

V&V Reference Report

L2 ASCDS Version : 10.9.1

Observation 5560 - L2 Version 4
Chandra X-Ray Center

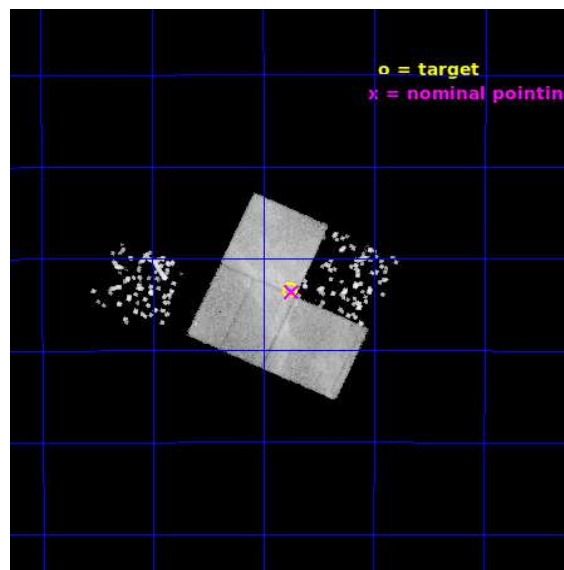
L2 Processing Date : Oct 9 2020

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 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
A	Summary	17
A.1	Status	17
A.2	Comments	17

1 Front

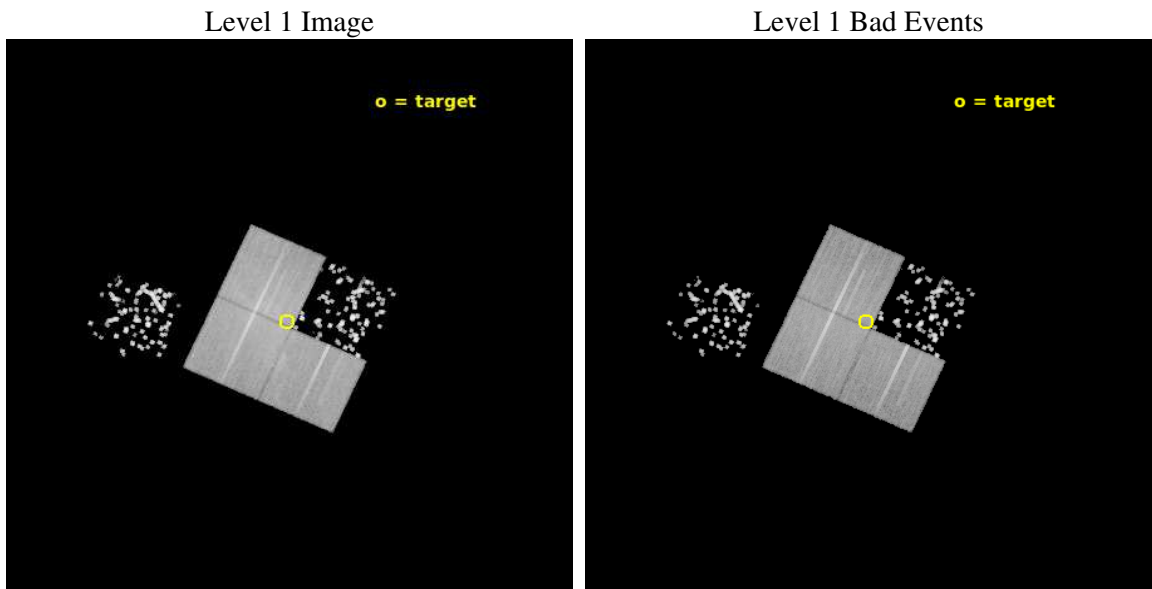
seq_num	500549	Sequence number
obs_id	5560	Observation id
title	Searching for spectral and morphological changes of X-ray structures in SNR RX J1713.7-3946	Proposal title
observer	Dr. Yasunobu Uchiyama	Principal investigator
object	RX J1713.7-3946 NW	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	257.939583	Observer's specified target RA [deg]
dec_targ	-39.556444	Observer's specified target Dec [deg]
ra_nom	257.93514893532	Nominal RA [deg]
dec_nom	-39.560474965426	Nominal Dec [deg]
roll_nom	294.63476334135	Nominal Roll [deg]
revision	4	Processing version of data
ontime	29412.717972994	Sum of GTIs [s]
livetime	29028.419159349	Livetime [s]
ontime0	29418.999943405	Sum of GTIs [s]
ontime1	29418.999943405	Sum of GTIs [s]
ontime2	29415.858953148	Sum of GTIs [s]
ontime3	29412.717972994	Sum of GTIs [s]
ontime6	29418.999943405	Sum of GTIs [s]
l2events	242640	Number of level 2 events



