

V&V Reference Report

L2 ASCDS Version : 10.4.1

Observation 17393 - L2 Version 2
Chandra X-Ray Center

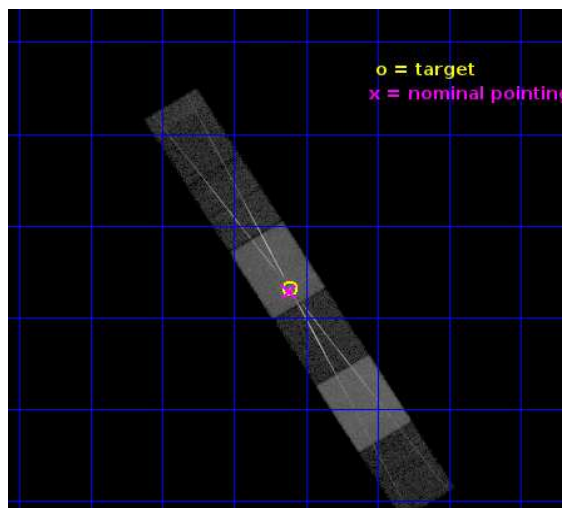
L2 Processing Date : Jul 17 2015

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1 Front

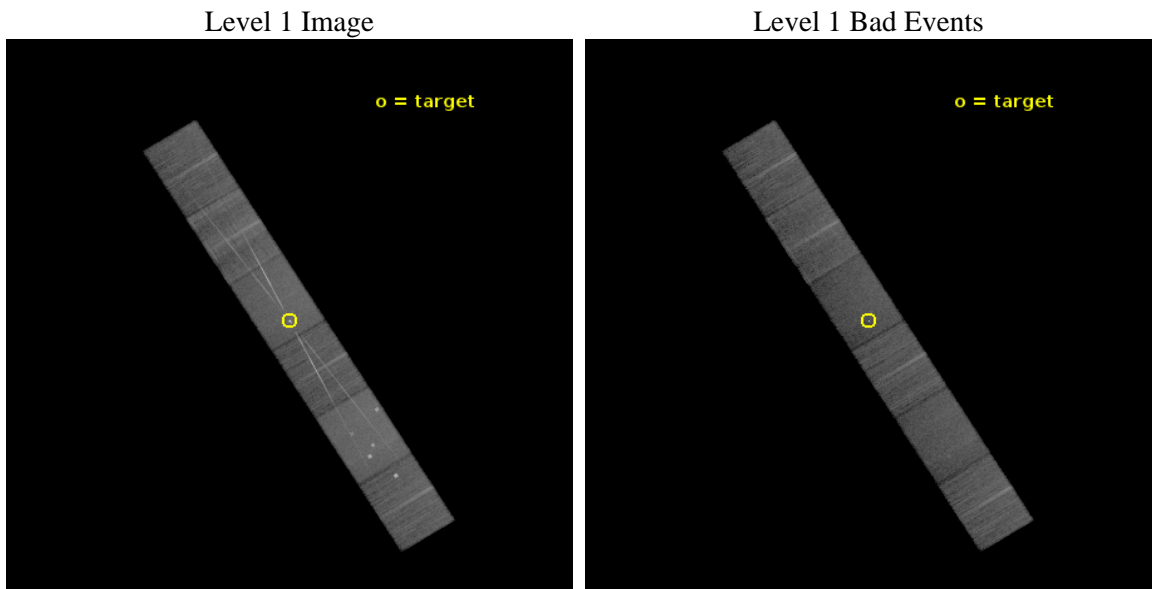
seq_num	790284	Sequence number
obs_id	17393	Observation id
title	AO-16 LETG/ACIS-S Calibration Observations of PKS2155-304	Proposal
observer	Dr. CXC Calibration	Principal investigator
object	3C273	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	187.277917	Observer's specified target RA [deg]
dec_targ	2.052389	Observer's specified target Dec [deg]
ra_nom	187.27860192595	Nominal RA [deg]
dec_nom	2.0469963841445	Nominal Dec [deg]
roll_nom	238.15659558846	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30030.0	Sum of GTIs [s]
livetime	29544.989453137	Livetime [s]
ontime4	30030.0	Sum of GTIs [s]
ontime5	30030.0	Sum of GTIs [s]
ontime6	30030.0	Sum of GTIs [s]
ontime7	30030.0	Sum of GTIs [s]
ontime8	30030.0	Sum of GTIs [s]
ontime9	30030.0	Sum of GTIs [s]
l2events	260109	Number of level 2 events



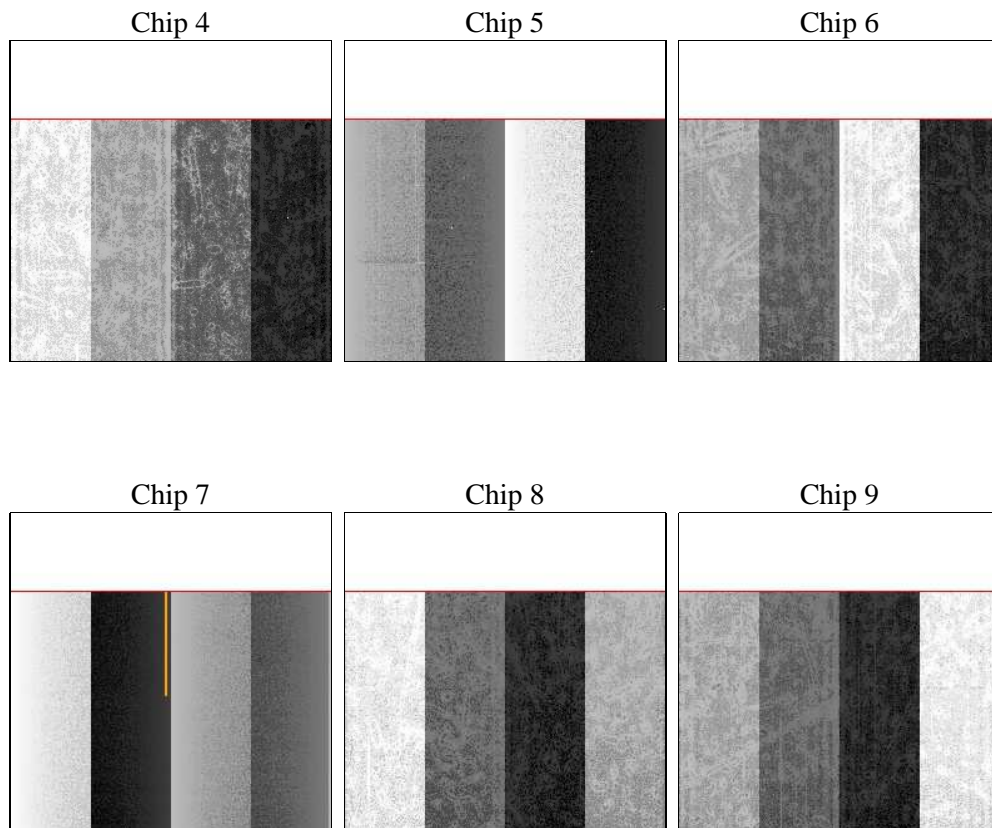
2 OBI

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	10.4.1	Processing system revision	ontime	30030.0	Sum of GTIs [s]
caldbver	4.6.8	 	ontime4	30030.0	Sum of GTIs [s]
date	2015-07-17T17:46:25	Date and time of file creation	ontime5	30030.0	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	30030.0	Sum of GTIs [s]
			ontime7	30030.0	Sum of GTIs [s]
			ontime8	30030.0	Sum of GTIs [s]
			ontime9	30030.0	Sum of GTIs [s]
			l1events	946398	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
				4110126	

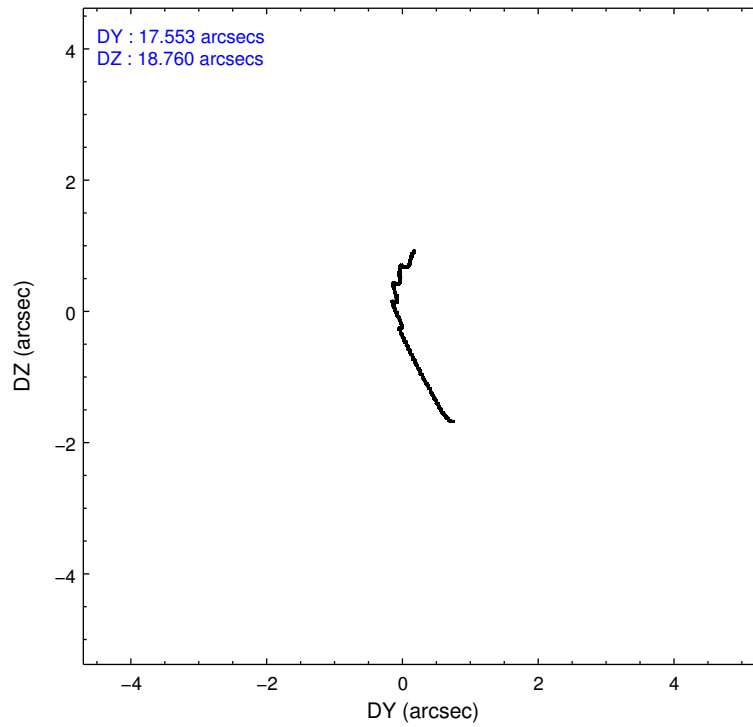
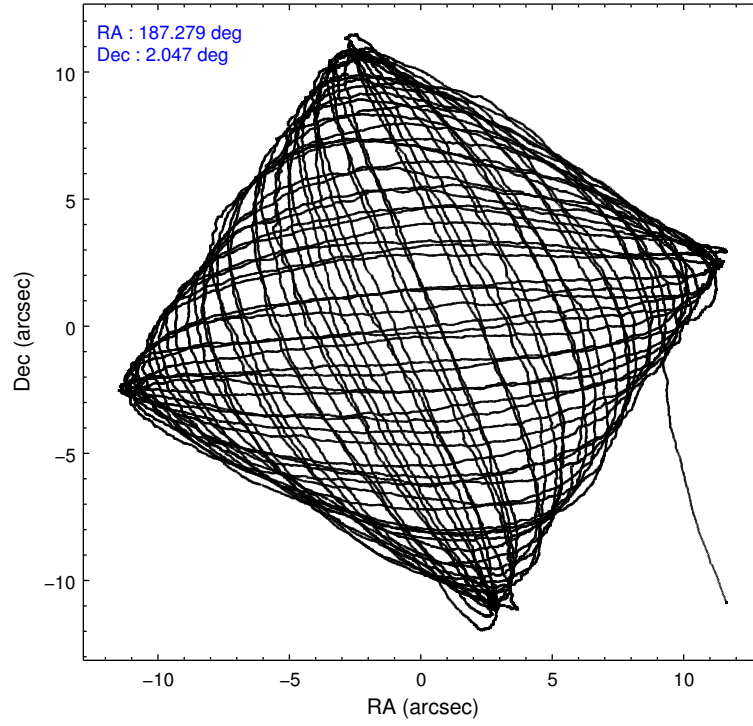
2.1.4 Events

