

V&V Reference Report

L2 ASCDS Version : 10.8

Observation 22602 - L2 Version 1
Chandra X-Ray Center

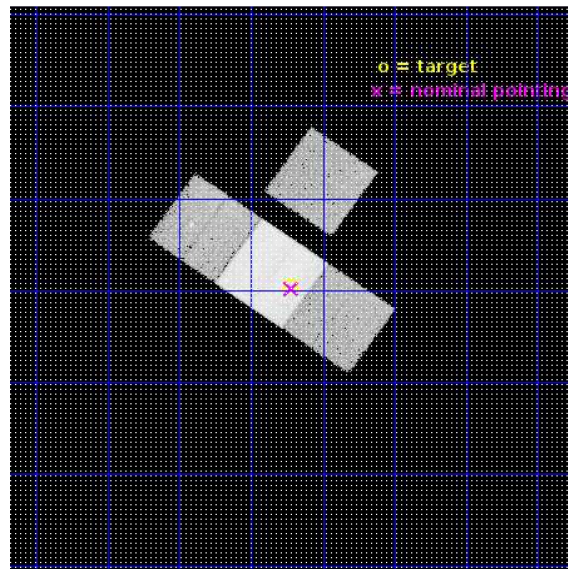
L2 Processing Date : Sep 4 2019

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1 Front

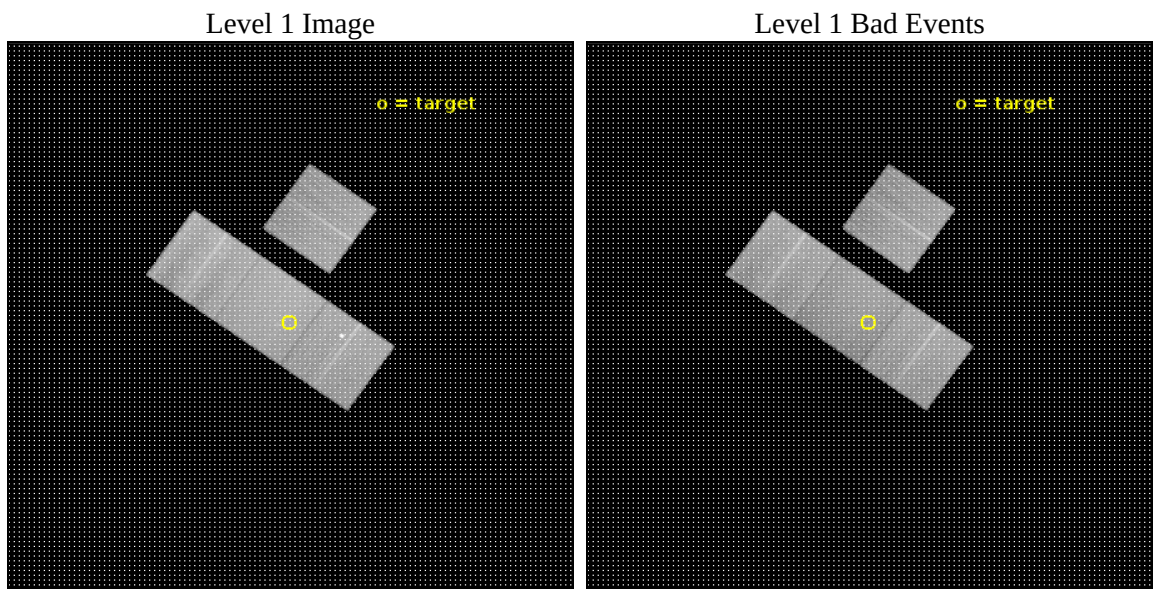
seq_num	703988	Sequence number
obs_id	22602	Observation id
title	Young Radio Sources at the Highest Redshift (Part 2)	Proposal titl
observer	Aneta Siemiginowska	Principal investigator
object	J2228+0110	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	337.18125	Observer's specified target RA [deg]
dec_targ	1.175528	Observer's specified target Dec [deg]
ra_nom	337.17989225717	Nominal RA [deg]
dec_nom	1.1696814691362	Nominal Dec [deg]
roll_nom	215.15659378915	Nominal Roll [deg]
revision	1	Processing version of data
ontime	29065.60022366	Sum of GTIs [s]
livetime	28685.836758955	Livetime [s]
ontime3	29062.45911324	Sum of GTIs [s]
ontime6	29059.31806314	Sum of GTIs [s]
ontime7	29065.60022366	Sum of GTIs [s]
ontime8	29065.60022366	Sum of GTIs [s]
l2events	183447	Number of level 2 events



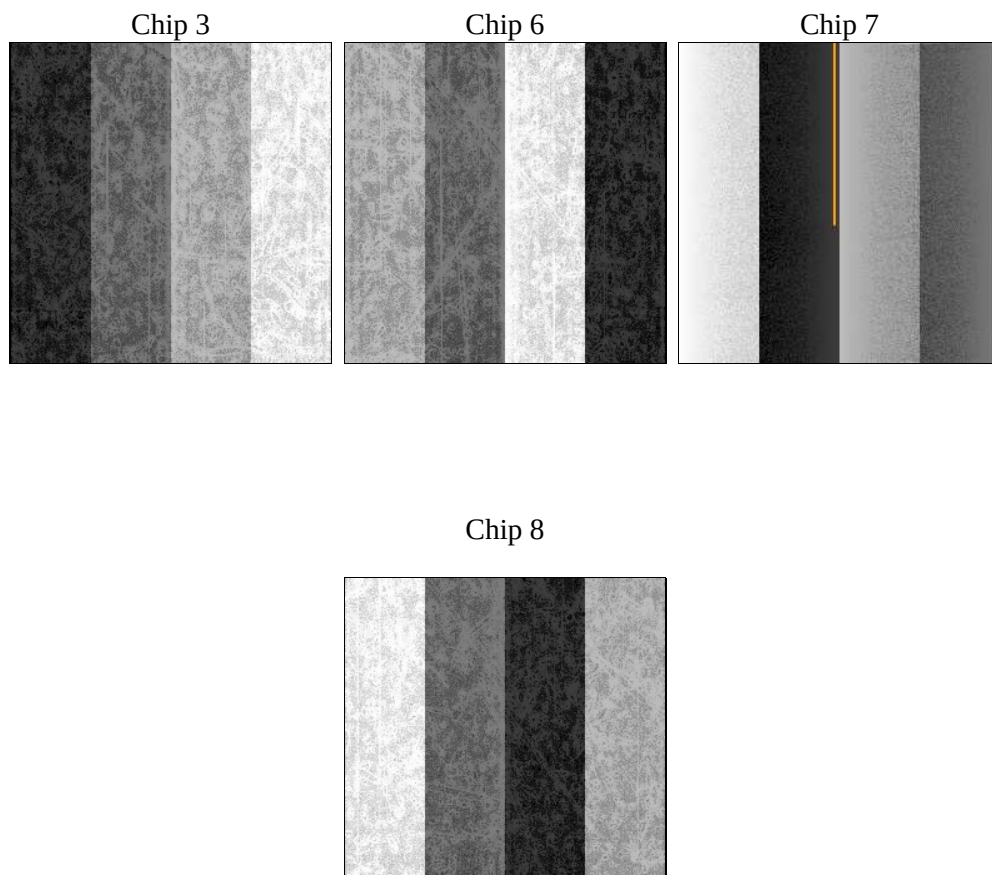
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	29000.000000	[s] Scheduled observation exposure time
ascdsver	10.8	Processing system revision	ontime	29065.60022366	Sum of GTIs [s]
caldsver	4.8.4	 	ontime3	29062.45911324	Sum of GTIs [s]
date	2019-09-04T05:56:50	Date and time of file creation	ontime6	29059.31806314	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	29065.60022366	Sum of GTIs [s]
			ontime8	29065.60022366	Sum of GTIs [s]
			l1events	1021648	Number of level 1 events

