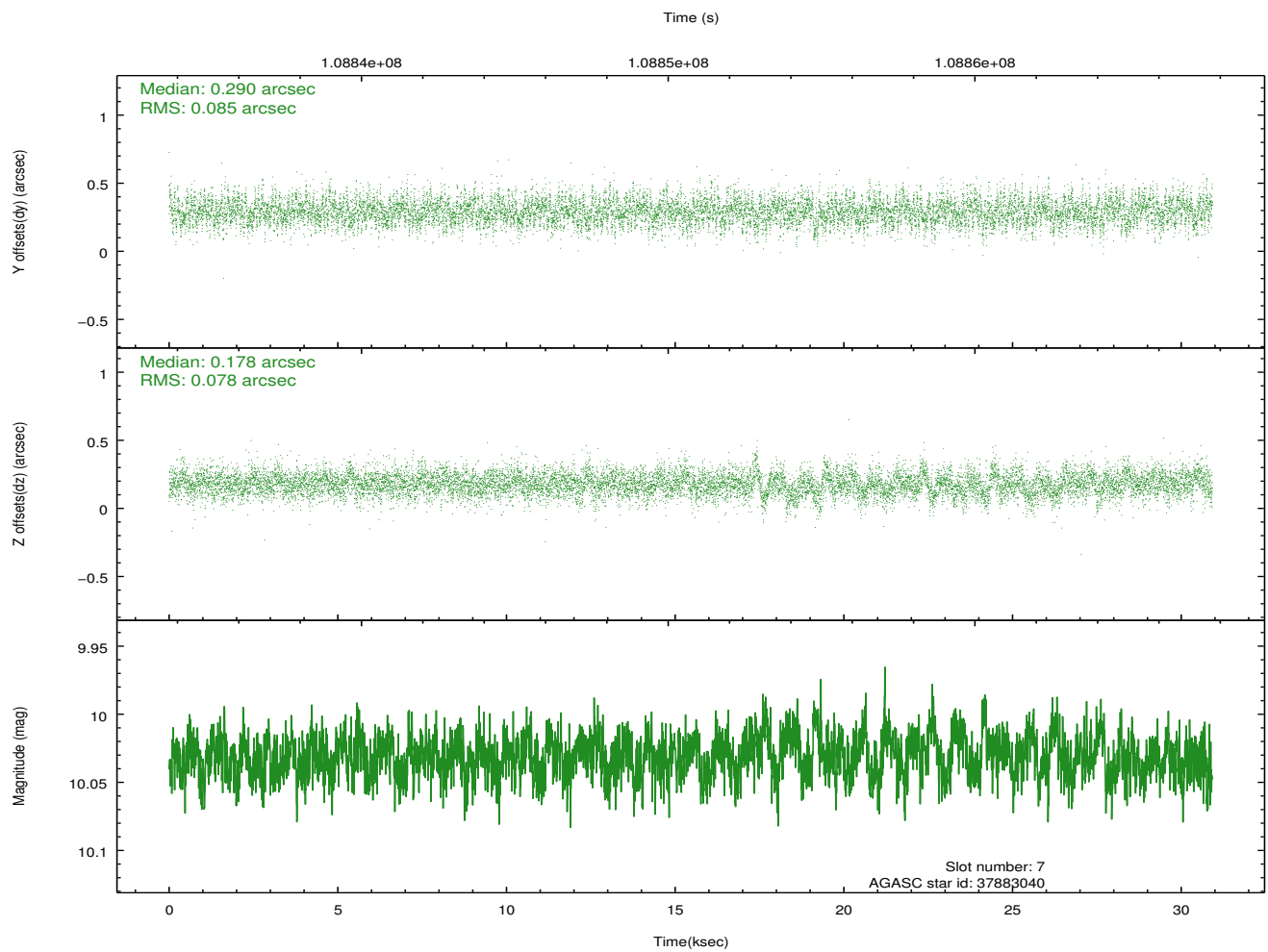
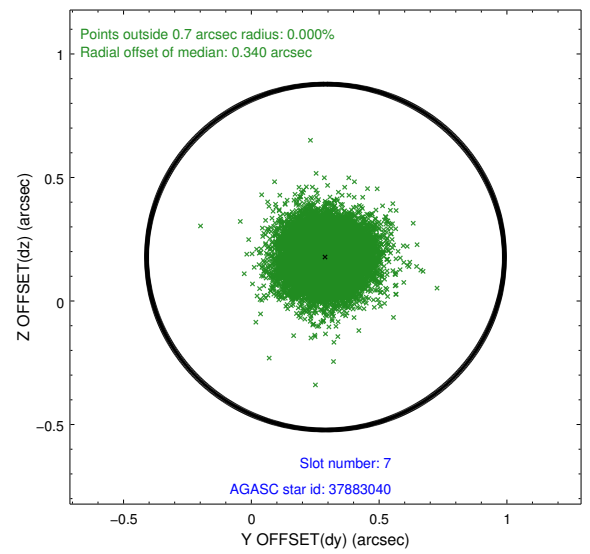
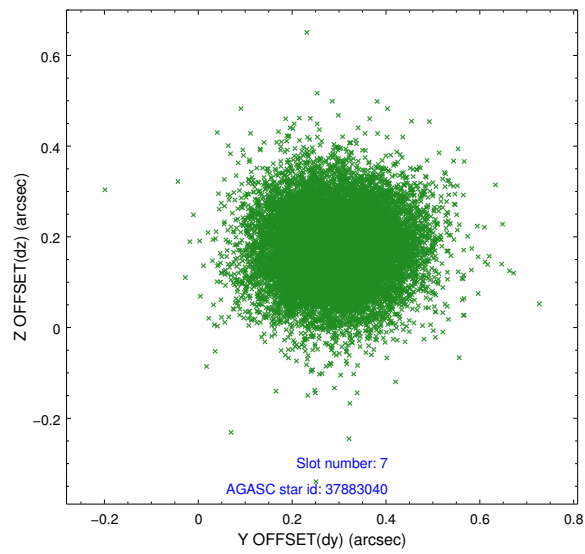
2.4.3 Slot 5



