

V&V Reference Report

L2 ASCDS Version : 10.7.1

Observation 22168 - L2 Version 1
Chandra X-Ray Center

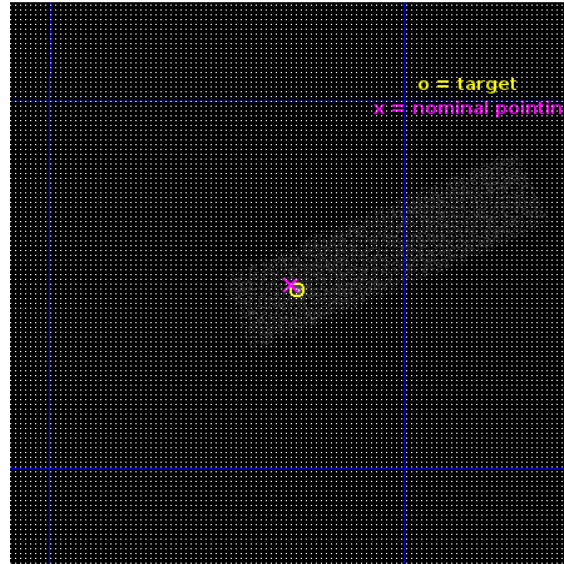
L2 Processing Date : Apr 7 2019

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1 Front

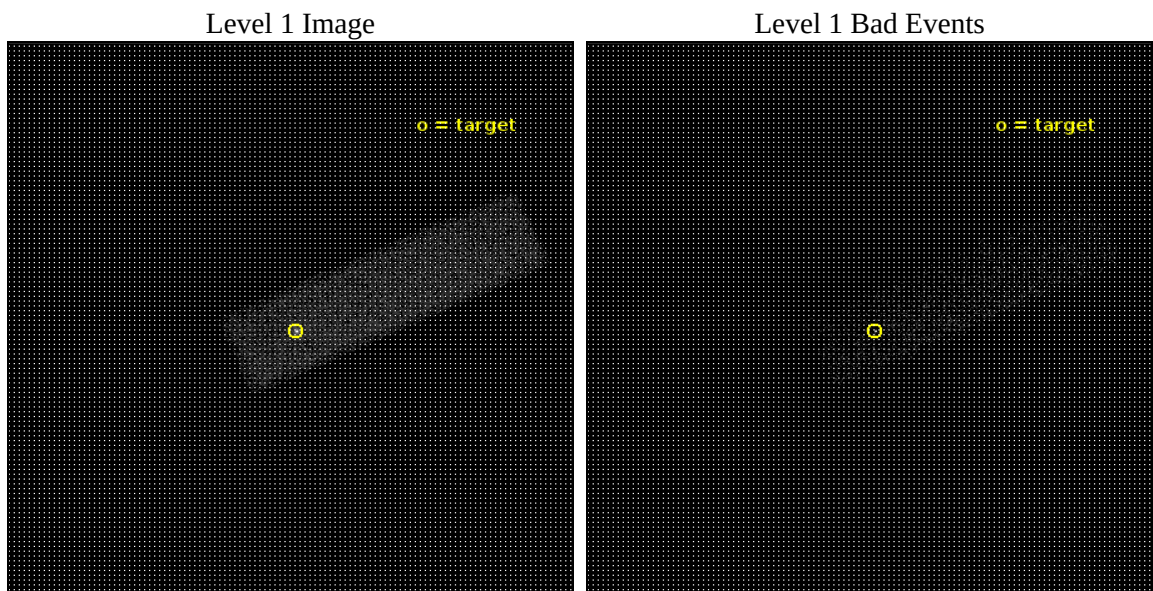
seq_num	703876	Sequence number
obs_id	22168	Observation id
title	C-BASS: A Chandra Legacy Survey of AGN at the Highest Spatial Resolutions	Proposal title
observer	Michael Koss	Principal investigator
object	2MASXJ02141794+5144520	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	33.574753	Observer's specified target RA [deg]
dec_targ	51.747765	Observer's specified target Dec [deg]
ra_nom	33.579103904758	Nominal RA [deg]
dec_nom	51.750173967132	Nominal Dec [deg]
roll_nom	335.4230856609	Nominal Roll [deg]
revision	1	Processing version of data
ontime	10060.79940033	Sum of GTIs [s]
livetime	9569.8653099302	Livetime [s]
ontime7	10060.79940033	Sum of GTIs [s]
l2events	19222	Number of level 2 events



2 OBI

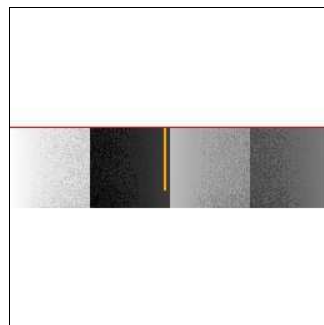
2.1 OBI

2.1.1 Images



2.1.2 Bias

Chip 7



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.7.1	Processing system revision	ontime	10060.79940033	Sum of GTIs [s]
caldsver	4.8.2	 	ontime7	10060.79940033	Sum of GTIs [s]
date	2019-04-07T22:46:19	Date and time of file creation	l1events	34276	Number of level 1 events
revision	1	Processing version of data			

2.1.4 Events

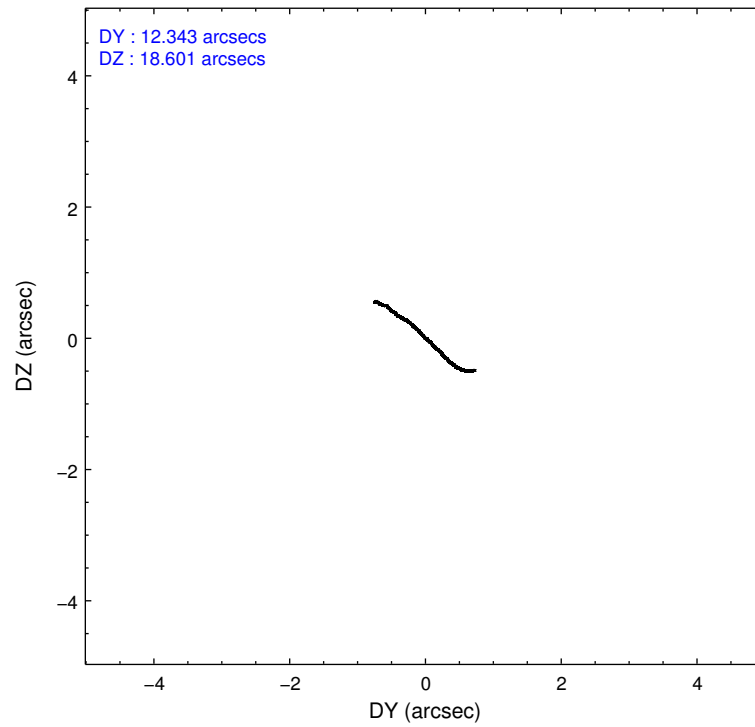
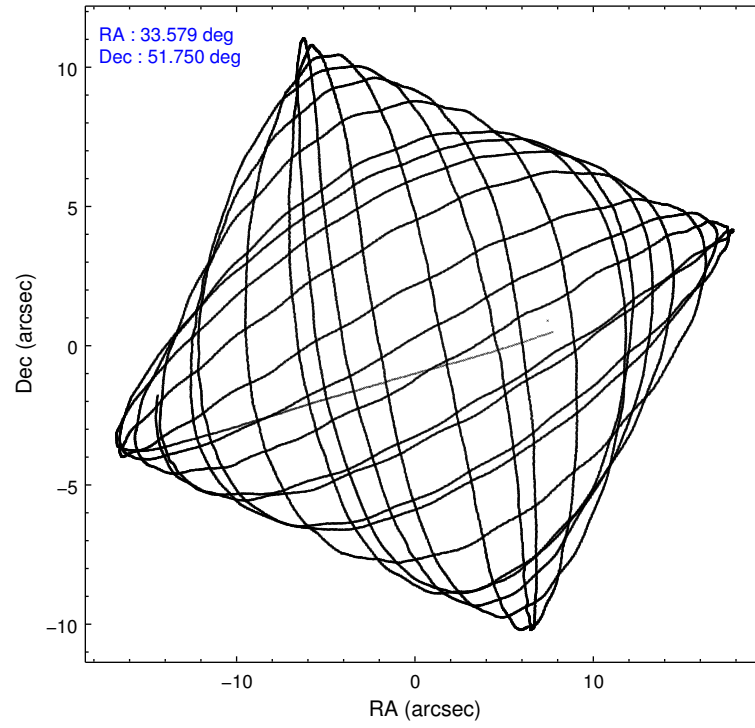
	ccd 7
level 1 events	34276
rejected events	14653
rejected %	42%

