

V&V Reference Report

L2 ASCDS Version : 10.8.1

Observation 23139 - L2 Version 2
Chandra X-Ray Center

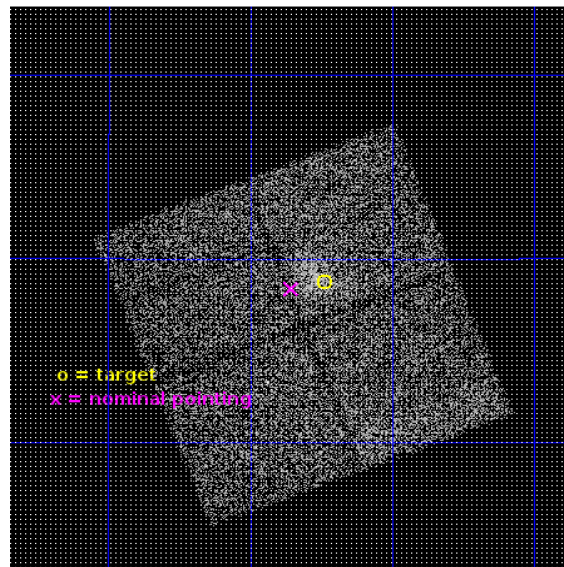
L2 Processing Date : Feb 10 2020

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1 Front

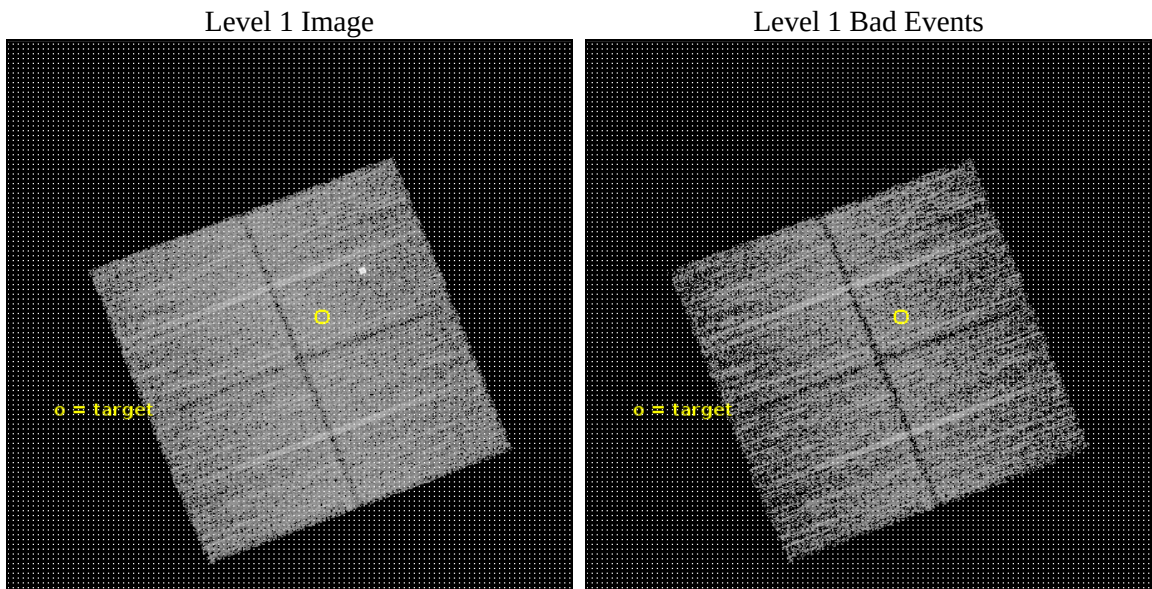
seq_num	801903	Sequence number
obs_id	23139	Observation id
title	An random sub-sample of lambda=25-80 redMaPPer clusters	Proposal t
observer	Ming Sun	Principal investigator
object	RMJ084114.3+075843.6	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	130.309494	Observer's specified target RA [deg]
dec_targ	7.978788	Observer's specified target Dec [deg]
ra_nom	130.33874714619	Nominal RA [deg]
dec_nom	7.9727171786694	Nominal Dec [deg]
roll_nom	338.6636749449	Nominal Roll [deg]
revision	2	Processing version of data
ontime	9907.6000763178	Sum of GTIs [s]
livetime	9778.1499874516	Livetime [s]
ontime0	9907.6000763178	Sum of GTIs [s]
ontime1	9904.4591060877	Sum of GTIs [s]
ontime2	9904.4590760469	Sum of GTIs [s]
ontime3	9907.6000763178	Sum of GTIs [s]
l2events	29023	Number of level 2 events



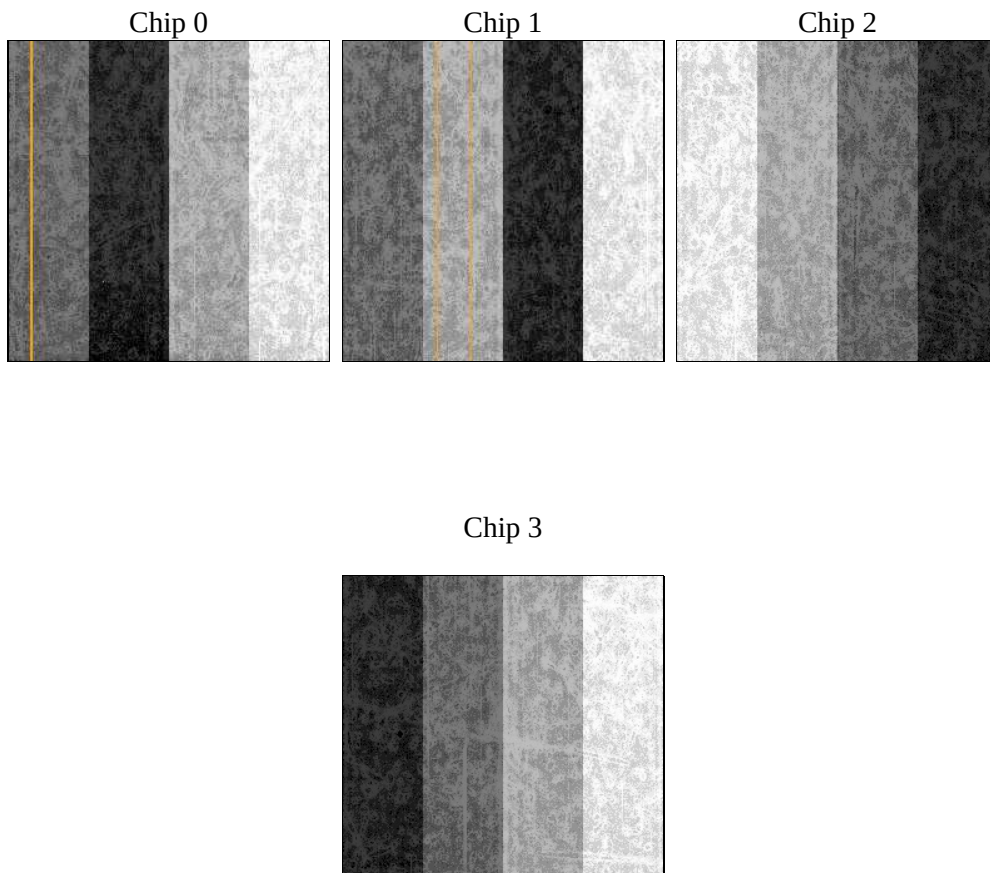
2 OBI

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	10.8.1	Processing system revision	ontime	9907.6000763178	Sum of GTIs [s]
caldsver	4.8.4.2	 	ontime0	9907.6000763178	Sum of GTIs [s]
date	2020-02-11T04:01:11	Date and time of file creation	ontime1	9904.4591060877	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	9904.4590760469	Sum of GTIs [s]
			ontime3	9907.6000763178	Sum of GTIs [s]
			l1events	283482	Number of level 1 events

