

V&V Reference Report

L2 ASCDS Version : 10.6

Observation 19705 - L2 Version 2
Chandra X-Ray Center

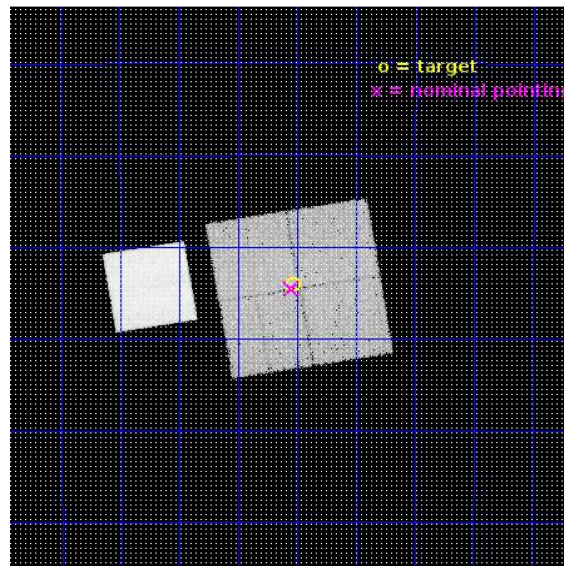
L2 Processing Date : Oct 16 2017

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1 Front

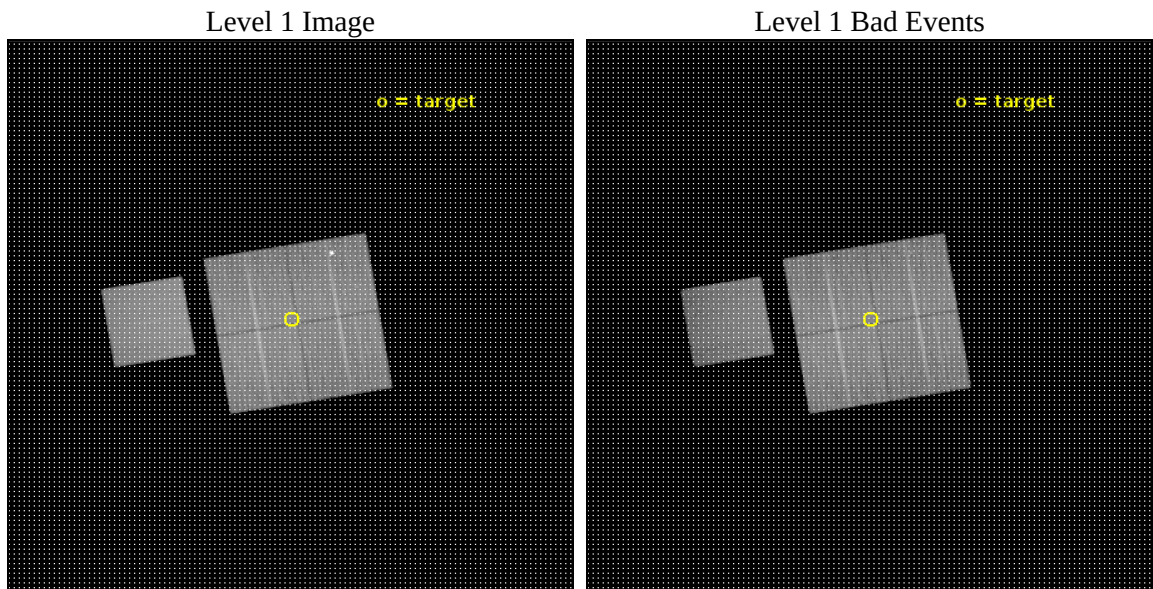
seq_num	201145	Sequence number
obs_id	19705	Observation id
title	Linking the G352 Giant Molecular Filament to NGC 6357	Proposal tit
observer	Gordon Garmire	Principal investigator
object	G352.841+0.720	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	261.13375	Observer's specified target RA [deg]
dec_targ	-34.567611	Observer's specified target Dec [deg]
ra_nom	261.13699935393	Nominal RA [deg]
dec_nom	-34.576111940452	Nominal Dec [deg]
roll_nom	260.56658813533	Nominal Roll [deg]
revision	2	Processing version of data
ontime	40055.10030818	Sum of GTIs [s]
livetime	39531.750934518	Livetime [s]
ontime0	40055.10030818	Sum of GTIs [s]
ontime1	40051.959247947	Sum of GTIs [s]
ontime2	40051.959387422	Sum of GTIs [s]
ontime3	40055.10030818	Sum of GTIs [s]
ontime7	40055.10030818	Sum of GTIs [s]
l2events	217741	Number of level 2 events



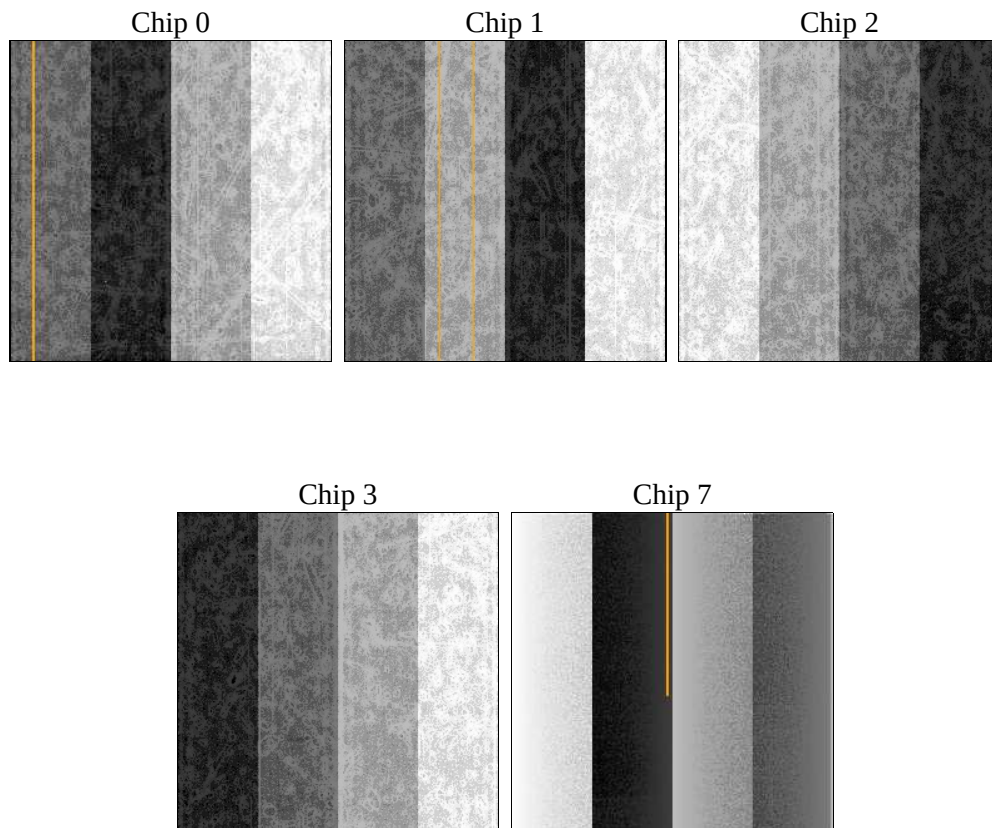
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	40000.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	40055.10030818	Sum of GTIs [s]
caldsver	4.7.6	 	ontime0	40055.10030818	Sum of GTIs [s]
date	2017-10-16T19:28:30	Date and time of file creation	ontime1	40051.959247947	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	40051.959387422	Sum of GTIs [s]
			ontime3	40055.10030818	Sum of GTIs [s]
			ontime7	40055.10030818	Sum of GTIs [s]
			l1events	1253659	Number of level 1 events

