

V&V Reference Report

L2 ASCDS Version : 8.5.1.1

Observation 15475 - L2 Version 2
Chandra X-Ray Center

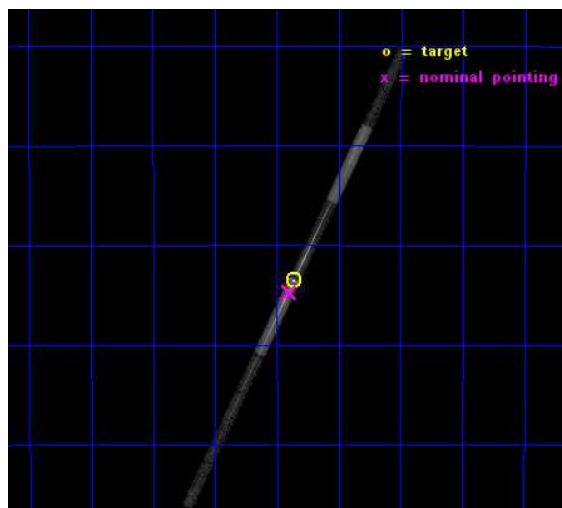
L2 Processing Date : Dec 2 2014

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	LETG Arm	17
A	Summary	19
A.1	Status	19
A.2	Comments	19

1 Front

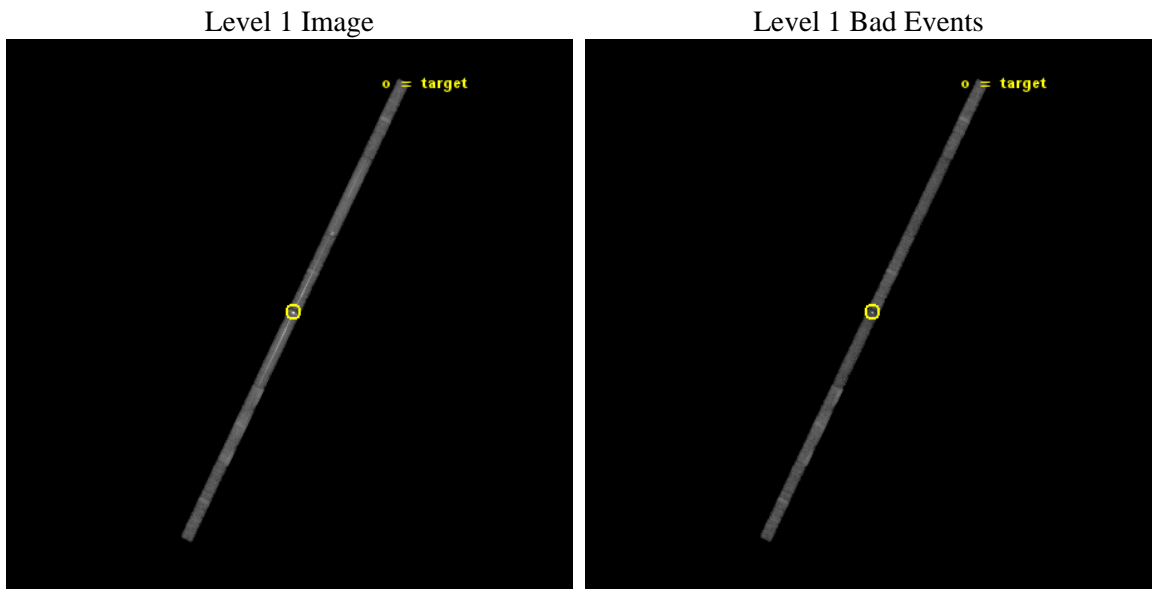
seq_num	790251	Sequence number
obs_id	15475	Observation id
title	AO-14 LETG/ACIS-S Calibration Observations of PKS2155-304	Proposal
observer	Dr. CXC Calibration	Principal investigator
object	PKS2155-304	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	329.716667	Observer's specified target RA [deg]
dec_targ	-30.225556	Observer's specified target Dec [deg]
ra_nom	329.72466113488	Nominal RA [deg]
dec_nom	-30.245431863833	Nominal Dec [deg]
roll_nom	116.28909775905	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30054.499488115	Sum of GTIs [s]
livetime	28390.032443162	Livetime [s]
ontime4	30054.499488115	Sum of GTIs [s]
ontime5	30054.499488115	Sum of GTIs [s]
ontime6	30054.467455864	Sum of GTIs [s]
ontime7	30054.499488115	Sum of GTIs [s]
ontime8	30054.426415861	Sum of GTIs [s]
ontime9	30054.385375857	Sum of GTIs [s]
l2events	93293	Number of level 2 events



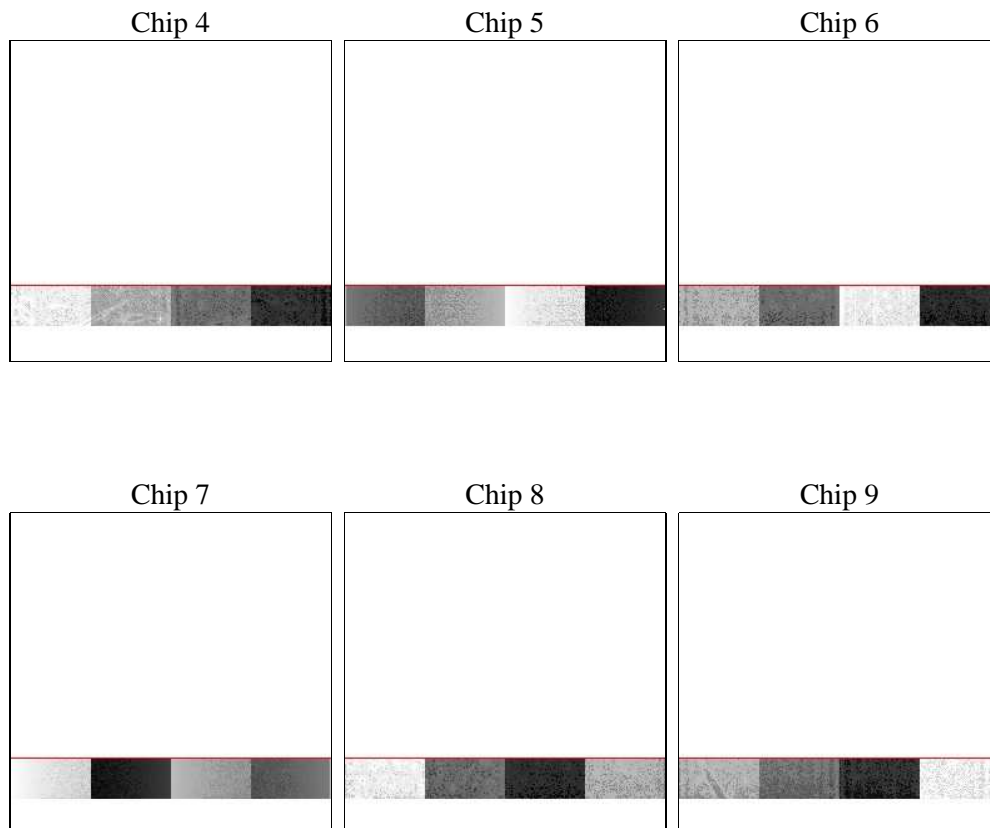
2 OBI

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	10.3	Processing system revision	ontime	30054.499488115	Sum of GTIs [s]
caldbver	4.6.4	 	ontime4	30054.499488115	Sum of GTIs [s]
date	2014-12-02T22:24:35	Date and time of file creation	ontime5	30054.499488115	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	30054.467455864	Sum of GTIs [s]
			ontime7	30054.499488115	Sum of GTIs [s]
			ontime8	30054.426415861	Sum of GTIs [s]
			ontime9	30054.385375857	Sum of GTIs [s]
			l1events	230336	Number of level 1 events
			tgmethod	FINDZO	Method used to create src1a file
			z0_pos	(4145.46 4241.82)	src1a sky pixel position

2.1.4 Events

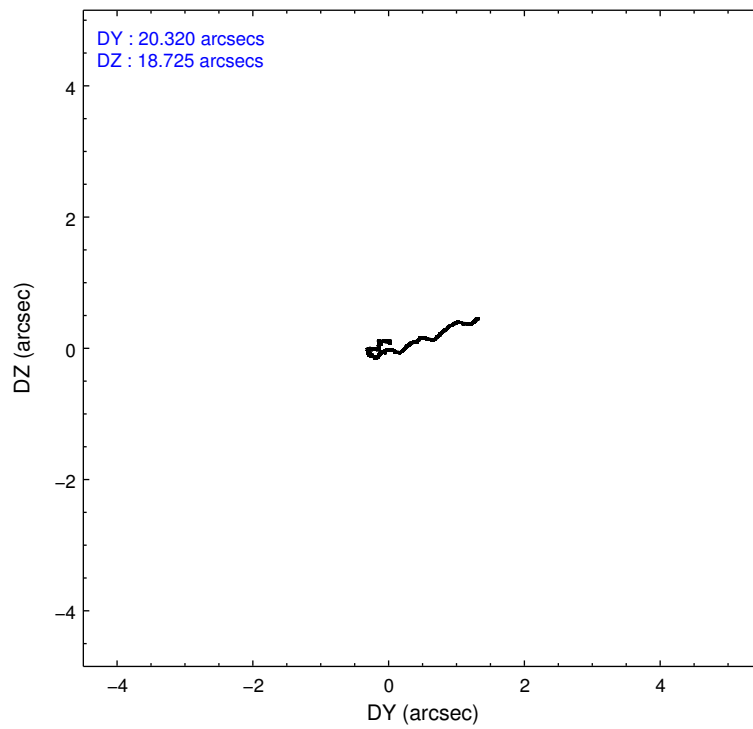
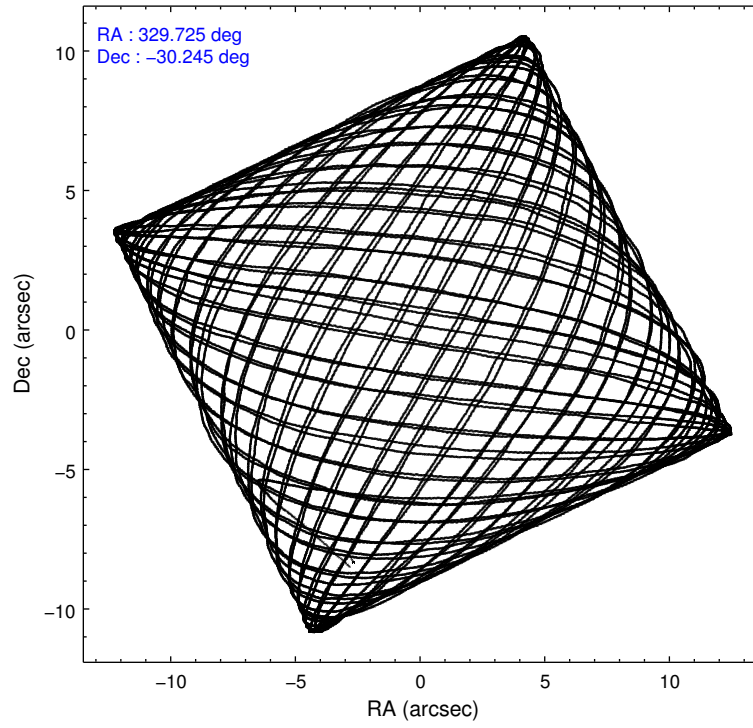
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	27338	37537	36660	67789	38229	22783
rejected events	23572	16247	21839	16767	28122	19443
rejected %	86%	43%	59%	24%	73%	85%

