

V&V Reference Report

L2 ASCDS Version : 10

Observation 15657 - L2 Version 2
Chandra X-Ray Center

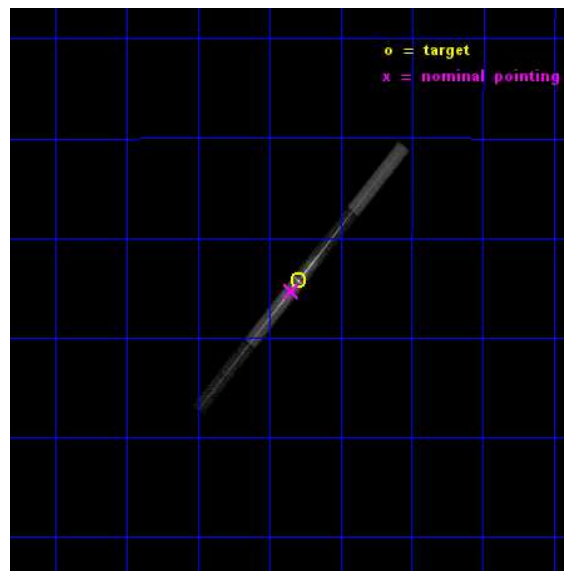
L2 Processing Date : Dec 4 2014

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1 Front

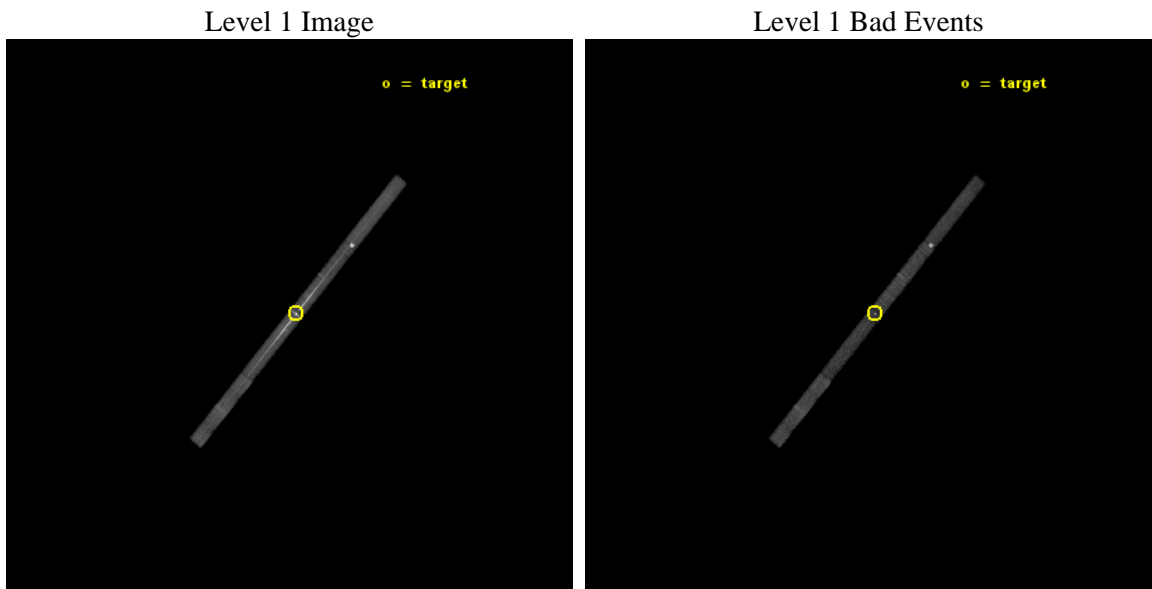
seq_num	401511	Sequence number
obs_id	15657	Observation id
title	Characterizing the photoionized gas in the dipper 4U1916-05	Propos
observer	Dr. Jelle Kaastra	Principal investigator
object	4U1916-05	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	289.699583	Observer's specified target RA [deg]
dec_targ	-5.238056	Observer's specified target Dec [deg]
ra_nom	289.71079001542	Nominal RA [deg]
dec_nom	-5.2559093757031	Nominal Dec [deg]
roll_nom	129.15765532727	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30068.352856696	Sum of GTIs [s]
livetime	28143.347862875	Livetime [s]
ontime5	30068.311816692	Sum of GTIs [s]
ontime6	30068.270776689	Sum of GTIs [s]
ontime7	30068.352856696	Sum of GTIs [s]
ontime8	30067.588696659	Sum of GTIs [s]
l2events	180168	Number of level 2 events



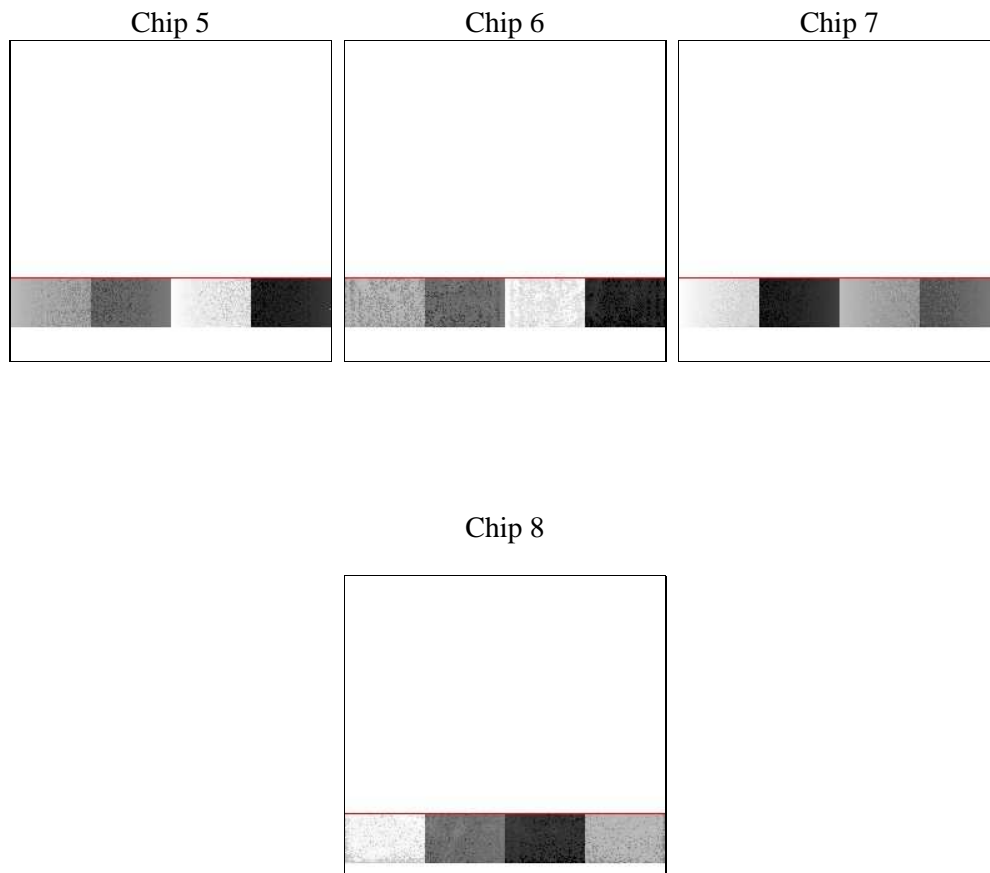
2 OBI

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	10.3	Processing system revision	ontime	30068.352856696	Sum of GTIs [s]
caldbver	4.6.4	 	ontime5	30068.311816692	Sum of GTIs [s]
date	2014-12-04T06:45:13	Date and time of file creation	ontime6	30068.270776689	Sum of GTIs [s]
revision	2	Processing version of data	ontime7	30068.352856696	Sum of GTIs [s]
			ontime8	30067.588696659	Sum of GTIs [s]
			l1events	330357	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			zo_pos	(4179.88, 4226.68)	src1a sky pixel position
			zo_pos_tgd	(4179.70, 4226.87)	src1a sky pixel position via todetect

2.1.4 Events

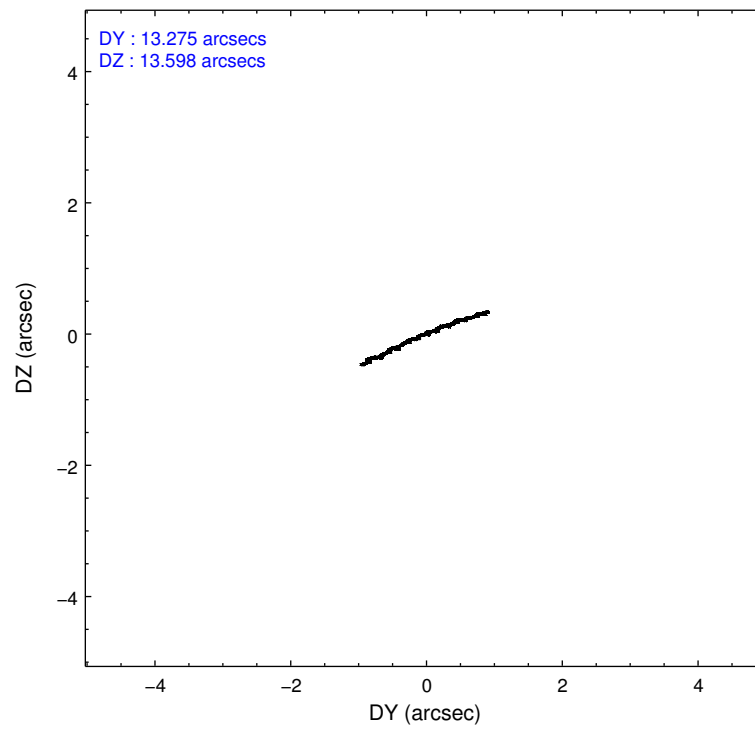
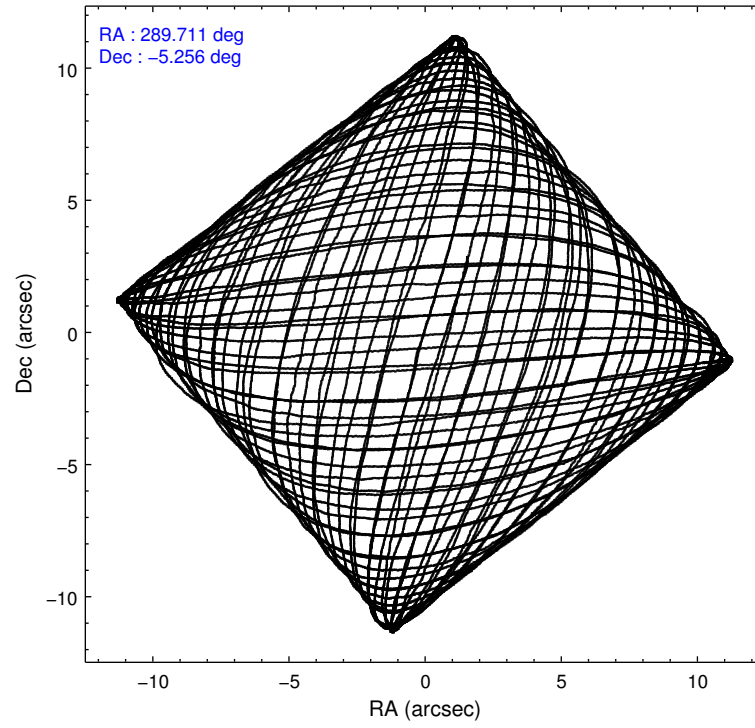
	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	74369	77742	133381	44865
rejected events	31755	27582	27286	32402
rejected %	42%	35%	20%	72%