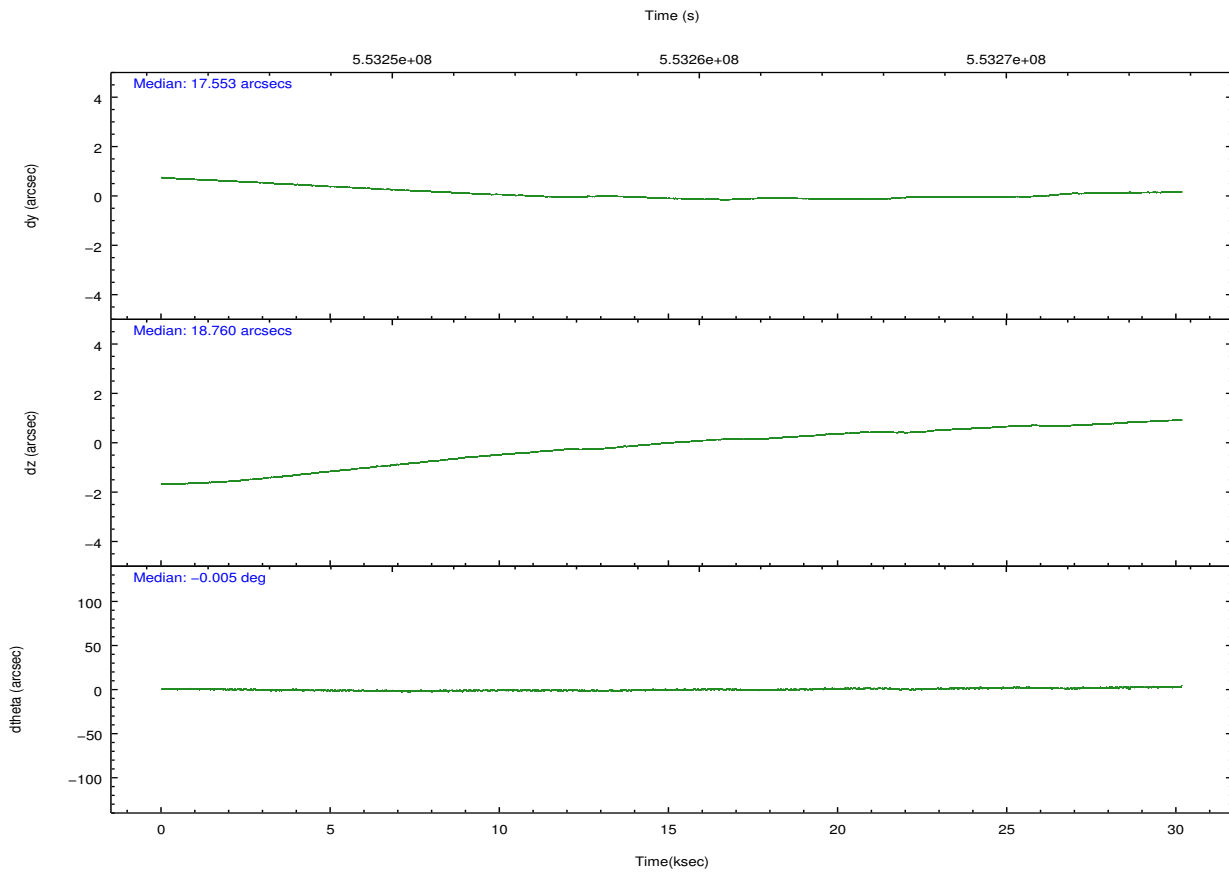
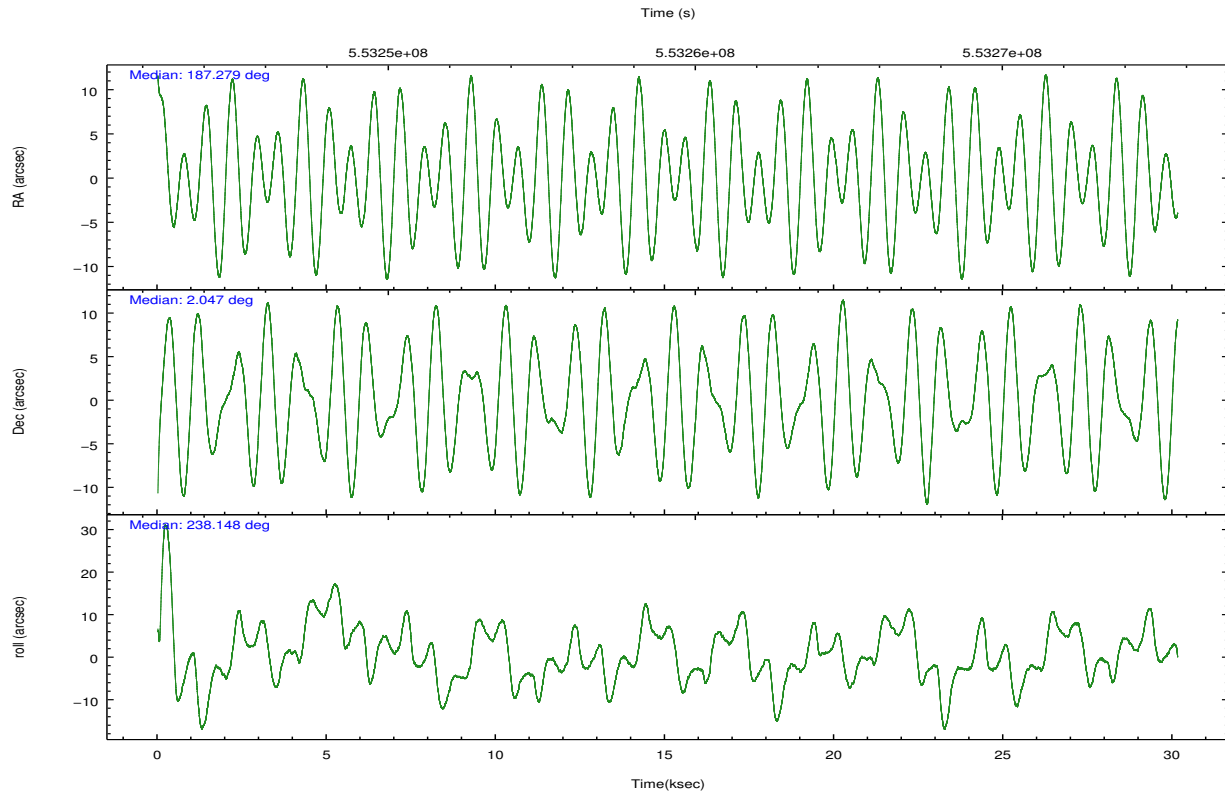
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	141081	198446	139689	185431	161739	120012	grade 0 events	11533	15158	19457	11496	19610	6384
rejected events	119919	96603	106639	91103	110602	103578		8%	7%	13%	6%	12%	5%
rejected %	85%	48%	76%	49%	68%	86%	grade 1 events	116	426	114	436	126	64
								0%	0%	0%	0%	0%	0%
							grade 2 events	3785	30033	5416	20544	10303	3558
								2%	15%	3%	11%	6%	2%
							grade 3 events	1578	3844	2228	8347	5069	1646
								1%	1%	1%	4%	3%	1%
							grade 4 events	1547	3733	2180	8476	4946	1613
								1%	1%	1%	4%	3%	1%
							grade 5 events	5816	13646	5588	16862	8284	6384
								4%	6%	4%	9%	5%	5%
							grade 6 events	2724	49085	3777	45468	11217	3236
								1%	24%	2%	24%	6%	2%
							grade 7 events	113982	82521	100929	73802	102184	97127
								80%	41%	72%	39%	63%	80%

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	187.279121	187.2786019259478	CCD I2 on	N	N
[deg] Pointing Dec	2.074440	2.046996384144491	CCD I3 on	N	N
[deg] Pointing Roll	237.999961	238.1565955884587	CCD S0 on	O1	Y
[s] Window start time (MET)	549504067.184000	549504067.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	554688068.184000	554688068.184000	CCD S2 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S3 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S4 on	Y	Y
[mm] SIM translation stage pos	-187.132523	-187.1254020033014	CCD S5 on	O2	Y
[mm] SIM translation stage offset	-3	-3.007120579706367	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	553244204.184000	553242849.05468	On-chip summing requested	N	N
Observation start date	2015-07-14T06:55:36	2015-07-14T06:34:09	Subarray requested	CUSTOM	CUSTOM
[s] Observation end time (MET)	553274204.184000	553275099.1440001	Subarray start row	1	1
Observation end date	2015-07-14T15:15:36	2015-07-14T15:31:39	Subarray row count	774	774
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	2.5

