

V&V Reference Report

L2 ASCDS Version : 10.8

Observation 21449 - L2 Version 2
Chandra X-Ray Center

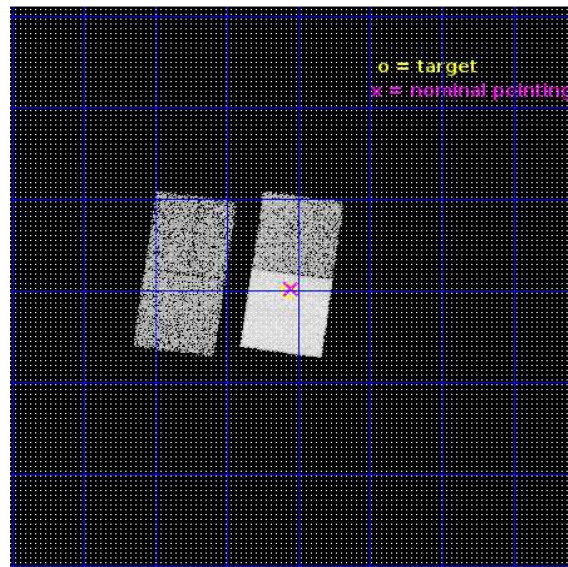
L2 Processing Date : Sep 25 2019

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 4	9
2.4.2	Slot 5	10
2.4.3	Slot 6	11
2.4.4	Slot 7	12
2.5	FID Slots	13
2.5.1	Slot 0	13
2.5.2	Slot 1	14
2.5.3	Slot 2	15
A	Summary	16
A.1	Status	16
A.2	Comments	16

1 Front

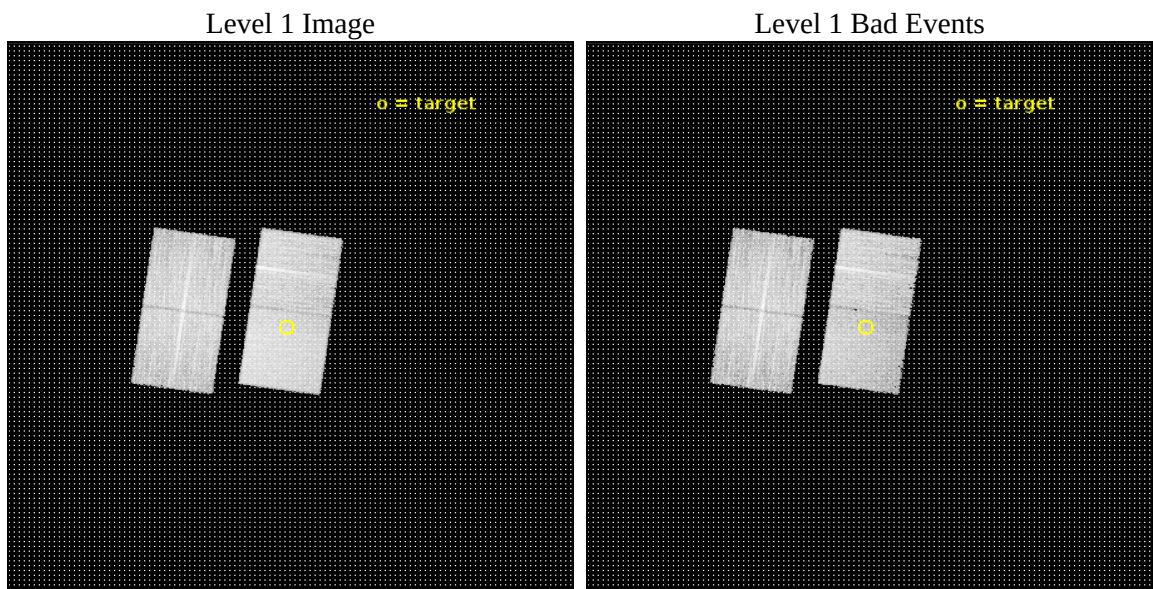
seq_num	703746	Sequence number
obs_id	21449	Observation id
title	Testing Mid-Infrared AGN Selection in Dwarf Galaxies with Chandra and HST	Proposal title
observer	Amy Reines	Principal investigator
object	J005904.10+010004.2	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	14.767083	Observer's specified target RA [deg]
dec_targ	1.001222	Observer's specified target Dec [deg]
ra_nom	14.762545811942	Nominal RA [deg]
dec_nom	1.0037365025059	Nominal Dec [deg]
roll_nom	98.156657681221	Nominal Roll [deg]
revision	2	Processing version of data
ontime	10062.044194818	Sum of GTIs [s]
livetime	9930.5761798431	Livetime [s]
ontime2	10061.921074867	Sum of GTIs [s]
ontime3	10061.962114811	Sum of GTIs [s]
ontime6	10062.003154874	Sum of GTIs [s]
ontime7	10062.044194818	Sum of GTIs [s]
l2events	63415	Number of level 2 events



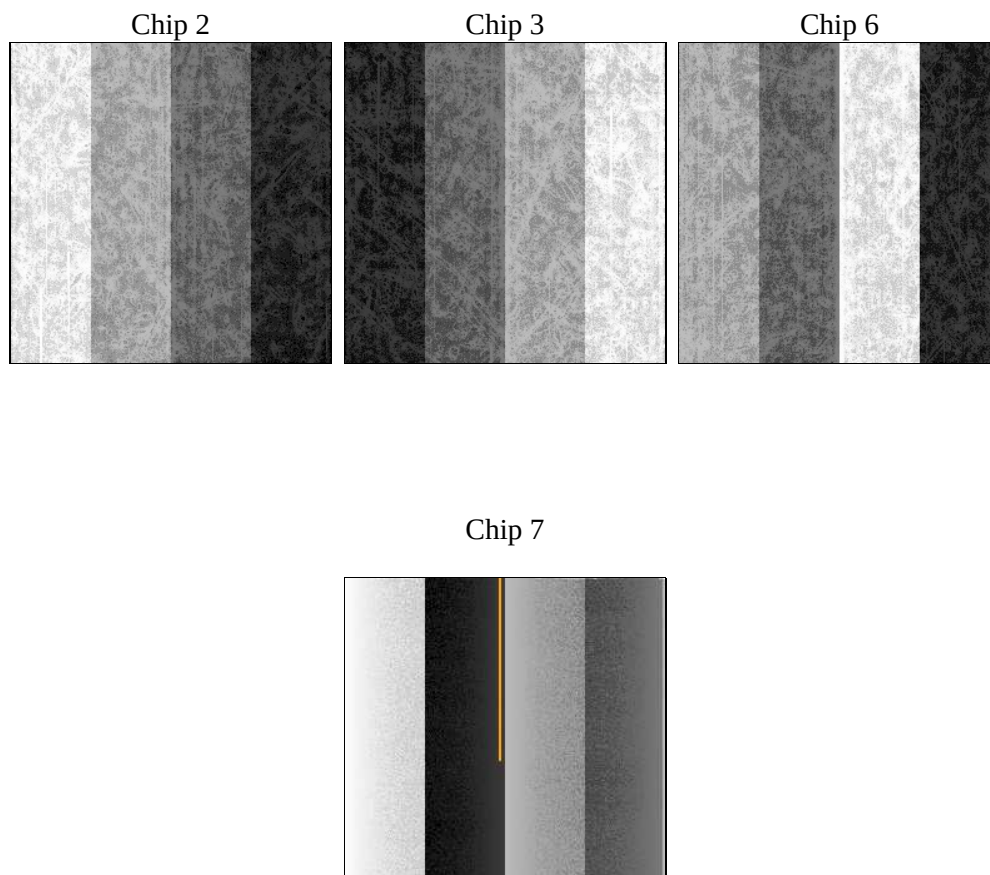
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.8	Processing system revision	ontime	10062.044194818	Sum of GTIs [s]
caldbver	4.8.4.1	 	ontime2	10061.921074867	Sum of GTIs [s]
date	2019-09-25T17:24:29	Date and time of file creation	ontime3	10061.962114811	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	10062.003154874	Sum of GTIs [s]
			ontime7	10062.044194818	Sum of GTIs [s]
			l1events	350454	Number of level 1 events

