

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 4416 - L2 Version 3
Chandra X-Ray Center

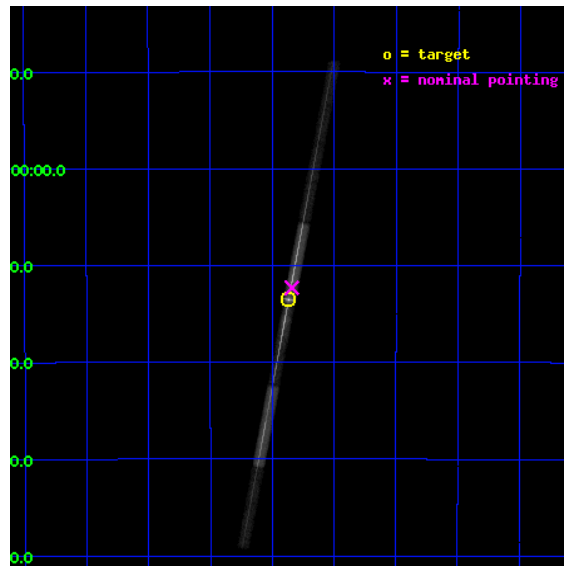
L2 Processing Date : Nov 9 2012

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1 Front

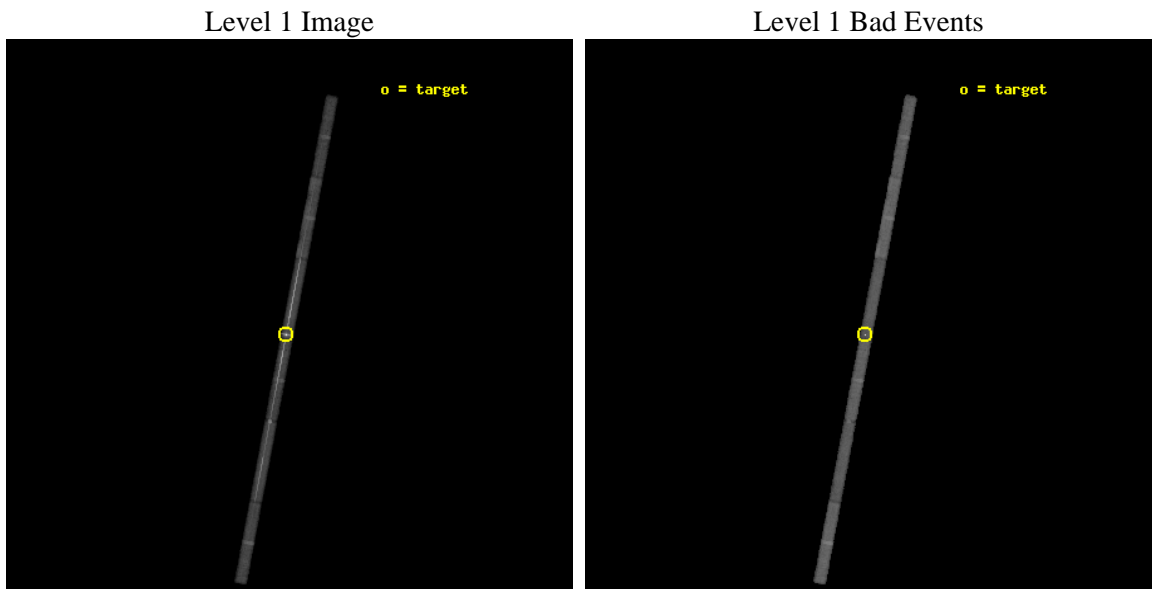
seq_num	790086	Sequence number
obs_id	4416	Observation id
title	AO4 CALIBRATION OBSERVATIONS OF PKS2155-304	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	PKS2155-304	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	329.716667	Observer's specified target RA [deg]
dec_targ	-30.225556	Observer's specified target Dec [deg]
ra_nom	329.71030359712	Nominal RA [deg]
dec_nom	-30.205242136016	Nominal Dec [deg]
roll_nom	280.75361277612	Nominal Roll [deg]
revision	3	Processing version of data
ontime	49202.999162078	Sum of GTIs [s]
livetime	46478.057073106	Livetime [s]
ontime4	49202.999162078	Sum of GTIs [s]
ontime5	49202.999162078	Sum of GTIs [s]
ontime6	49202.999162078	Sum of GTIs [s]
ontime7	49202.999162078	Sum of GTIs [s]
ontime8	49202.999162078	Sum of GTIs [s]
ontime9	49202.999162078	Sum of GTIs [s]
l2events	330702	Number of level 2 events



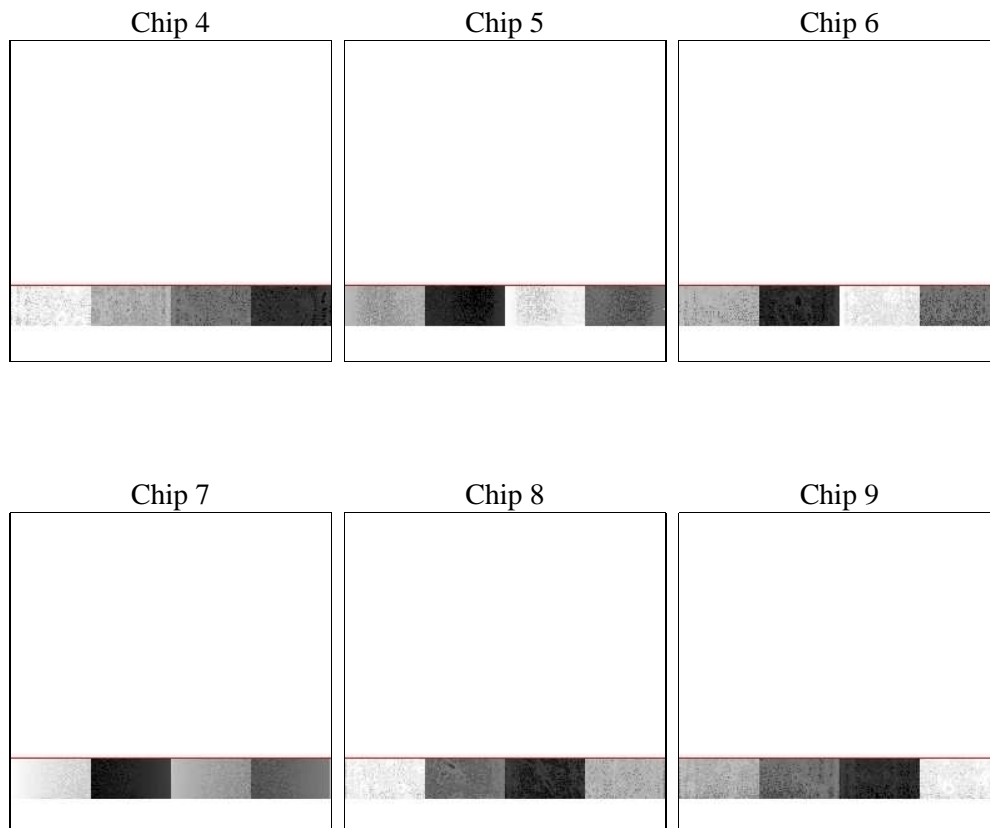
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	48691.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	49202.999162078	Sum of GTIs [s]
caldbver	4.5.2	 	ontime4	49202.999162078	Sum of GTIs [s]
date	2012-11-09T09:29:45	Date and time of file creation	ontime5	49202.999162078	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	49202.999162078	Sum of GTIs [s]
			ontime7	49202.999162078	Sum of GTIs [s]
			ontime8	49202.999162078	Sum of GTIs [s]
			ontime9	49202.999162078	Sum of GTIs [s]
			l1events	627419	Number of level 1 events

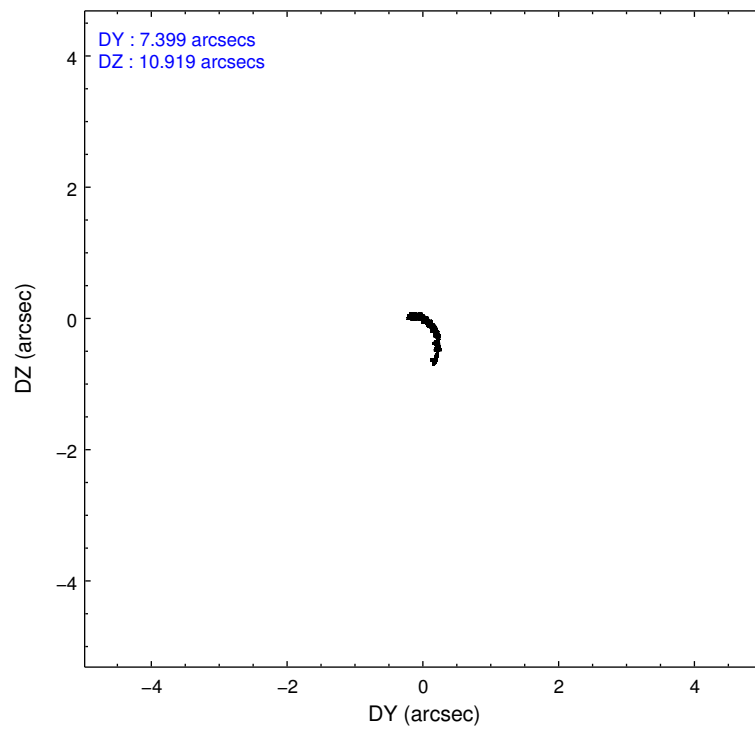
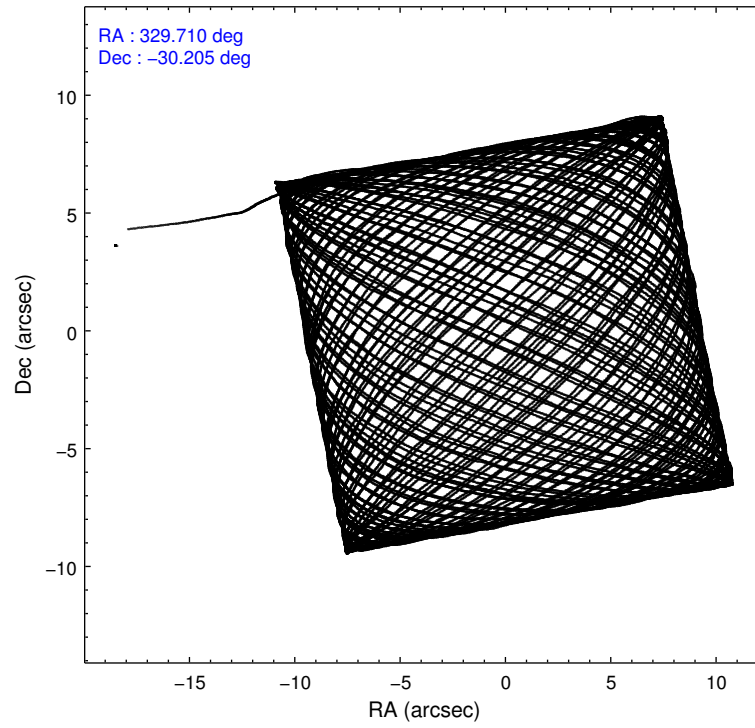
2.1.4 Events