2.3 Aspect





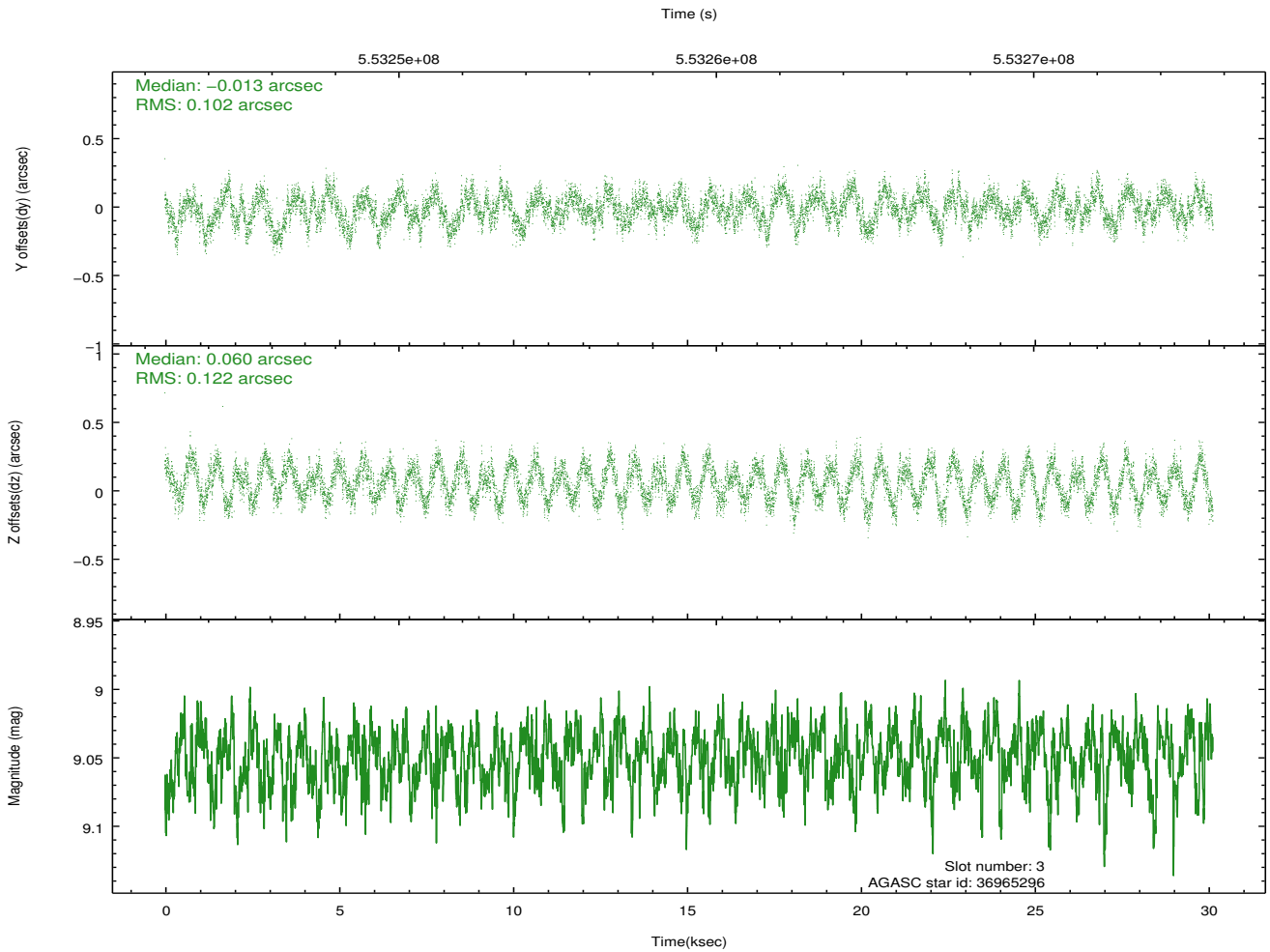
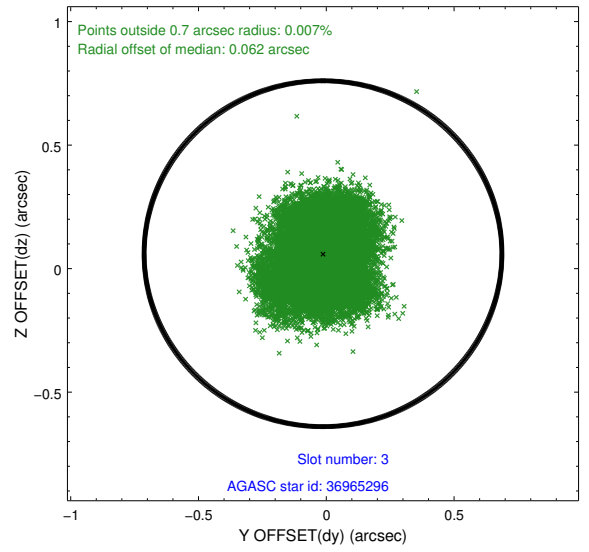
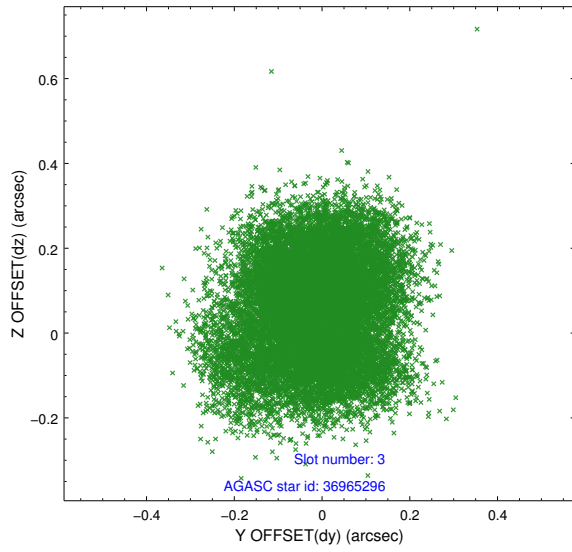
Slot Statistics

lot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-2	7.06	7353	-0.140	-0.053	0.021	0.033	0.000000	0.000000	-770.61	-1802.21
1	FID		ACIS-S-4	7.15	7353	0.326	0.082	0.020	0.059	0.000000	0.000000	2143.08	106.37
2	FID		ACIS-S-5	7.18	7353	-0.223	-0.021	0.026	0.044	0.000000	0.000000	-1823.47	99.96
3	GUIDE	used	36965296	9.05	14692	-0.013	0.060	0.174	0.262	186.926292	1.837429	1396.65	-624.71
4	GUIDE	used	36965816	9.25	14697	0.162	-0.194	0.152	0.261	186.823353	1.771455	1794.55	-812.91
5	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
6	BAD	used	36968408	10.49	13685	-0.142	0.050	0.249	0.435	187.336128	1.315108	2211.18	1622.78
7	GUIDE	used	37356352	7.71	14701	-0.018	0.081	0.095	0.158	187.433784	2.618460	-1955.16	-566.31

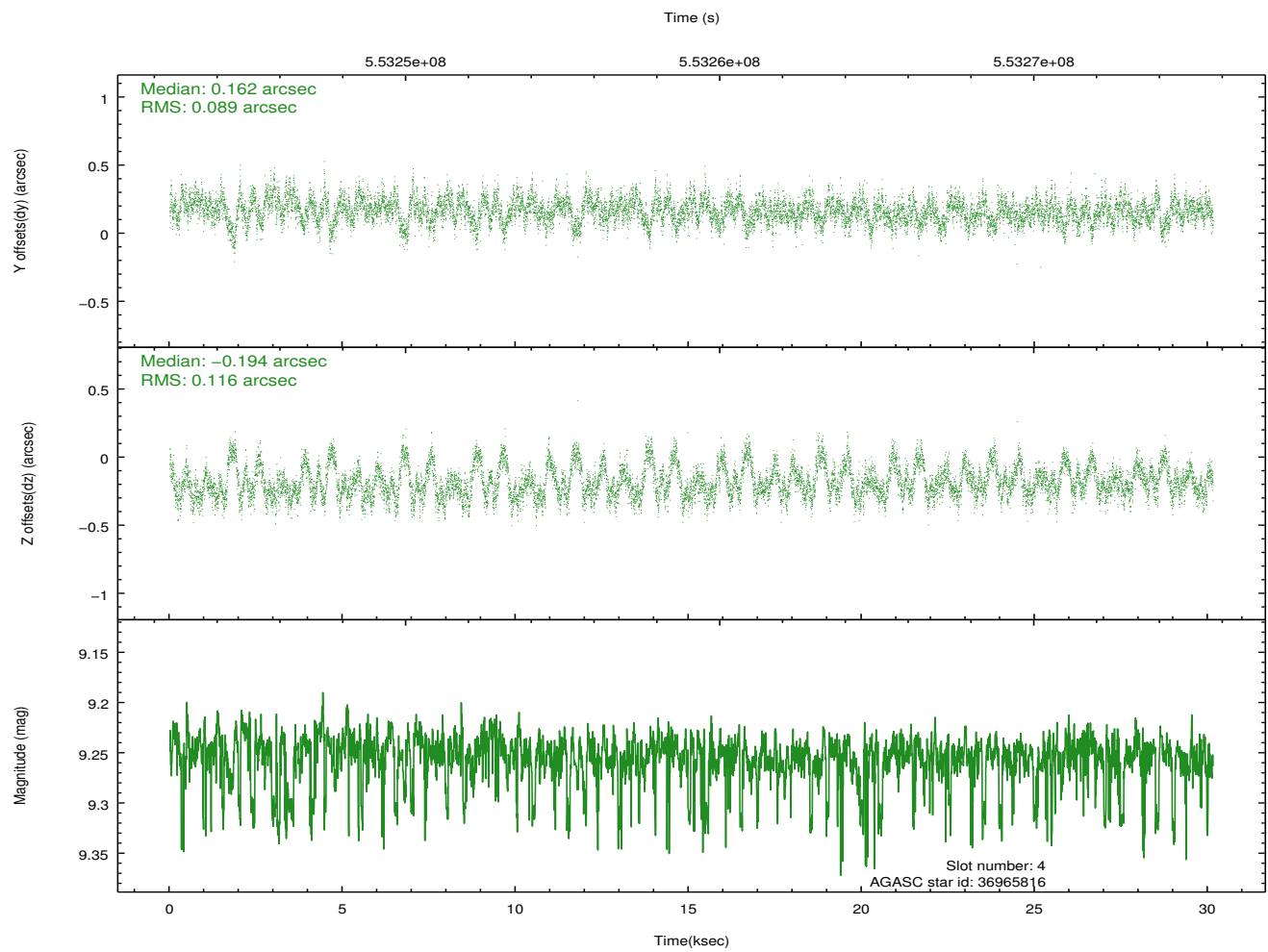
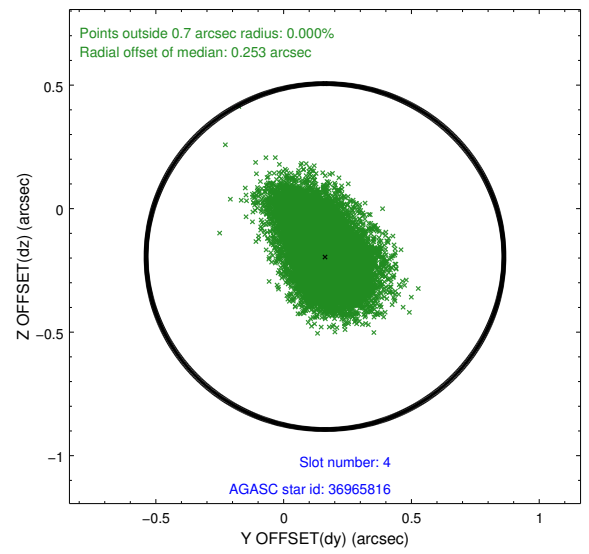
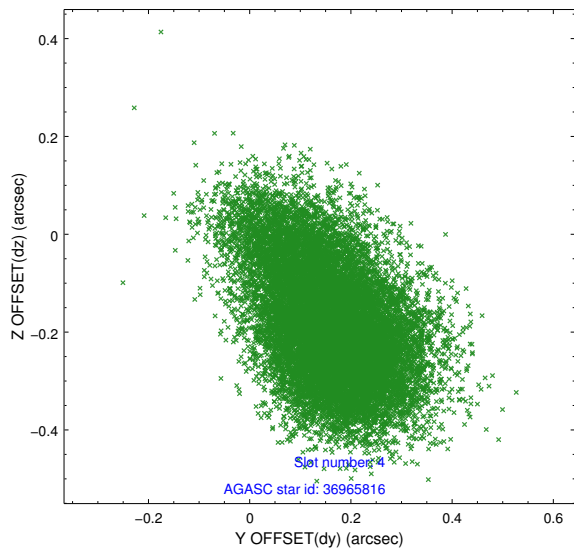
∞