2.1.4 Events

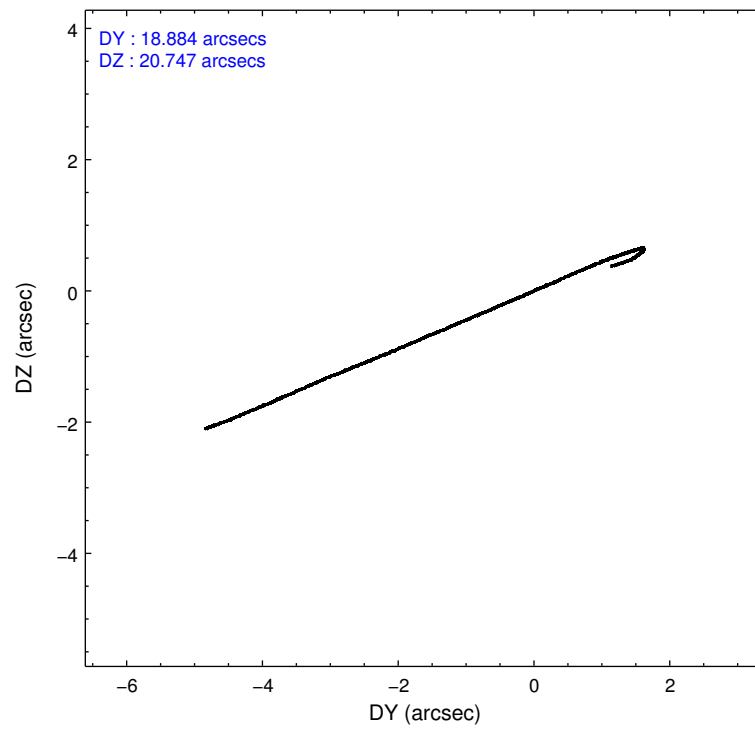
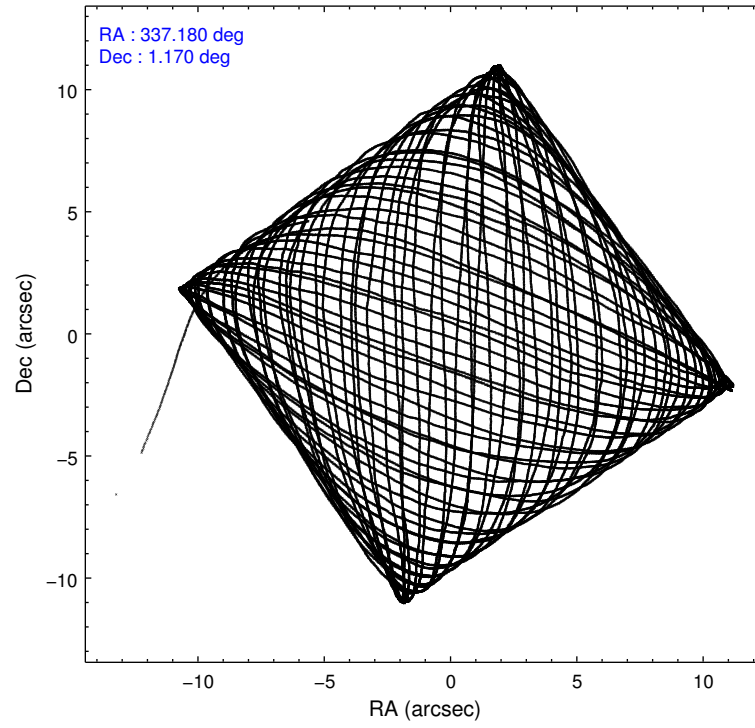
	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	215765	241626	283391	280866
rejected events	193641	208096	162665	210950
rejected %	89%	86%	57%	75%

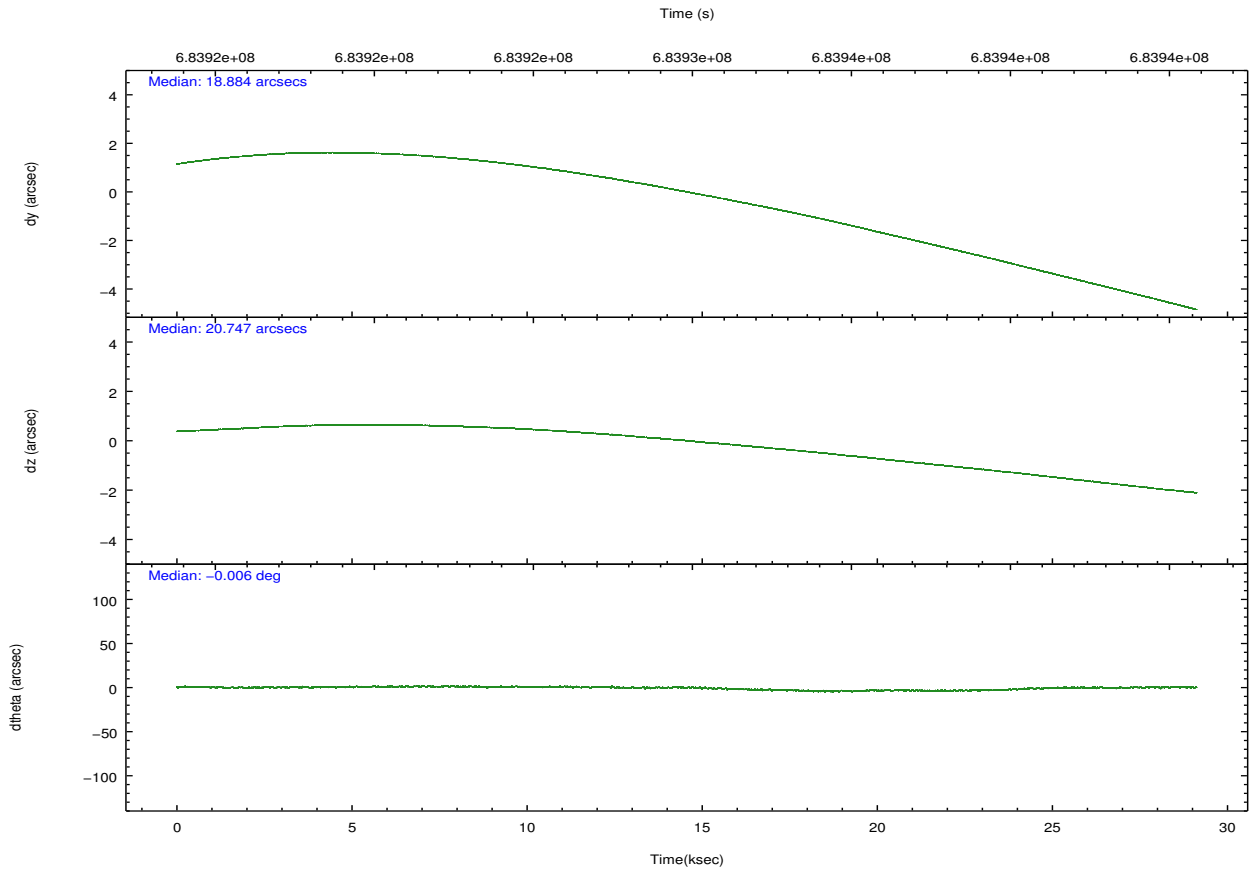
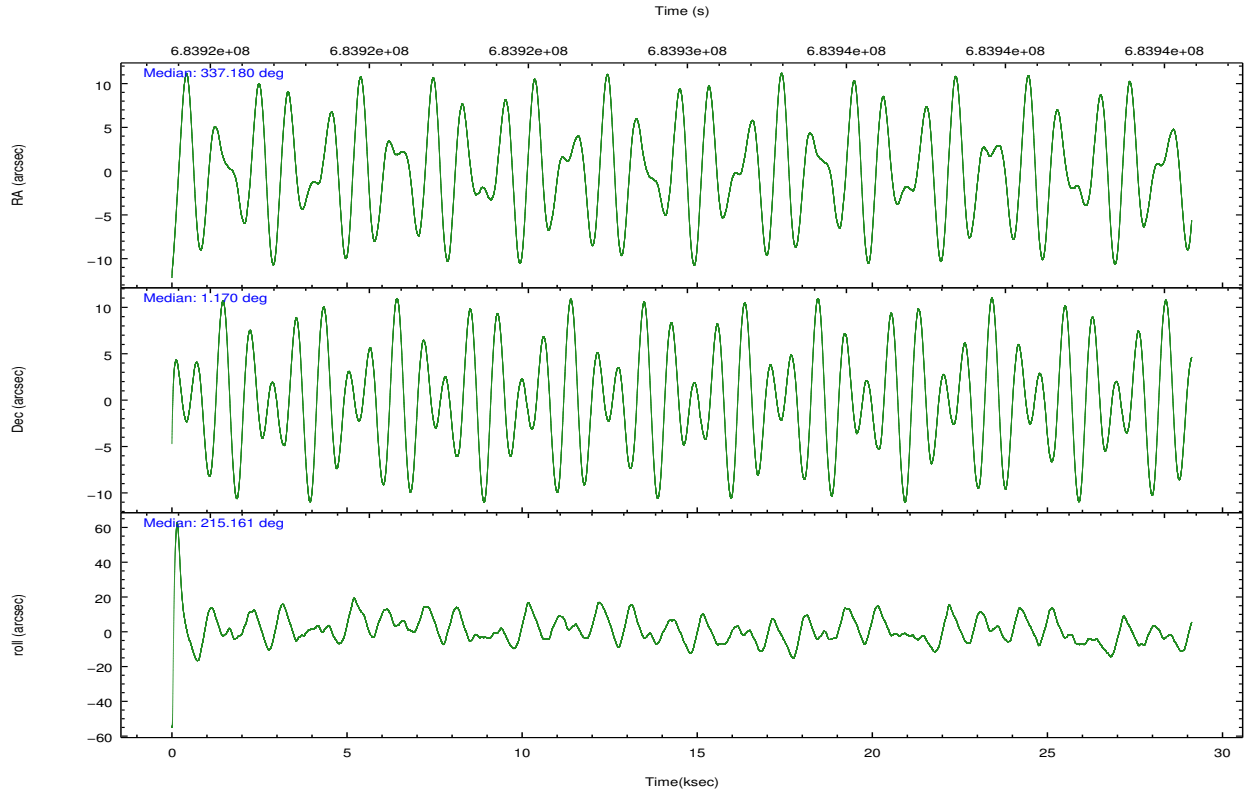
	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	7435	15549	9975	19152
	3%	6%	3%	6%
grade 1 events	101	147	434	191
	0%	0%	0%	0%
grade 2 events	4987	6909	25237	17295
	2%	2%	8%	6%
grade 3 events	2281	2027	9071	7193
	1%	0%	3%	2%
grade 4 events	2263	2055	8996	6750
	1%	0%	3%	2%
grade 5 events	9828	9118	26911	14663
	4%	3%	9%	5%
grade 6 events	5167	6993	67475	19529
	2%	2%	23%	6%
grade 7 events	183703	198828	135292	196093
	85%	82%	47%	69%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-3678	ACIS-3678	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	337.191103	337.1798922571681	CCD I2 on	O1	N
[deg] Pointing Dec	1.194734	1.169681469136205	CCD I3 on	O2	Y
[deg] Pointing Roll	214.999796	215.1565937891482	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	Y	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	Y	Y
[s] Observation start time (MET)	683915381.184000	683914098.9338599	CCD S5 on	N	N
Observation start date	2019-09-03T16:28:32	2019-09-03T16:08:18	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	683944381.184000	683945063.6732301	On-chip summing requested	N	N
Observation end date	2019-09-04T00:31:52	2019-09-04T00:44:23	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