2.1.4 Events

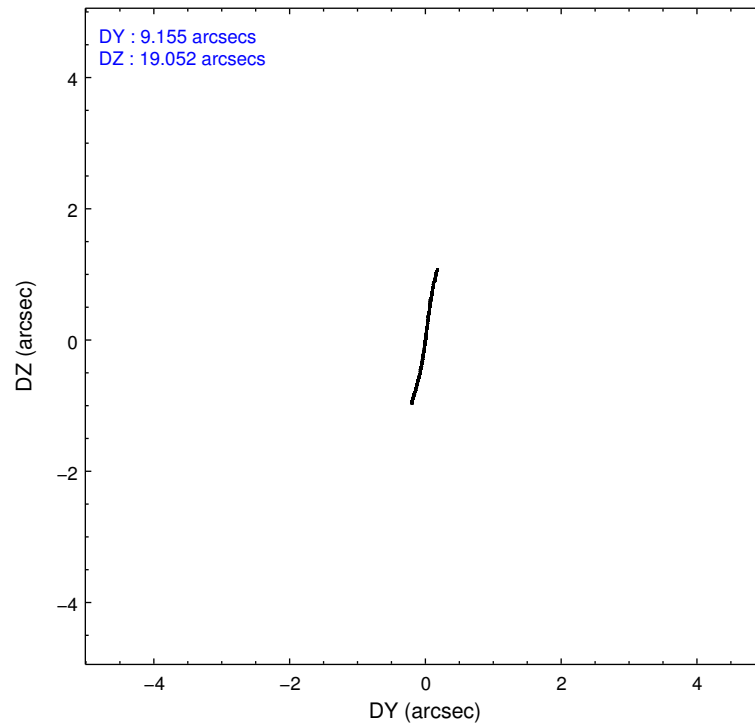
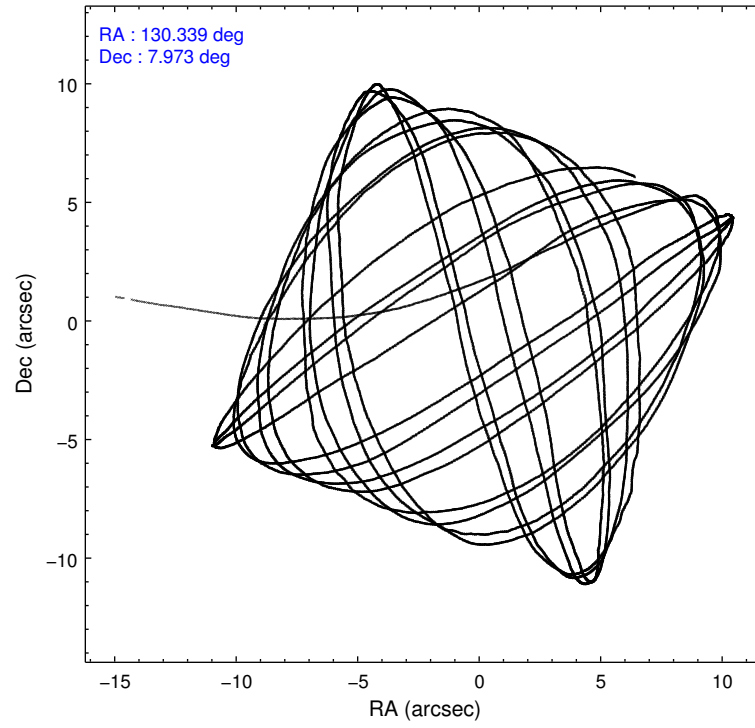
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	67684	68660	72683	74455
rejected events	59066	59414	64578	62563
rejected %	87%	86%	88%	84%