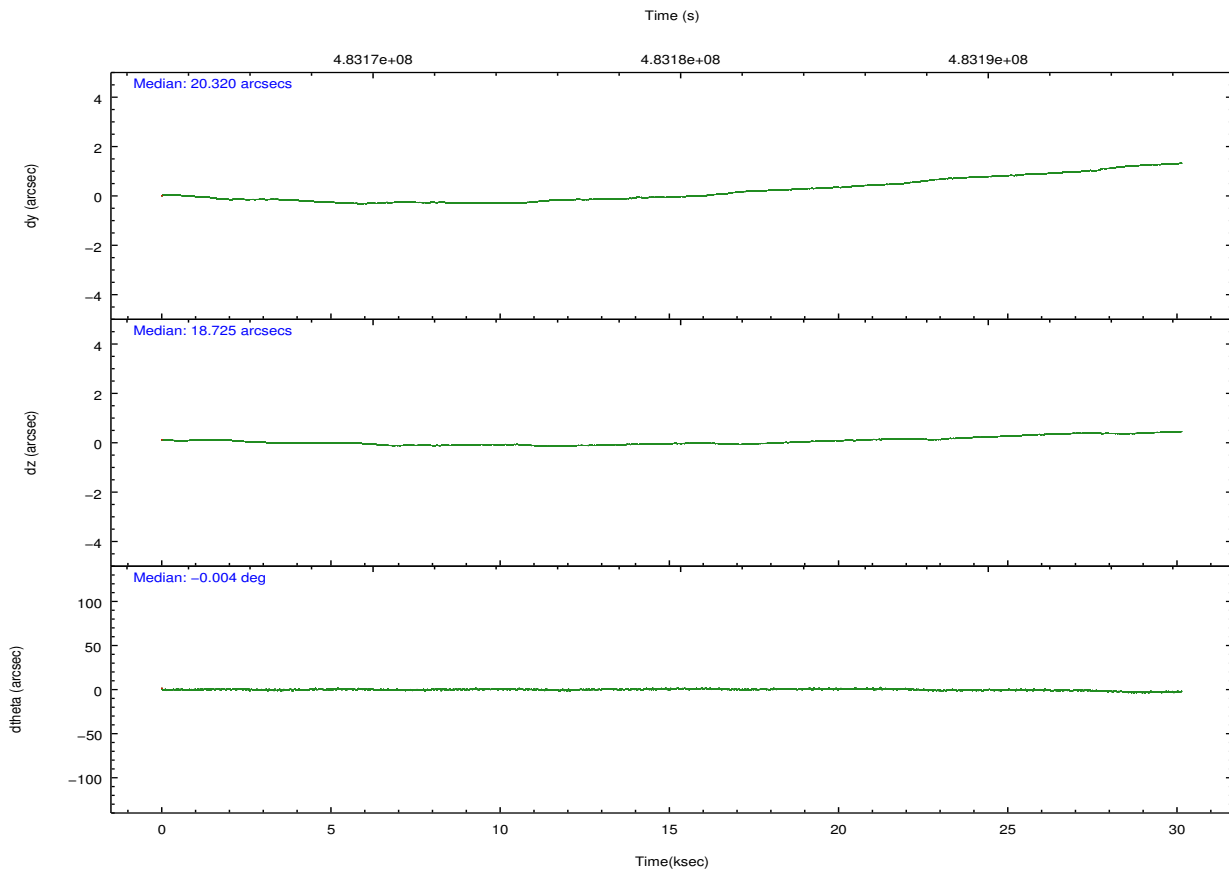
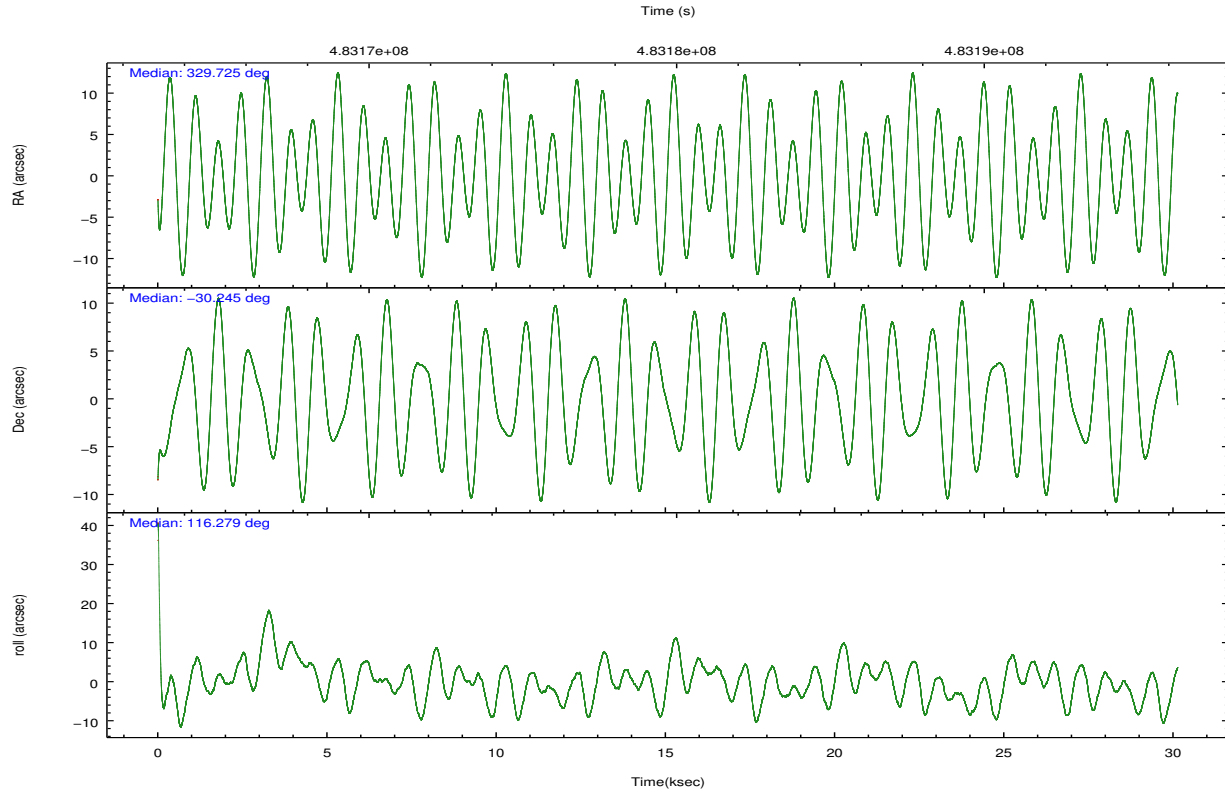
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	1477	4942	10675	12670	2941	1165
	5%	13%	29%	18%	7%	5%
grade 1 events	10	161	21	331	13	11
	0%	0%	0%	0%	0%	0%
grade 2 events	756	4979	1714	12437	2141	636
	2%	13%	4%	18%	5%	2%
grade 3 events	508	1556	800	5761	930	499
	1%	4%	2%	8%	2%	2%
grade 4 events	451	1563	802	5603	995	491
	1%	4%	2%	8%	2%	2%
grade 5 events	948	3183	876	3805	1440	948
	3%	8%	2%	5%	3%	4%
grade 6 events	574	8250	830	14552	3101	549
	2%	21%	2%	21%	8%	2%
grade 7 events	22614	12903	20942	12630	26668	18484
	82%	34%	57%	18%	69%	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	LETG	LETG	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	329.751225	329.724661134882	CCD I2 on	N	N
[deg] Pointing Dec	-30.260286	-30.24543186383319	CCD I3 on	N	N
[deg] Pointing Roll	116.145838	116.2890977590493	CCD S0 on	O1	Y
[s] Window start time (MET)	481161667.184000	481161667.184000	CCD S1 on	Y	Y
[s] Window stop time (MET)	486345667.184000	486345667.184000	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	-182.132523	-182.1344861297048	CCD S5 on	Y	Y
[mm] SIM translation stage offset	-8	-7.998036453302973	Number of optional ACIS chips dropped	0	0
[s] Observation start time (MET)	483164780.184000	483163443.9947	On-chip summing requested	N	N
Observation start date	2013-04-24T04:25:13	2013-04-24T04:04:03	Subarray requested	CUSTOM	1/8
[s] Observation end time (MET)	483194780.184000	483195479.85894	Subarray start row	113	113
Observation end date	2013-04-24T12:45:13	2013-04-24T12:57:59	Subarray row count	128	128
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0.7