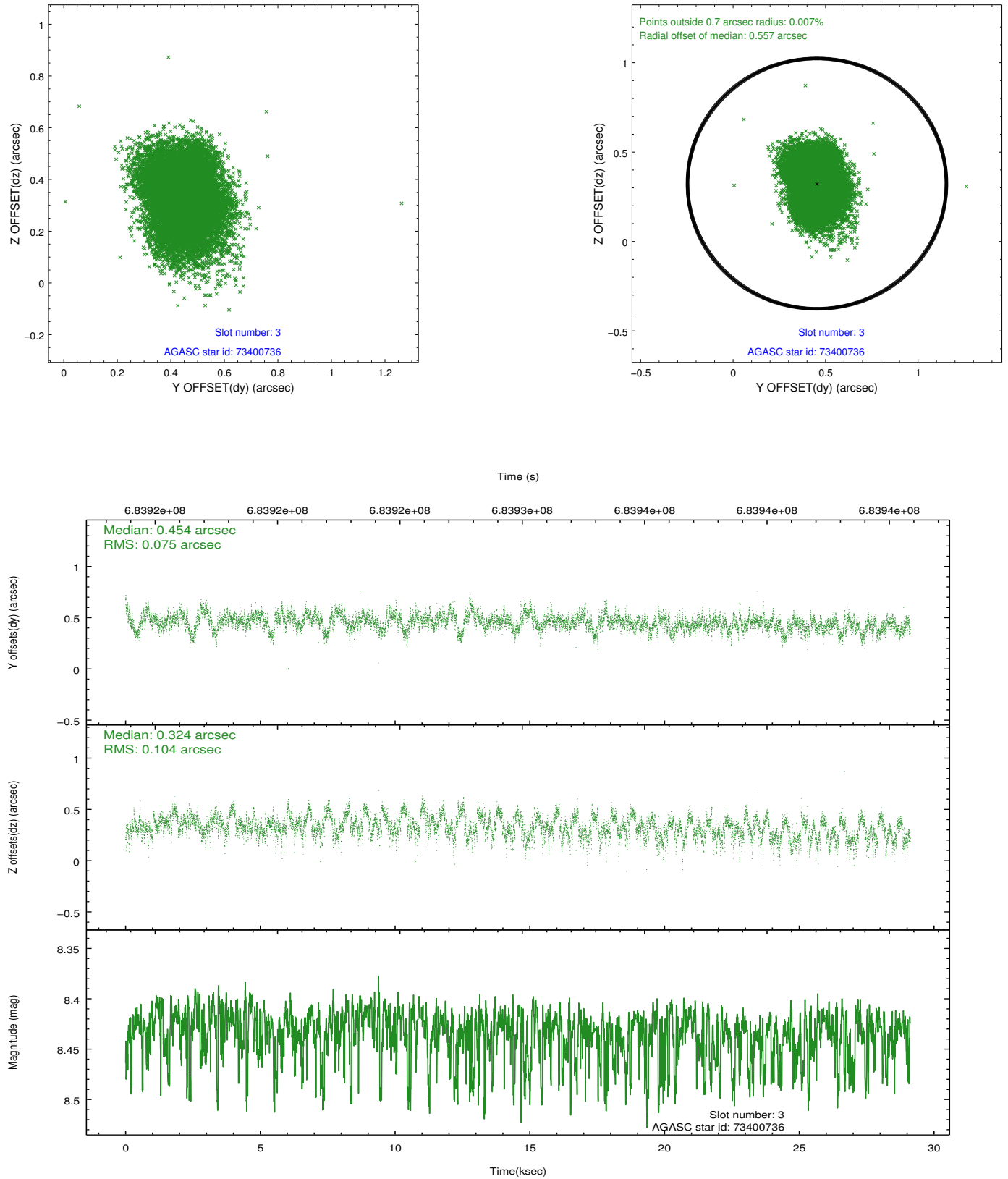


Slot Statistics

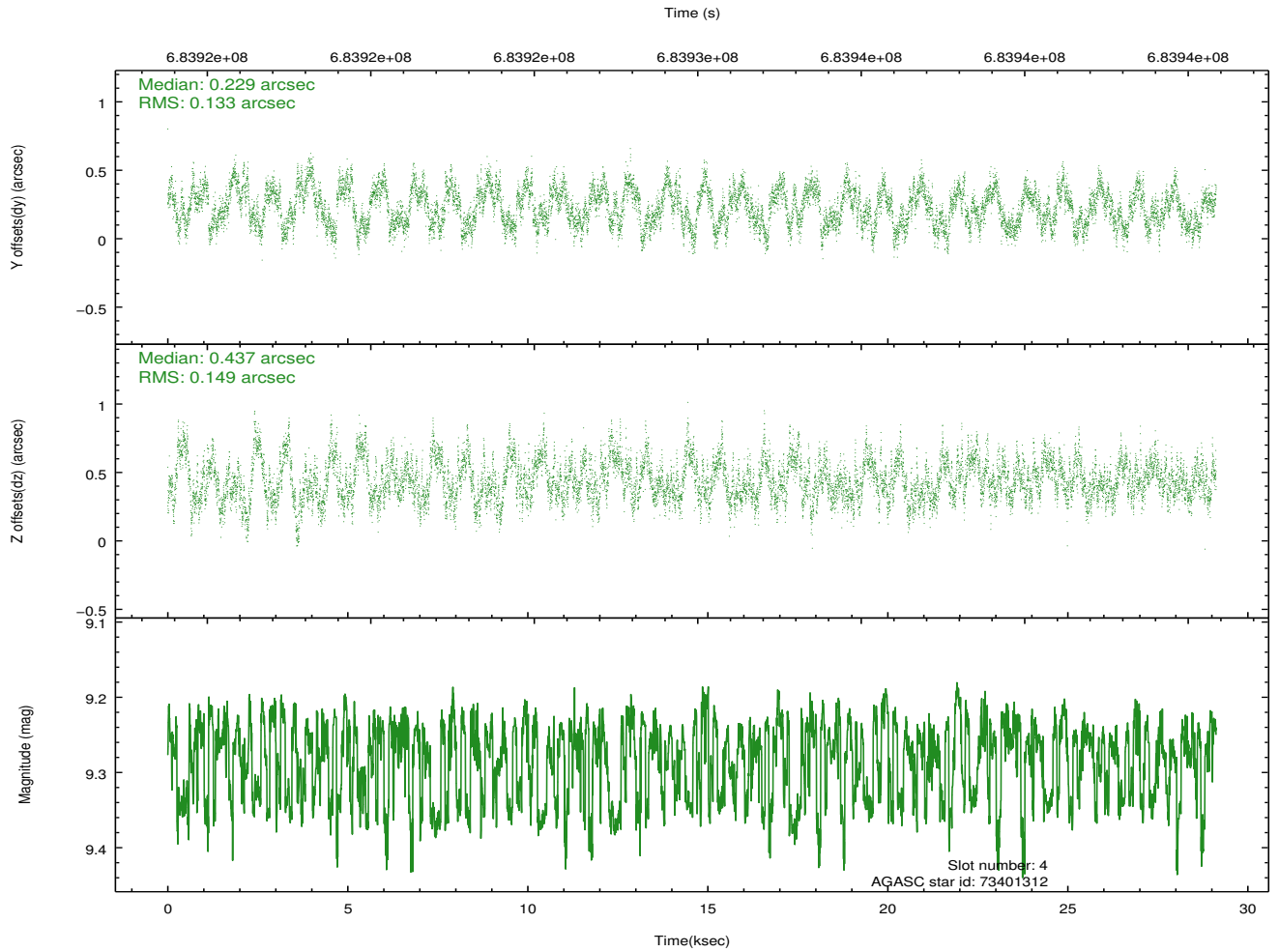
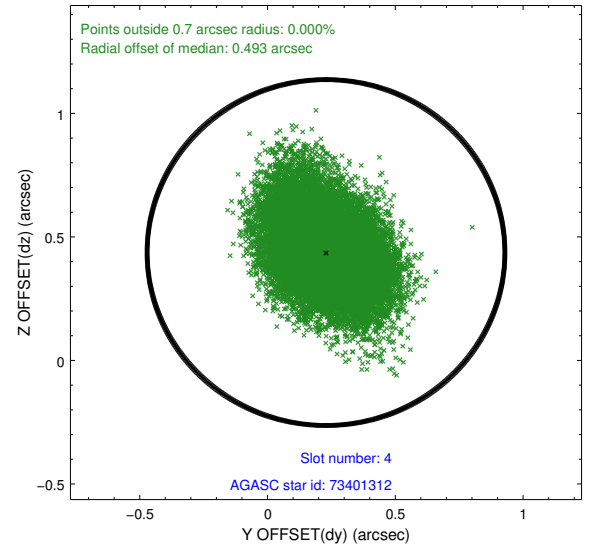
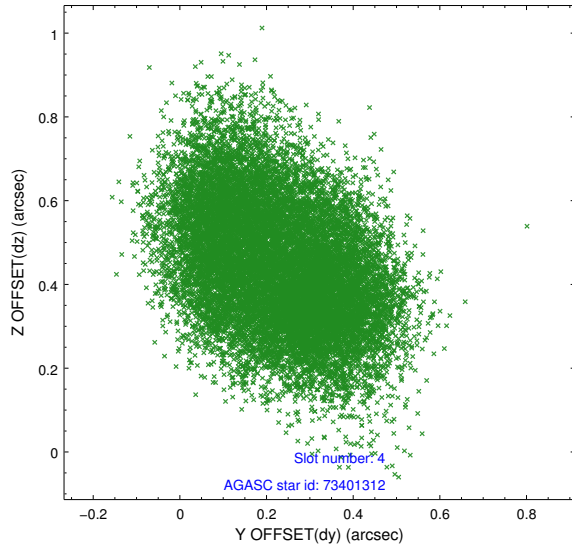
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.15	7102	1.000	-0.341	-0.290	0.030	0.057	0.000000	0.000000	-771.66	-1742
1	FID		ACIS-S-4	7.25	7101	1.000	0.818	0.243	0.037	0.049	0.000000	0.000000	2142.67	166
2	FID		ACIS-S-5	7.20	7103	1.000	-0.513	0.055	0.052	0.072	0.000000	0.000000	-1824.62	160
3	GUIDE	used	73400736	8.43	14194	1.000	0.454	0.324	0.137	0.223	336.956638	1.657325	-264.21	-1847
4	GUIDE	used	73401312	9.28	14193	1.000	0.229	0.437	0.215	0.332	337.221064	1.328803	-365.12	-333
5	GUIDE	used	73402984	9.54	14173	1.000	-0.468	-0.409	0.206	0.334	337.090347	0.377806	1984.00	2200
6	GUIDE	used	73407896	9.29	14176	1.000	0.100	0.037	0.182	0.319	337.411805	1.293834	-854.00	163
7	GUIDE	used	73408704	8.72	14191	1.000	-0.288	-0.386	0.171	0.286	336.716348	0.720216	2379.26	418