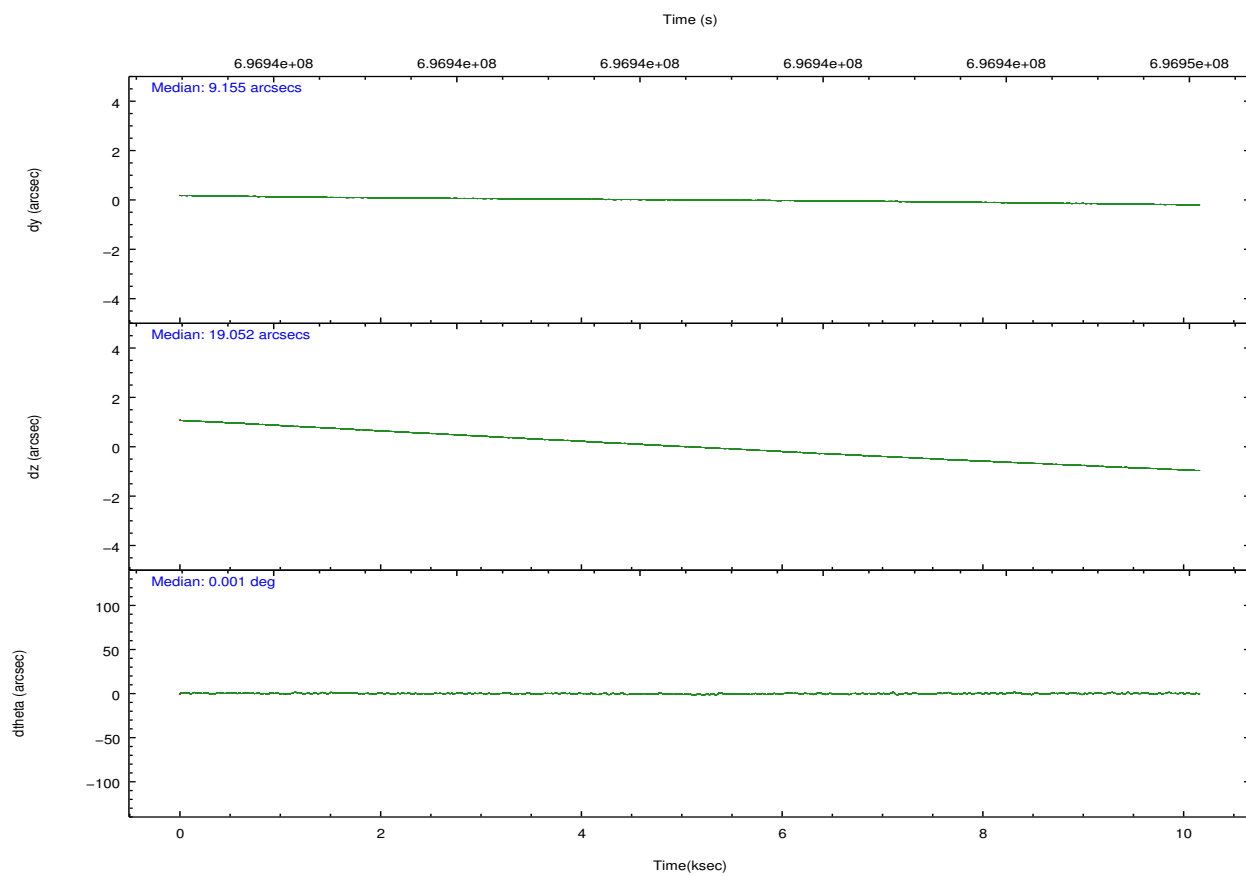
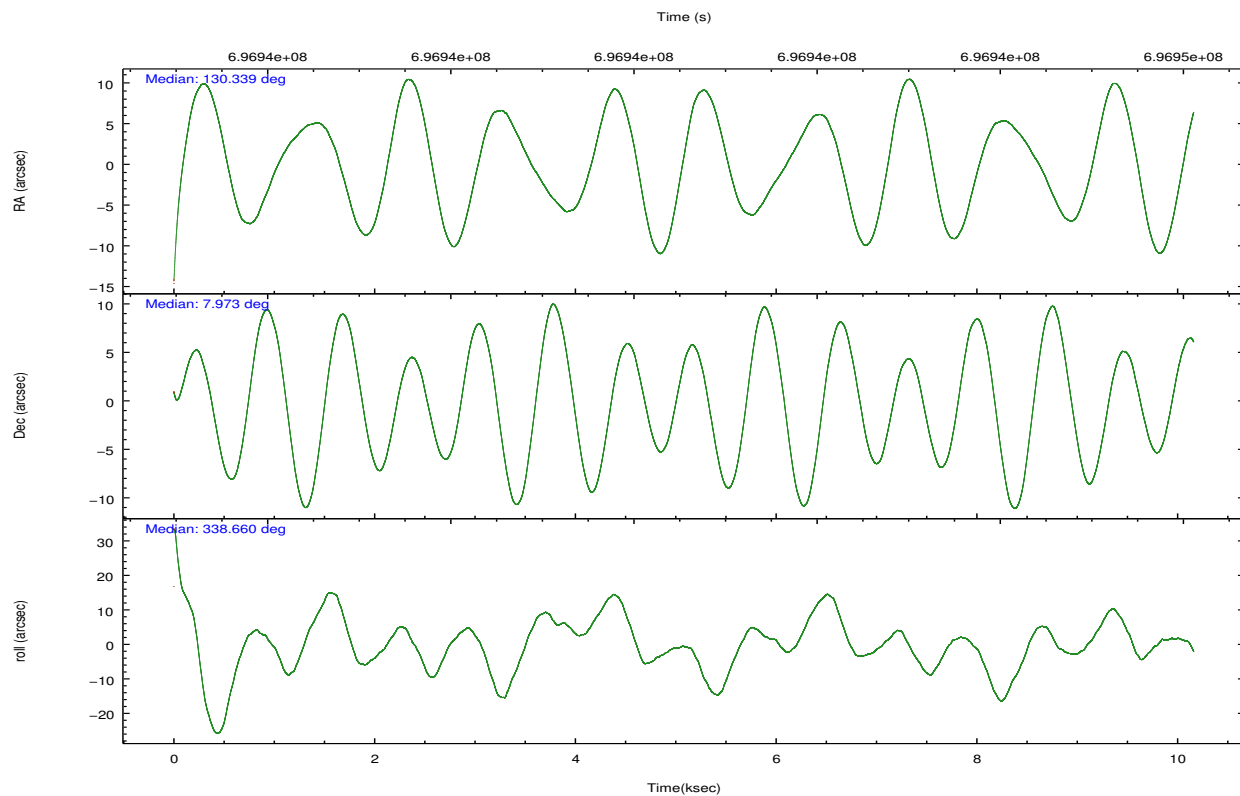
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	2836	3068	2885	3579
	4%	4%	3%	4%
grade 1 events	66	29	36	51
	0%	0%	0%	0%
grade 2 events	2293	2471	2026	4956
	3%	3%	2%	6%
grade 3 events	899	852	750	818
	1%	1%	1%	1%
grade 4 events	790	843	821	779
	1%	1%	1%	1%
grade 5 events	3233	3463	3082	3759
	4%	5%	4%	5%
grade 6 events	1802	2014	1627	1761
	2%	2%	2%	2%
grade 7 events	55765	55920	61456	58752
	82%	81%	84%	78%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-0123	ACIS-0123	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	130.311207	130.3387471461926	Subarray requested	NONE	NONE
[deg] Pointing Dec	7.968429	7.972717178669368	Alternating exposures requested	N	N
[deg] Pointing Roll	338.458777	338.6636749449006	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.782348	-0.7809083437167272			
[mm] SIM defocus	0	0.001439871863259334			
[mm] SIM translation stage pos	-229.792463	-229.7883040401715			
[mm] SIM translation stage offset	-3.8	-3.804148962758148			
[s] Observation start time (MET)	696935617.184000	696934223.20699			
Observation start date	2020-02-01T09:12:28	2020-02-01T08:50:23			
[s] Observation end time (MET)	696945617.184000	696946768.69525			
Observation end date	2020-02-01T11:59:08	2020-02-01T12:19:28			
Read mode	TIMED	TIMED			