2.1.4 Events

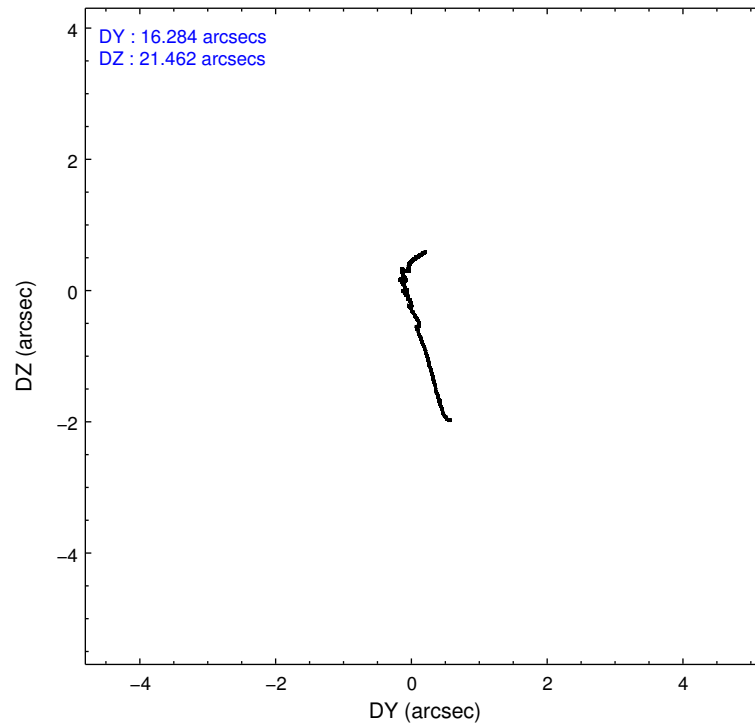
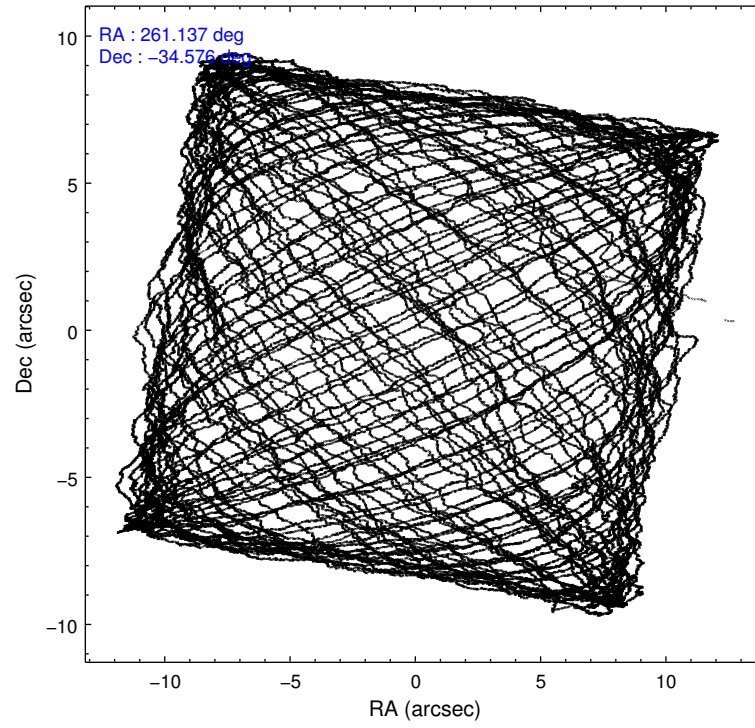
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 7
level 1 events	224654	255619	258307	239402	275677
rejected events	196906	202024	230854	212887	145560
rejected %	87%	79%	89%	88%	52%