2.4 Star Slots

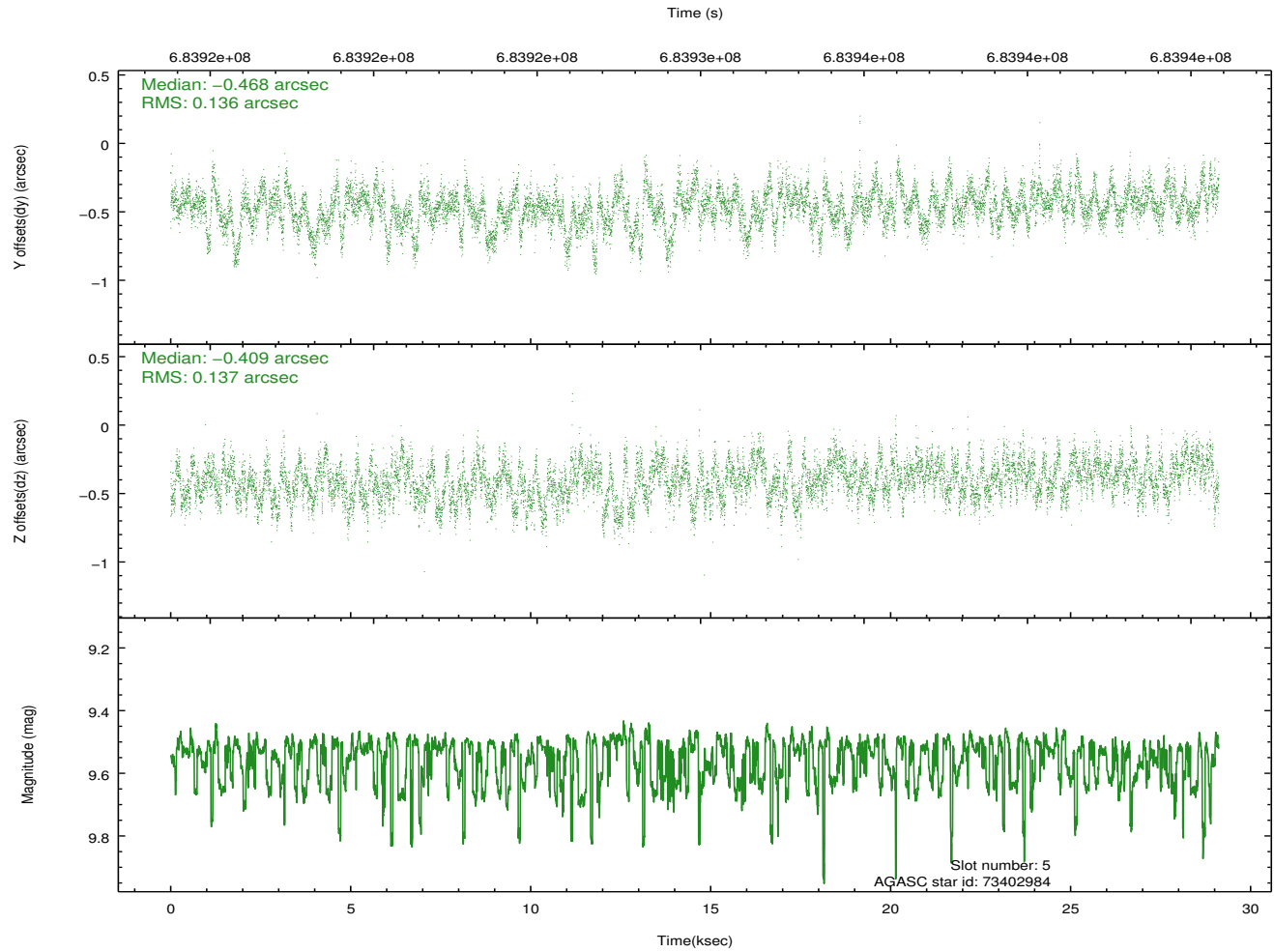
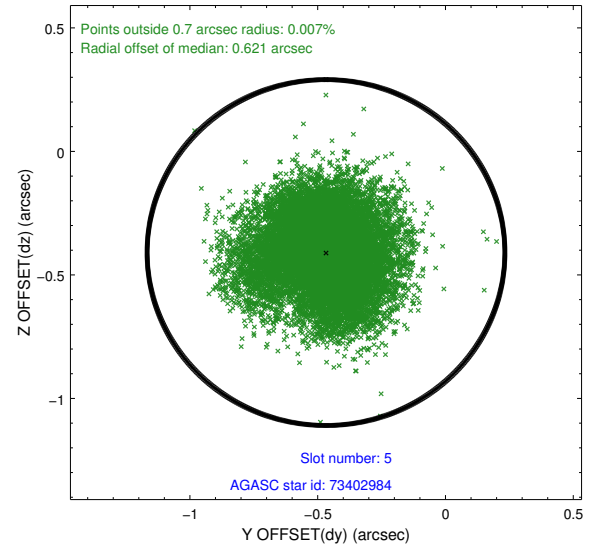
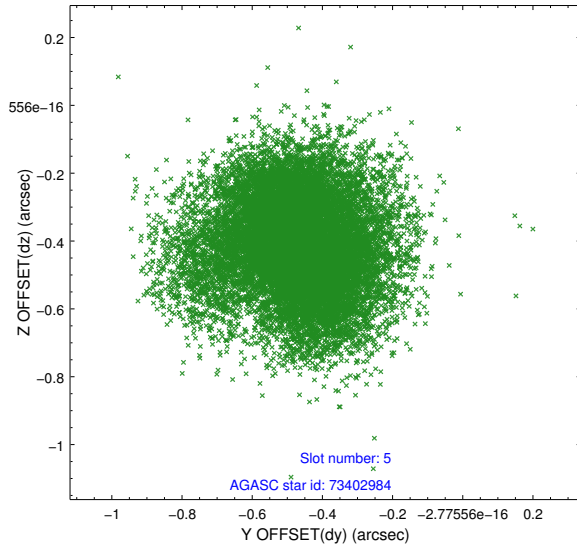
