

V&V Reference Report

L2 ASCDS Version : 10.8

Observation 22686 - L2 Version 1
Chandra X-Ray Center

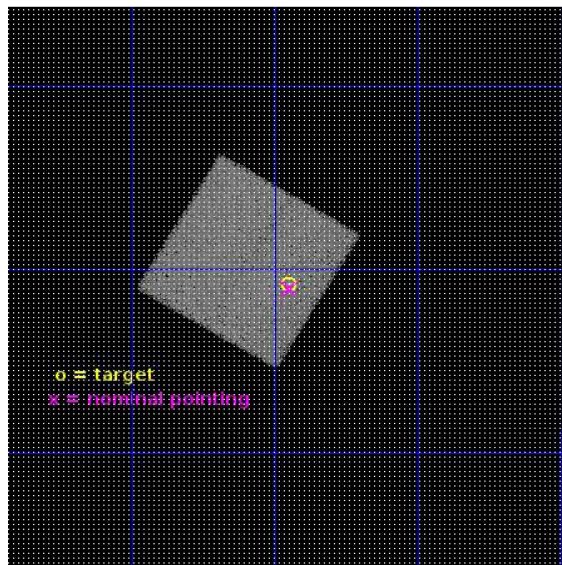
L2 Processing Date : Aug 17 2019

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1 Front

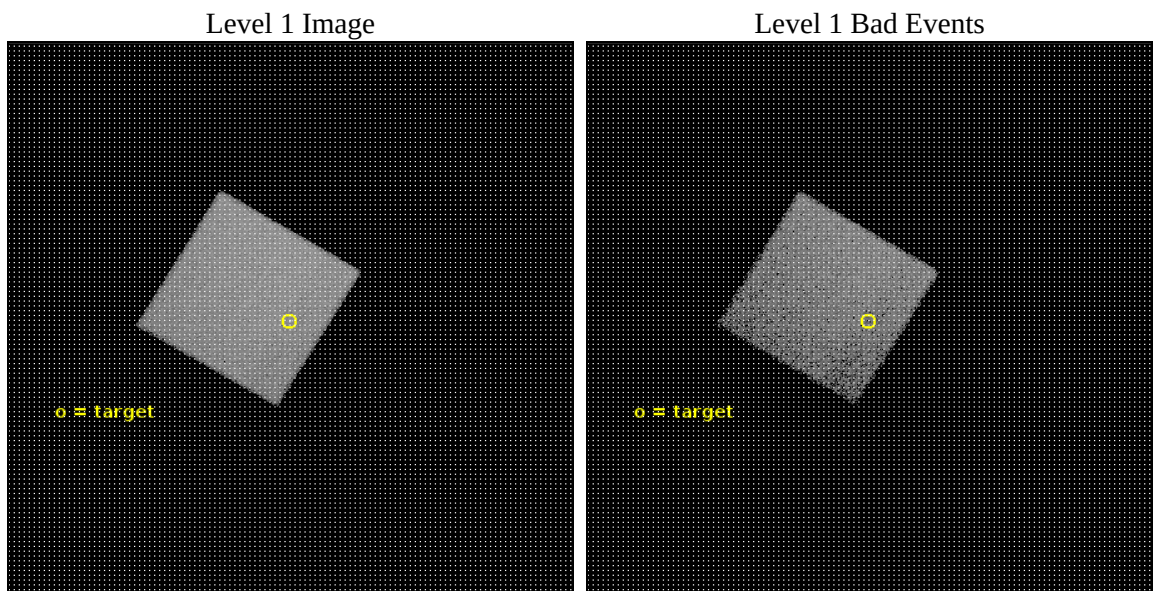
seq_num	201326	Sequence number
obs_id	22686	Observation id
title	Stellar activity with TESS and Chandra	Proposal title
observer	Hans Guenther	Principal investigator
object	2RXS J211827.5-034050	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	319.612823	Observer's specified target RA [deg]
dec_targ	-3.680181	Observer's specified target Dec [deg]
ra_nom	319.61276109654	Nominal RA [deg]
dec_nom	-3.6845821131846	Nominal Dec [deg]
roll_nom	210.85125669787	Nominal Roll [deg]
revision	1	Processing version of data
ontime	20091.0	Sum of GTIs [s]
livetime	19819.864256965	Livetime [s]
ontime7	20091.0	Sum of GTIs [s]
l2events	83666	Number of level 2 events



2 OBI

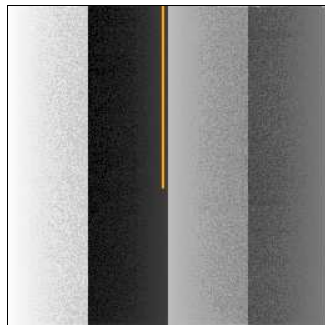
2.1 OBI

2.1.1 Images



2.1.2 Bias

Chip 7



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ascdsver	10.8	Processing system revision	ontime	20091.0	Sum of GTIs [s]
caldsver	4.8.3.1	 	ontime7	20091.0	Sum of GTIs [s]
date	2019-08-17T15:21:43	Date and time of file creation	l1events	197593	Number of level 1 events
revision	1	Processing version of data			

2.1.4 Events

	ccd 7
level 1 events	197593
rejected events	111559
rejected %	56%

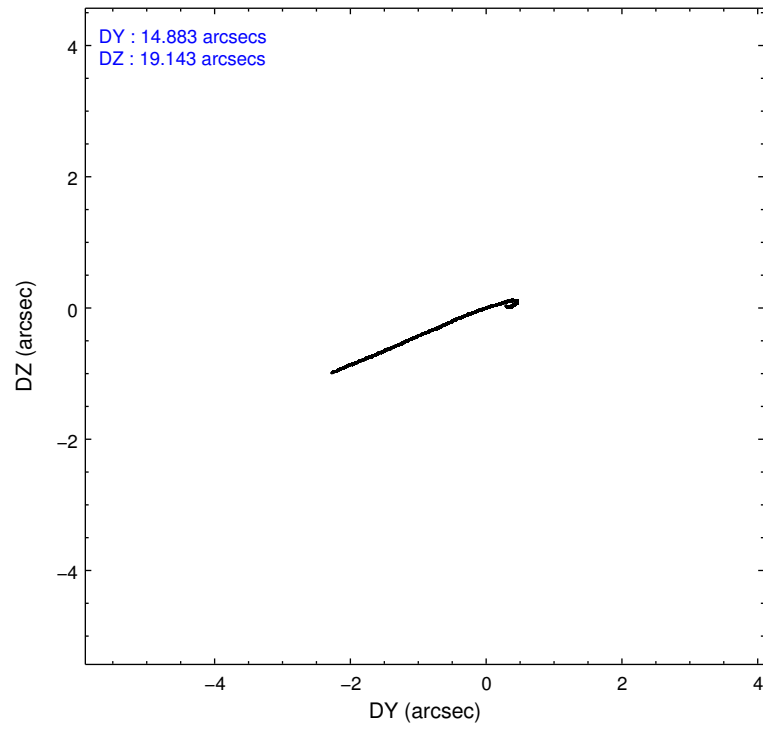
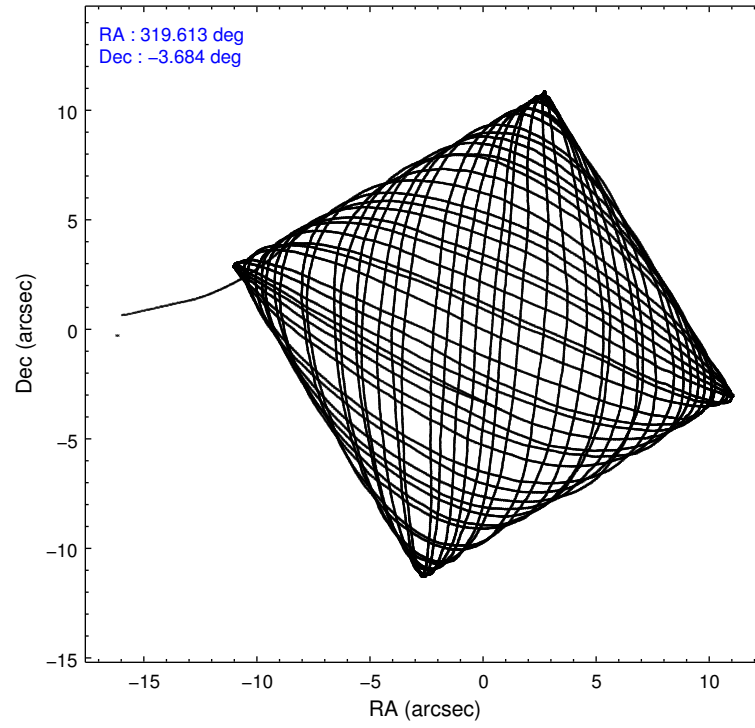
	ccd 7
grade 0 events	7084
	3%
grade 1 events	297
	0%
grade 2 events	17828
	9%
grade 3 events	6615
	3%
grade 4 events	6620
	3%
grade 5 events	18446
	9%
grade 6 events	47901
	24%
grade 7 events	92802
	46%