2.4.4 Slot 6

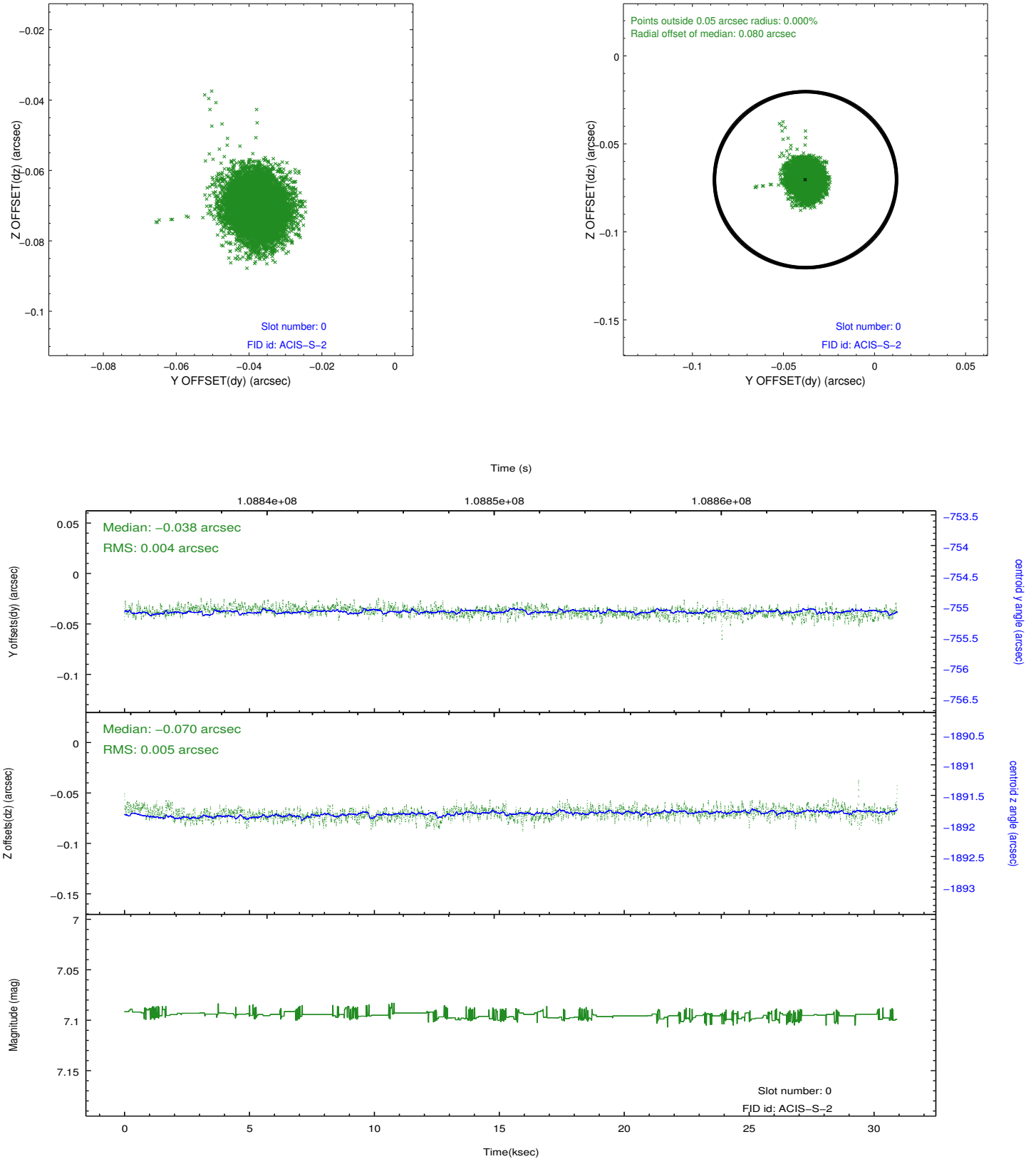


2.4.5 Slot 7

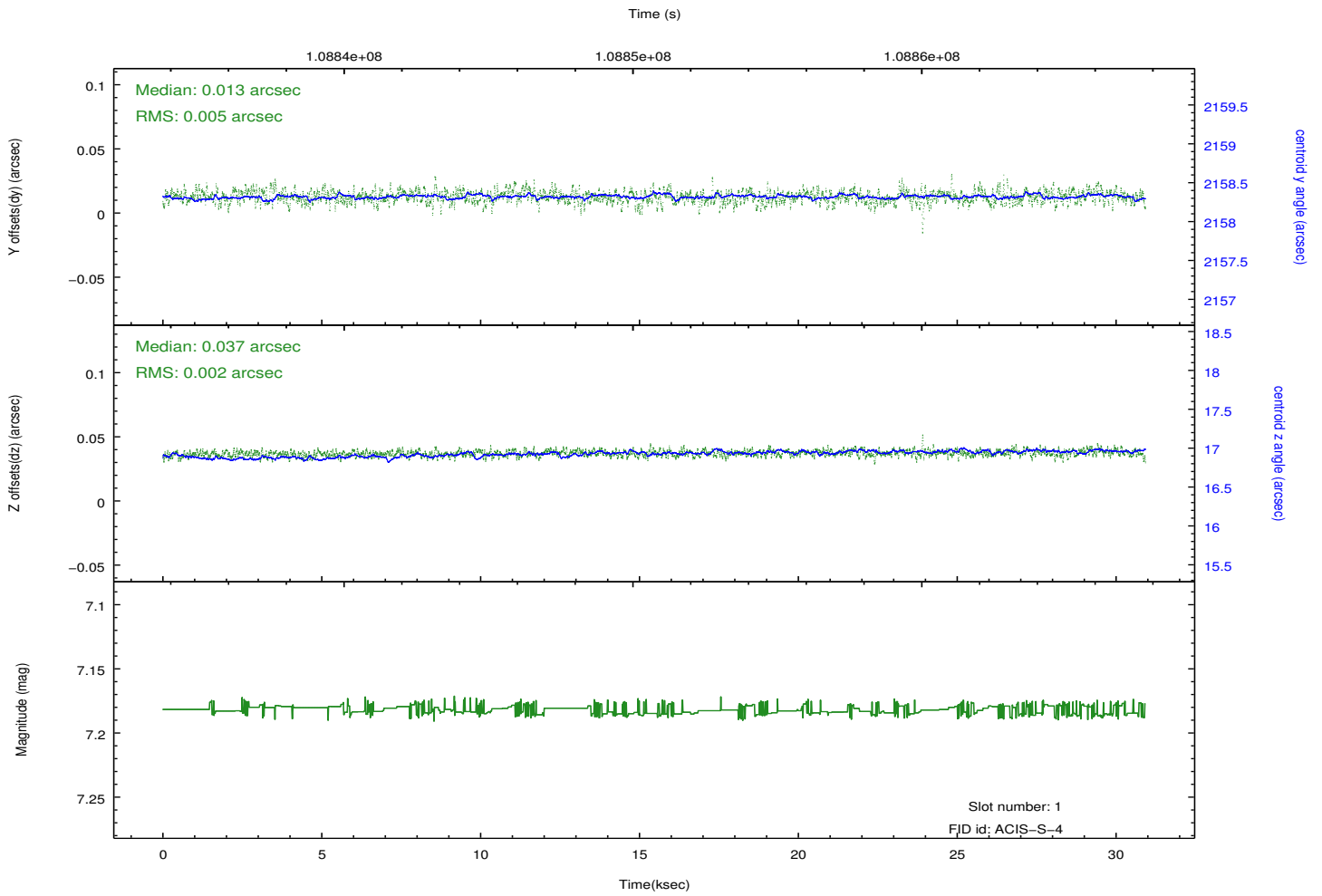
