

V&V Reference Report

L2 ASCDS Version : 8.4.3

Observation 14052 - L2 Version 2
Chandra X-Ray Center

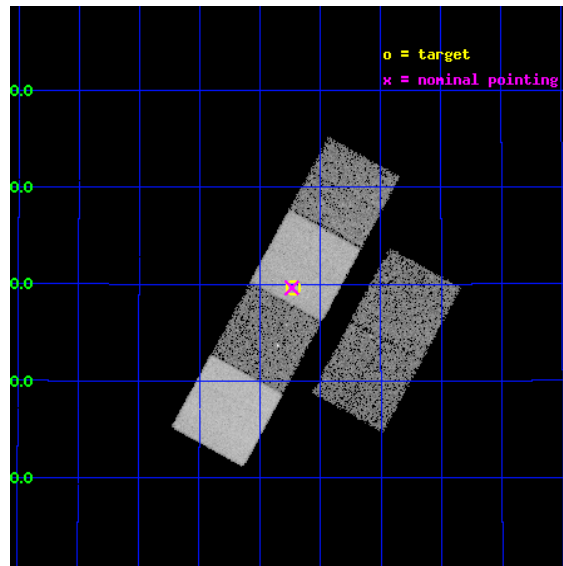
L2 Processing Date : Feb 29 2012

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1 Front

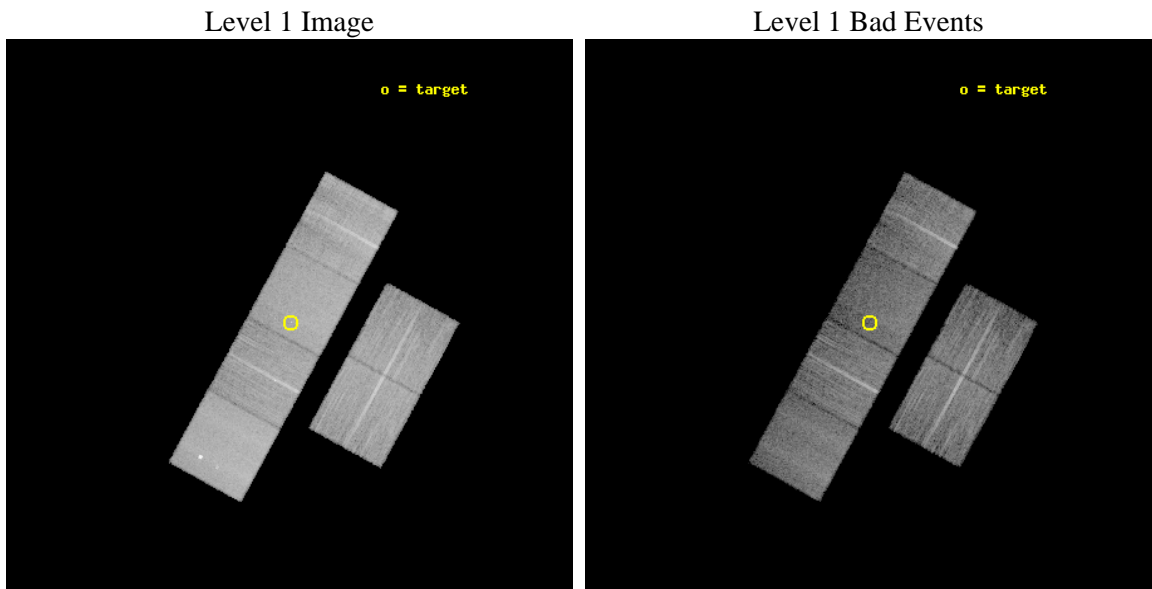
seq_num	901018	Sequence number
obs_id	14052	Observation id
title	The demographics of dark gamma-ray bursts	Proposal title
observer	Dr Andrew Levan	Principal investigator
object	GRB111215A	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	349.555375	Observer's specified target RA [deg]
dec_targ	32.494	Observer's specified target Dec [deg]
ra_nom	349.55892839938	Nominal RA [deg]
dec_nom	32.493770606248	Nominal Dec [deg]
roll_nom	298.65479631413	Nominal Roll [deg]
revision	2	Processing version of data
ontime	14956.799944341	Sum of GTIs [s]
livetime	14767.407937542	Livetime [s]
ontime2	14956.799944341	Sum of GTIs [s]
ontime3	14956.799944341	Sum of GTIs [s]
ontime5	14956.799944341	Sum of GTIs [s]
ontime6	14956.799944341	Sum of GTIs [s]
ontime7	14956.799944341	Sum of GTIs [s]
ontime8	14956.799944341	Sum of GTIs [s]
l2events	155581	Number of level 2 events



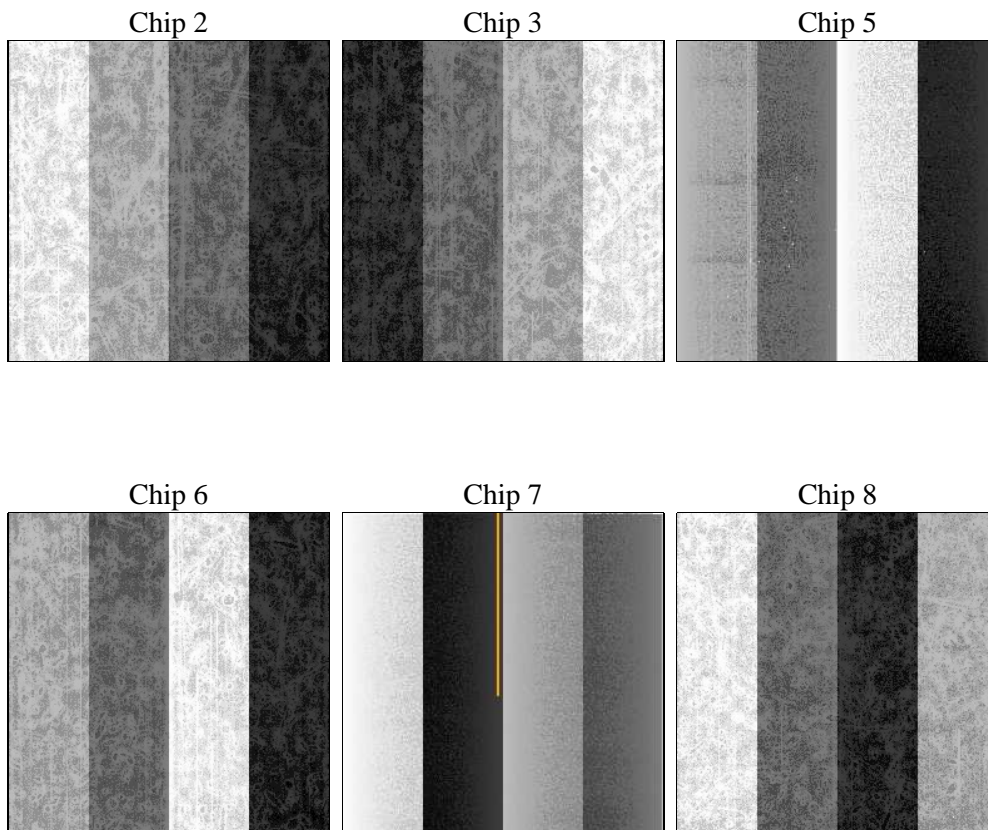
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	15000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	14956.799944341	Sum of GTIs [s]
caldbver	4.4.8	 	ontime2	14956.799944341	Sum of GTIs [s]
date	2012-02-29T12:54:48	Date and time of file creation	ontime3	14956.799944341	Sum of GTIs [s]
revision	2	Processing version of data	ontime5	14956.799944341	Sum of GTIs [s]
			ontime6	14956.799944341	Sum of GTIs [s]
			ontime7	14956.799944341	Sum of GTIs [s]
			ontime8	14956.799944341	Sum of GTIs [s]
			l1events	692795	Number of level 1 events