2.3 Aspect



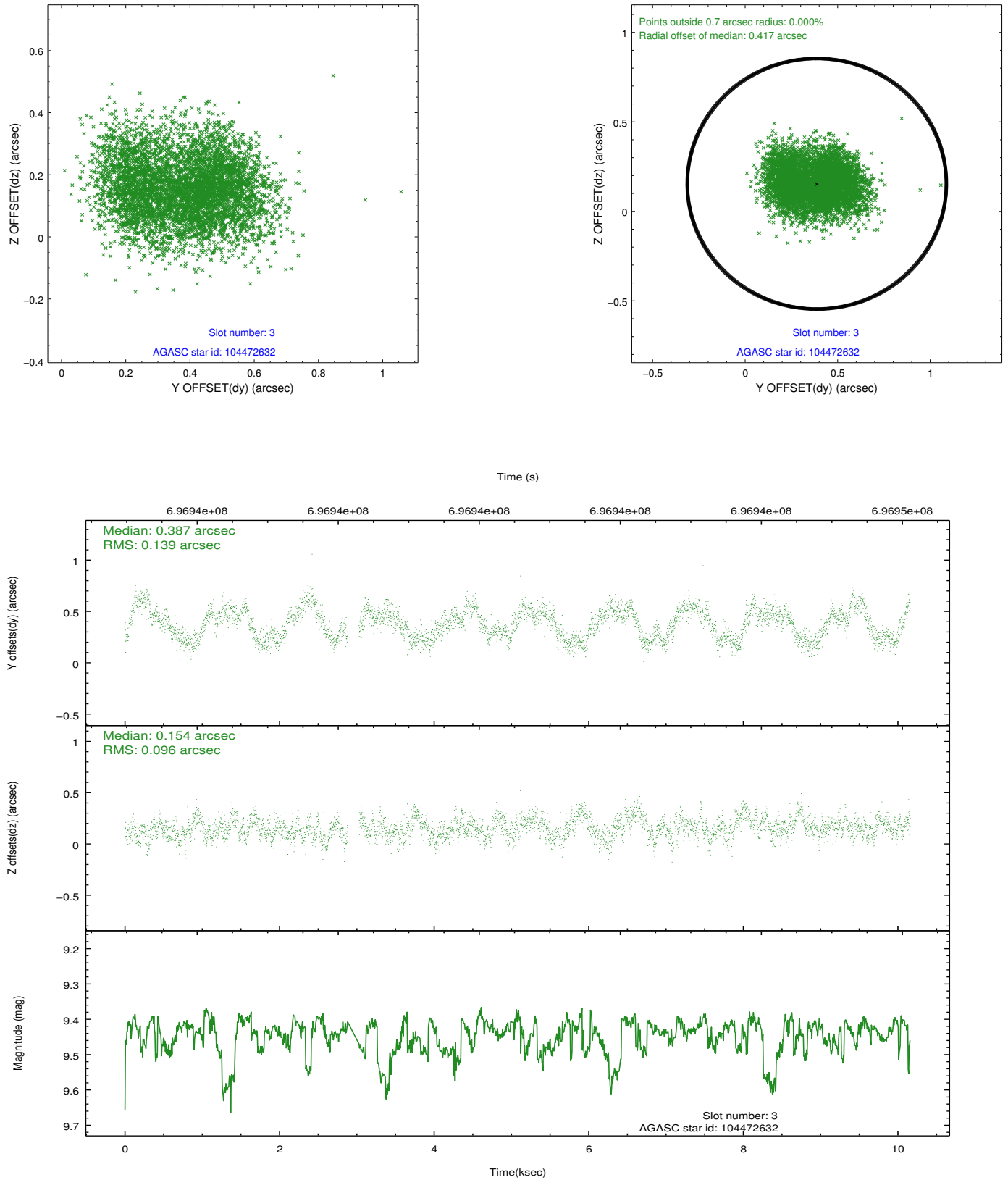


Slot Statistics

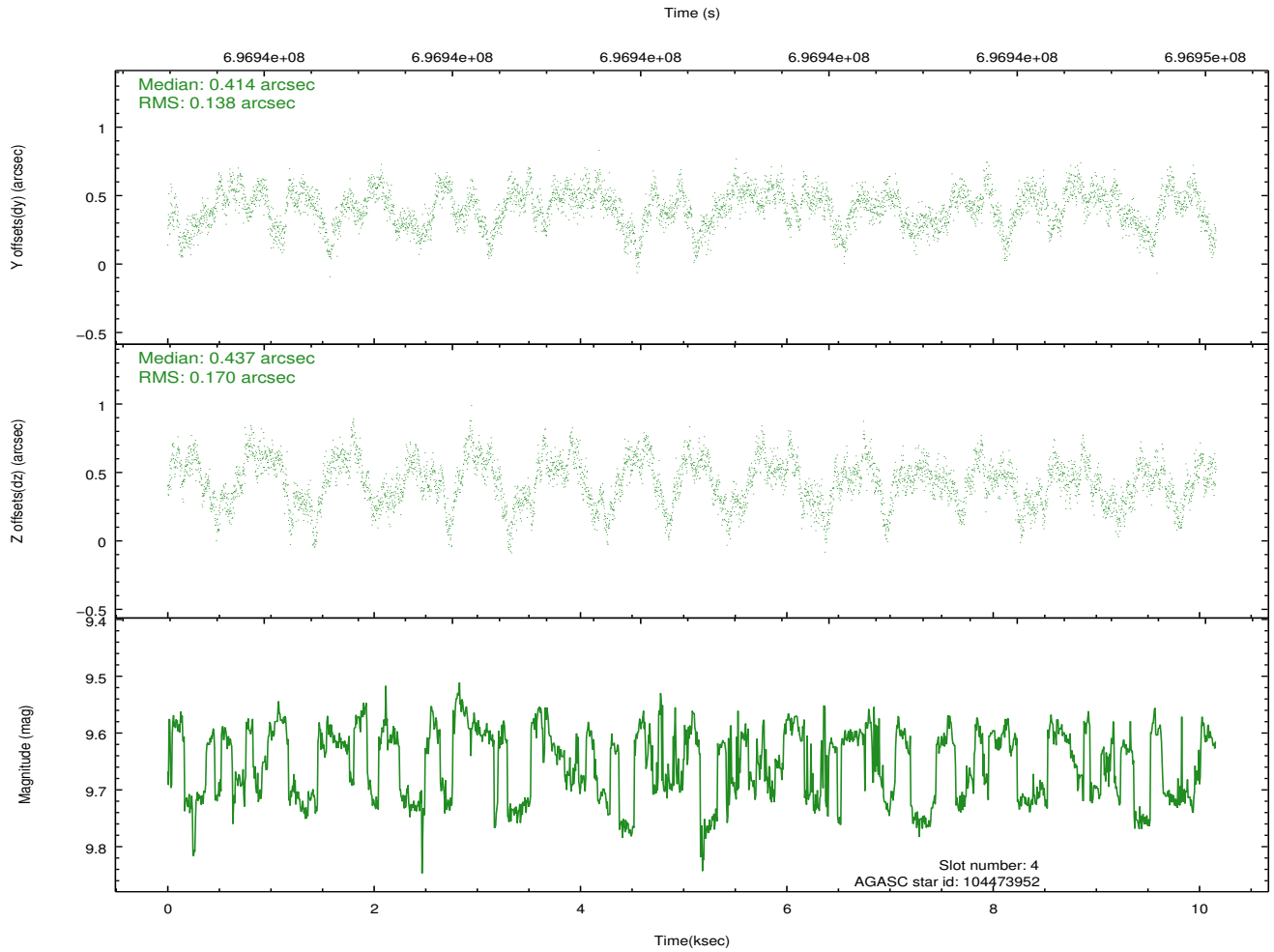
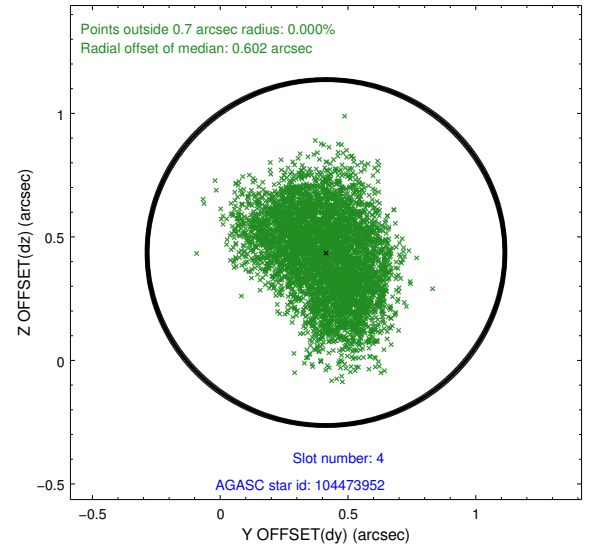
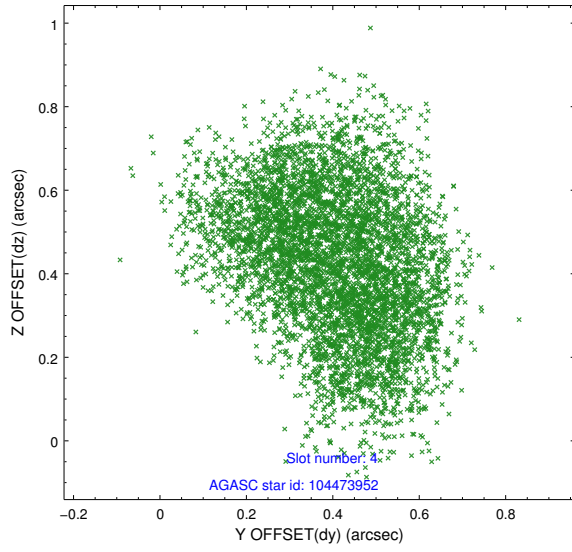
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-1	7.14	2479	1.000	0.131	-0.108	0.023	0.039	0.000000	0.000000	930.48	-920
1	FID		ACIS-I-3	7.36	2479	1.000	-0.141	0.122	0.015	0.023	0.000000	0.000000	47.99	-1054
2	FID		ACIS-I-6	7.14	2479	1.000	-0.078	0.055	0.036	0.056	0.000000	0.000000	396.13	1620
3	GUIDE	used	104472632	9.44	4880	1.000	0.387	0.154	0.186	0.278	129.958556	7.902991	-1082.50	-680
4	GUIDE	used	104473952	9.64	4951	1.000	0.414	0.437	0.238	0.364	129.595369	7.759028	-2098.33	-1636
5	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0
6	GUIDE	used	106171160	9.37	4950	1.000	-0.268	-0.274	0.158	0.246	131.002000	7.942415	2324.59	818
7	GUIDE	used	106189744	9.38	4948	1.000	-0.518	-0.304	0.294	0.432	130.448591	8.254627	77.34	1137