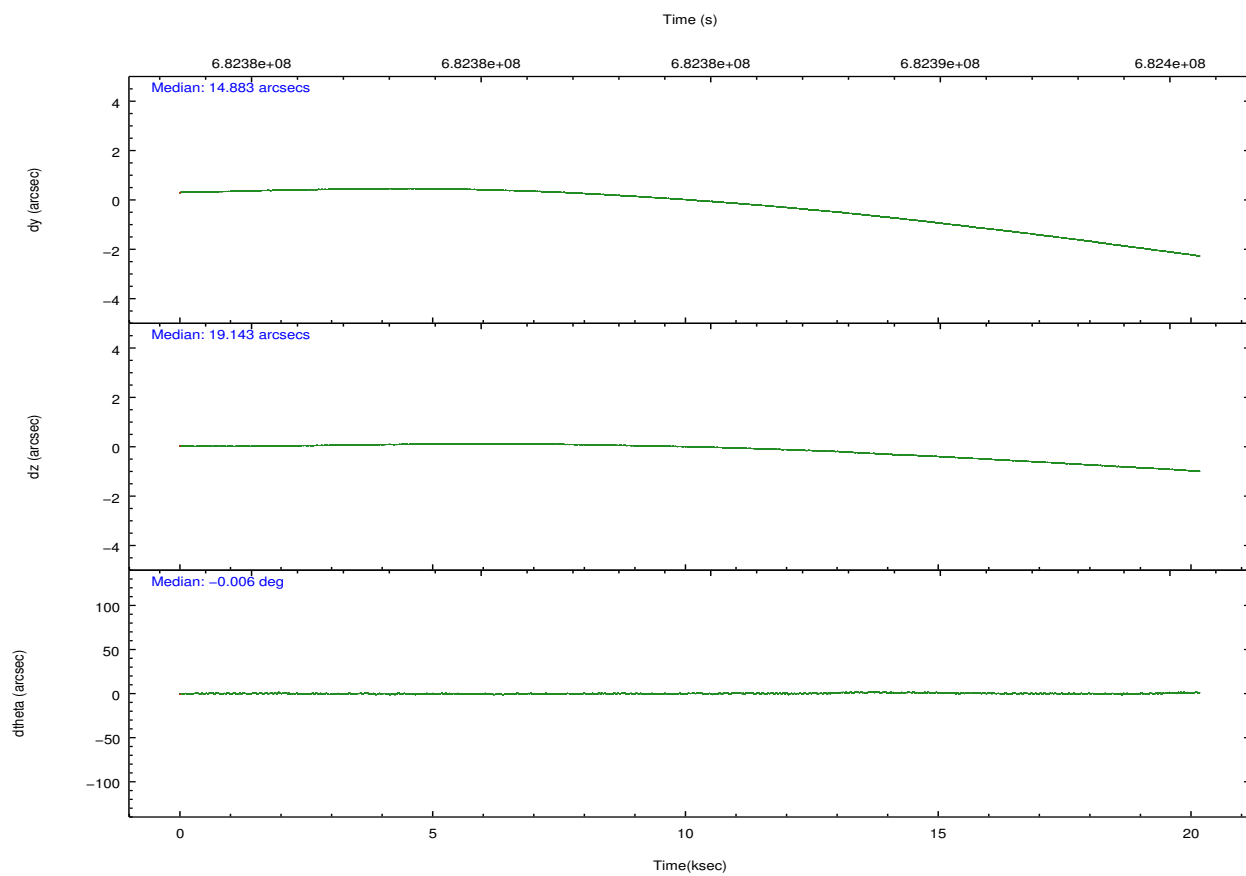
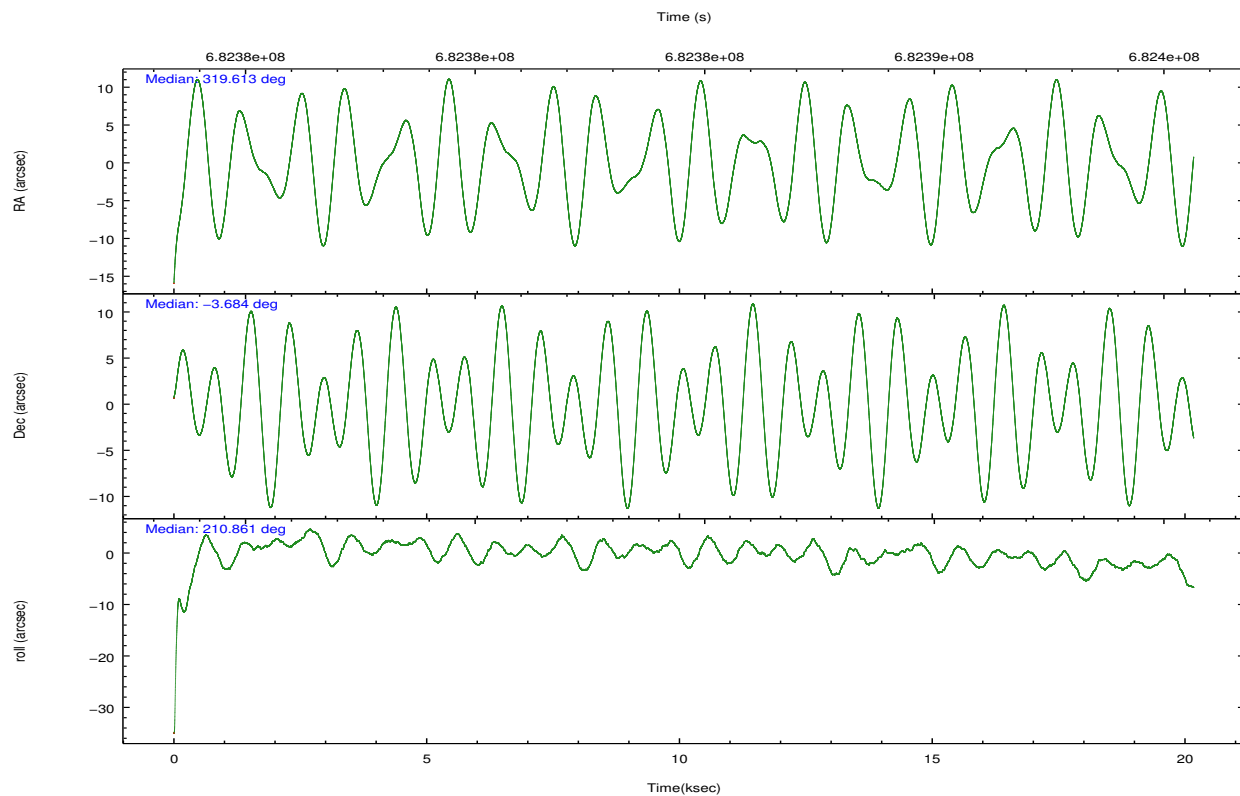
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-7	ACIS-7
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	319.625854	319.6127610965404
[deg] Pointing Dec	-3.660446	-3.684582113184557
[deg] Pointing Roll	210.695483	210.8512566978662
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1425803651734
[mm] SIM translation stage offset	0	0.01005778216563158
[s] Observation start time (MET)	682374616.184000	682373744.21621
Observation start date	2019-08-16T20:29:07	2019-08-16T20:15:44
[s] Observation end time (MET)	682394616.184000	682396122.5300601
Observation end date	2019-08-17T02:02:27	2019-08-17T02:28:42
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3