2.4 Star Slots

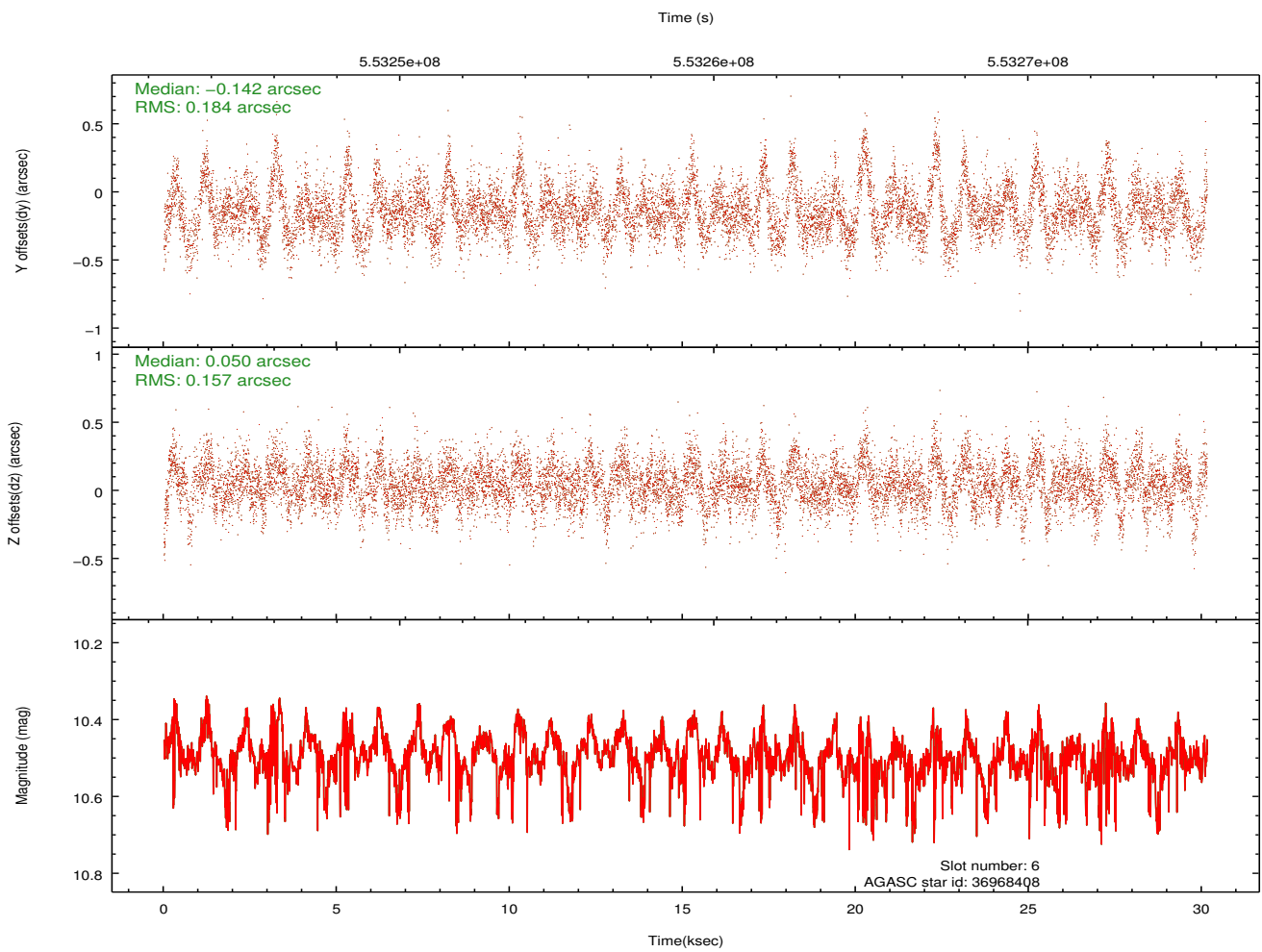
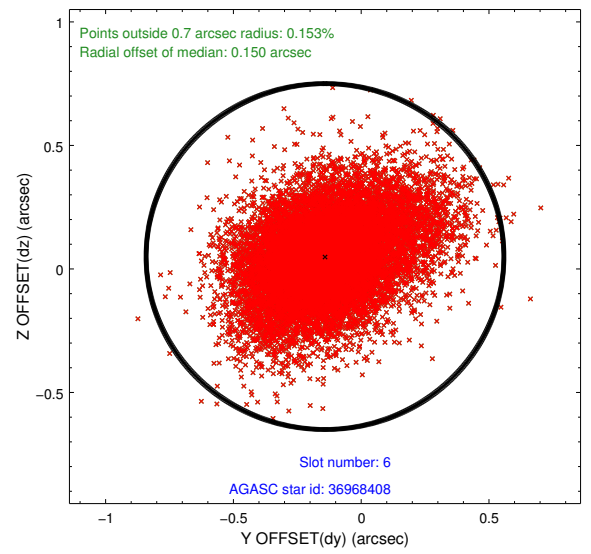
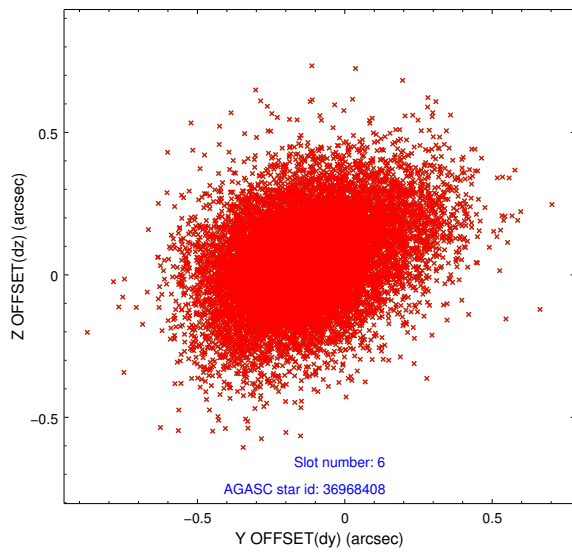
2.4.1 Slot 3



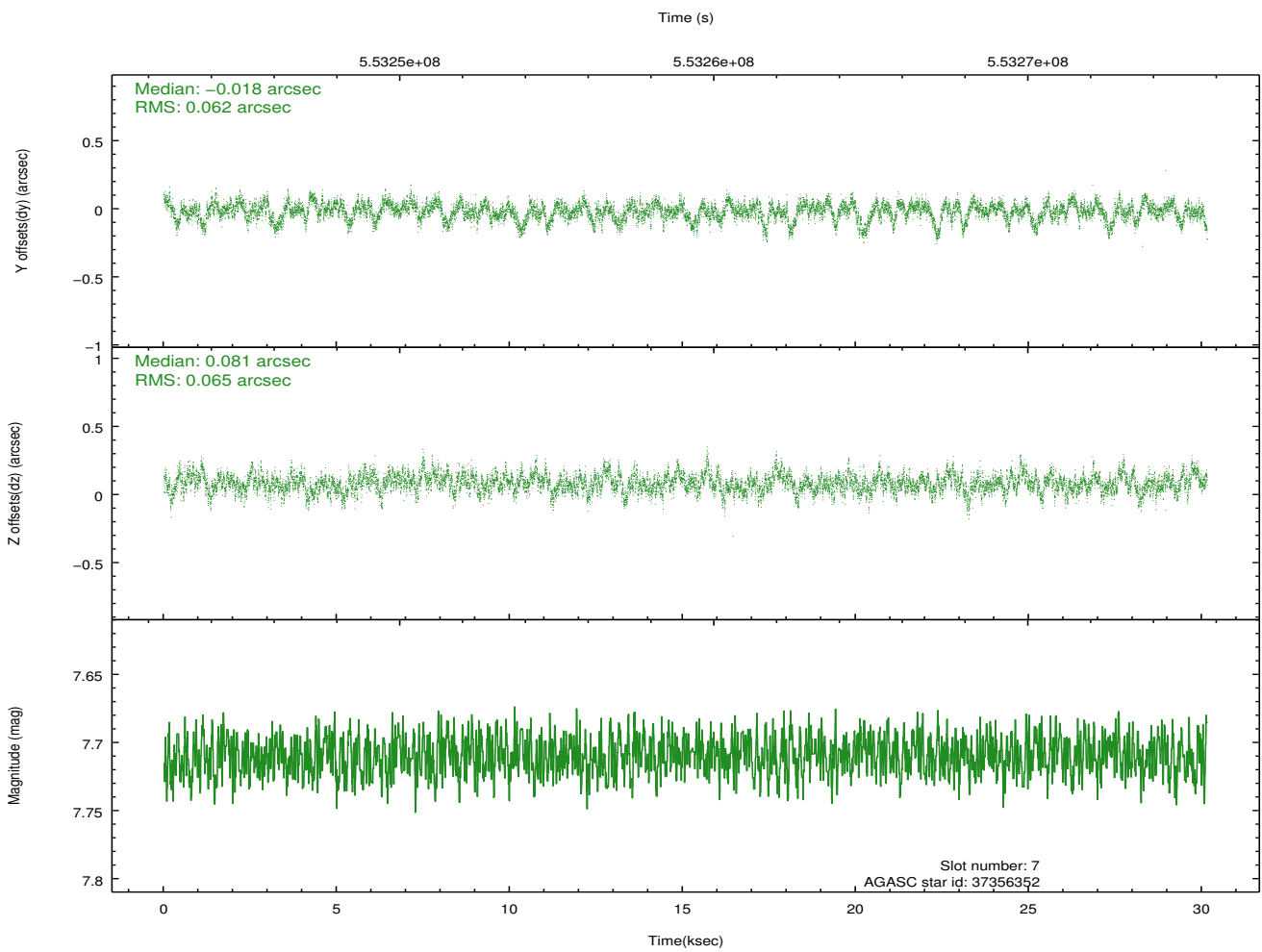
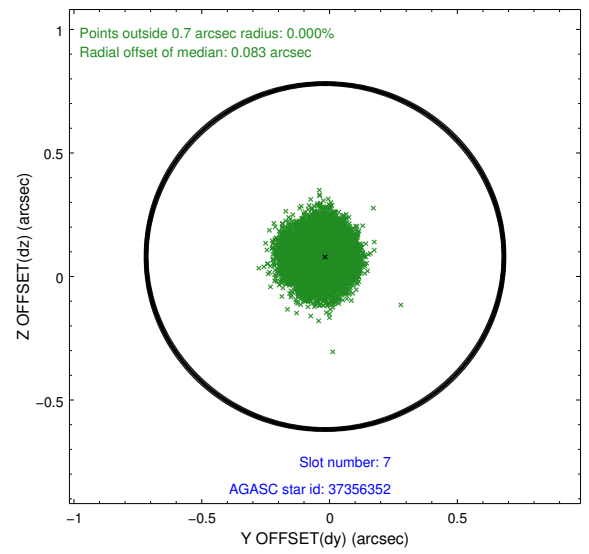
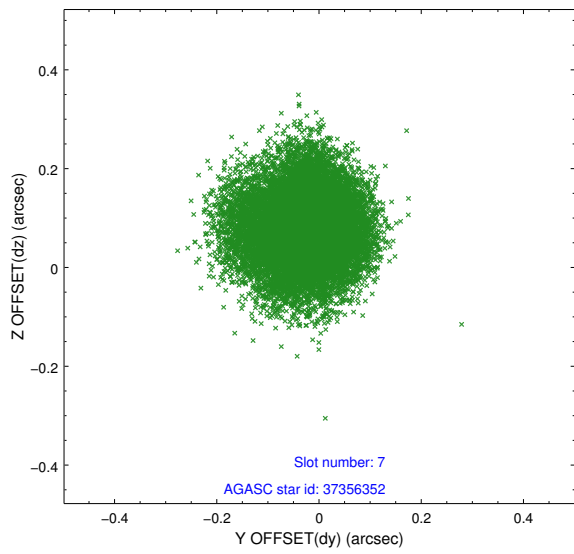
2.4.2 Slot 4