2.4 Star Slots

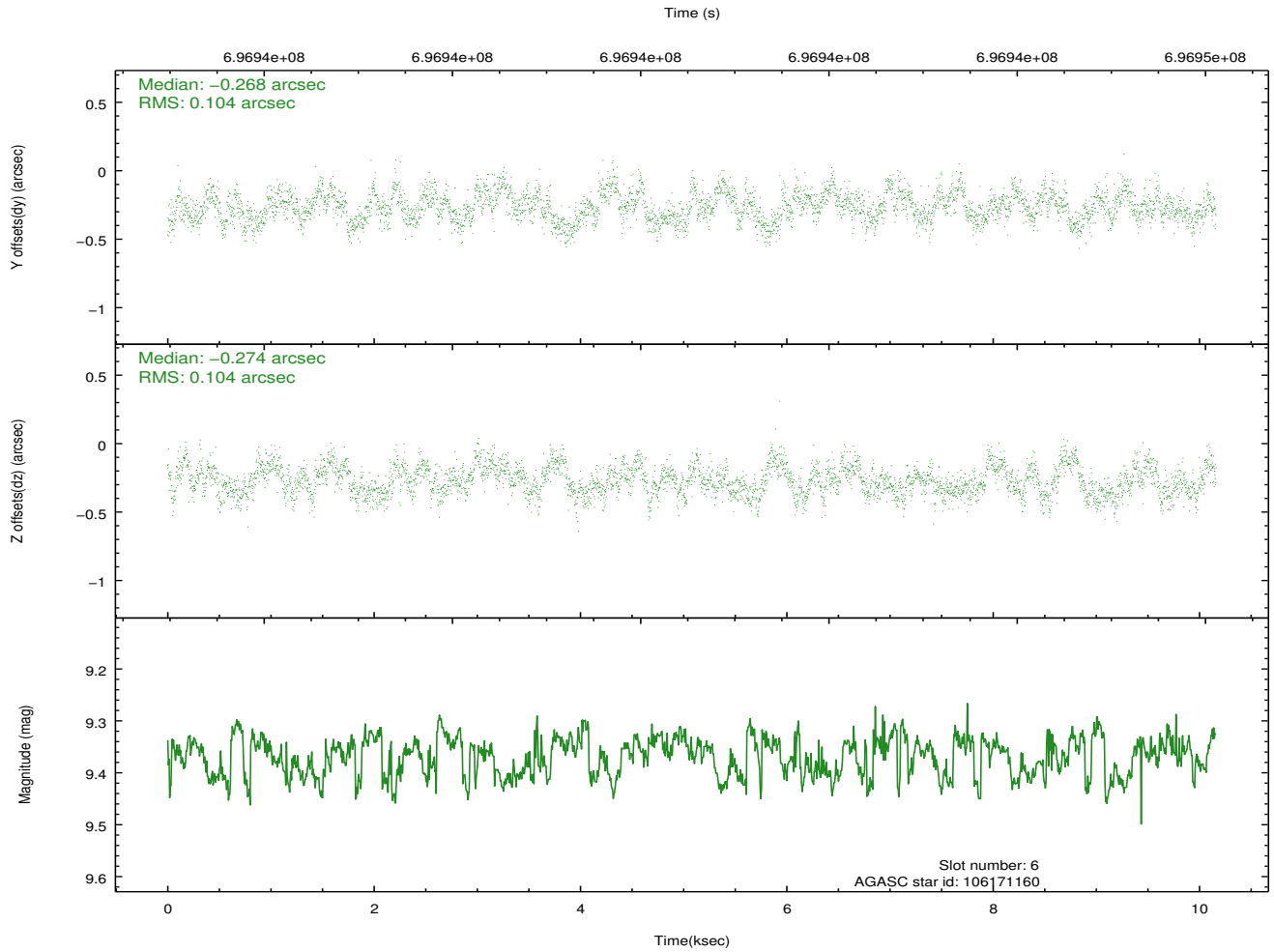
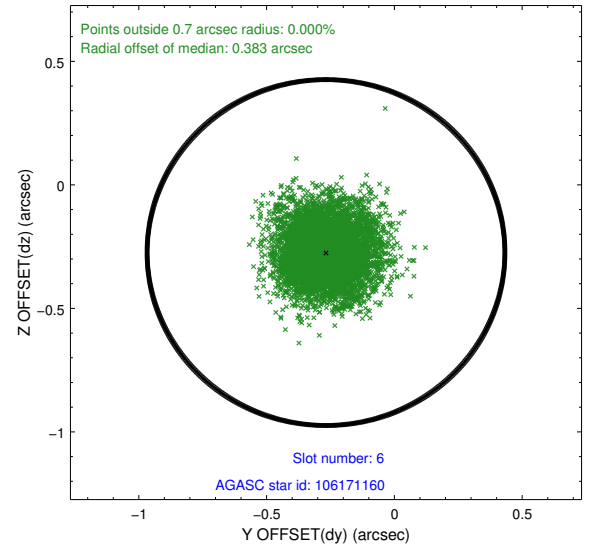
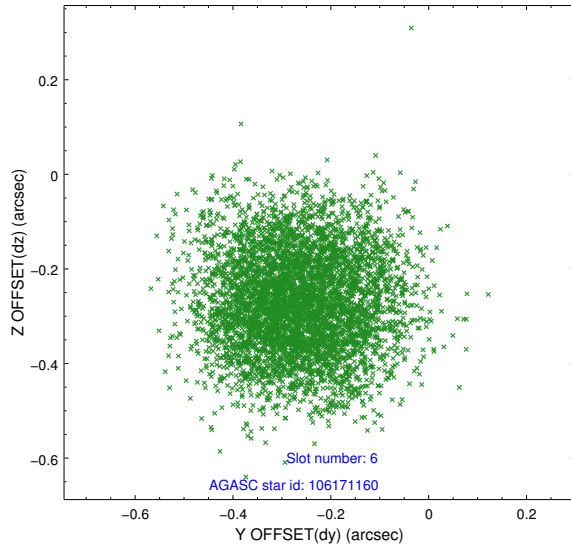
2.4.1 Slot 3