2.3 Aspect



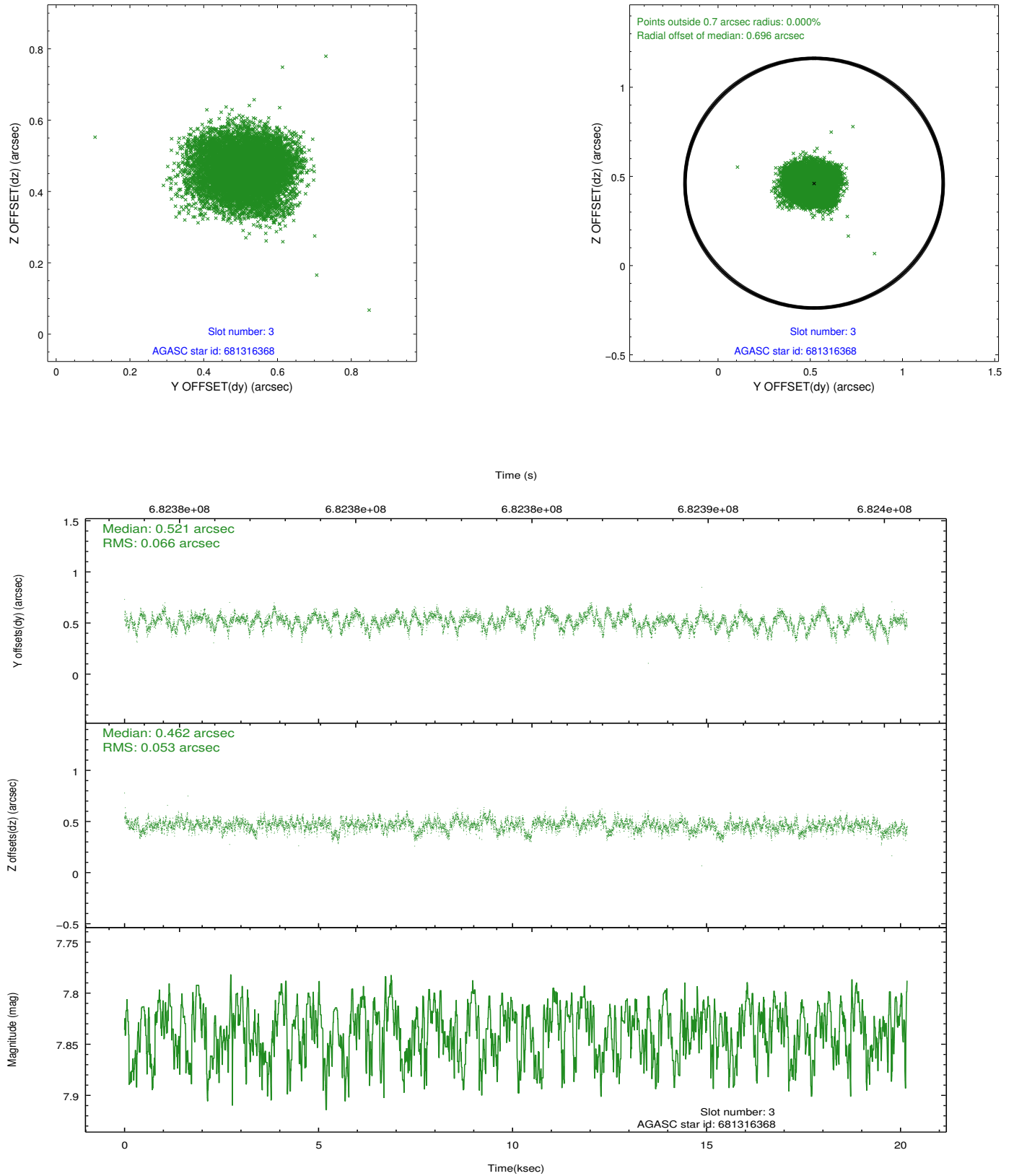


Slot Statistics

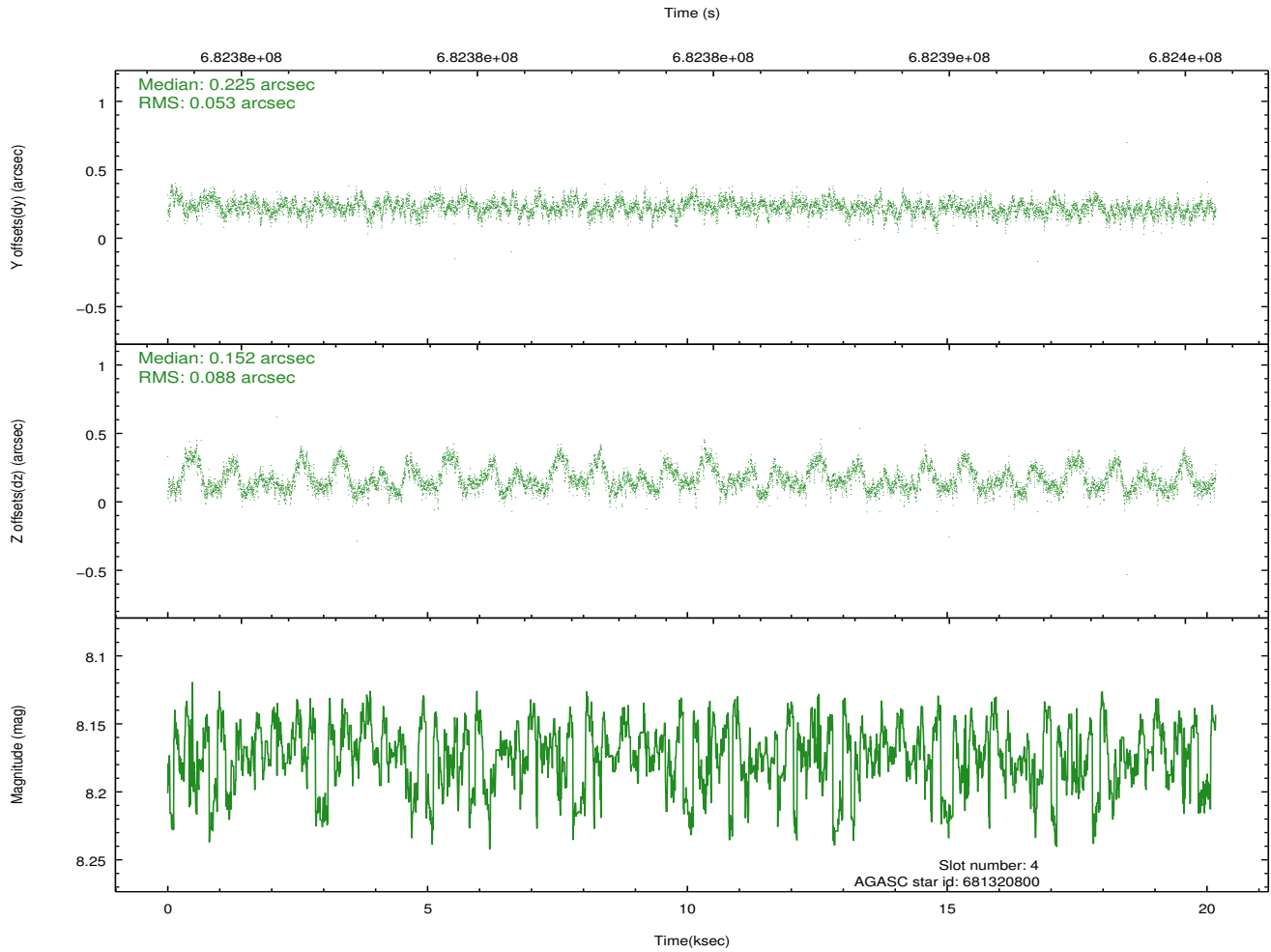
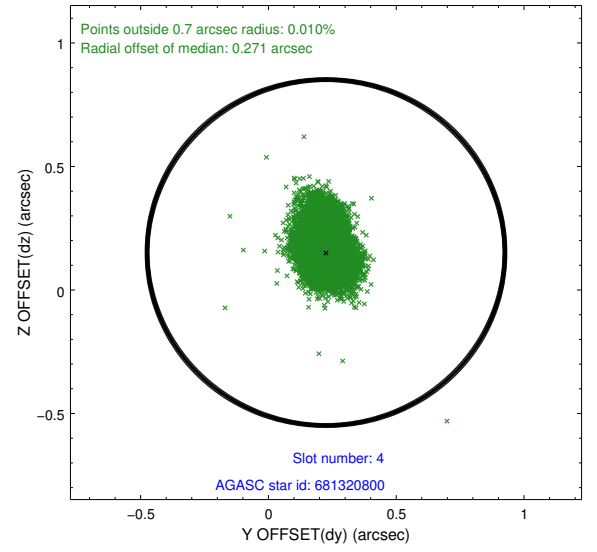
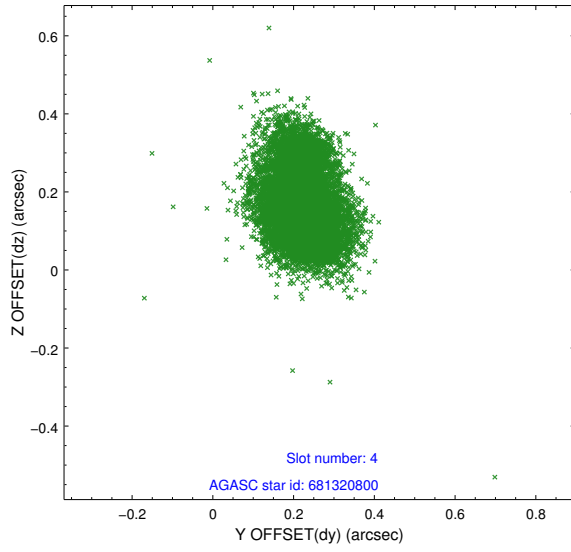
id	status	used	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-2	7.17	4921	1.000	-0.314	-0.258	0.046	0.083	0.000000	0.000000	-767.74 -1740
1	FID		ACIS-S-4	7.29	4921	1.000	0.856	0.220	0.021	0.087	0.000000	0.000000	2146.53 168
2	FID		ACIS-S-5	7.25	4921	1.000	-0.579	0.048	0.029	0.044	0.000000	0.000000	-1820.69 161
3	GUIDE	used	681316368	7.84	9837	1.000	0.521	0.462	0.090	0.147	319.926256	-2.878538	-2366.16 -1866
4	GUIDE	used	681320800	8.17	9832	1.000	0.225	0.152	0.106	0.182	319.465990	-3.479059	160.58 -853
5	GUIDE	used	681322312	8.03	9836	1.000	-0.141	-0.214	0.088	0.144	319.612844	-3.680194	75.77 38
6	GUIDE	used	681838640	7.80	9834	1.000	-0.493	-0.236	0.076	0.122	319.294445	-4.239529	2087.37 1185
7	GUIDE	used	681841136	8.74	9828	1.000	-0.108	-0.174	0.129	0.218	319.394013	-3.940091	1228.31 441