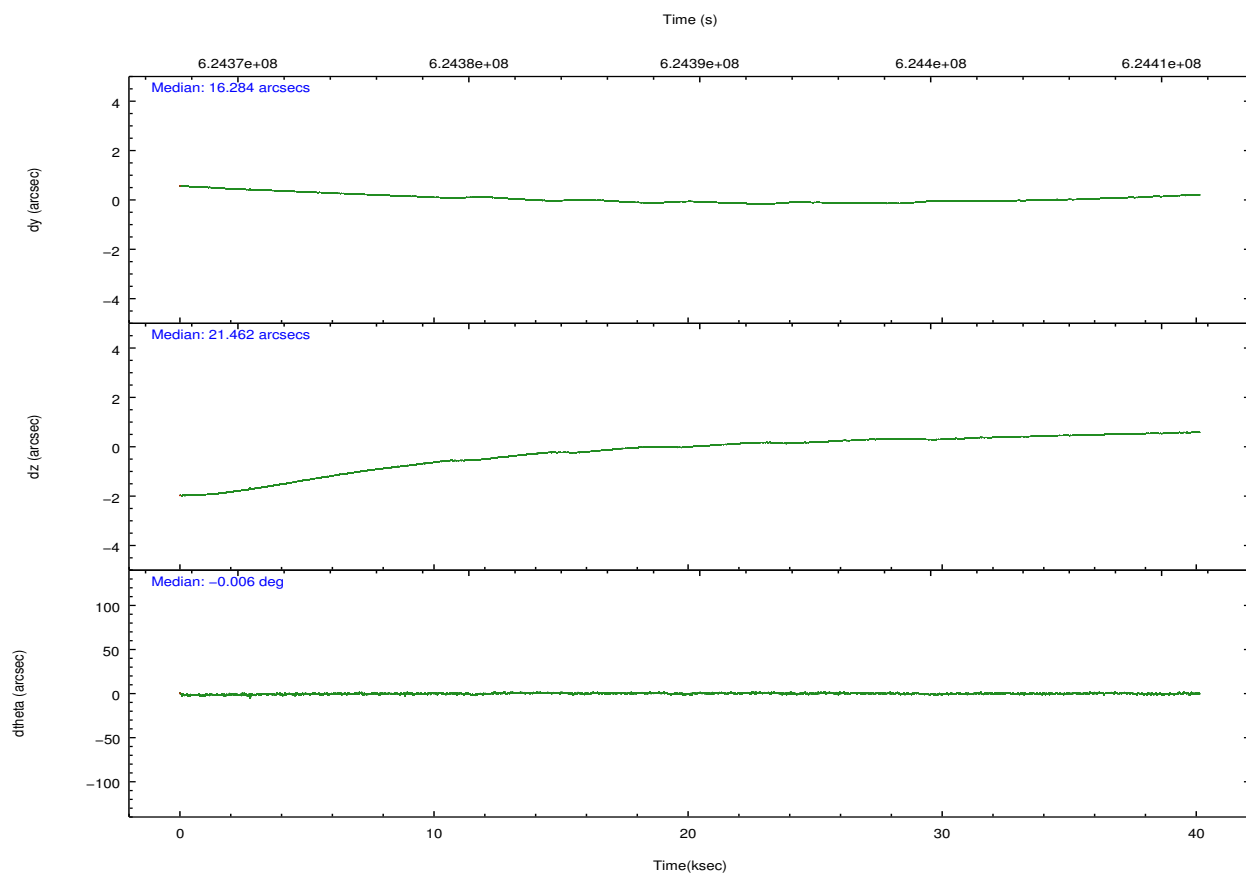
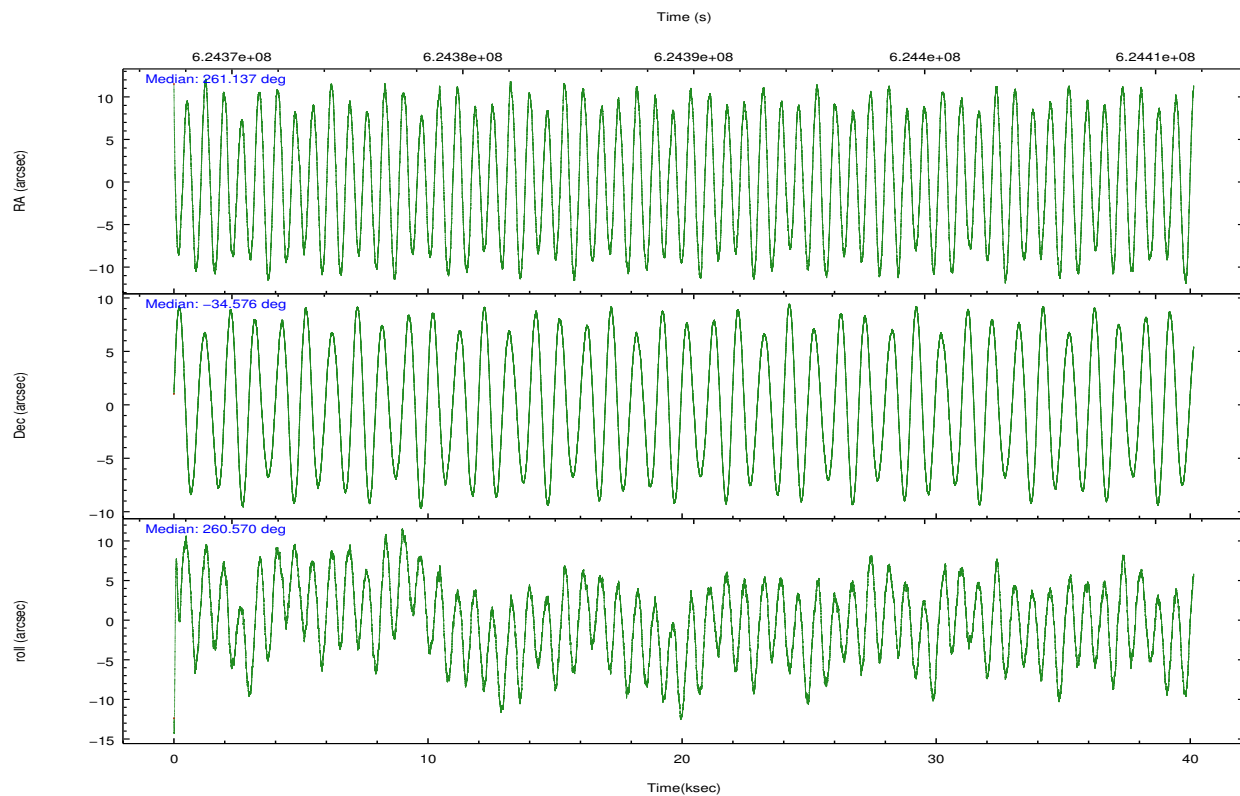
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 7
grade 0 events	10193	10174	10791	10184	12379
	4%	3%	4%	4%	4%
grade 1 events	118	162	136	162	436
	0%	0%	0%	0%	0%
grade 2 events	6949	31487	6706	5802	28558
	3%	12%	2%	2%	10%
grade 3 events	2734	2780	2531	2711	11078
	1%	1%	0%	1%	4%
grade 4 events	2571	2716	2637	2646	10878
	1%	1%	1%	1%	3%
grade 5 events	8631	9325	7985	10096	28487
	3%	3%	3%	4%	10%
grade 6 events	5306	6448	4789	5174	67234
	2%	2%	1%	2%	24%
grade 7 events	188152	192527	222732	202627	116627
	83%	75%	86%	84%	42%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-01237	ACIS-01237	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	261.125122	261.1369993539258	CCD I2 on	Y	Y
[deg] Pointing Dec	-34.550305	-34.57611194045195	CCD I3 on	Y	Y
[deg] Pointing Roll	260.351174	260.5665881353303	CCD S0 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S1 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S2 on	O1	N
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	O2	Y
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	624369615.184000	624368460.2539001	CCD S5 on	N	N
Observation start date	2017-10-14T11:59:06	2017-10-14T11:41:00	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	624409615.184000	624410705.11888	On-chip summing requested	N	N
Observation end date	2017-10-14T23:05:46	2017-10-14T23:25:05	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