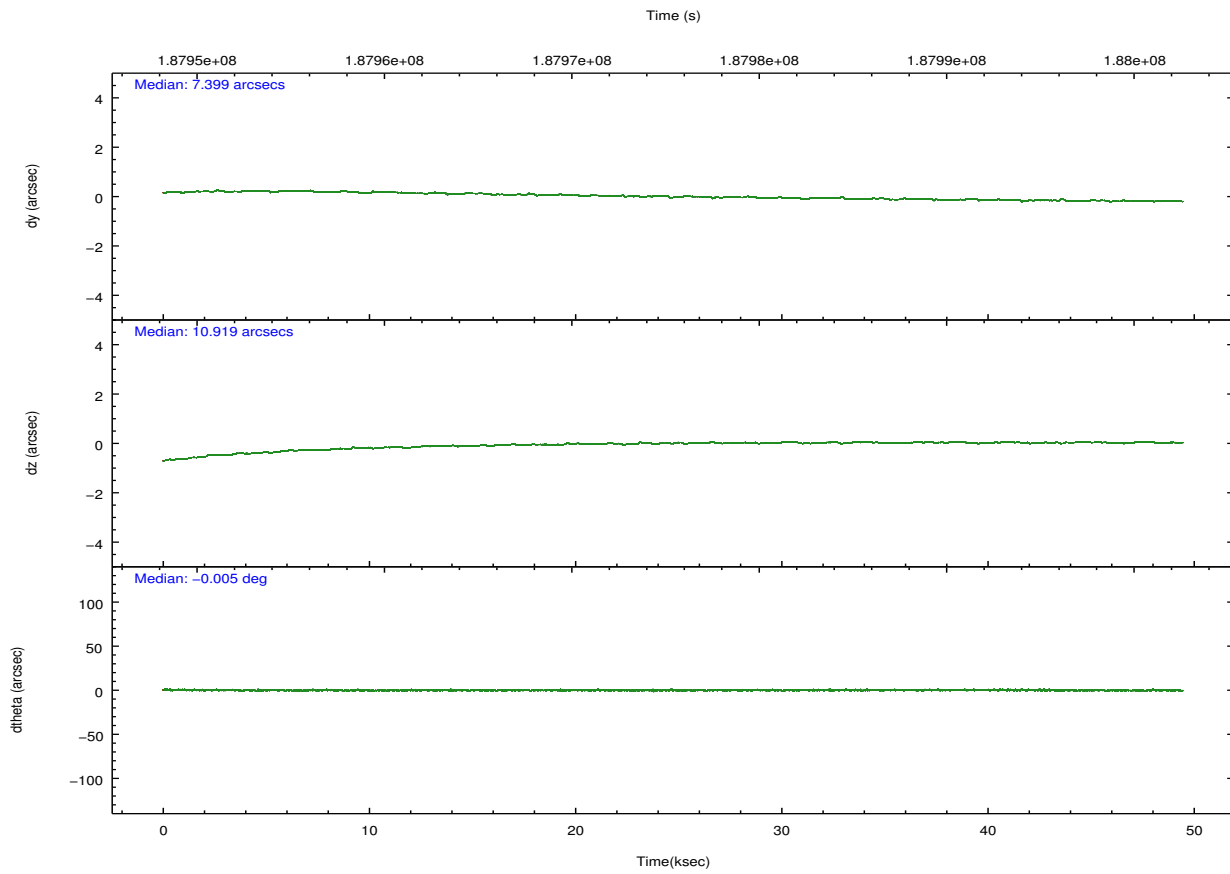
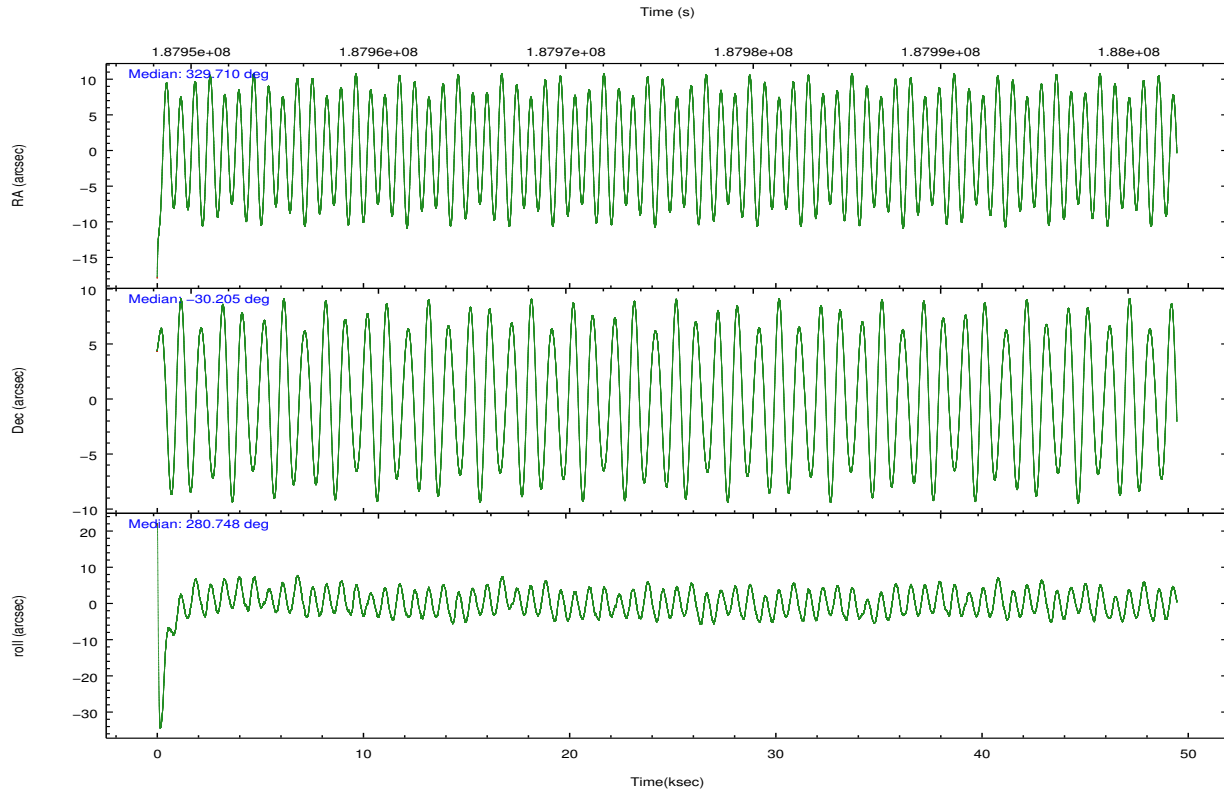
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	57236	85716	111772	253242	72919	46534	grade 0 events	3984	23337	55121	51293	8886	3835
rejected events	49137	30248	42388	61424	53709	38743		6%	27%	49%	20%	12%	8%
rejected %	85%	35%	37%	24%	73%	83%	grade 1 events	26	582	103	2769	19	20
								0%	0%	0%	1%	0%	0%
							grade 2 events	1264	11064	6849	46295	3021	1104
								2%	12%	6%	18%	4%	2%
							grade 3 events	942	3698	2619	21742	1688	957
								1%	4%	2%	8%	2%	2%
							grade 4 events	943	3629	2641	21168	1687	906
								1%	4%	2%	8%	2%	1%
							grade 5 events	1597	5213	1725	14962	2066	1603
								2%	6%	1%	5%	2%	3%
							grade 6 events	966	13742	2155	51327	3928	989
								1%	16%	1%	20%	5%	2%
							grade 7 events	47514	24451	40559	43686	51624	37120
								83%	28%	36%	17%	70%	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	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	329.689412	329.7103035971161	Subarray requested	CUSTOM	1/8
[deg] Pointing Dec	-30.184862	-30.20524213601599	Subarray start row	113	113
[deg] Pointing Roll	280.586462	280.7536127761239	Subarray row count	128	128
[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	0.7
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
[s] Observation start time (MET)	187951431.184000	187950179.12666			
Observation start date	2003-12-16T08:42:47	2003-12-16T08:22:59			
[s] Observation end time (MET)	188000122.184000	188000820.27886			
Observation end date	2003-12-16T22:14:18	2003-12-16T22:27:00			
Read mode	TIMED	TIMED			