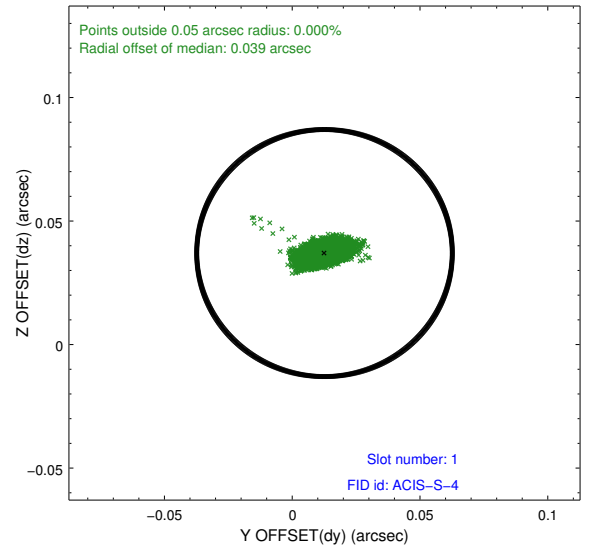
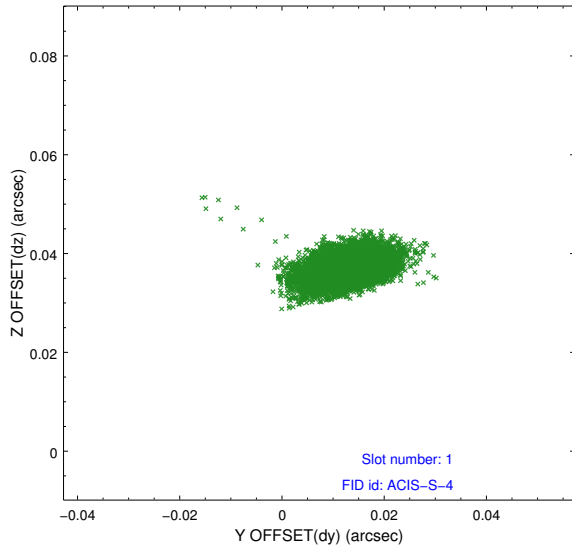