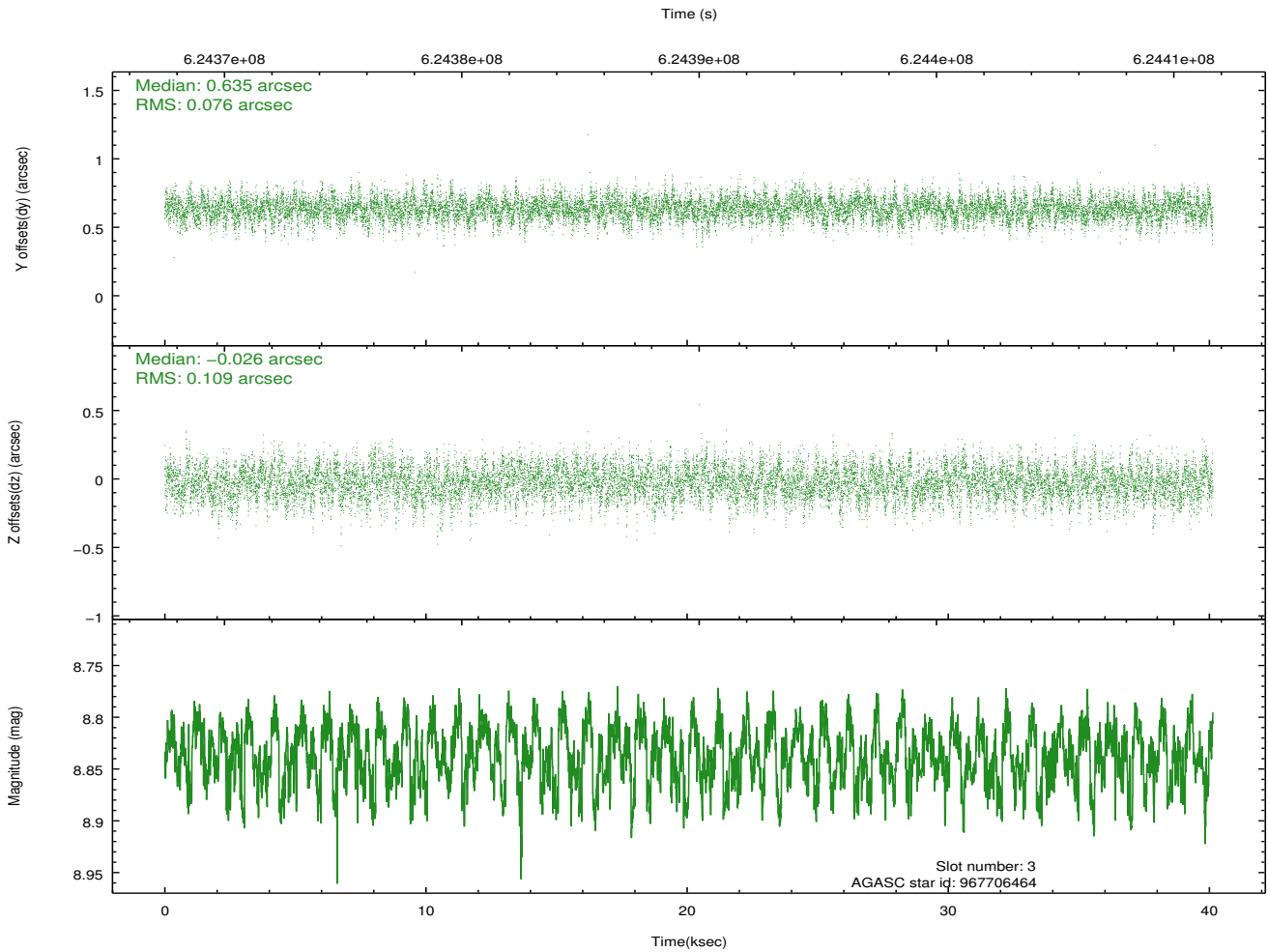
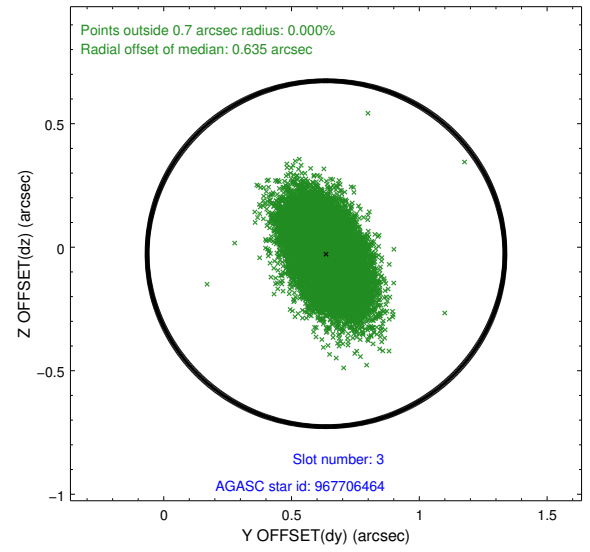
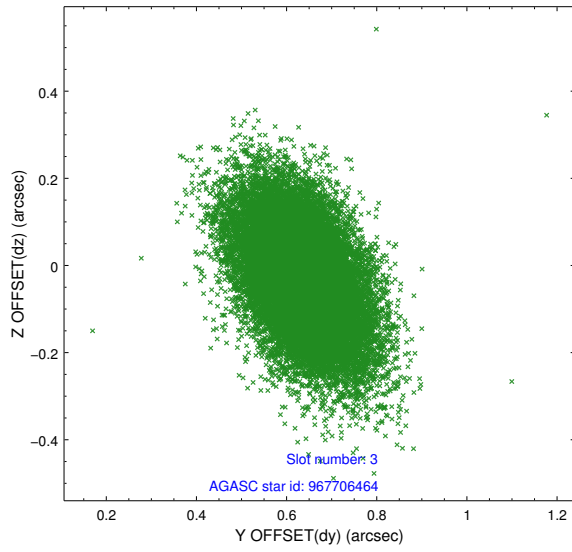


Slot Statistics

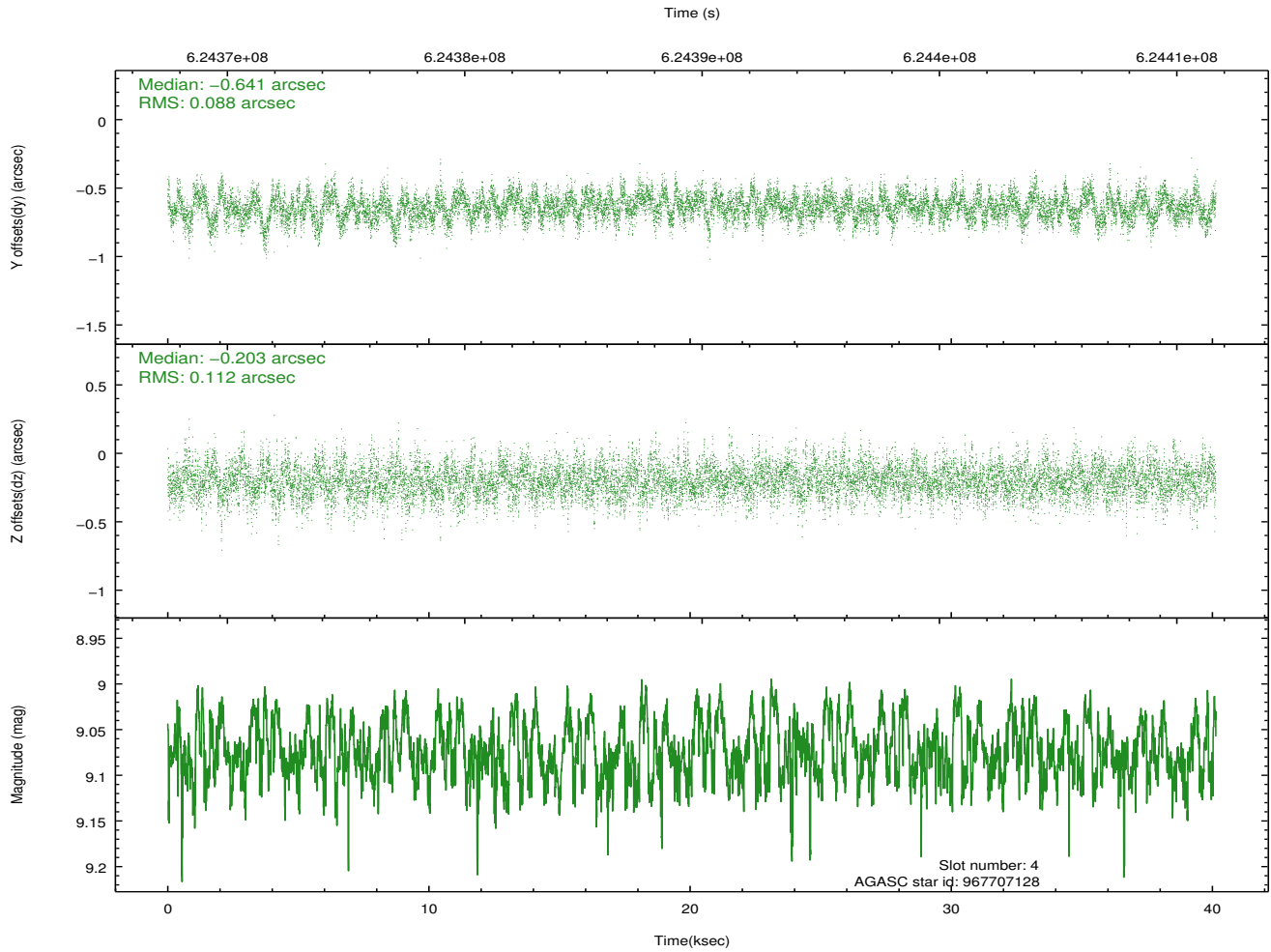
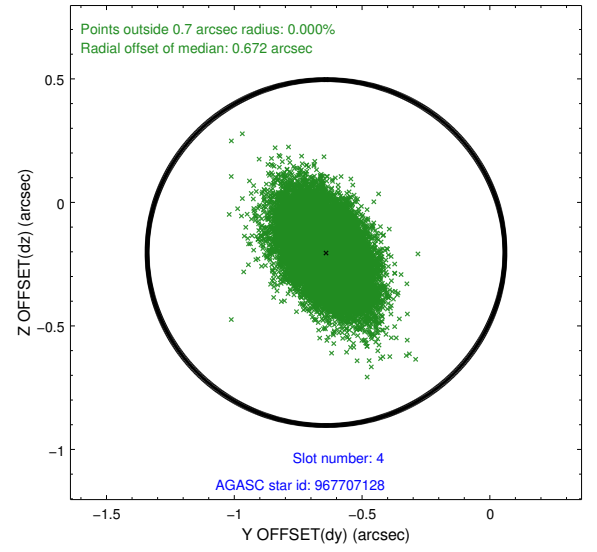
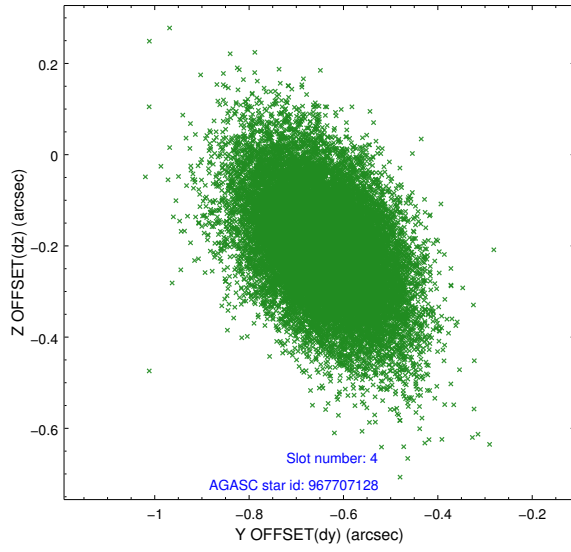
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.22	9790	-0.053	-0.111	0.018	0.048	0.000000	0.000000	923.08	-845.04
1	FID		ACIS-I-4	7.14	9790	0.406	0.127	0.024	0.078	0.000000	0.000000	2143.47	1055.08
2	FID		ACIS-I-5	7.21	9788	-0.454	0.055	0.030	0.064	0.000000	0.000000	-1825.44	1052.60
3	GUIDE	used	967706464	8.84	19569	0.635	-0.026	0.138	0.237	261.477528	-34.851379	896.95	1208.36
4	GUIDE	used	967707128	9.08	19547	-0.641	-0.203	0.147	0.255	261.767640	-34.671396	117.16	1949.81
5	GUIDE	used	967708760	7.40	19578	-0.126	-0.096	0.128	0.233	261.328301	-34.249213	-1168.91	414.82
6	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
7	GUIDE	used	967705680	8.71	19561	0.128	0.327	0.127	0.224	261.132669	-33.999088	-1959.64	-309.84