2.3 Aspect



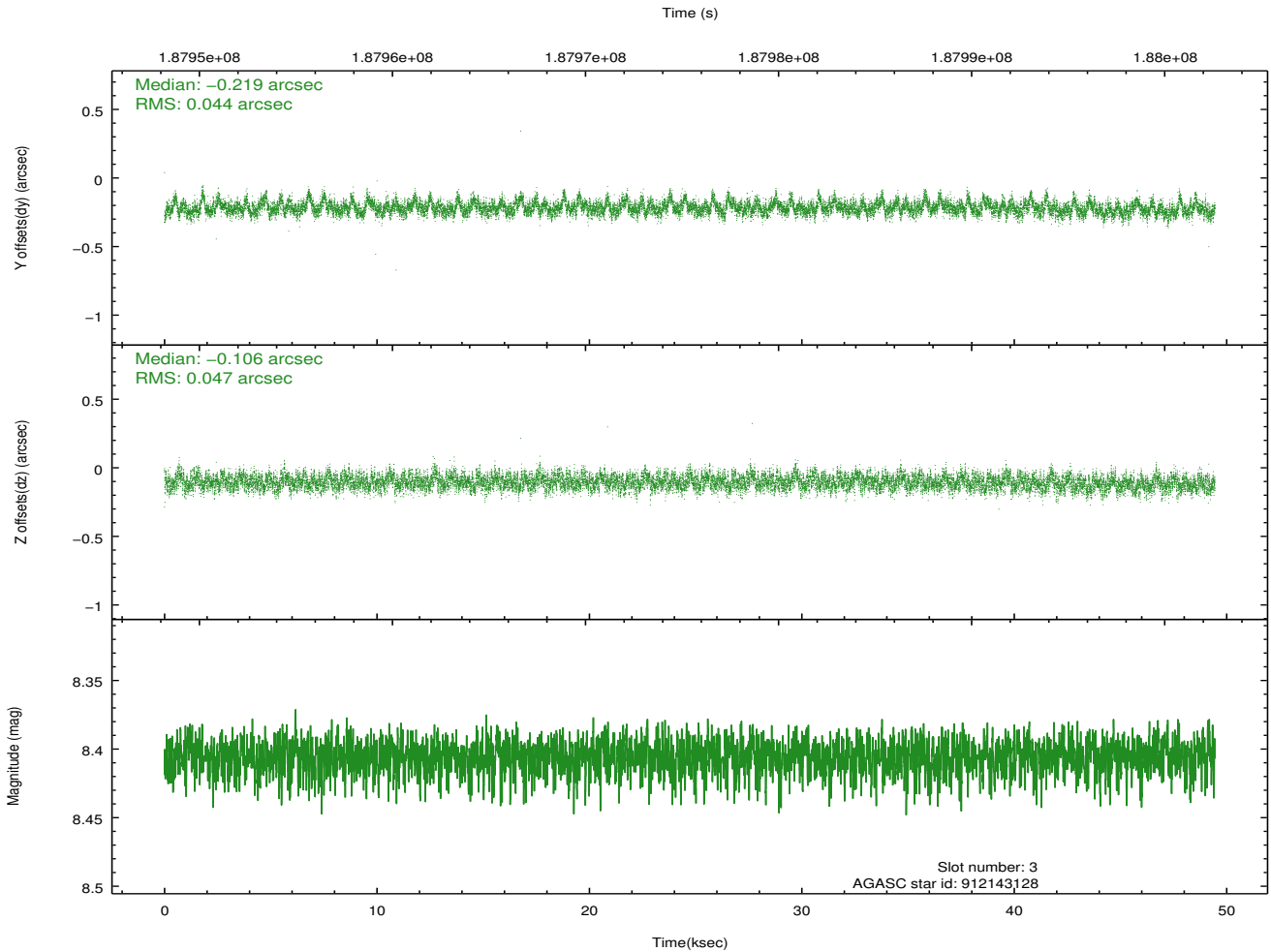
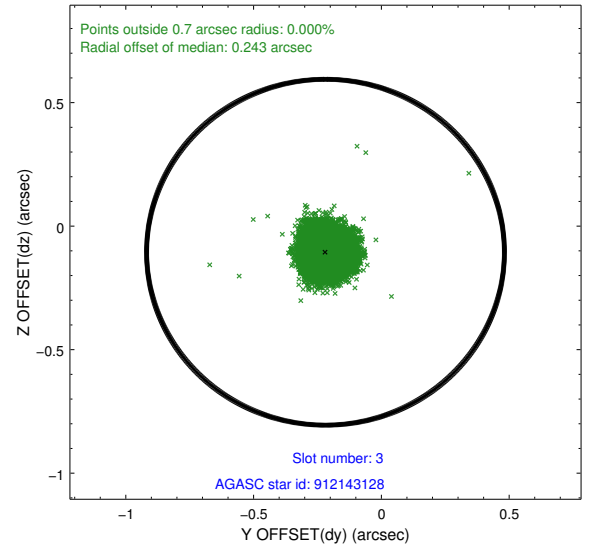
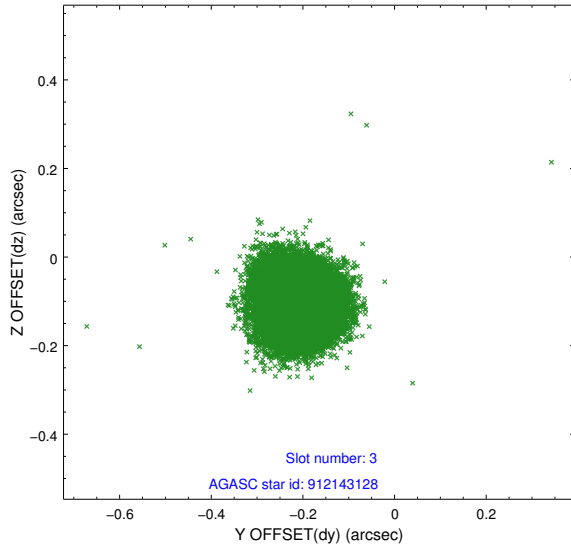


Slot Statistics

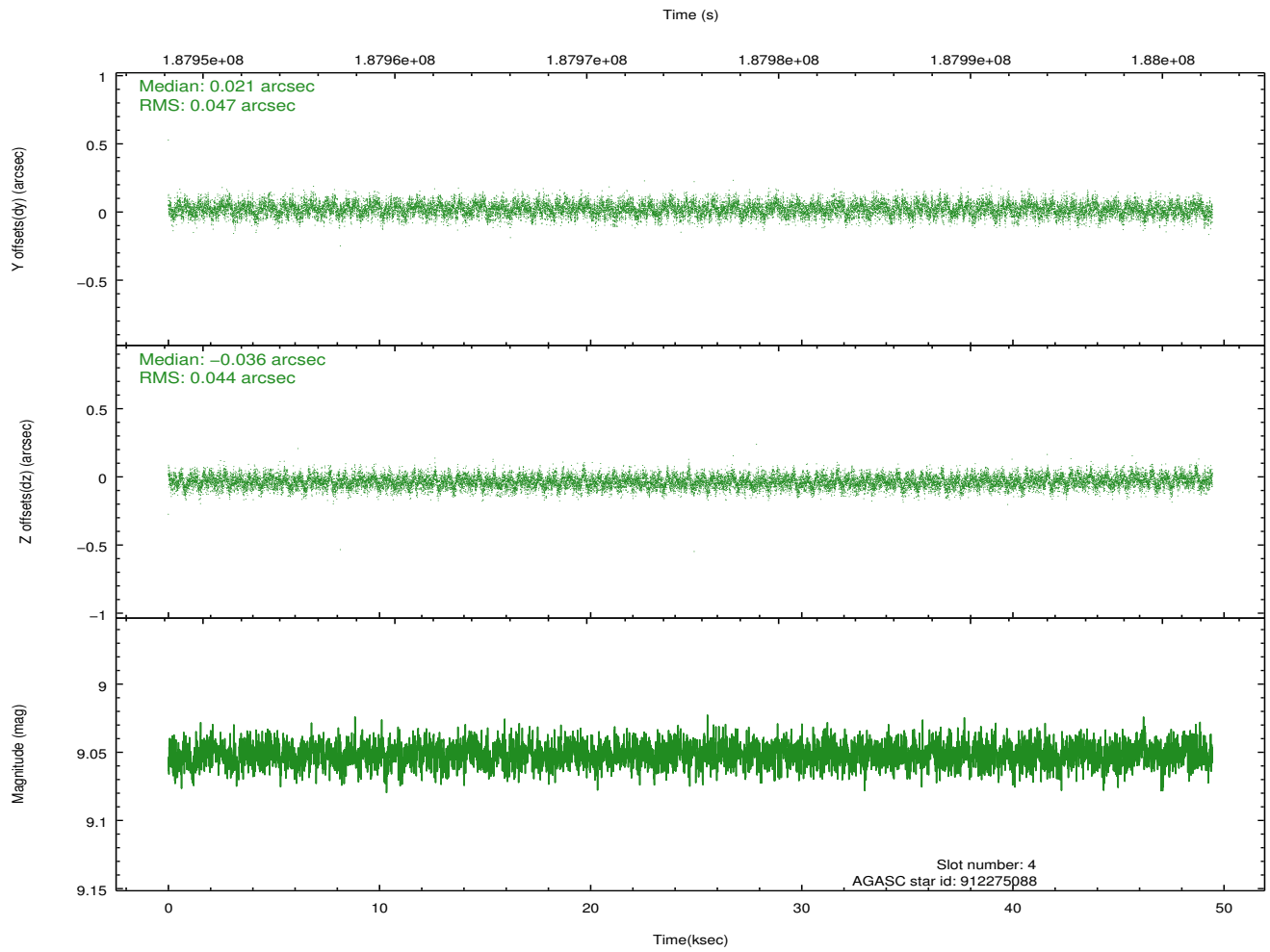
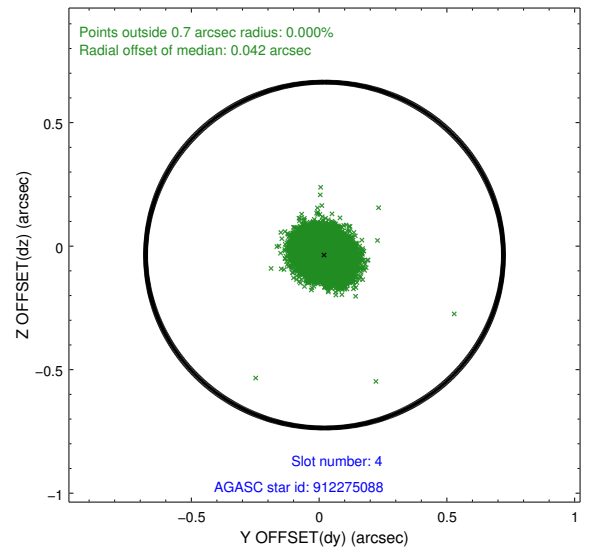
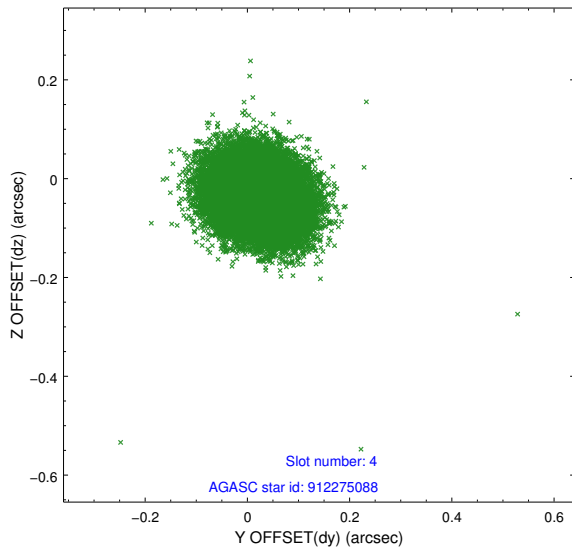
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.08	12063	-0.090	-0.071	0.009	0.030	0.000000	0.000000	-759.66	-1896.90
1	FID	ACIS-S-4	7.17	12063	0.060	0.052	0.008	0.017	0.000000	0.000000	2153.75	11.74
2	FID	ACIS-S-6	7.40	12063	0.004	0.027	0.010	0.018	0.000000	0.000000	402.36	649.07
3	GUIDE	912143128	8.41	24122	-0.219	-0.106	0.068	0.109	328.924992	-29.706140	-2124.29	-2034.44
4	GUIDE	912275088	9.05	24085	0.021	-0.036	0.069	0.111	329.619228	-29.738698	-1618.75	79.39
5	GUIDE	981468128	9.36	24116	0.137	-0.043	0.077	0.128	329.756350	-30.158334	-54.99	222.61
6	GUIDE	981478152	9.40	24113	0.003	0.095	0.102	0.164	329.415589	-30.057192	-607.05	-754.14
7	GUIDE	981471664	6.36	24125	0.061	0.094	0.075	0.120	328.981826	-30.605916	1094.75	-2434.30

