

V&V Reference Report

L2 ASCDS Version : 10.0.1

Observation 14516 - L2 Version 4
Chandra X-Ray Center

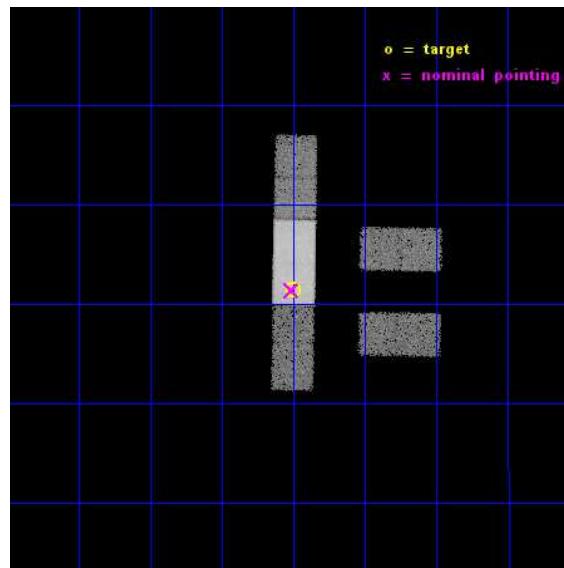
L2 Processing Date : Dec 30 2014

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1 Front

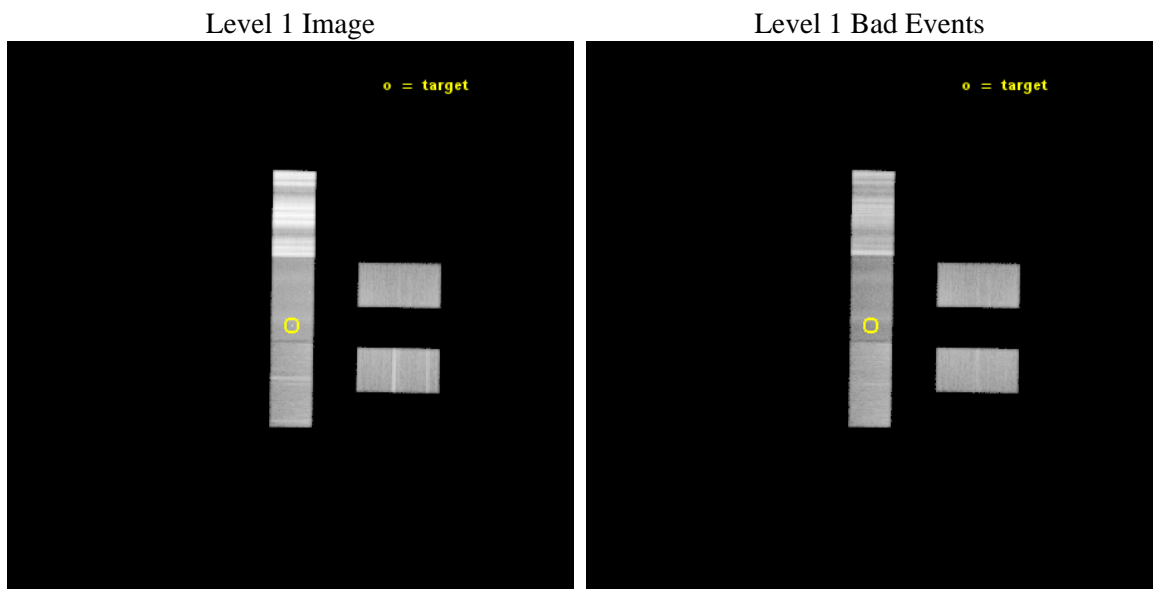
seq_num	702753	Sequence number
obs_id	14516	Observation id
title	ENERGY DEPENDENT X-RAY MICROLENSING AND THE STRUCTURE OF QUASARS	P
observer	Prof. Christopher Kochanek	Principal investigator
object	Q2237+0305	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	340.12625	Observer's specified target RA [deg]
dec_targ	3.358	Observer's specified target Dec [deg]
ra_nom	340.12883347628	Nominal RA [deg]
dec_nom	3.3564193548043	Nominal Dec [deg]
roll_nom	270.94089829049	Nominal Roll [deg]
revision	4	Processing version of data
ontime	30055.999789298	Sum of GTIs [s]
livetime	29347.516221227	Livetime [s]
ontime2	18049.830744147	Sum of GTIs [s]
ontime3	18461.224801004	Sum of GTIs [s]
ontime6	15393.484336793	Sum of GTIs [s]
ontime7	30055.999789298	Sum of GTIs [s]
ontime8	22388.483237028	Sum of GTIs [s]
l2events	120745	Number of level 2 events



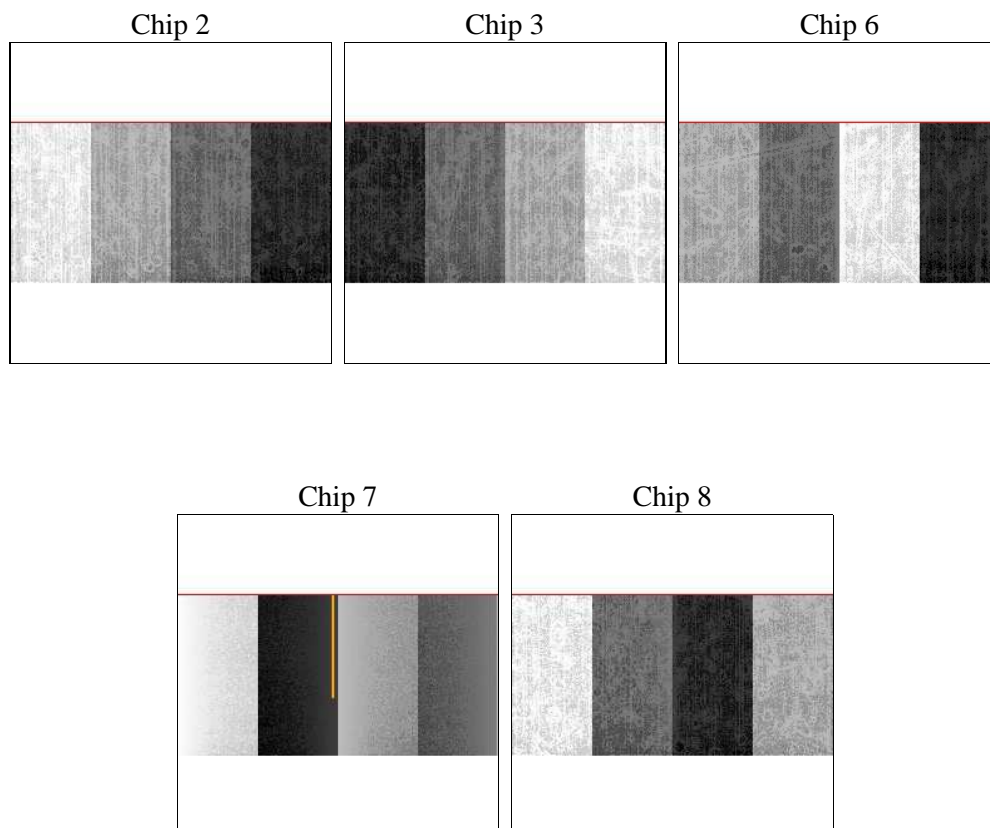
2 OBI

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	10.3.1	Processing system revision	ontime	30055.999789298	Sum of GTIs [s]
caldsver	4.6.5	 	ontime2	18049.830744147	Sum of GTIs [s]
date	2014-12-30T21:44:51	Date and time of file creation	ontime3	18461.224801004	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	15393.484336793	Sum of GTIs [s]
			ontime7	30055.999789298	Sum of GTIs [s]
			ontime8	22388.483237028	Sum of GTIs [s]
			l1events	2111950	Number of level 1 events