2.4 Star Slots

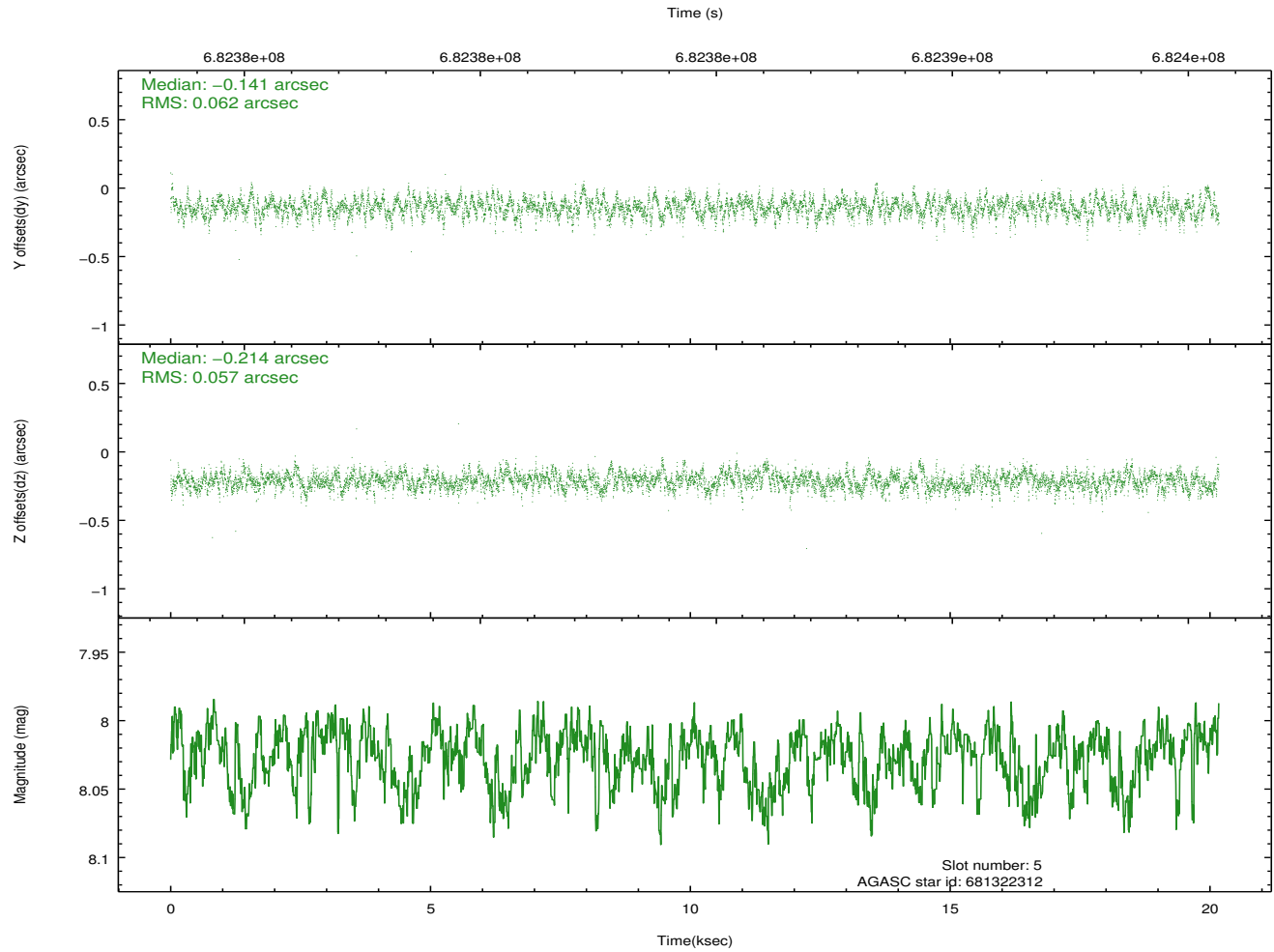
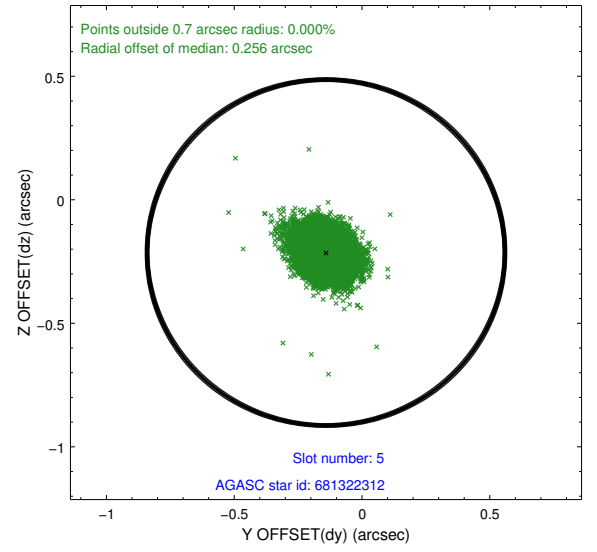
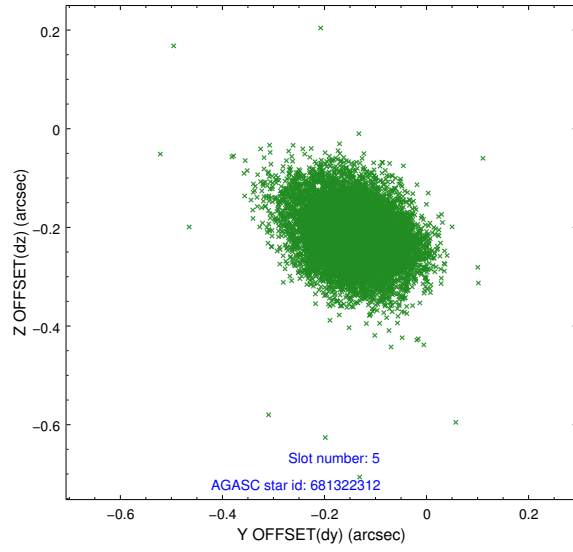