2.4 Star Slots

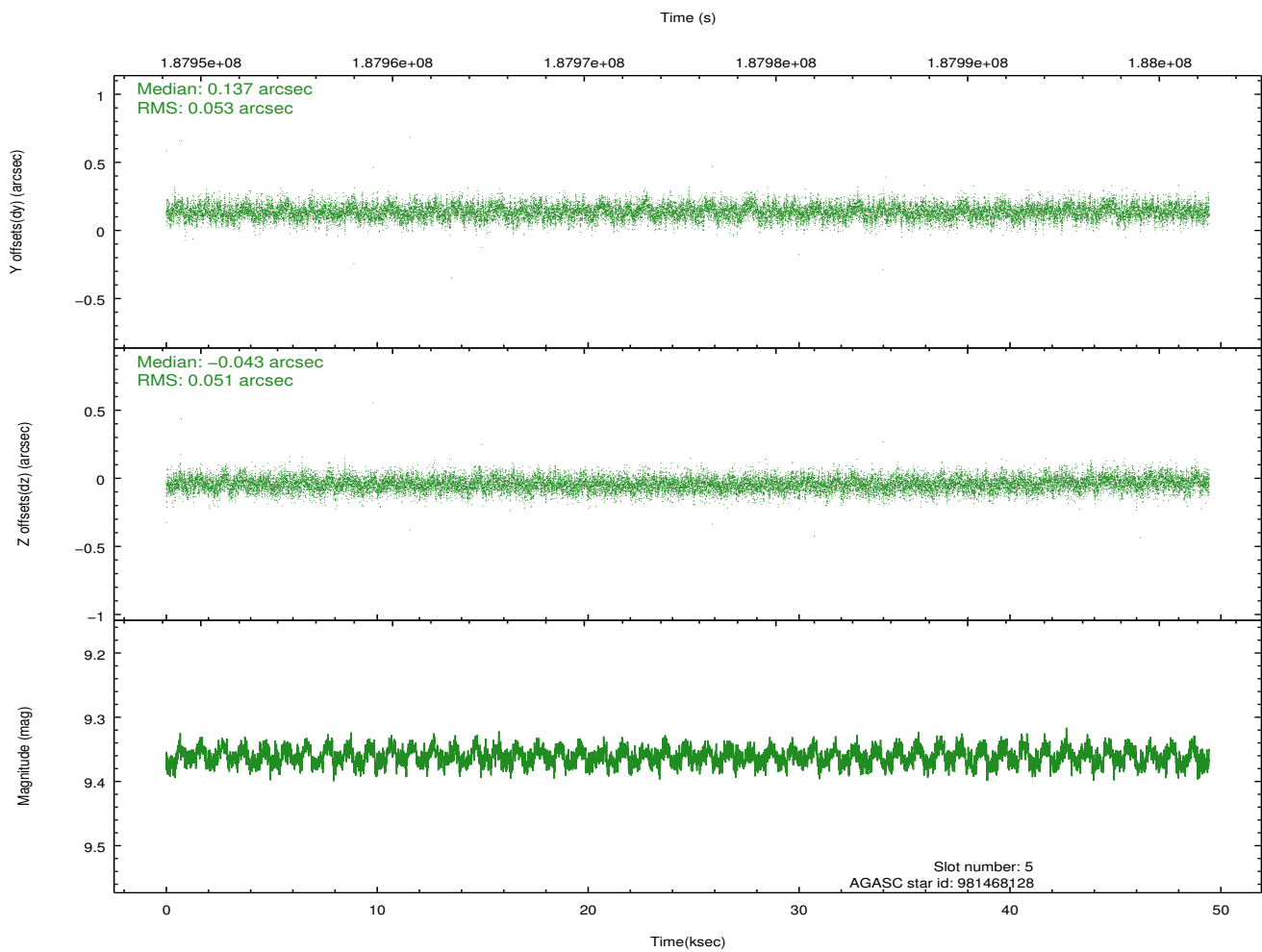
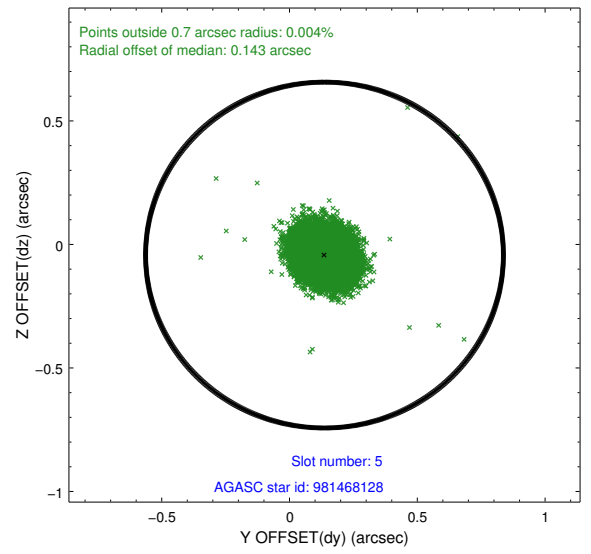
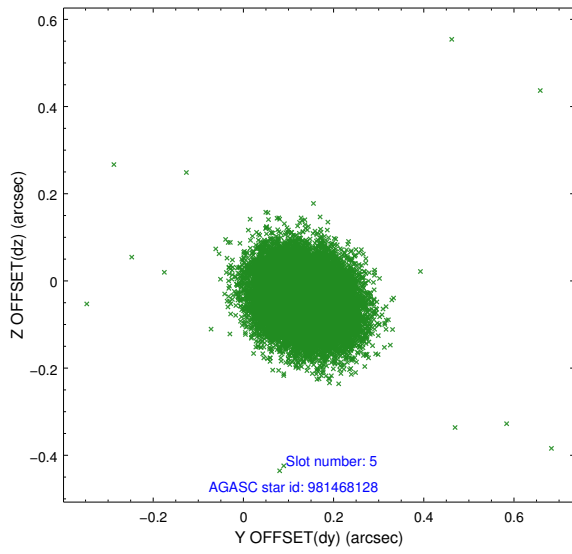
2.4.1 Slot 3