2.1.4 Events

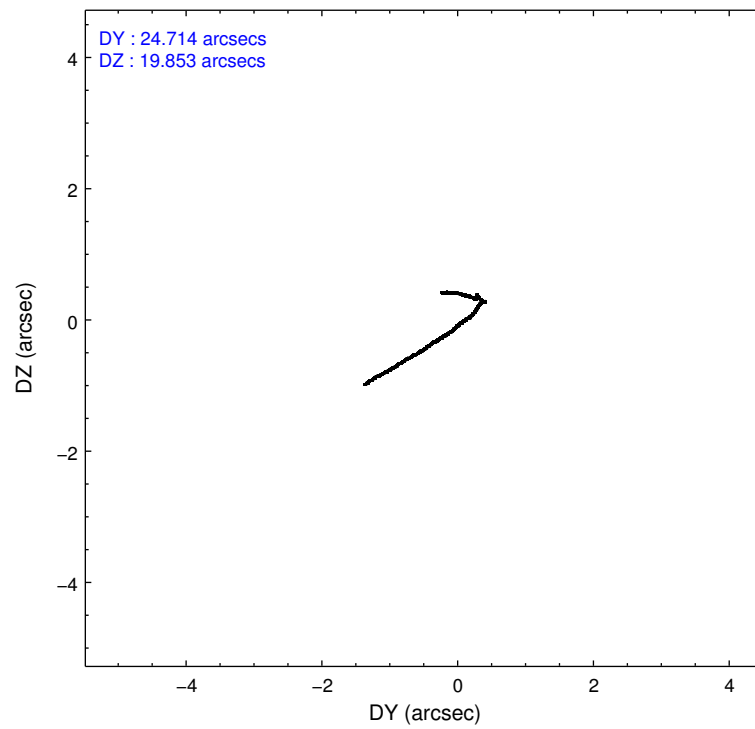
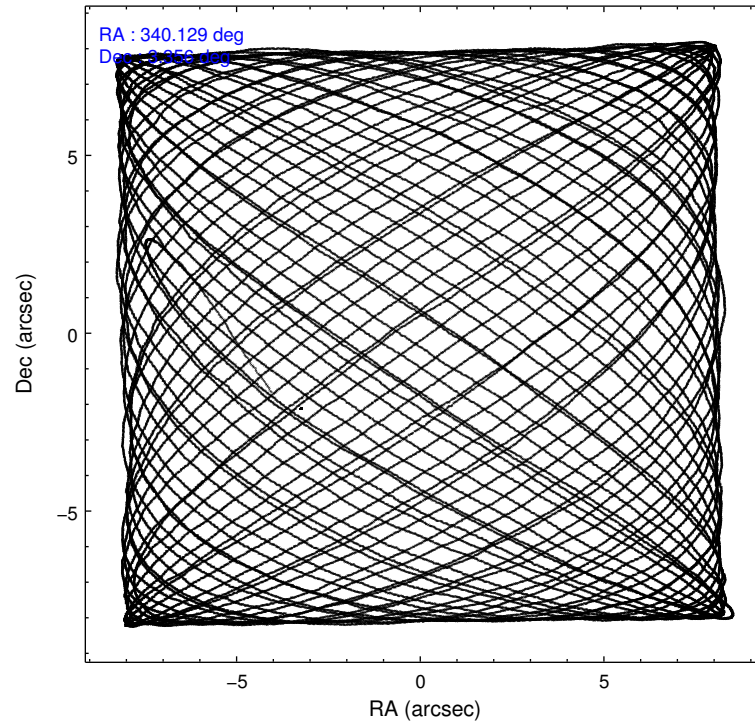
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	219048	184301	193689	189916	1324996
rejected events	181008	175862	173818	97299	361656
rejected %	82%	95%	89%	51%	27%

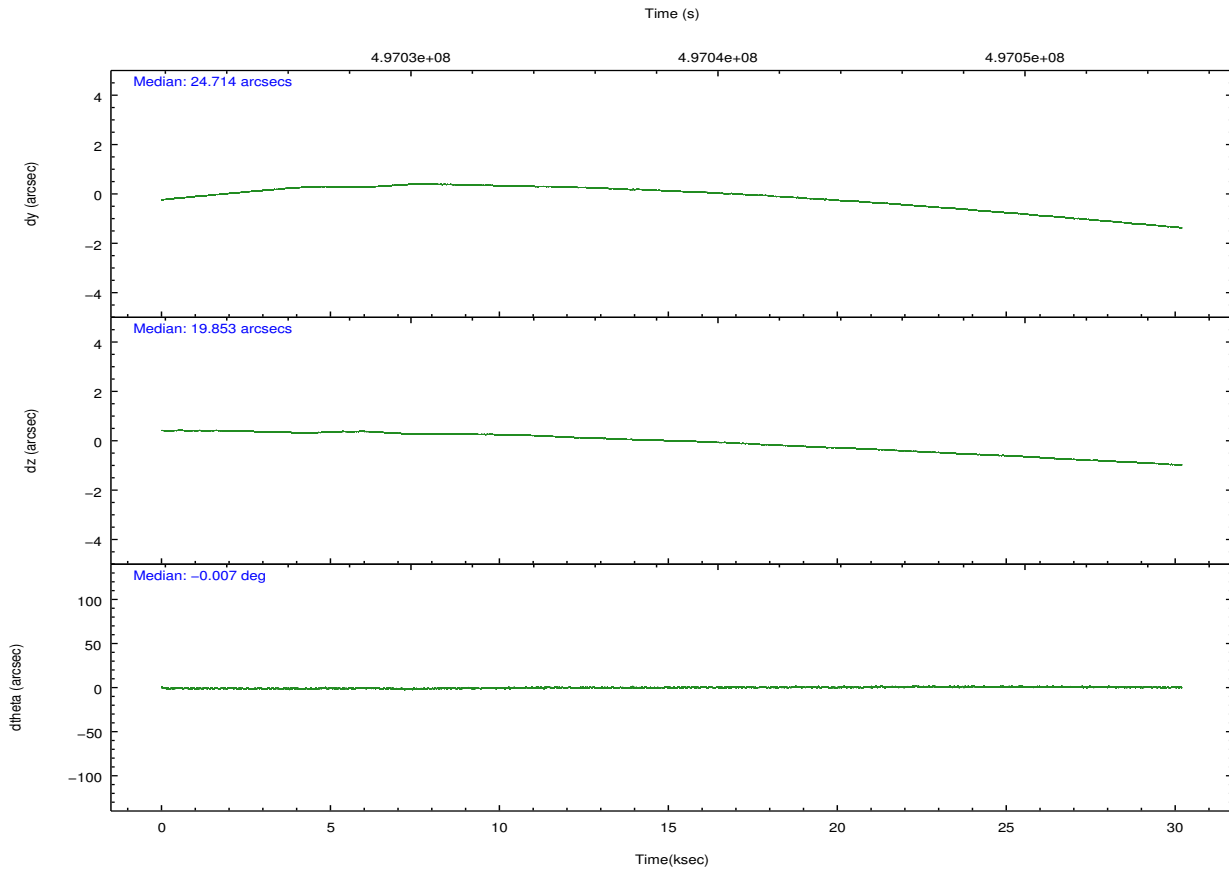
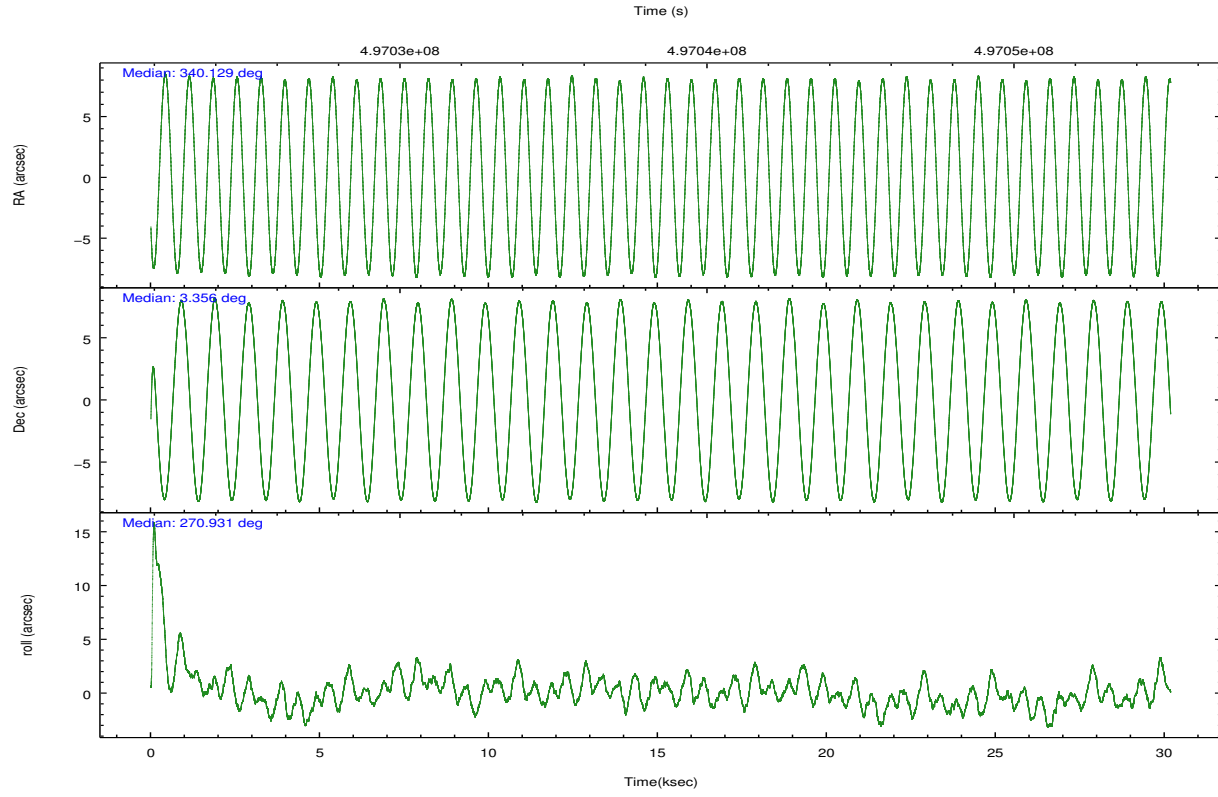
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	14786	2559	7881	12635	239696
	6%	1%	4%	6%	18%
grade 1 events	152	36	61	880	1717
	0%	0%	0%	0%	0%
grade 2 events	15577	3252	9380	31938	157535
	7%	1%	4%	16%	11%
grade 3 events	680	731	672	9056	155824
	0%	0%	0%	4%	11%
grade 4 events	3413	707	690	9080	144108
	1%	0%	0%	4%	10%
grade 5 events	2304	2478	2188	14932	21338
	1%	1%	1%	7%	1%
grade 6 events	3588	1190	1249	29909	266208
	1%	0%	0%	15%	20%
grade 7 events	178548	173348	171568	81486	338570
	81%	94%	88%	42%	25%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-23678	ACIS-23678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	340.114427	340.1288334762766	CCD I2 on	O4	Y
[deg] Pointing Dec	3.379672	3.356419354804314	CCD I3 on	O3	Y
[deg] Pointing Roll	270.785120	270.9408982904949	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	N	N
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	O1	Y
[mm] SIM translation stage pos	-190.132523	-190.1400660498719	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.00754346686406393	CCD S4 on	O2	Y
[s] Observation start time (MET)	497023585.184000	497022531.24868	CCD S5 on	N	N
Observation start date	2013-10-01T14:05:18	2013-10-01T13:48:51	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	497053585.184000	497054402.6004	On-chip summing requested	N	N
Observation end date	2013-10-01T22:25:18	2013-10-01T22:40:02	Subarray requested	CUSTOM	1/2
Read mode	TIMED	TIMED	Subarray start row	257	257
			Subarray row count	512	512
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.7