2.5 FID Slots

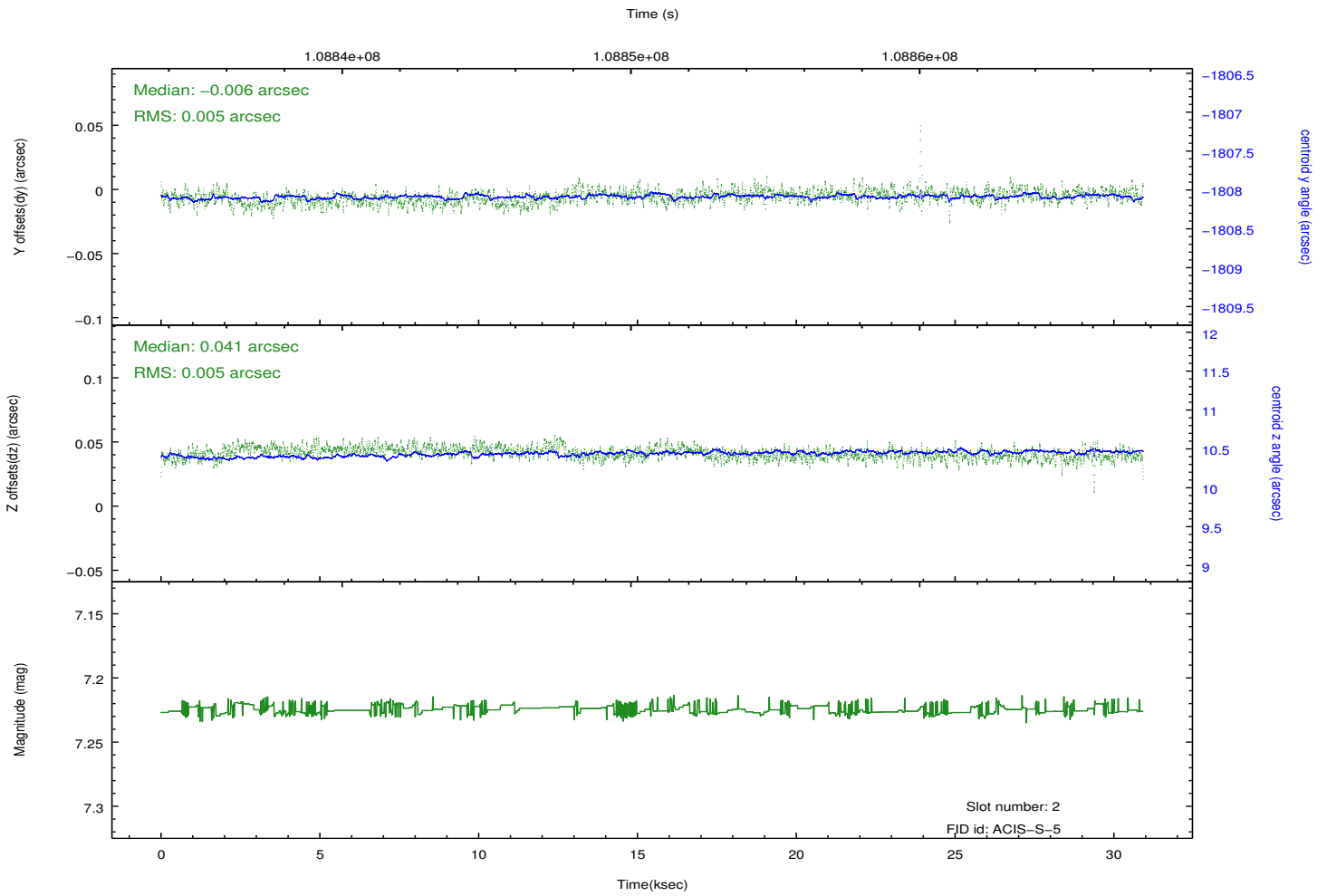
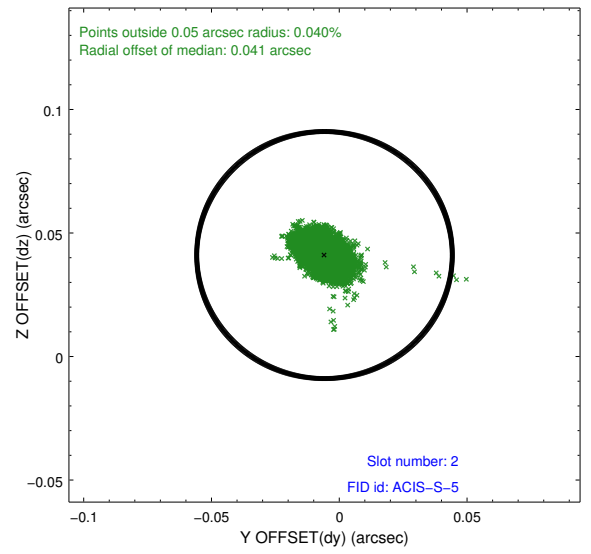
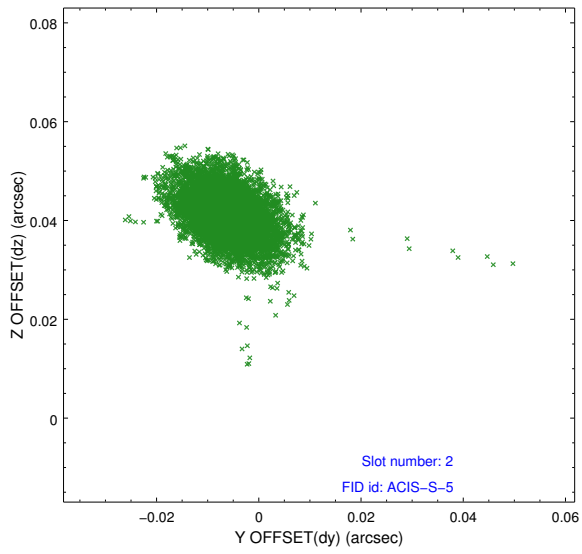
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