2.4.3 Slot 6

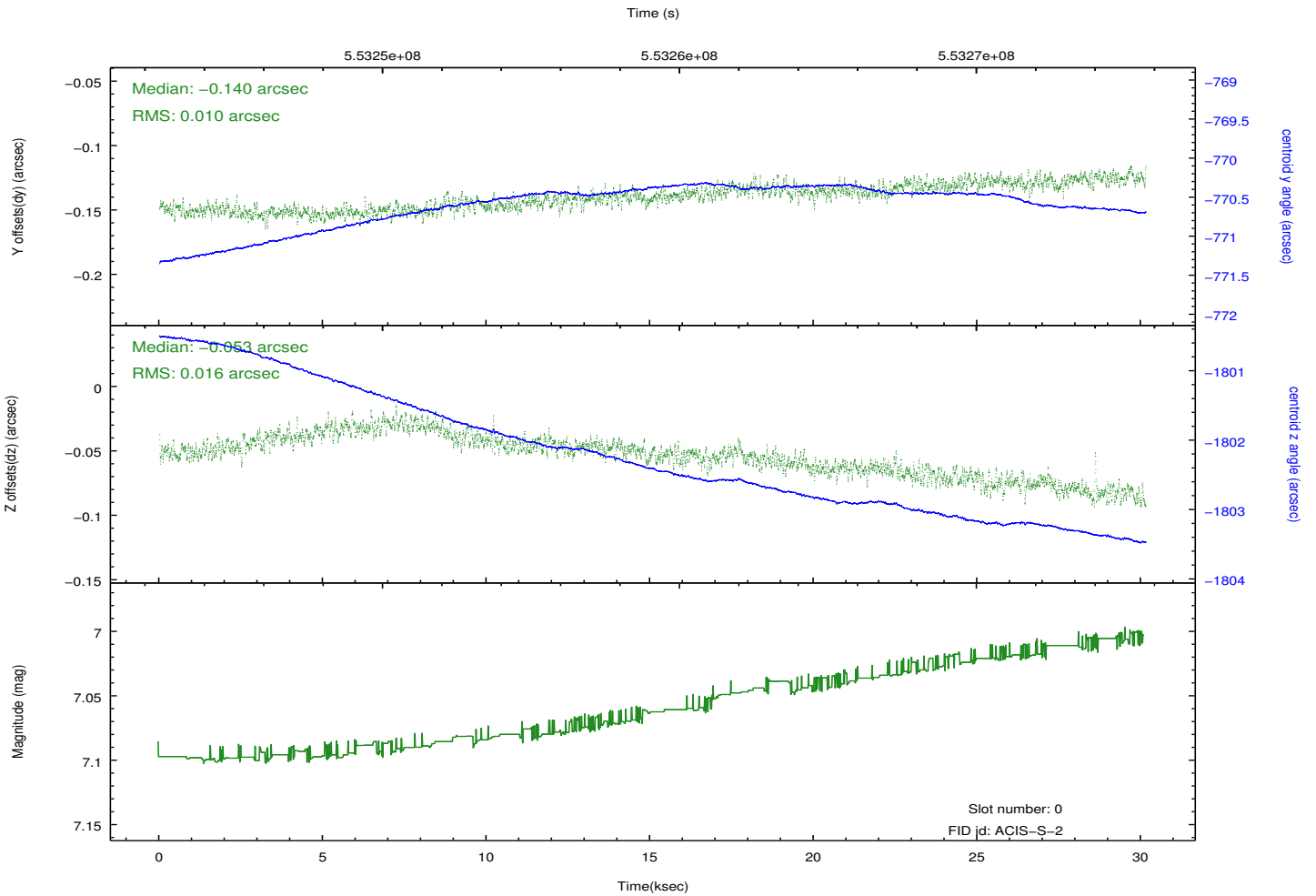
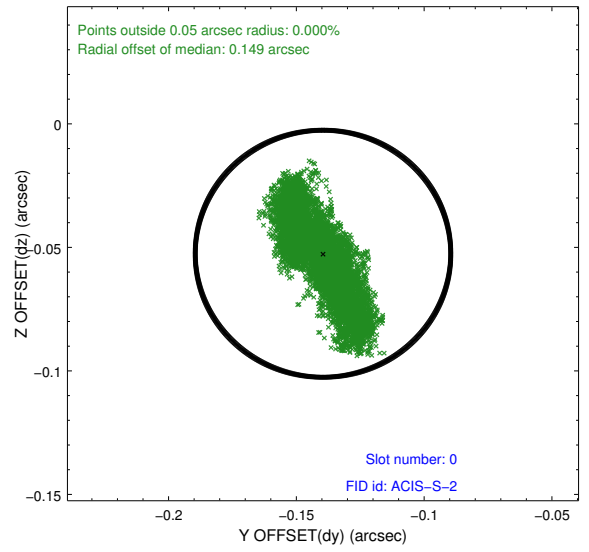
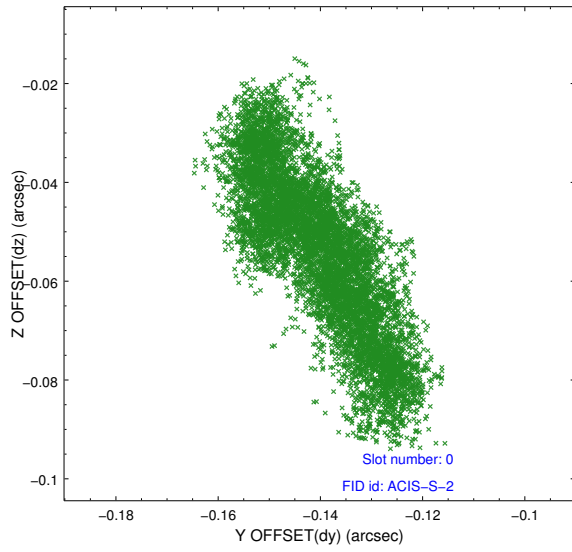


2.4.4 Slot 7

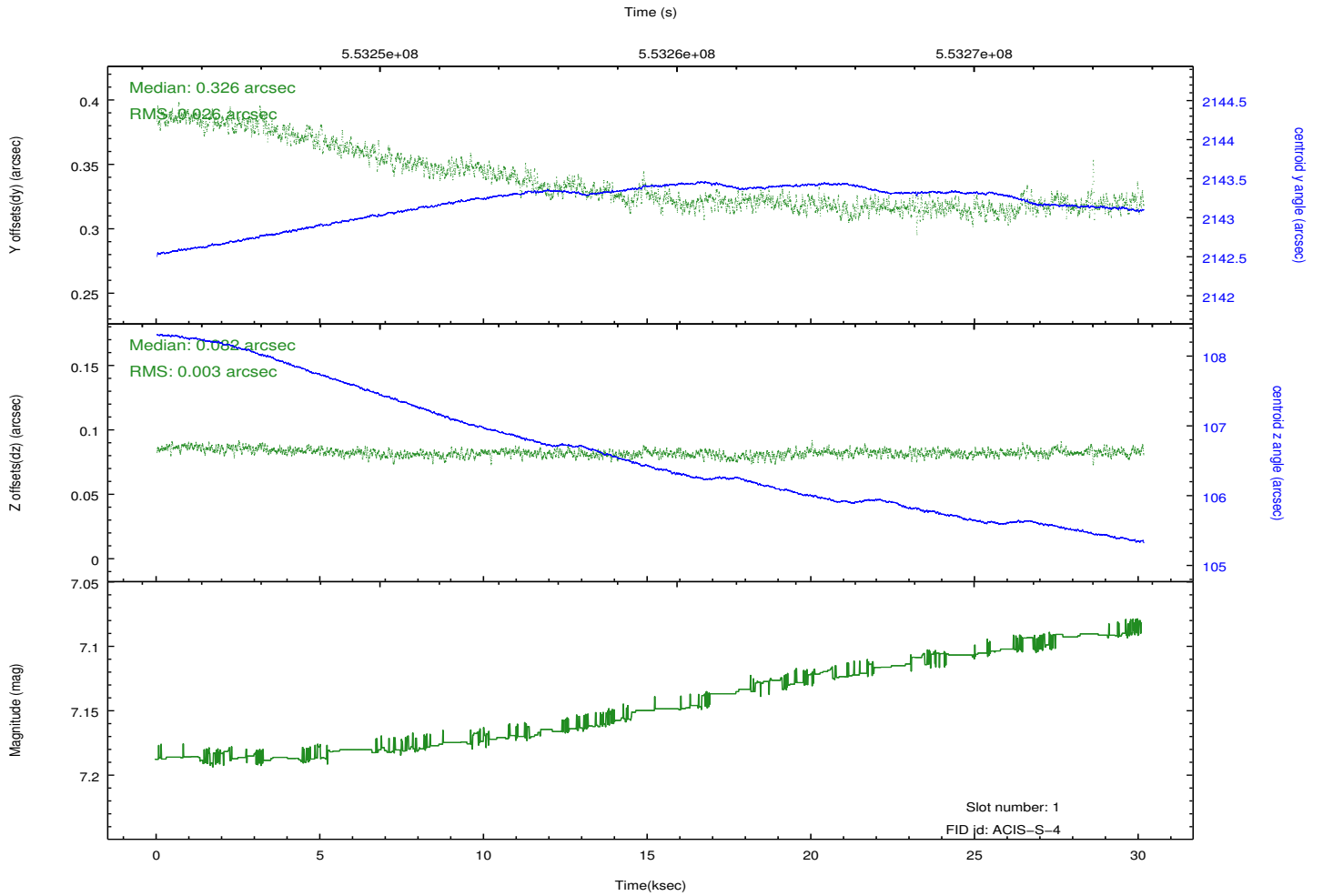
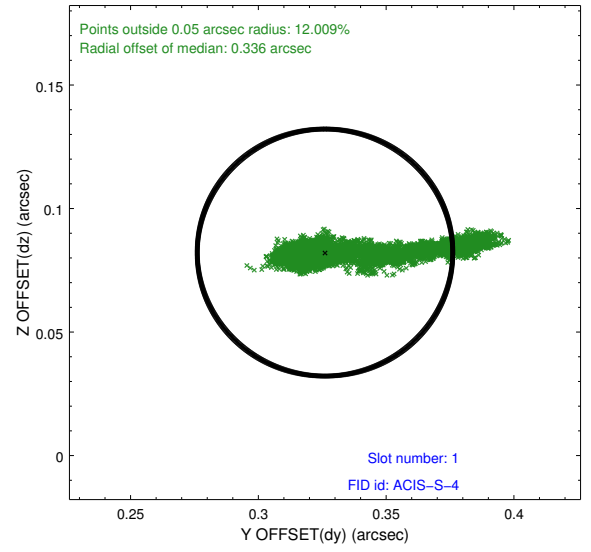
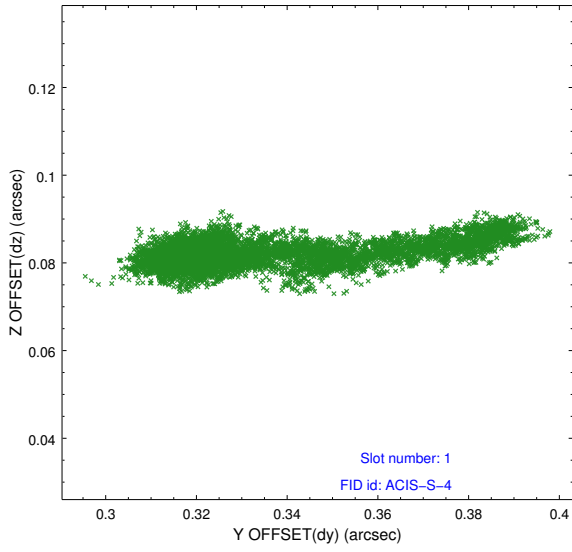