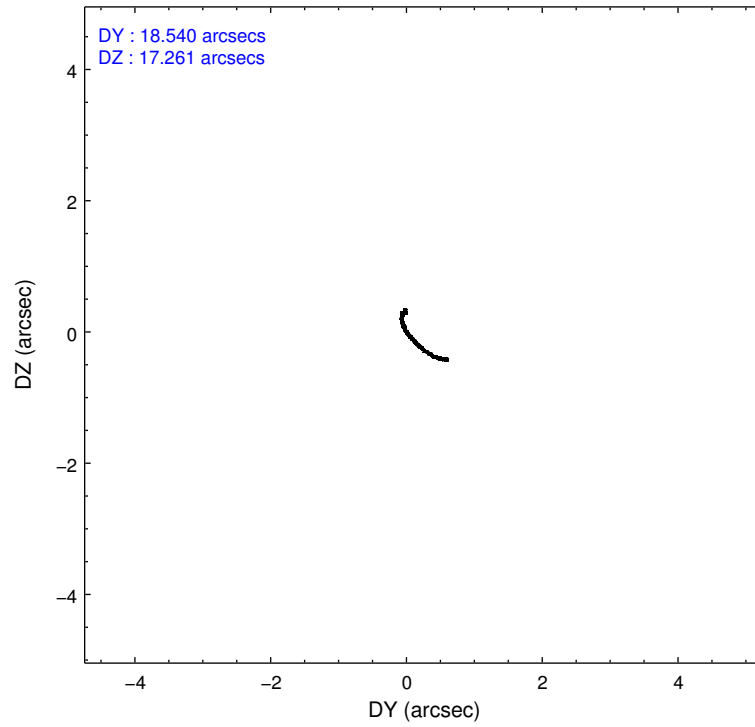
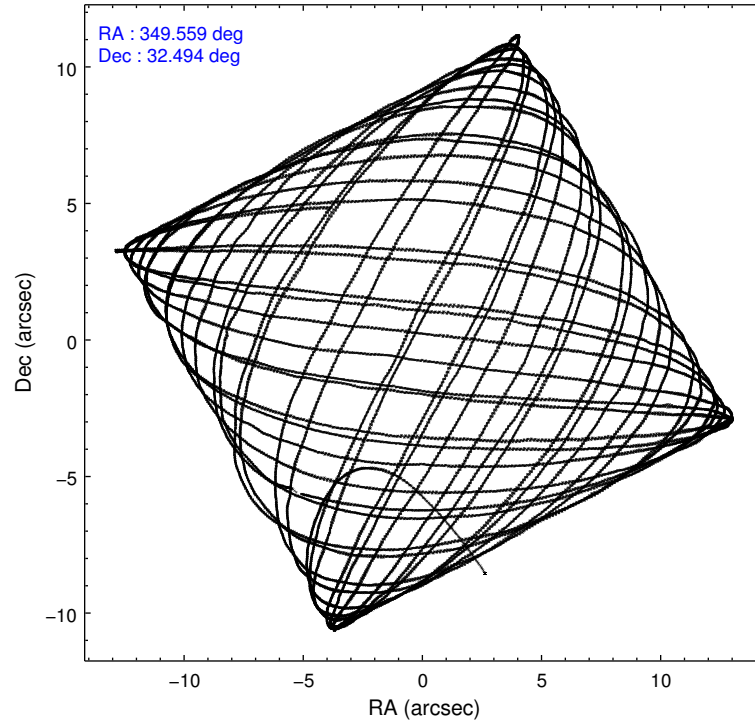
2.1.4 Events

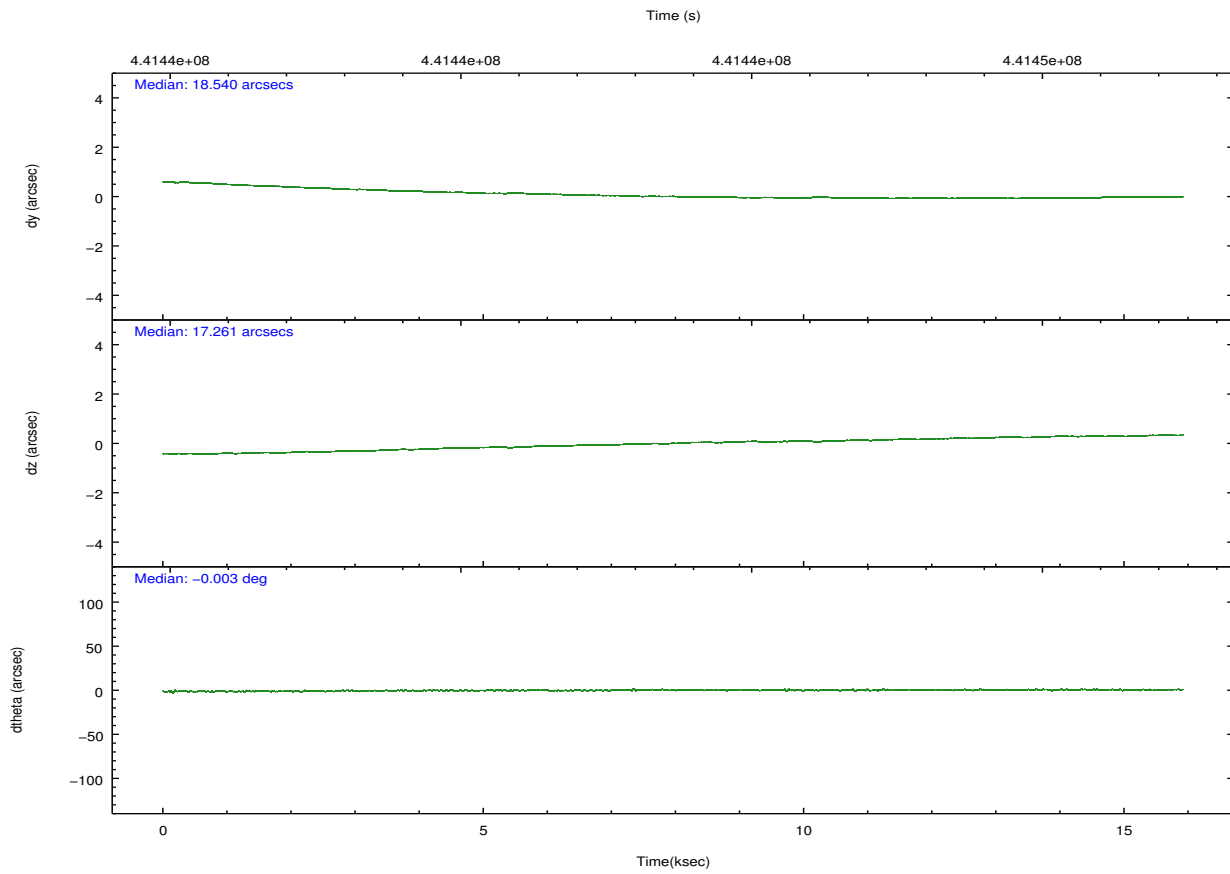
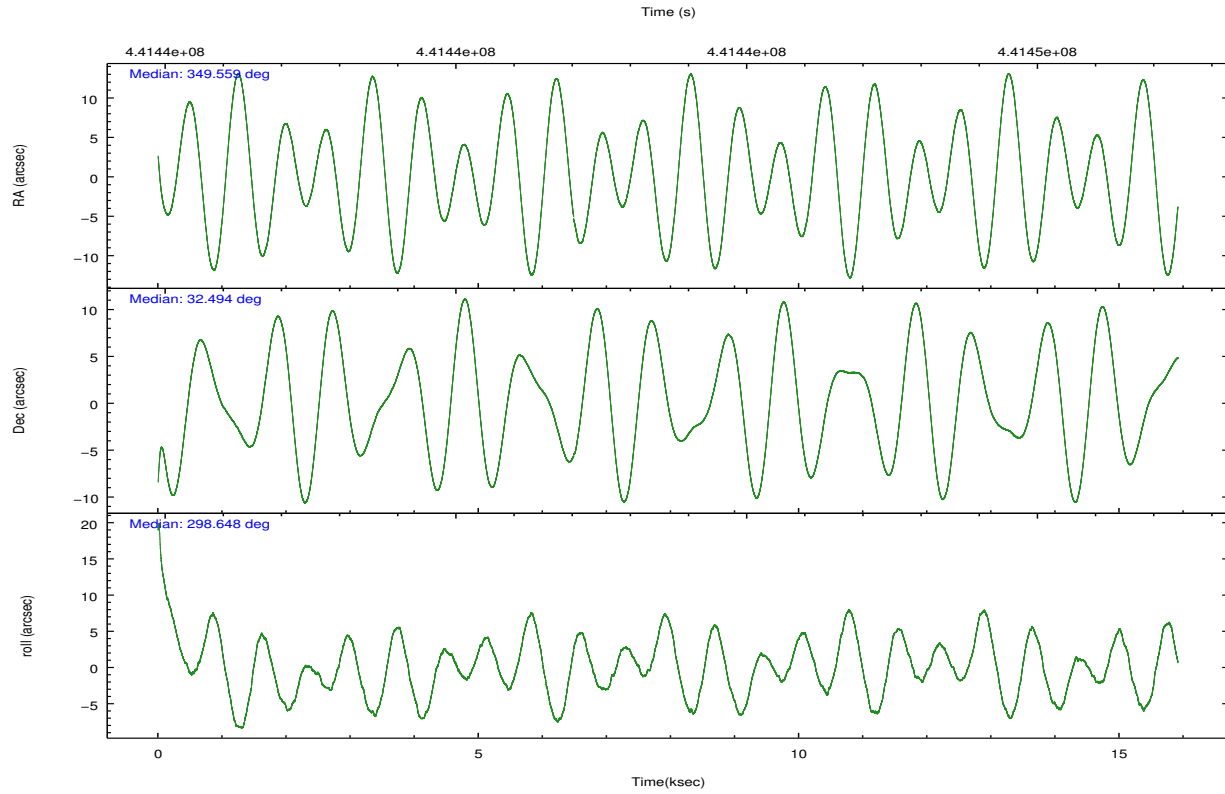
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	106079	93319	149912	99302	120109	124074	grade 0 events	3558	3481	4631	3518	4477	8891
rejected events	96009	83561	78078	88364	68008	93414		3%	3%	3%	3%	3%	7%
rejected %	90%	89%	52%	88%	56%	75%	grade 1 events	48	54	283	45	147	77
								0%	0%	0%	0%	0%	0%
							grade 2 events	2458	2038	20611	2742	10616	7370
								2%	2%	13%	2%	8%	5%
							grade 3 events	1009	1137	3250	1021	4280	3016
								0%	1%	2%	1%	3%	2%
							grade 4 events	1044	1034	3491	972	4085	2926
								0%	1%	2%	0%	3%	2%
							grade 5 events	3657	4240	10014	4206	11899	6145
								3%	4%	6%	4%	9%	4%
							grade 6 events	2003	2071	39864	2687	28664	8464
								1%	2%	26%	2%	23%	6%
							grade 7 events	92302	79264	67768	84111	55941	87185
								87%	84%	45%	84%	46%	70%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-235678	ACIS-235678	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	349.531036	349.5589283993834	CCD I2 on	O1	Y
[deg] Pointing Dec	32.507703	32.49377060624811	CCD I3 on	O2	Y
[deg] Pointing Roll	298.513144	298.6547963141304	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[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)	441436600.184000	441434841.01597	CCD S5 on	N	N
Observation start date	2011-12-28T05:15:34	2011-12-28T04:47:21	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	441451600.184000	441453058.85444	On-chip summing requested	N	N
Observation end date	2011-12-28T09:25:34	2011-12-28T09:50:58	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