2.3 Aspect





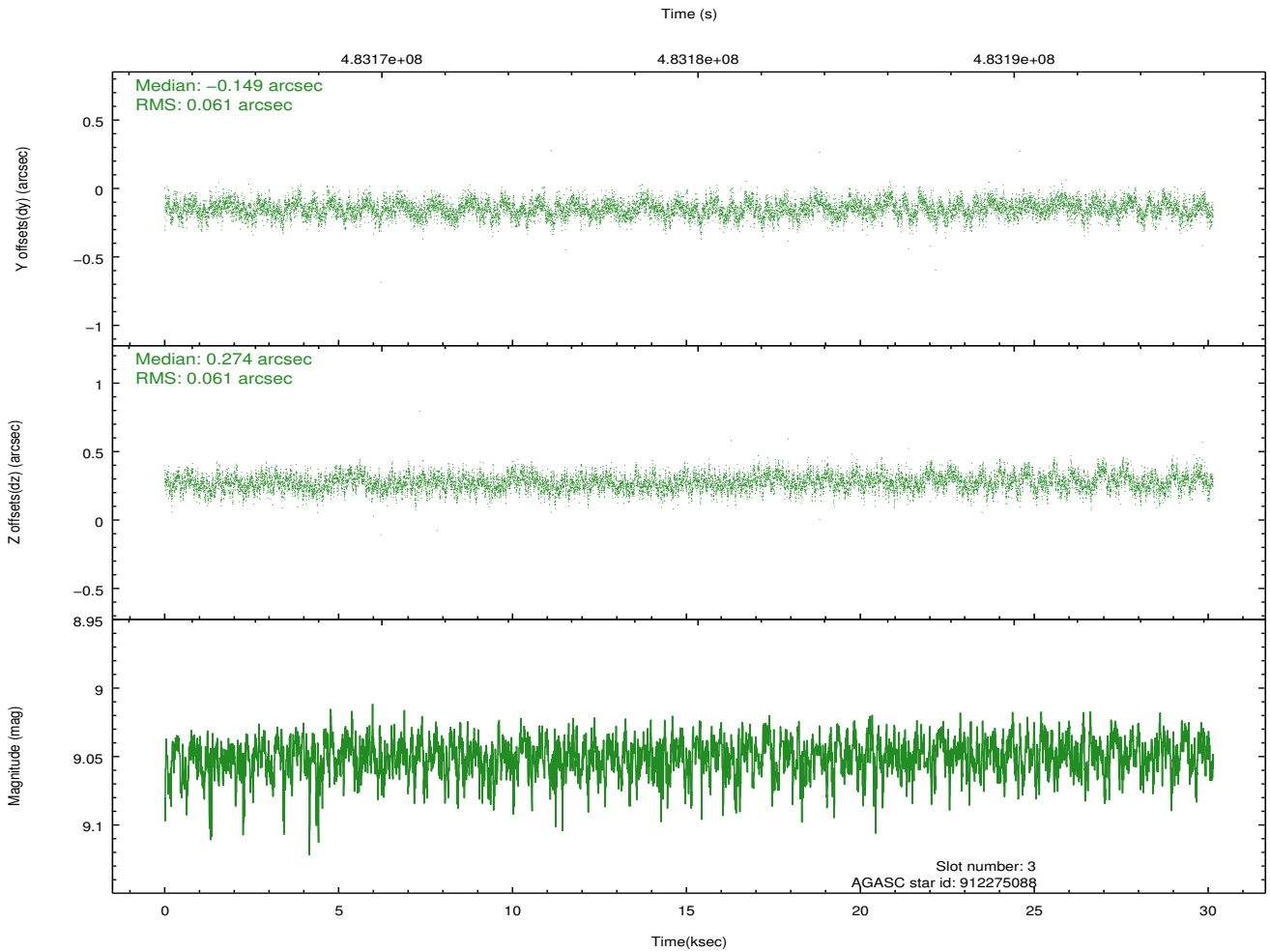
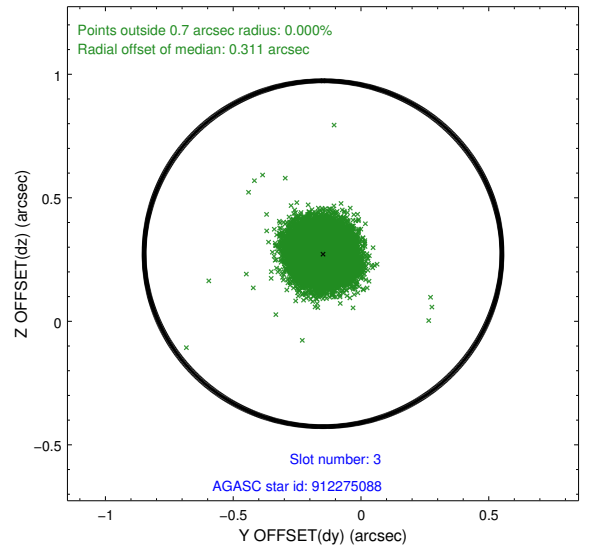
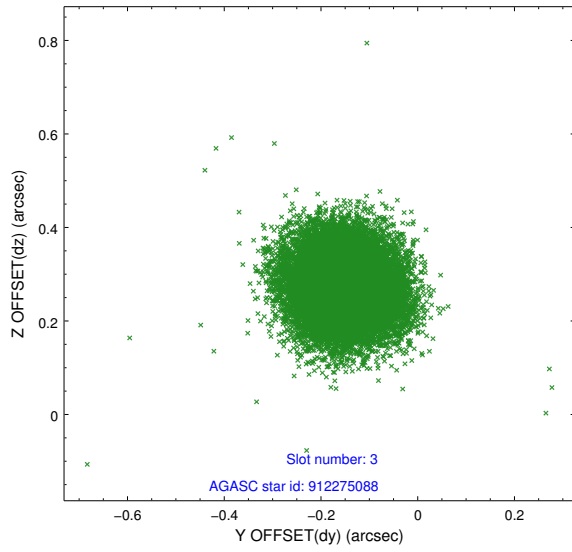
Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.00	7350	0.143	0.204	0.012	0.028	0.000000	0.000000	923.06	-1900.48
1	FID		ACIS-S-2	6.90	7350	-0.256	-0.124	0.012	0.032	0.000000	0.000000	-773.19	-1905.42
2	FID		ACIS-S-6	7.20	7350	0.091	-0.075	0.010	0.017	0.000000	0.000000	388.68	640.48
3	GUIDE	used	912275088	9.05	14677	-0.149	0.274	0.091	0.146	329.619228	-29.738698	1867.43	-456.38
4	GUIDE	used	981468016	8.99	14689	-0.149	-0.214	0.128	0.191	328.842457	-30.034984	1965.80	2190.06
5	GUIDE	used	981468128	9.34	14667	0.275	0.244	0.179	0.266	329.756350	-30.158334	322.88	-175.81
6	GUIDE	used	981478152	9.37	14687	0.047	-0.198	0.155	0.234	329.415589	-30.057192	1116.05	617.25
7	GUIDE	used	912131856	9.70	14630	-0.021	-0.113	0.153	0.243	328.758728	-29.933690	2407.14	2267.38

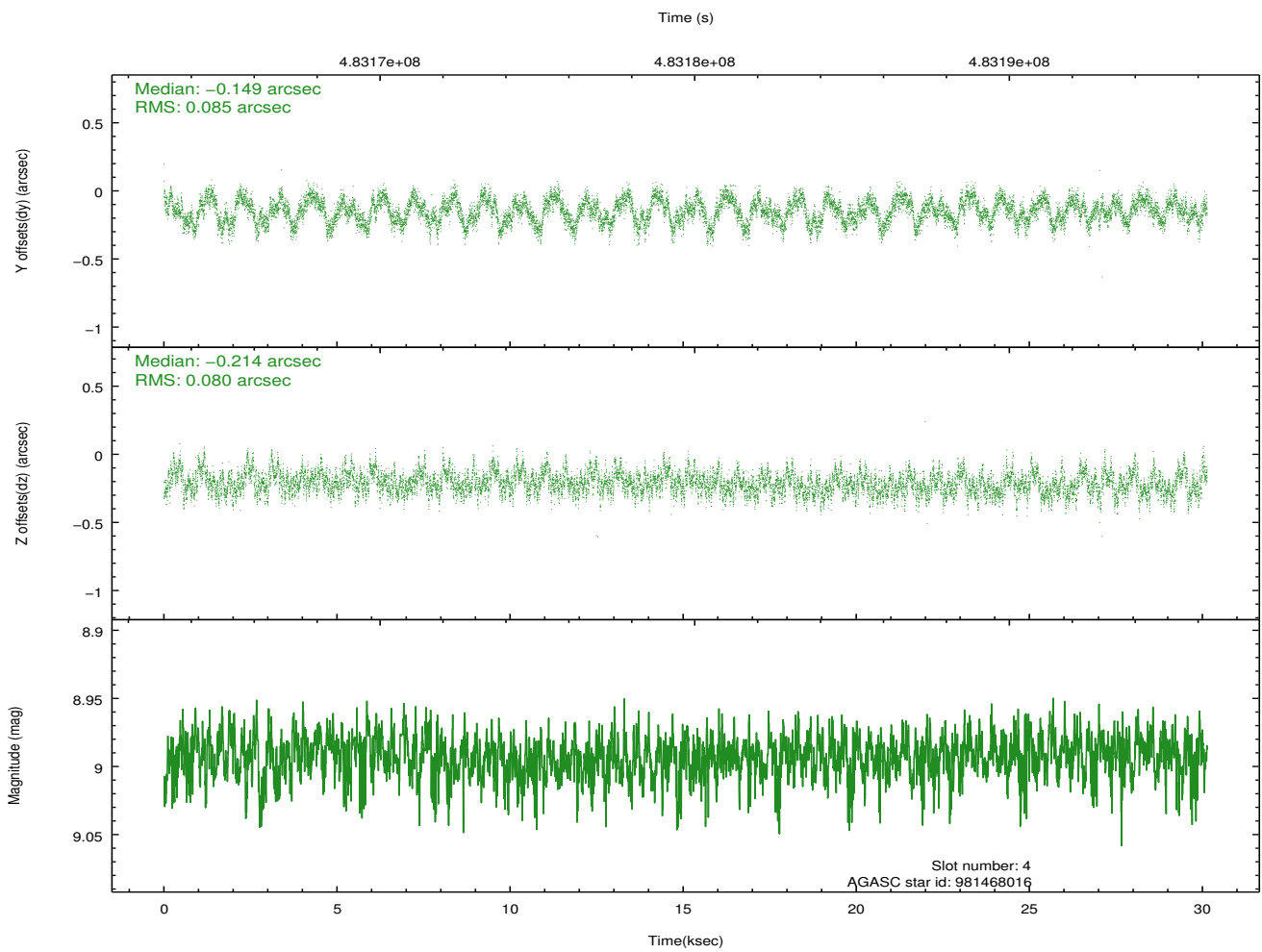
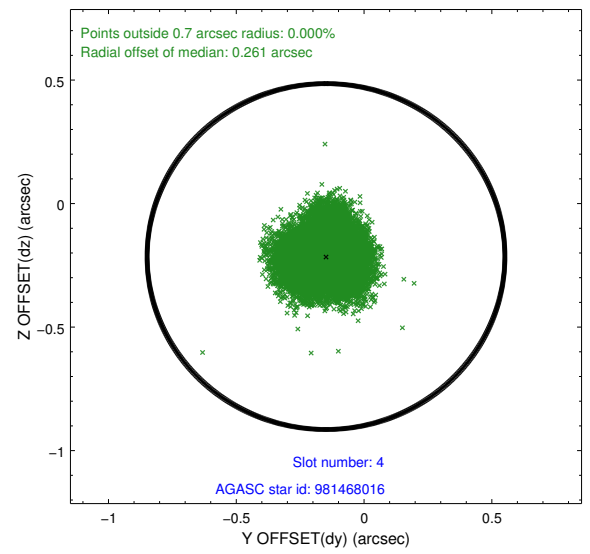
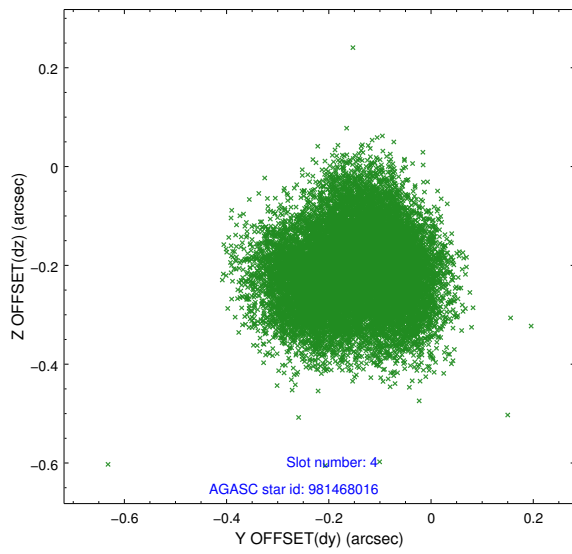
∞