2.1.4 Events

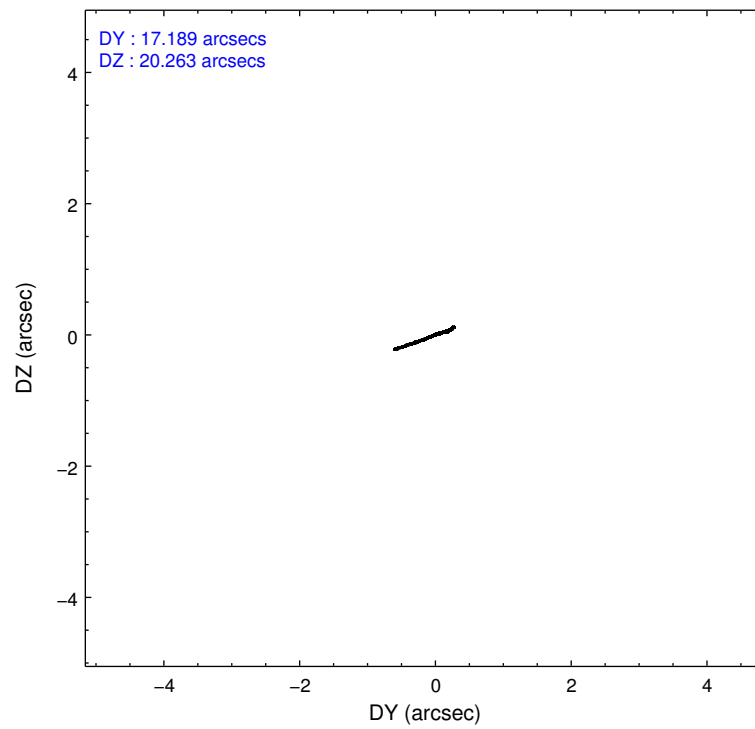
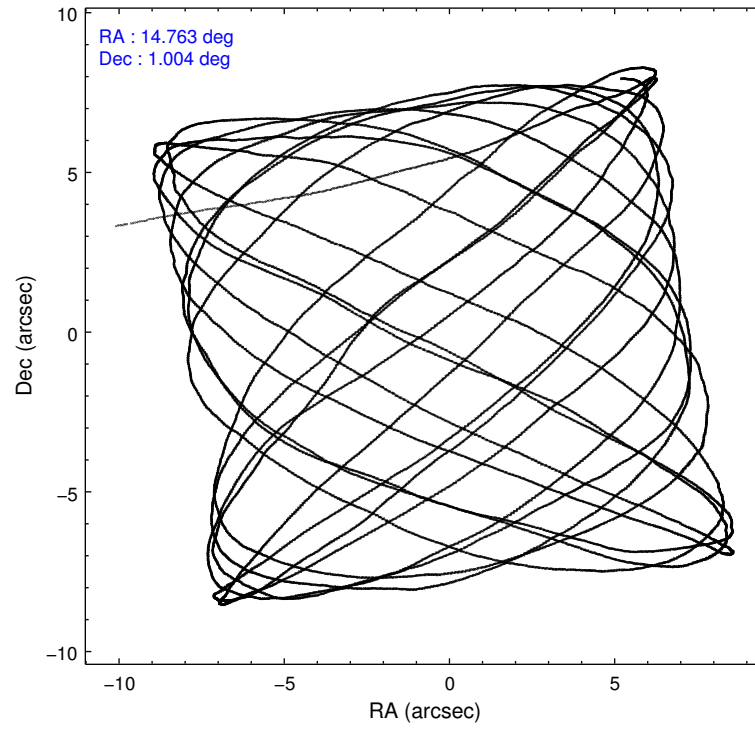
	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	81512	79601	87015	102326
rejected events	73831	71853	78352	59005
rejected %	90%	90%	90%	57%