2.5 FID Slots

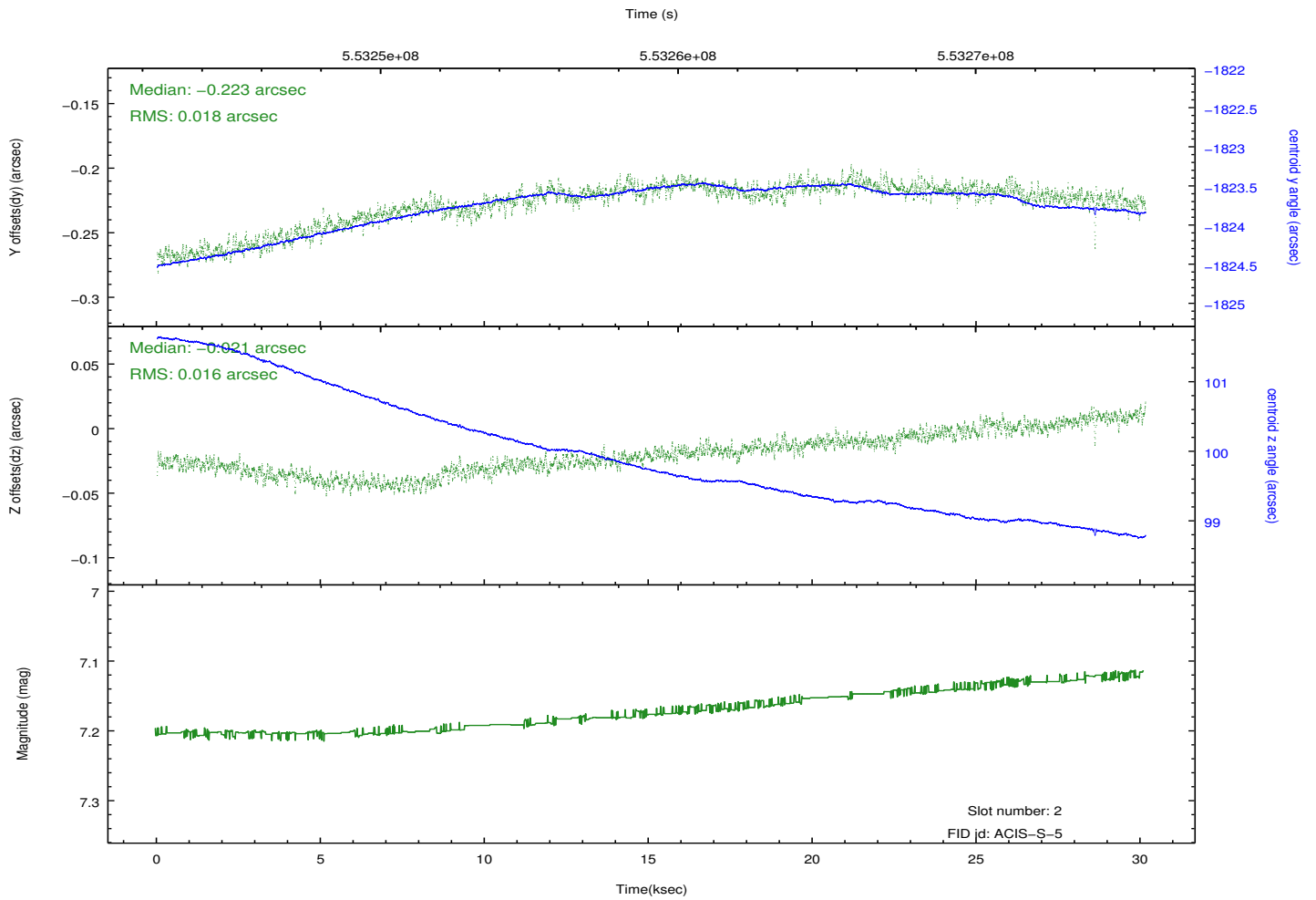
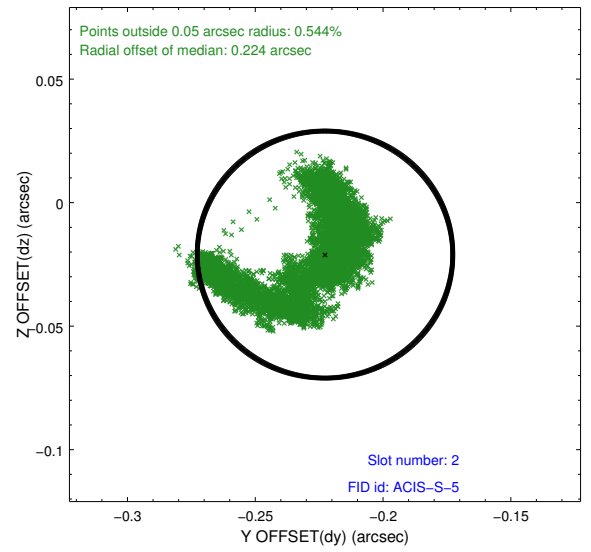
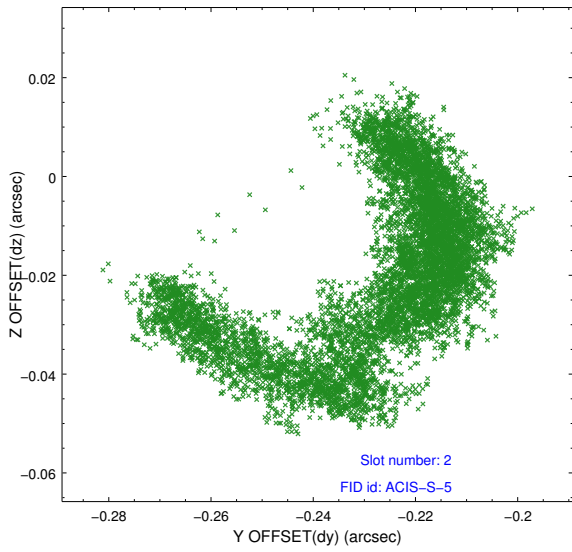
2.5.1 Slot 0