2.4 Star Slots

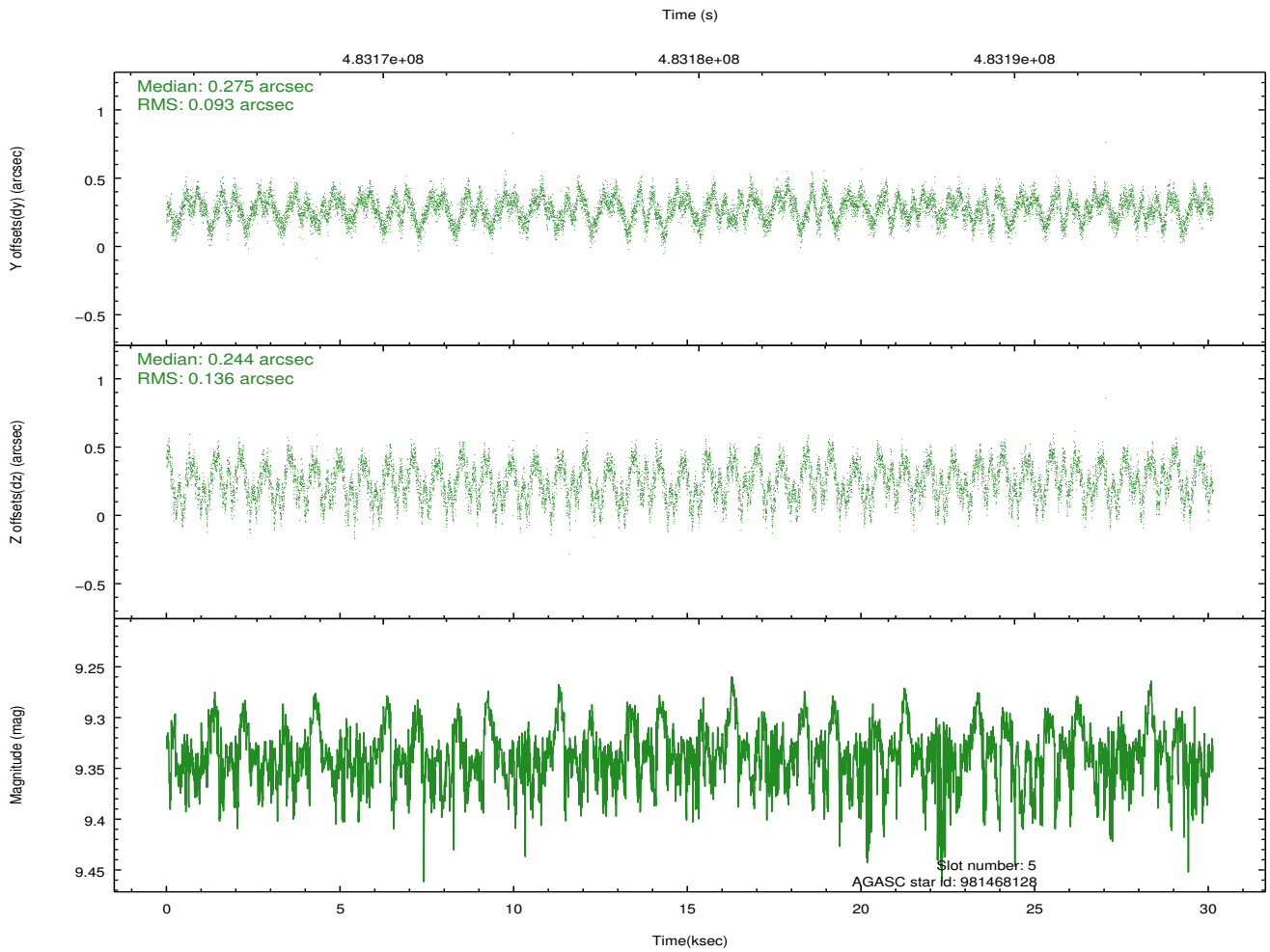
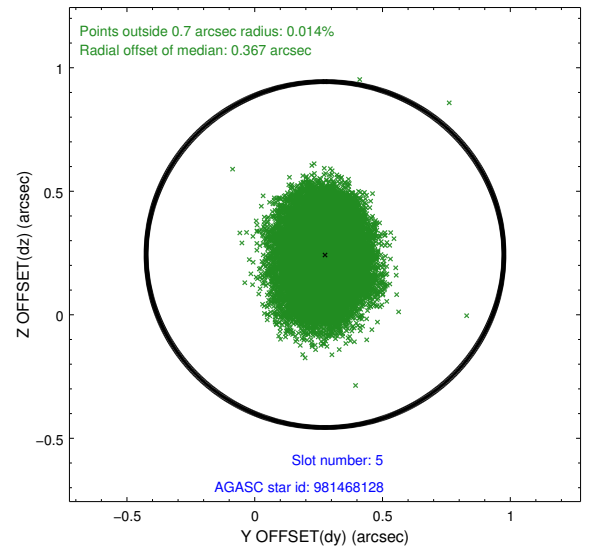
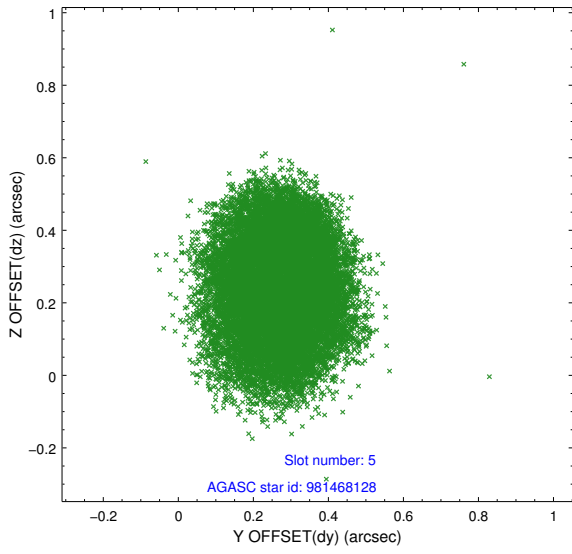
2.4.1 Slot 3