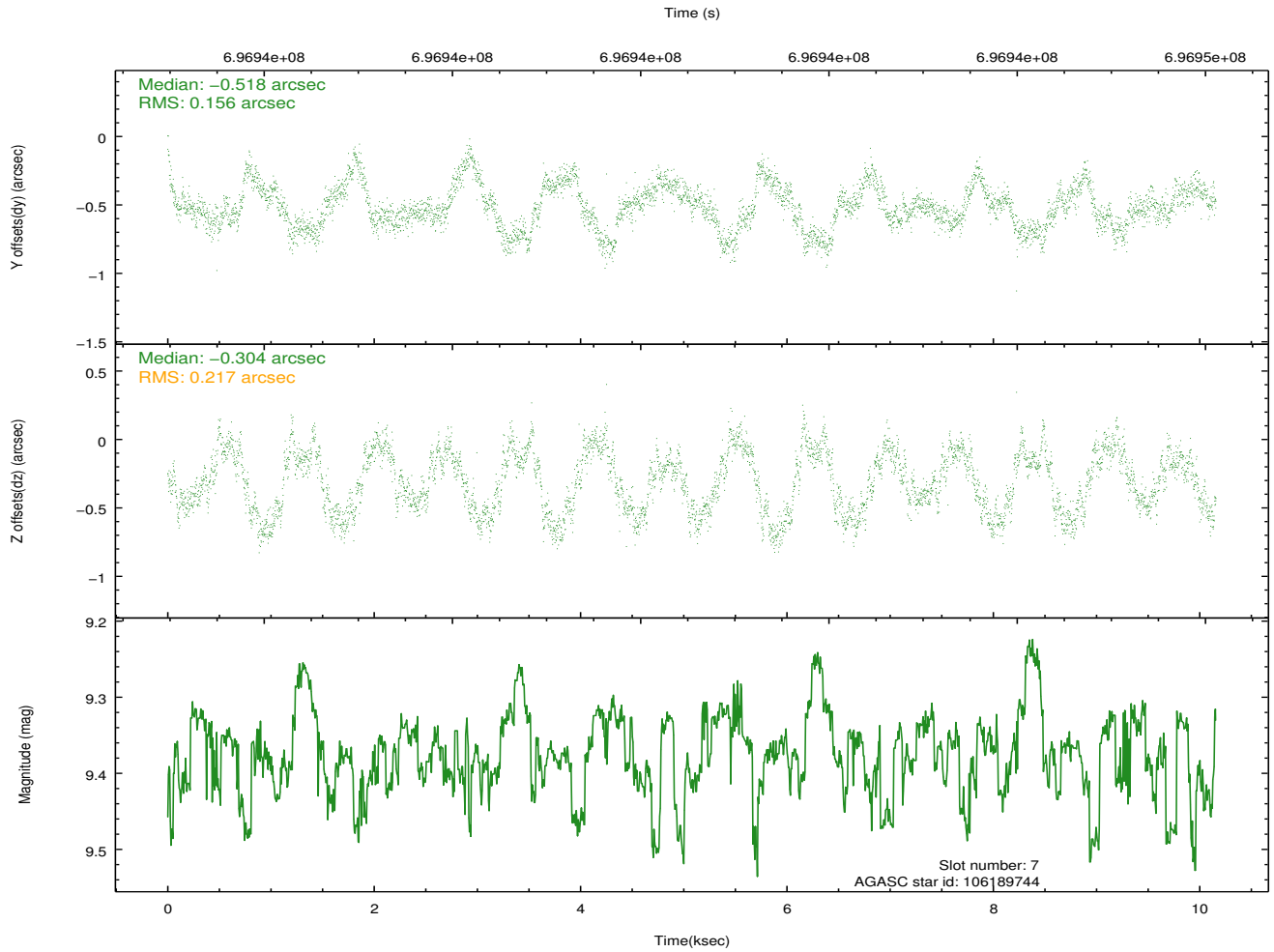
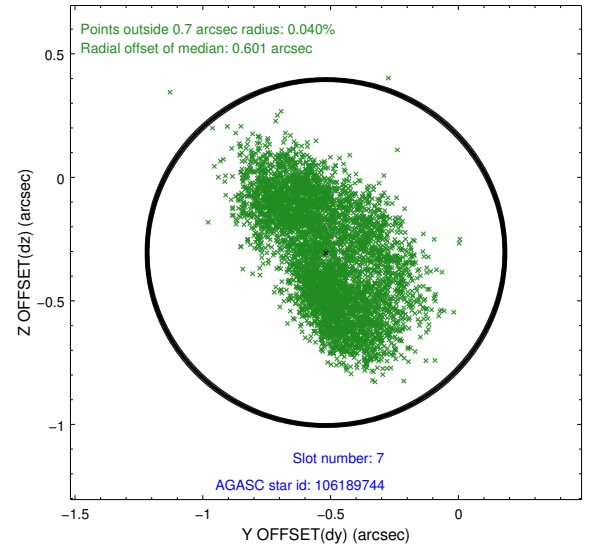
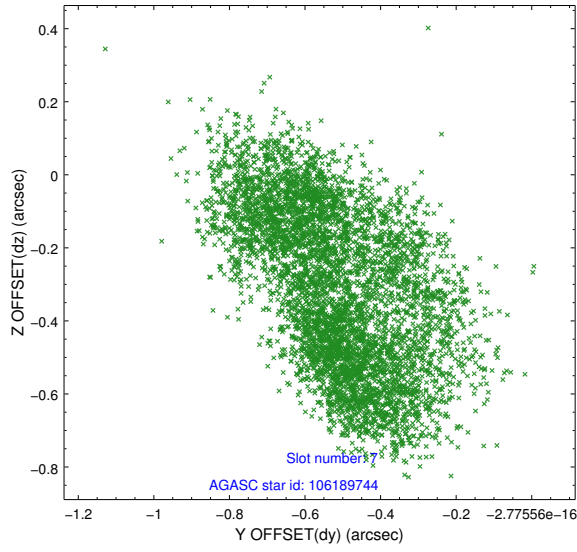
2.4.2 Slot 4