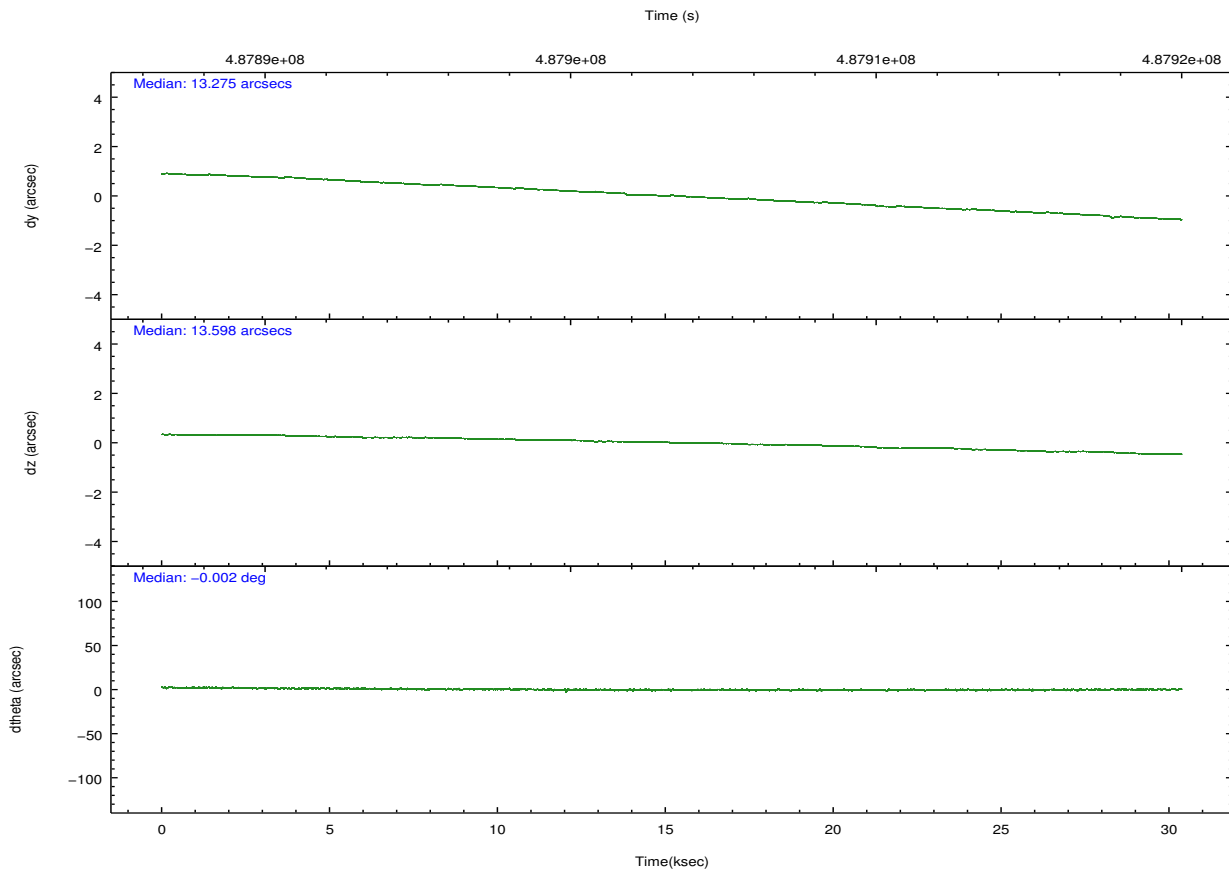
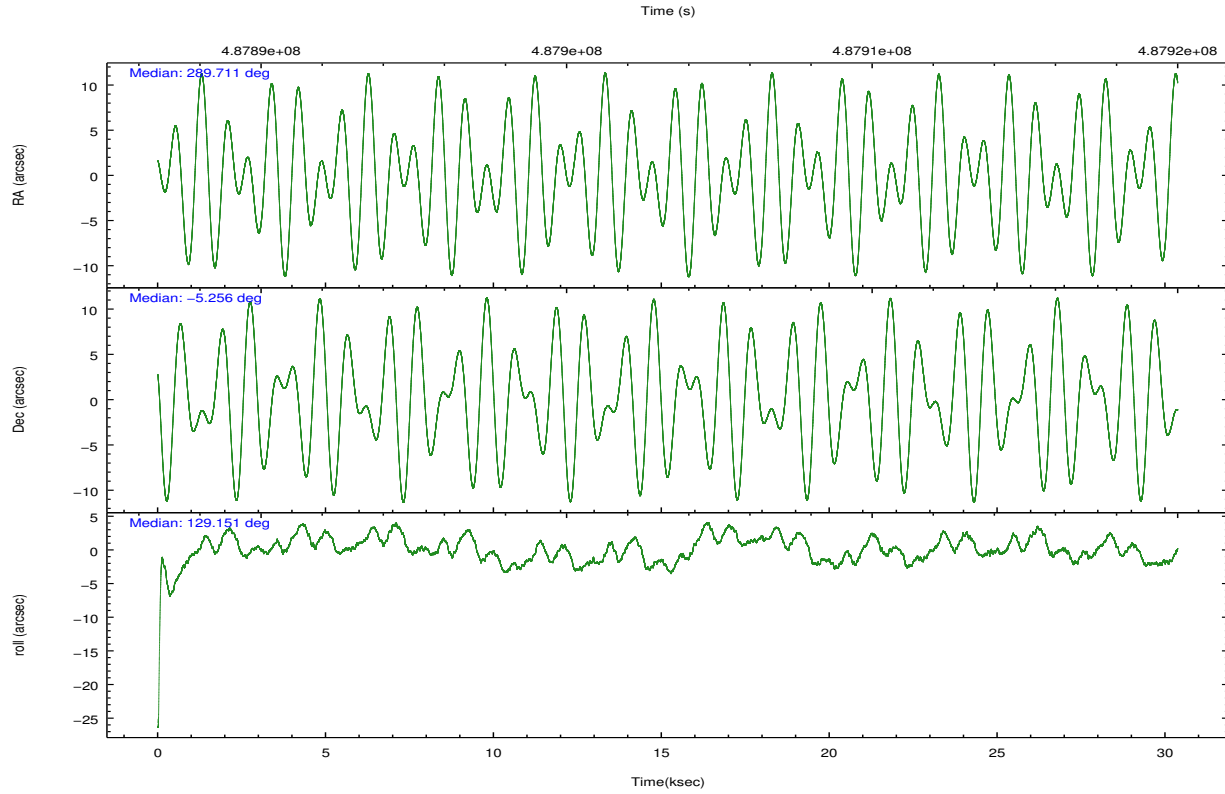
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	7681	36251	19022	4309
	10%	46%	14%	9%
grade 1 events	4531	103	561	13
	6%	0%	0%	0%
grade 2 events	9191	6228	25283	2295
	12%	8%	18%	5%
grade 3 events	4567	2516	11263	1445
	6%	3%	8%	3%
grade 4 events	4435	2463	11236	1341
	5%	3%	8%	2%
grade 5 events	10386	1285	6071	1618
	13%	1%	4%	3%
grade 6 events	16742	2704	39293	3073
	22%	3%	29%	6%
grade 7 events	16836	26192	20652	30771
	22%	33%	15%	68%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-5678	ACIS-5678	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	289.736572	289.7107900154221	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	-5.265274	-5.255909375703113	Subarray start row	109	109
[deg] Pointing Roll	129.003394	129.1576553272736	Subarray row count	158	158
[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	0.6
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
[s] Observation start time (MET)	487888507.184000	487887634.40091			
Observation start date	2013-06-17T20:34:00	2013-06-17T20:20:34			
[s] Observation end time (MET)	487918507.184000	487919151.61512			
Observation end date	2013-06-18T04:54:00	2013-06-18T05:05:51			
Read mode	TIMED	TIMED			