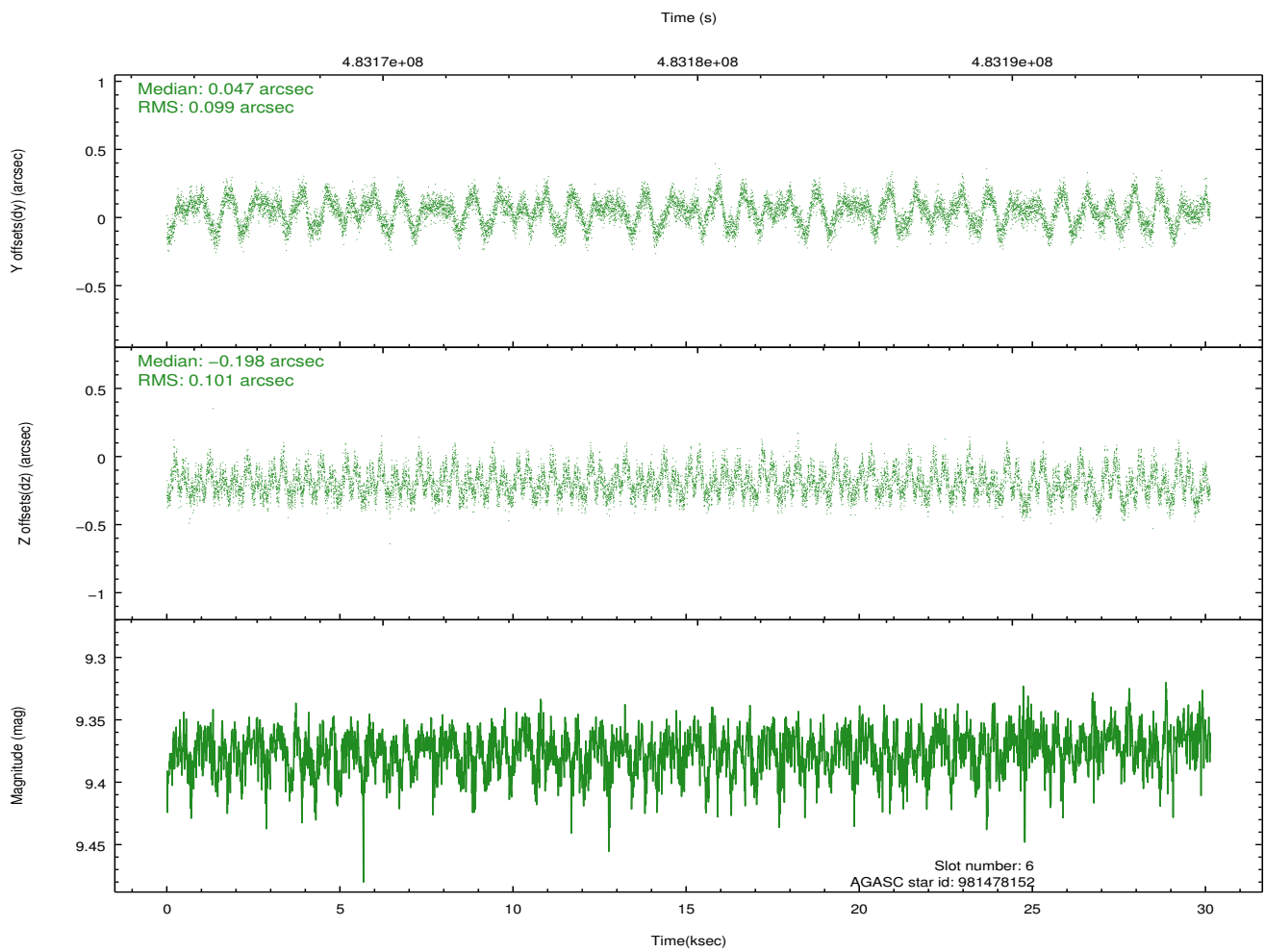
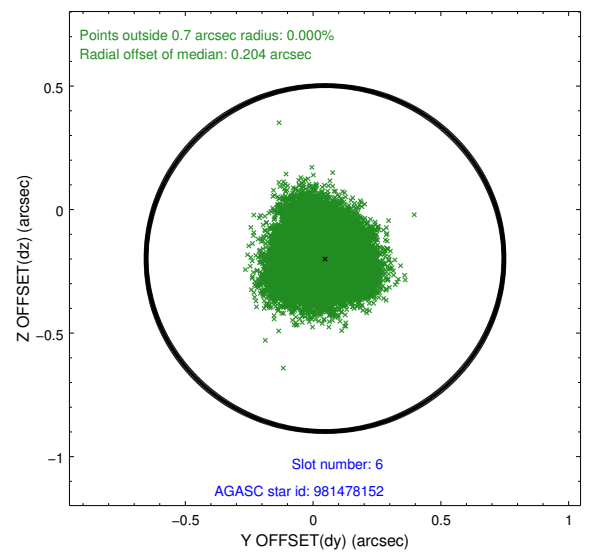
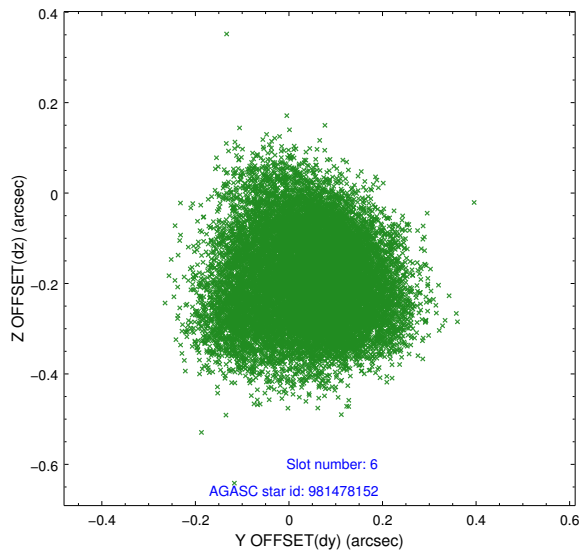
2.4.2 Slot 4



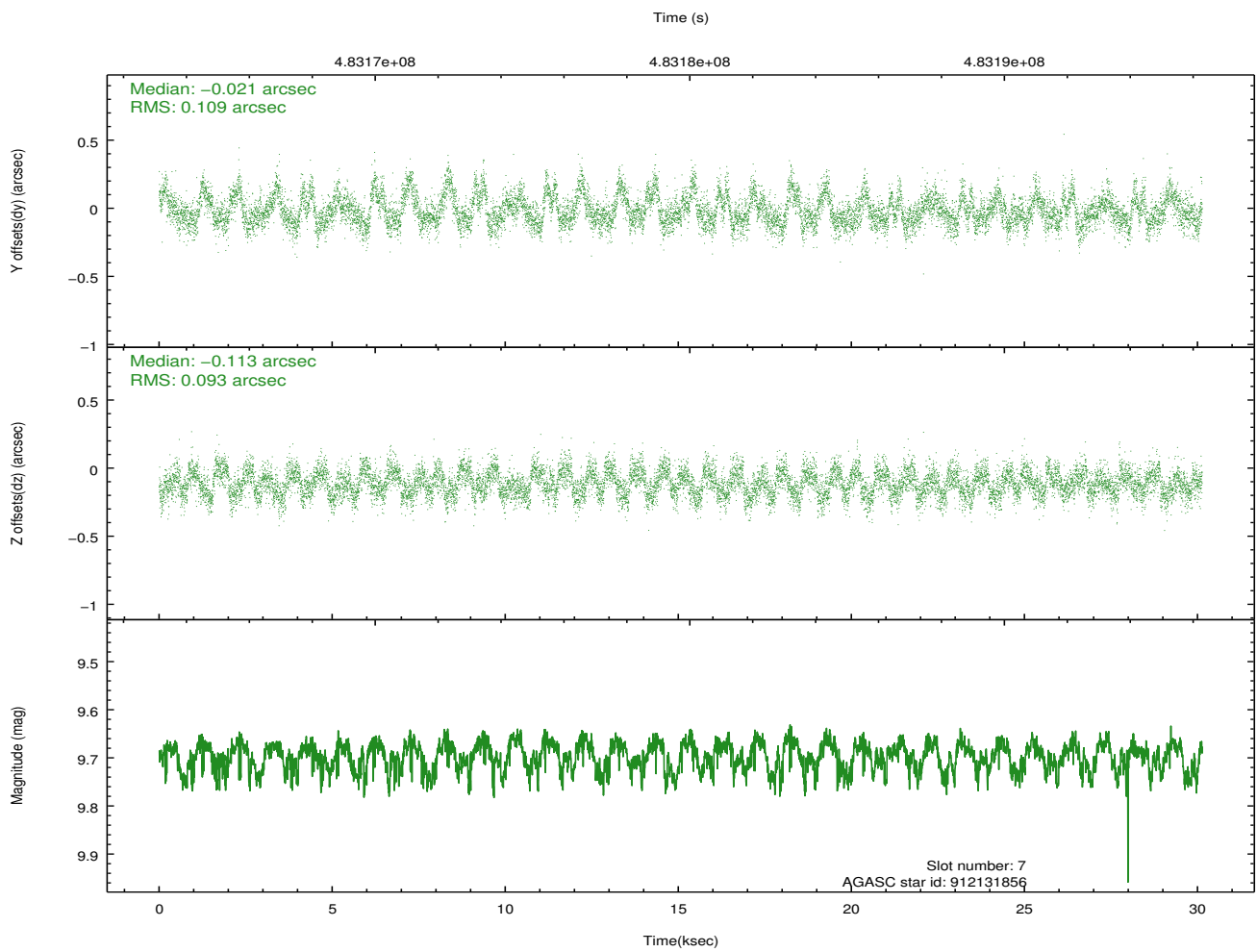
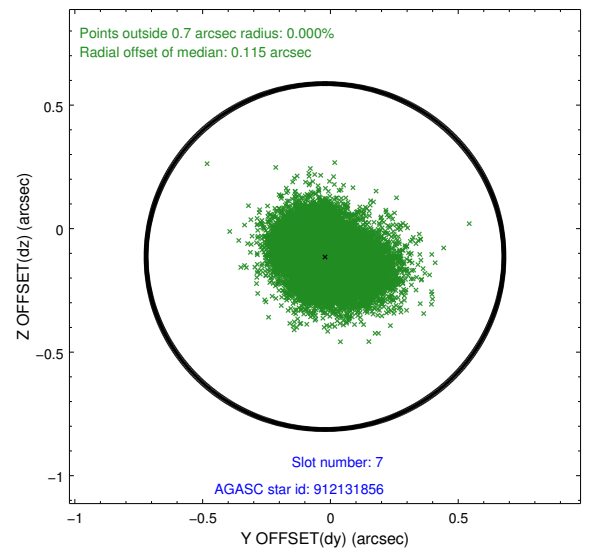
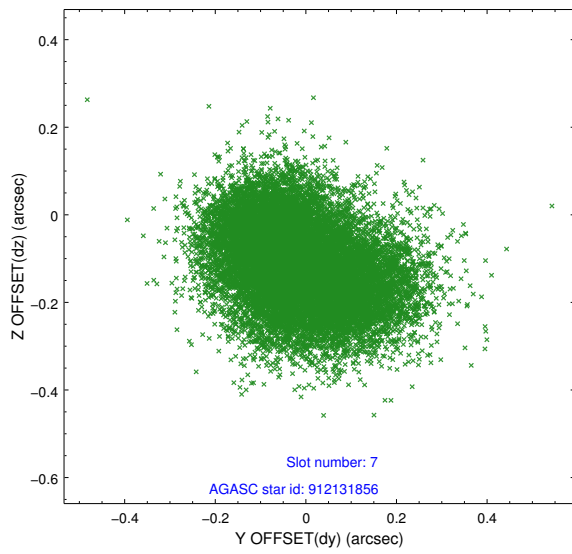
2.4.3 Slot 5