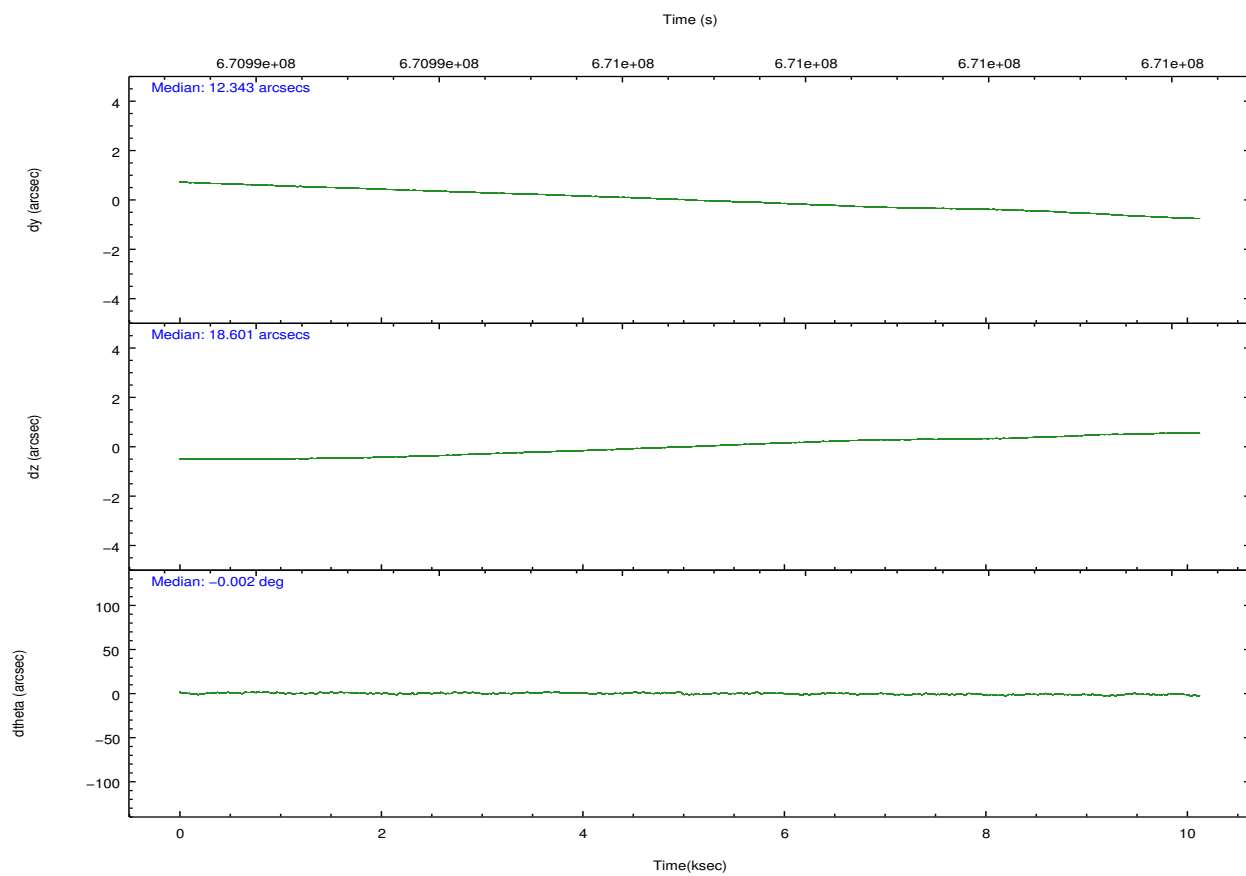
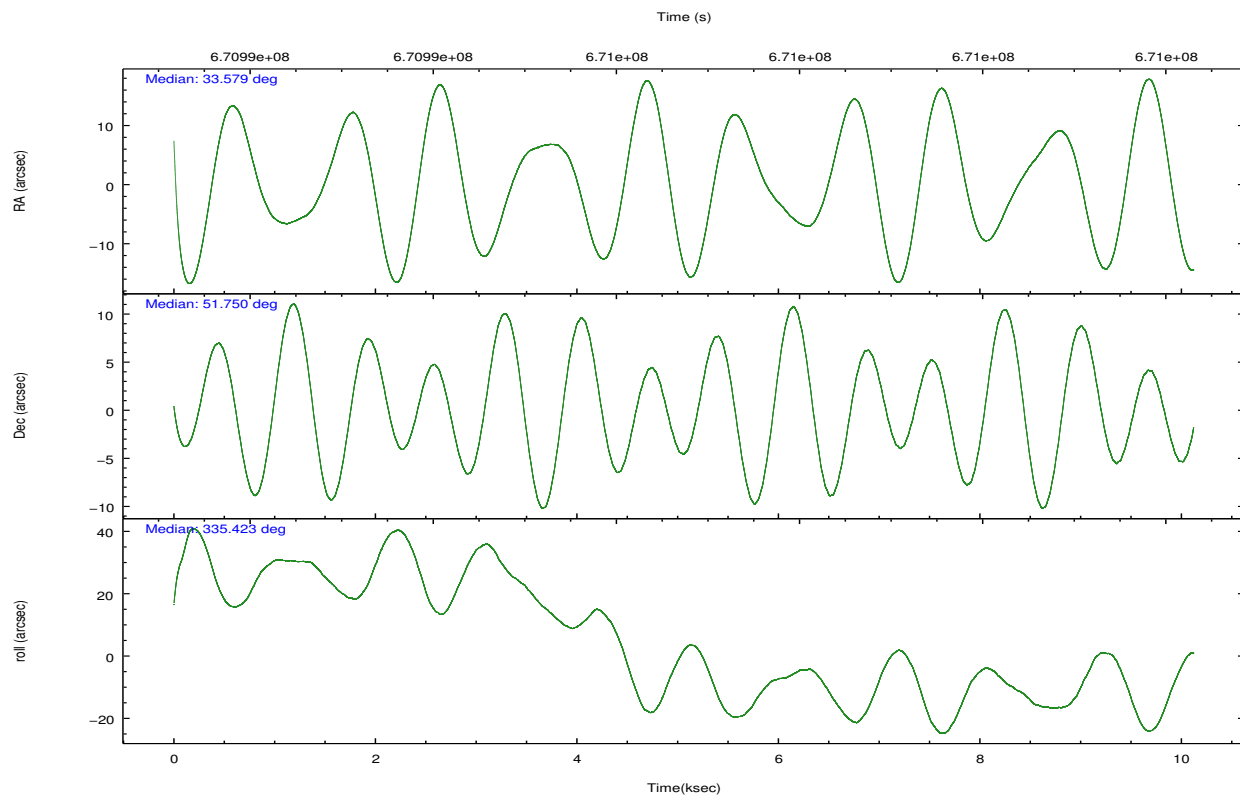
	ccd 7
grade 0 events	2764
	8%
grade 1 events	142
	0%
grade 2 events	4153
	12%
grade 3 events	2210
	6%
grade 4 events	2091
	6%
grade 5 events	2988
	8%
grade 6 events	8410
	24%
grade 7 events	11518
	33%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-7	ACIS-7	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	33.535076	33.57910390475764	Subarray requested	CUSTOM	1/4
[deg] Pointing Dec	51.747233	51.75017396713184	Subarray start row	385	385
[deg] Pointing Roll	335.301039	335.4230856608964	Subarray row count	256	256
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	0.8
[mm] SIM translation stage pos	-190.132523	-190.1425803651734			
[mm] SIM translation stage offset	0	0.01005778216563158			
[s] Observation start time (MET)	670991789.184000	670990461.50831			
Observation start date	2019-04-07T02:35:20	2019-04-07T02:14:21			
[s] Observation end time (MET)	671001789.184000	671002536.00903			
Observation end date	2019-04-07T05:22:00	2019-04-07T05:35:36			
Read mode	TIMED	TIMED			