2.4.1 Slot 3



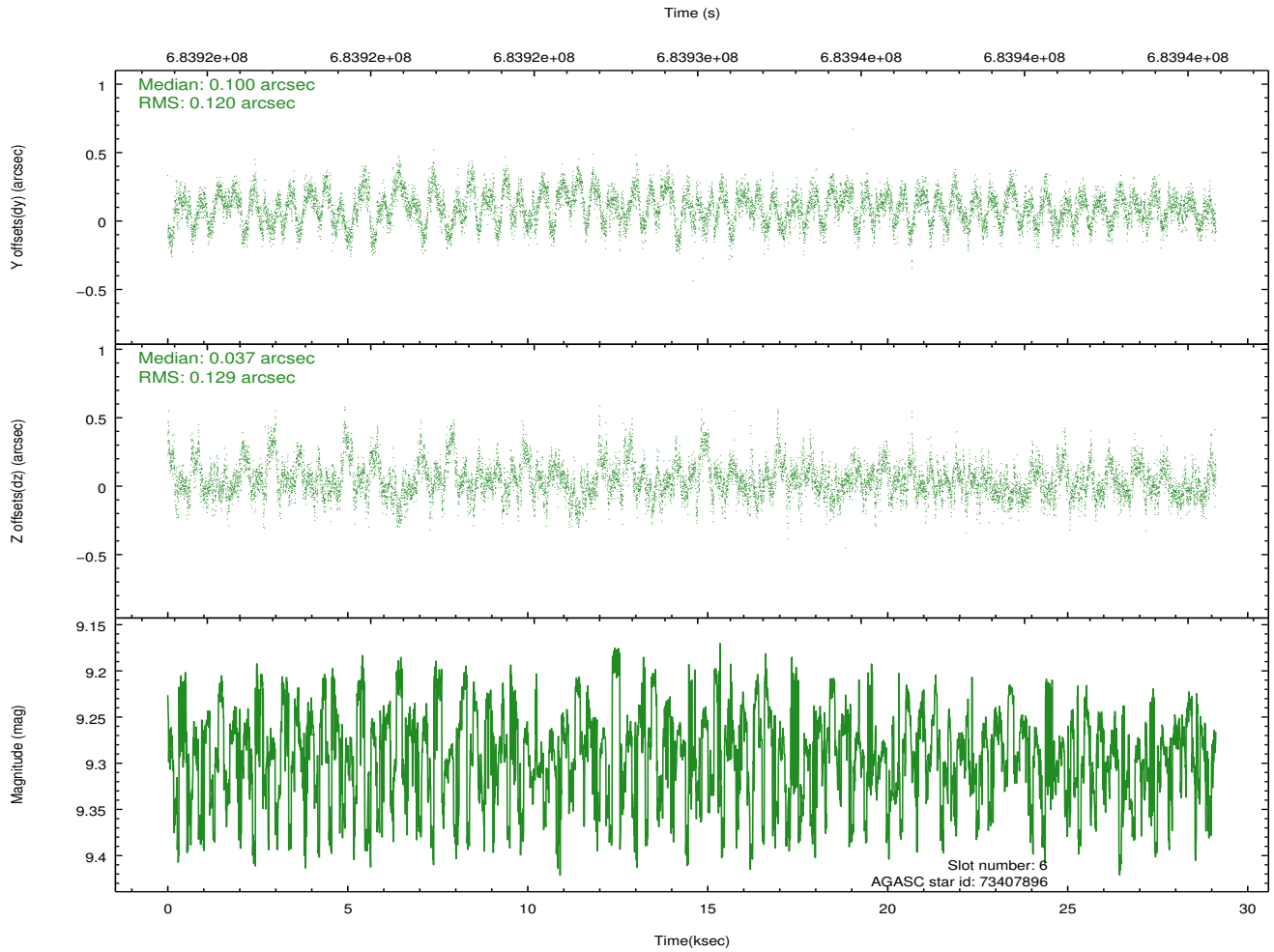
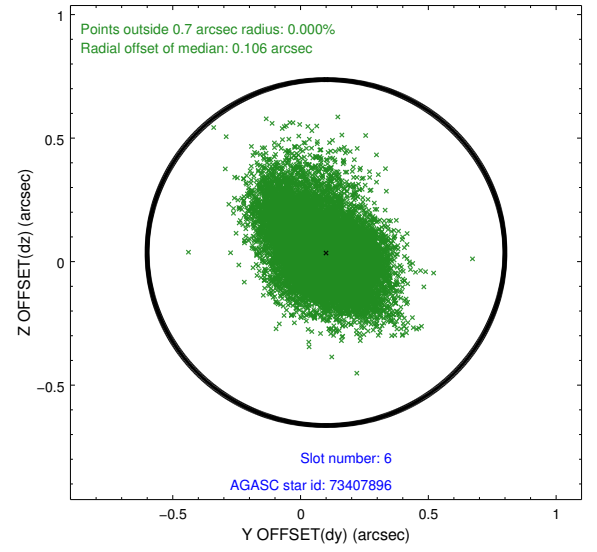
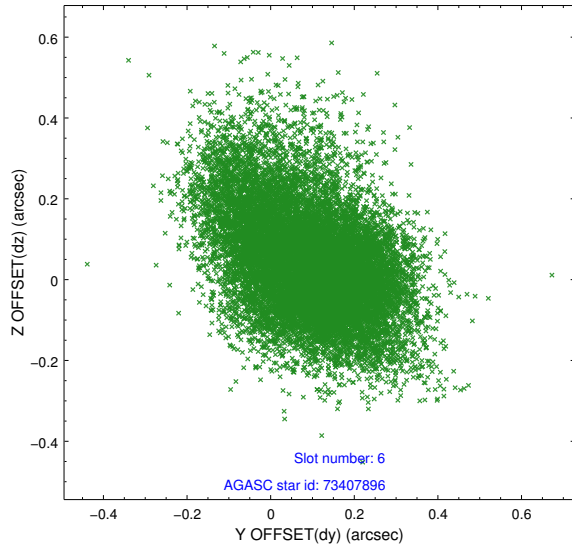
2.4.2 Slot 4