2.4.4 Slot 6

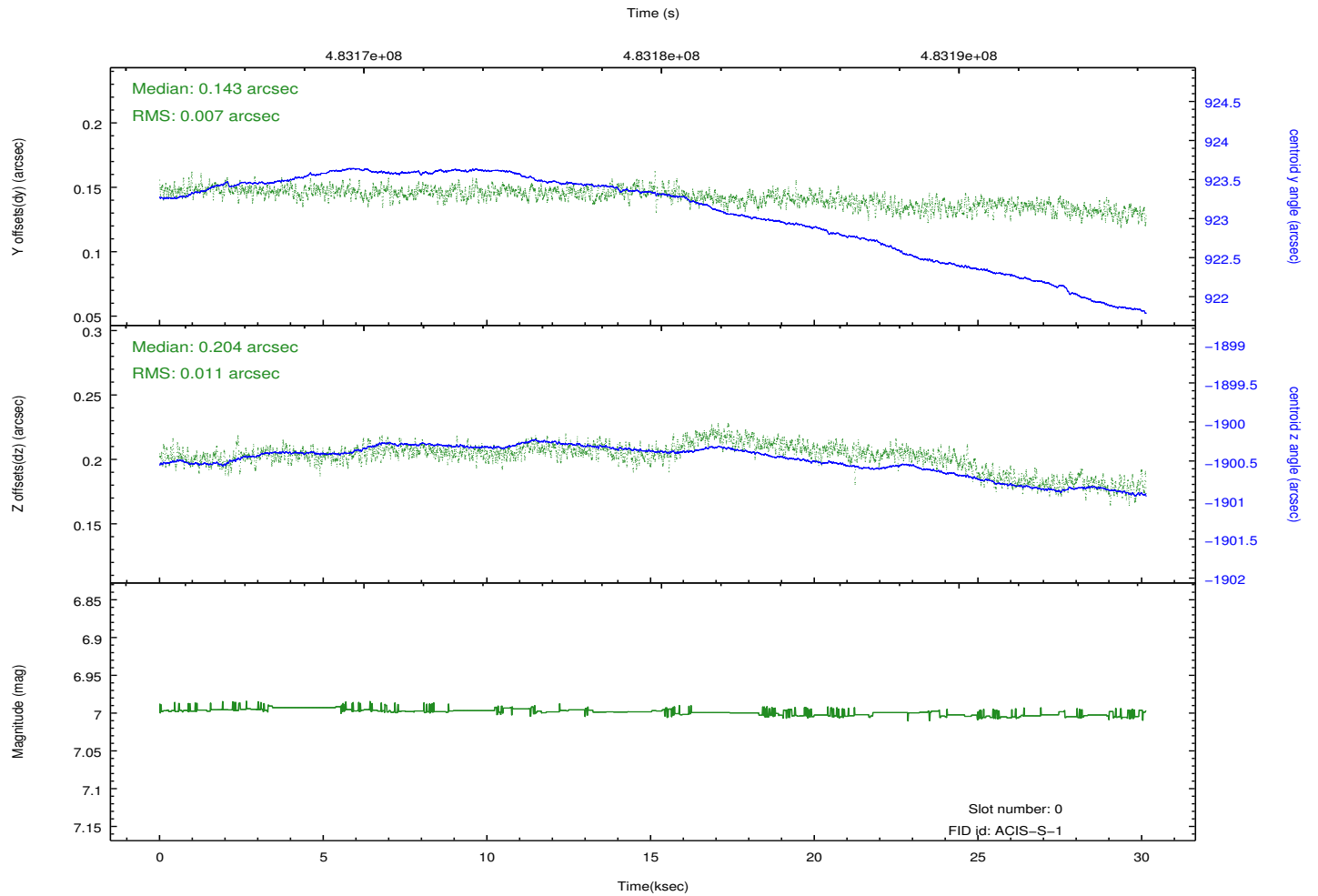
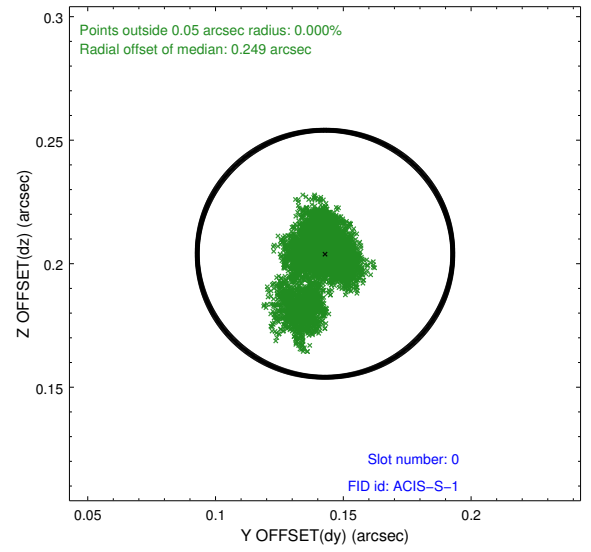
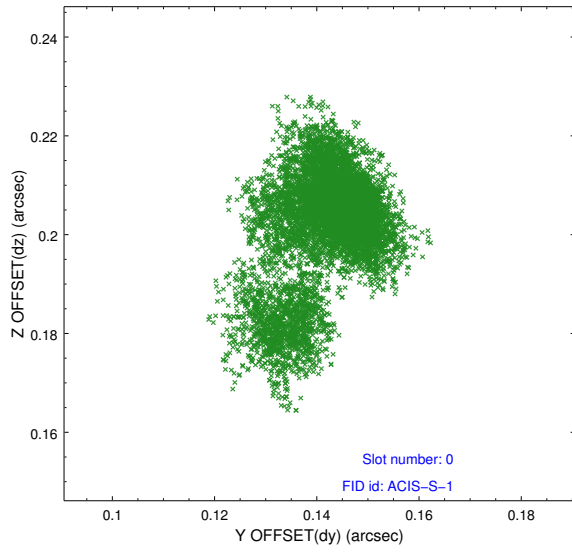


2.4.5 Slot 7

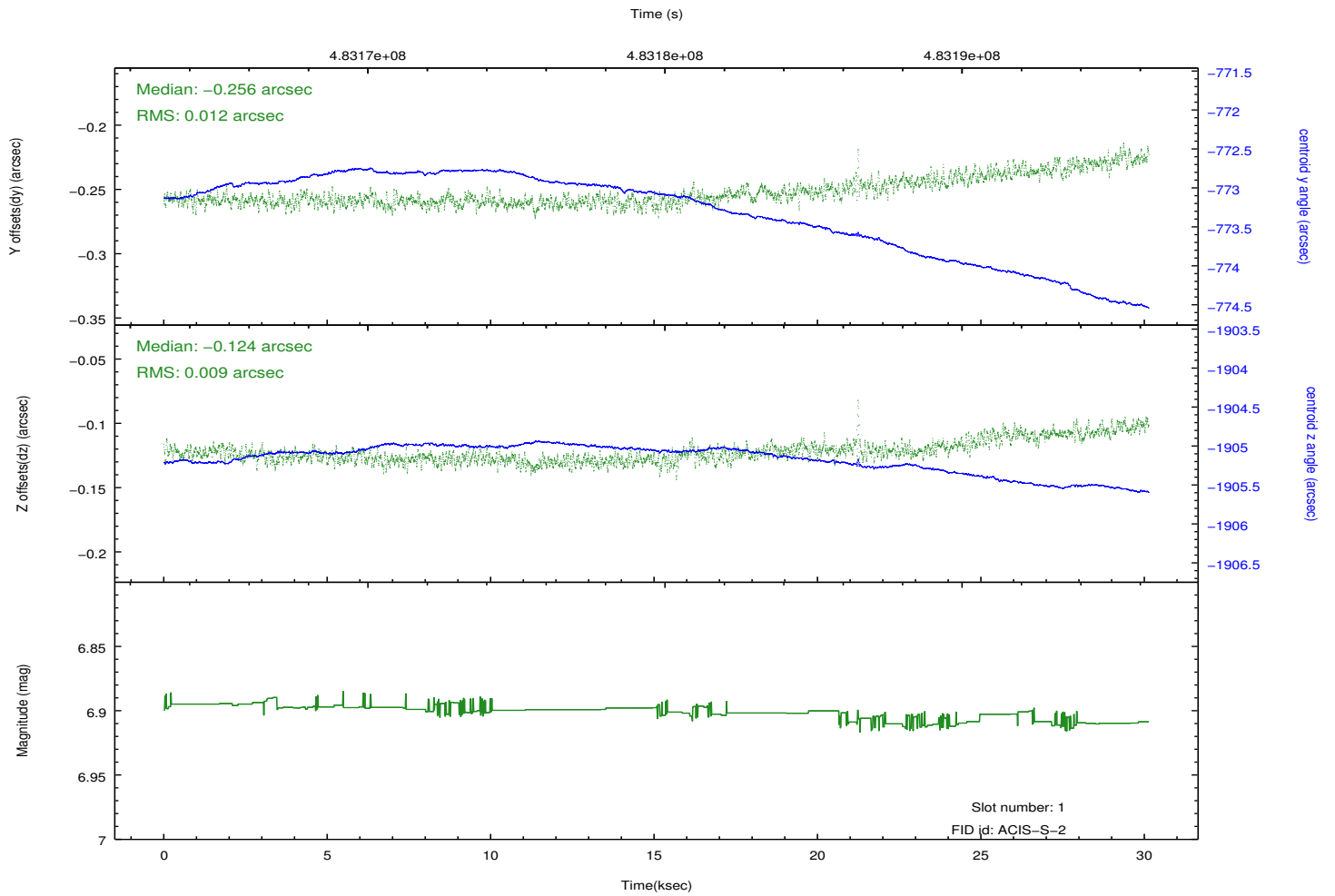
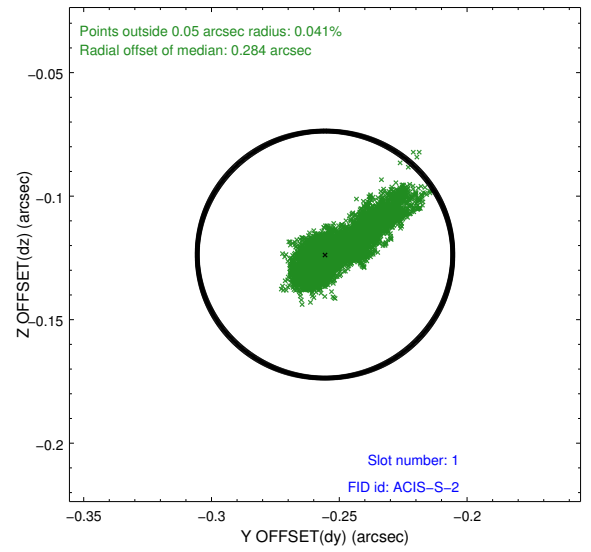
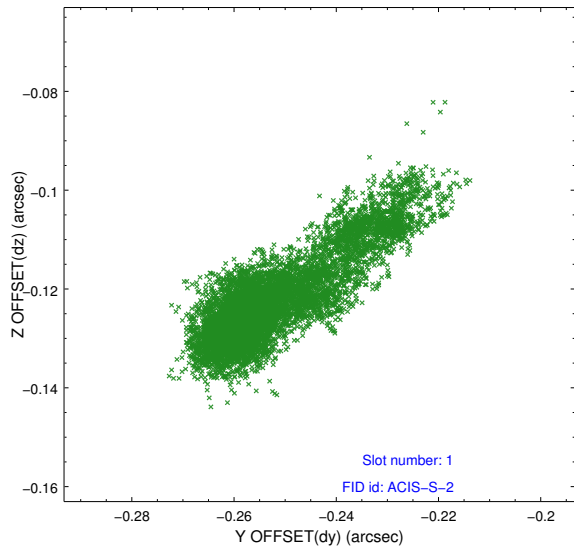