2.5.2 Slot 1

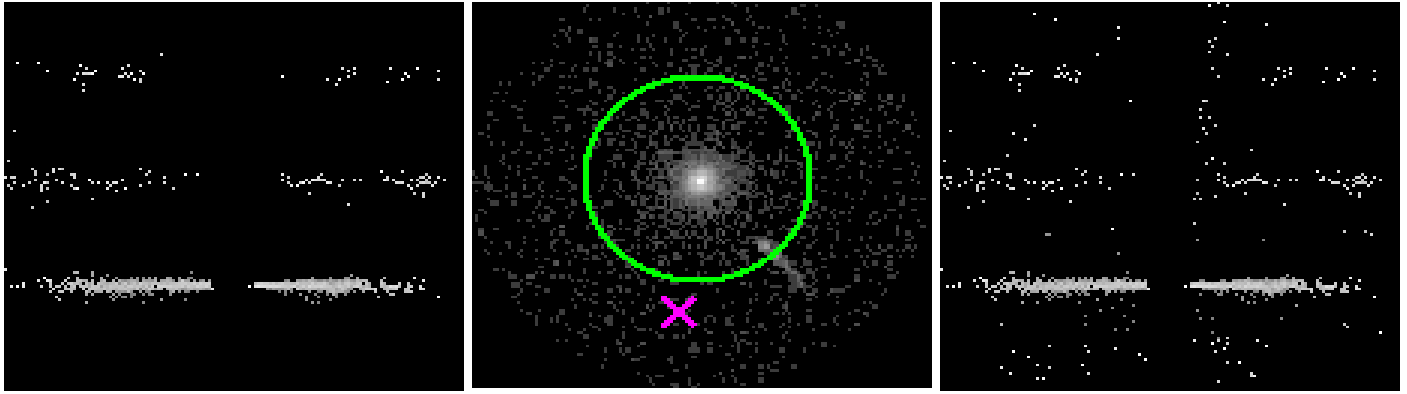


2.5.3 Slot 2



3 Gratings

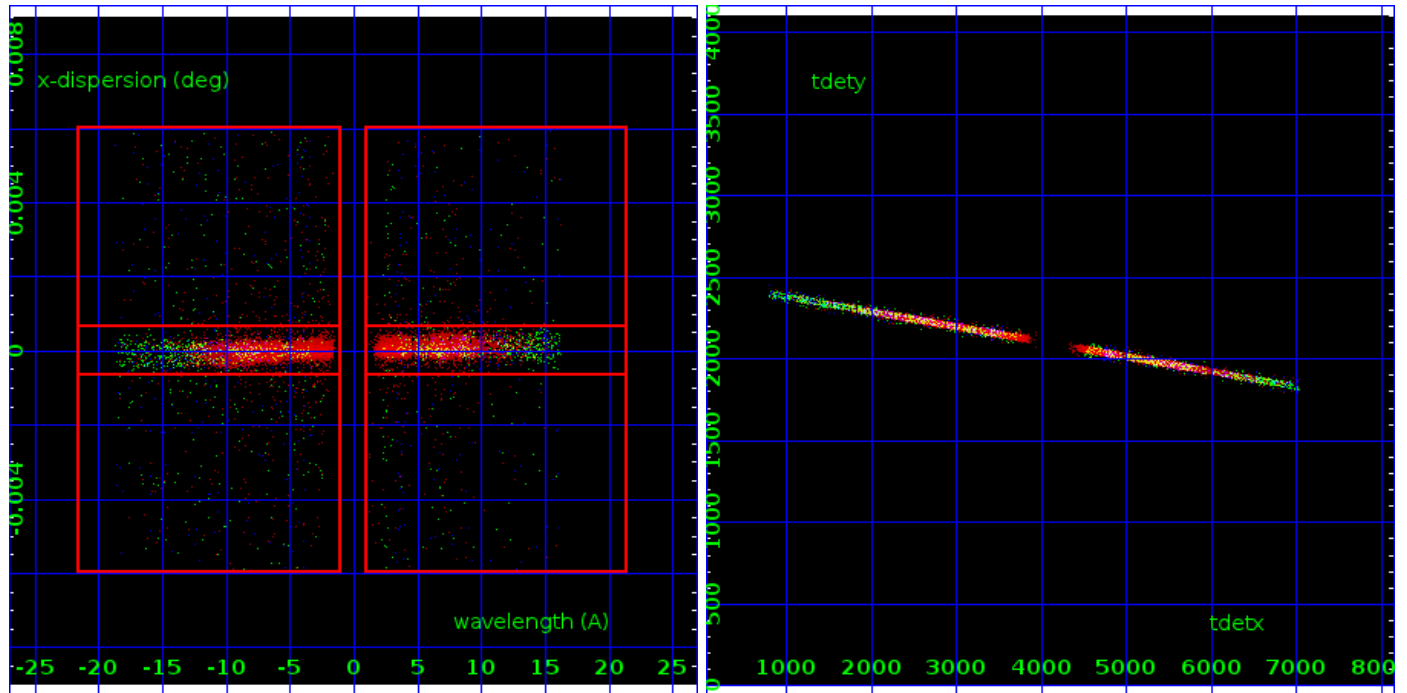
3.1 HEG Arm



HEG Order Sort 123

HEG Zero Order

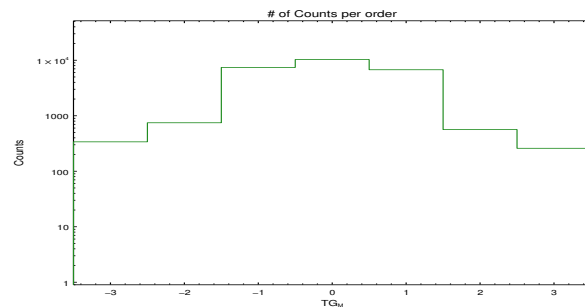
HEG Order Sort ALL



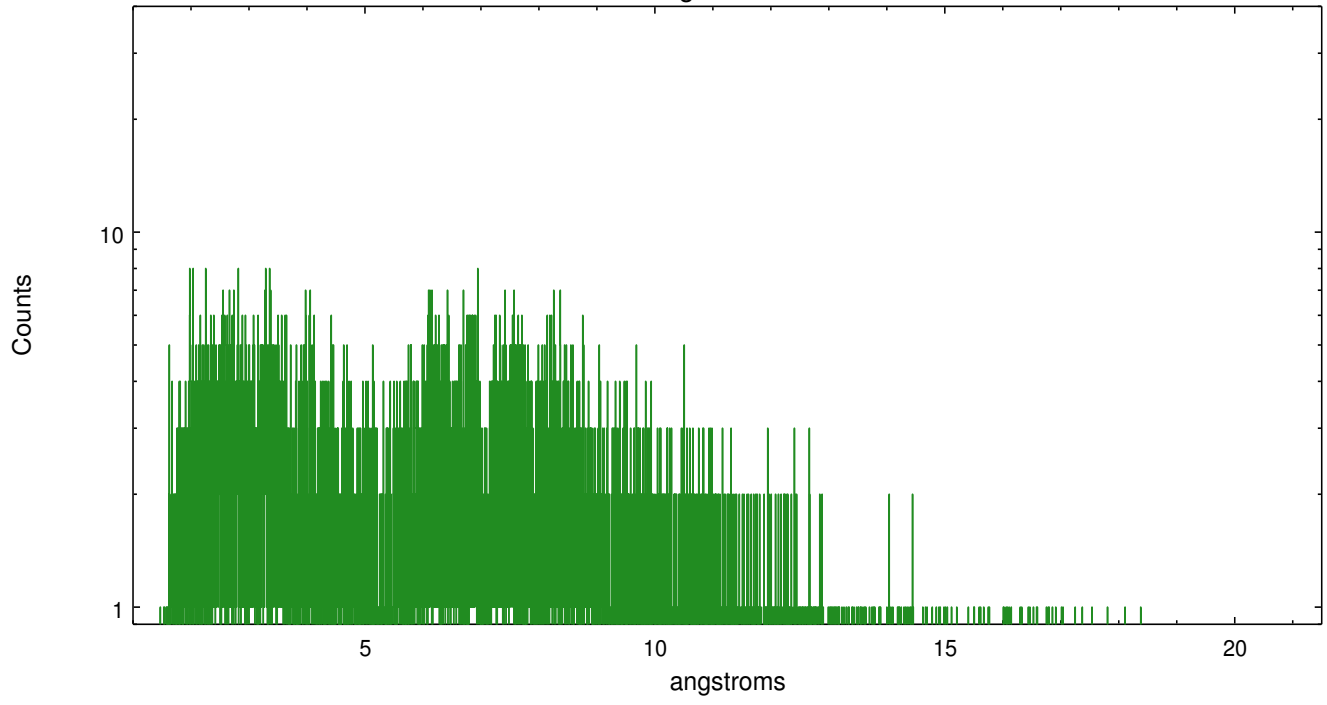
Spot Image HEG

Full Detector HEG

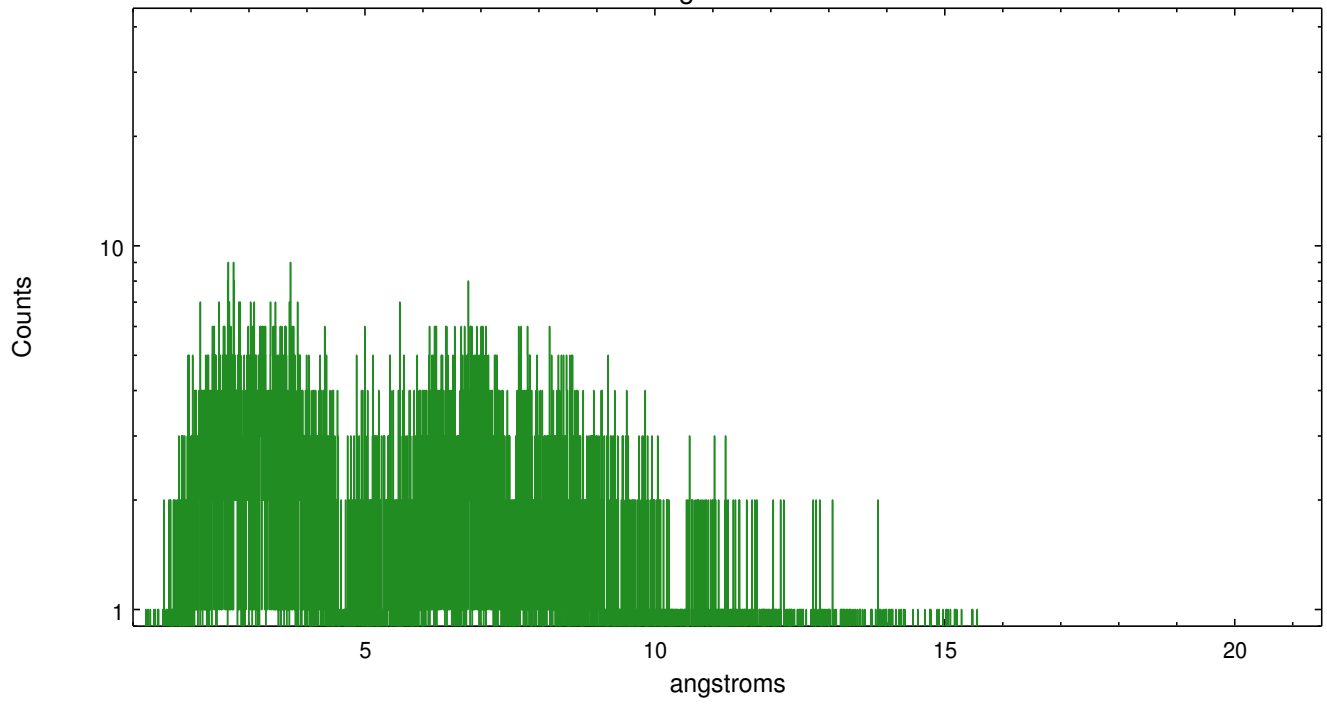
	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	339	748	7427	10284	6749	563	259