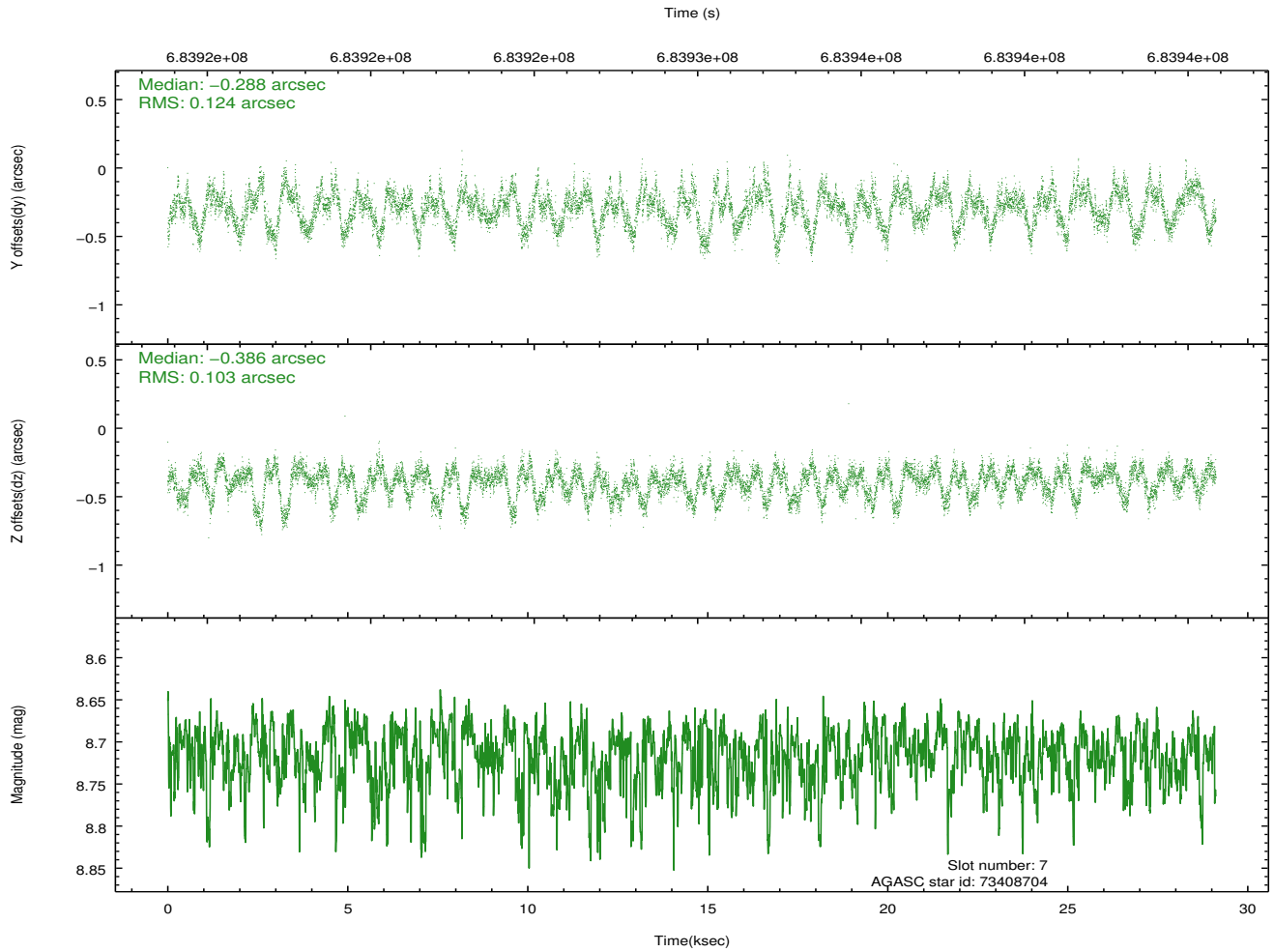
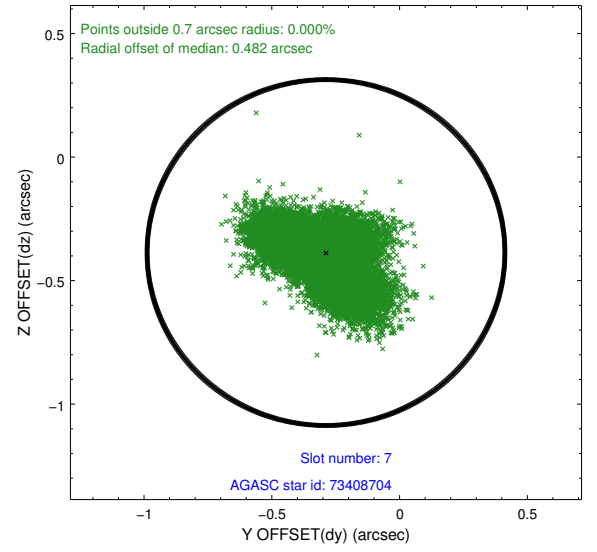
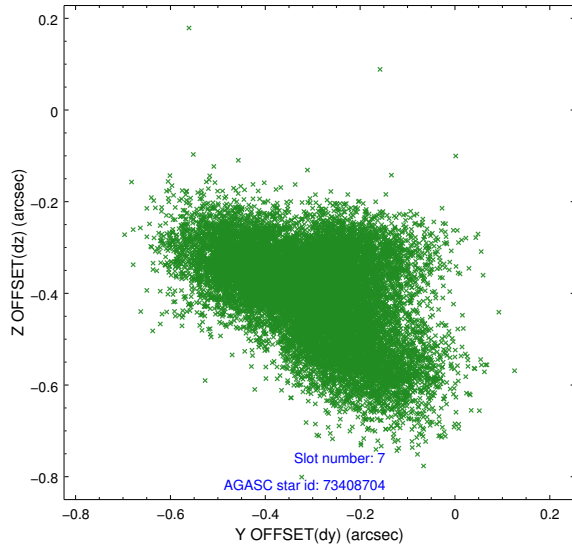
2.4.3 Slot 5