2.3 Aspect



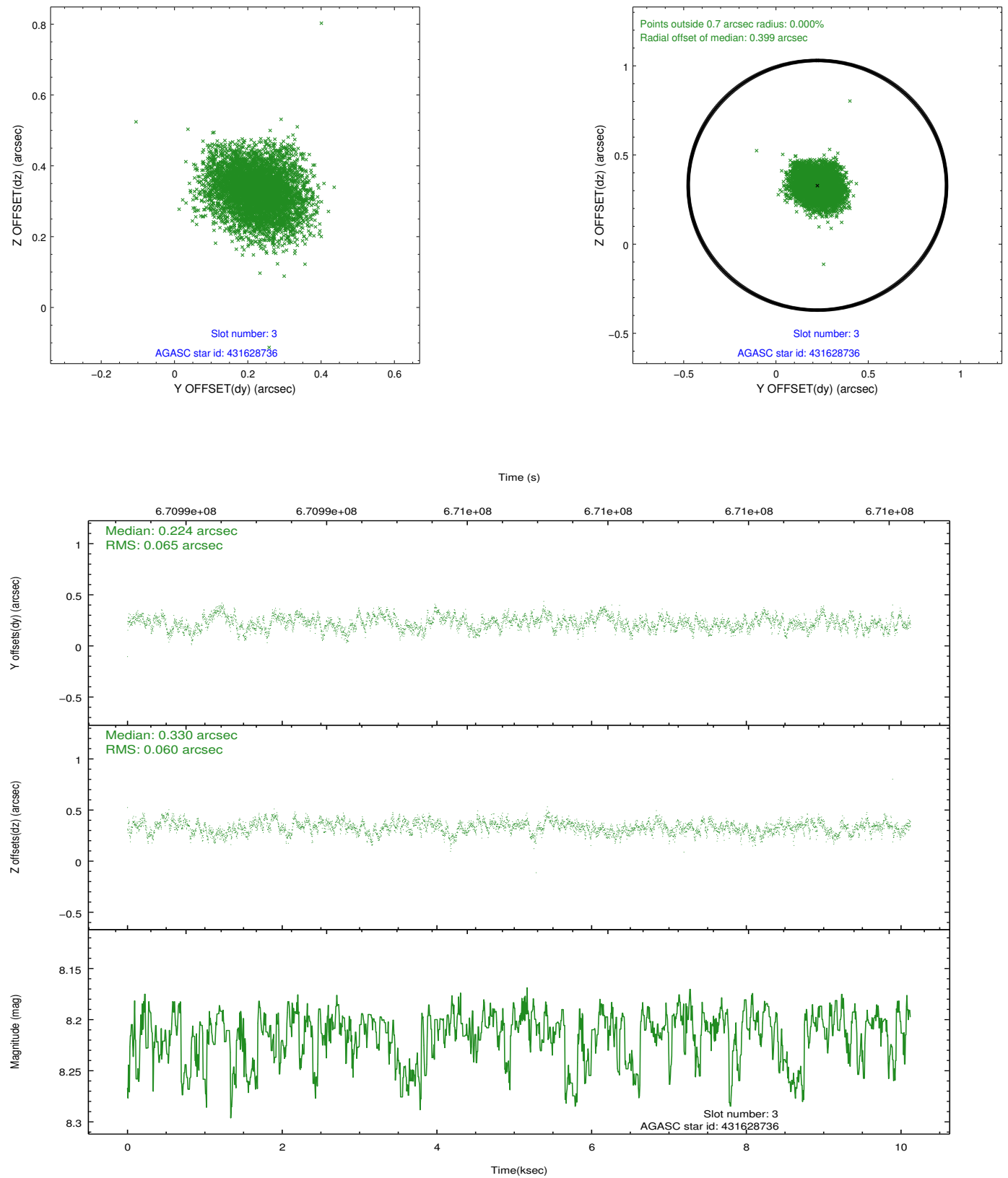


Slot Statistics

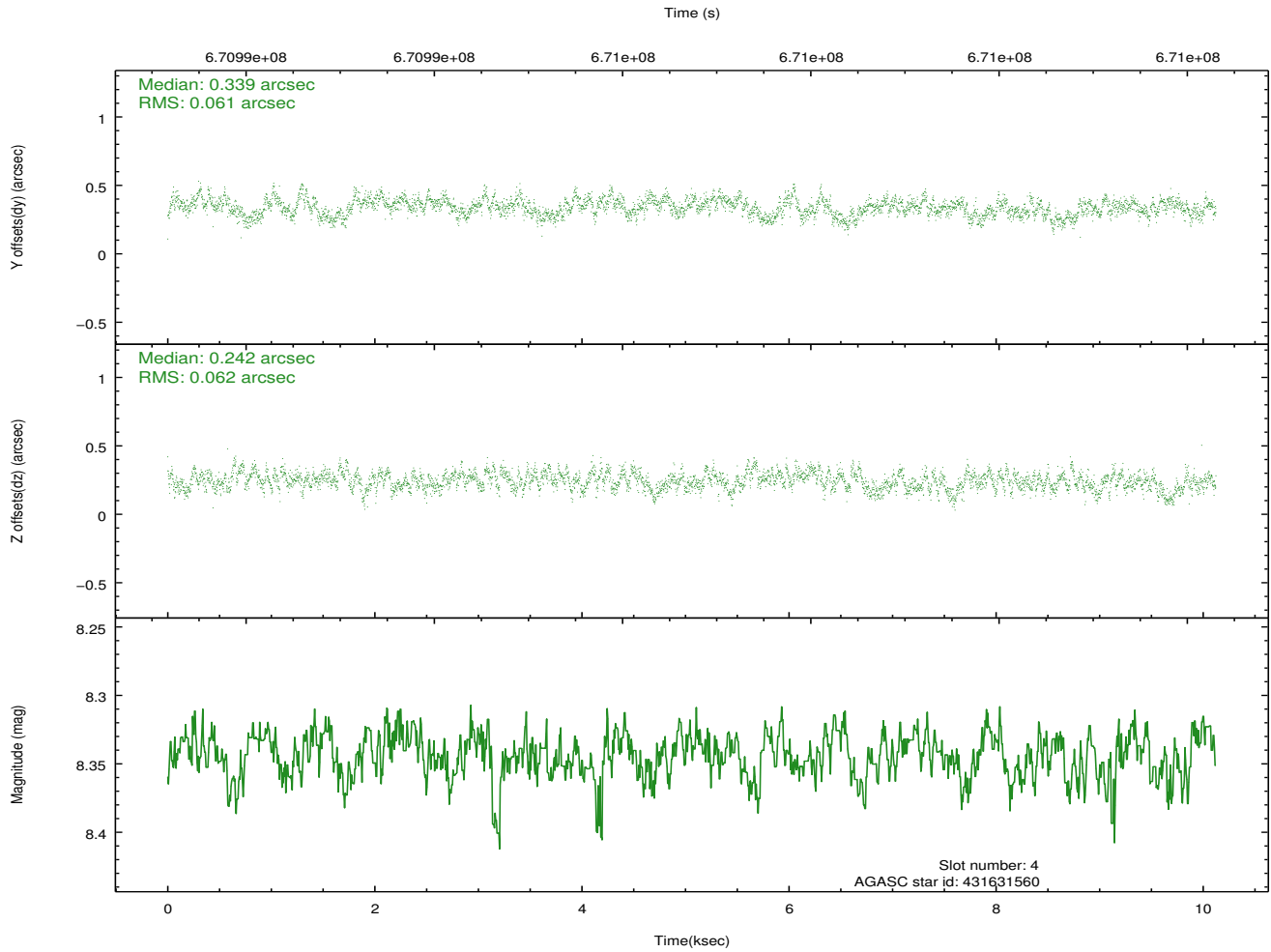
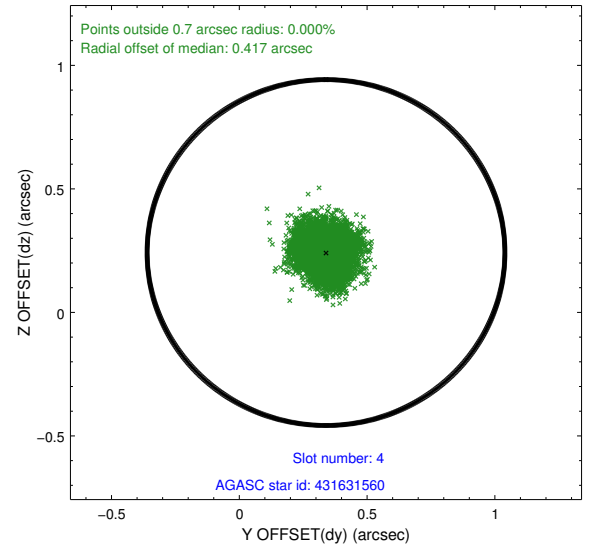
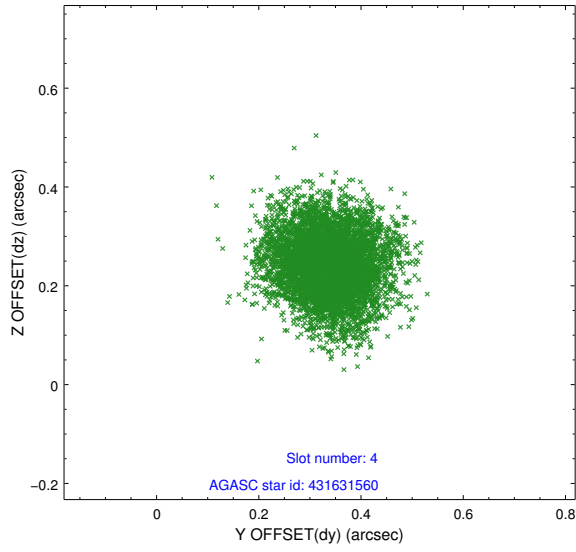
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-3	7.38	2469	1.000	0.046	-0.128	0.015	0.025	0.000000	0.000000	47.94	-1869
1	FID		ACIS-S-5	7.24	2469	1.000	-0.367	-0.015	0.024	0.041	0.000000	0.000000	-1818.63	161
2	FID		ACIS-S-6	7.39	2469	1.000	0.299	0.152	0.016	0.024	0.000000	0.000000	396.13	806
3	GUIDE	used	431628736	8.21	4938	1.000	0.224	0.330	0.095	0.152	32.638874	51.783832	-1872.70	-702
4	GUIDE	used	431631560	8.34	4931	1.000	0.339	0.242	0.093	0.146	32.803271	51.611505	-1285.31	-1119
5	GUIDE	used	433328976	7.35	4938	1.000	-0.036	-0.049	0.085	0.144	34.205239	51.528957	1689.06	-80
6	GUIDE	used	433338376	8.73	4934	1.000	-0.326	-0.391	0.113	0.189	34.214642	51.897114	1143.42	1127
7	GUIDE	used	431634784	8.67	4936	1.000	-0.203	-0.134	0.104	0.173	32.871631	52.326477	-2199.89	1291