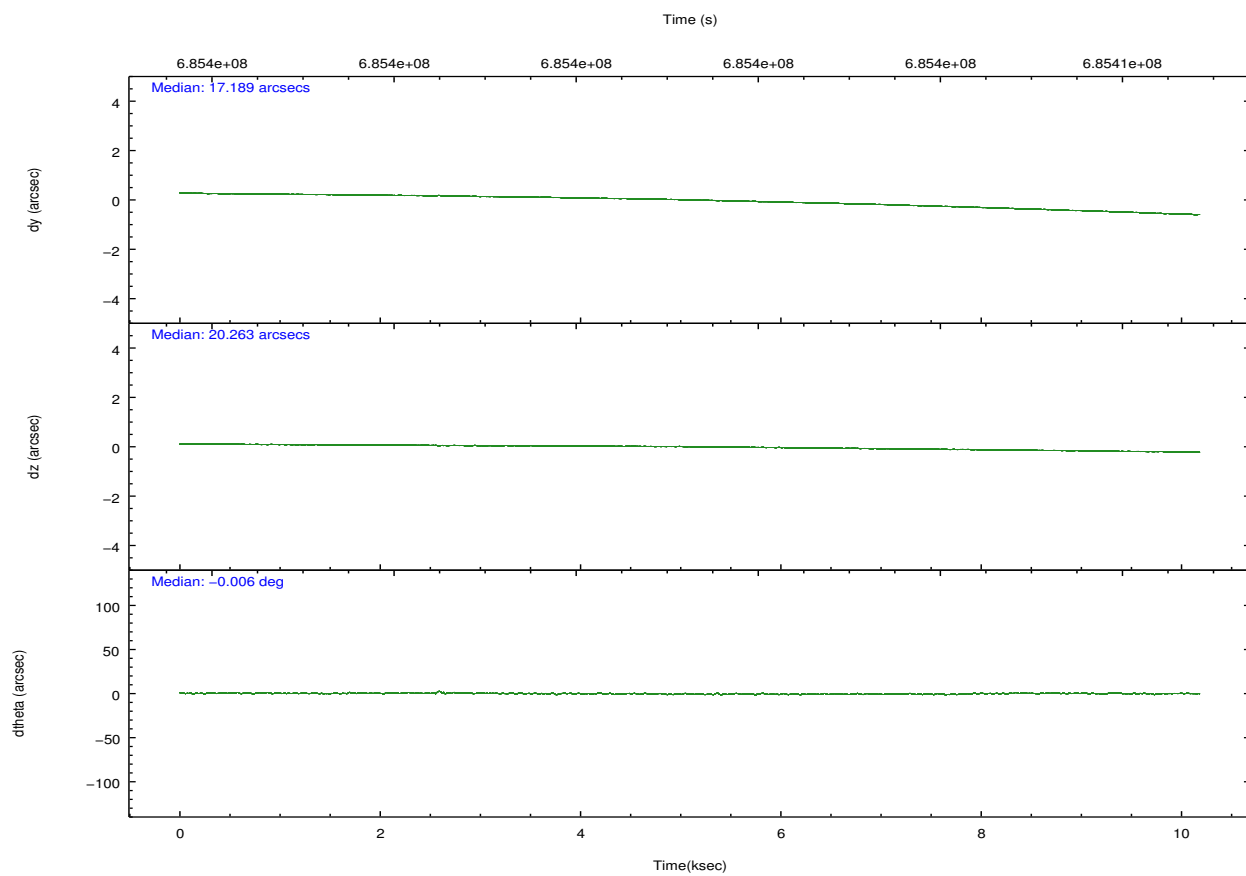
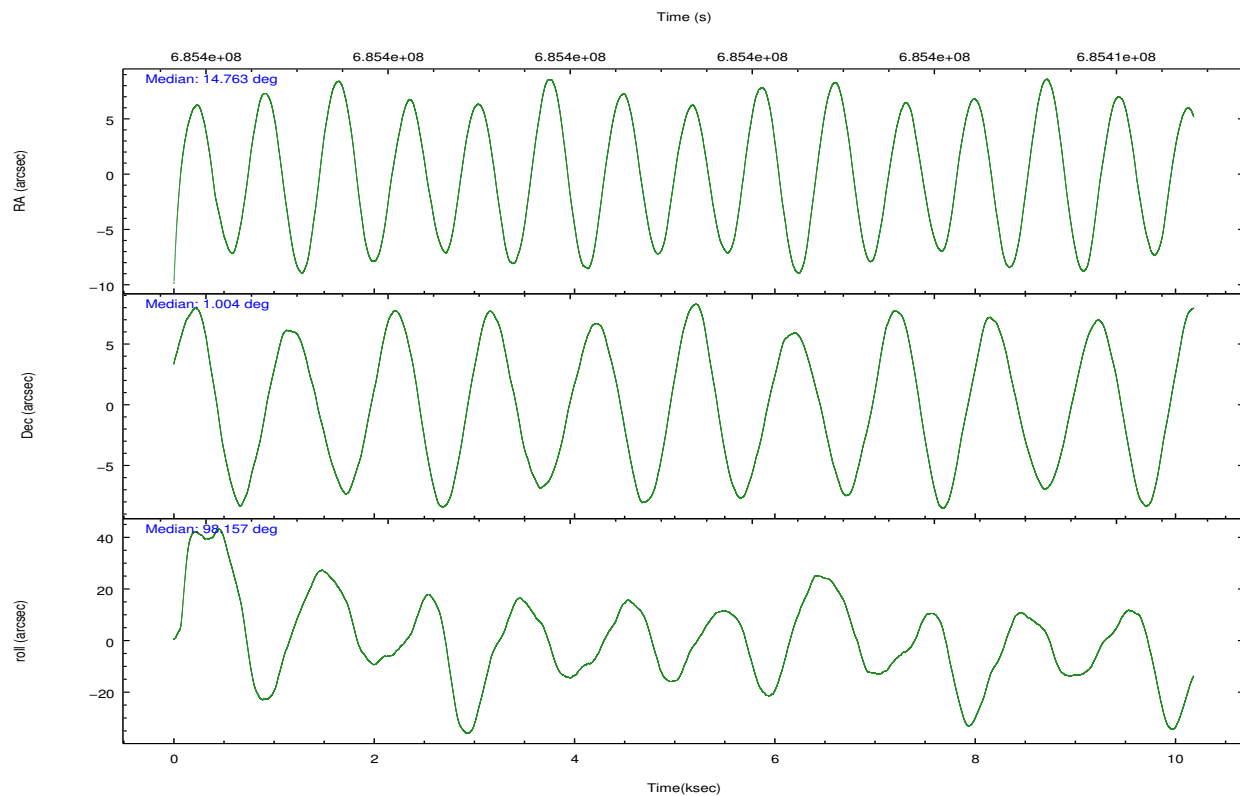
	ccd 2	ccd 3	ccd 6	ccd 7
grade 0 events	2611	2485	2067	3532
	3%	3%	2%	3%
grade 1 events	41	45	31	158
	0%	0%	0%	0%
grade 2 events	1900	1818	2712	8878
	2%	2%	3%	8%
grade 3 events	720	741	618	3401
	0%	0%	0%	3%
grade 4 events	719	732	630	3278
	0%	0%	0%	3%
grade 5 events	2550	3172	3030	9672
	3%	3%	3%	9%
grade 6 events	1735	1978	2641	24259
	2%	2%	3%	23%
grade 7 events	71236	68630	75286	49148
	87%	86%	86%	48%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-2367	ACIS-2367	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	14.779779	14.7625458119418	CCD I2 on	Y	Y
[deg] Pointing Dec	0.982350	1.003736502505859	CCD I3 on	Y	Y
[deg] Pointing Roll	97.999781	98.15665768122075	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	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	O1	N
[s] Observation start time (MET)	685396317.184000	685394966.23549	CCD S5 on	N	N
Observation start date	2019-09-20T19:50:48	2019-09-20T19:29:26	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	685406317.184000	685407386.67373	On-chip summing requested	N	N
Observation end date	2019-09-20T22:37:28	2019-09-20T22:56:26	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect



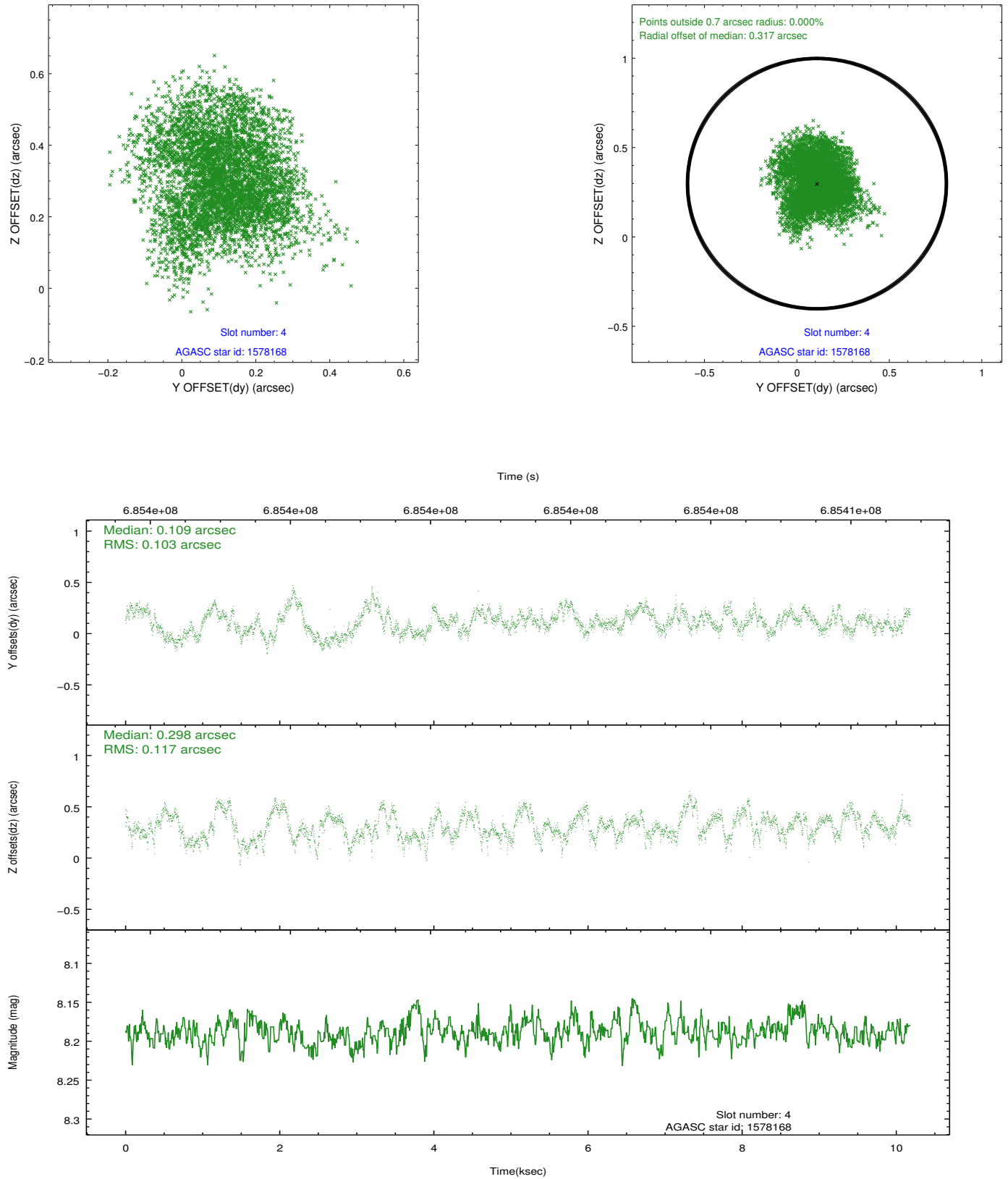


Slot Statistics

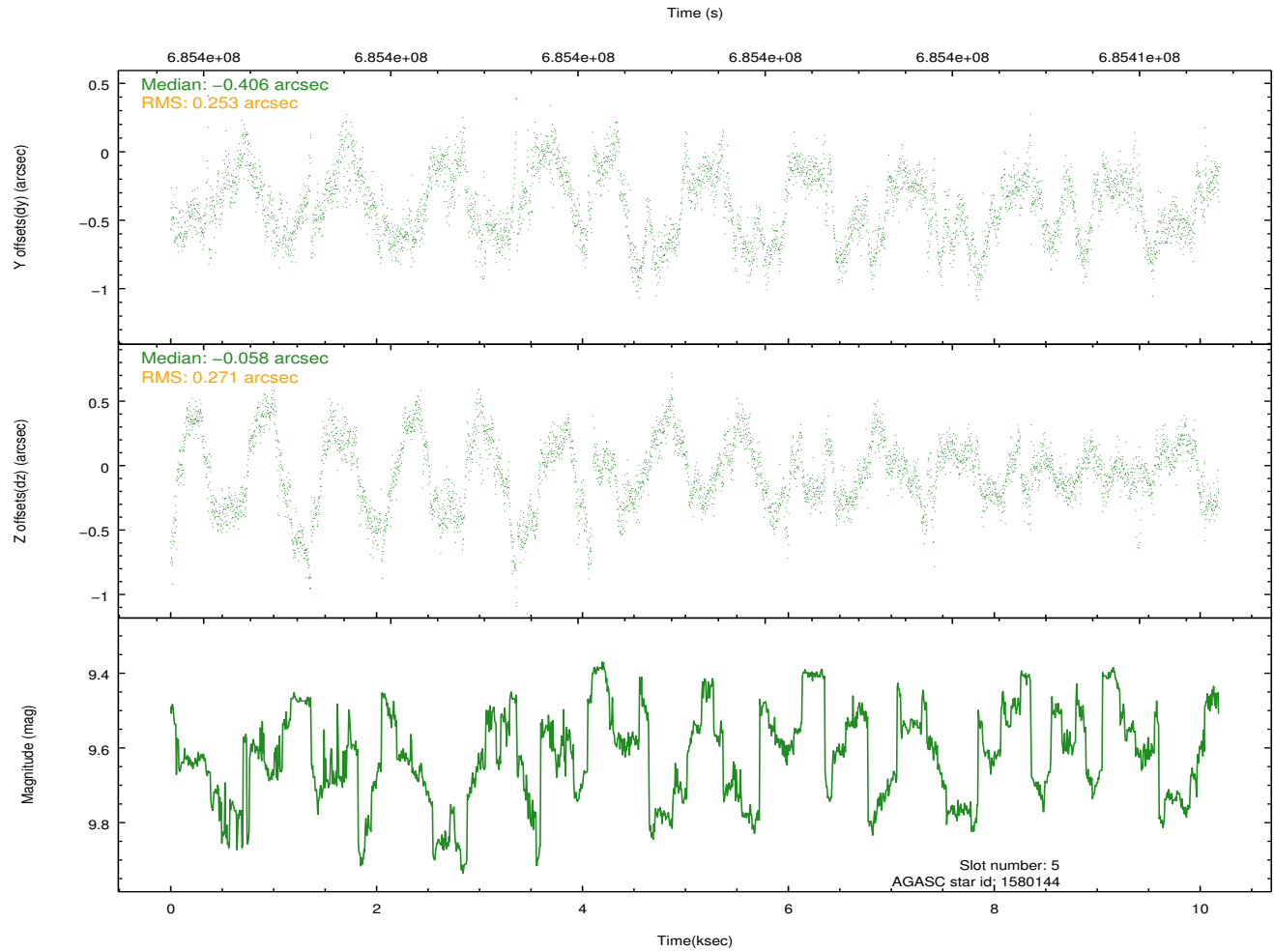
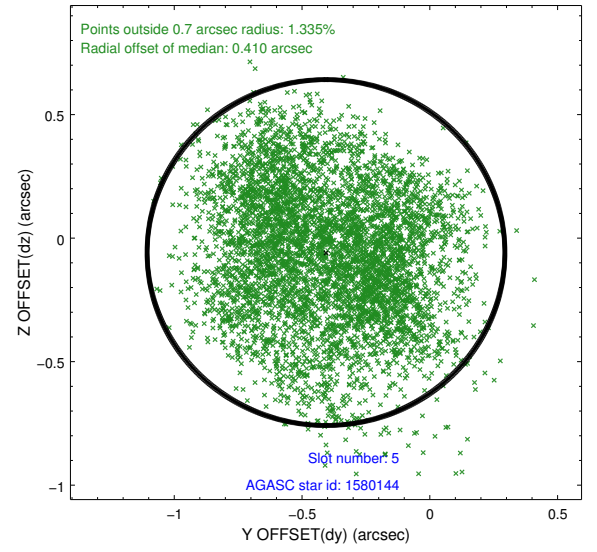
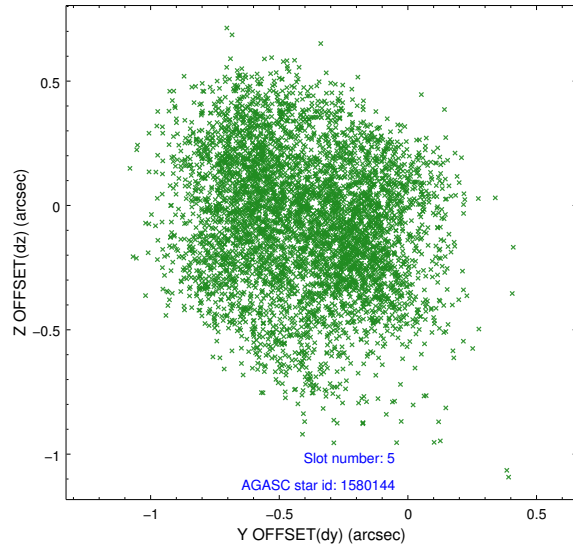
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.21	2484	1.000	-0.325	-0.266	0.010	0.016	0.000000	0.000000	-770.41	-1742
1	FID		ACIS-S-4	7.33	2483	1.000	0.827	0.228	0.009	0.016	0.000000	0.000000	2143.70	166
2	FID		ACIS-S-5	7.28	2484	1.000	-0.534	0.047	0.010	0.017	0.000000	0.000000	-1822.87	160
3	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0
4	GUIDE	used	1578168	8.19	4967	1.000	0.109	0.298	0.170	0.260	14.902539	0.670706	-1172.92	-280
5	GUIDE	used	1580144	9.62	4943	1.000	-0.406	-0.058	0.409	0.598	14.716438	1.595756	2218.09	-82
6	GUIDE	used	2499024	9.77	4873	1.000	-0.028	-0.250	0.257	0.419	15.089247	1.285369	925.57	-1254
7	GUIDE	used	2499336	9.26	4953	1.000	0.306	0.042	0.261	0.537	15.380911	1.463871	1416.99	-2382