2.3 Aspect



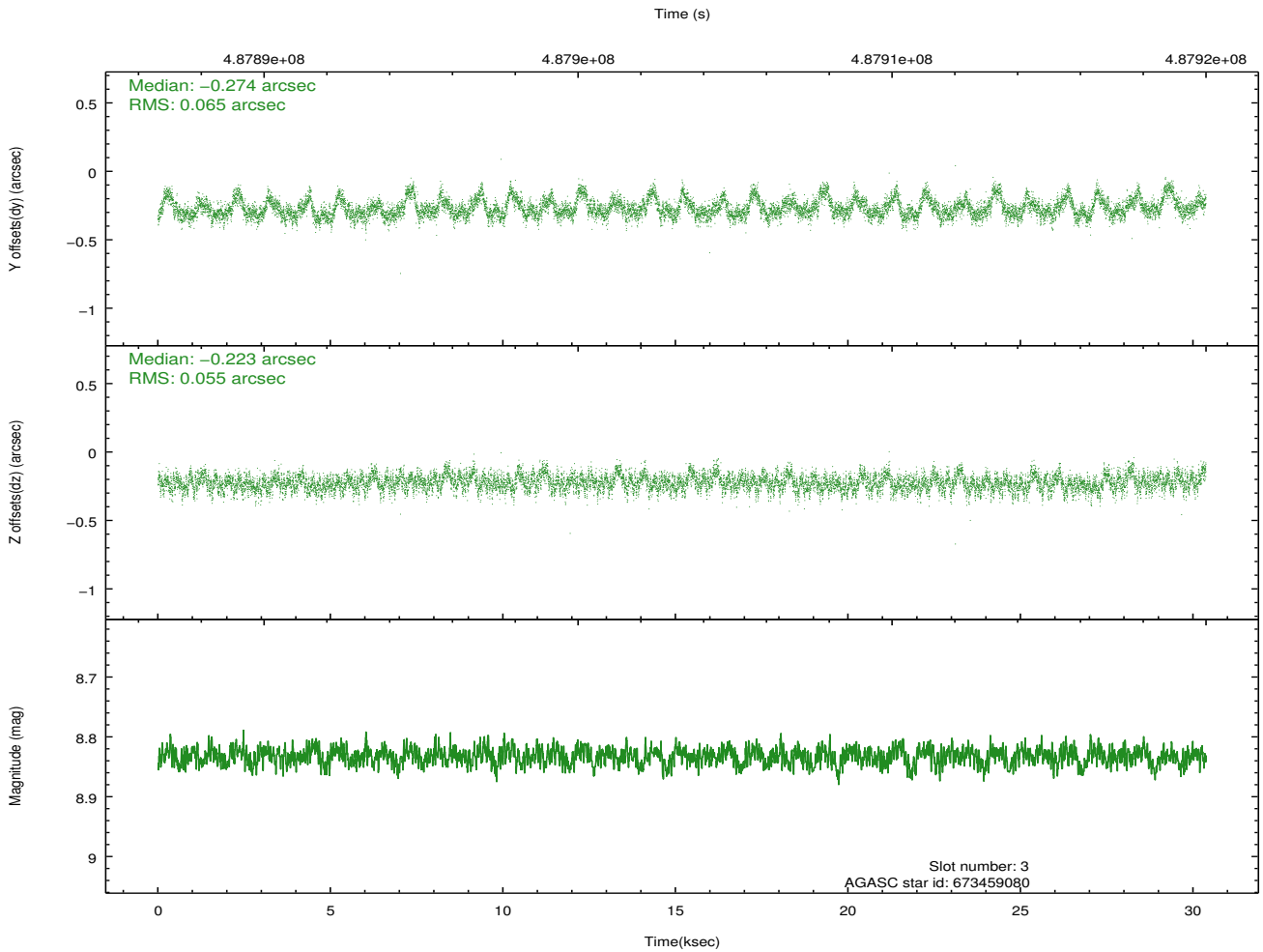
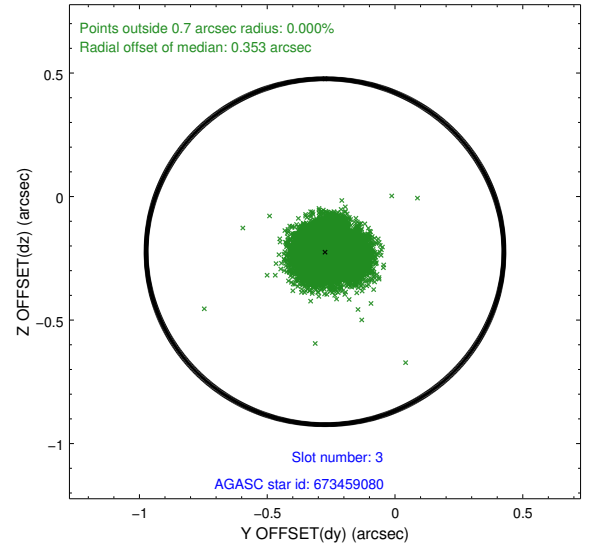
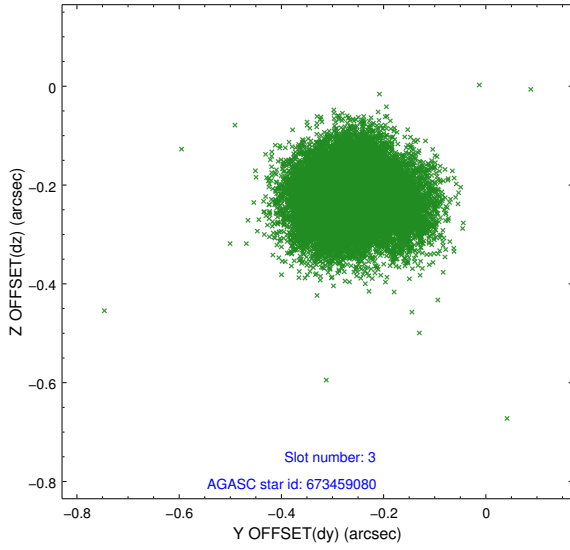


Slot Statistics

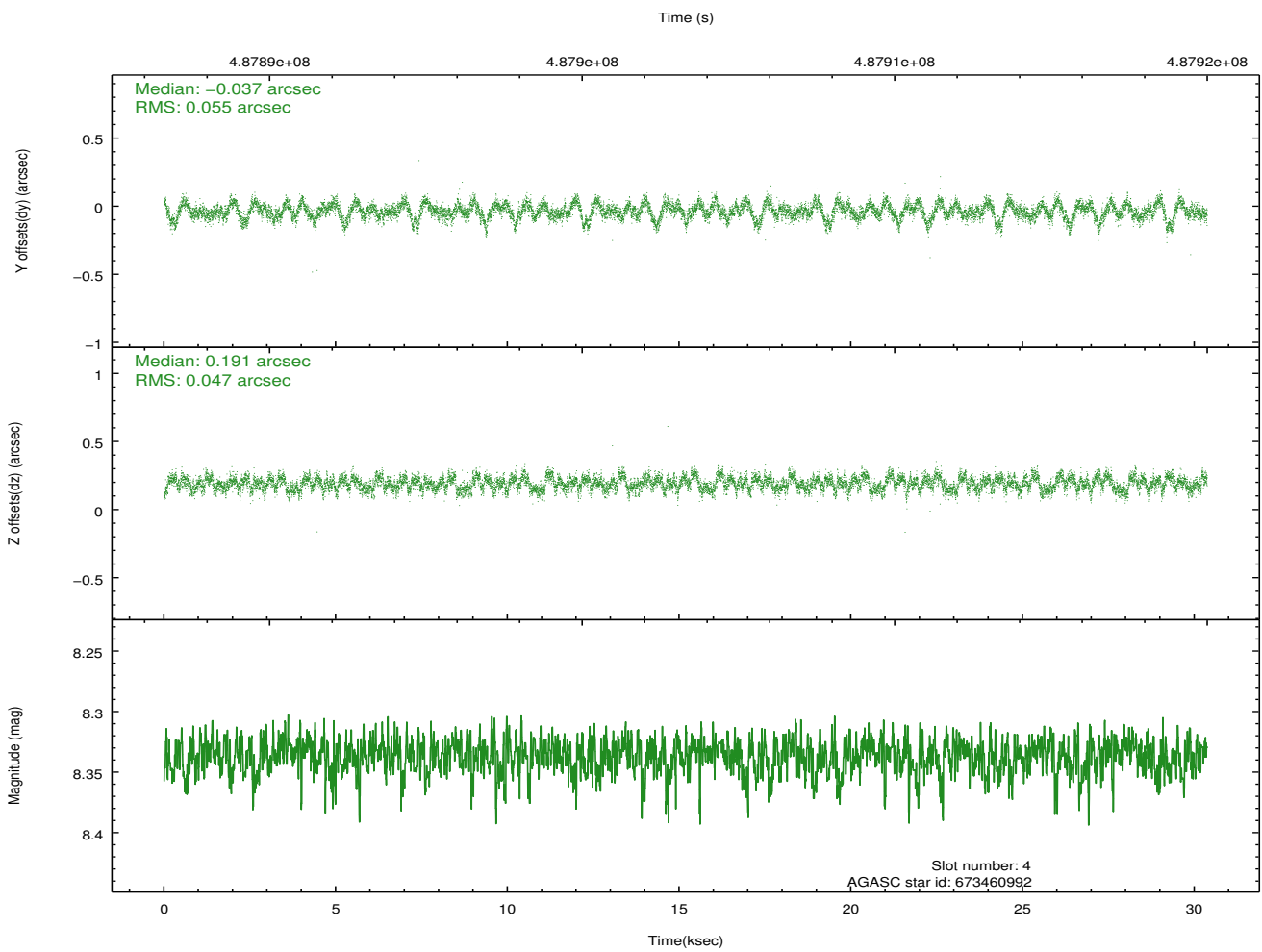
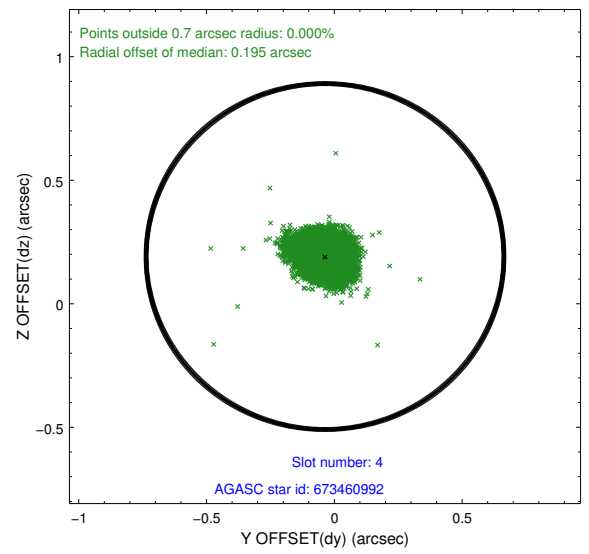
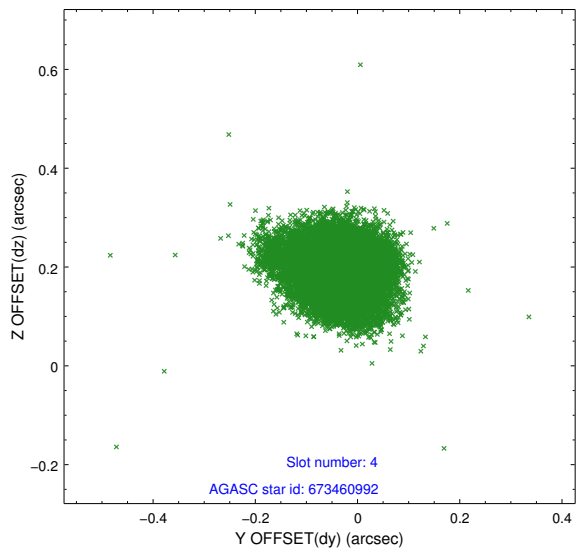
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.04	7408	-0.149	-0.103	0.012	0.019	0.000000	0.000000	-765.83	-1899.71
1	FID		ACIS-S-4	7.12	7408	0.159	0.077	0.015	0.025	0.000000	0.000000	2147.78	8.75
2	FID		ACIS-S-6	7.34	7408	-0.037	0.032	0.014	0.026	0.000000	0.000000	396.43	646.23
3	GUIDE	used	673459080	8.83	14808	-0.274	-0.223	0.091	0.148	289.246637	-5.373686	801.22	1610.80
4	GUIDE	used	673460992	8.34	14810	-0.037	0.191	0.076	0.121	289.799374	-5.232721	-50.29	-248.17
5	GUIDE	used	673463704	8.97	14806	-0.002	-0.007	0.089	0.144	289.894494	-4.869892	749.67	-1335.74
6	GUIDE	used	673464968	8.47	14812	0.124	0.181	0.070	0.111	290.349705	-5.597758	-2313.02	-953.07
7	GUIDE	used	673466464	9.23	14808	0.186	-0.134	0.140	0.213	289.850458	-5.613937	-1232.10	472.57