2.4 Star Slots

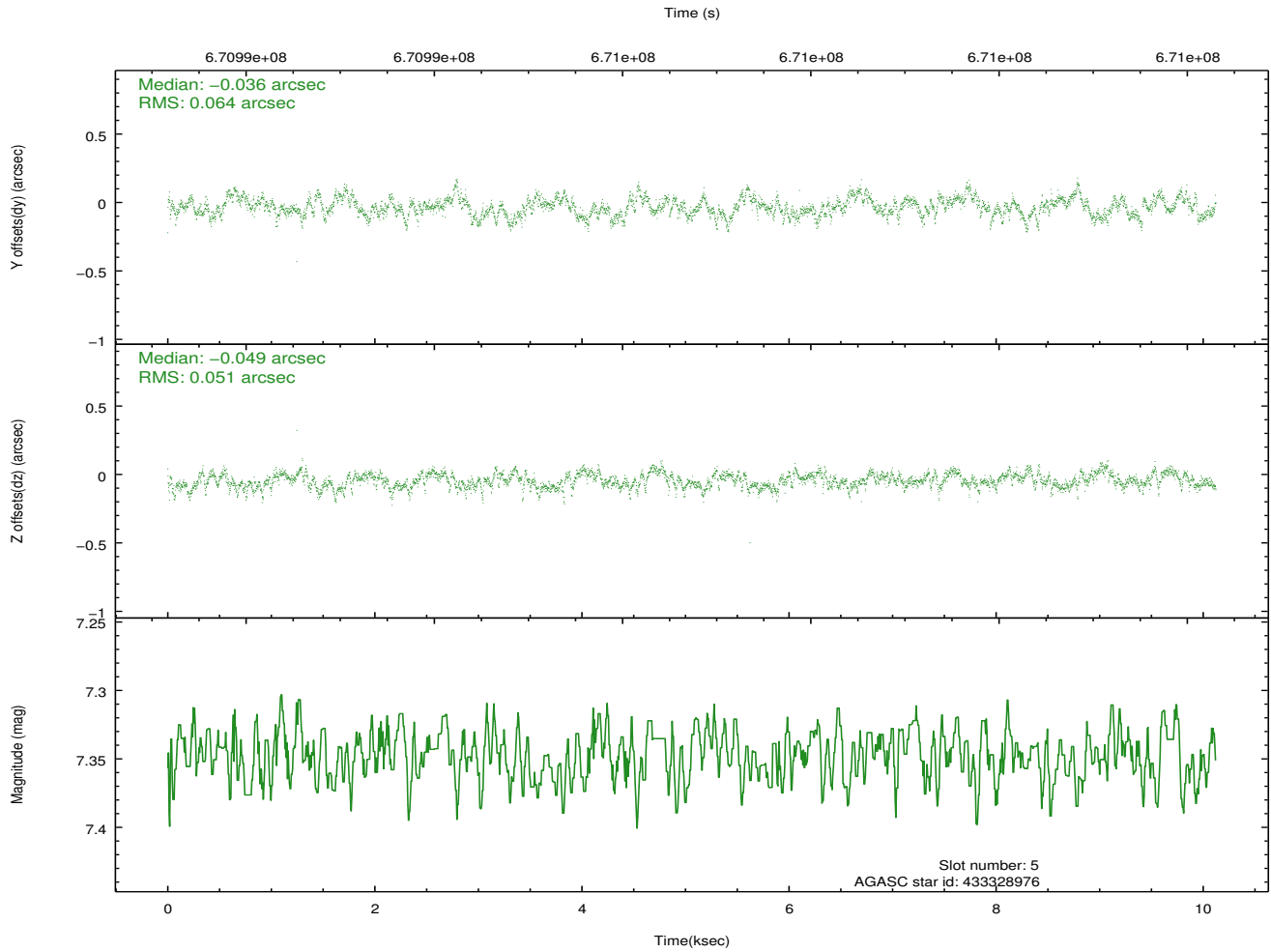
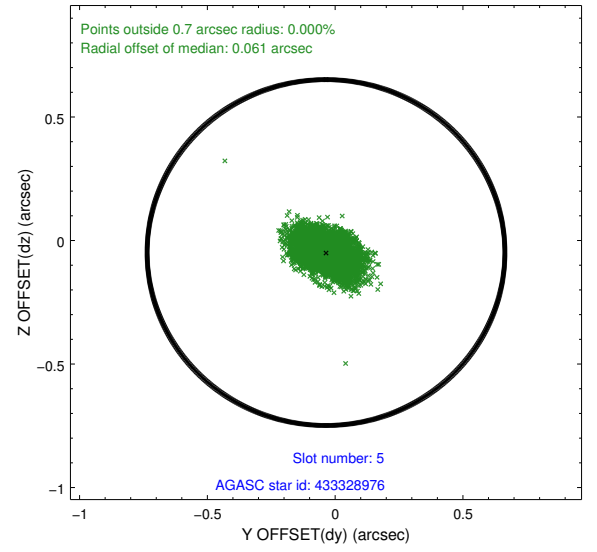
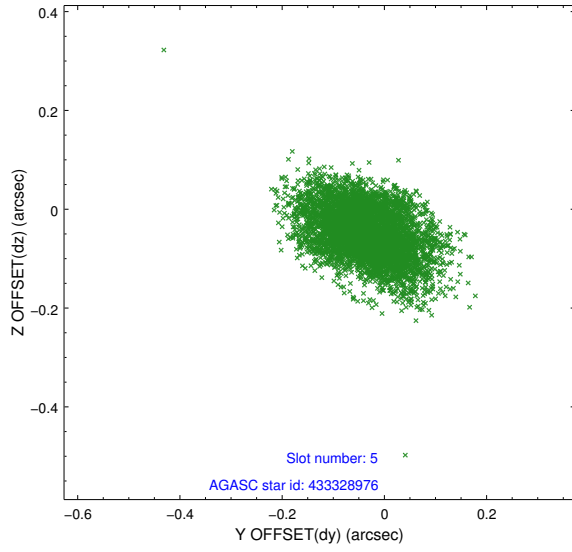