2.3 Aspect



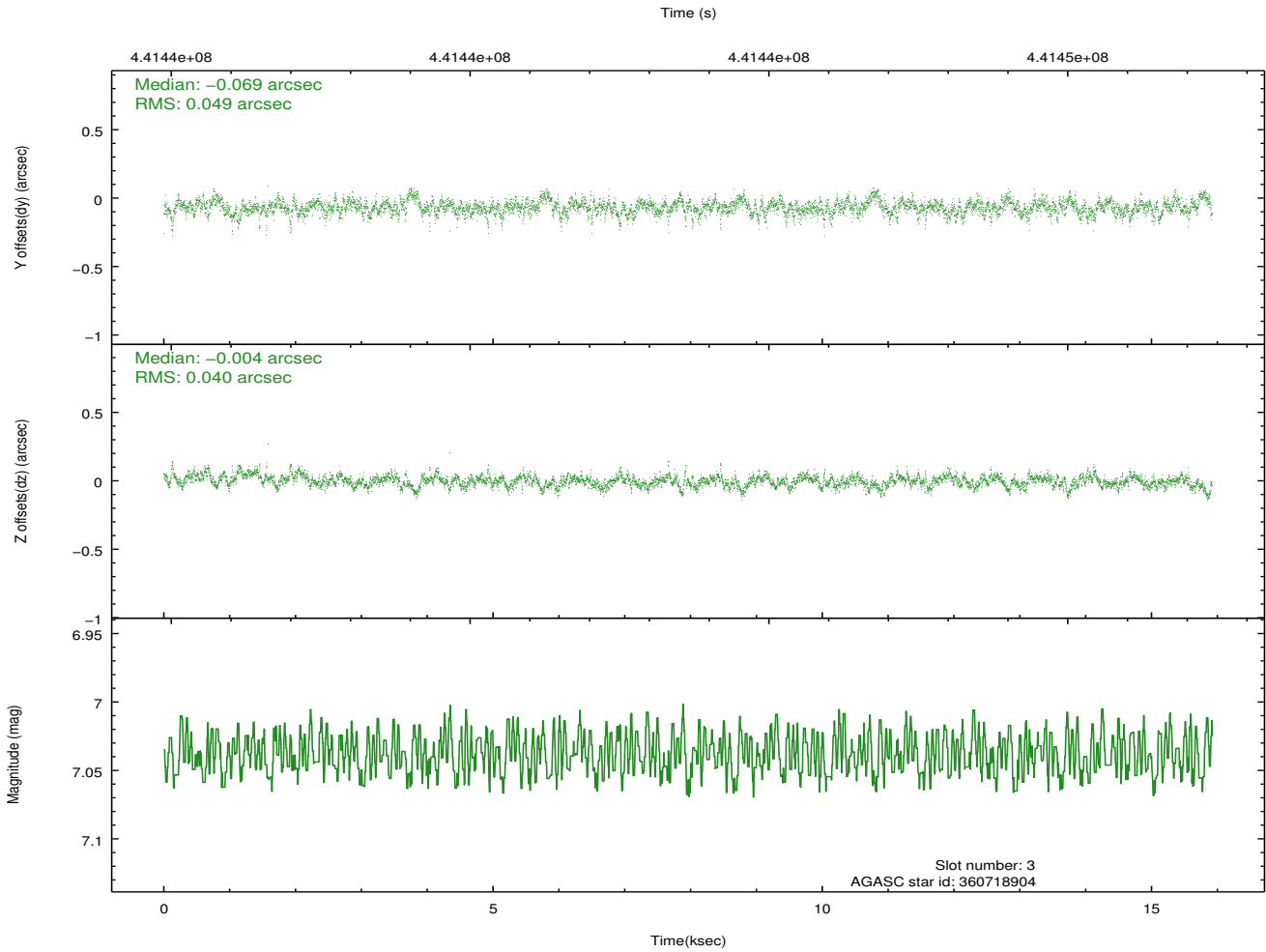
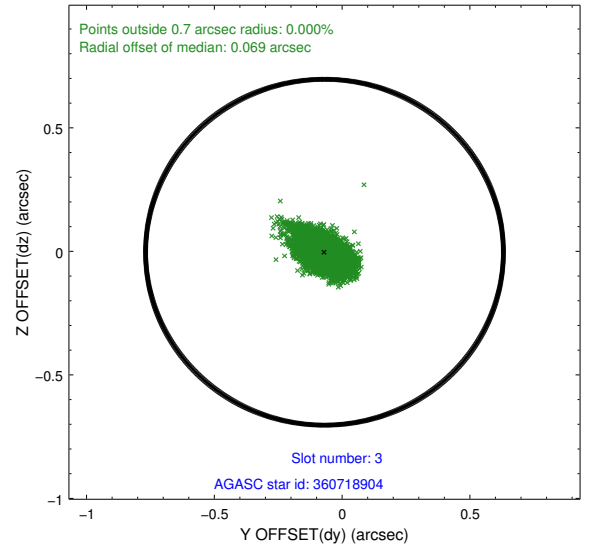
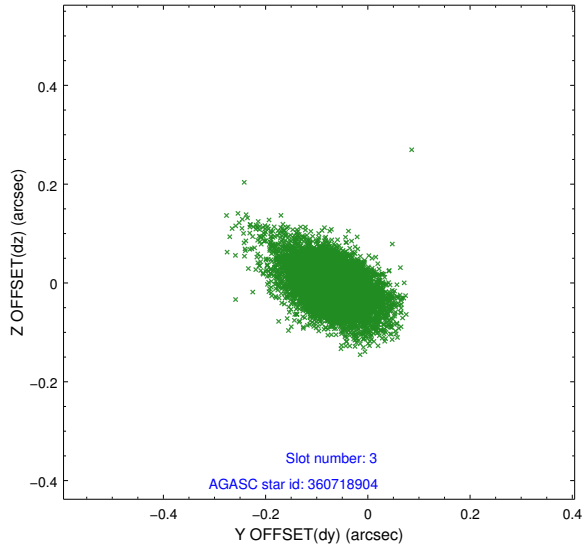