2.5 FID Slots

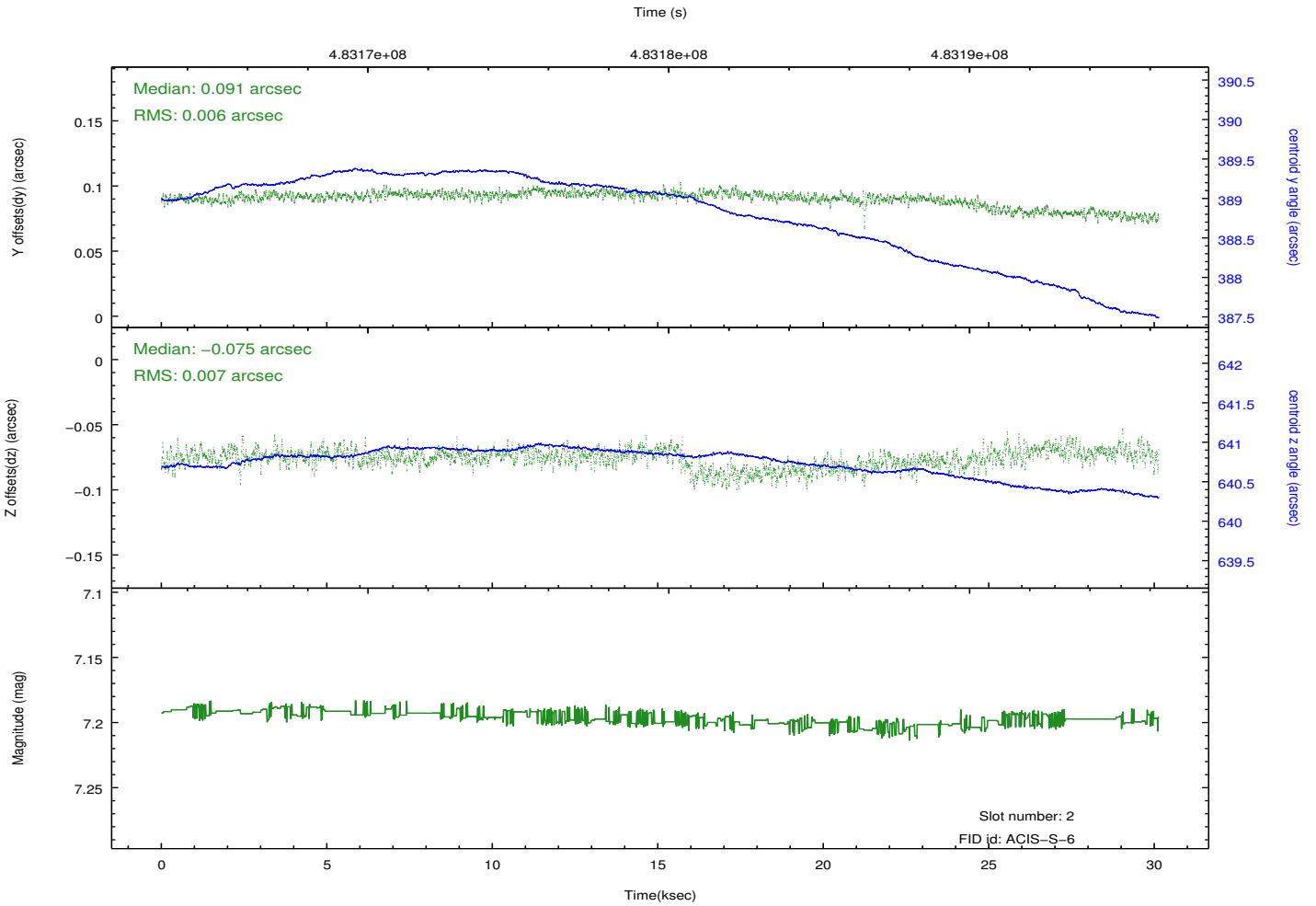
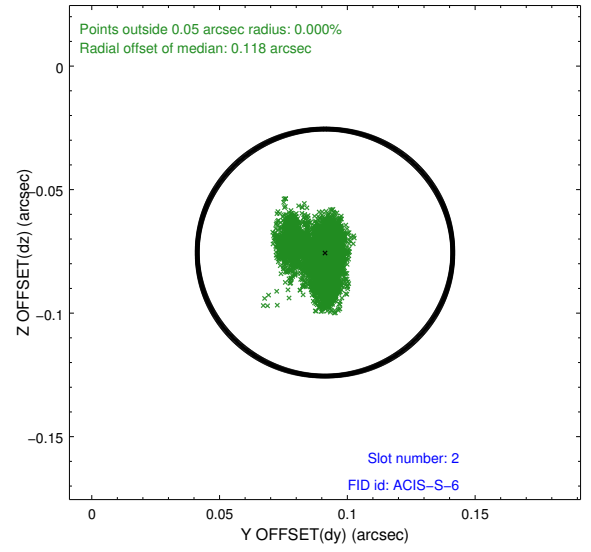
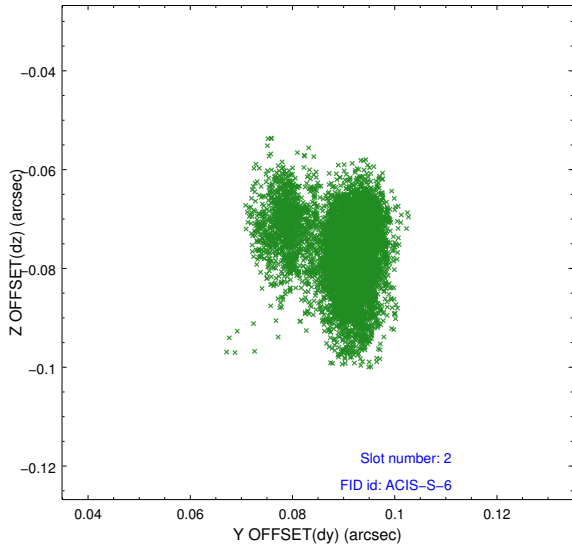
2.5.1 Slot 0