2.4 Star Slots

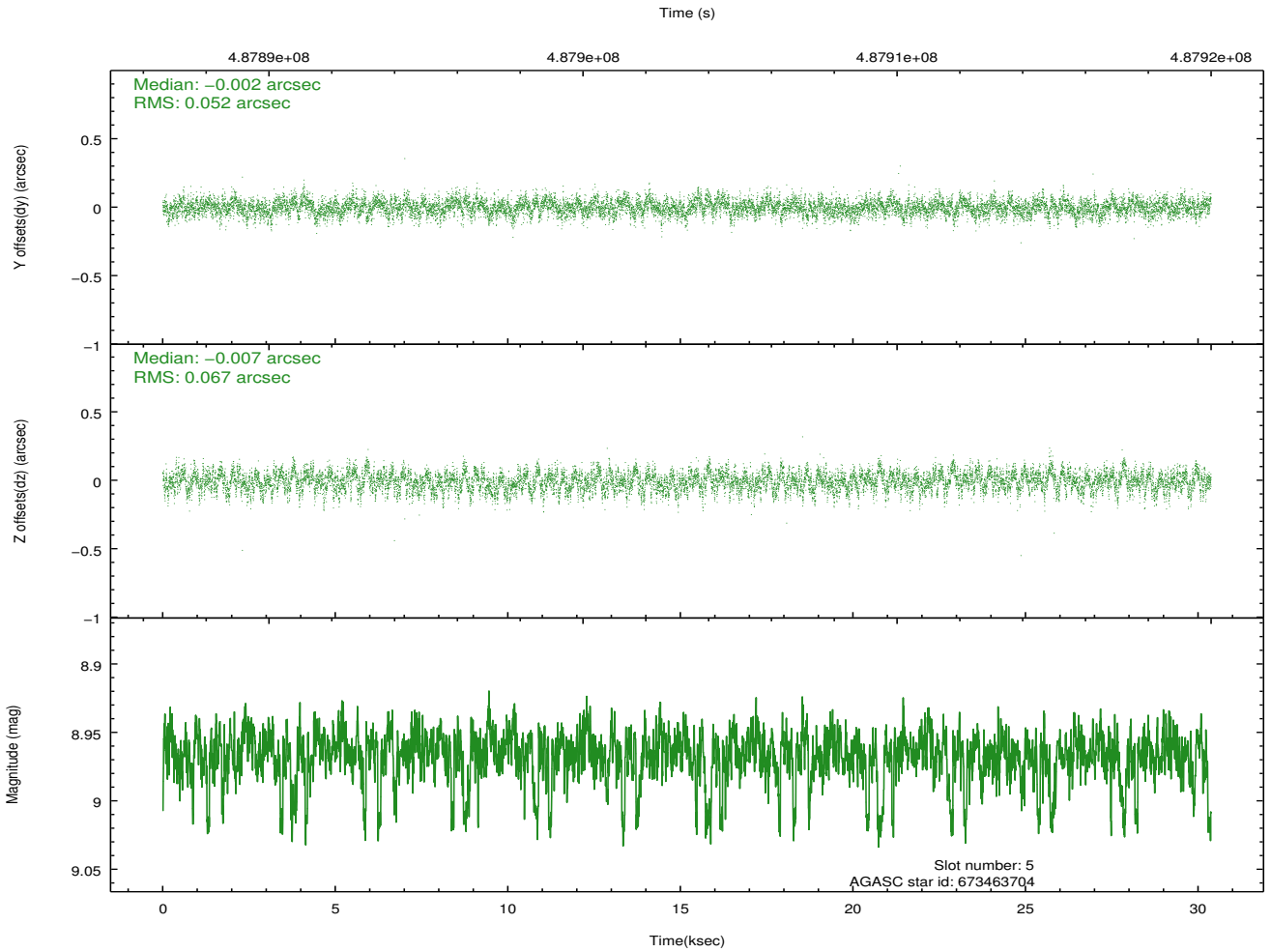
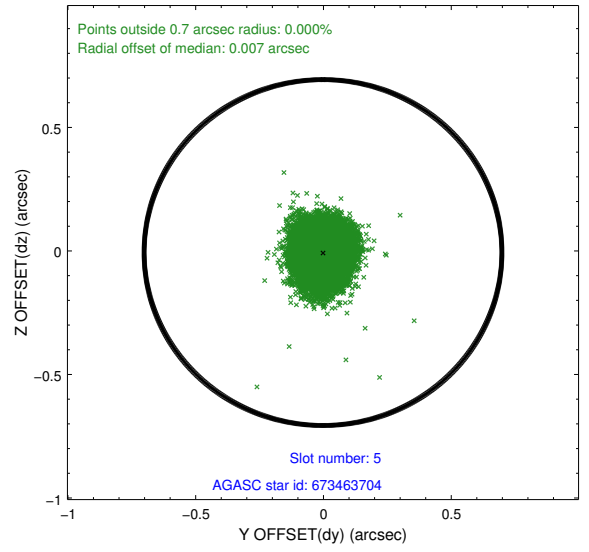
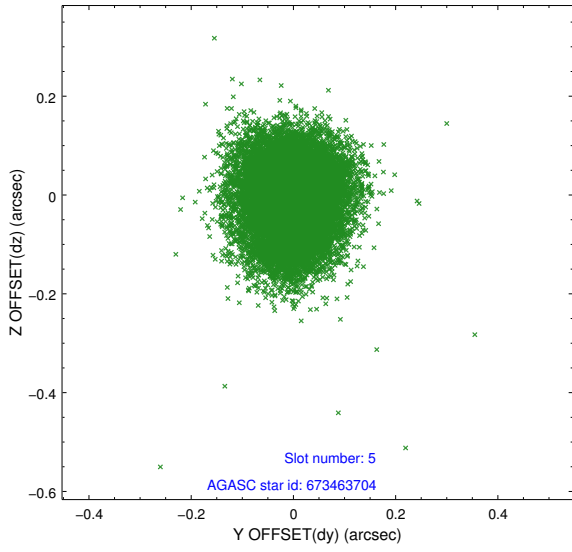
2.4.1 Slot 3



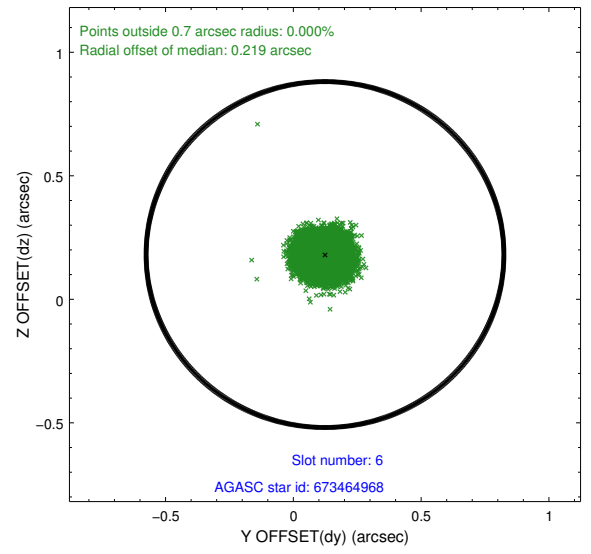
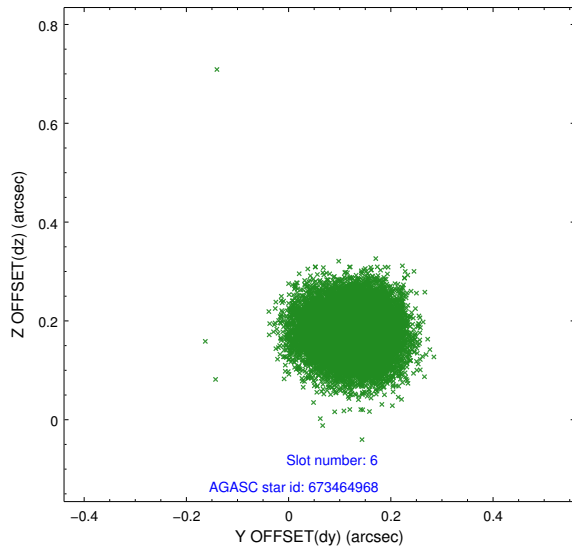
2.4.2 Slot 4