2.3 Aspect



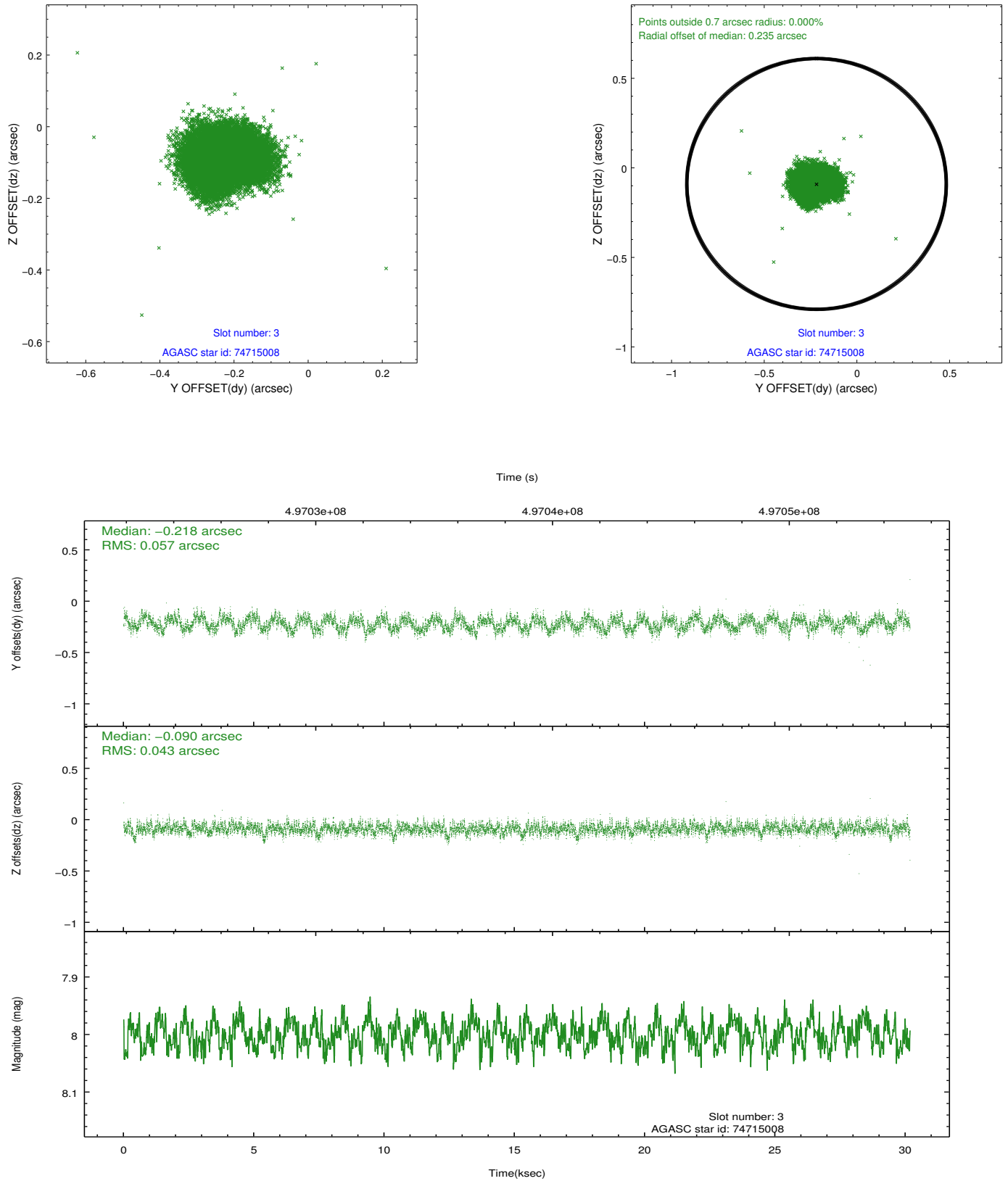


Slot Statistics

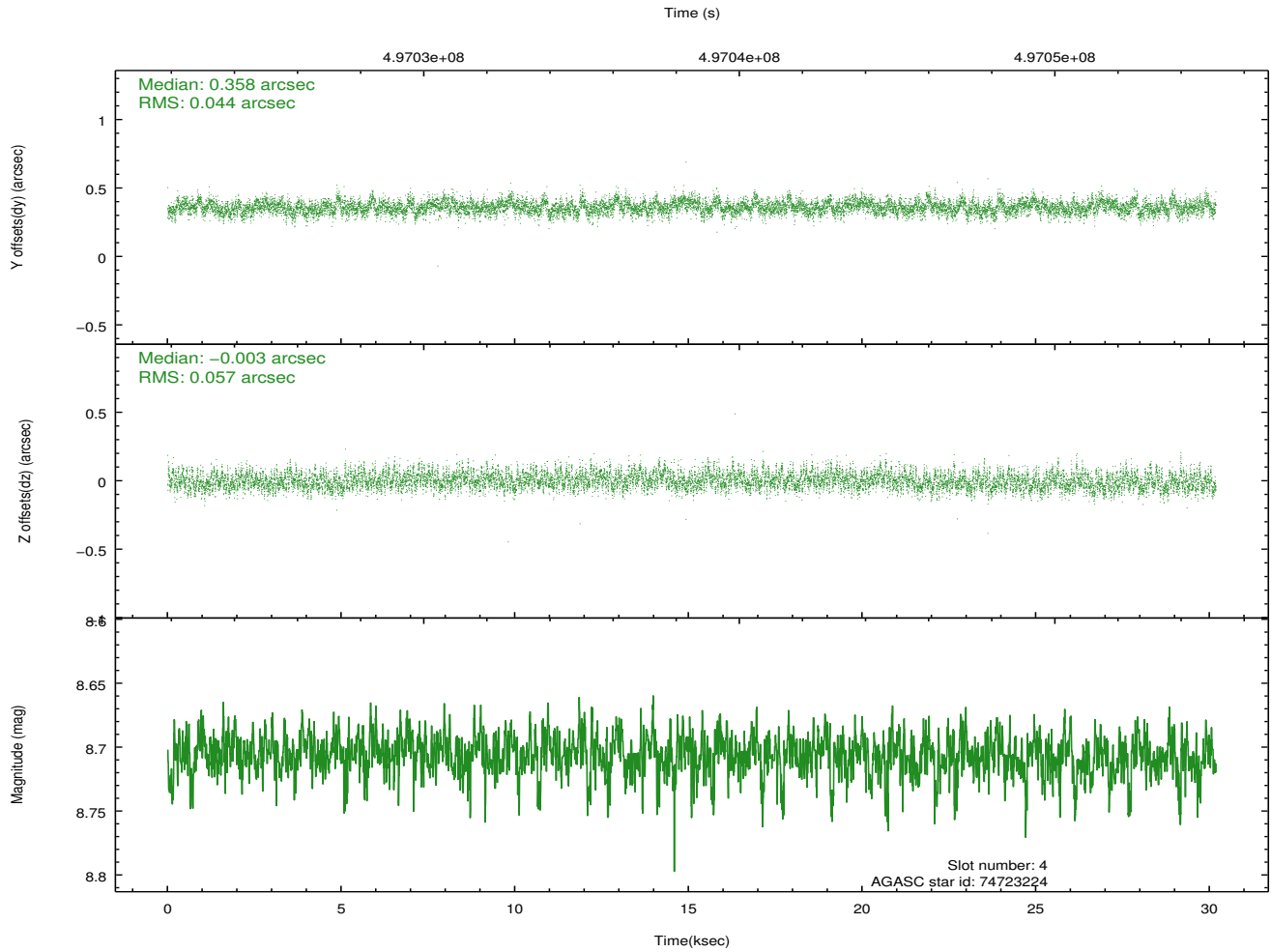
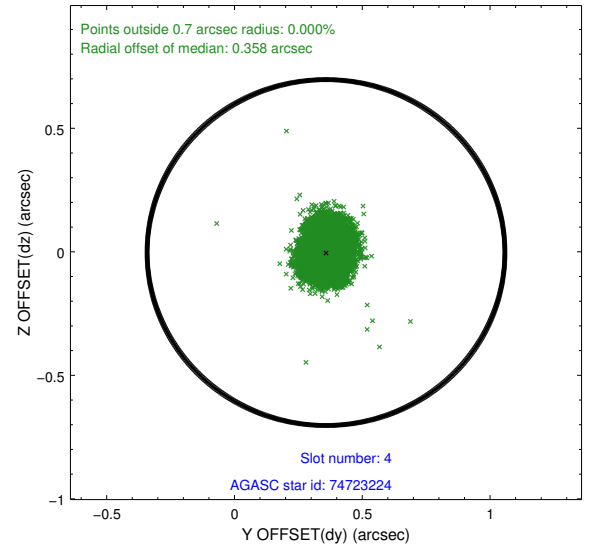
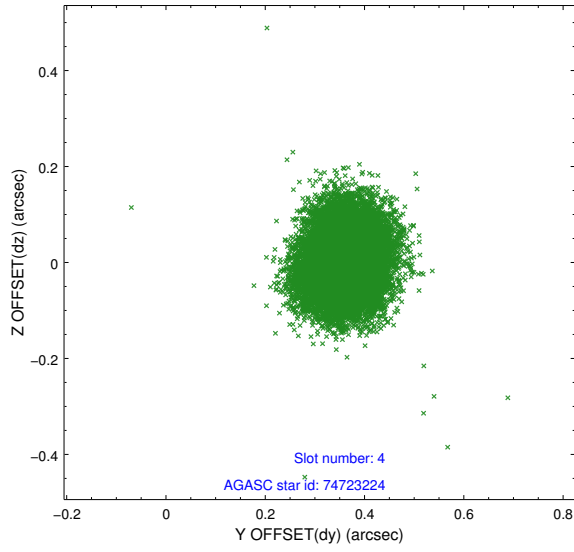
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.00	7361	0.049	-0.015	0.025	0.037	0.000000	0.000000	918.35	-1736.89
1	FID		ACIS-S-5	7.04	7361	-0.209	0.003	0.017	0.041	0.000000	0.000000	-1830.91	160.57
2	FID		ACIS-S-6	7.15	7361	0.136	0.026	0.026	0.056	0.000000	0.000000	383.85	804.66
3	GUIDE	used	74715008	8.00	14700	-0.218	-0.090	0.078	0.120	339.956848	3.242441	486.54	-572.61
4	GUIDE	used	74723224	8.71	14719	0.358	-0.003	0.076	0.123	339.594650	3.574222	-725.24	-1857.47
5	GUIDE	used	74727584	7.04	14721	-0.127	-0.065	0.059	0.099	339.633744	3.463732	-326.10	-1722.75
6	GUIDE	used	74854992	8.26	14717	-0.049	-0.209	0.074	0.118	340.342808	3.603730	-794.82	831.26
7	GUIDE	used	74855640	8.83	14704	0.033	0.369	0.096	0.149	340.341123	3.746937	-1310.68	833.11