2.4.4 Slot 6

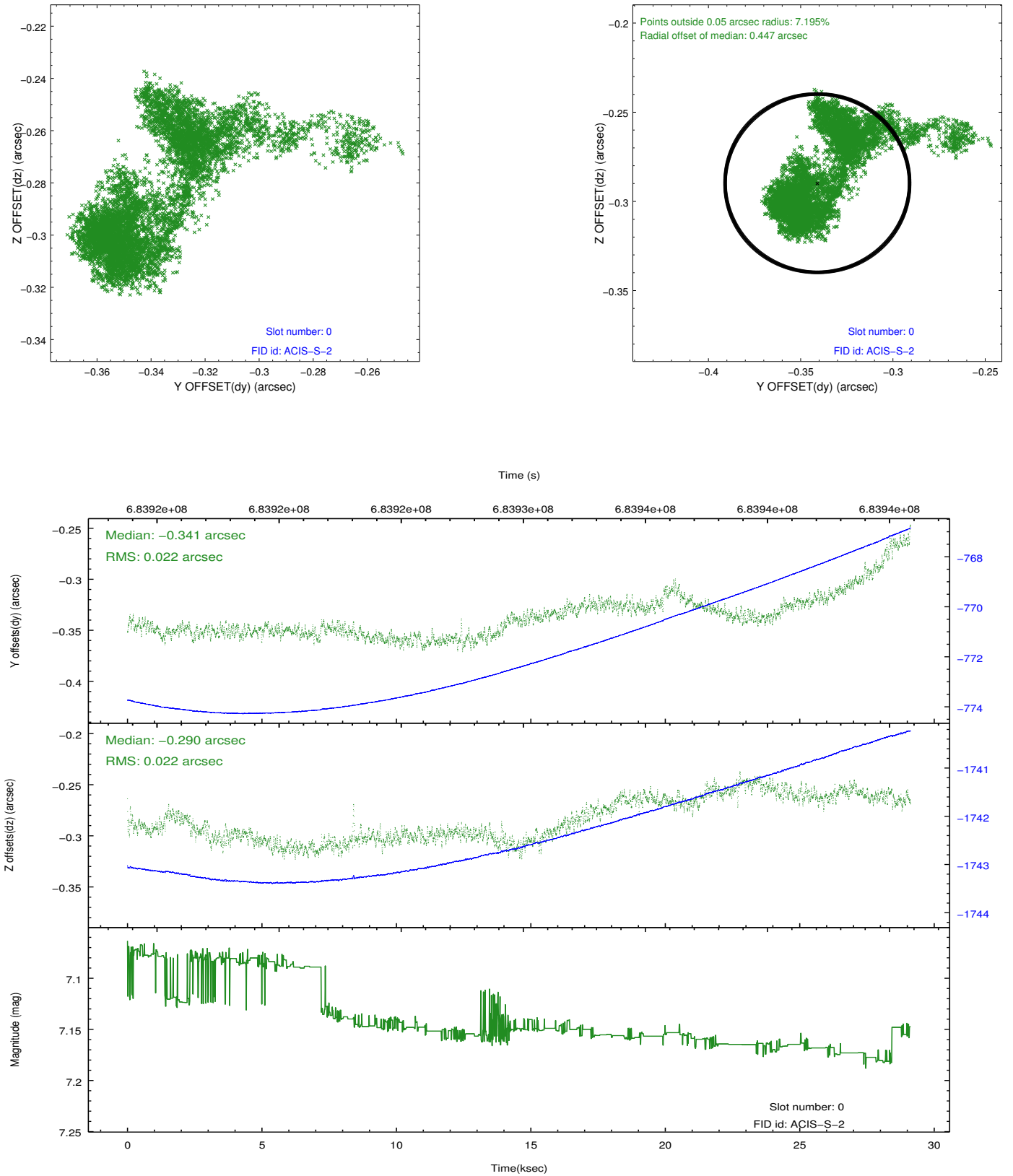


2.4.5 Slot 7

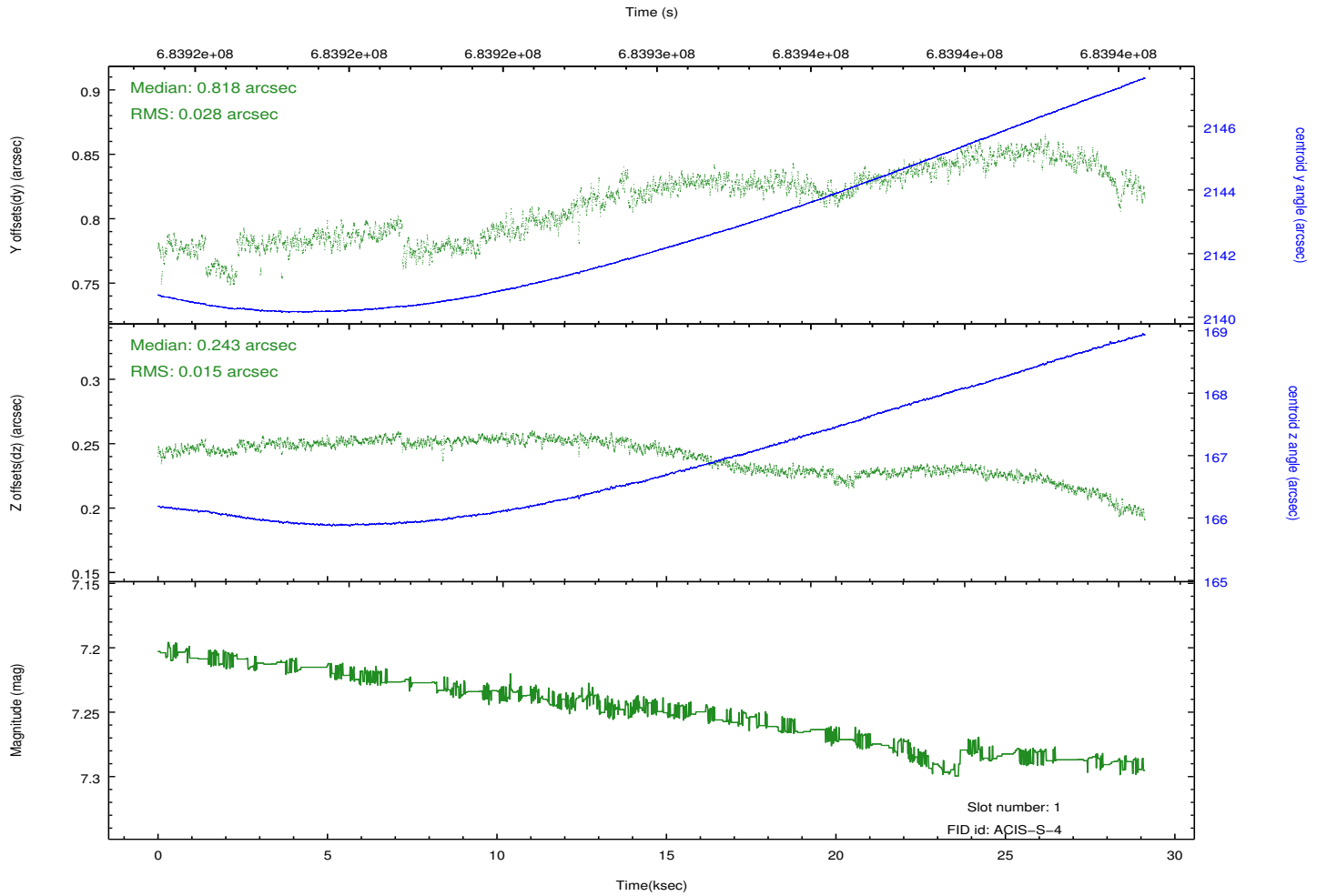
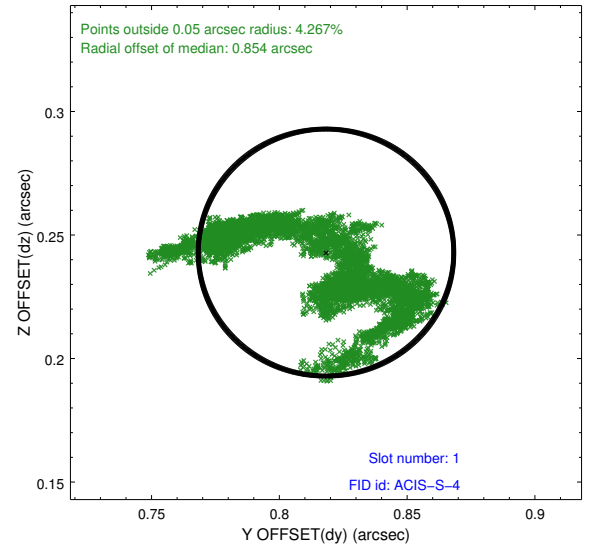
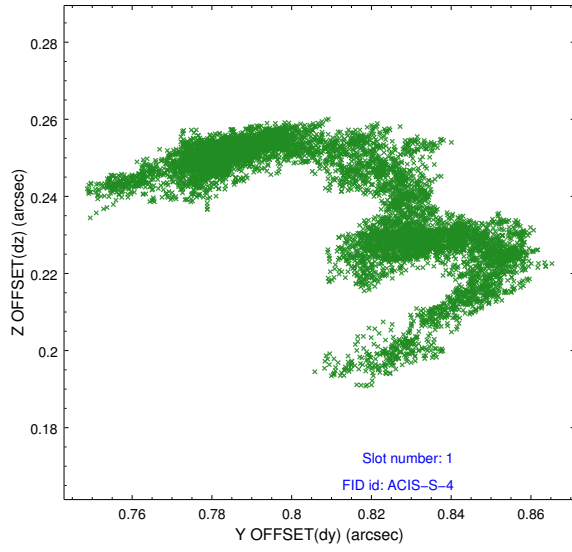