2.5.2 Slot 1

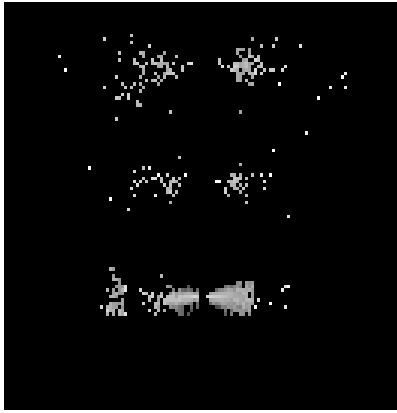


2.5.3 Slot 2

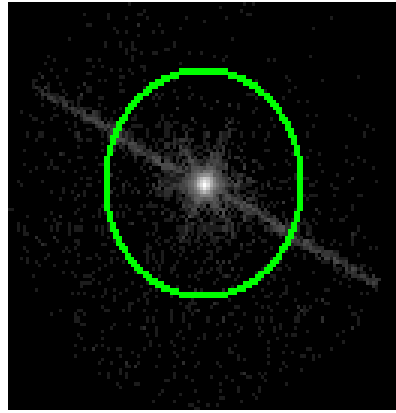


3 Gratings

3.1 LETG Arm



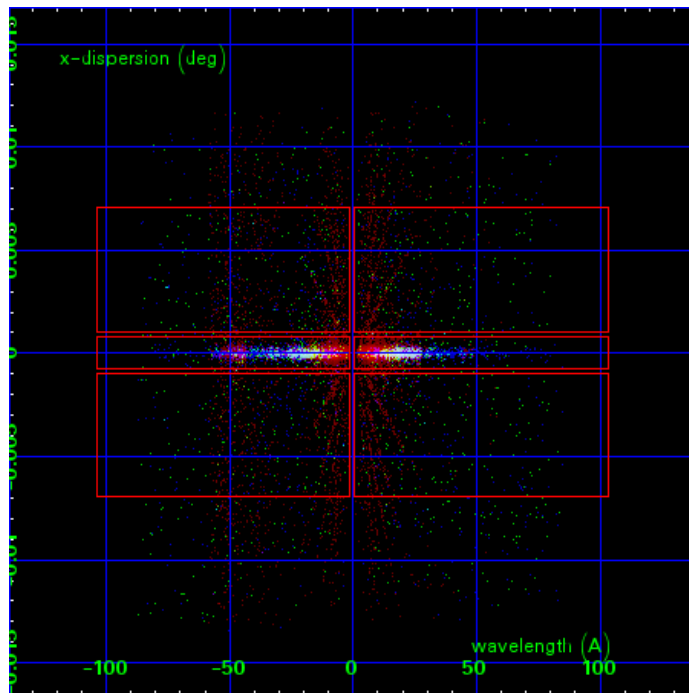
LETG Order Sort 123



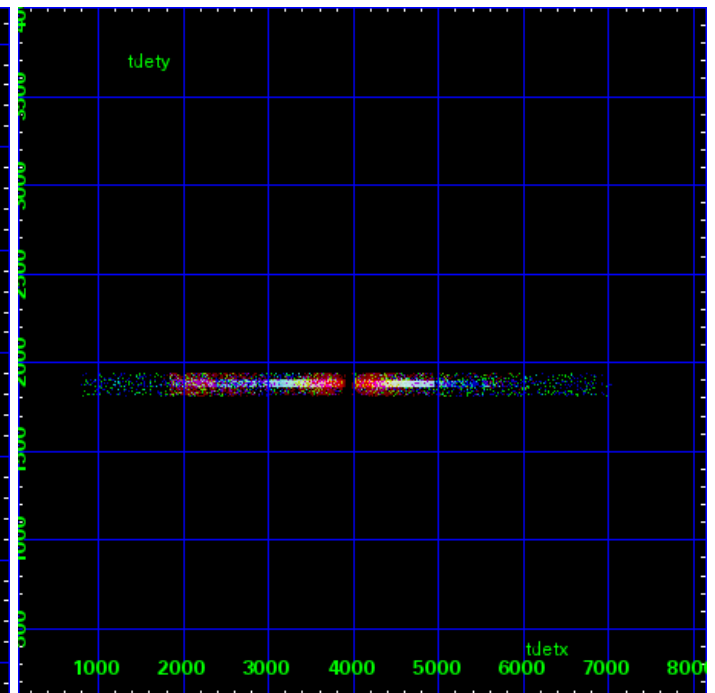
LETG Zero Order



LETG Order Sort ALL

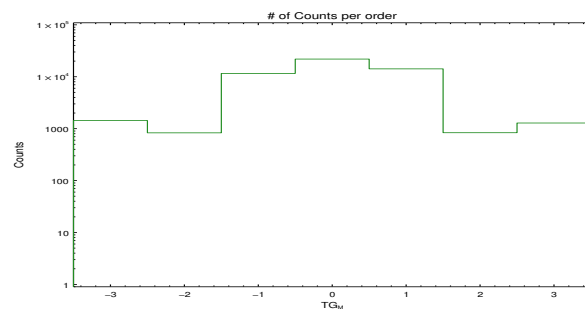


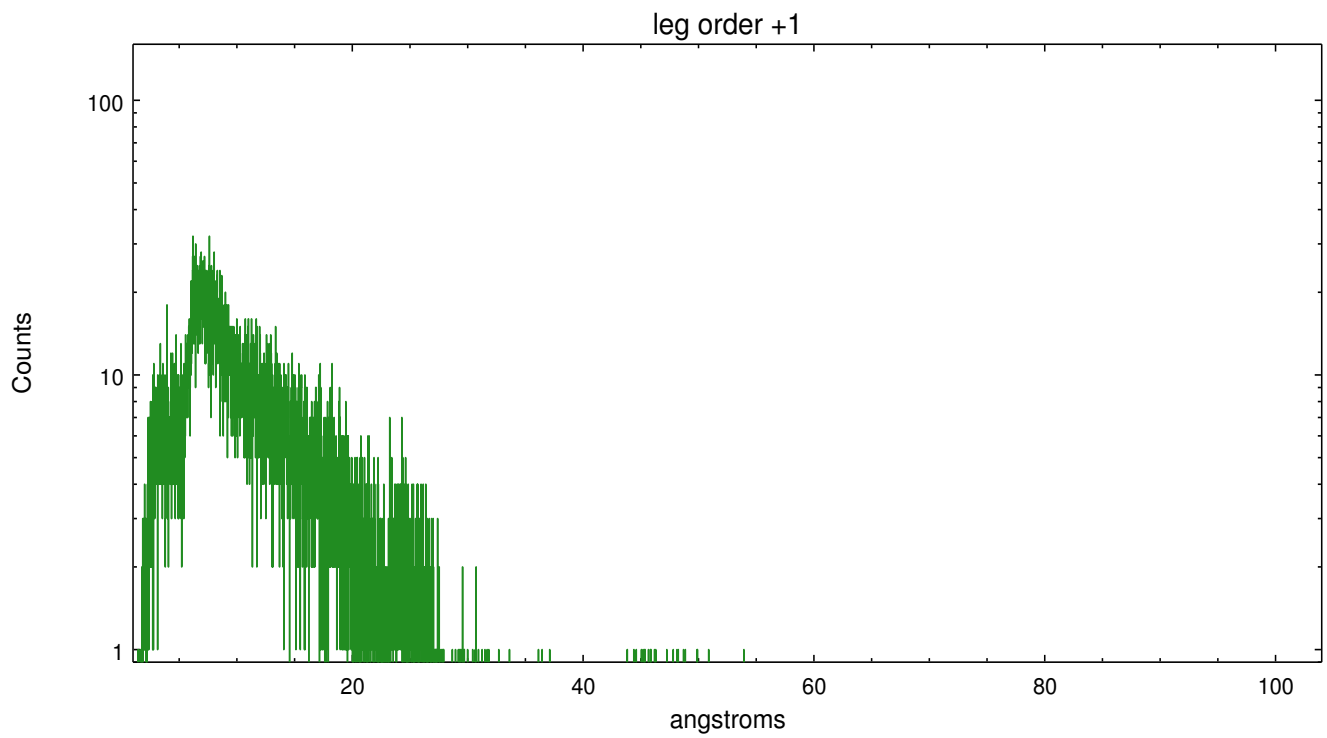
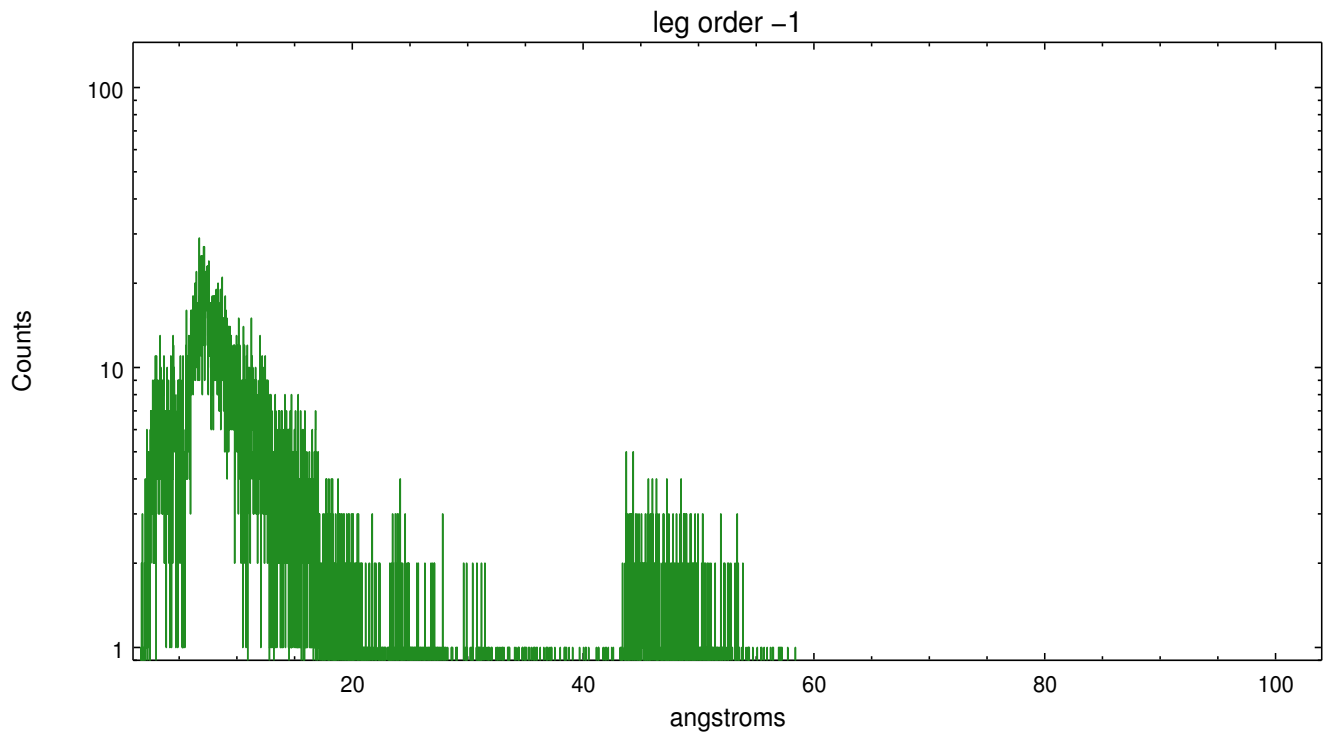
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1433	831	11590	21895	14190	836	1285





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2015.11.03
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.054499488115

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 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.