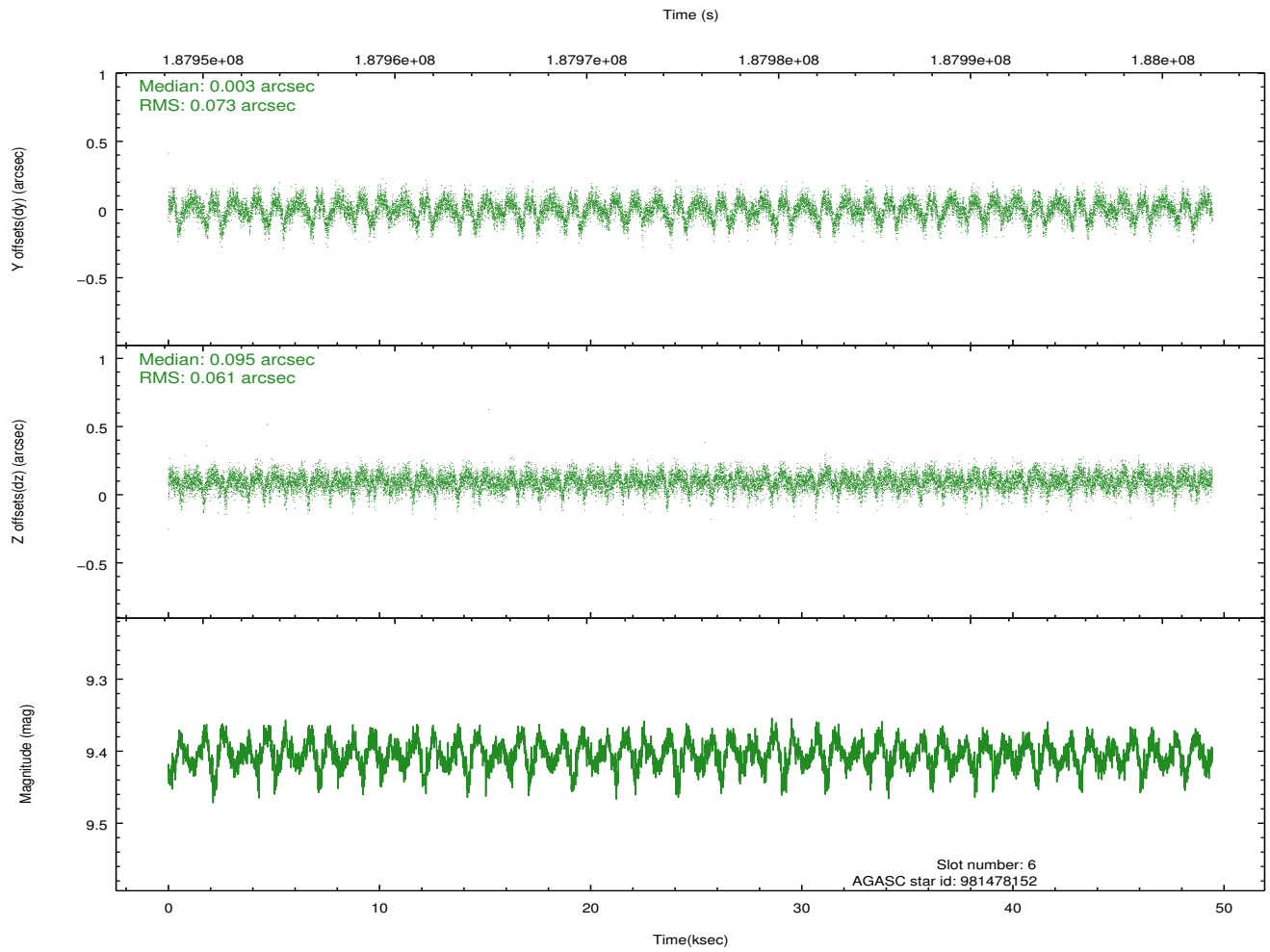
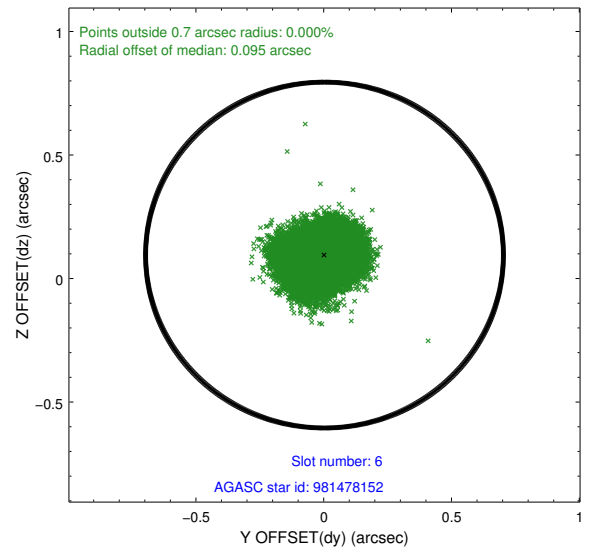
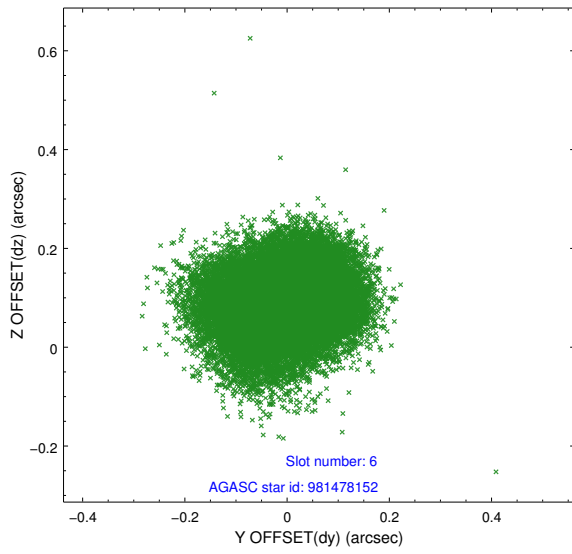
2.4.2 Slot 4



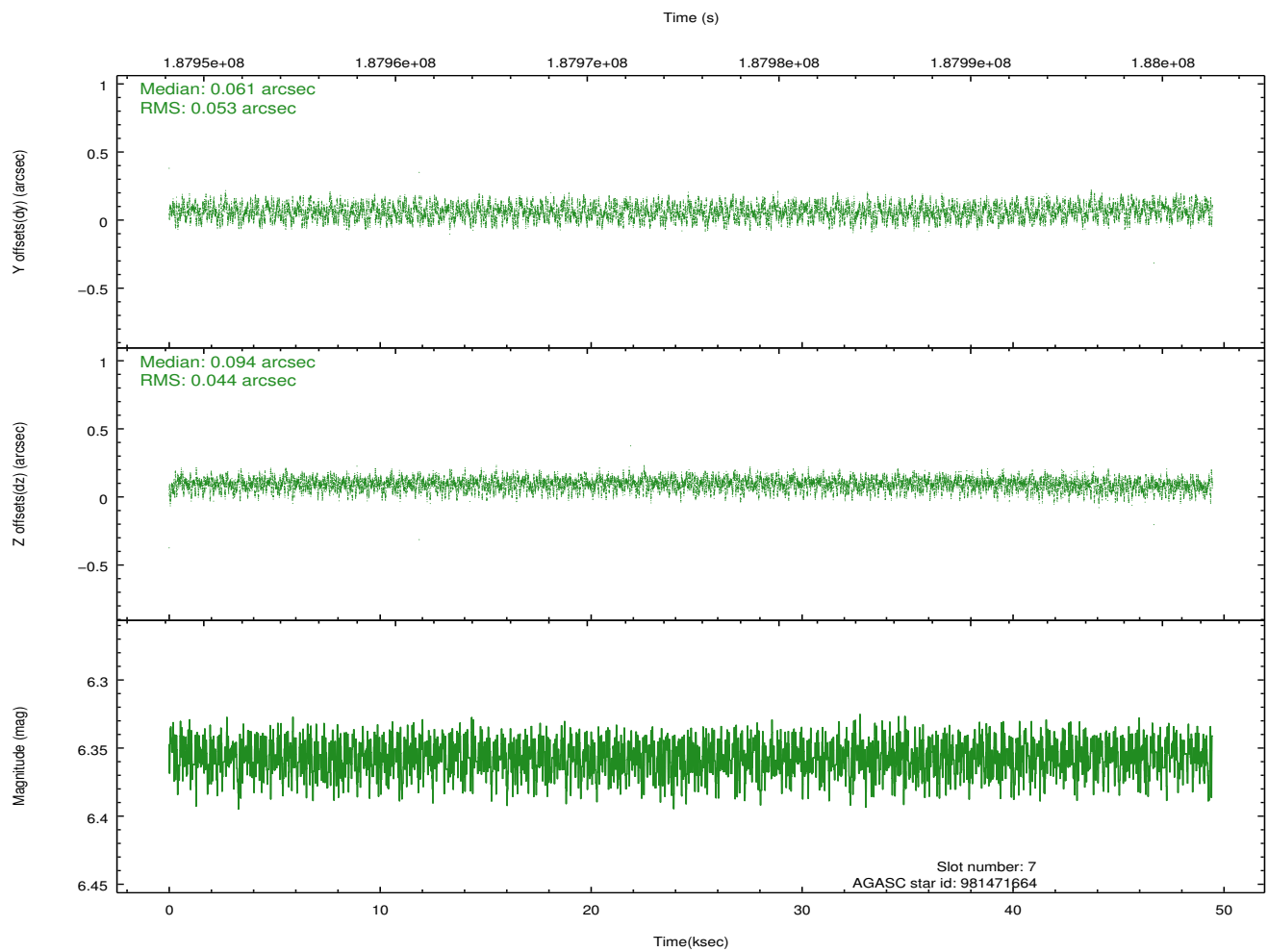
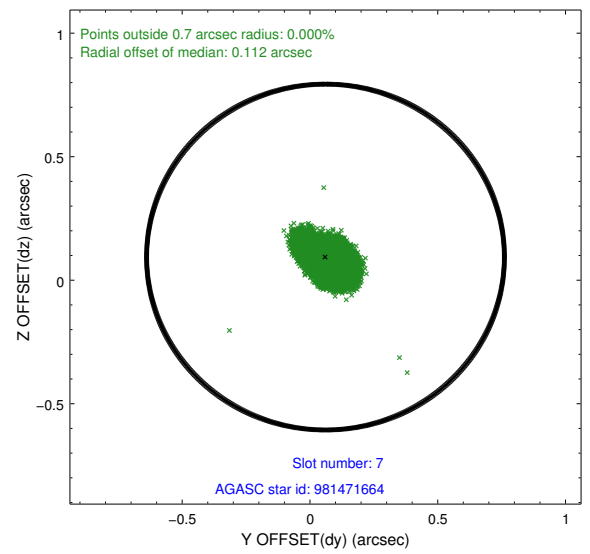
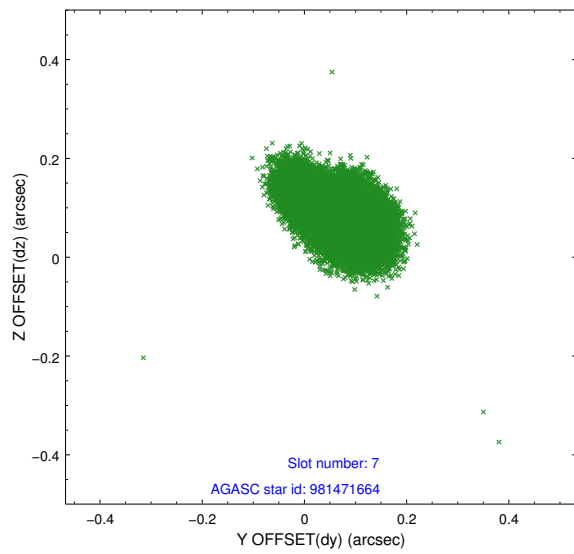
2.4.3 Slot 5