2.5 FID Slots

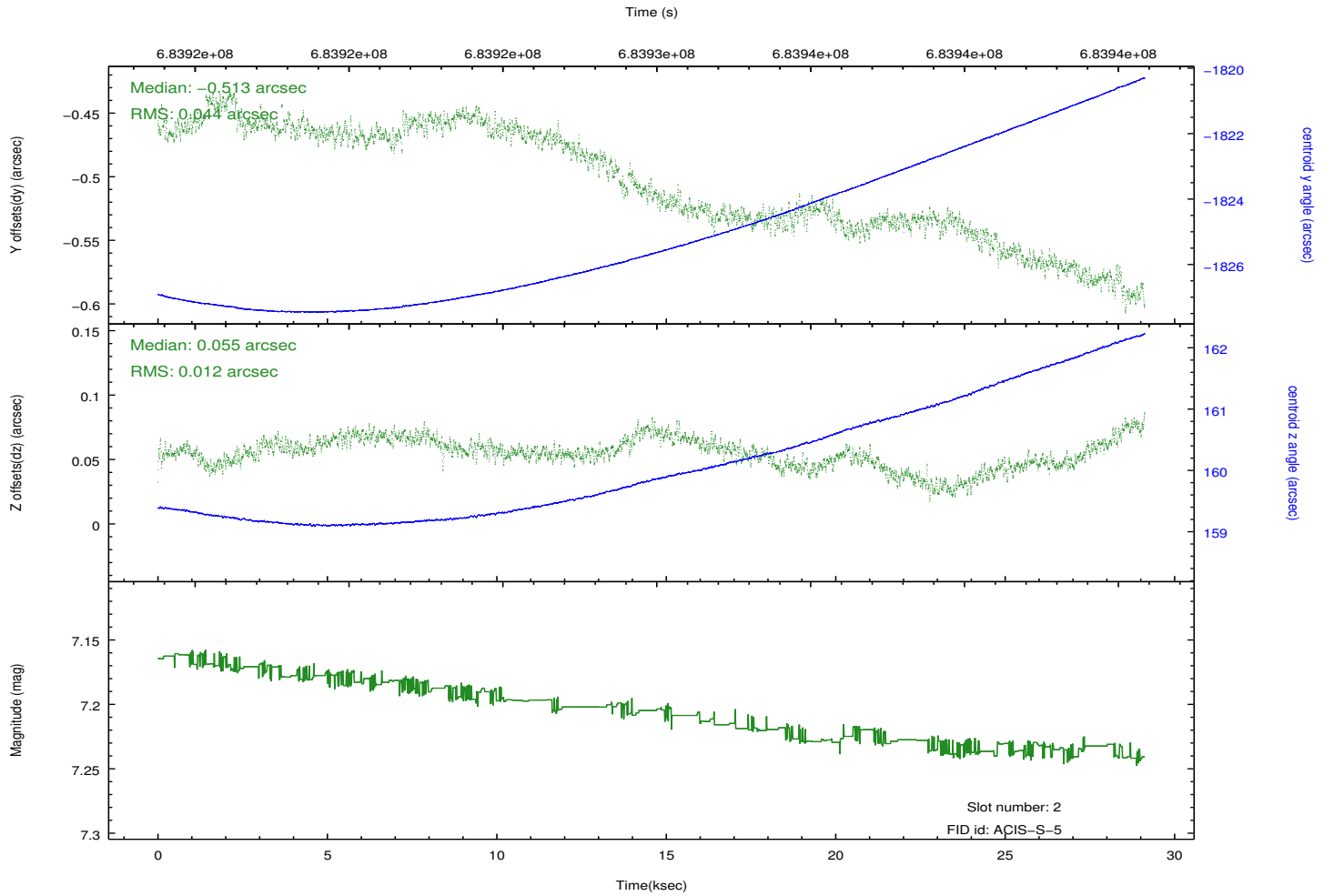
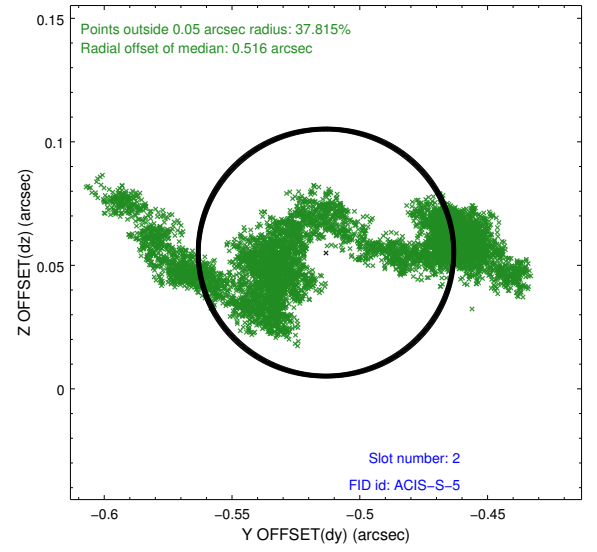
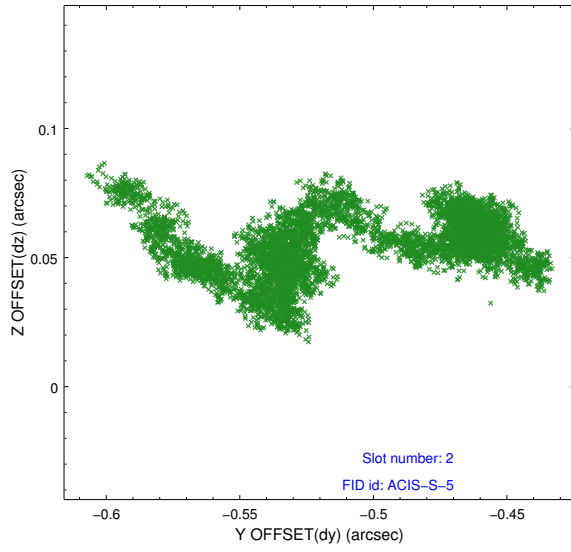
2.5.1 Slot 0



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)	2019.09.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.06560022366

A.2 Comments

The focal plane temperature during the interval 683941048.78 - 683944375.08 (MET s) of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -111.0 C for ACIS-S). The focal plane temperature during part of this observation was warmer than the upper limit for optimum calibration of the ACIS gain and spectral resolution (i.e., -111.0 C for ACIS-S). The Chandra calibration team calibrates the ACIS gain and spectral resolution using data from the external calibration source (ECS). ECS data show that the frontside-illuminated (FI) CCDs are more temperature-sensitive than the backside-illuminated (BI) CCDs. A summary of the current calibration status of the ACIS gain and spectral resolution can be found at:

http://asc.harvard.edu/cal/Acis/Cal_prods/Gain_and_Spectral_Resolution/ACIS_response_summary

The main points are:

- 1) The gain on BI chips remains within 0.3% (i.e., the systematic uncertainty in the ACIS gain quoted on the Chandra Calibration Status Summary web page) at all measured temperatures.
 - 2) The gain on FI chips remains within 0.3% below row 600 at all measured temperatures.
 - 3) The gain on FI chips above row 600 can be underestimated by as much as 1% for focal plane temperatures exceeding -116 C.
 - 4) The spectral resolution (i.e., FWHM) on BI chips is insensitive to the focal plane temperature.
 - 5) Warmer focal plane temperatures increase the FWHM on FI chips by up to 30 eV near row 512 and by up to 70 eV near the top of the chips.
- In summary, the user should be cautious in the spectral analysis of high S/N emission lines detected on the top half of FI chips in this observation. Default processing with the current version of the CALDB will underestimate photon energies by up to 1% and broaden emission lines by up to 70 eV.