2.4 Star Slots

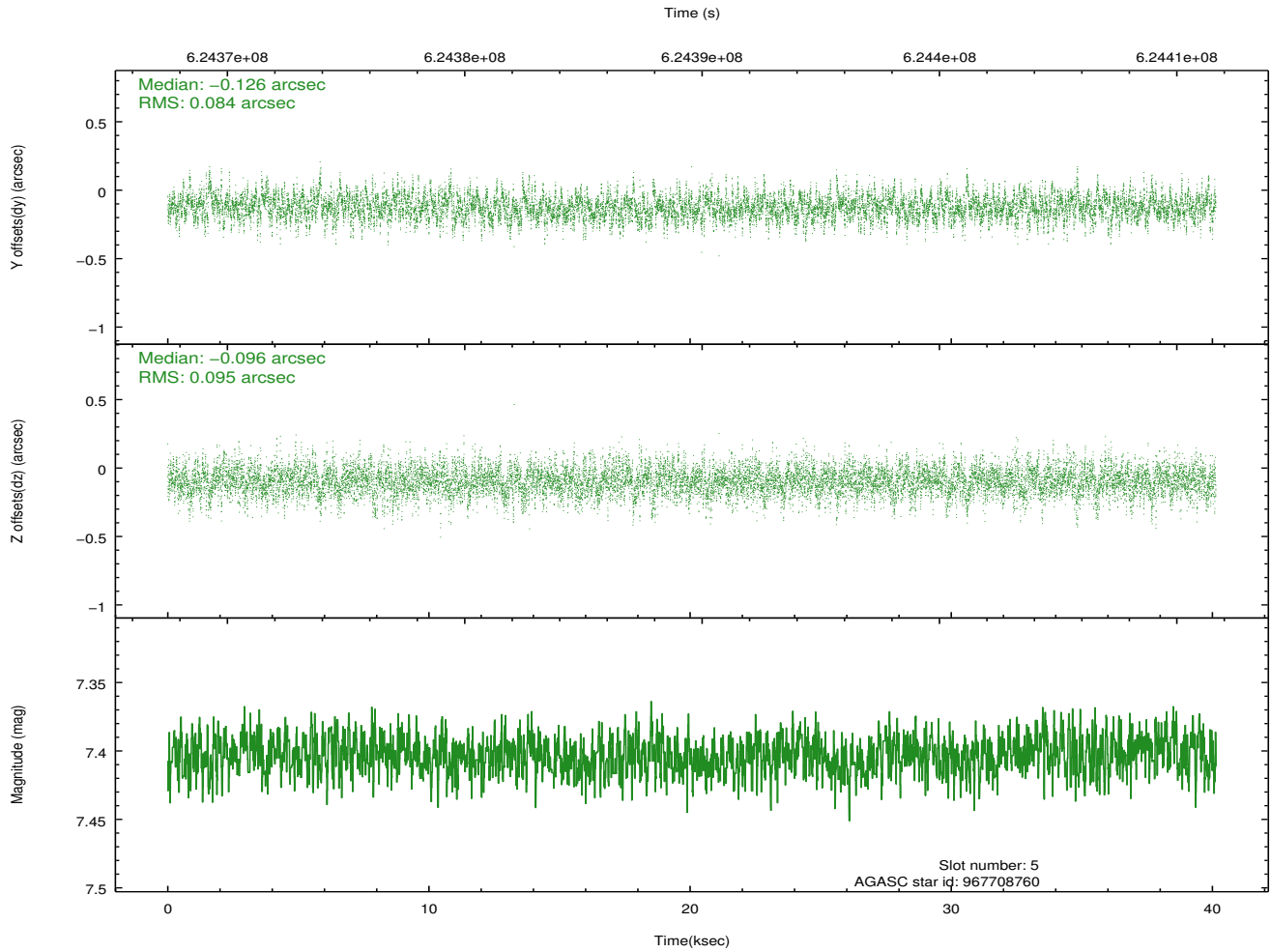
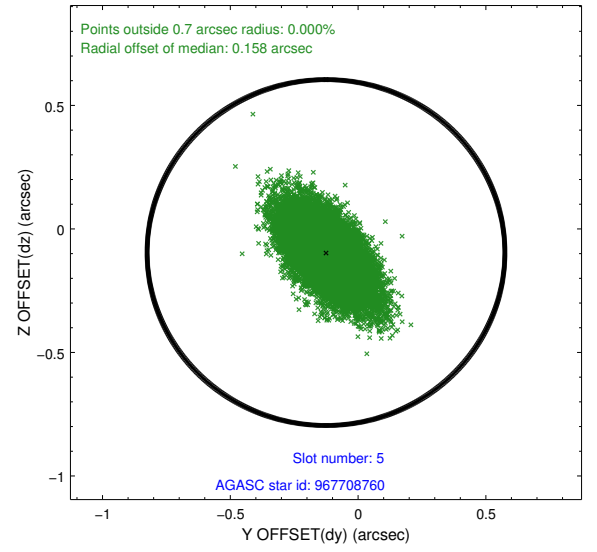
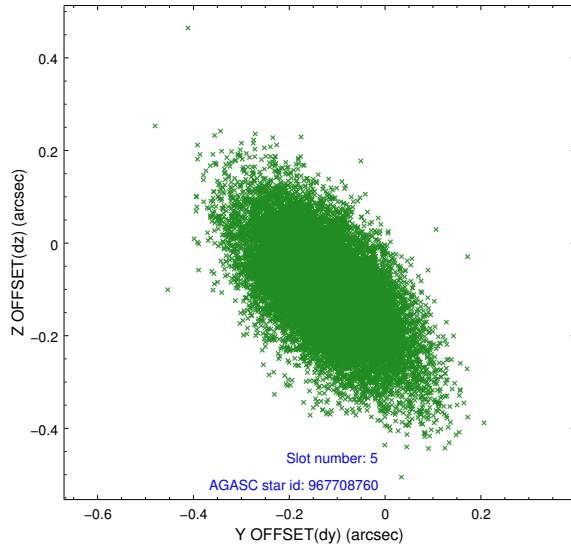
2.4.1 Slot 3