2.4 Star Slots

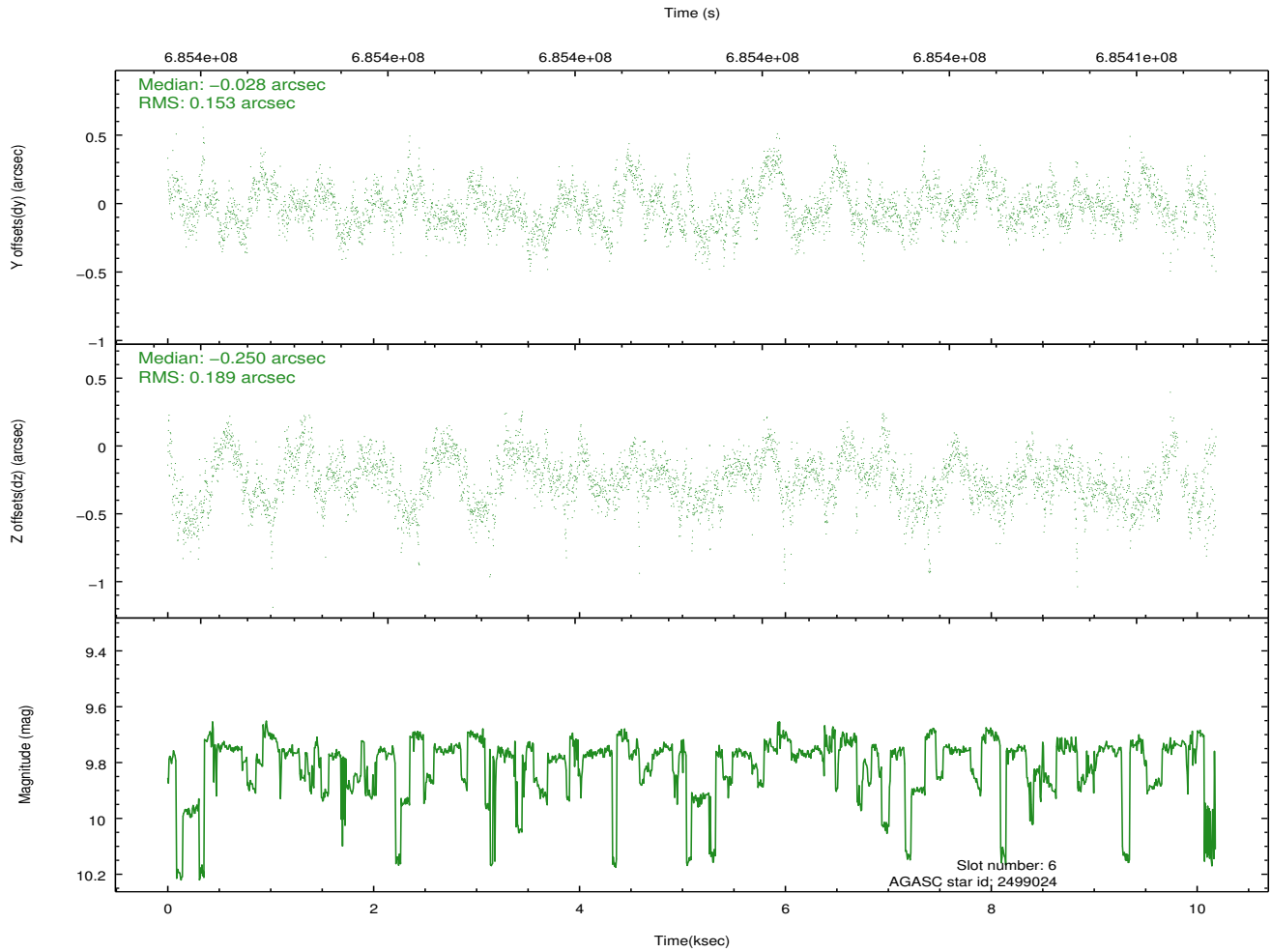
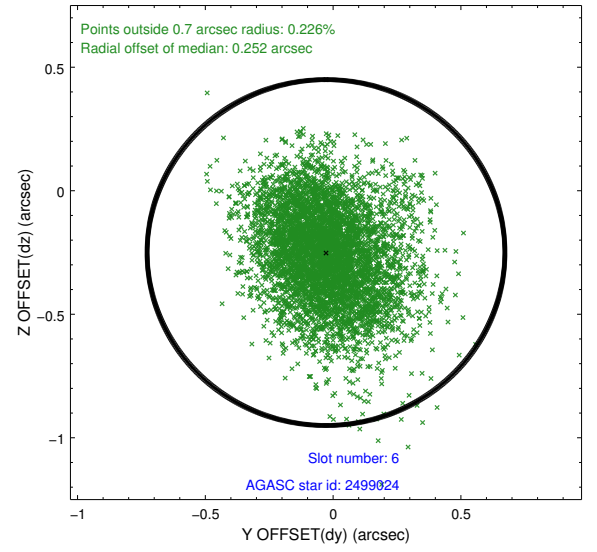
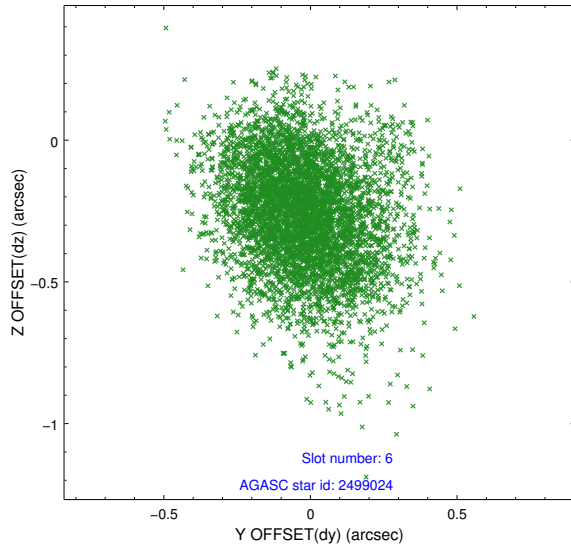
2.4.1 Slot 4