2.4.1 Slot 3



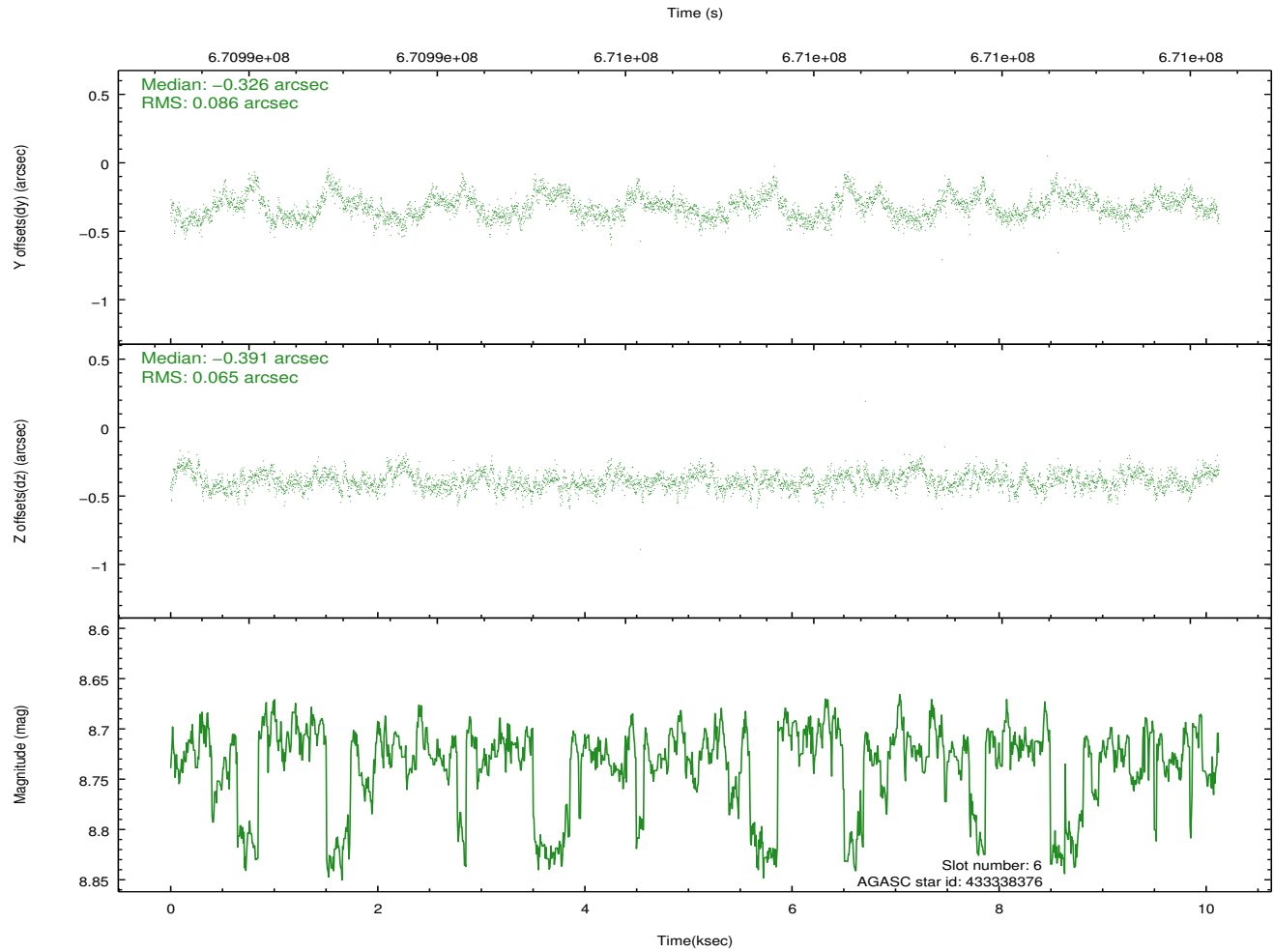
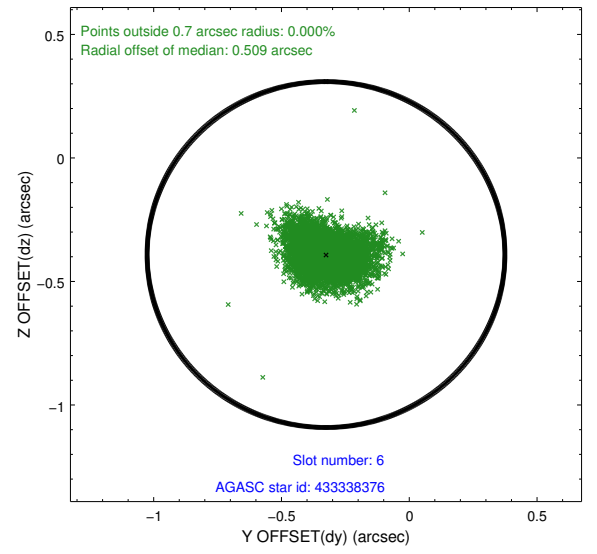
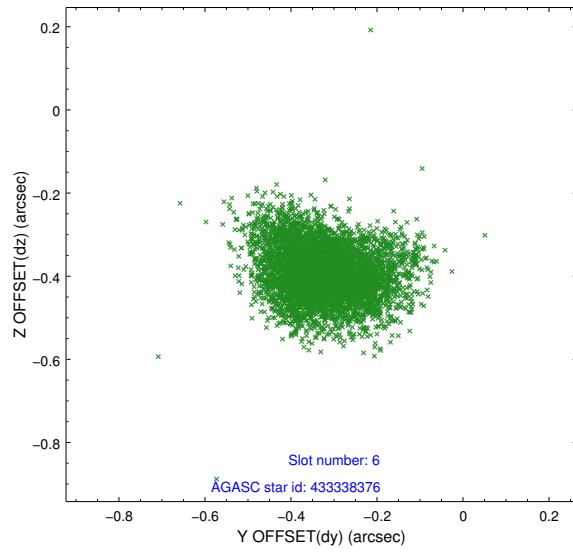
2.4.2 Slot 4