2.4.4 Slot 6

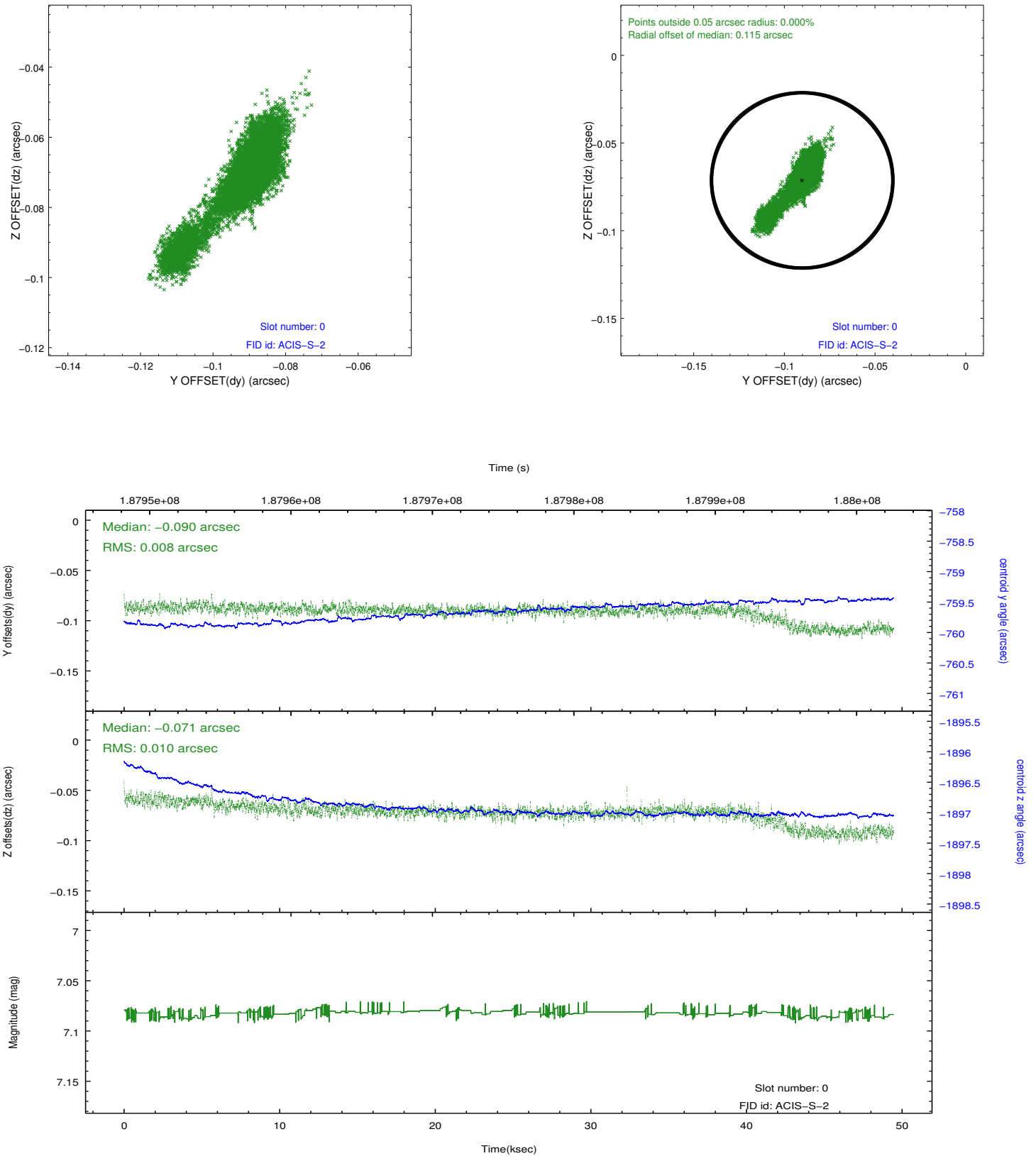


2.4.5 Slot 7

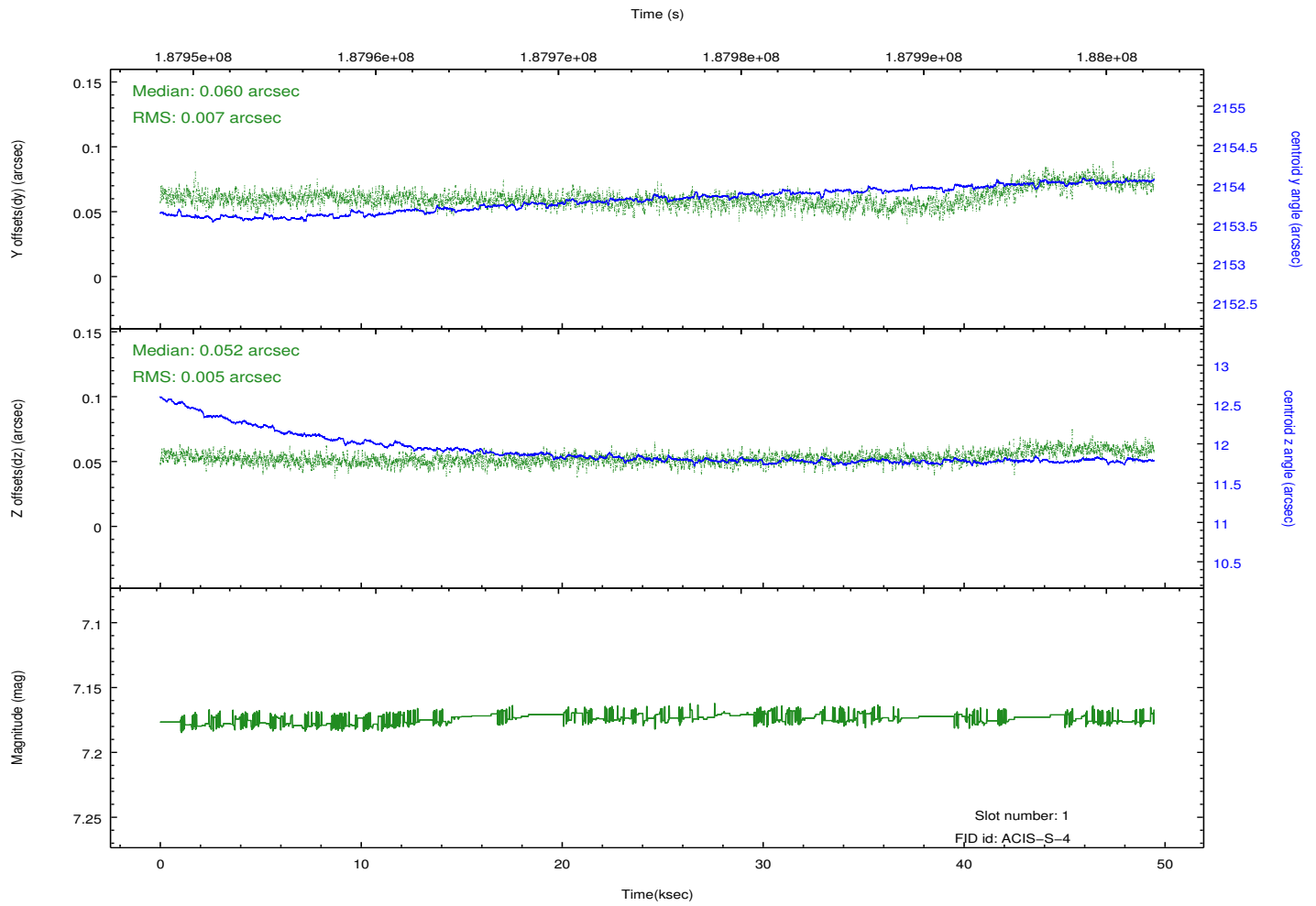
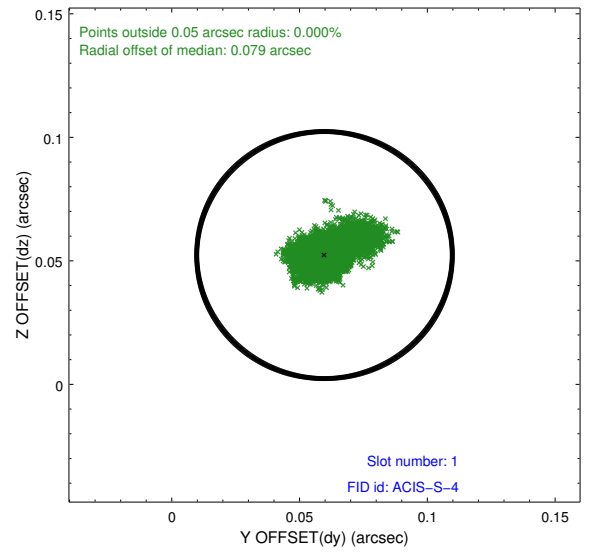
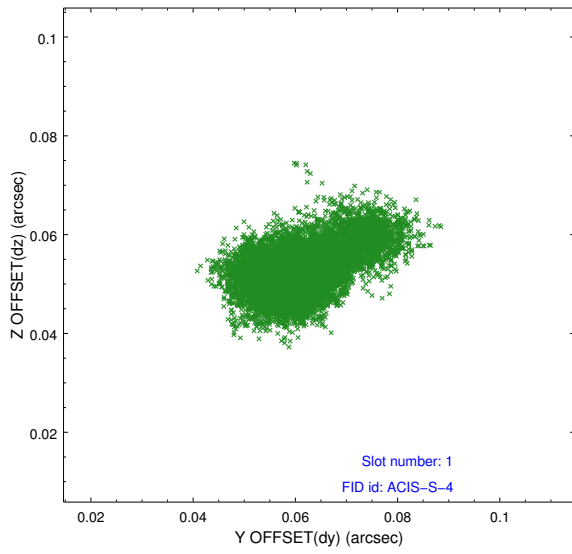