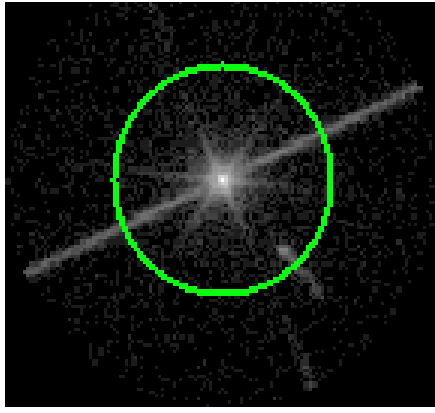


3 Gratings

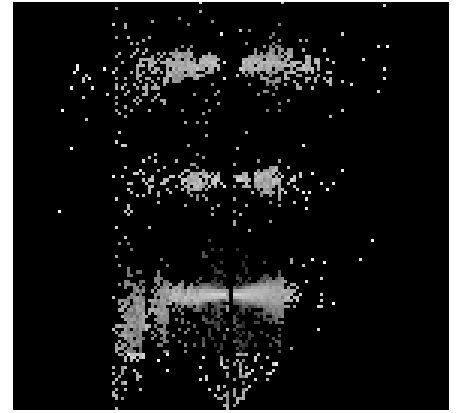
3.1 LETG Arm



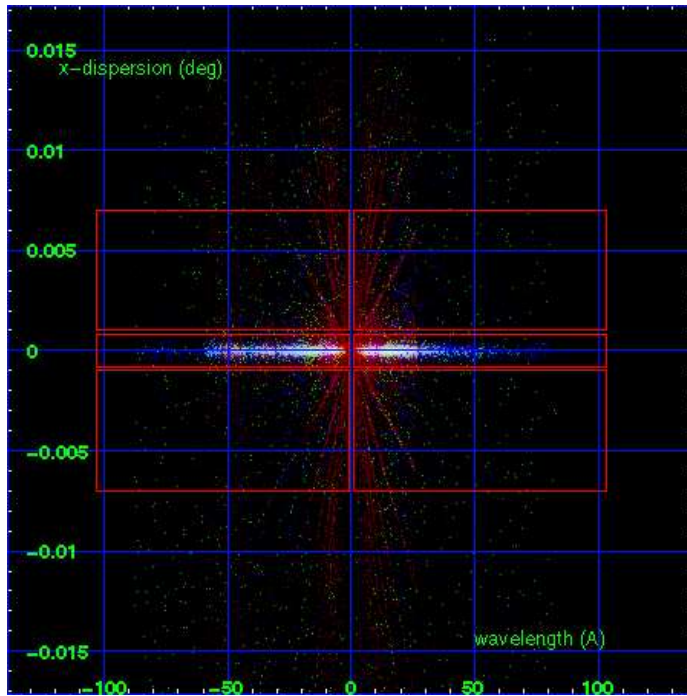
LETG Order Sort 123



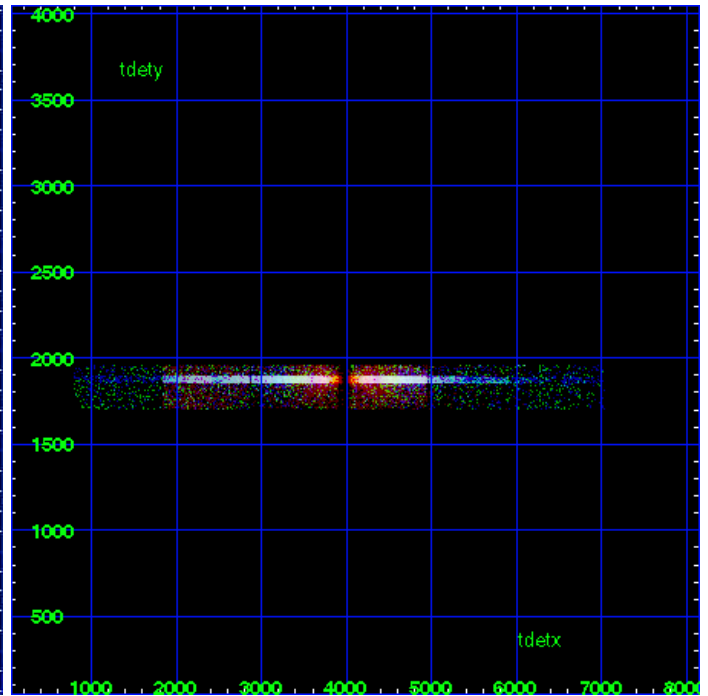
LETG Zero Order



LETG Order Sort ALL

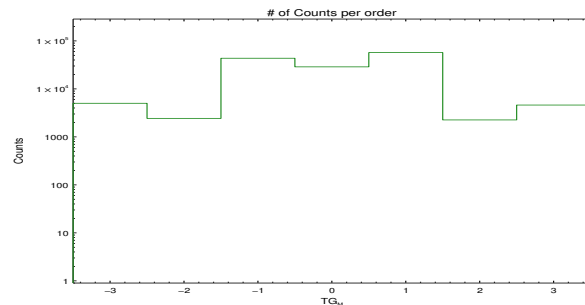


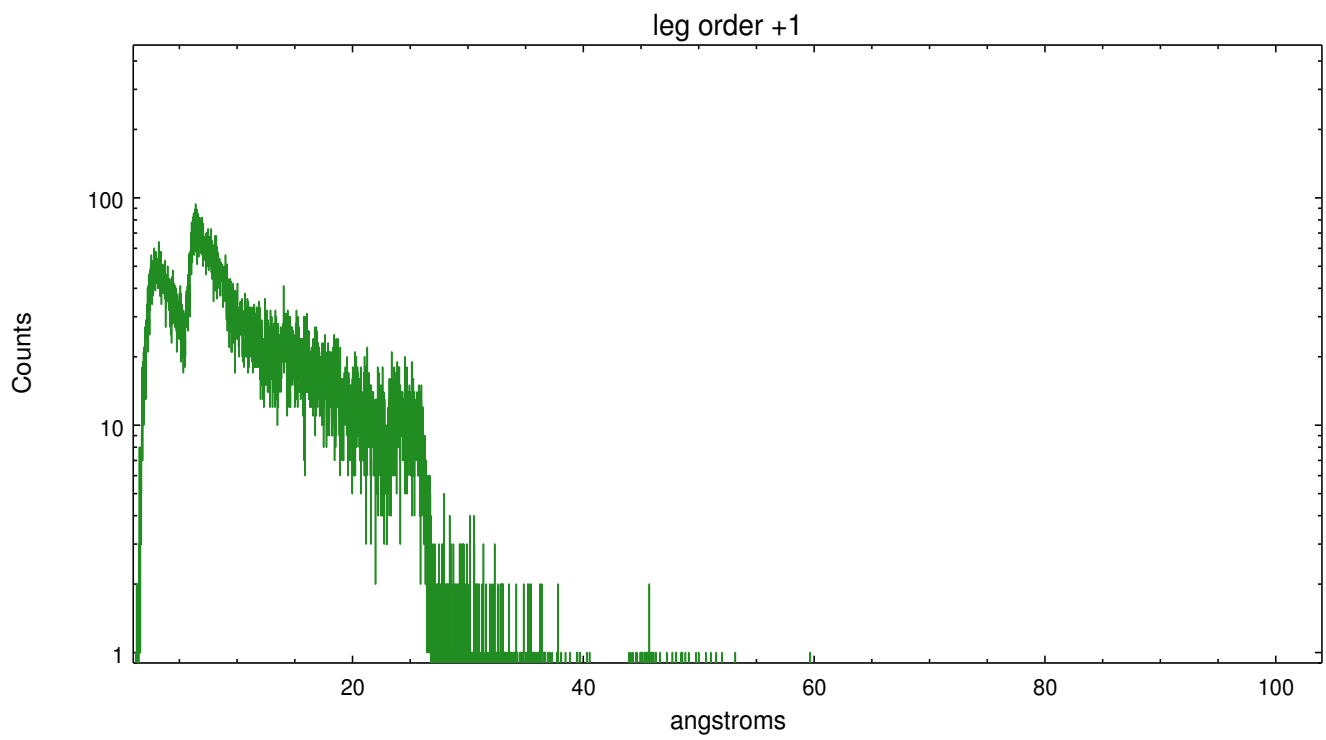
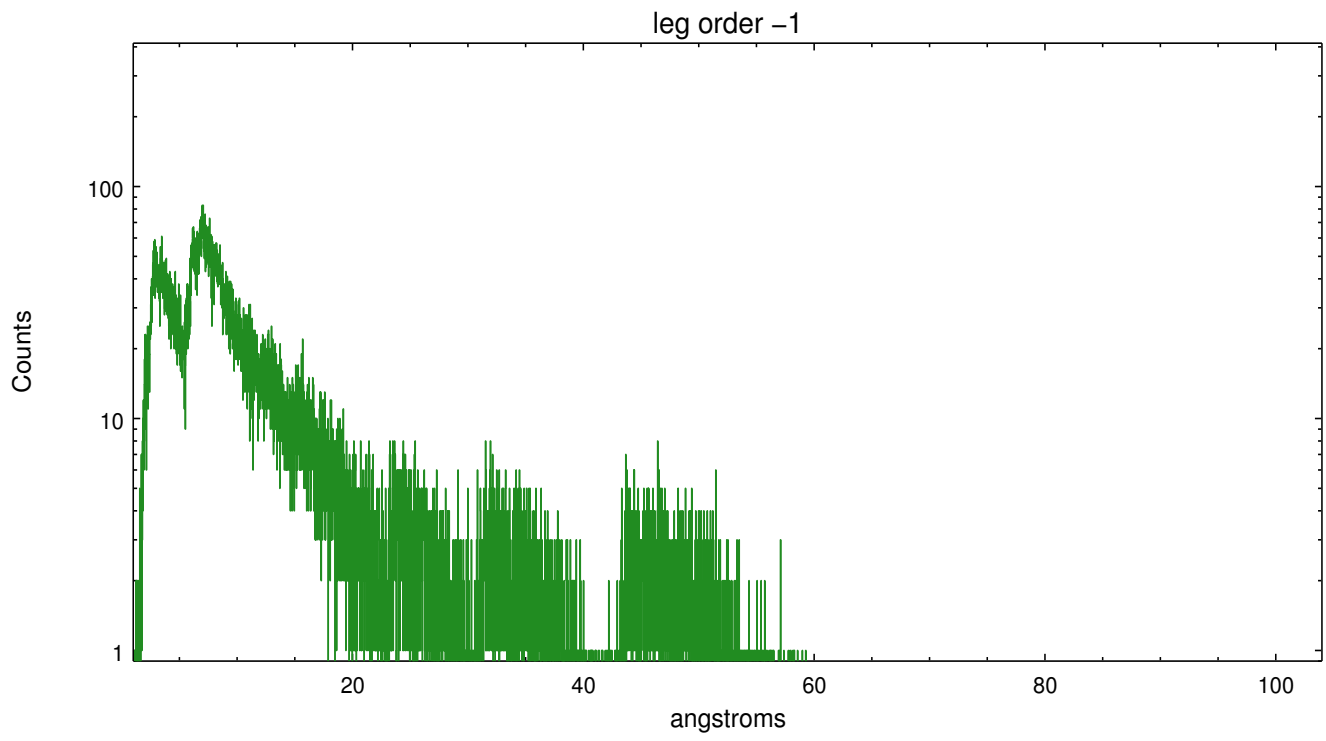
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	5008	2428	43481	28787	57057	2256	4604





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.56

A.2 Comments

Gain and CTI correction are not well calibrated on CCD_ID 5 (ACIS-S1). Default order sorting can clip some regions, particularly longward of 30A (first order). User-specified custom processing parameters may be required in `tg_resolve_events` (`osipfile=none`, `osort_lo`, `osort_hi ~0.5`) though this can allow more zeroth order background at short wavelengths.

===

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=4148.32`, `y=3952.79`) 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 leg 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.