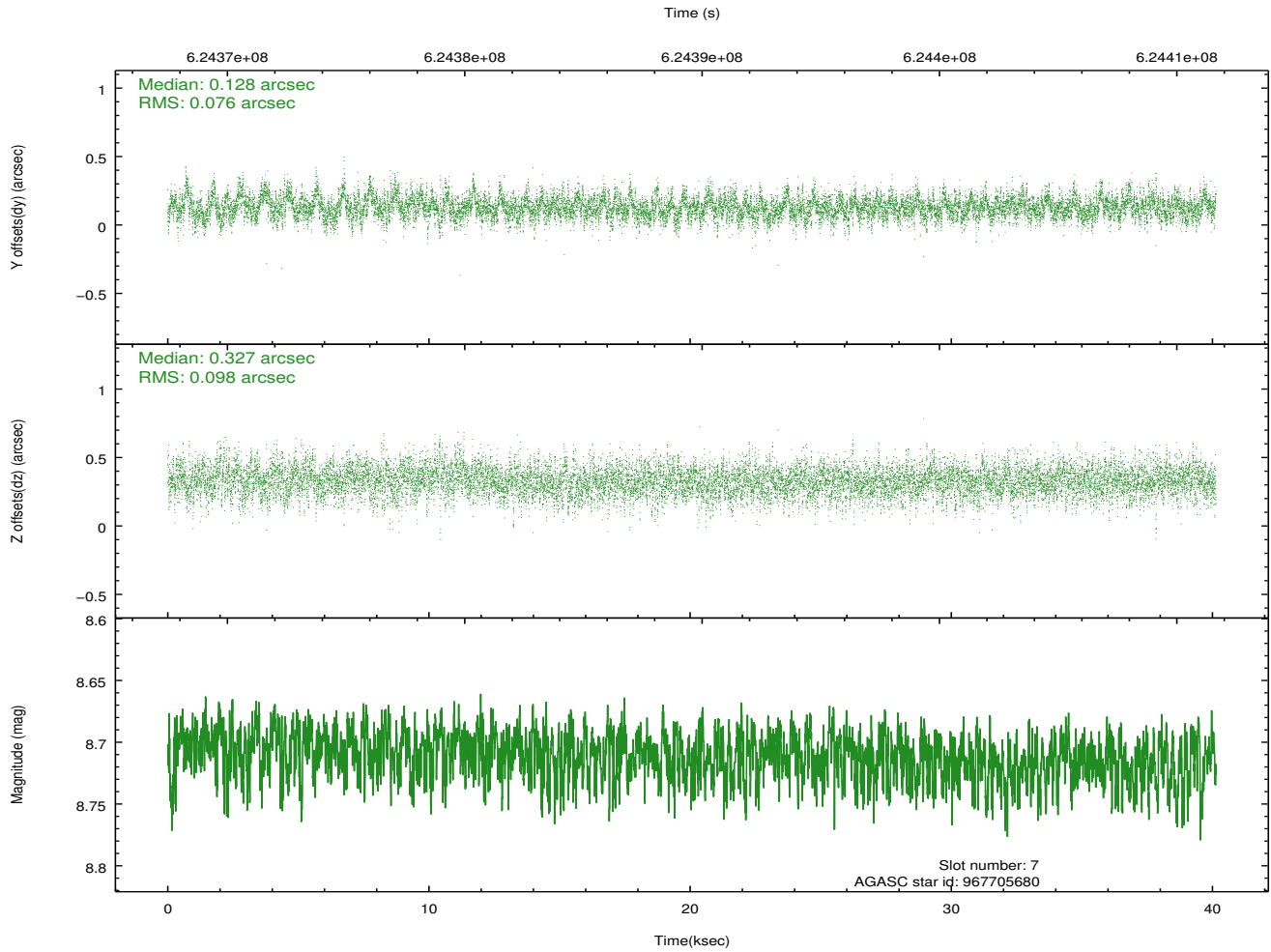
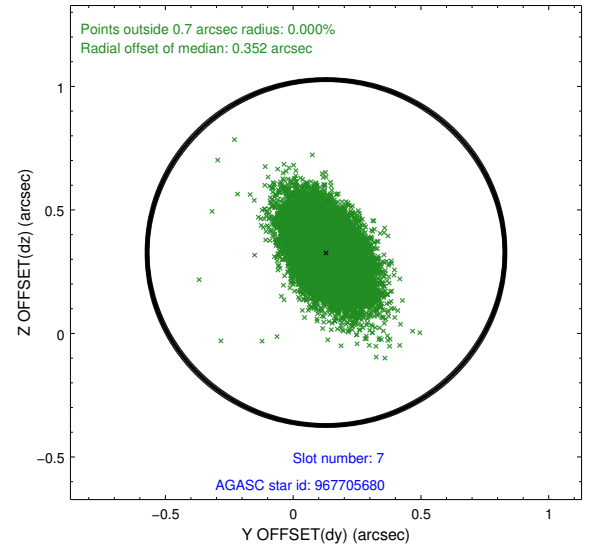
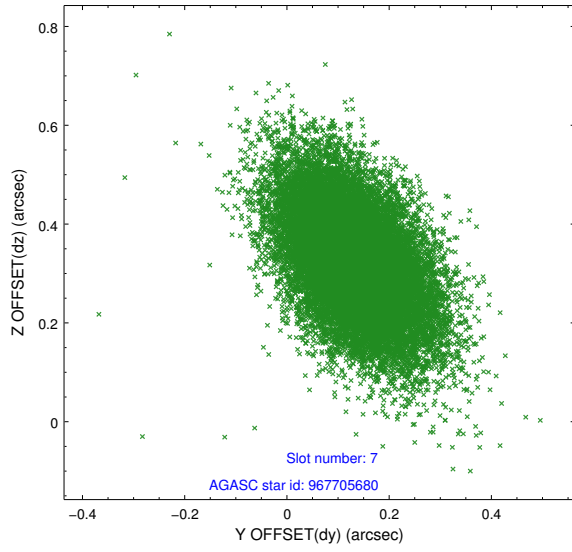
2.4.2 Slot 4