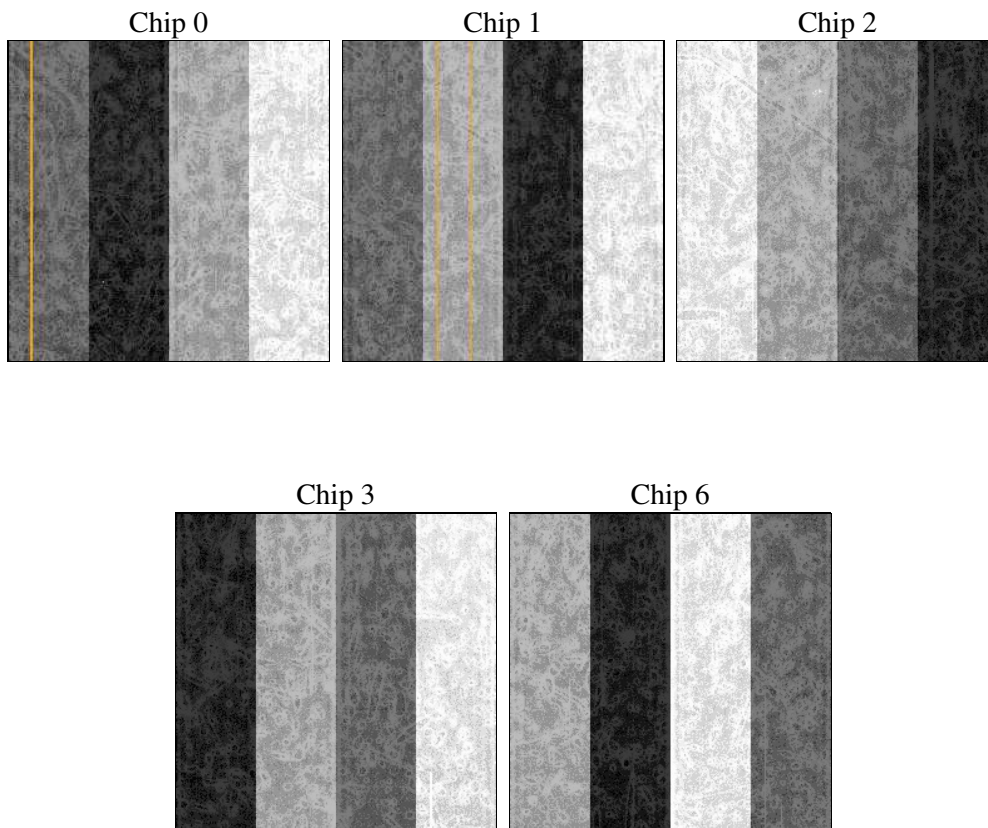
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	29250.000000	[s] Scheduled observation exposure time
ascdsver	10.9.1	Processing system revision	ontime	29412.717972994	Sum of GTIs [s]
caldbver	4.9.2	 	ontime0	29418.999943405	Sum of GTIs [s]
date	2020-10-09T07:48:05	Date and time of file creation	ontime1	29418.999943405	Sum of GTIs [s]
revision	4	Processing version of data	ontime2	29415.858953148	Sum of GTIs [s]
			ontime3	29412.717972994	Sum of GTIs [s]
			ontime6	29418.999943405	Sum of GTIs [s]
			l1events	959664	Number of level 1 events

2.1.4 Events

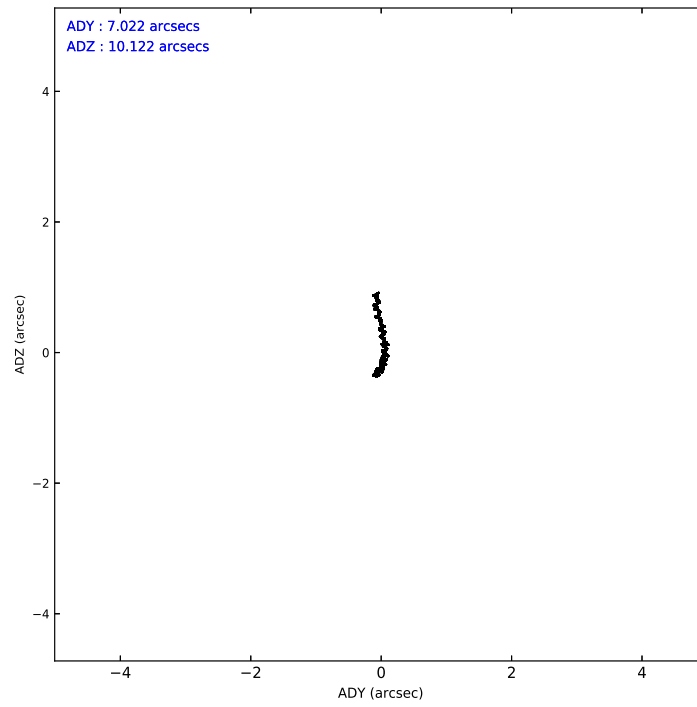
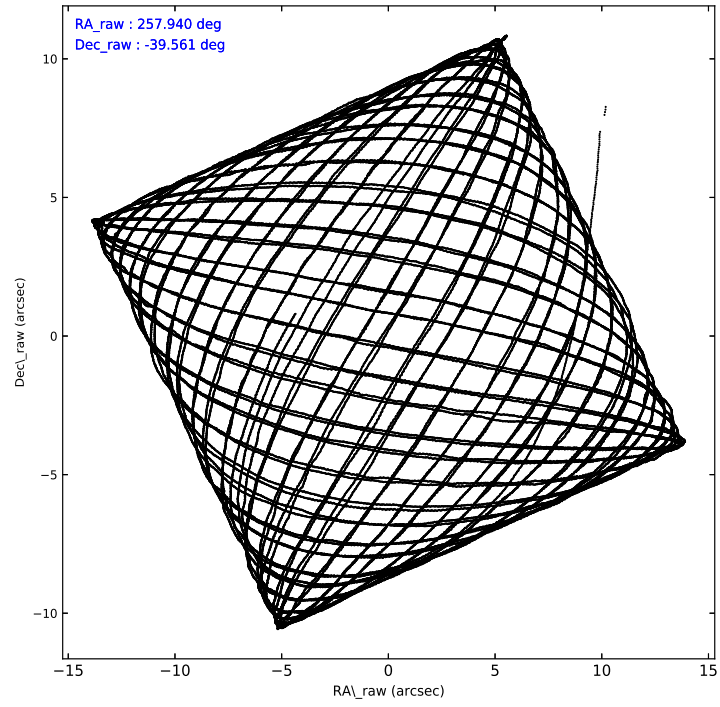
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	219231	101699	254102	272106	112526
rejected events	157121	77189	192866	181977	84705
rejected %	71%	75%	75%	66%	75%