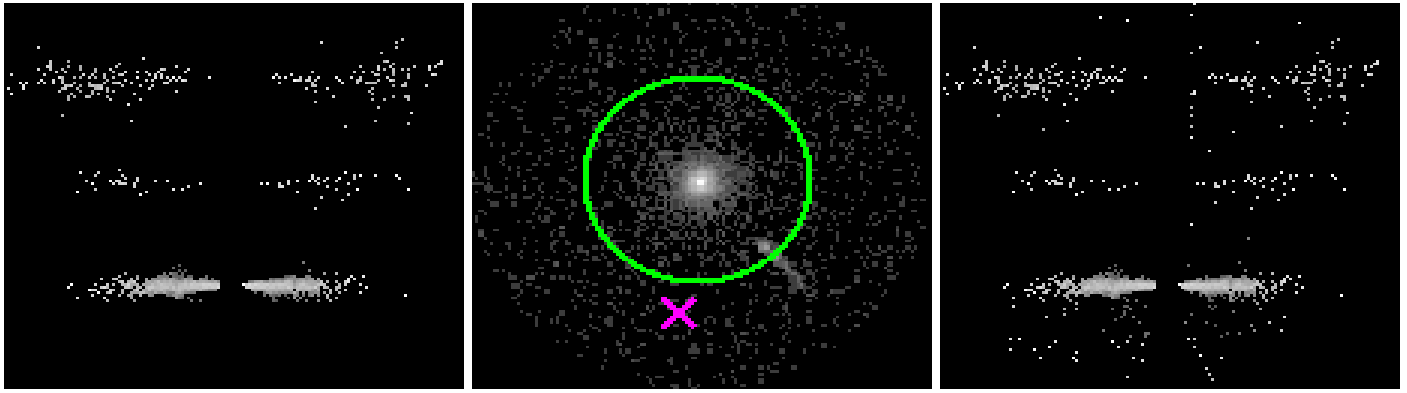
heg order -1



heg order +1



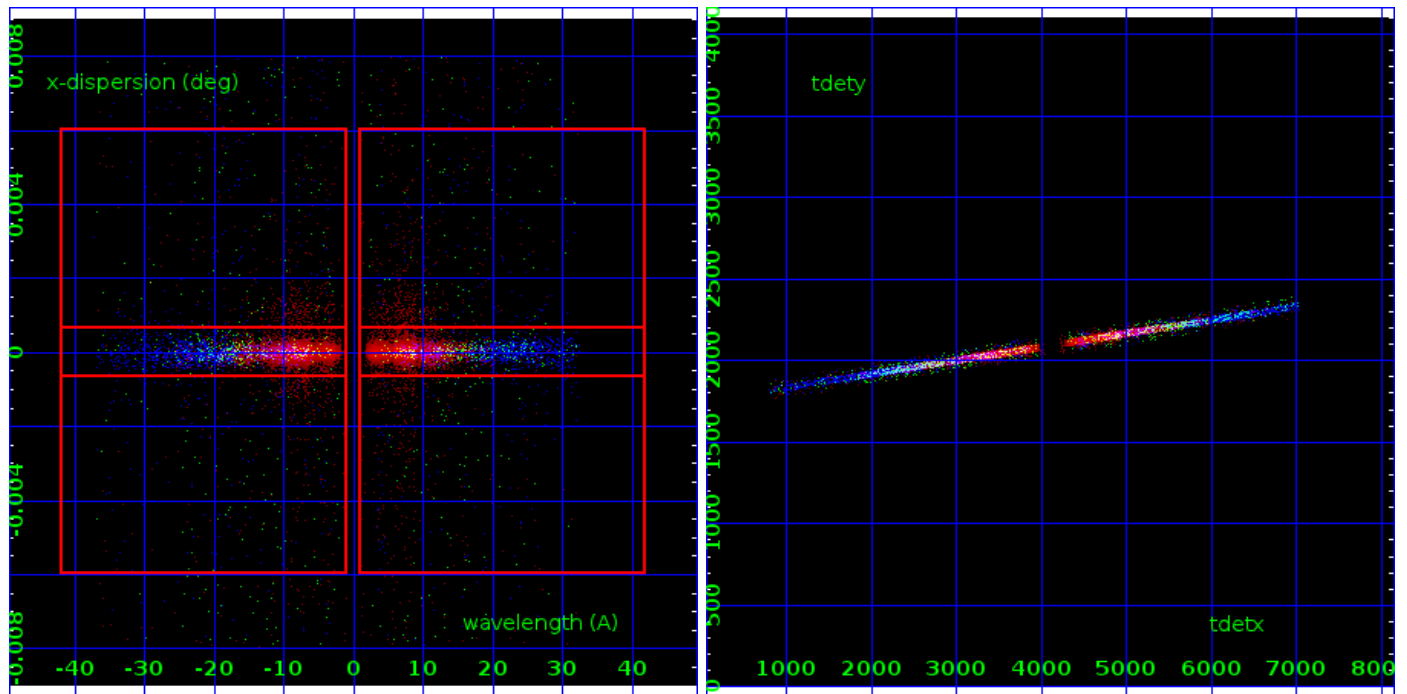
3.2 MEG Arm



MEG Order Sort 123

MEG Zero Order

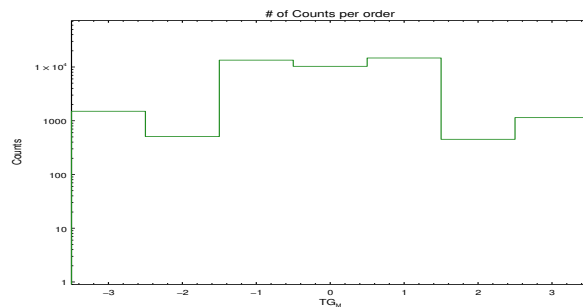
MEG Order Sort ALL

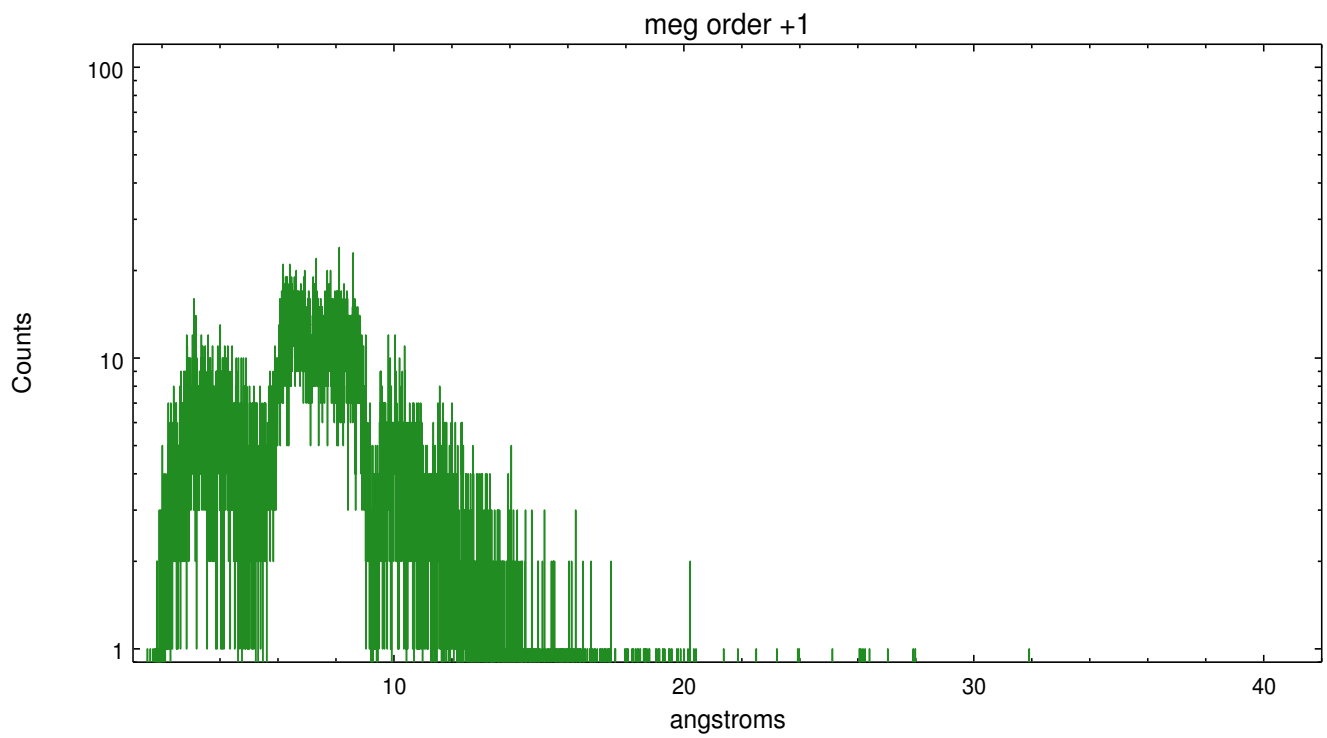
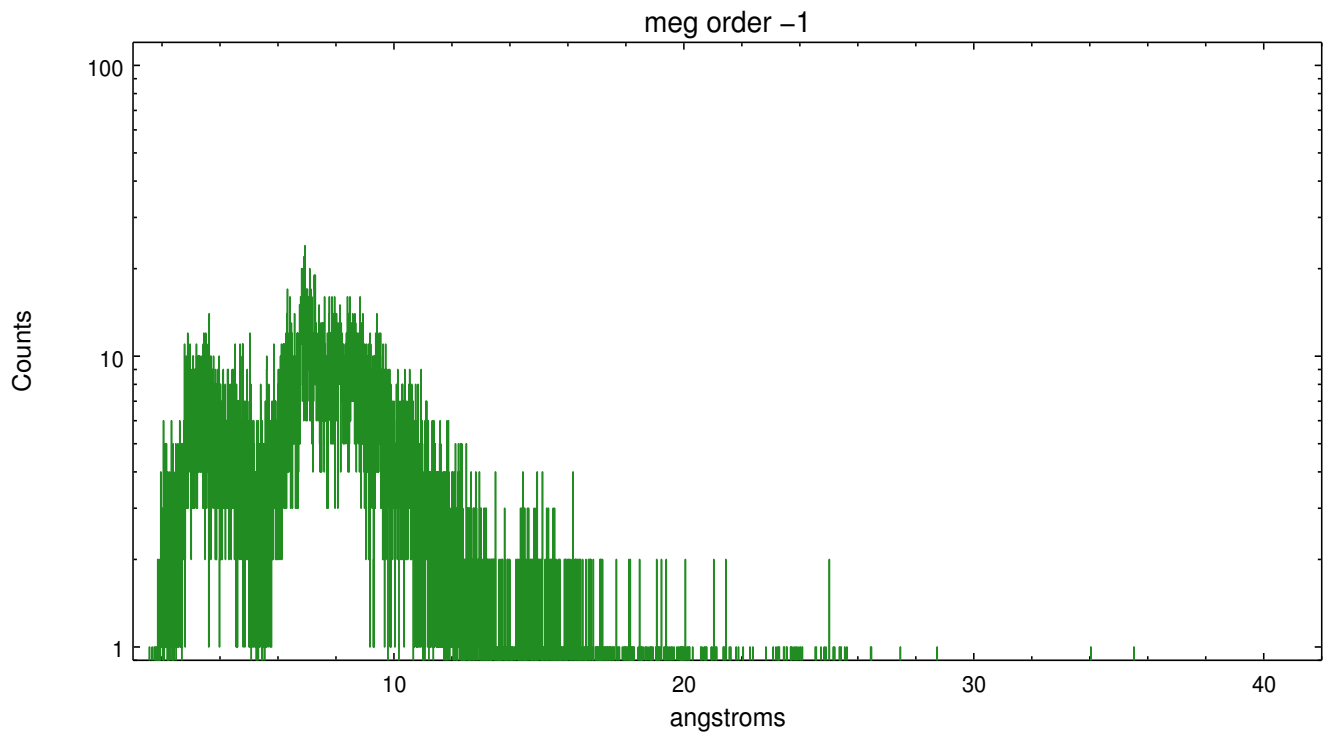


Spot Image MEG

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1500	508	13409	10284	14704	451	1143





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.07.21
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.03

A.2 Comments

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 meg dispersed spectral arm, rather than using a centroid position of the source. The findzero results are more accurate than source centroid in this case.

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The guide star in slot 5 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this guide star from the solution.