Slot Statistics

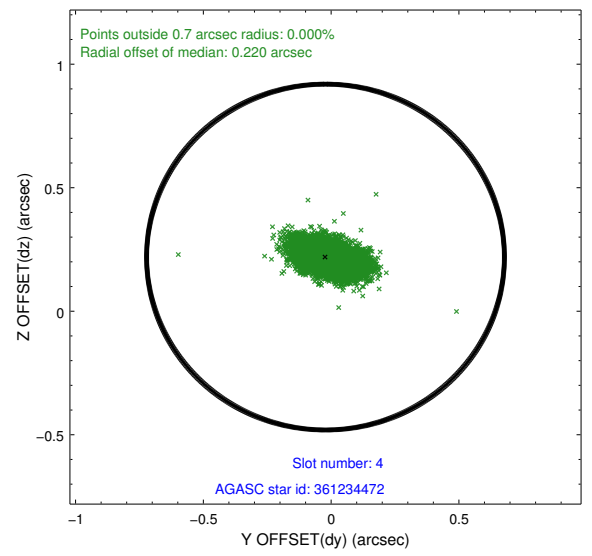
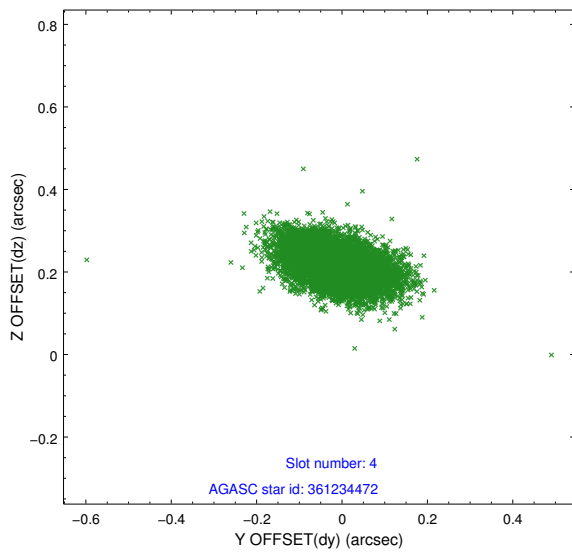
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.04	3882	-0.105	-0.063	0.011	0.026	0.000000	0.000000	-771.86	-1738.71
1	FID	ACIS-S-4	7.12	3882	0.295	0.068	0.009	0.015	0.000000	0.000000	2141.74	169.54
2	FID	ACIS-S-5	7.16	3882	-0.221	0.004	0.010	0.024	0.000000	0.000000	-1824.42	163.55
3	GUIDE	360718904	7.04	7765	-0.069	-0.004	0.063	0.116	349.303710	31.723735	2147.49	-1958.16
4	GUIDE	361234472	8.23	7762	-0.022	0.219	0.079	0.141	349.660249	33.051657	-1534.48	1277.55
5	GUIDE	361238456	9.46	7696	0.246	0.029	0.162	0.246	349.523603	31.902759	1903.49	-1058.27
6	GUIDE	361250800	9.18	7758	0.045	-0.172	0.095	0.154	349.883412	32.134556	1692.24	303.51
7	GUIDE	361247816	8.90	7762	-0.204	-0.066	0.118	0.185	350.243362	32.778974	164.92	2364.44