2.4 Star Slots

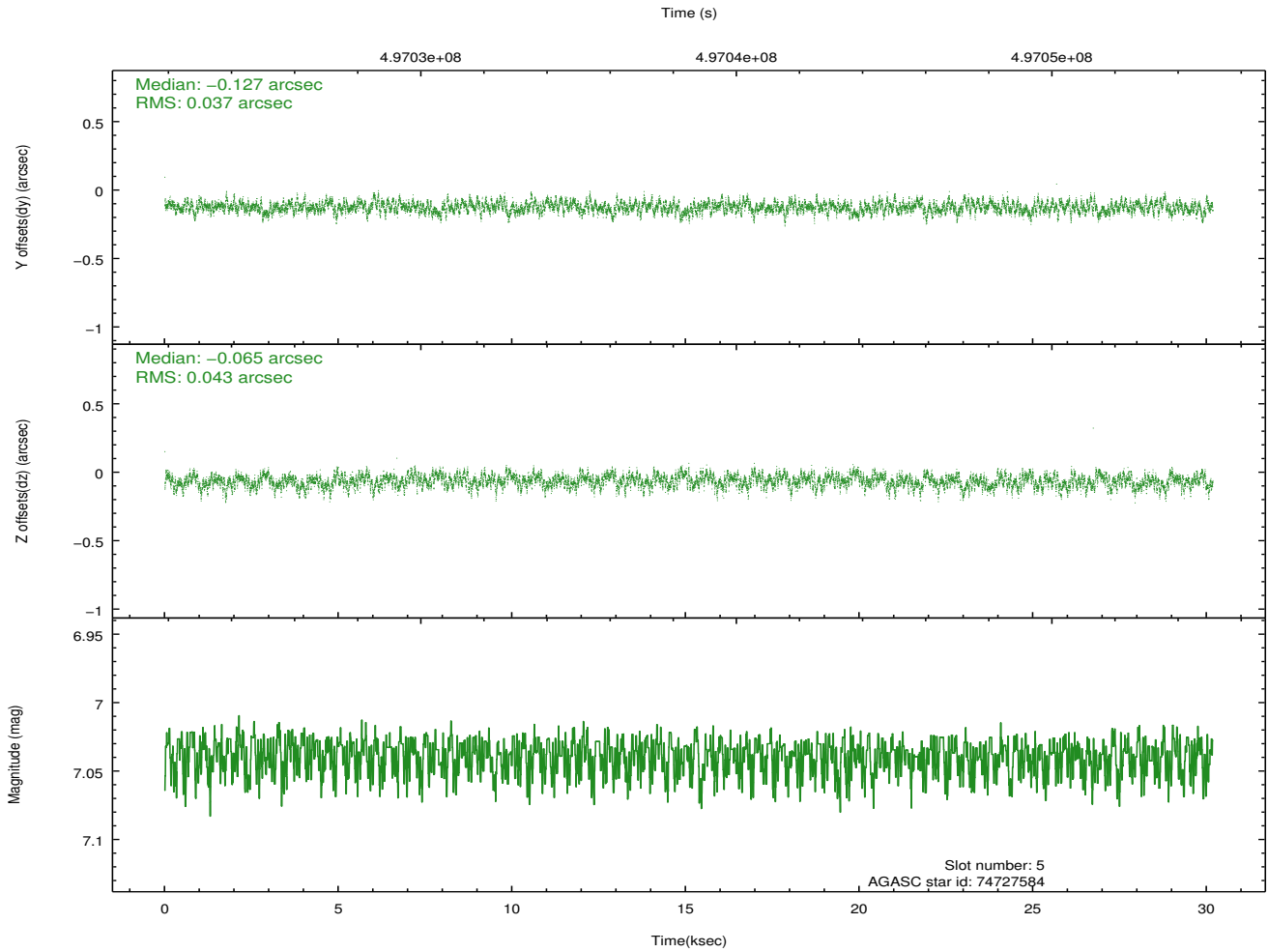
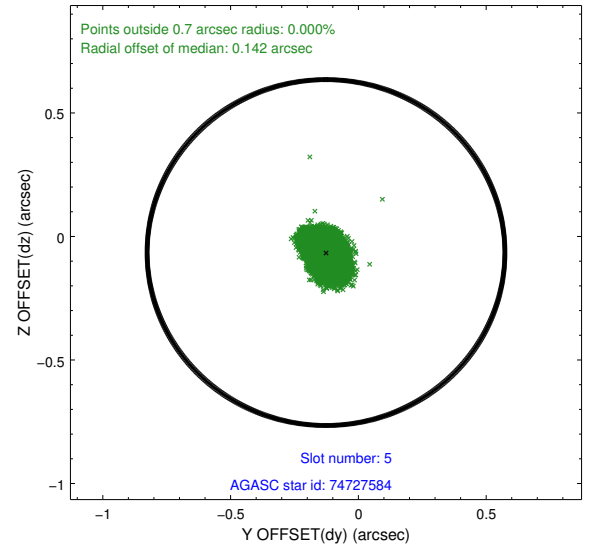
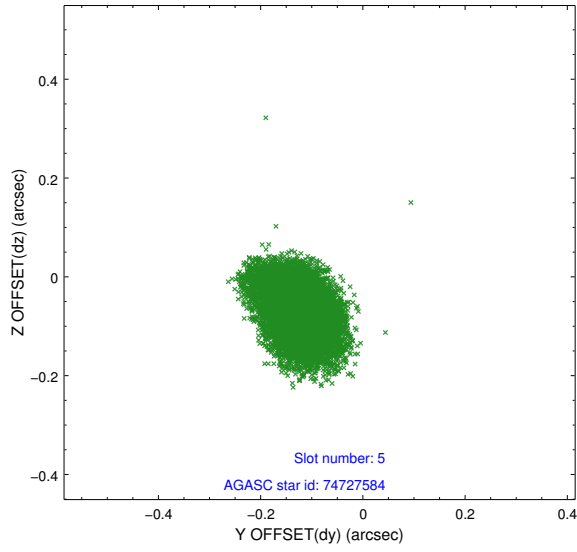