2.4.1 Slot 3



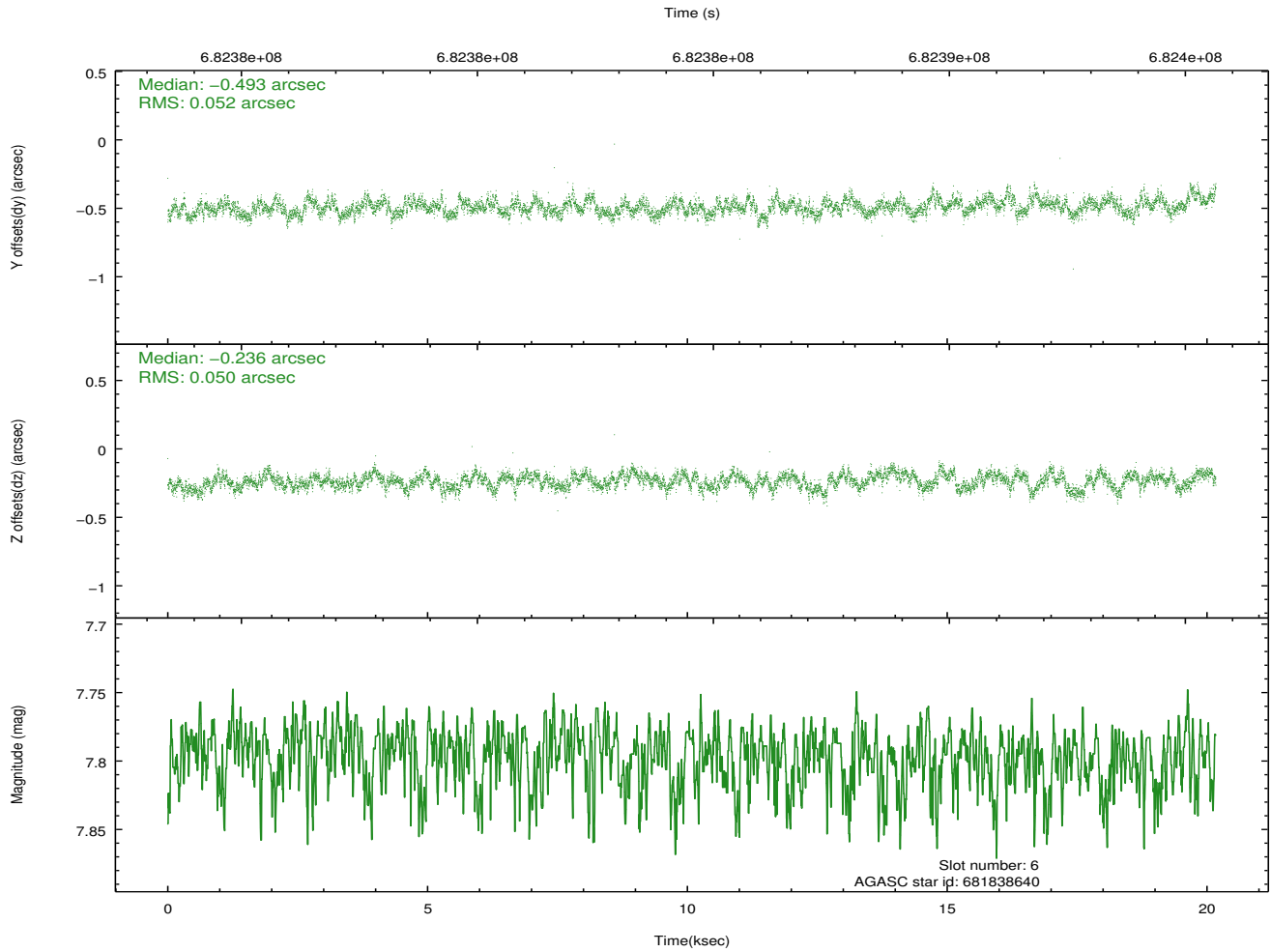
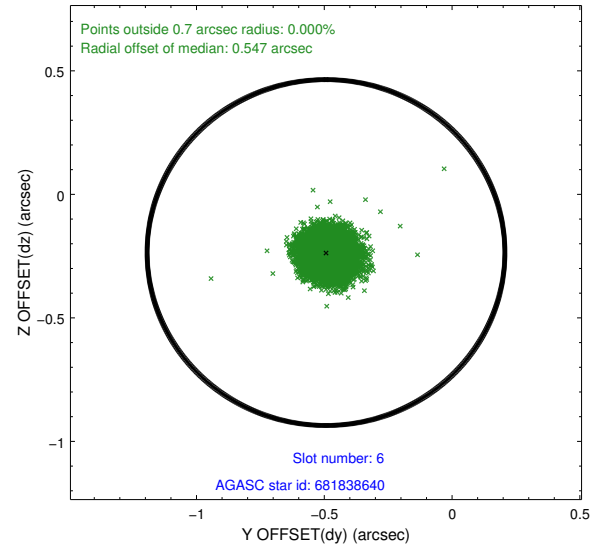
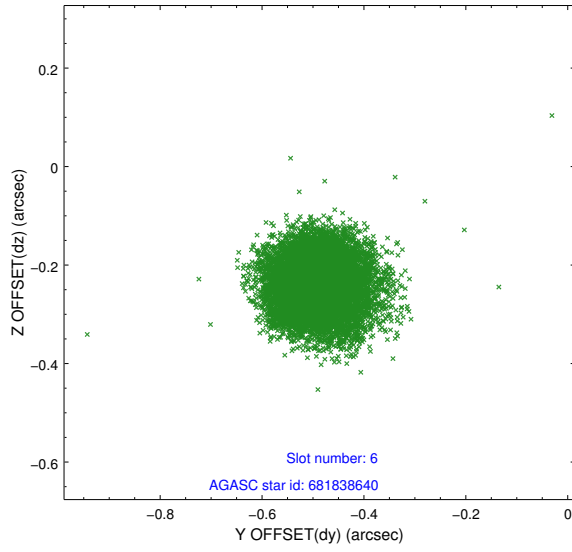
2.4.2 Slot 4