2.4 Star Slots

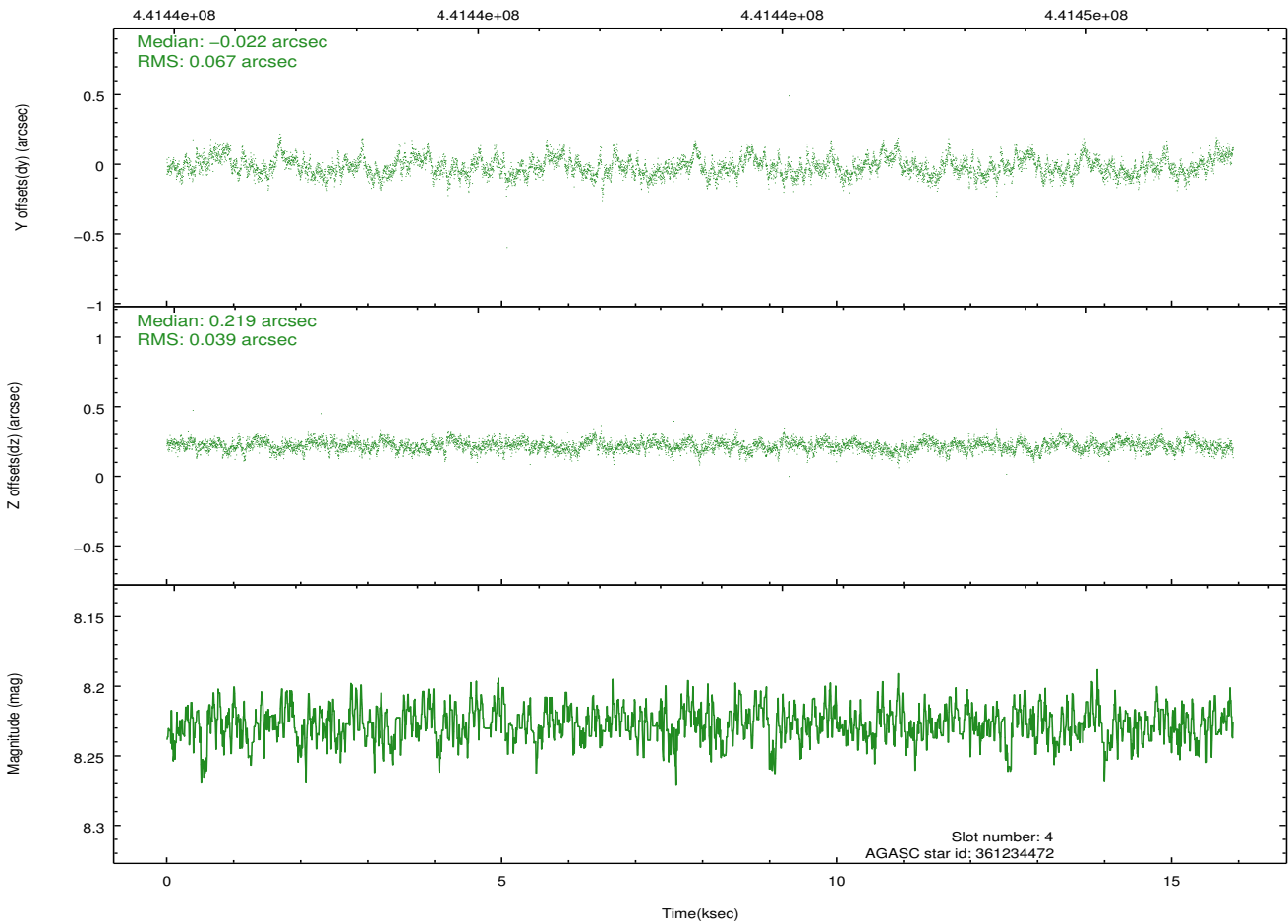
2.4.1 Slot 3



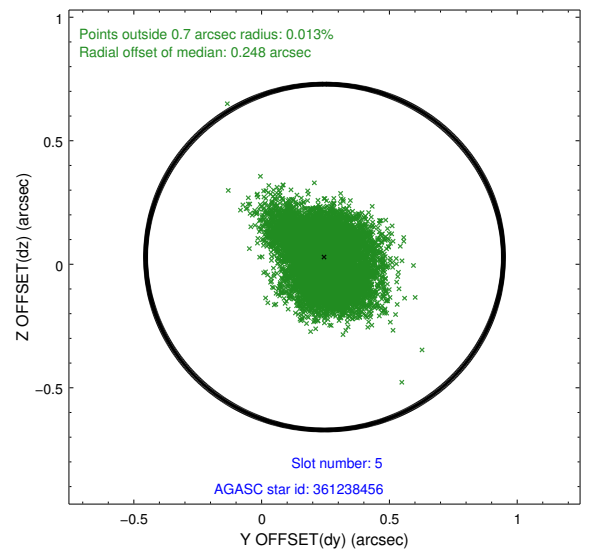
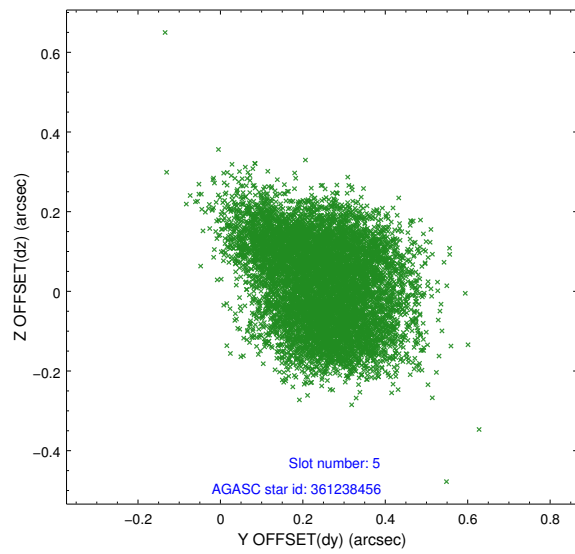
2.4.2 Slot 4



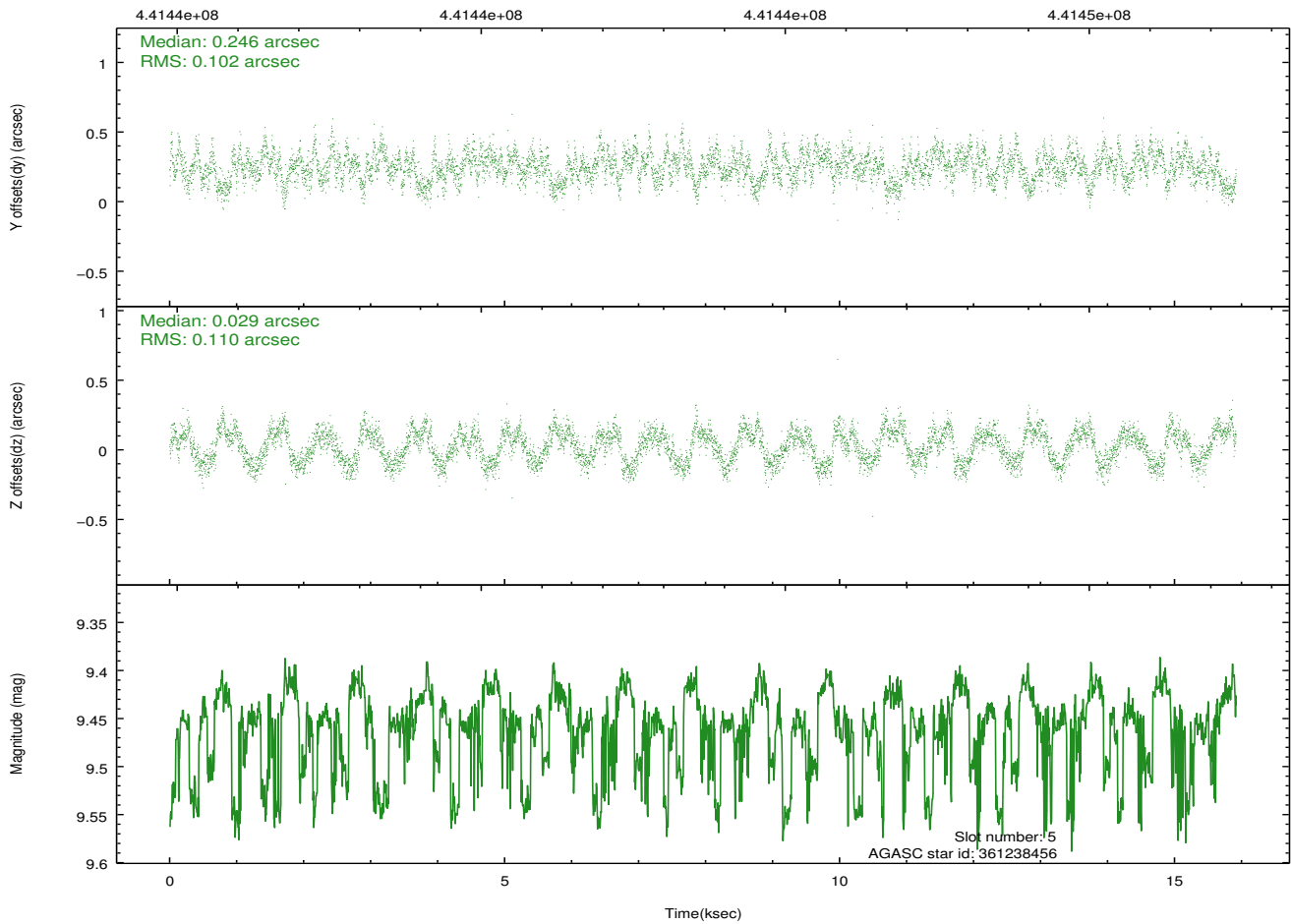
Time (s)



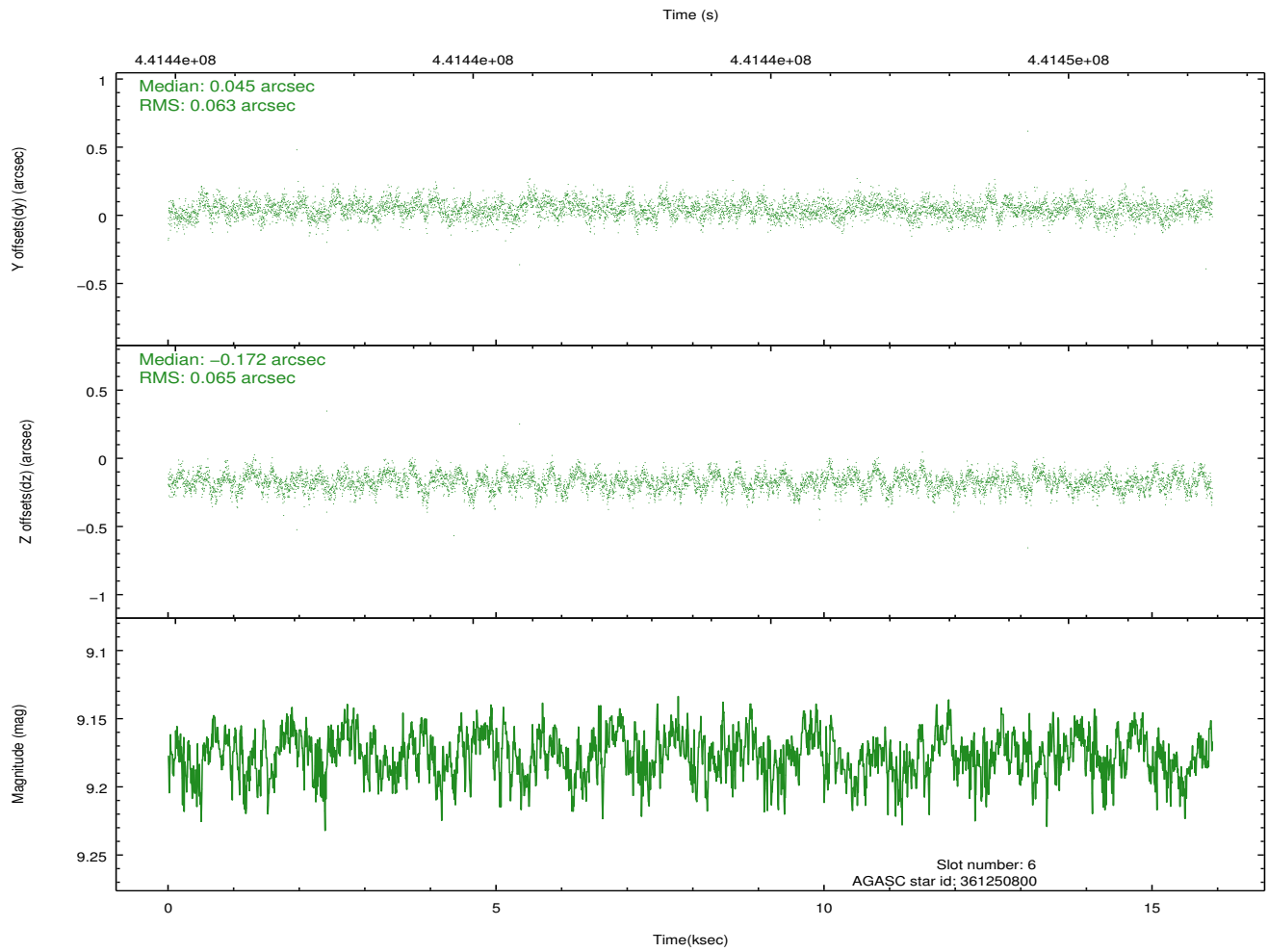
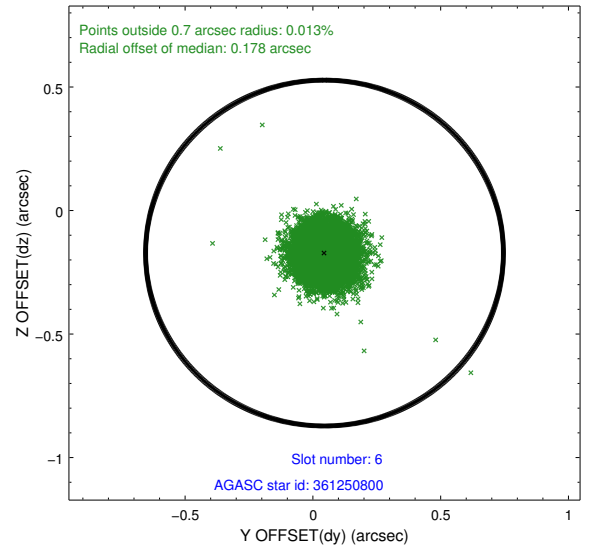
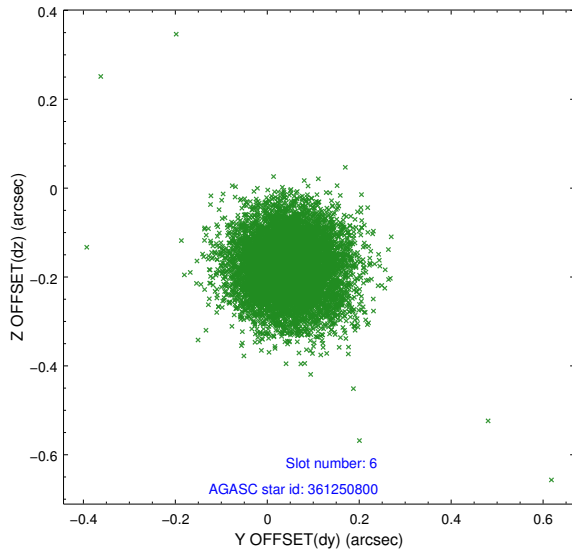
2.4.3 Slot 5