2.4.3 Slot 5

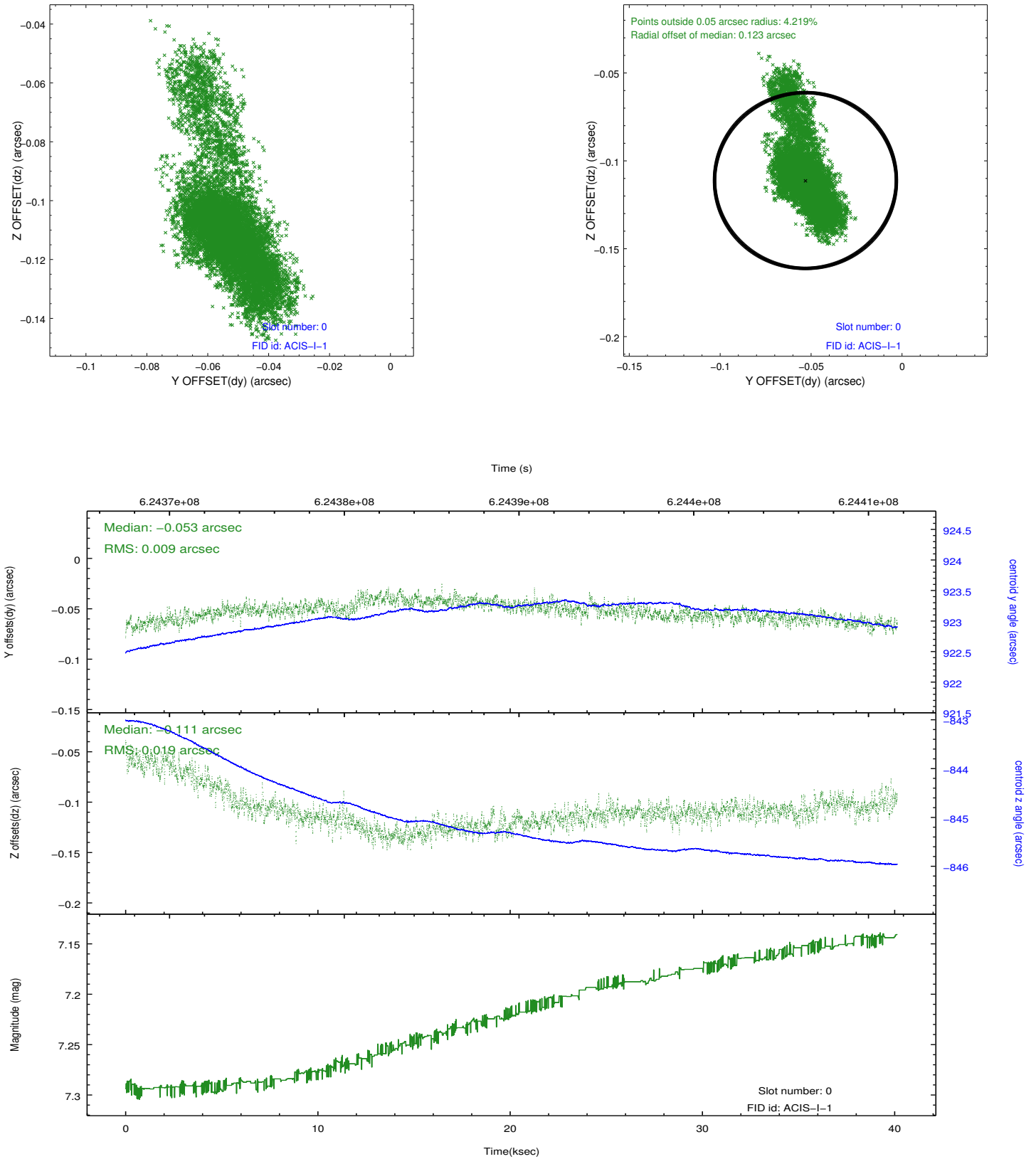


2.4.4 Slot 7

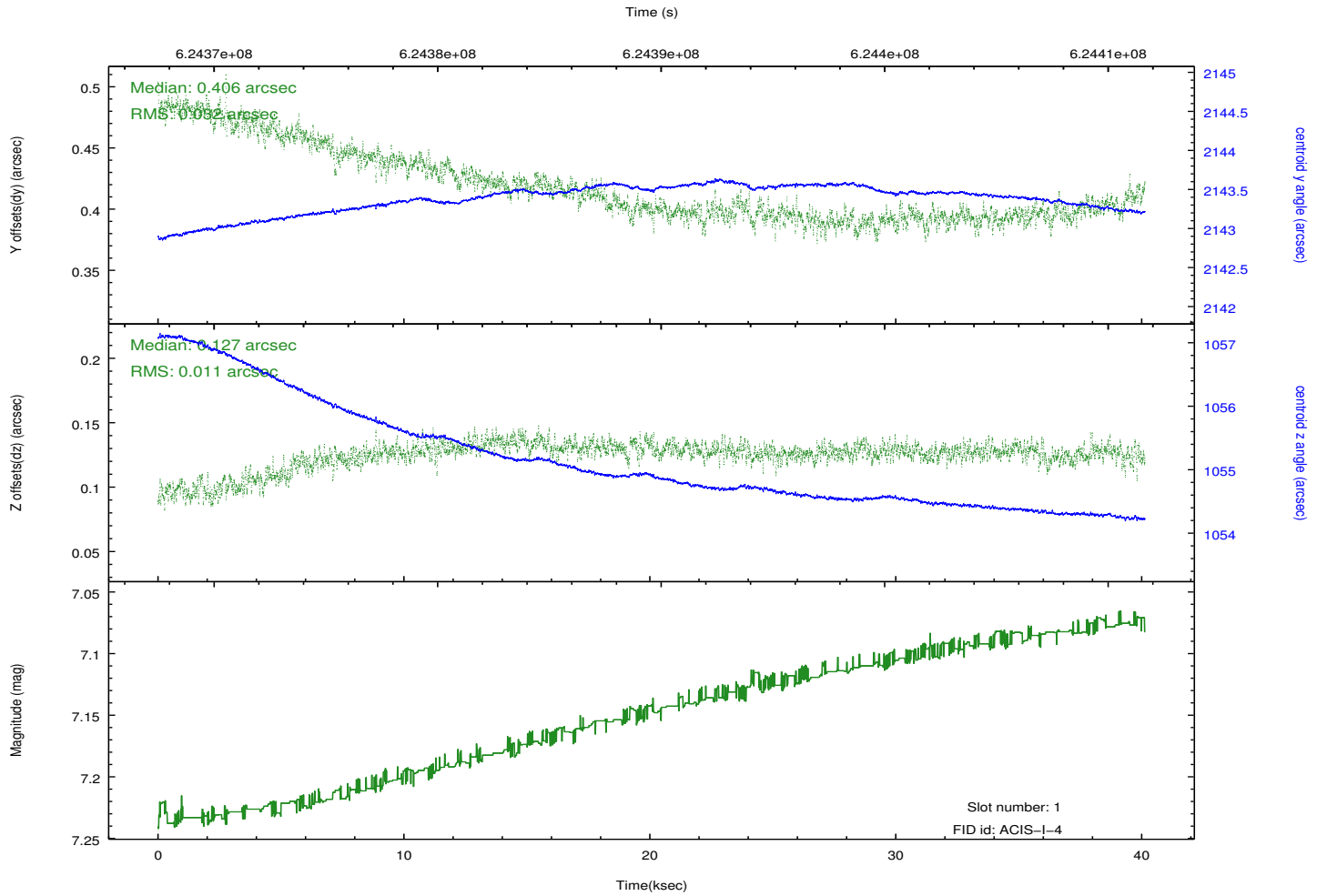
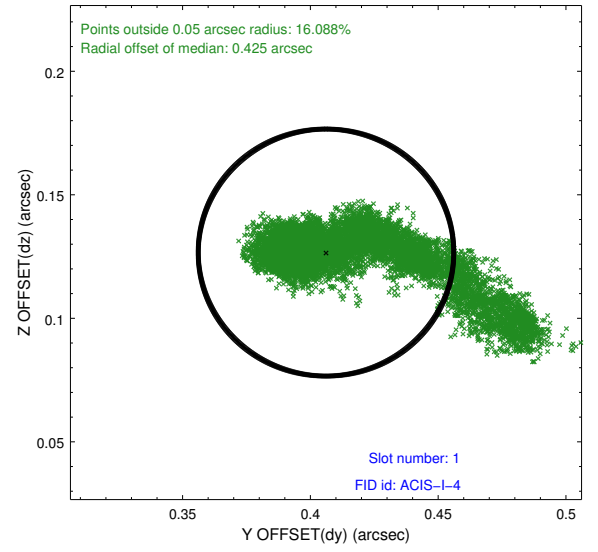
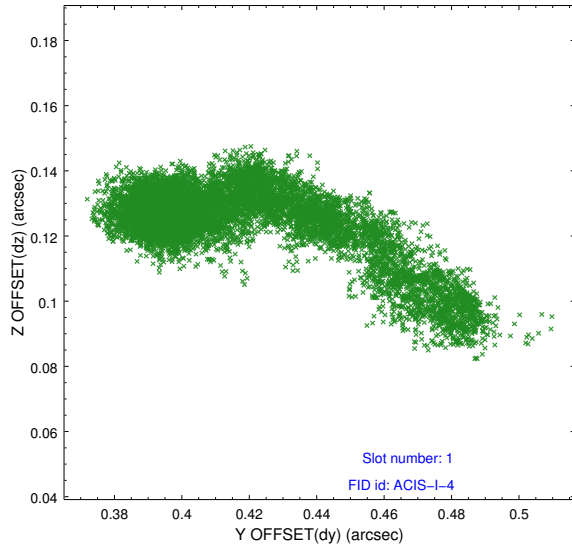


2.5 FID Slots

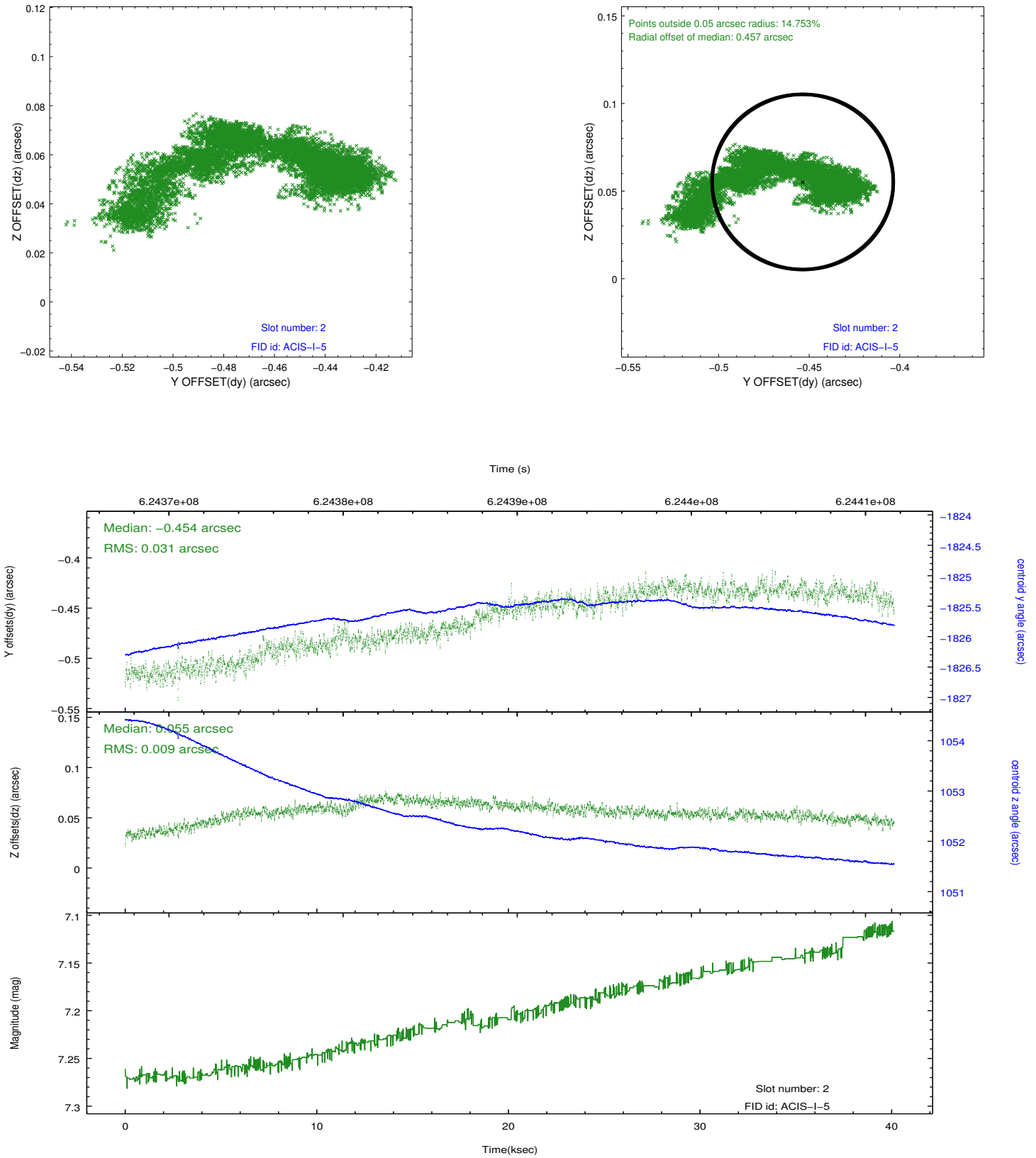
2.5.1 Slot 0



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)	2018.03.07
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	40.05510030818

A.2 Comments

The guide star in slot 6 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this slot from the solution.

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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.

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Optional chip S2 not included.