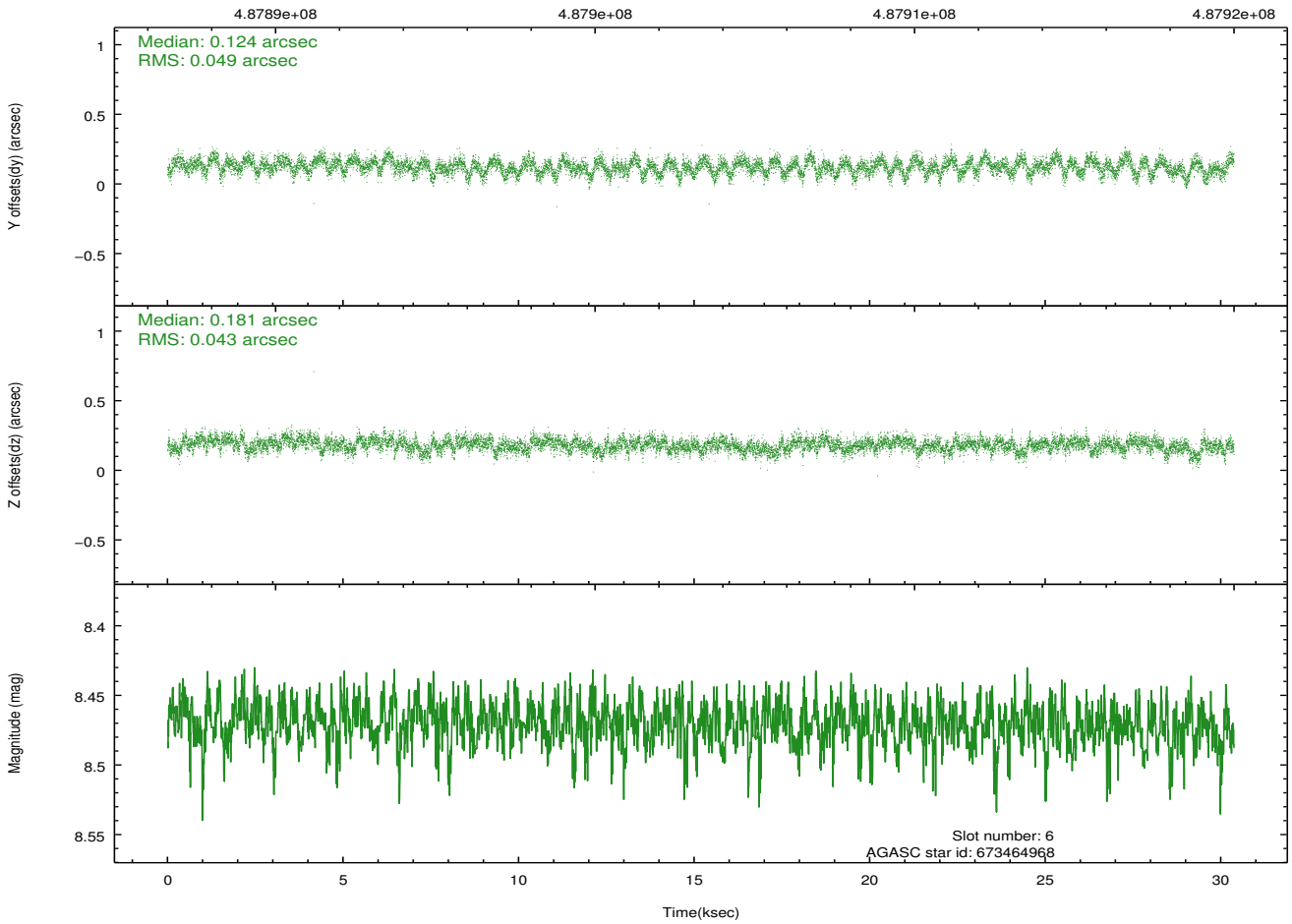
2.4.3 Slot 5



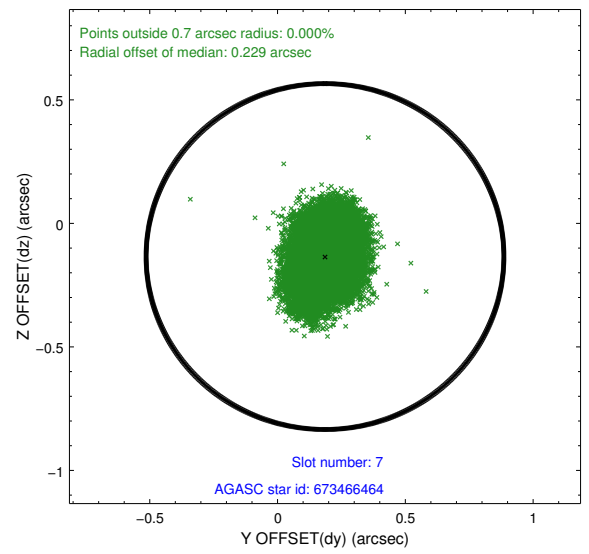
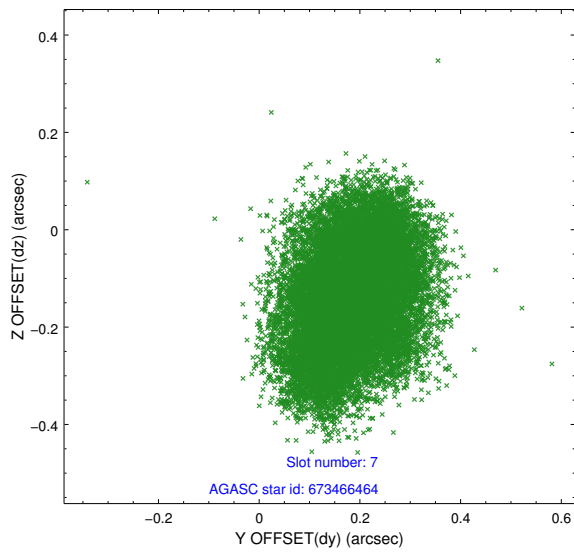
2.4.4 Slot 6



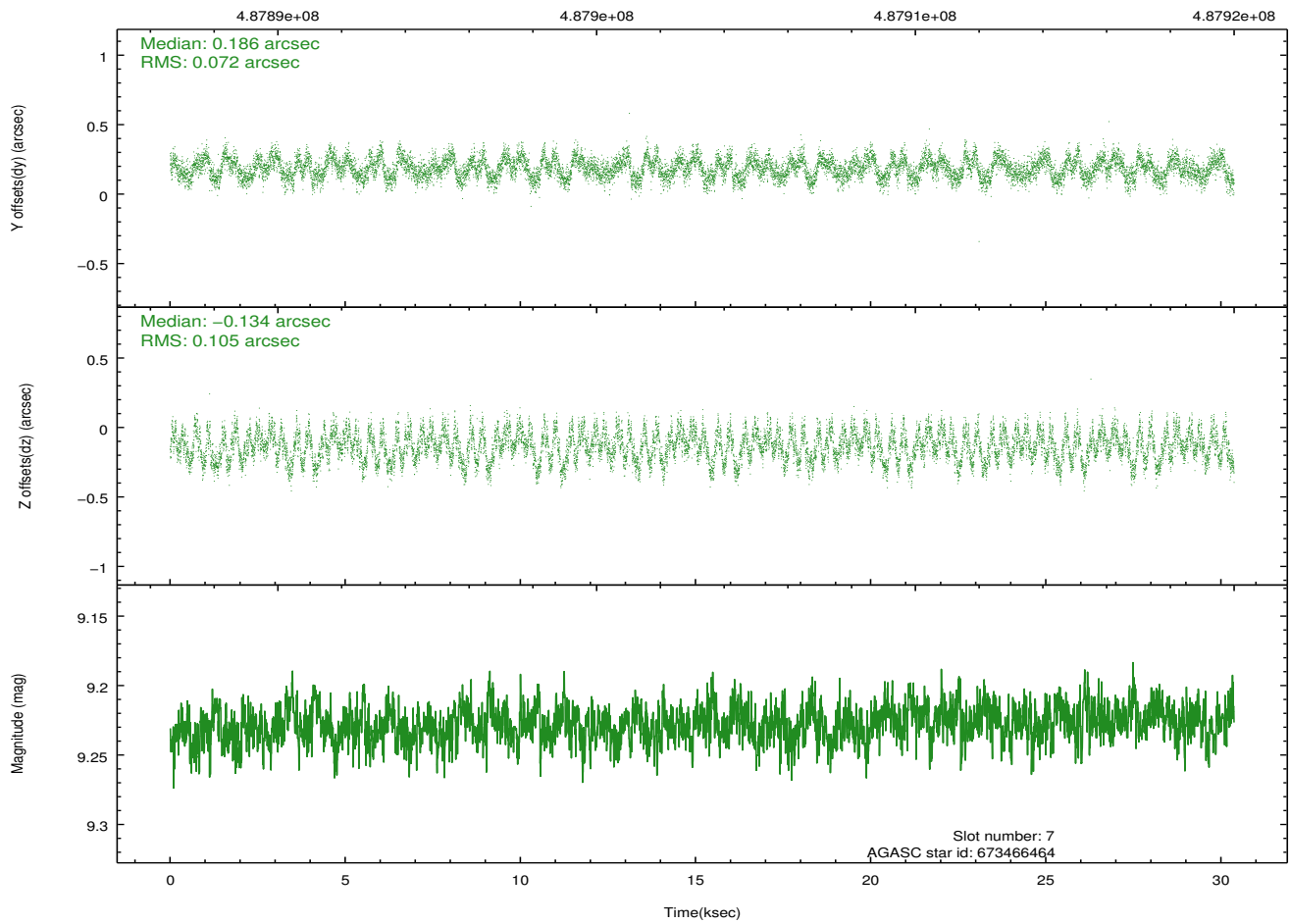
Time (s)