2.4.1 Slot 3



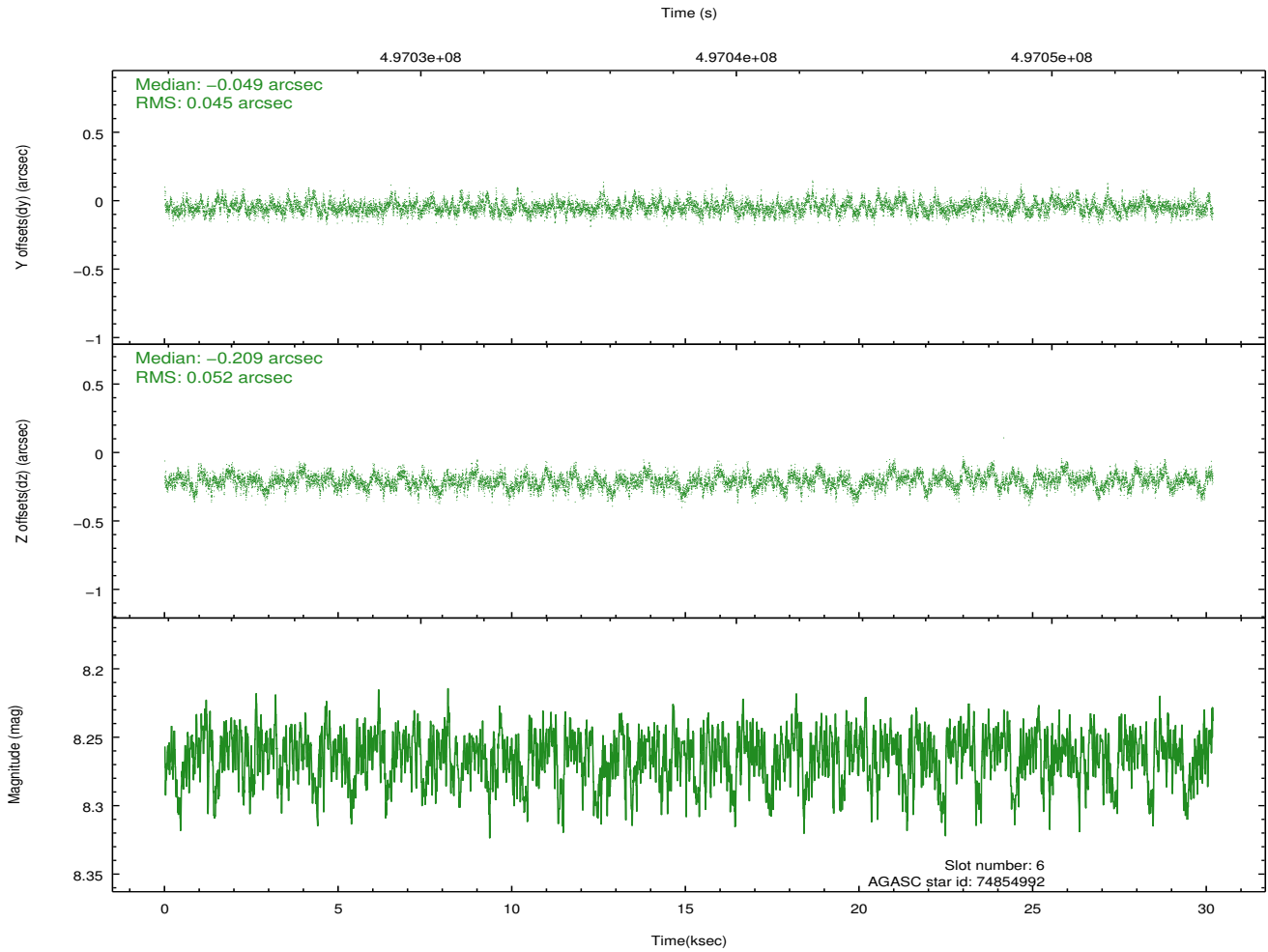
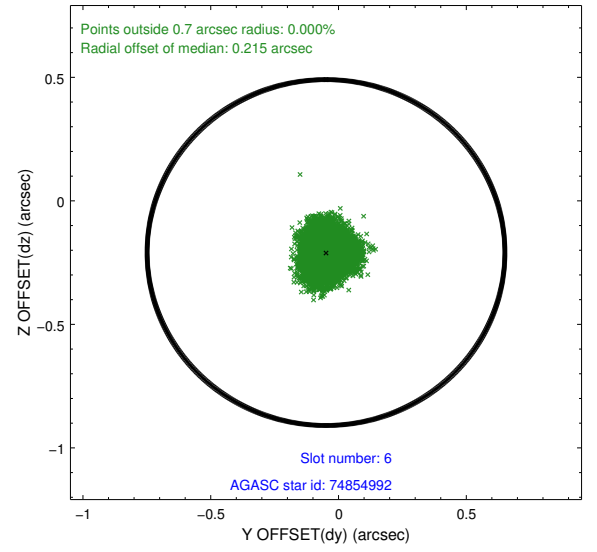
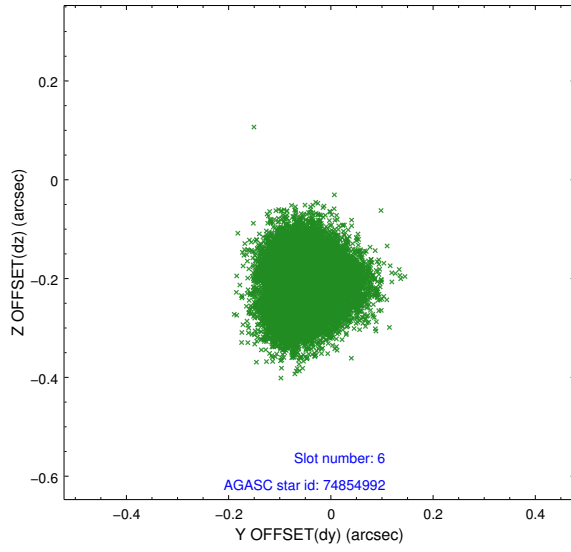
2.4.2 Slot 4