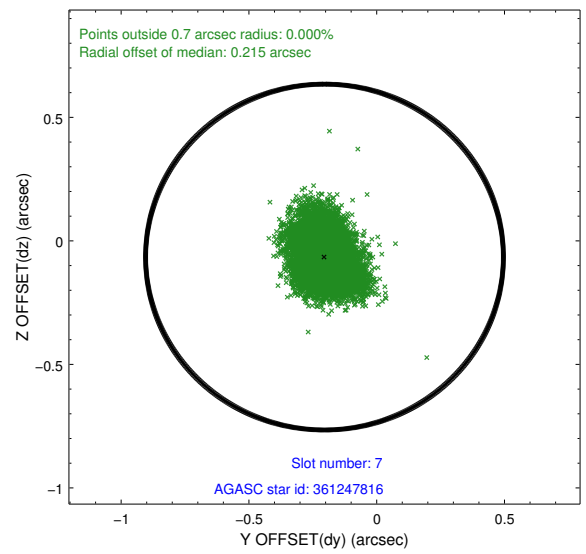
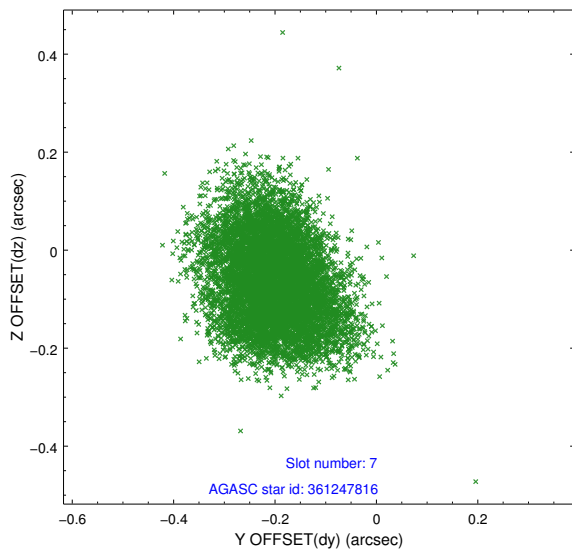
Time (s)