2.4.5 Slot 7

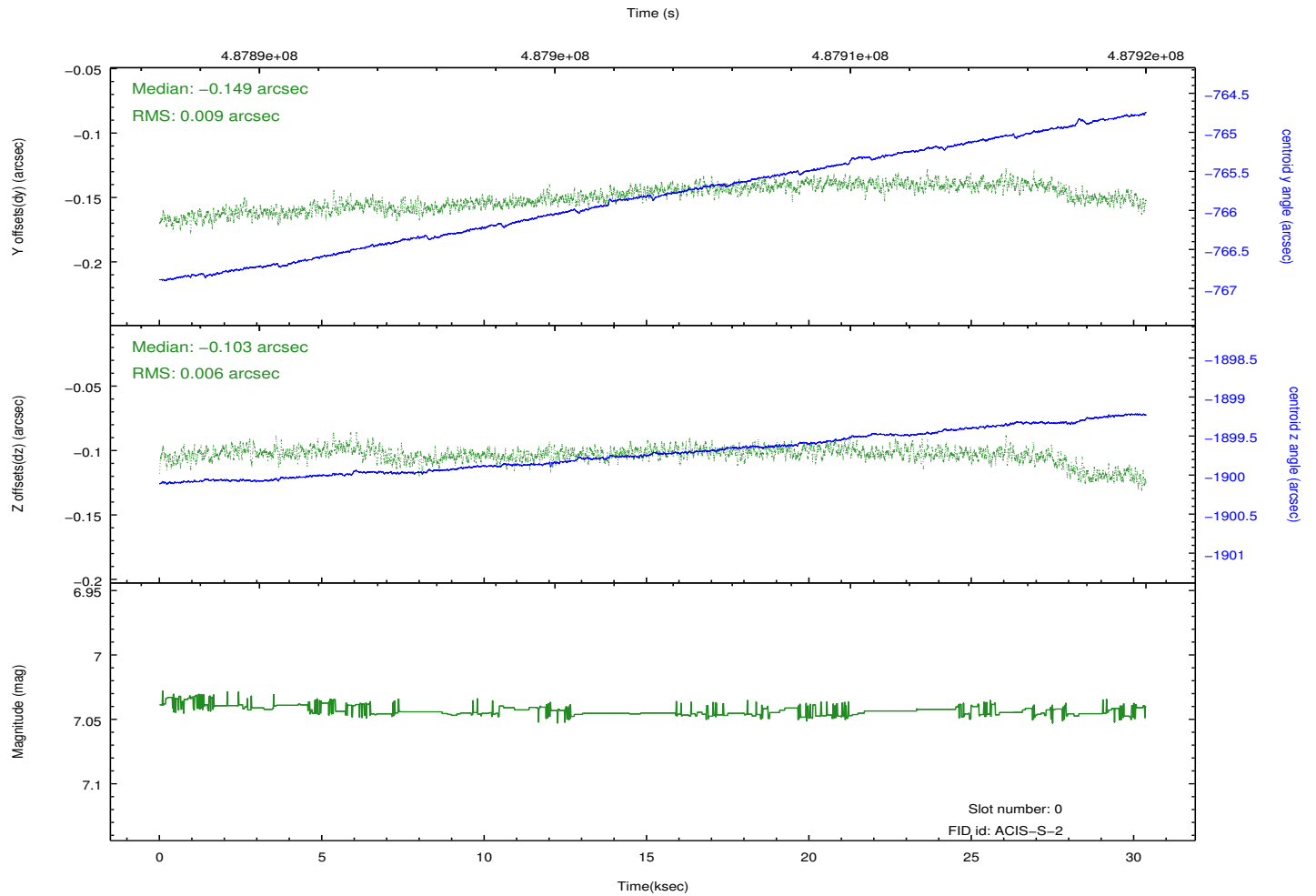
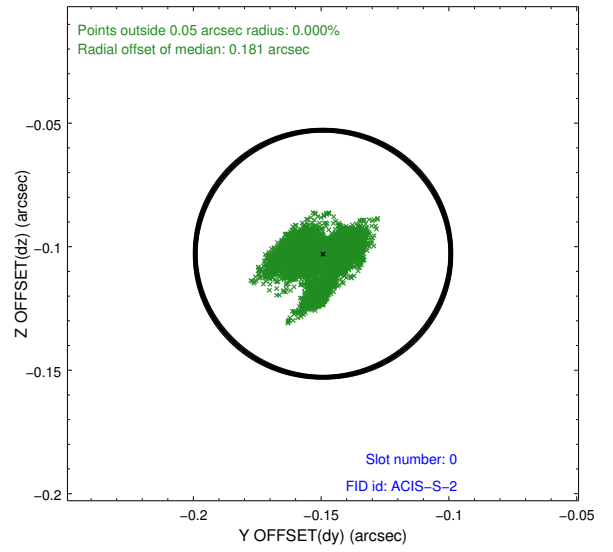
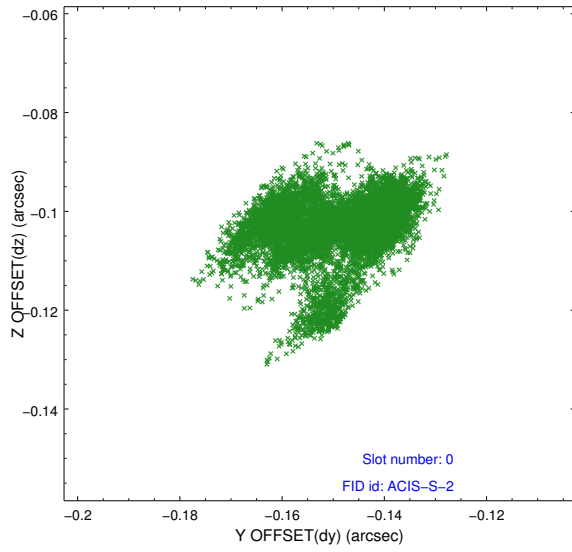


Time (s)

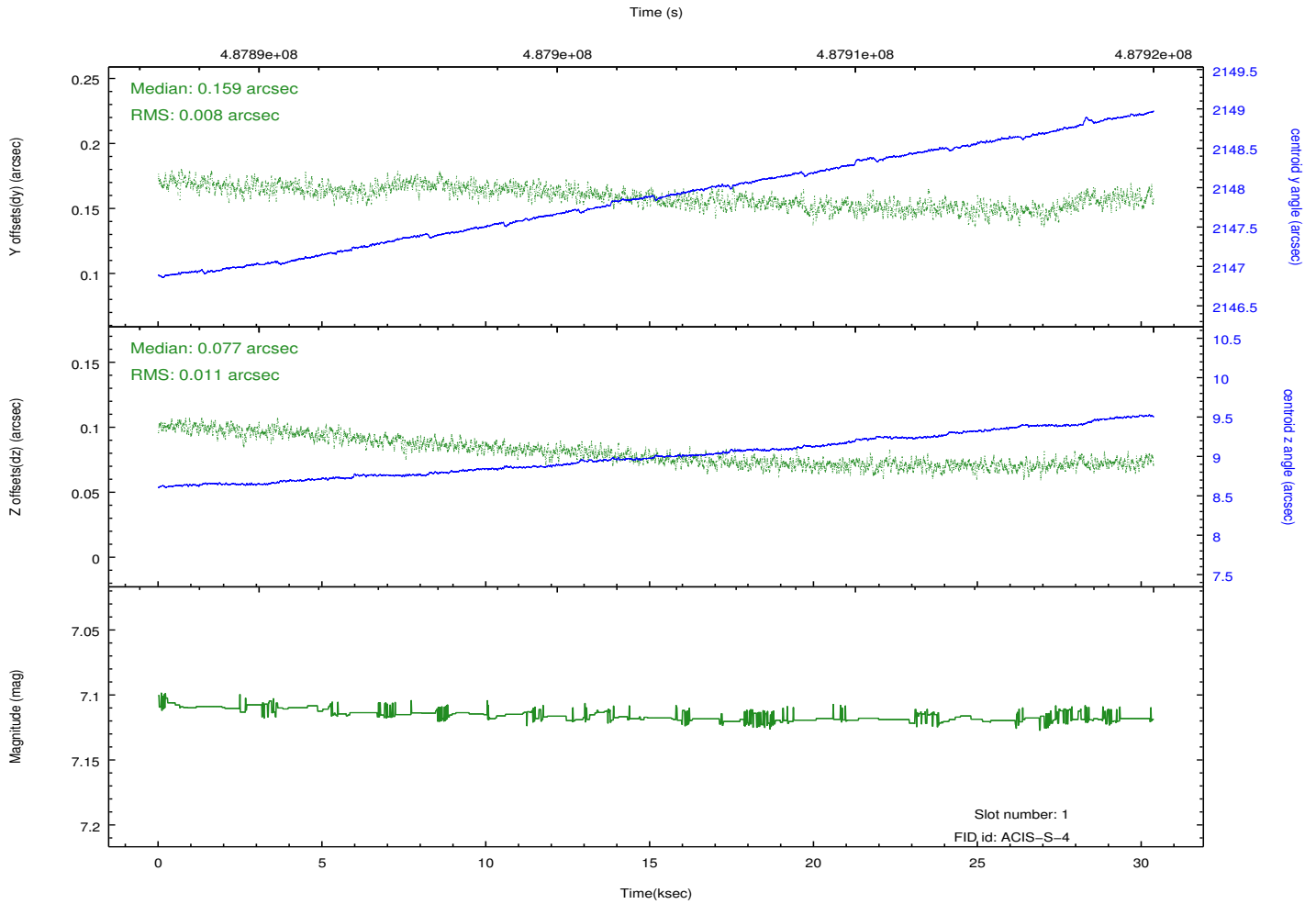
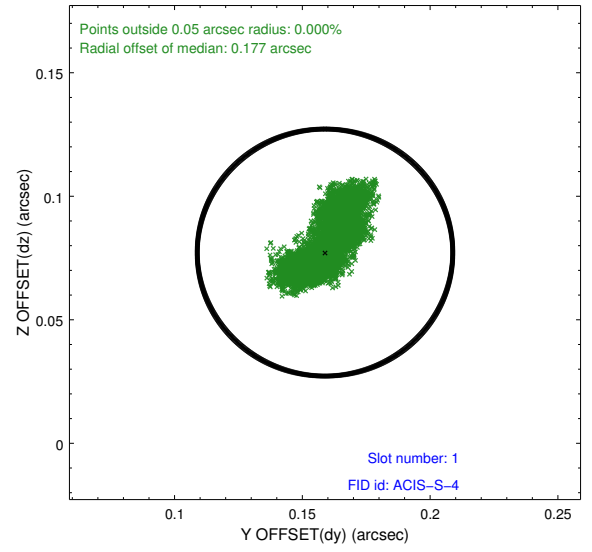
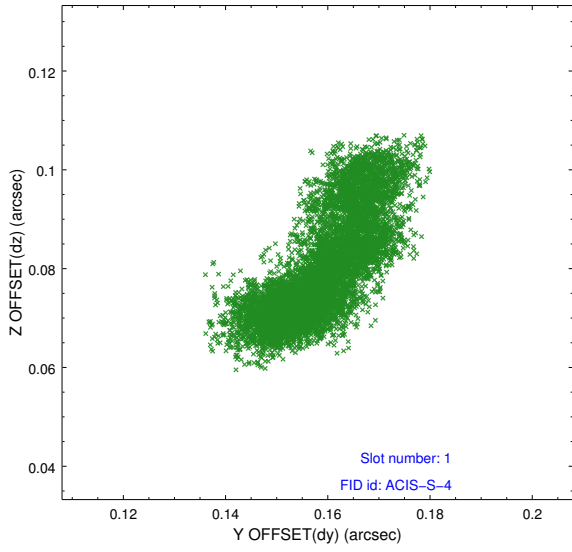