2.4.3 Slot 6

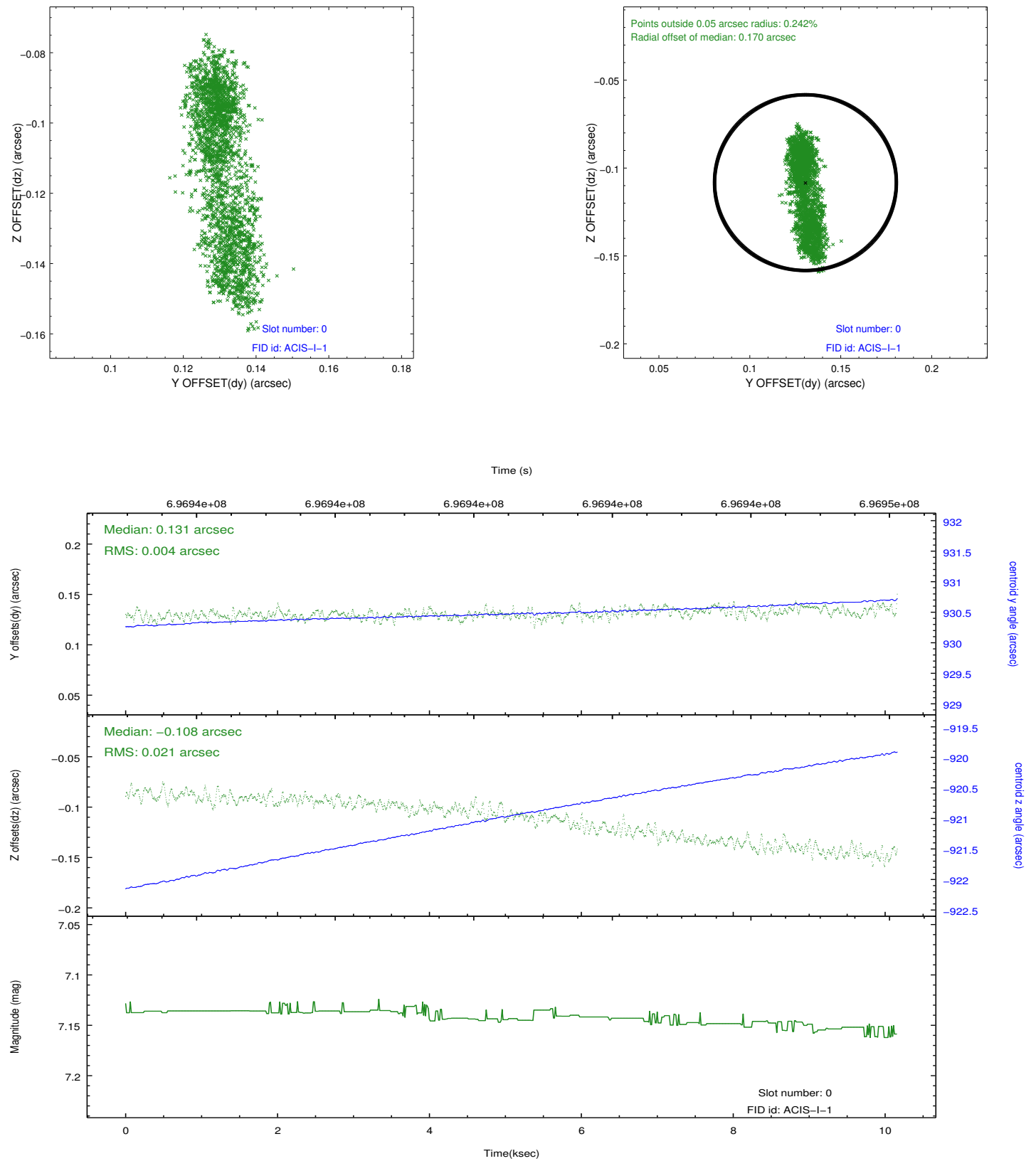


2.4.4 Slot 7

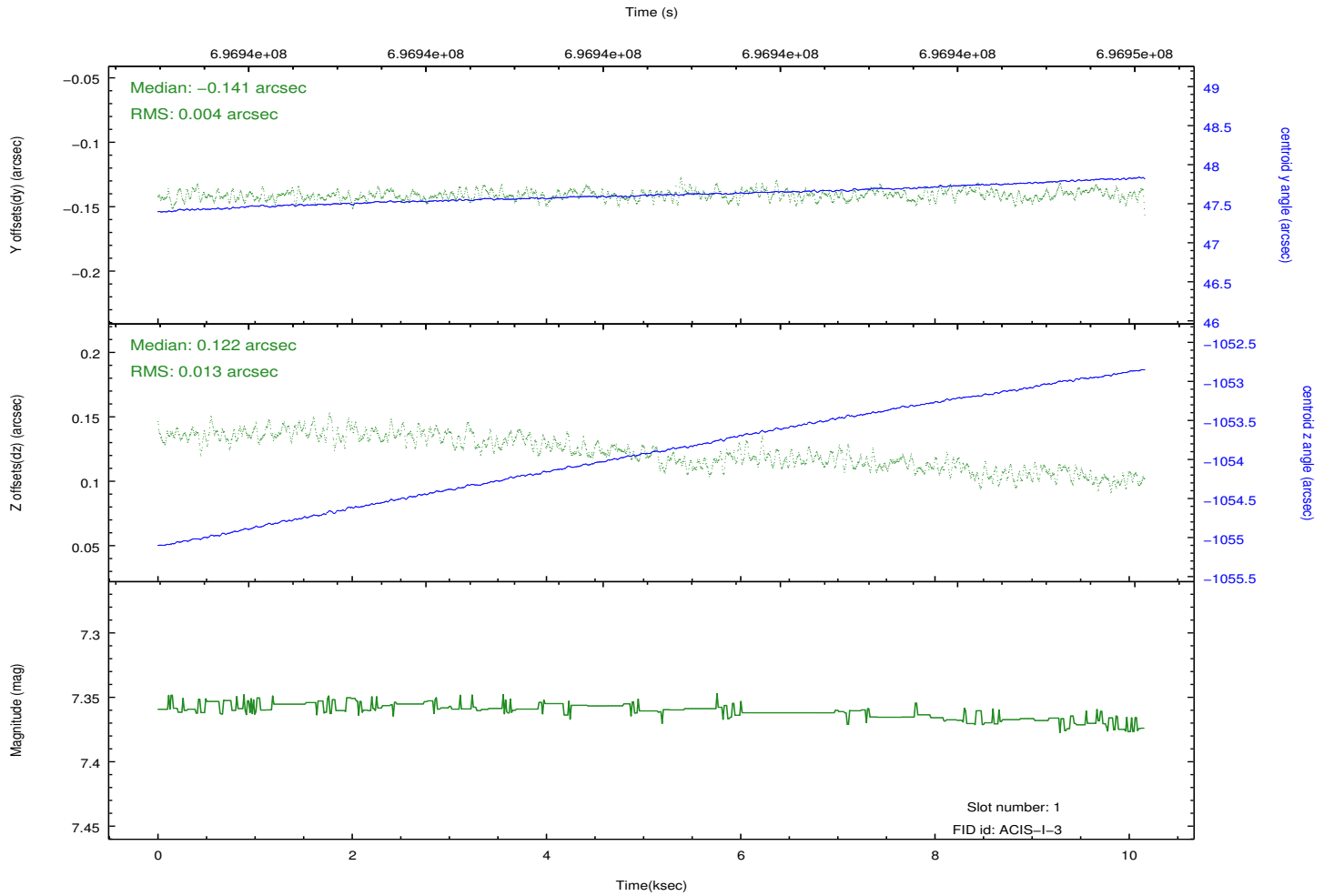
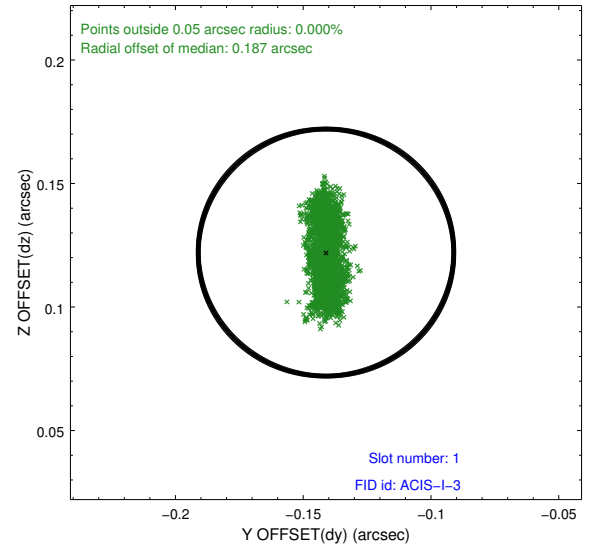
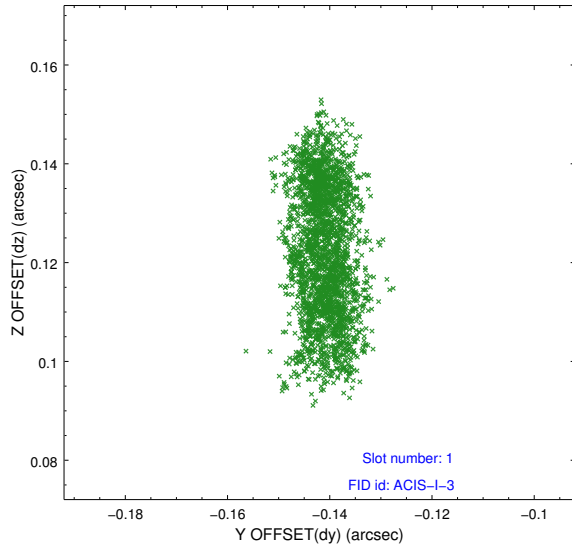