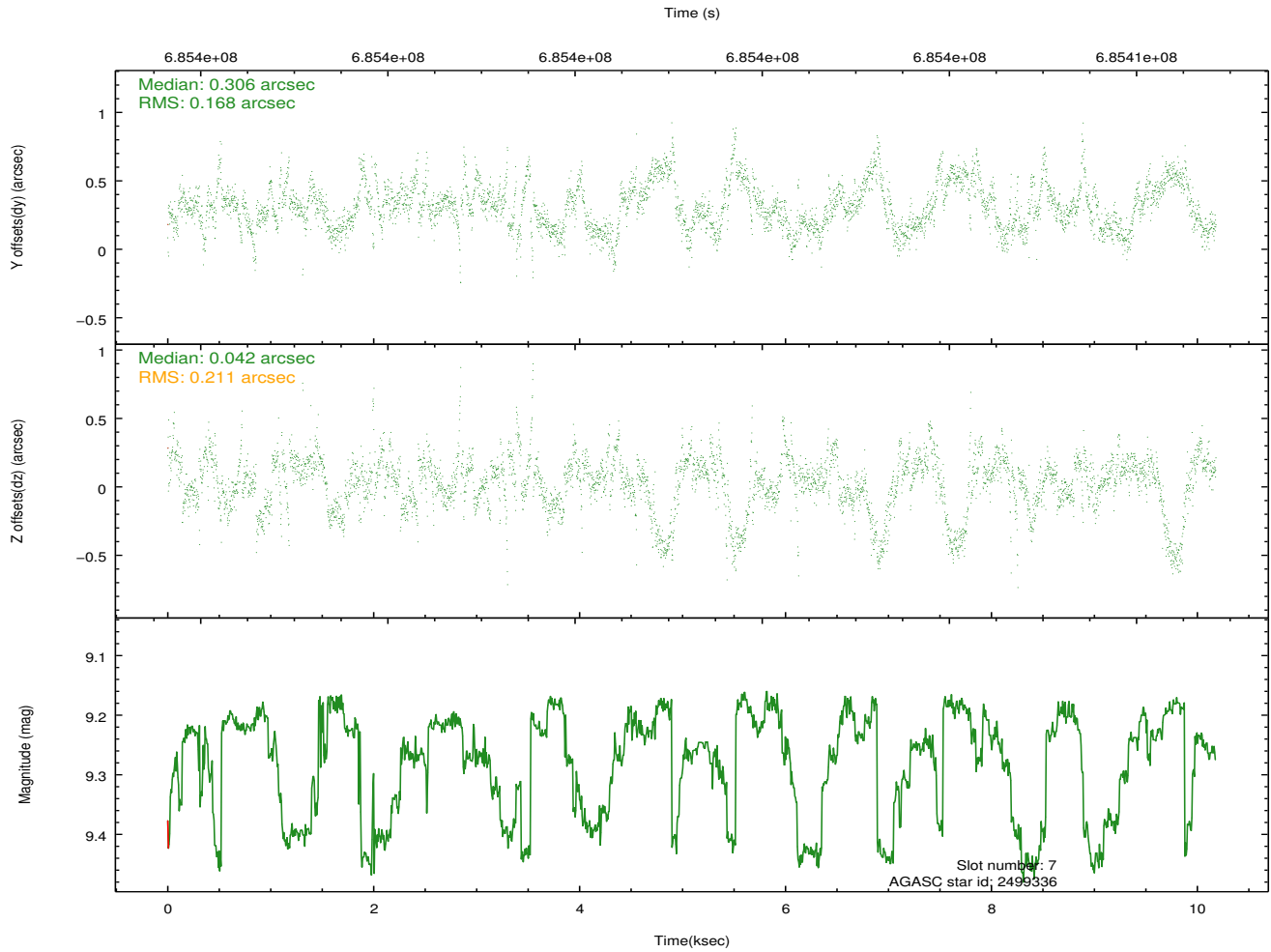
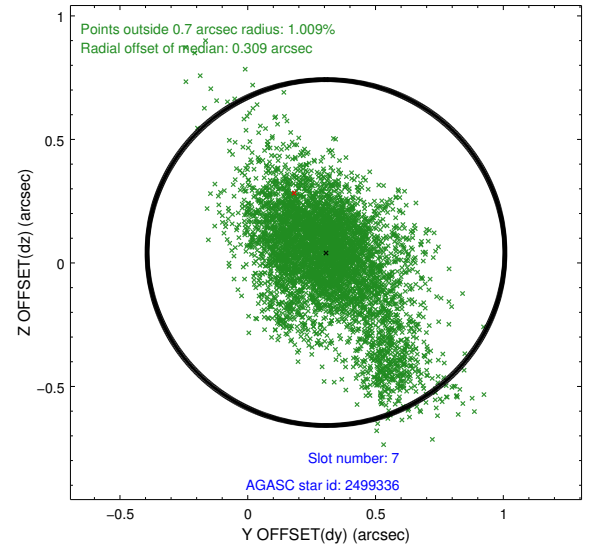
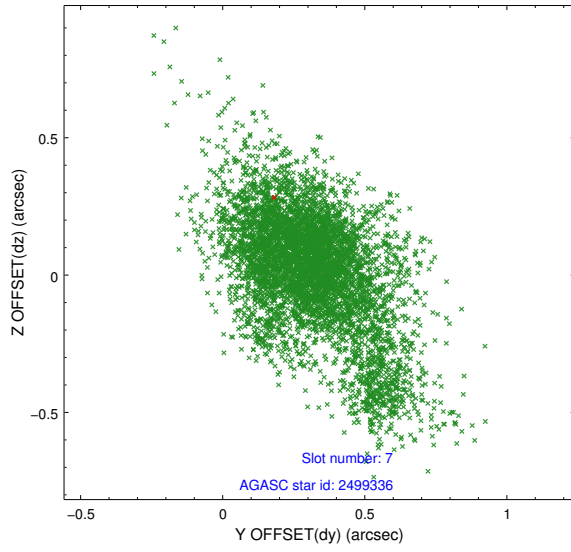
2.4.2 Slot 5