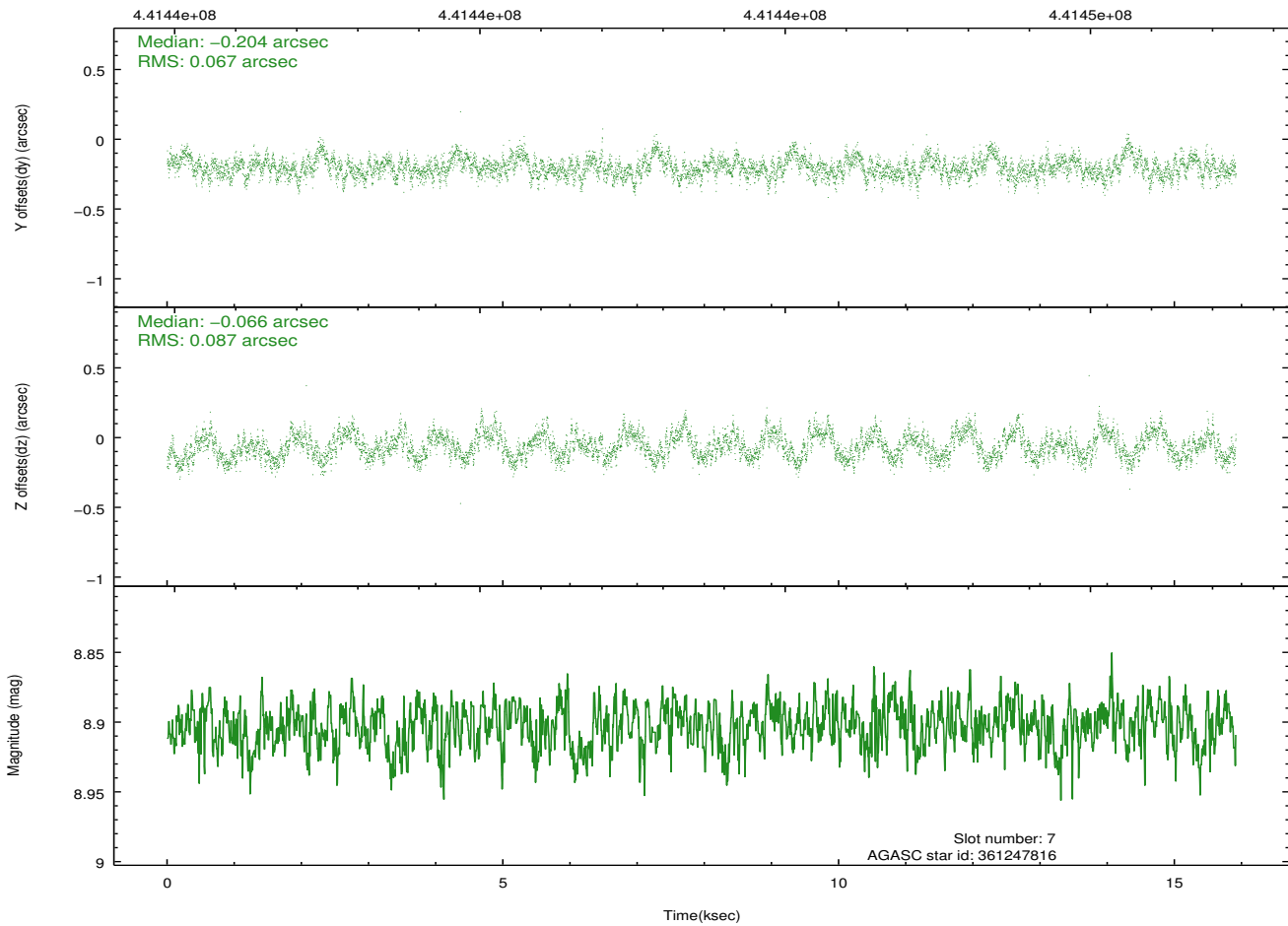
2.4.4 Slot 6



2.4.5 Slot 7

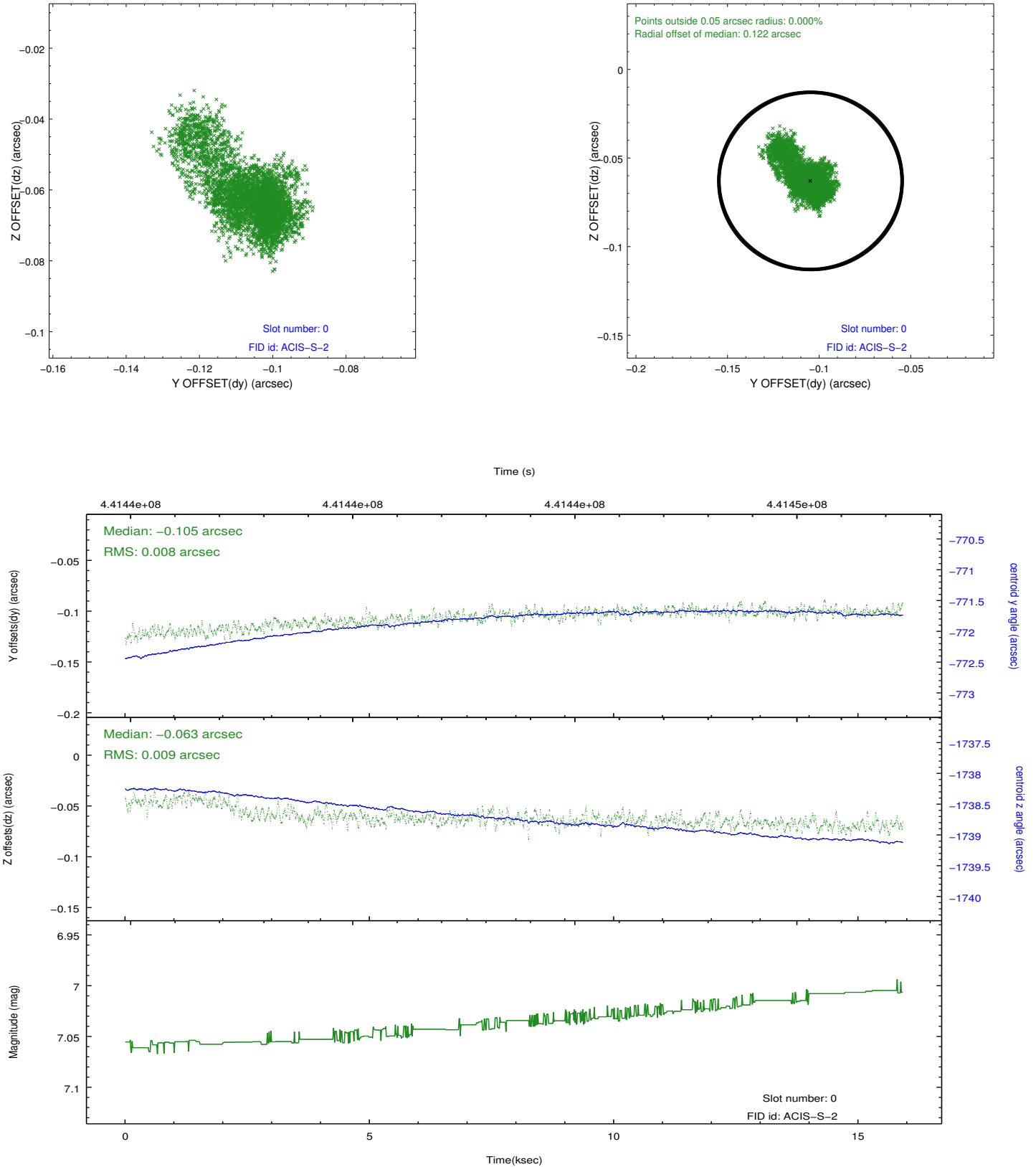


Time (s)

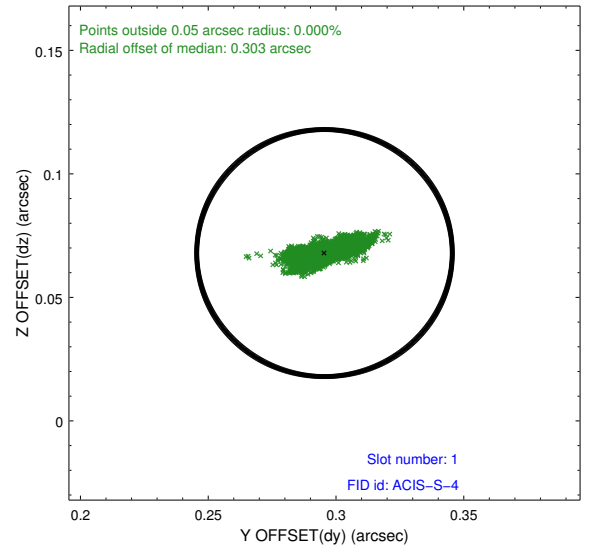
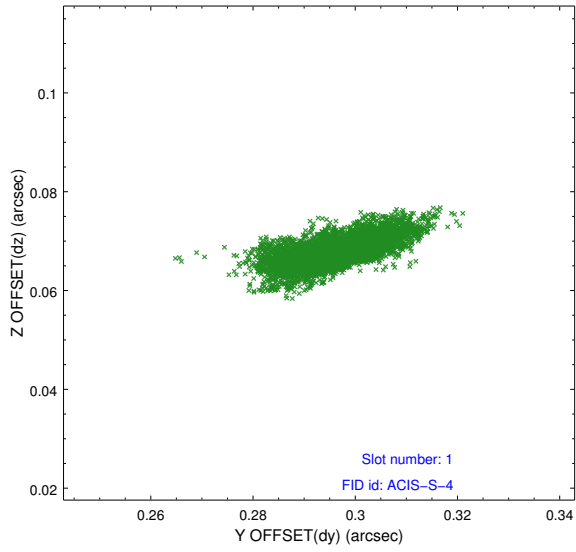