2.5 FID Slots

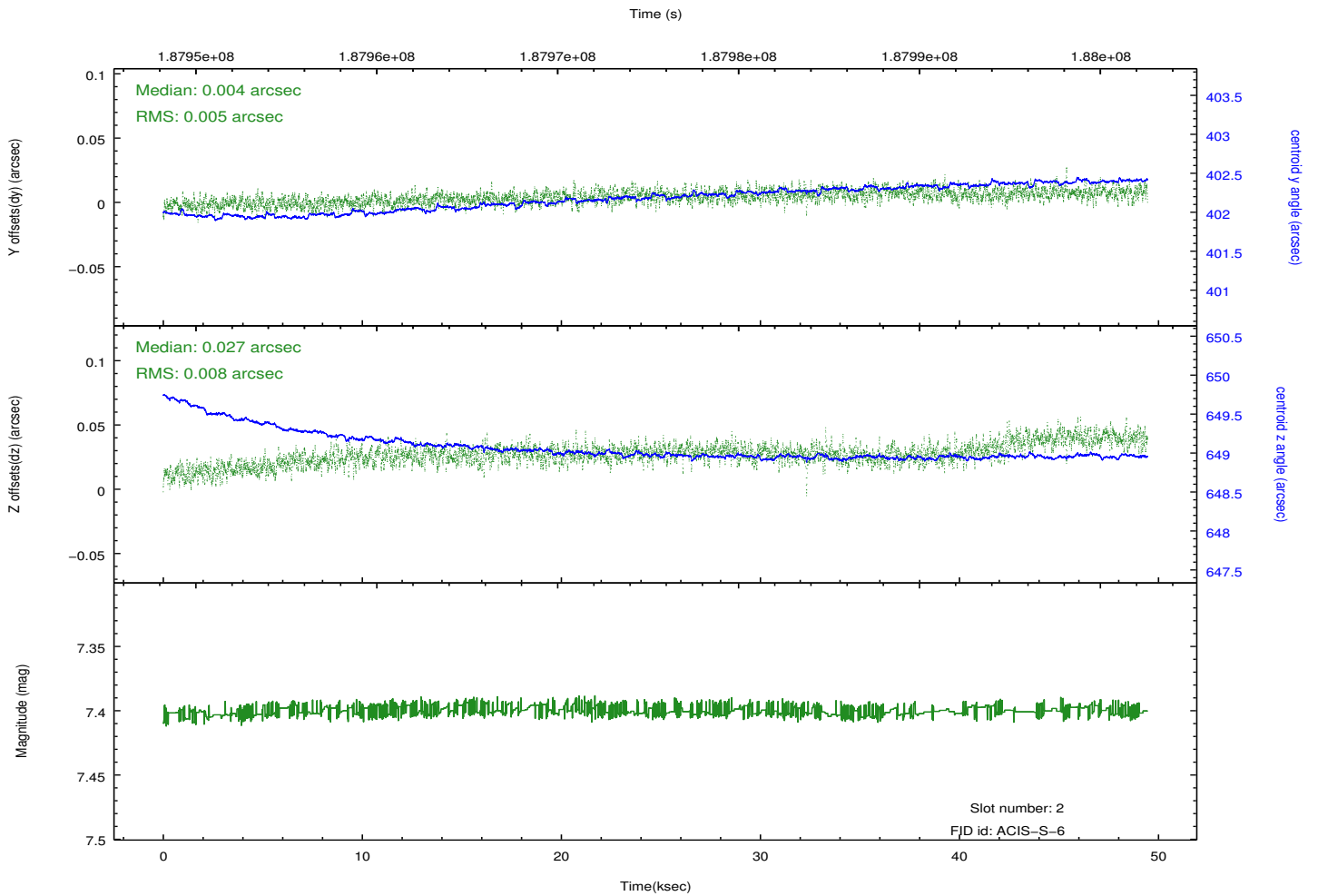
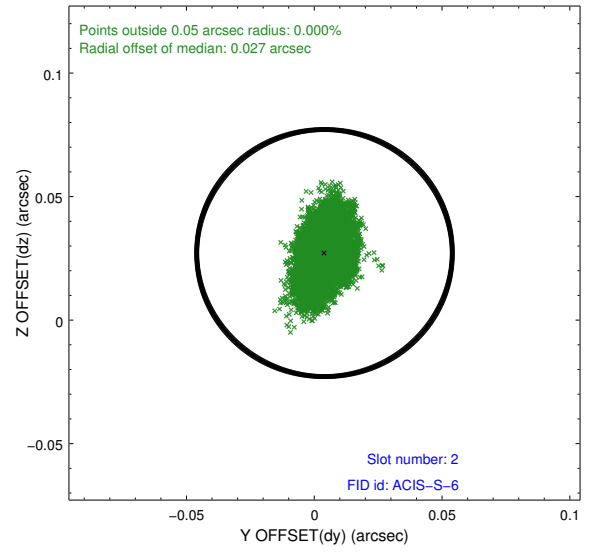
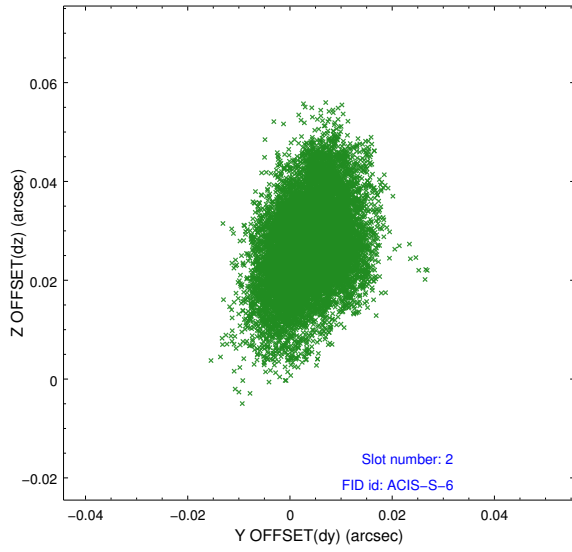
2.5.1 Slot 0