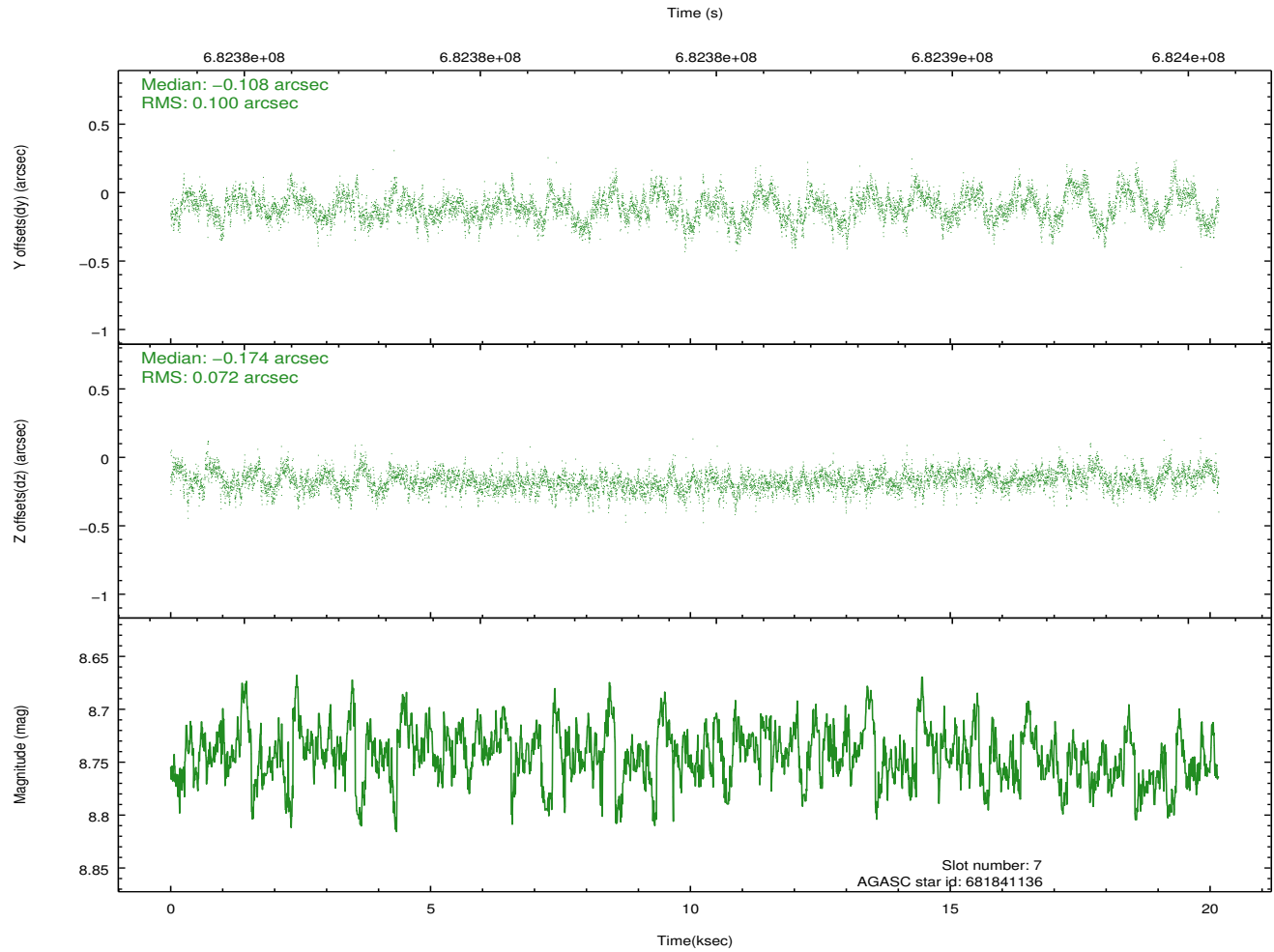
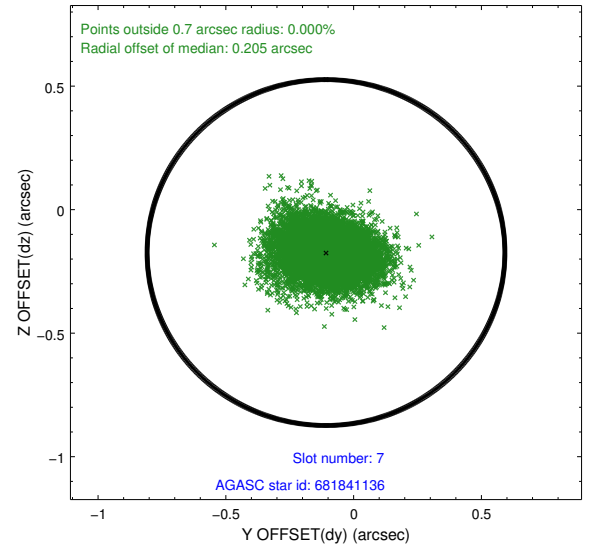
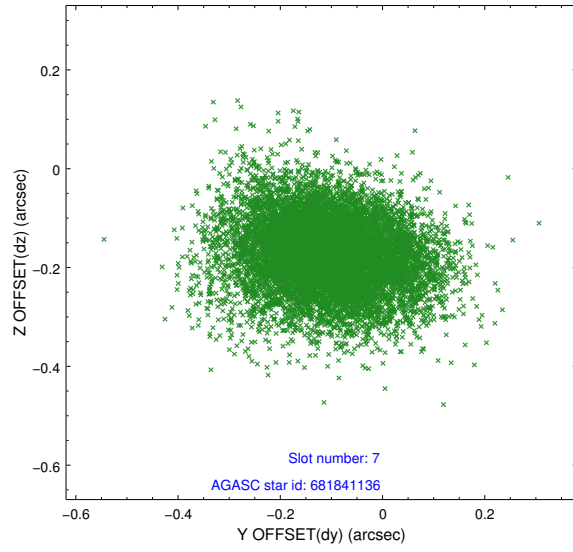
2.4.3 Slot 5