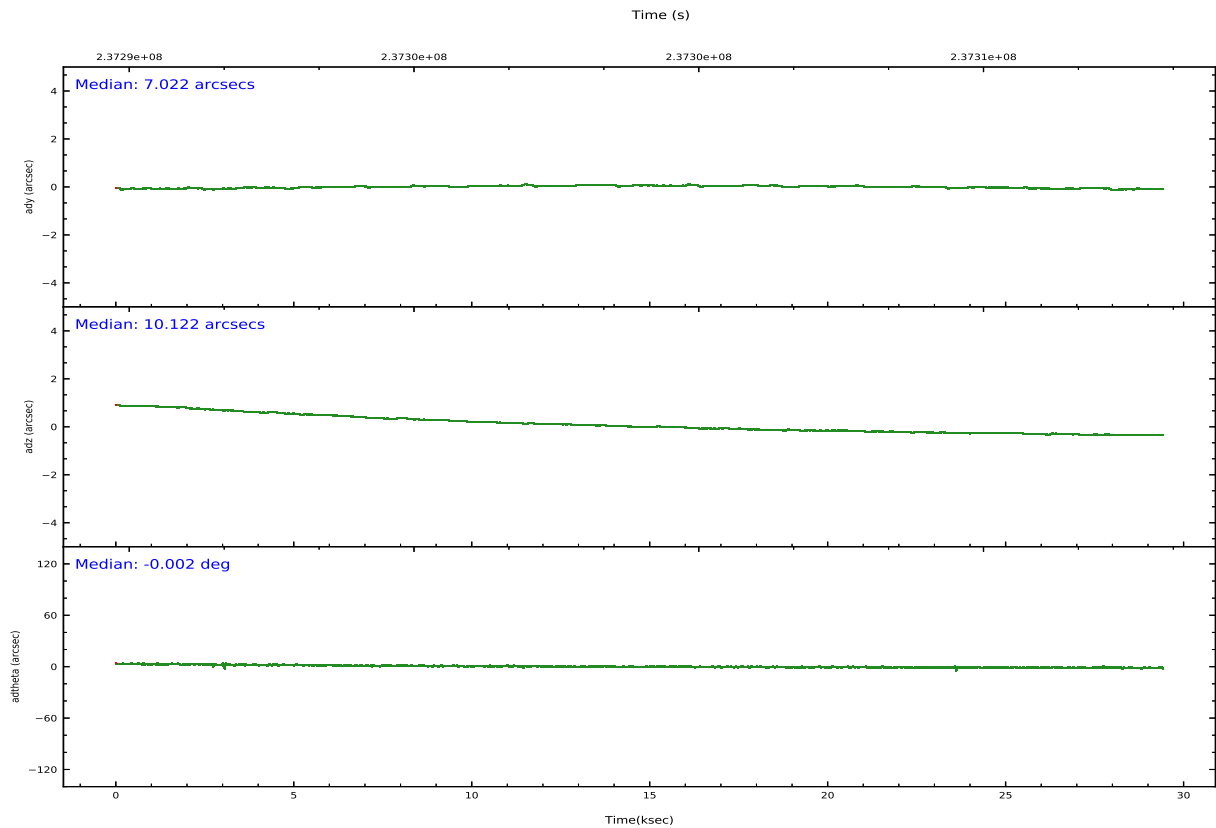
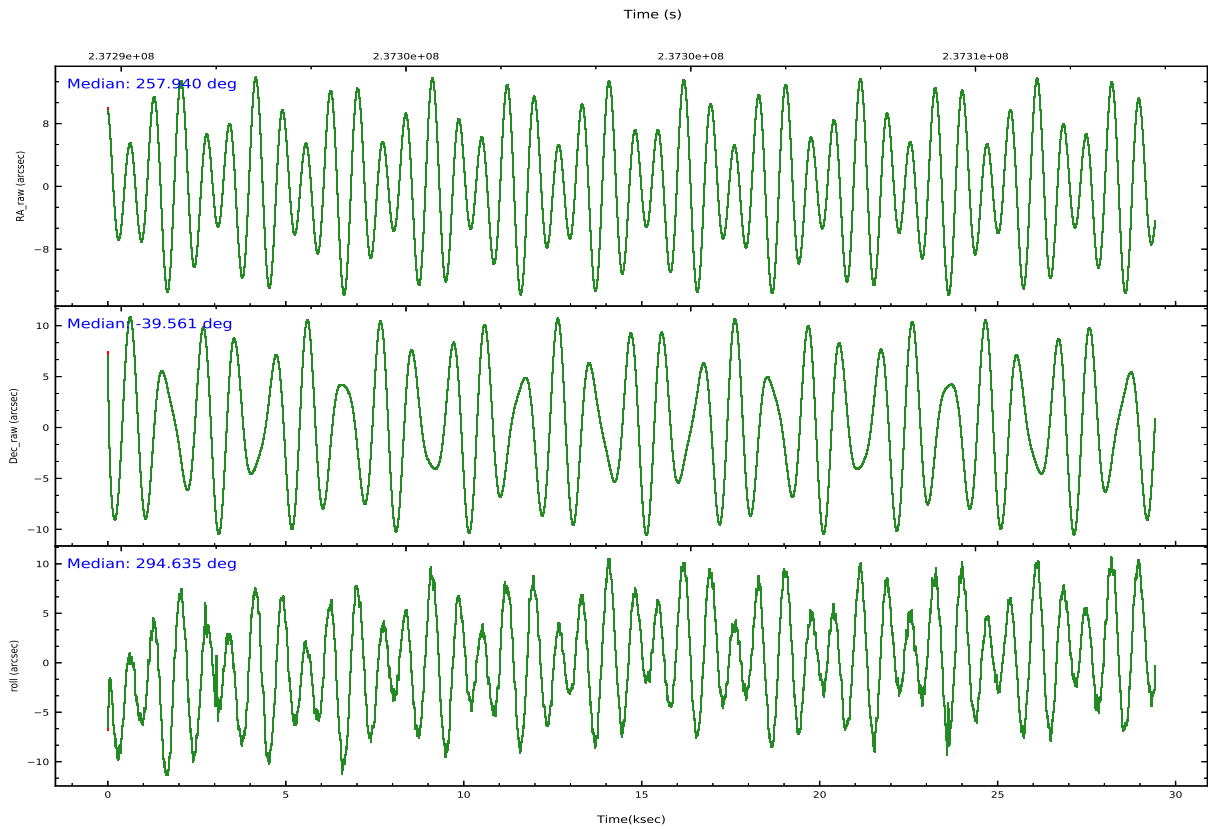
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	42077	2811	43053	65783	3360
	19%	2%	16%	24%	2%
grade 1 events	253	3483	480	544	3887
	0%	3%	0%	0%	3%
grade 2 events	9354	7585	9261	11921	9080
	4%	7%	3%	4%	8%
grade 3 events	3799	5765	3500	4670	6338
	1%	5%	1%	1%	5%
grade 4 events	3565	4108	3642	4682	4353
	1%	4%	1%	1%	3%
grade 5 events	5902	12925	5845	6818	14149
	2%	12%	2%	2%	12%
grade 6 events	4748	5607	4393	5591	6132
	2%	5%	1%	2%	5%
grade 7 events	149533	59415	183928	172097	65227
	68%	58%	72%	63%	57%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-01236	ACIS-01236	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	257.910717	257.93514893532	Subarray requested	NONE	NONE
[deg] Pointing Dec	-39.545326	-39.560474965426	Alternating exposures requested	N	N
[deg] Pointing Roll	294.412032	294.63476334135	[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	-233.592463	-233.5874344608287			
[mm] SIM translation stage offset	0	-0.005018542100998502			
[s] Observation start time (MET)	237287796.184000	237286017.40502			
Observation start date	2005-07-09T09:15:32	2005-07-09T08:46:57			
[s] Observation end time (MET)	237317046.184000	237317955.38148			
Observation end date	2005-07-09T17:23:02	2005-07-09T17:39:15			
Read mode	TIMED	TIMED			