2.5 FID Slots

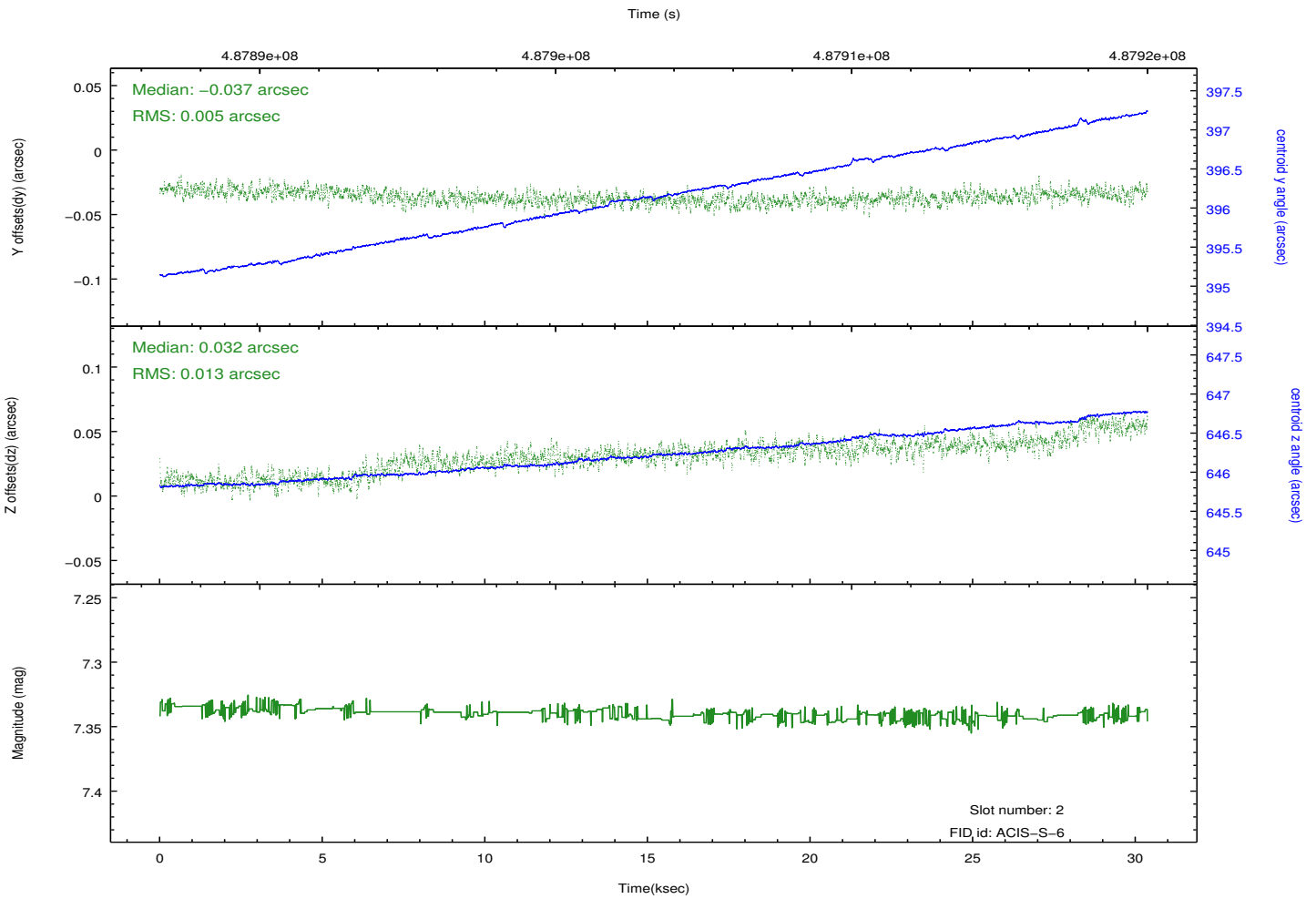
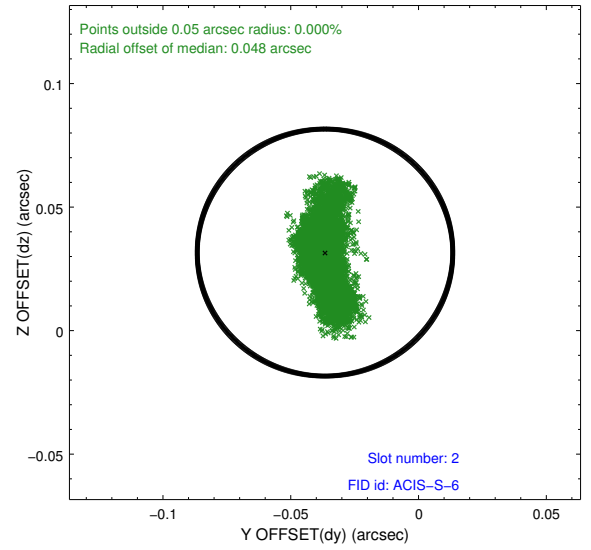
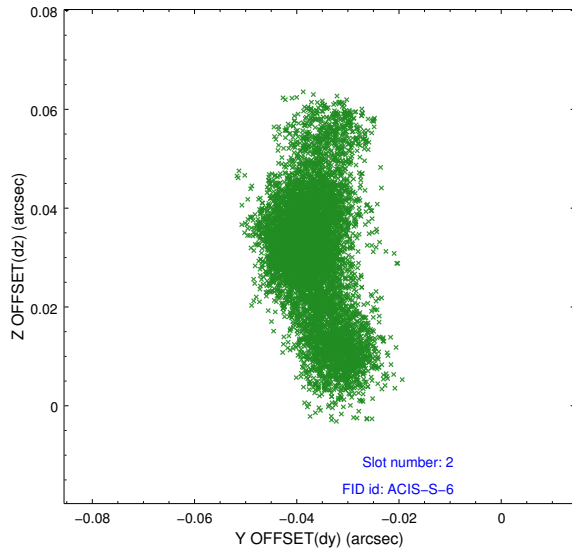
2.5.1 Slot 0