2.4.4 Slot 6

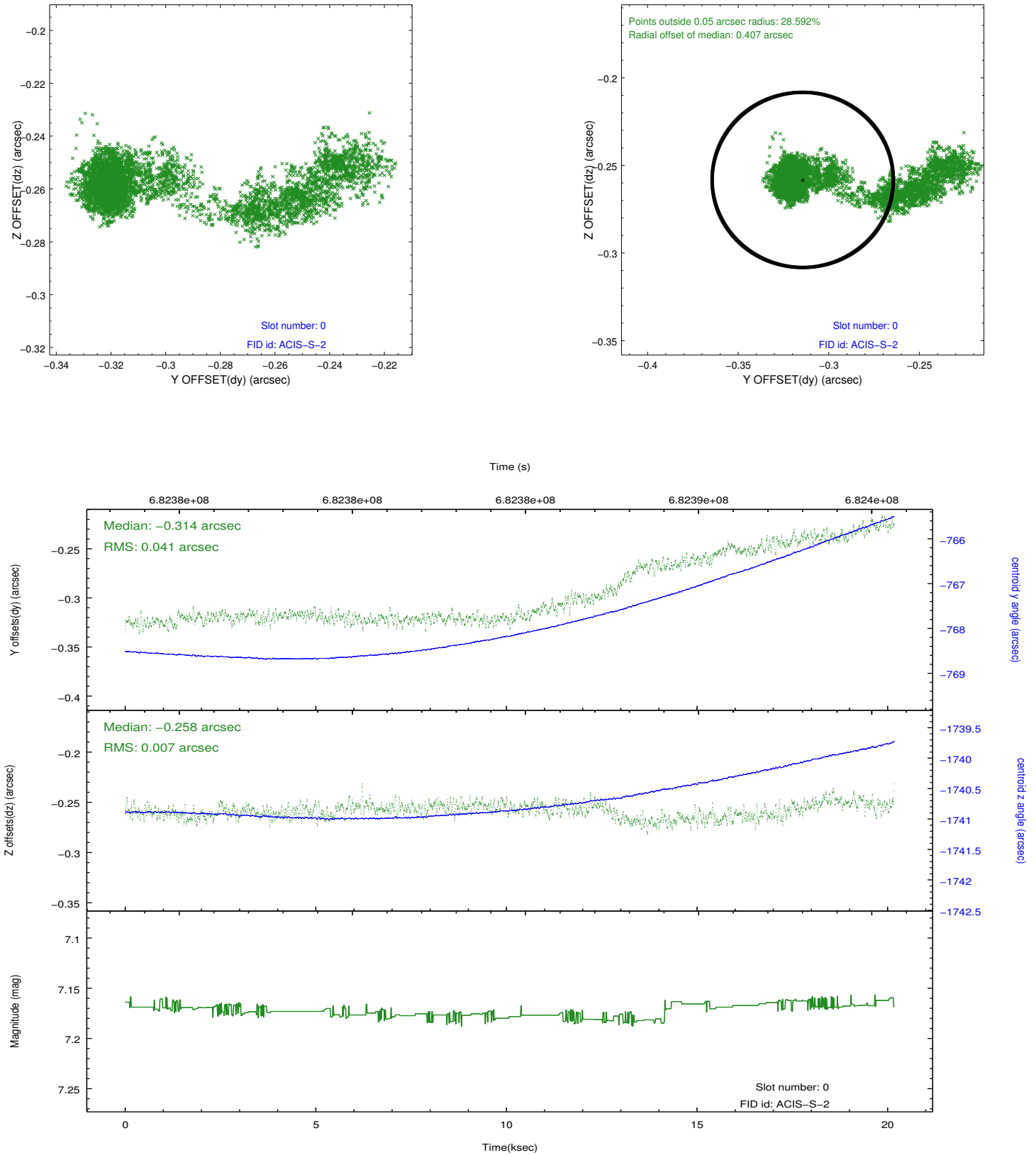


2.4.5 Slot 7

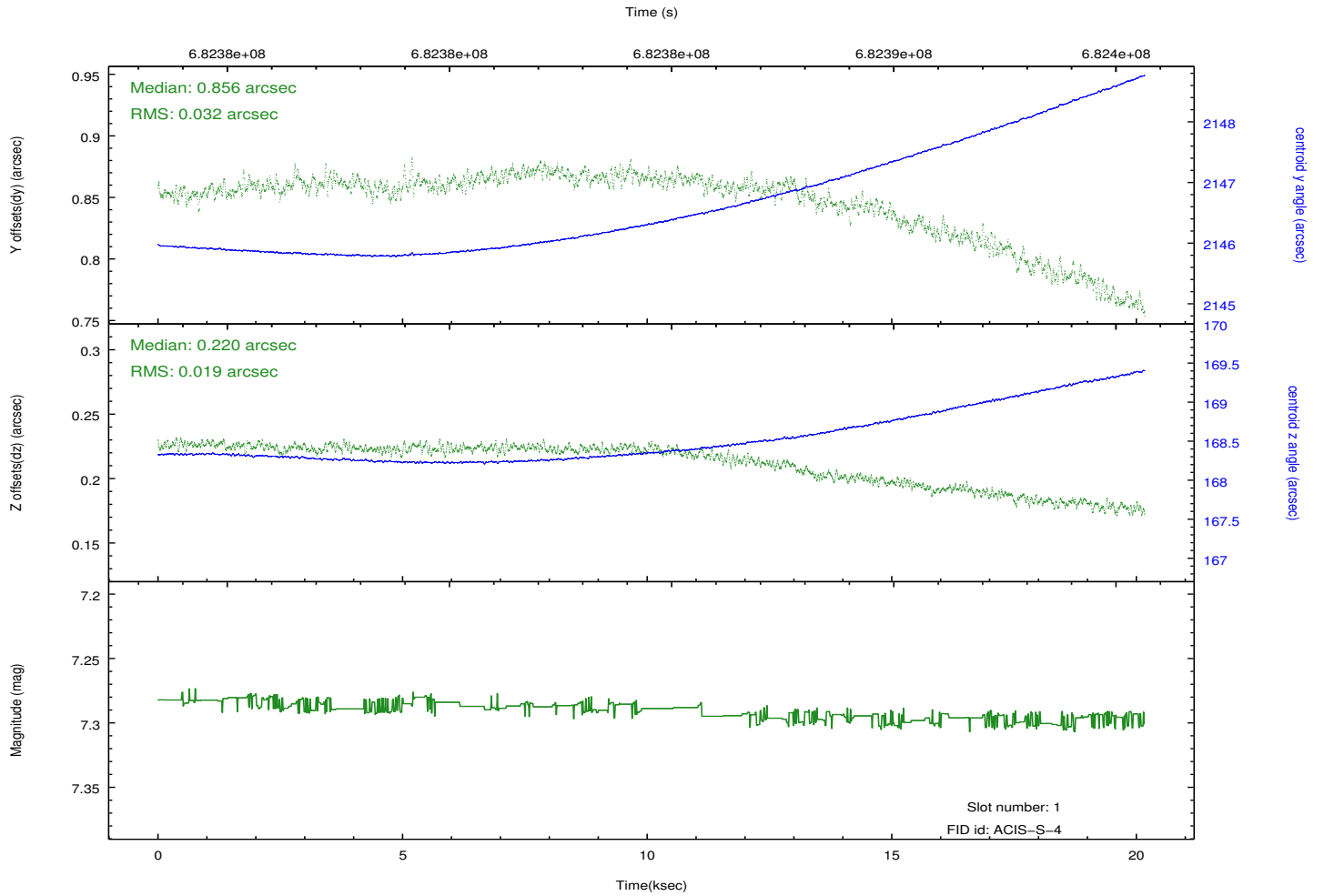
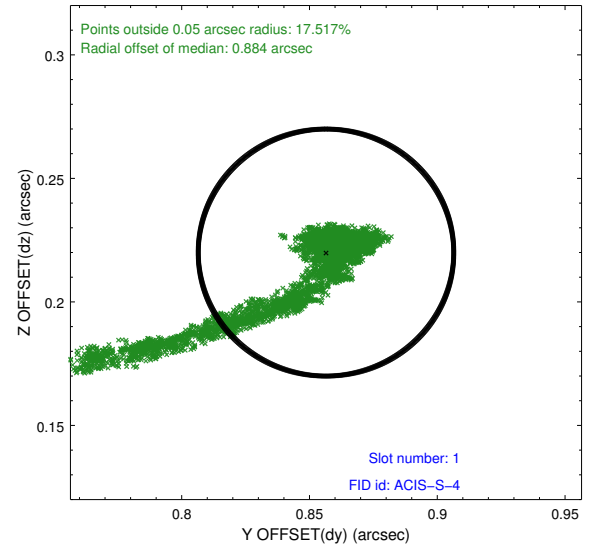
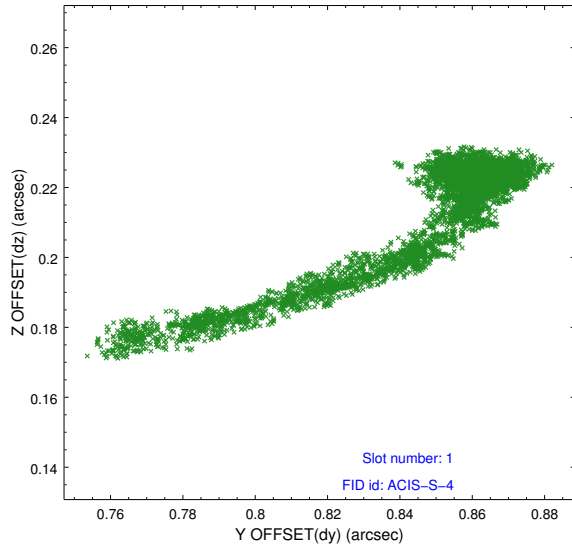


2.5 FID Slots