2.3 Aspect





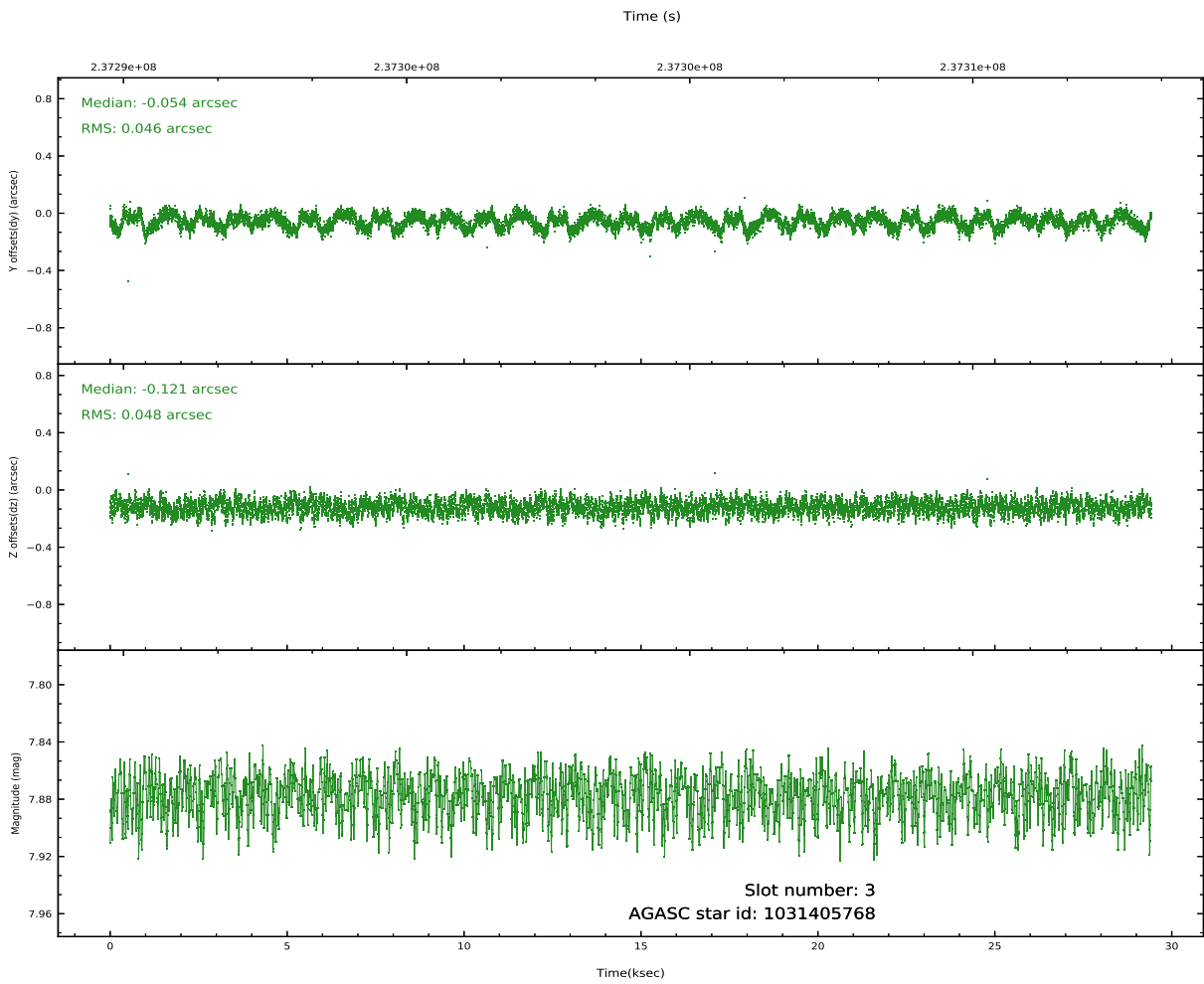
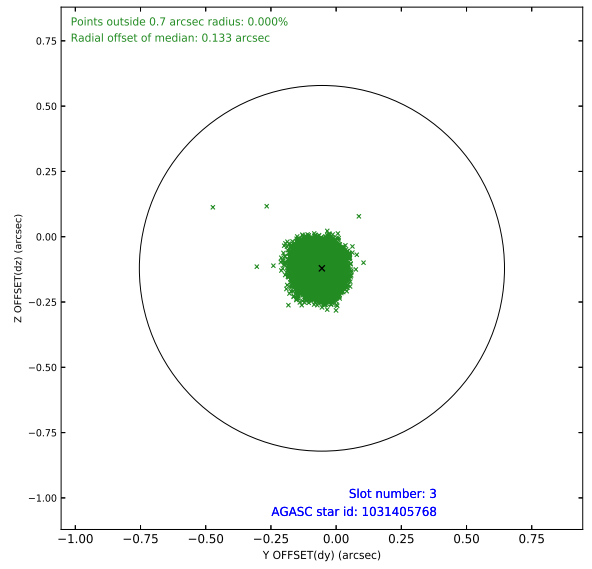
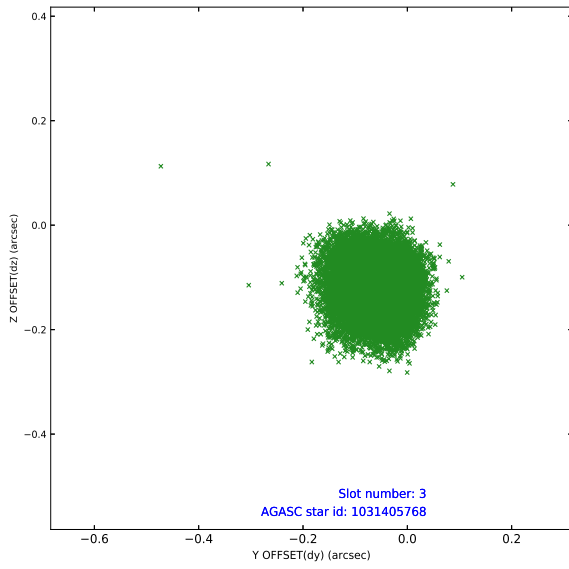
Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-I-1	7.24	7178	1.000	0.016	-0.013	0.020	0.040	0.000000	0.000000	932.68	-833
1	FID		ACIS-I-5	7.23	7178	1.000	-0.198	0.021	0.011	0.023	0.000000	0.000000	-1815.61	1063
2	FID		ACIS-I-6	7.25	7178	1.000	0.090	0.063	0.013	0.021	0.000000	0.000000	398.20	1708
3	GUIDE	used	1031405768	7.88	14353	1.000	-0.054	-0.121	0.073	0.110	257.178877	-39.338023	-1513.83	-1550
4	GUIDE	used	1031546704	9.16	14343	1.000	0.054	0.064	0.107	0.174	258.328569	-39.071177	-1069.16	1767
5	GUIDE	used	1031932624	8.33	14351	1.000	0.131	-0.021	0.074	0.119	257.431727	-40.221910	1677.64	-2206
6	GUIDE	used	1032064992	9.80	14290	1.000	0.017	0.080	0.115	0.184	258.632257	-39.931078	2095.33	1236
7	GUIDE	used	1031931840	8.08	14350	1.000	-0.150	0.002	0.071	0.112	256.966064	-39.446694	-1395.66	-2250