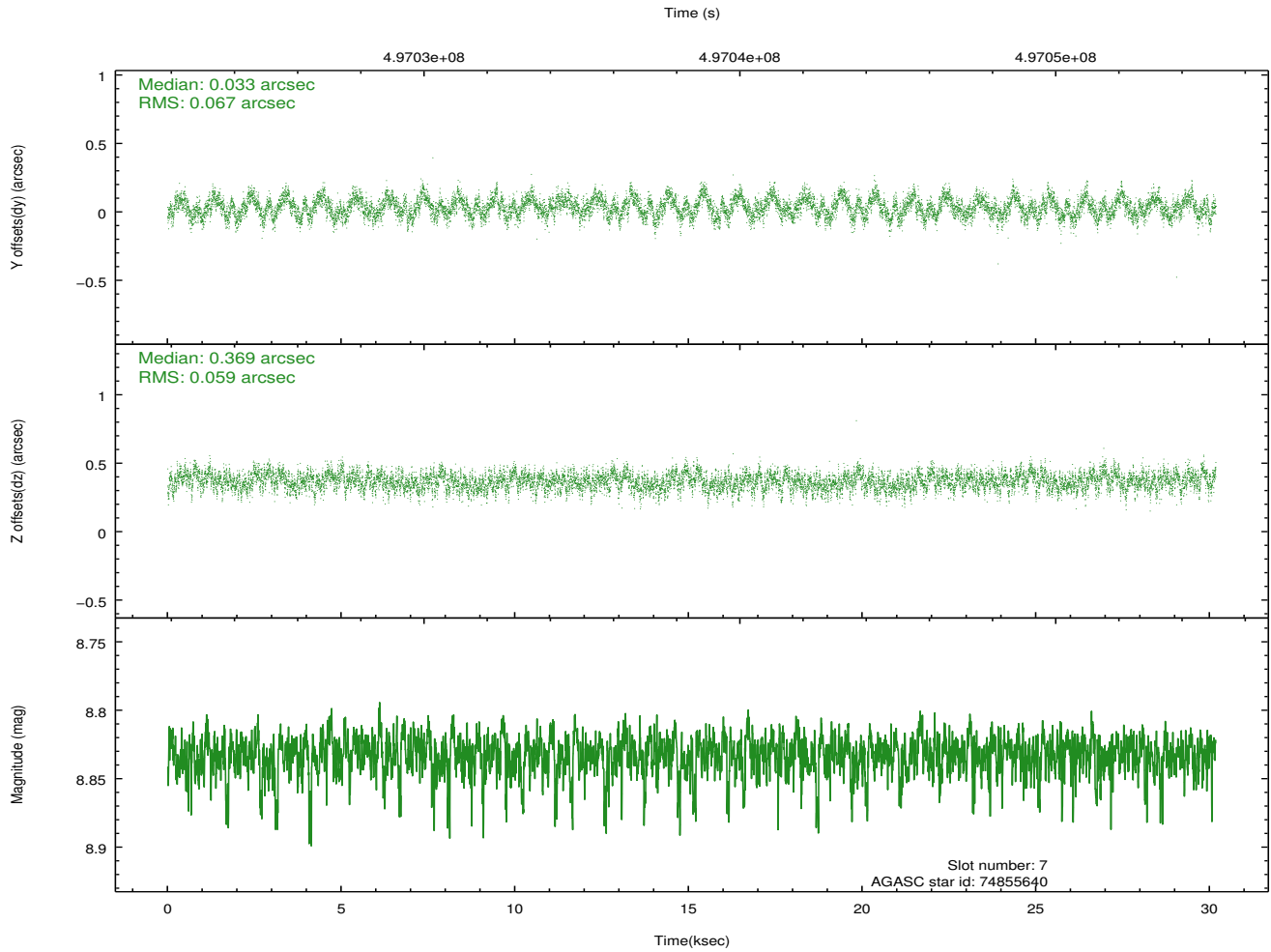
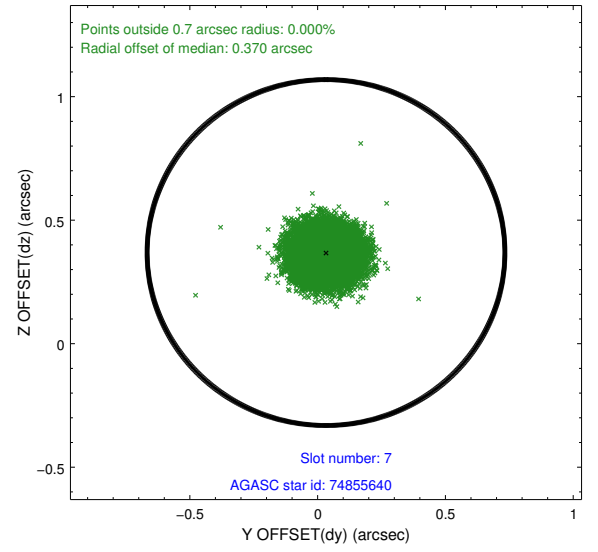
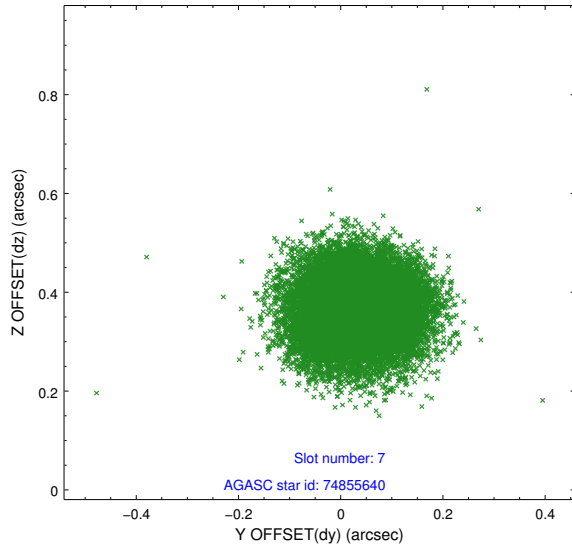
2.4.3 Slot 5