2.5.2 Slot 1

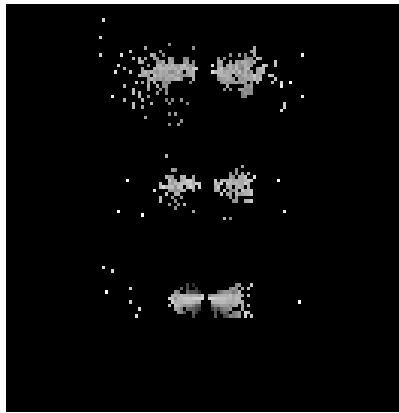


2.5.3 Slot 2

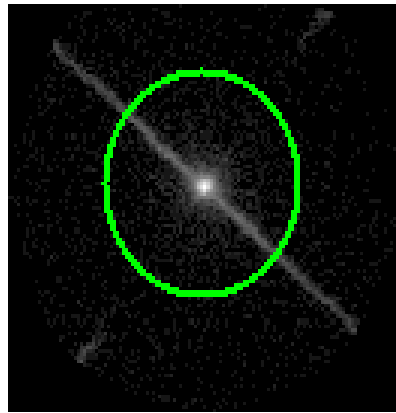


3 Gratings

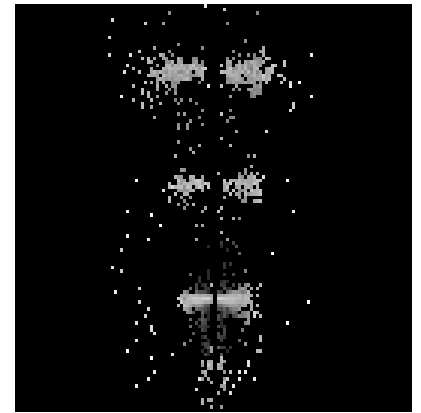
3.1 LETG Arm



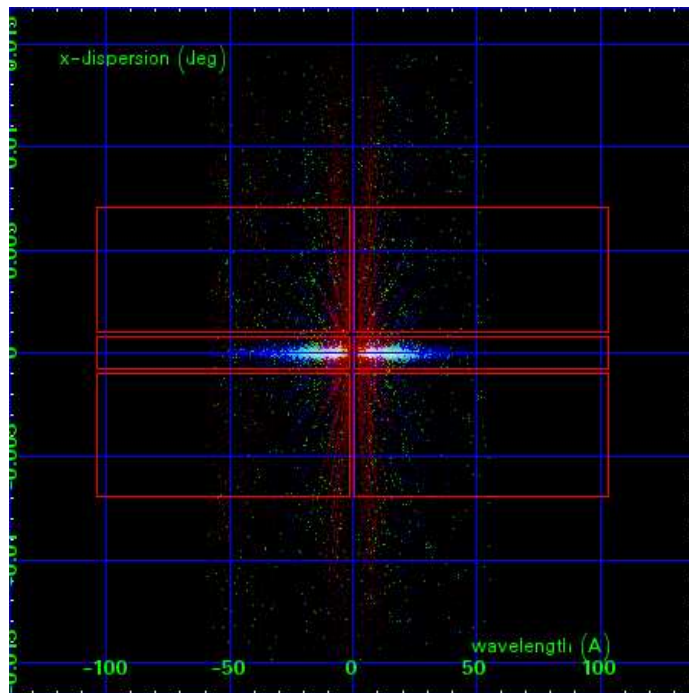
LETG Order Sort 123



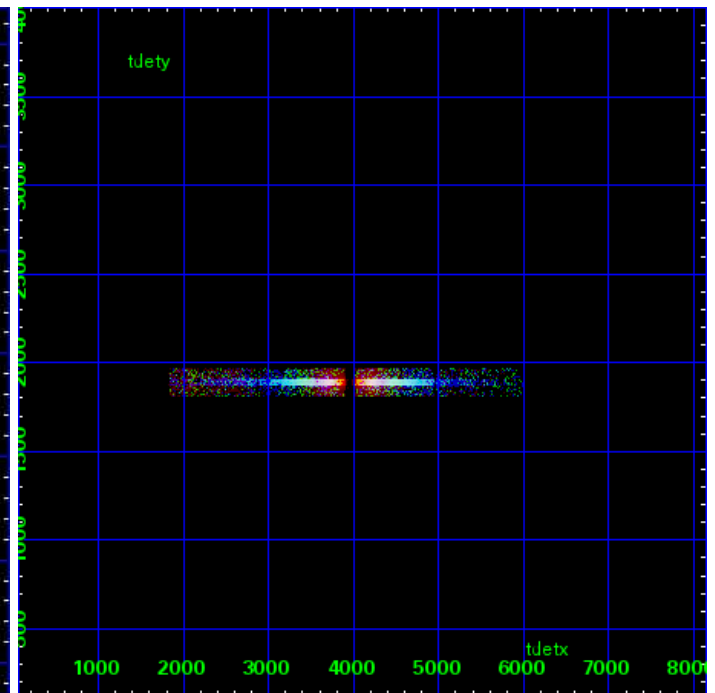
LETG Zero Order



LETG Order Sort ALL

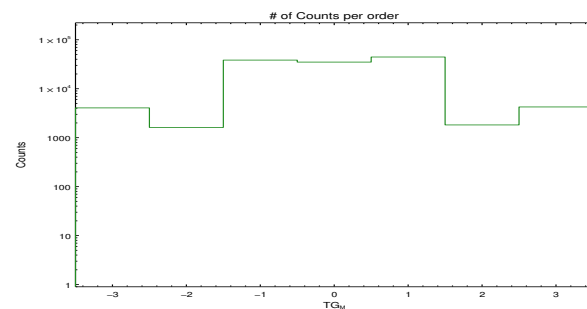


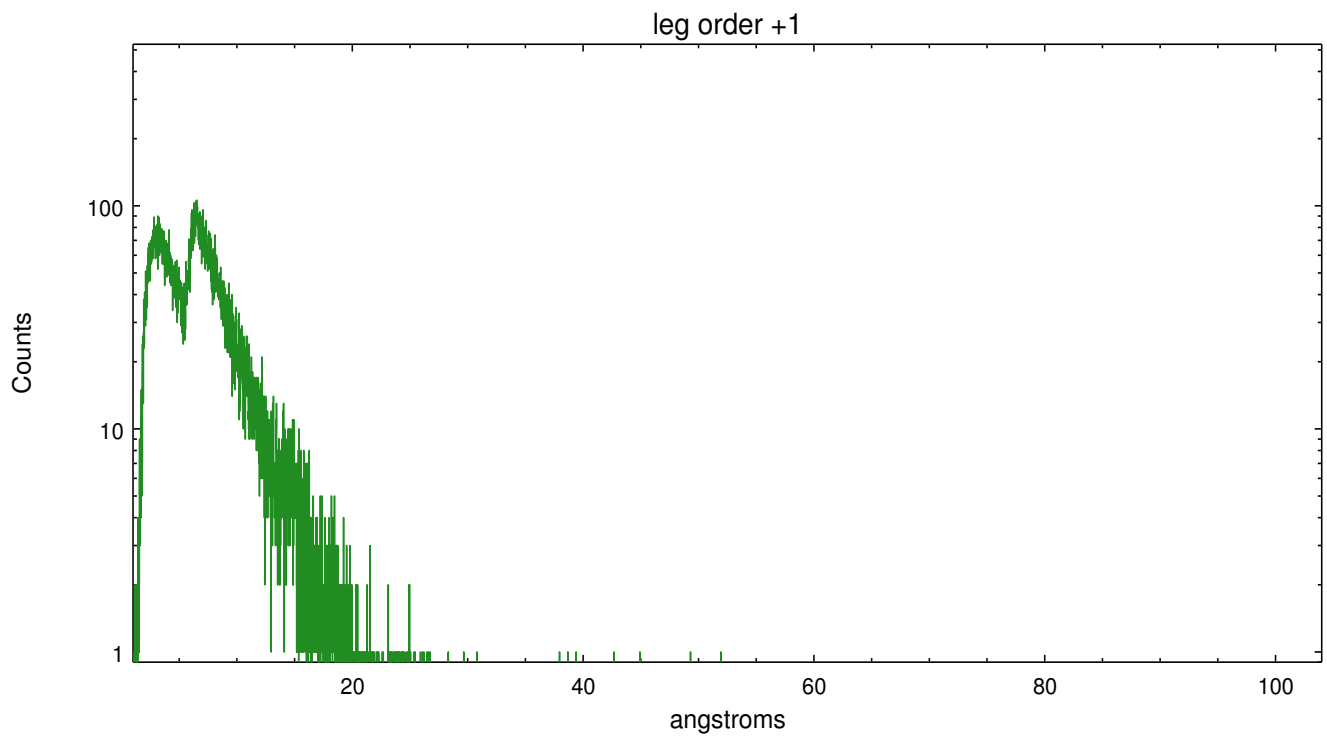
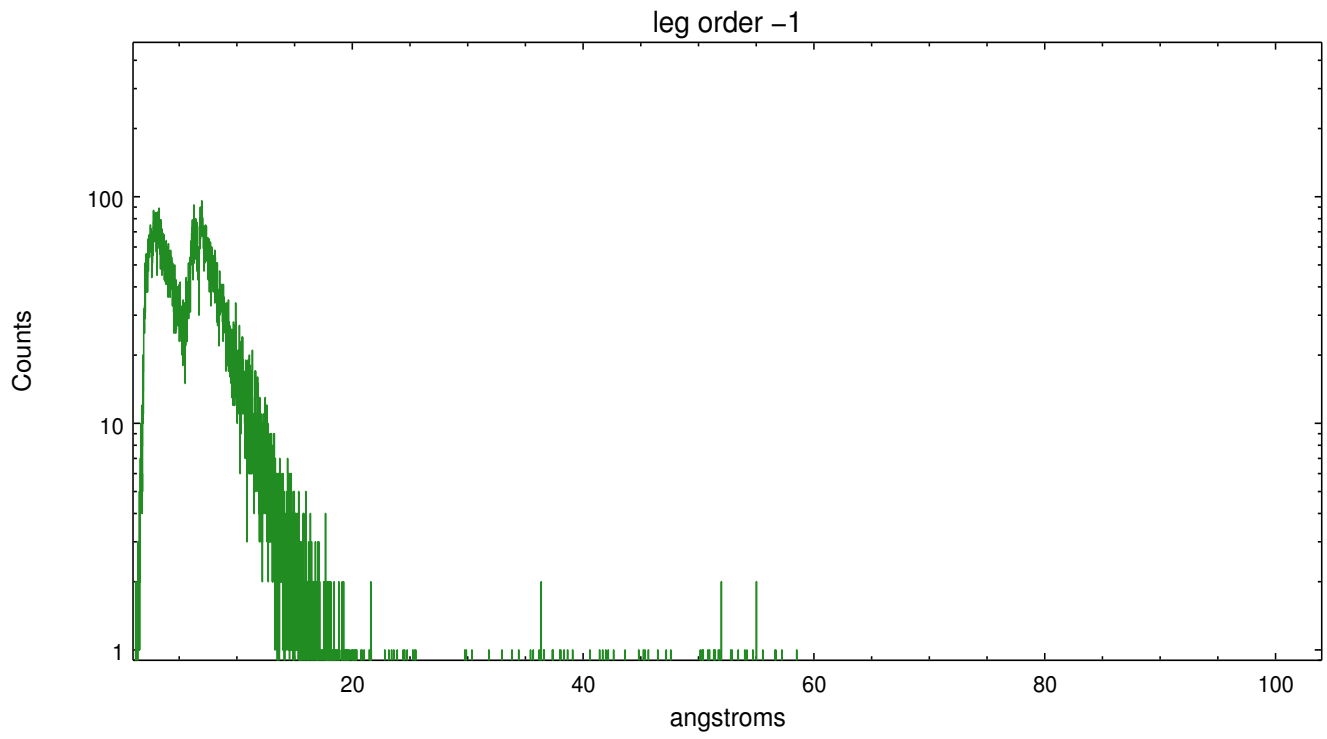
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	4059	1621	38423	34969	44440	1821	4244





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.11.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.068352856696

A.2 Comments

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.

====

Zeroth order piled up. The zeroth order sky position was determined using a software tool developed by CXC called findzero, which is available in CIAO as part of the tgdetect2 tool. The tool calculates the point of intersection of the readout streak on the ACIS CCD and the leg dispersed spectral arm, rather than using a centroid position of the source. The findzero results are more accurate than source centroid in this case.

====

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.