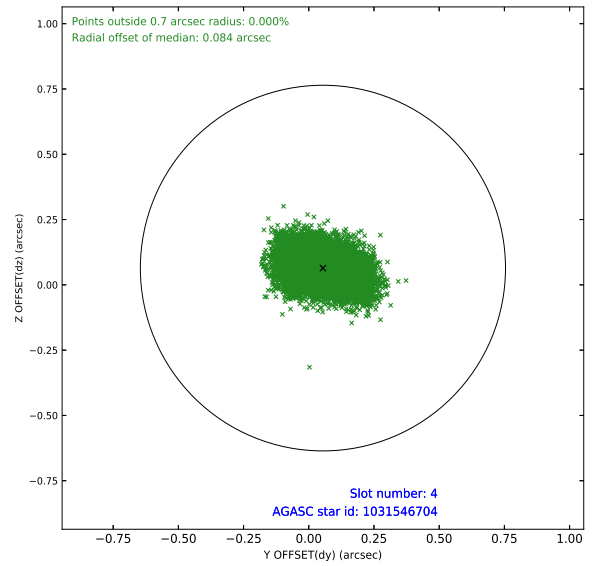
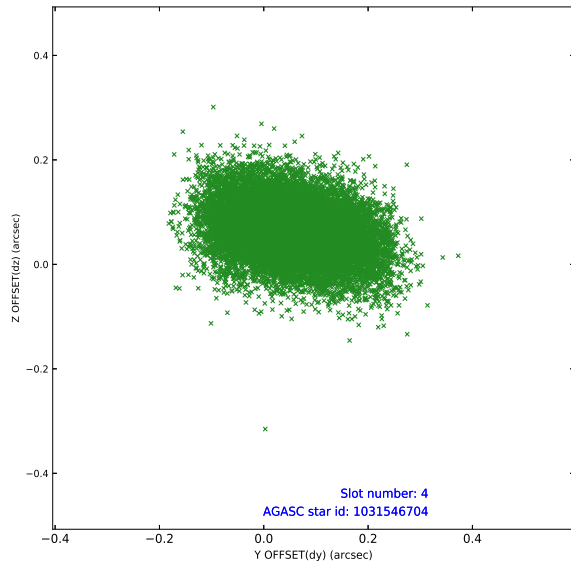
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2.4 Star Slots