2.4.4 Slot 6

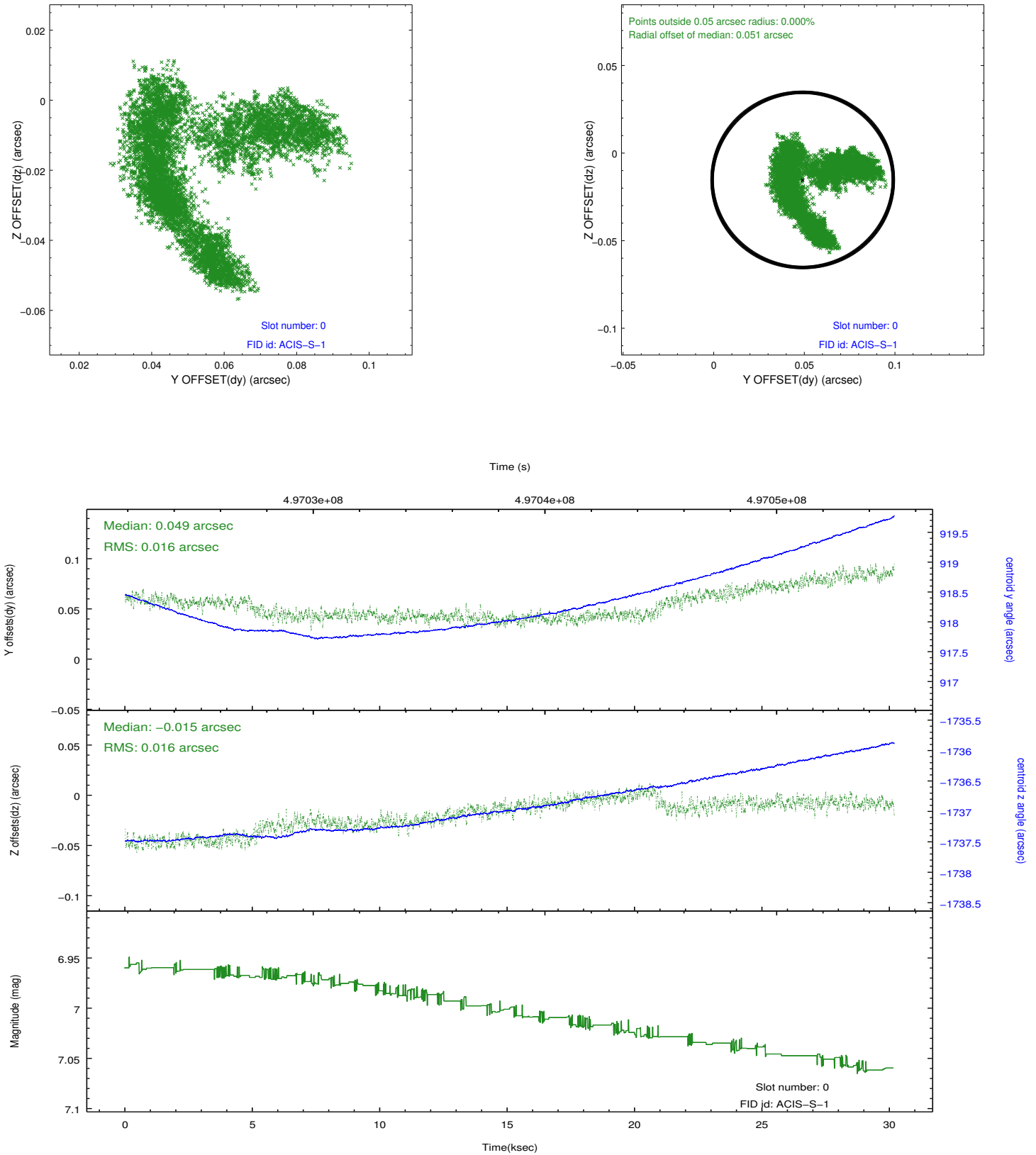


2.4.5 Slot 7

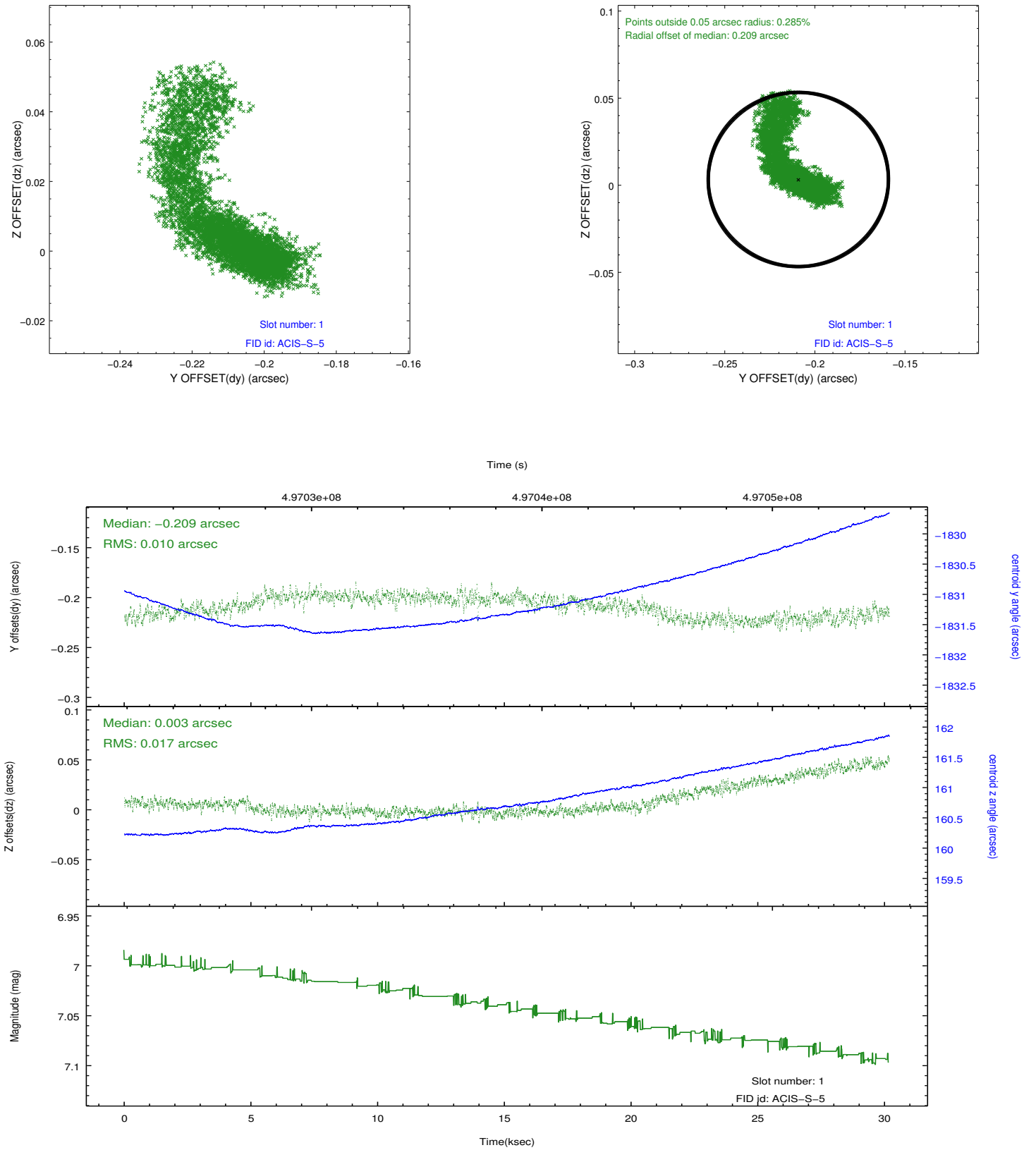


2.5 FID Slots

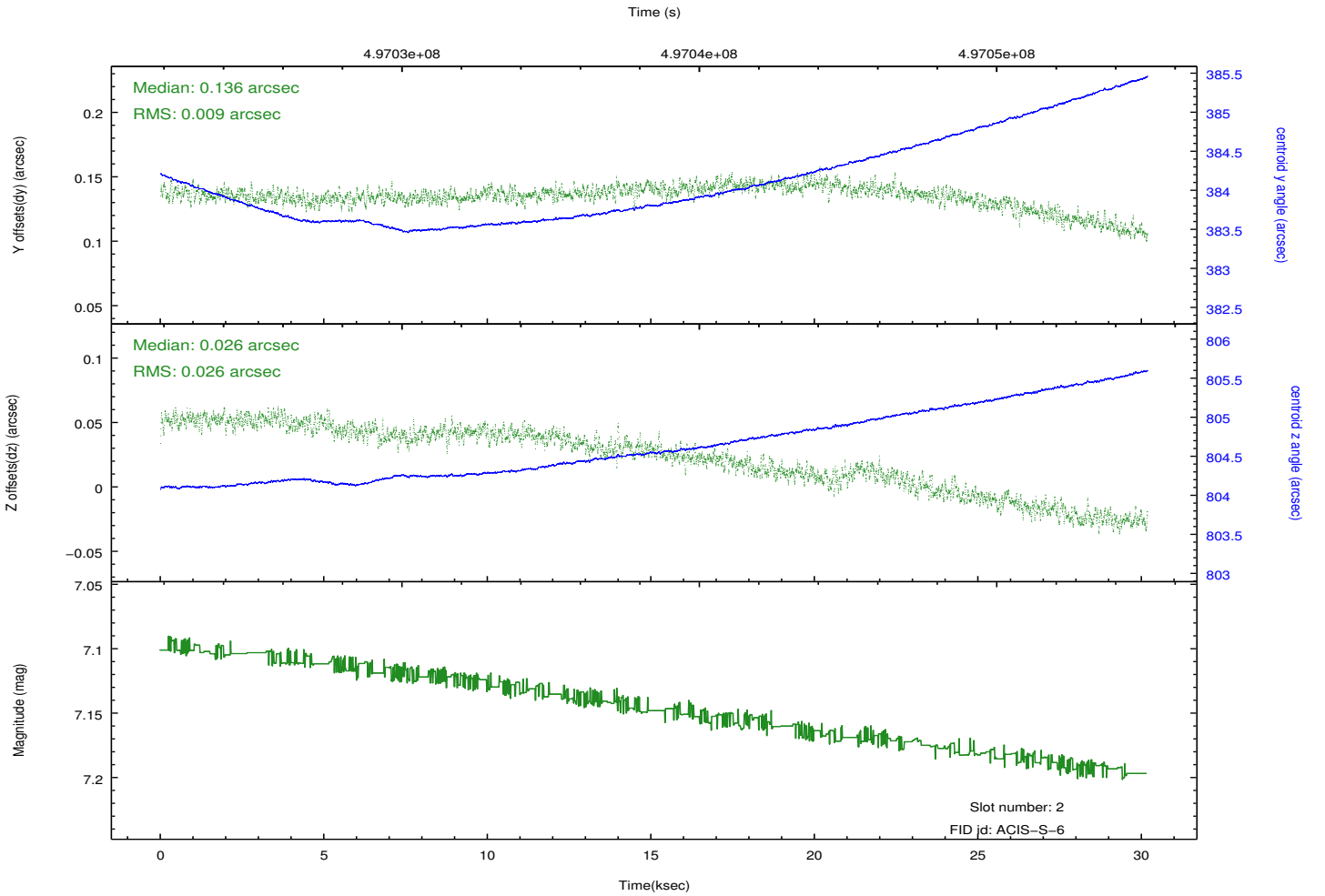
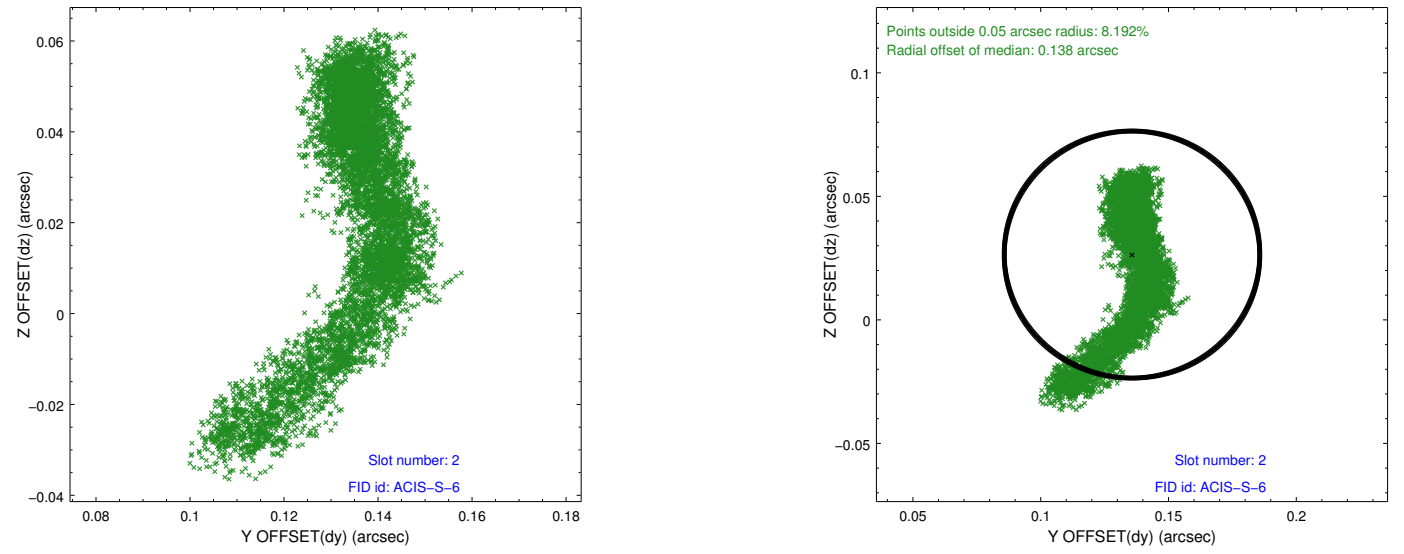
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2014.12.31
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.055999789298

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.

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The variation in exposure time from chip to chip is due to the loss of frames of data from telemetry saturation. This problem does not affect ACIS-S3, the aim-point chip. Since the proposed science seems to be strictly related to the source on ACIS-S3 and since the gratings were not used (i.e. there are no source events on the other chips), the scientific utility of the data should not be impaired due to the loss frames. The charged time is set to the time for the aim-point chip.

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MANUAL INTERVENTION: There were a large number of horizontal streaks on ACIS-S4, which were not initially removed by destreak using the default parameter settings for this tool. The data were reprocessed using destreak with max_rowloss_fraction=0.5. Use of such a high value for this parameter does not seem to have been a problem for this observation since there is no evidence of a bright source on ACIS-S4 that could have had a significant fraction of its source events removed as a result. This report was reviewed by the ACIS Team.