2.4.3 Slot 6

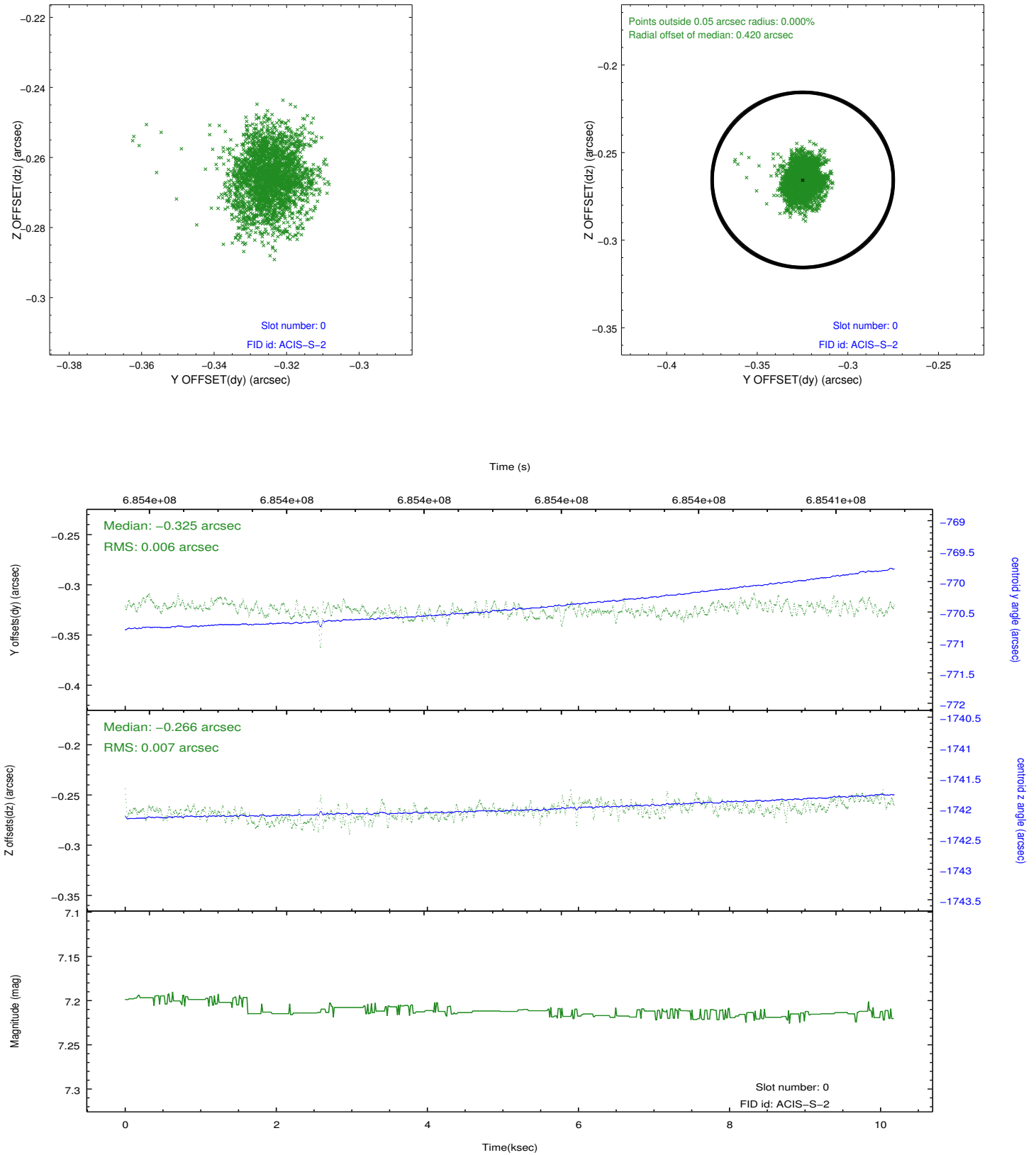


2.4.4 Slot 7

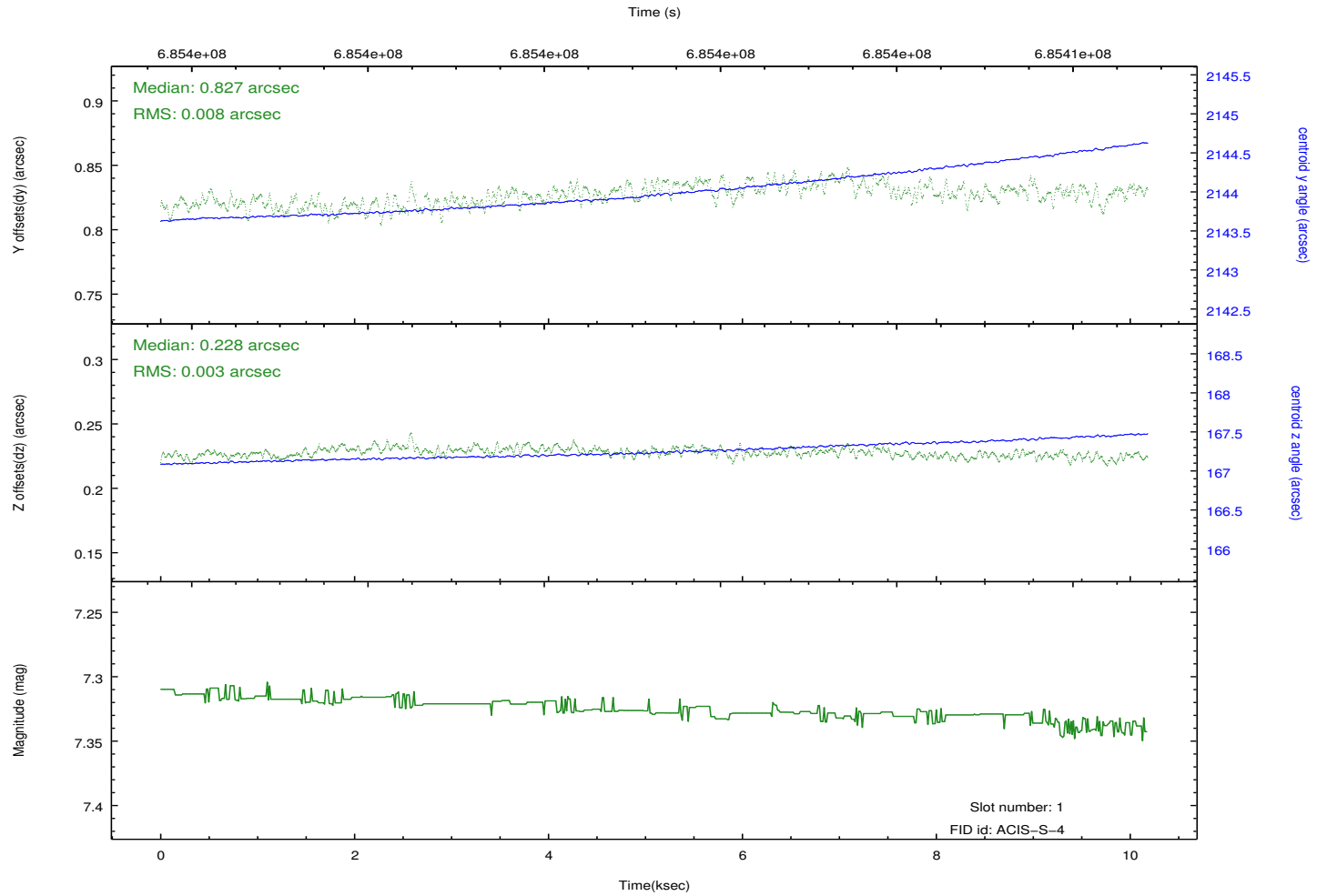
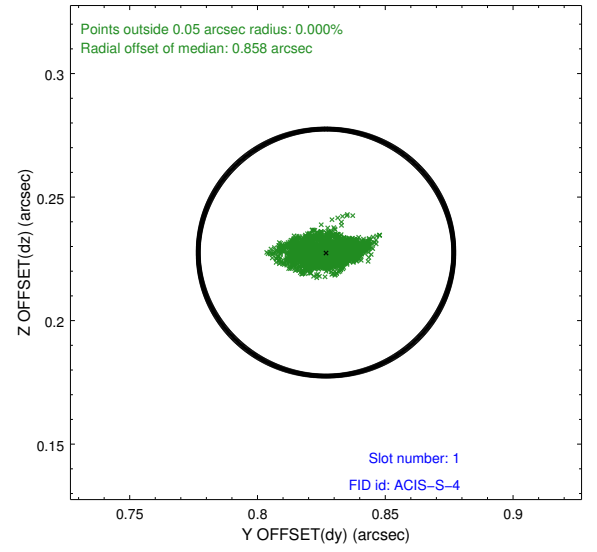
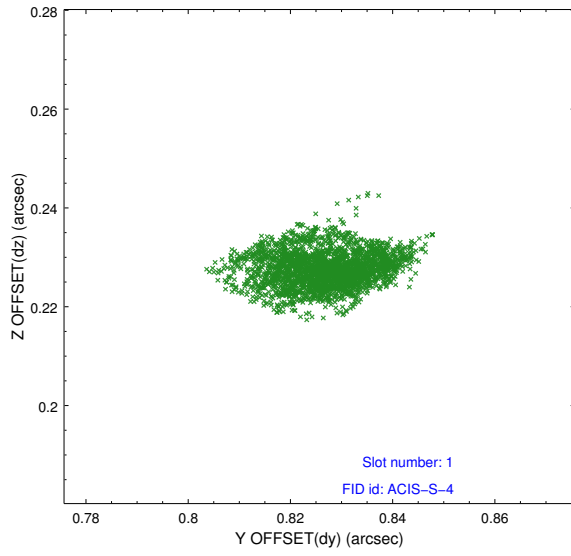


2.5 FID Slots

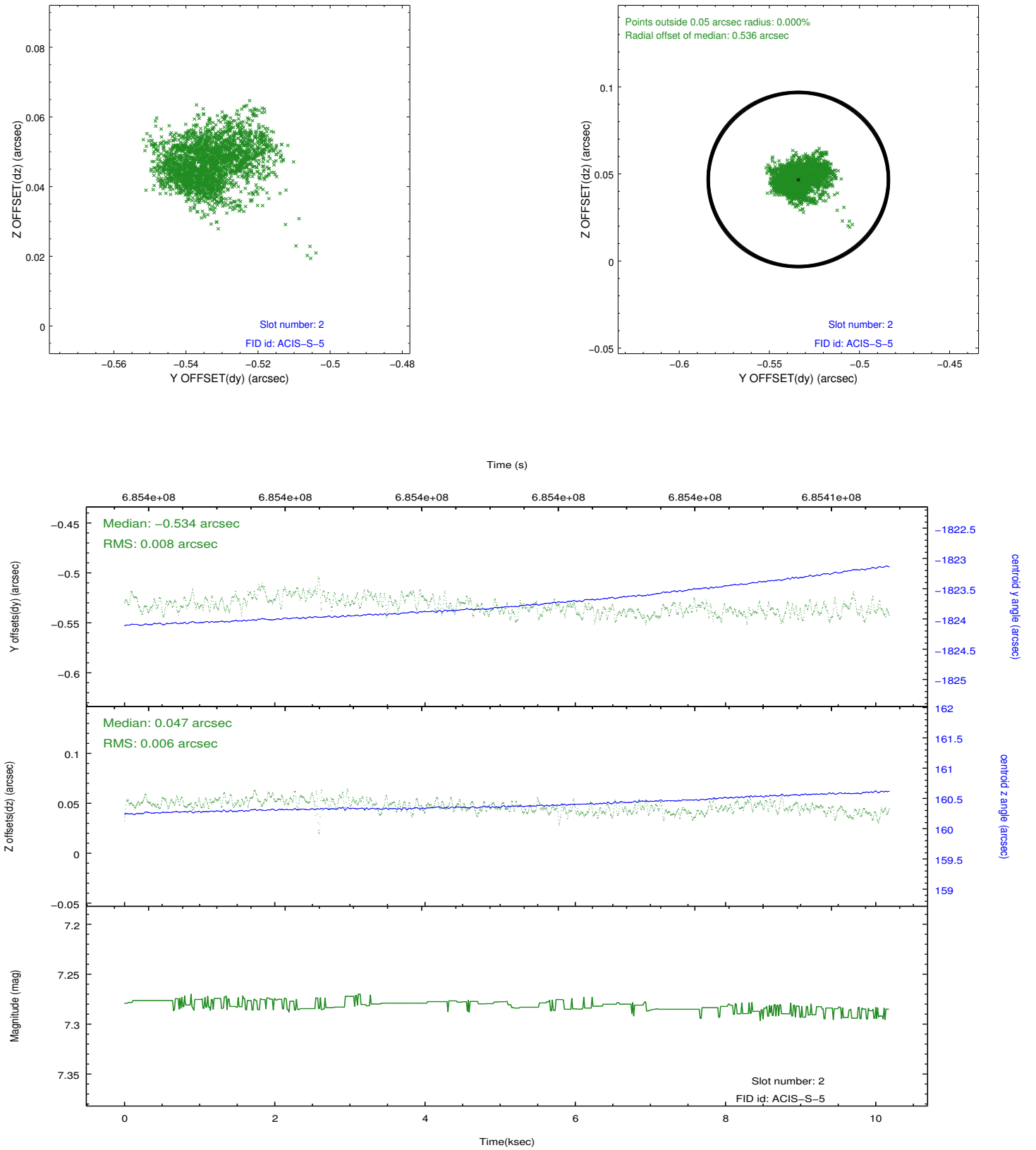
2.5.1 Slot 0



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)	2019.09.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.062044194818

A.2 Comments

Joint proposal with HST.

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One optional chip was dropped.

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The guide star in slot 3 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., -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.