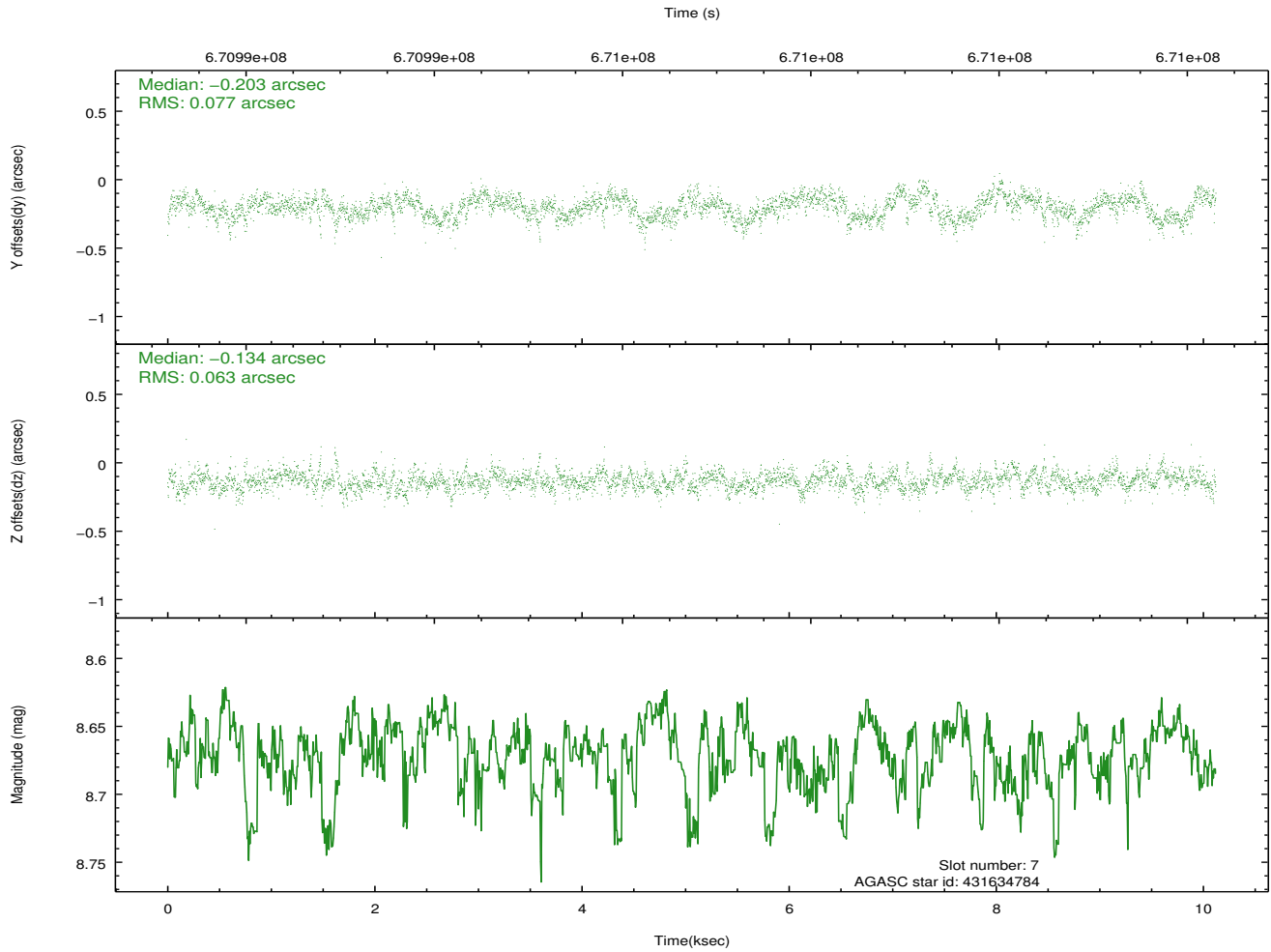
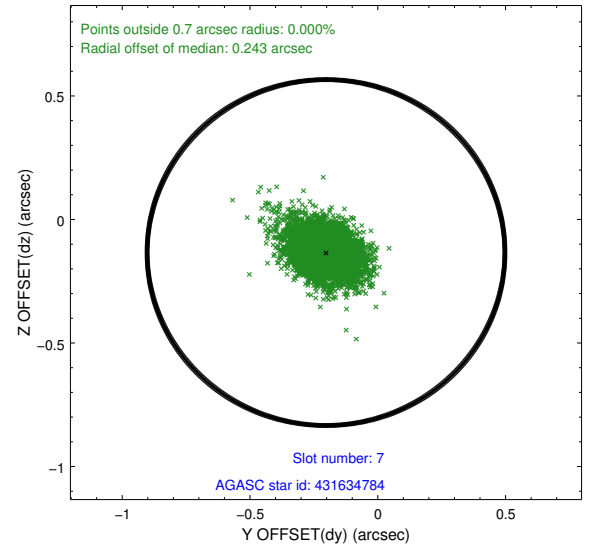
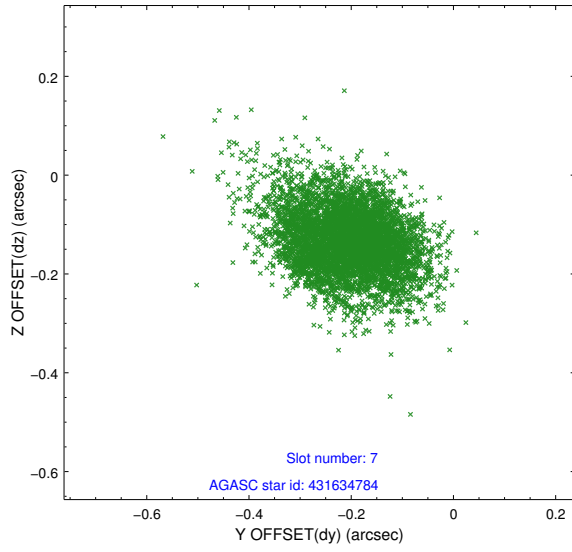
2.4.3 Slot 5