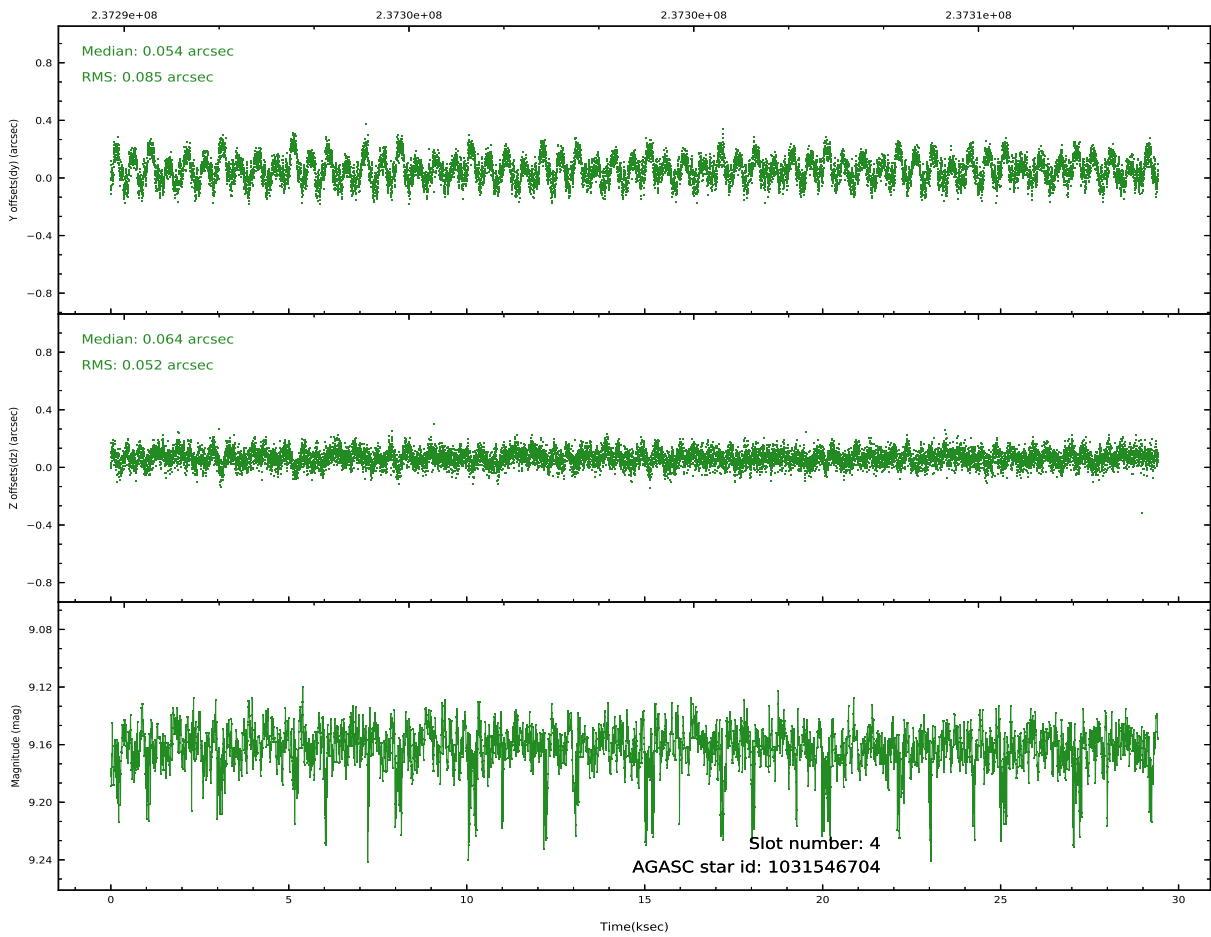
2.4.1 Slot 3



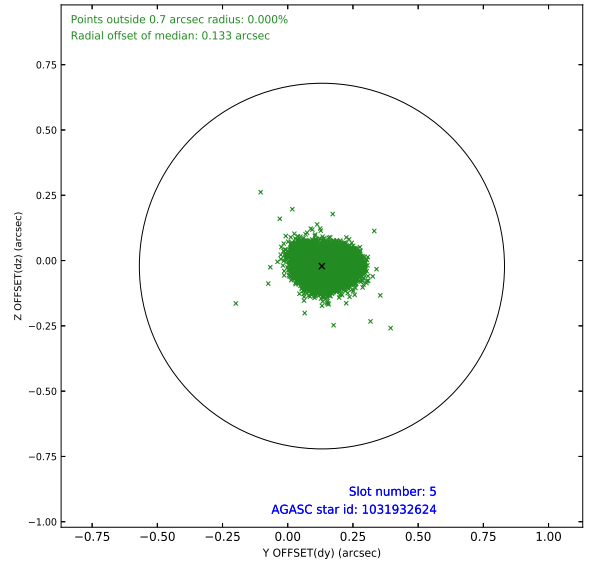
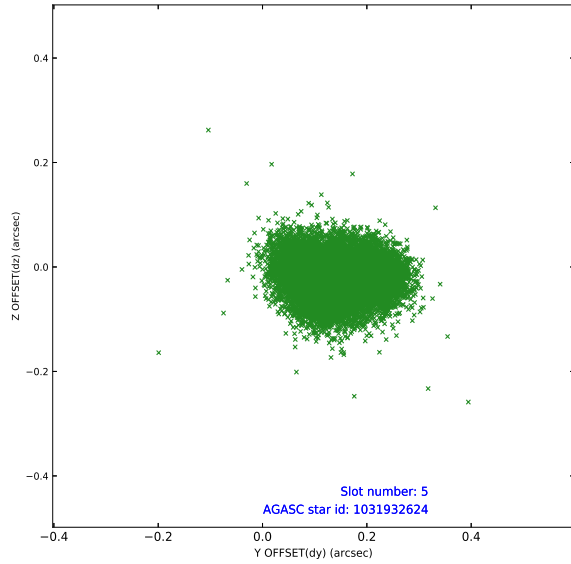
2.4.2 Slot 4