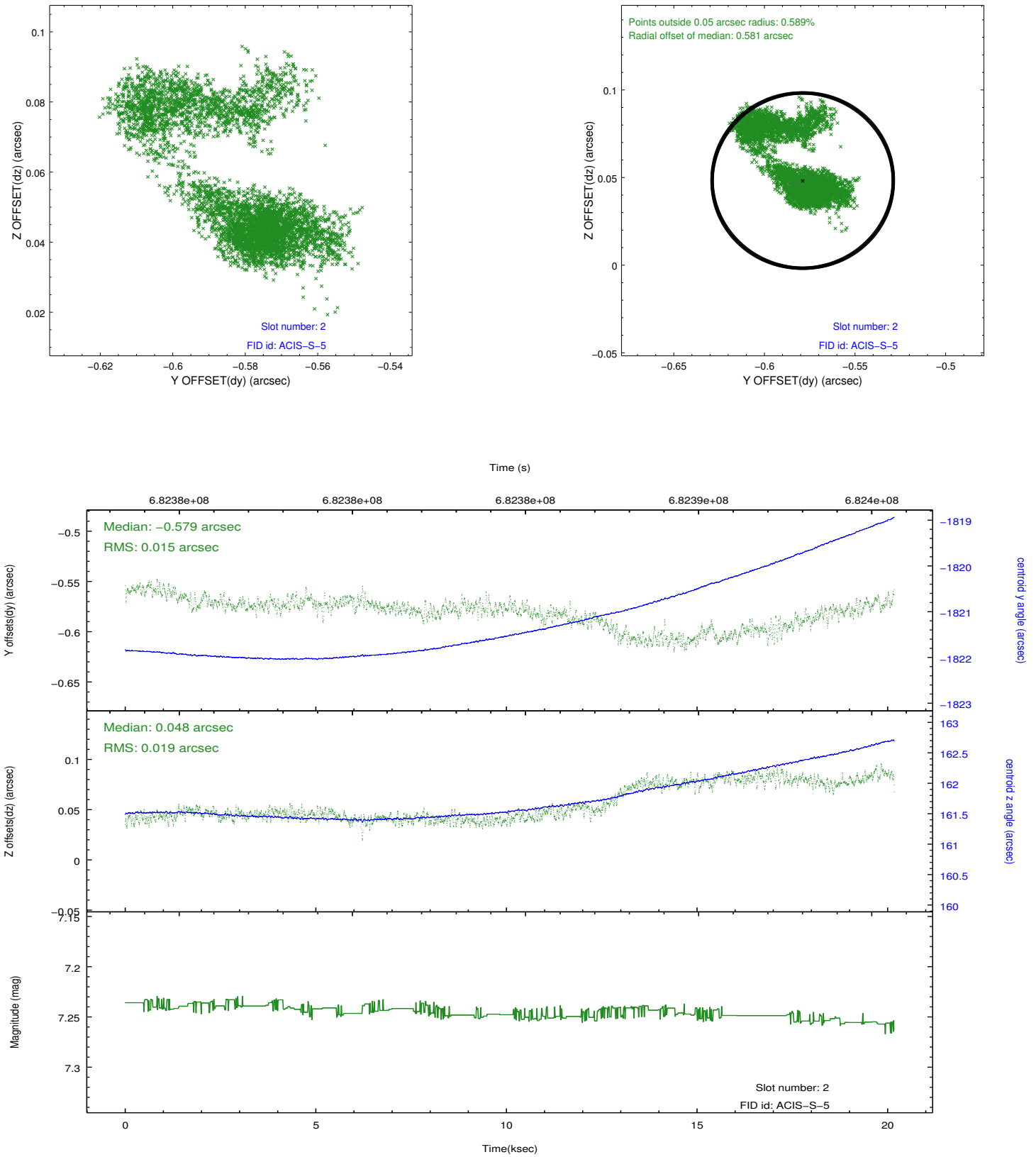
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2019.08.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.091

A.2 Comments

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.