2.5.2 Slot 1

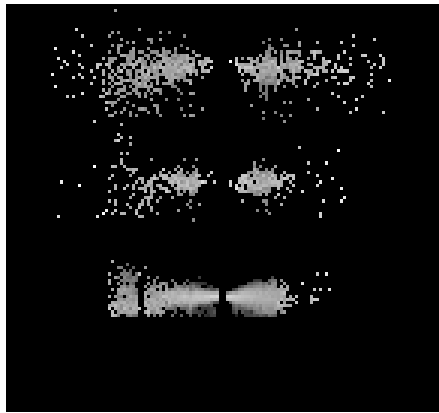


2.5.3 Slot 2

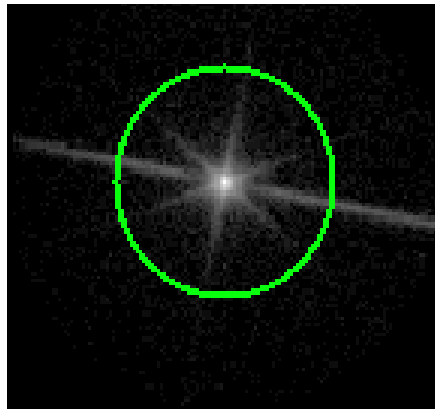


3 Gratings

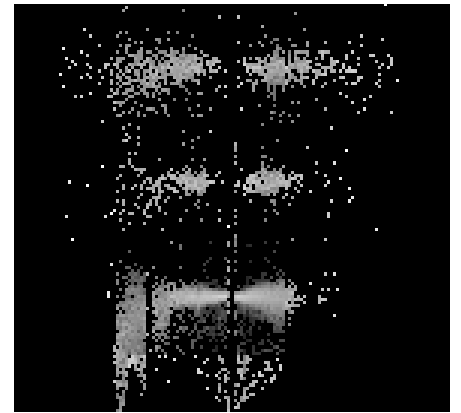
3.1 LETG Arm



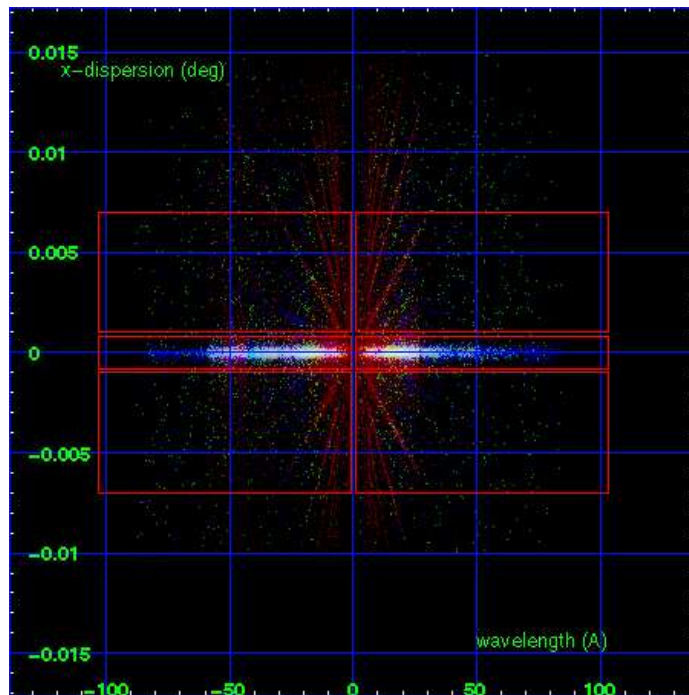
LETG Order Sort 123



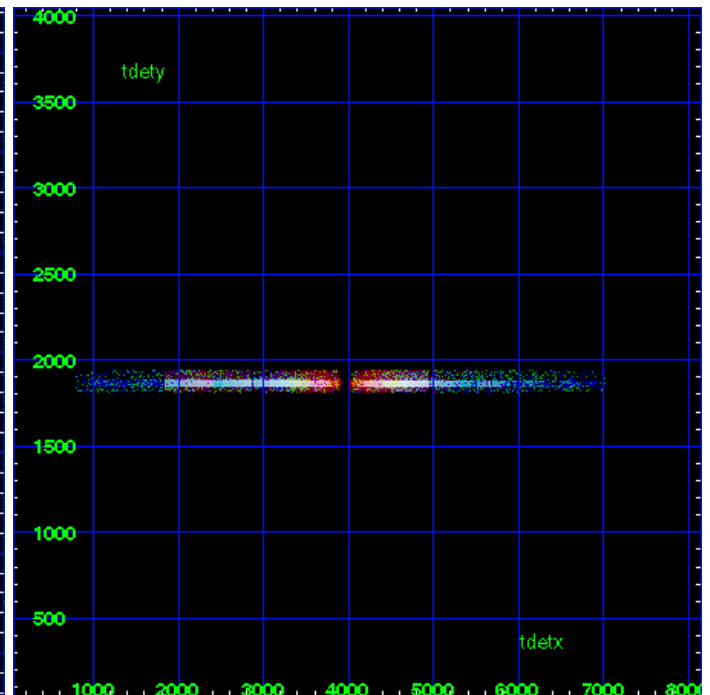
LETG Zero Order



LETG Order Sort ALL

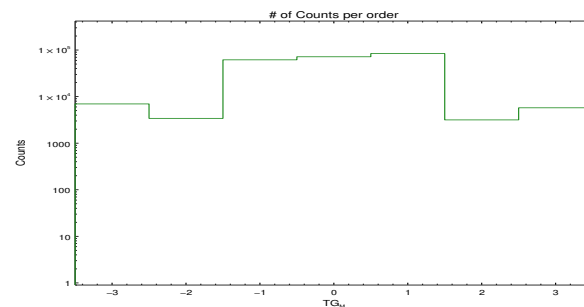


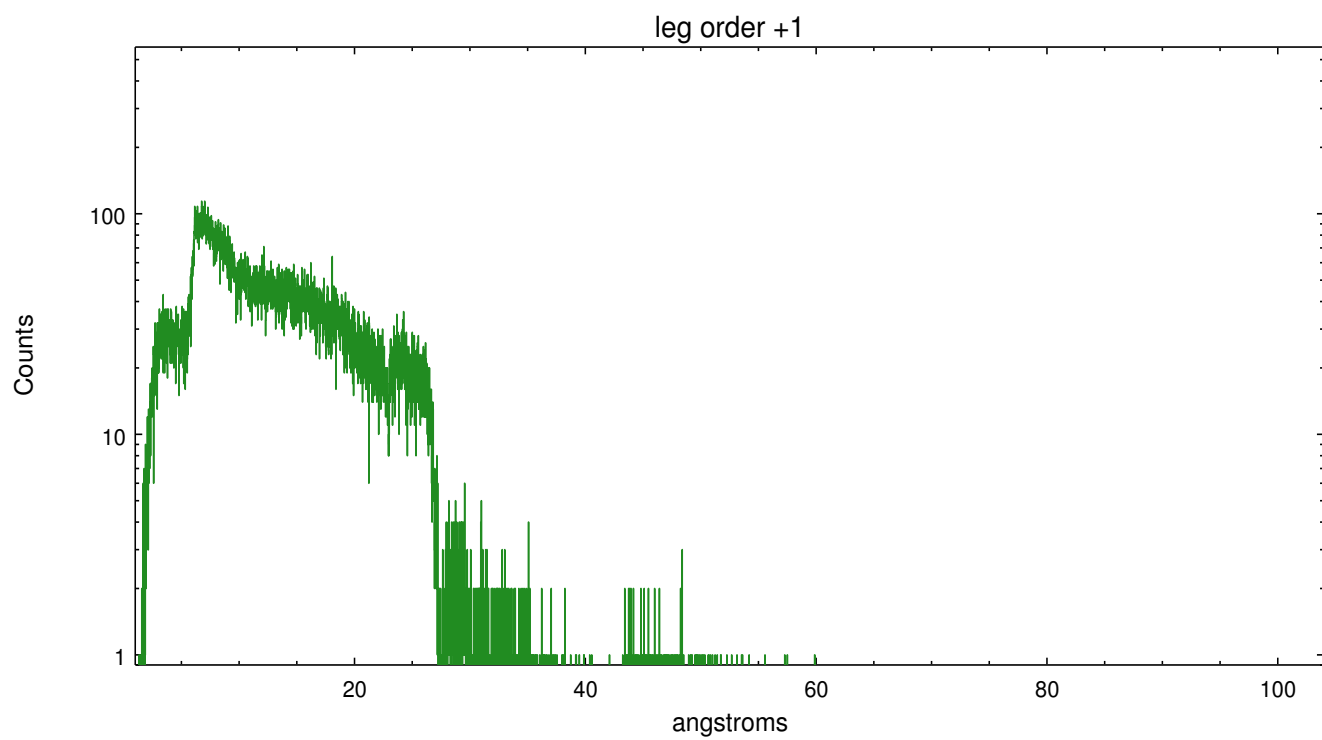
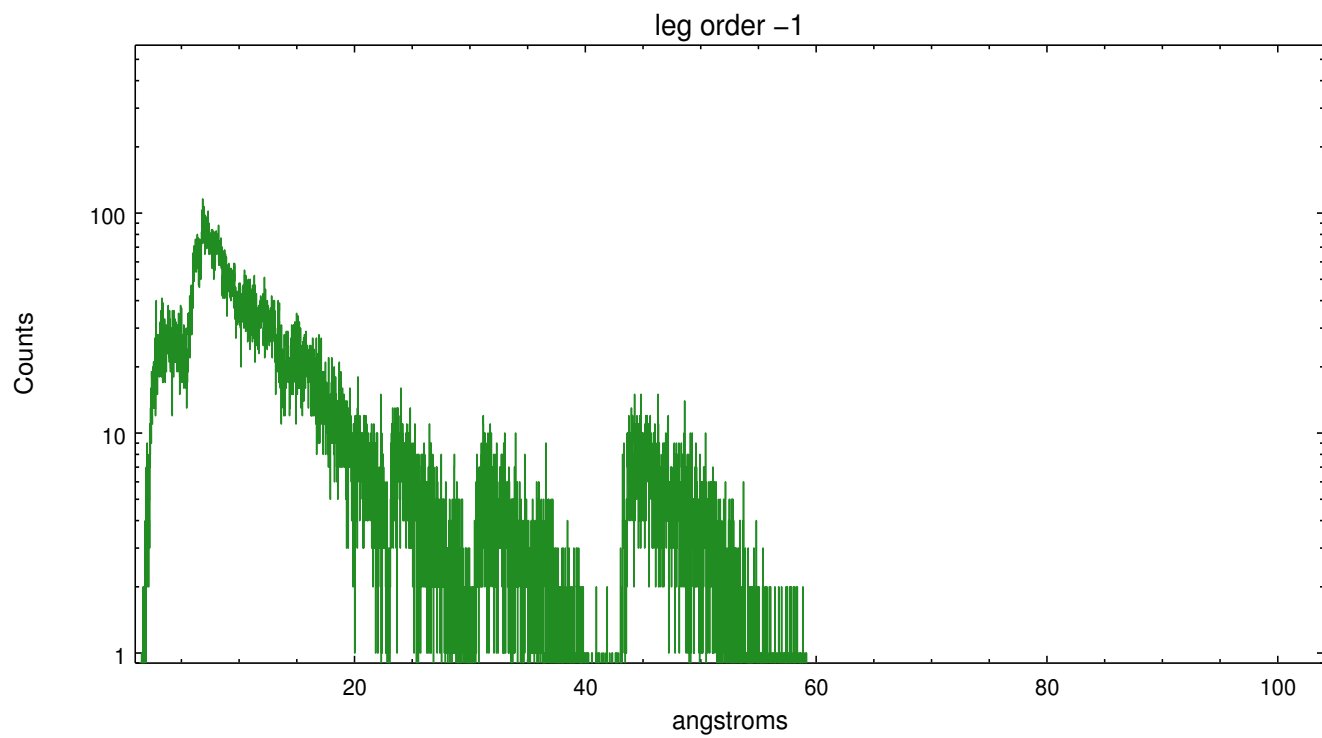
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	6969	3410	61643	71713	83848	3163	5754





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	49.203

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=4054.41, y=3947.8) into the *src1a.fits file table. These corrected coordinates were determined using a software tool developed by CXC called tg_findzo, available in CIAO. 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.

===

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.