2.5 FID Slots

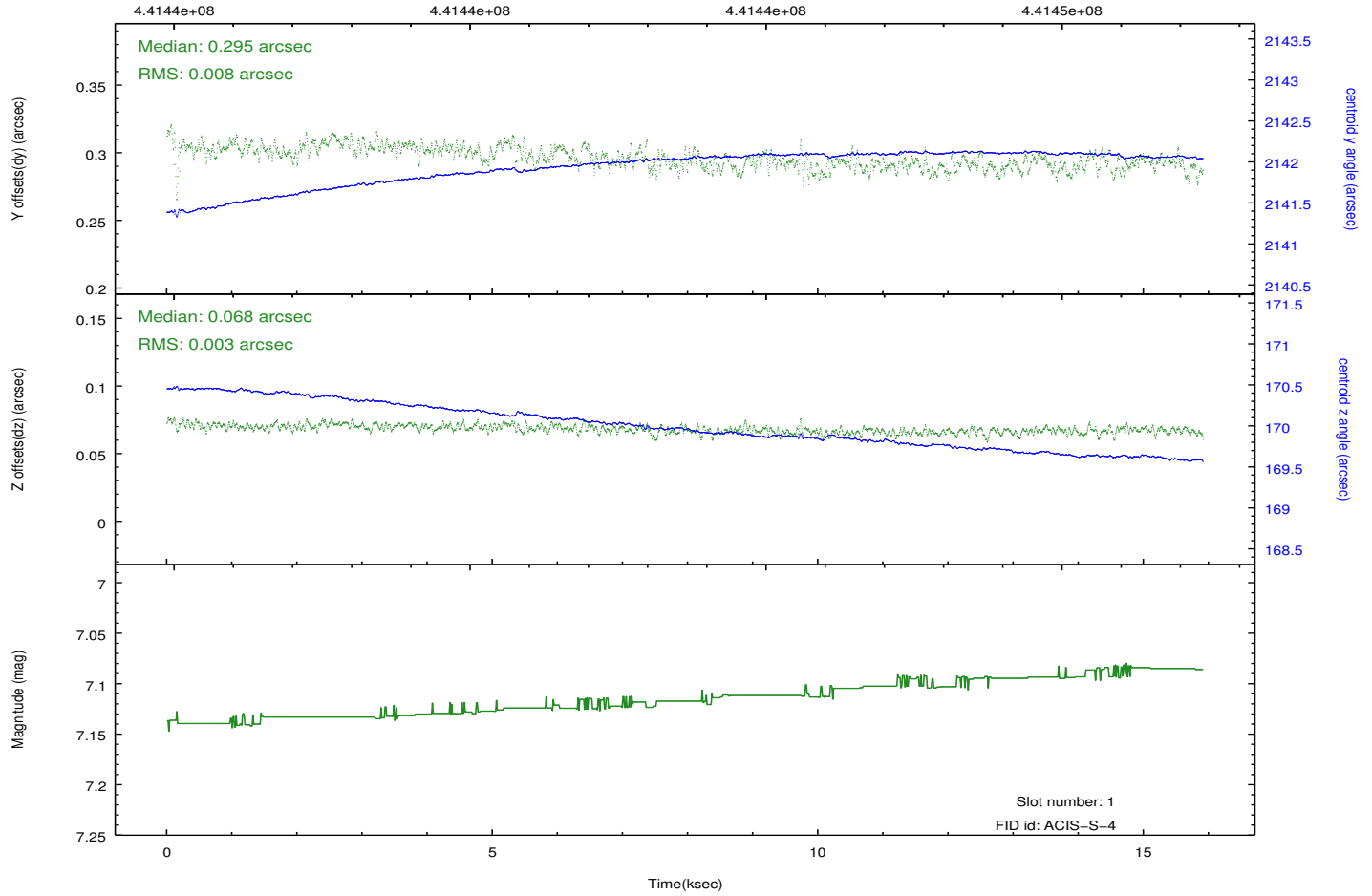
2.5.1 Slot 0



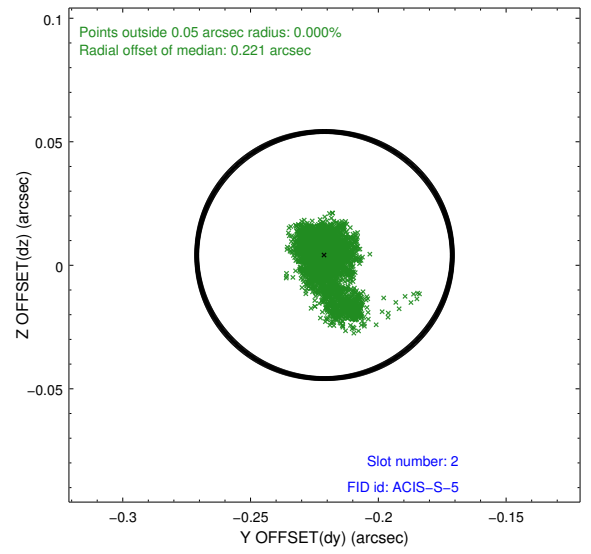
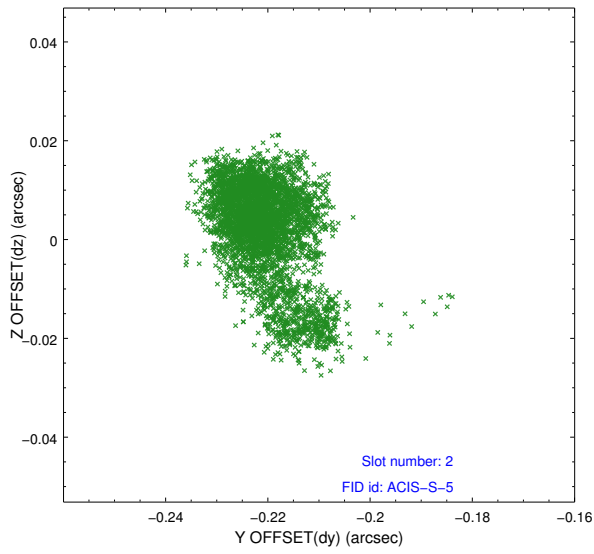
2.5.2 Slot 1



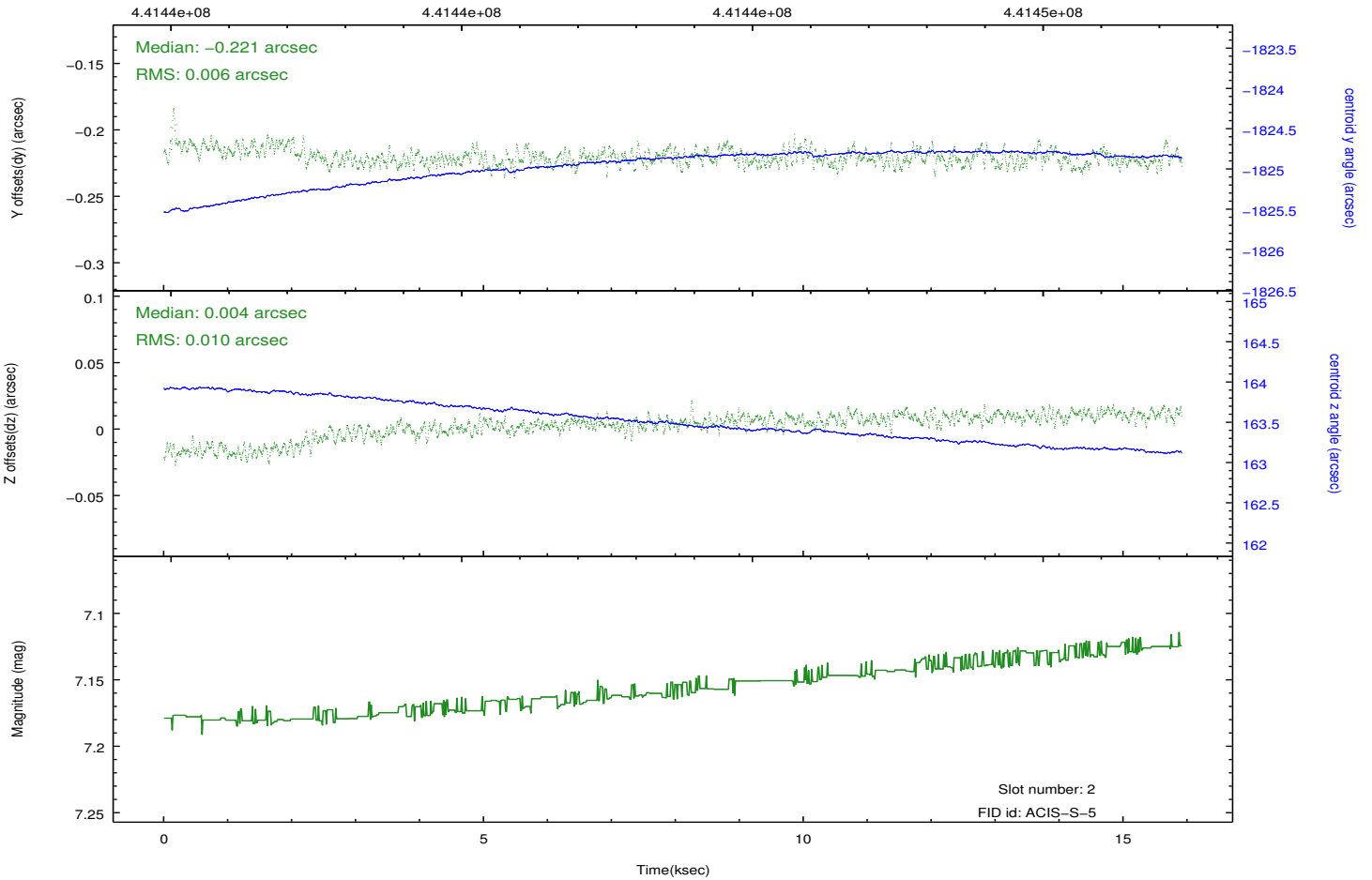
Time (s)



2.5.3 Slot 2



Time (s)



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2018.03.06
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	14.956799944341

A.2 Comments

Joint proposal with HST.

==

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/A_CIS_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.