2.4.4 Slot 6

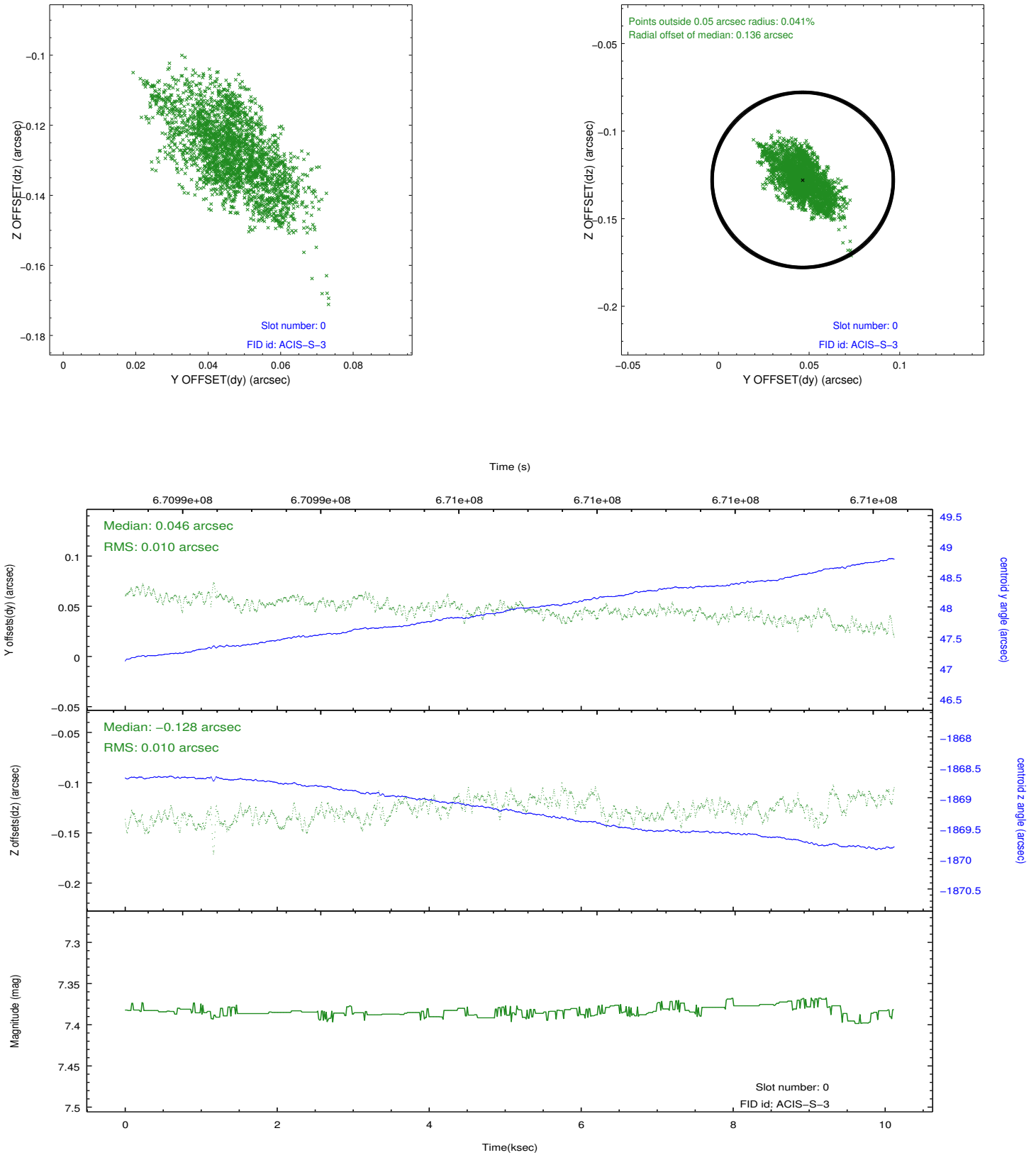


2.4.5 Slot 7

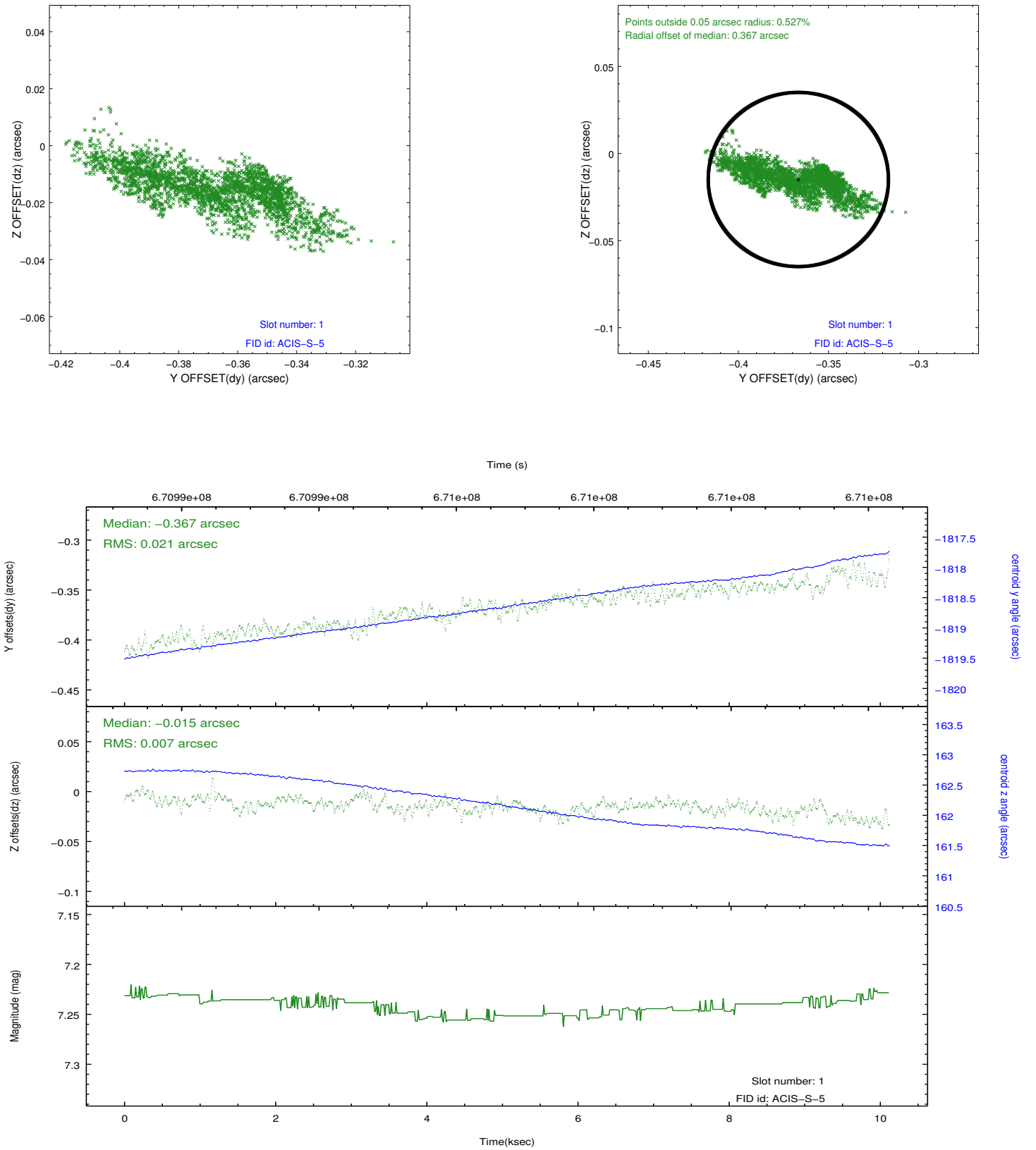


2.5 FID Slots

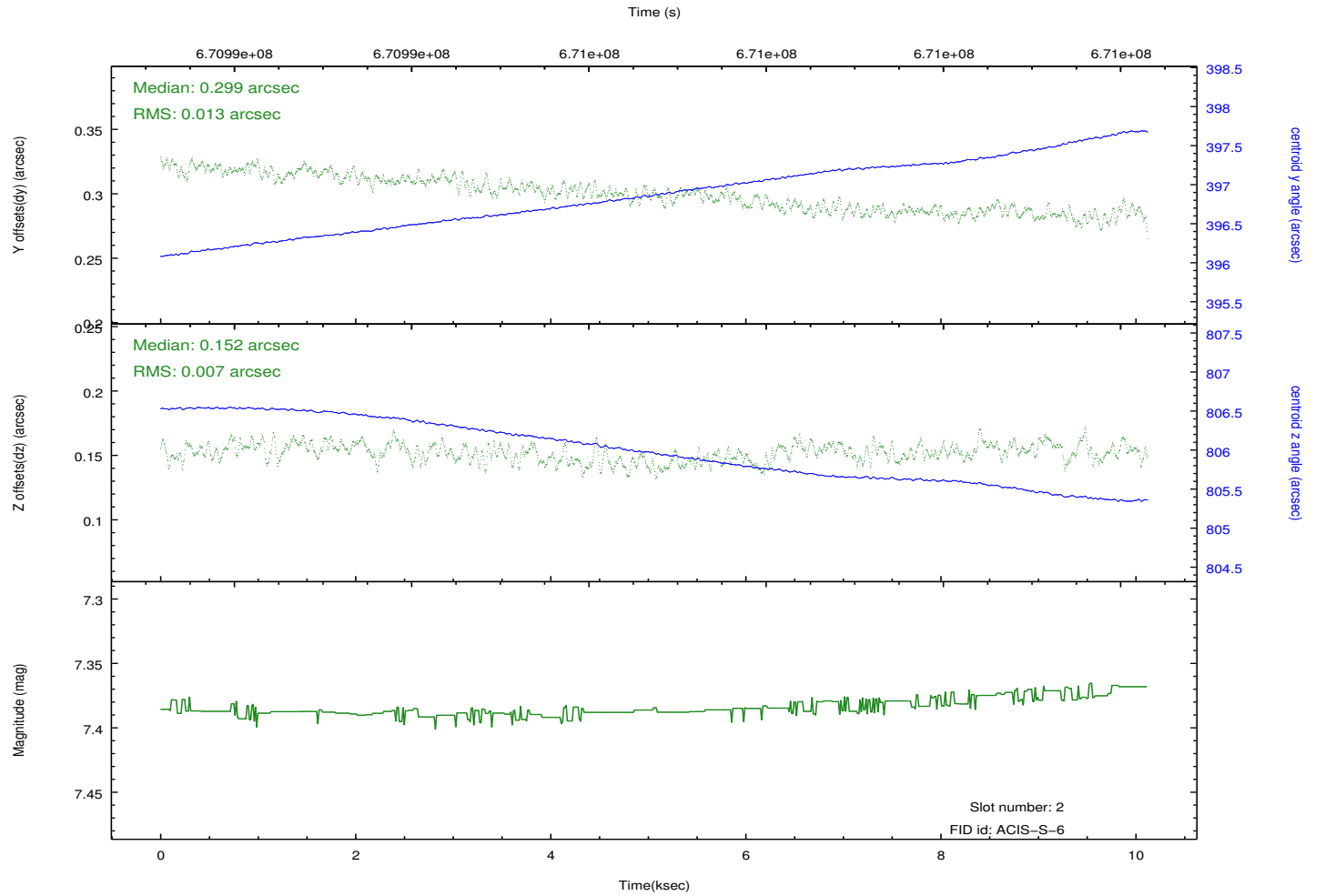
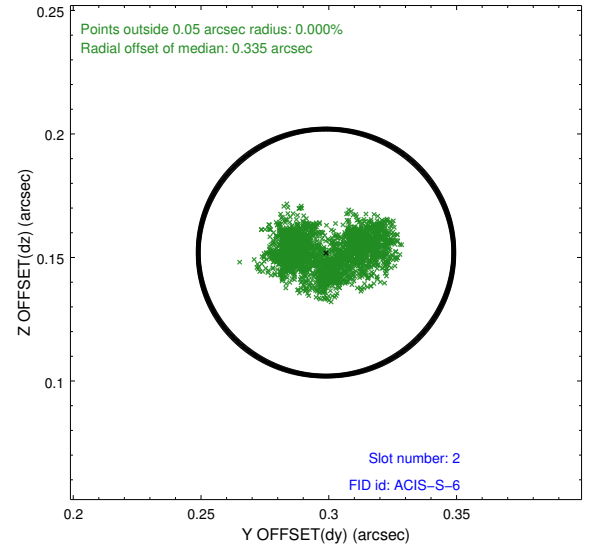
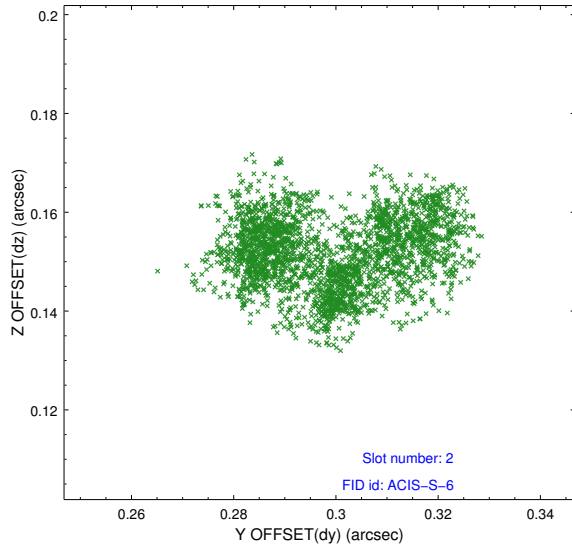
2.5.1 Slot 0



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)	2019.04.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.06079940033

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., -114.0 C for ACIS-I and -112.0 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.html

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.