2.5 FID Slots

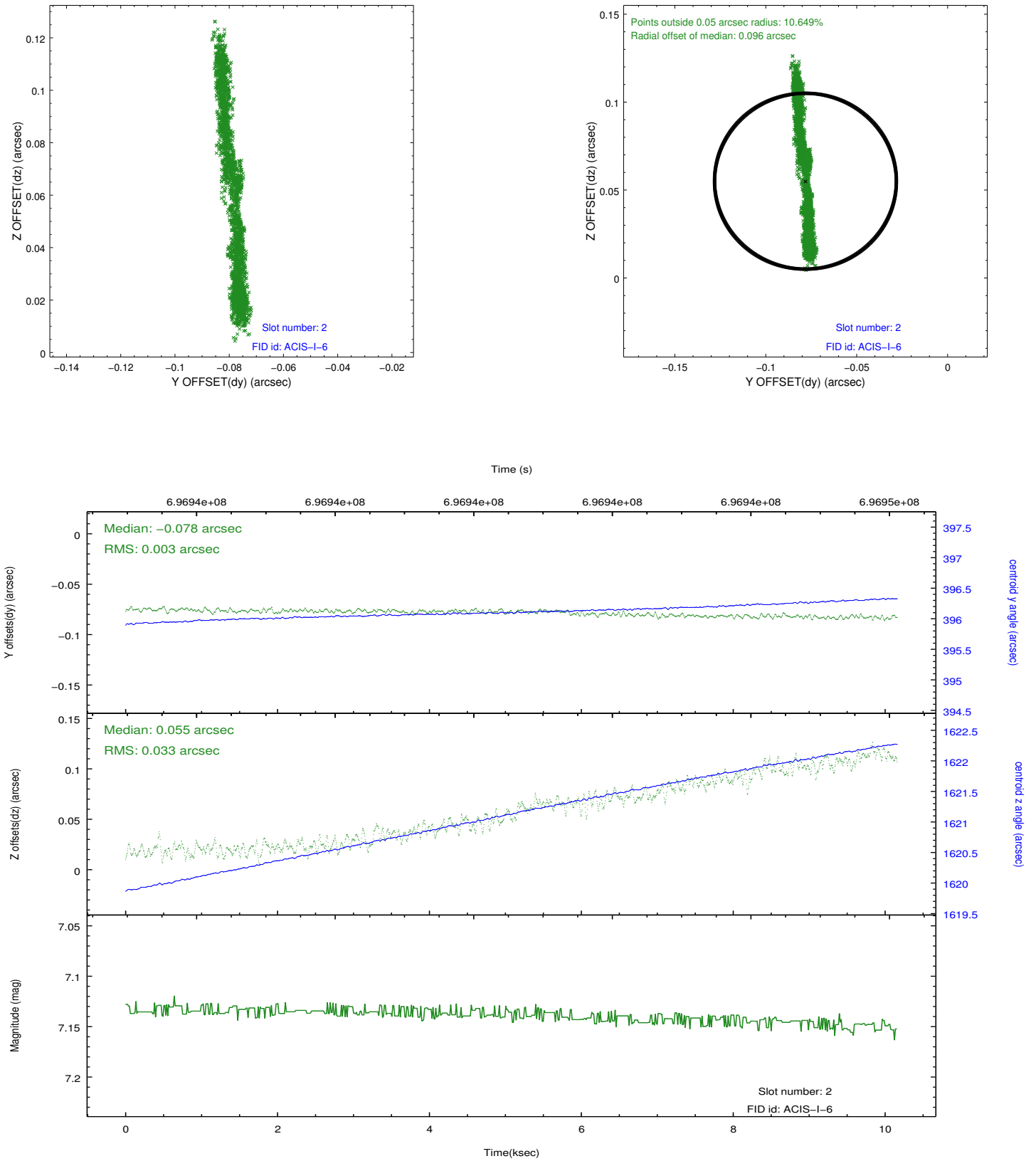
2.5.1 Slot 0



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)	2020.02.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	9.9076000763178

A.2 Comments

The guide star in slot 5 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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A spatial region of the original bias maps for CCD = 0, CCD = 1, and CCD = 2 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small (~ 20 eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias maps for CCD = 0, CCD = 1, and CCD = 2 have been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation.

The pixels on CCD = 0 affected by the anomaly are bounded by sky coords:

(130.44058,7.88811), (130.44209,7.89191), (130.38736,7.91311),
(130.37918,7.91188).

The affected pixels on CCD = 1 are bounded by sky coords:

(130.19680,7.93625), (130.19471,7.93091), (130.24152,7.91282),
(130.25464,7.91390).

The affected pixels on CCD = 2 are bounded by sky coords:

(130.45755,7.98171), (130.45880,7.98489), (130.41584,8.00151),
(130.41408,7.99854).