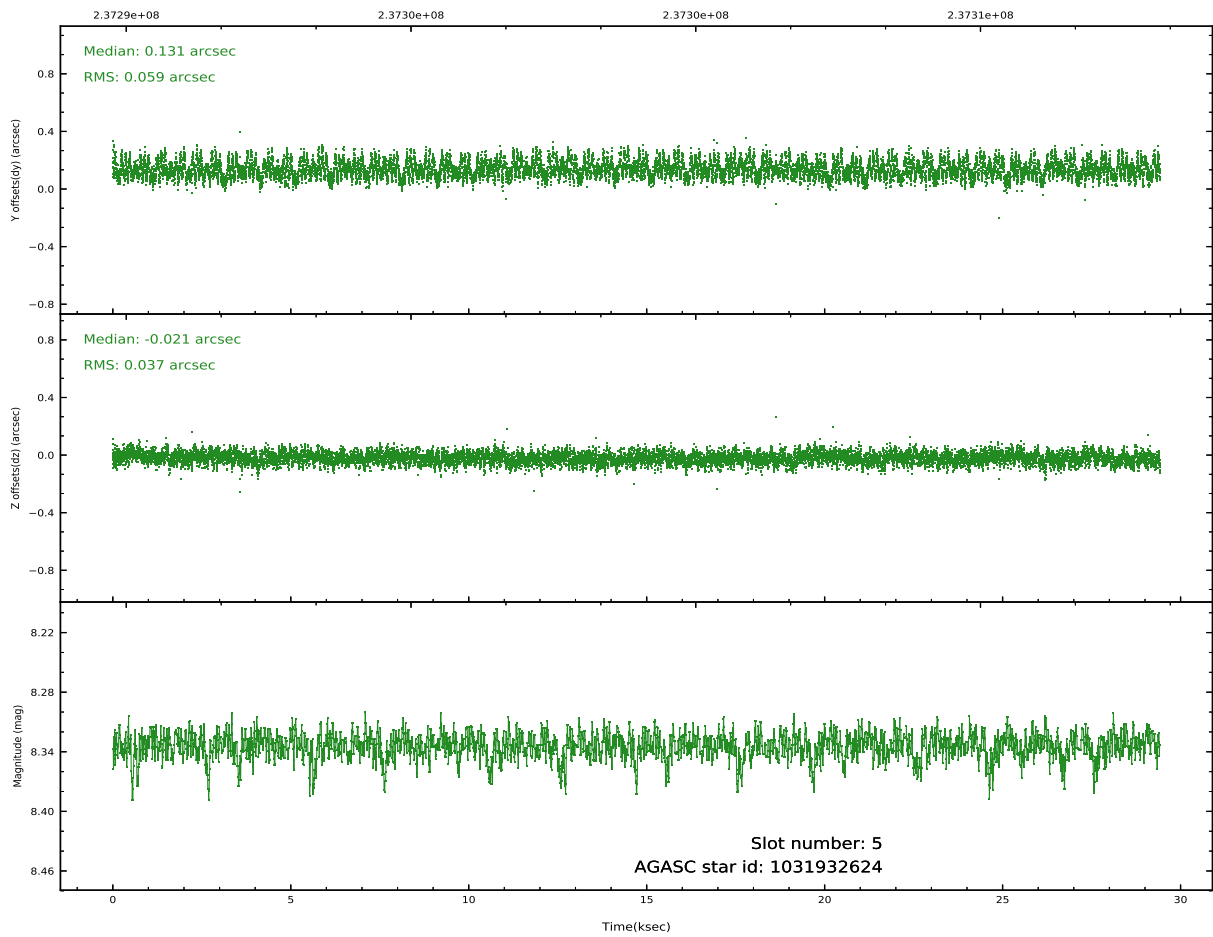
Time (s)



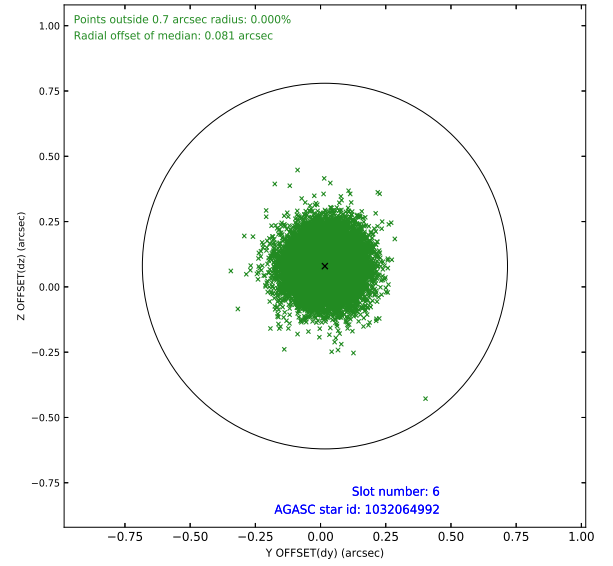
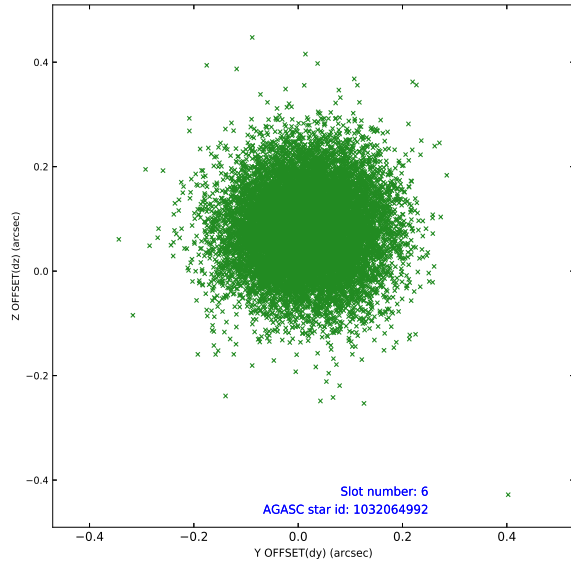
2.4.3 Slot 5



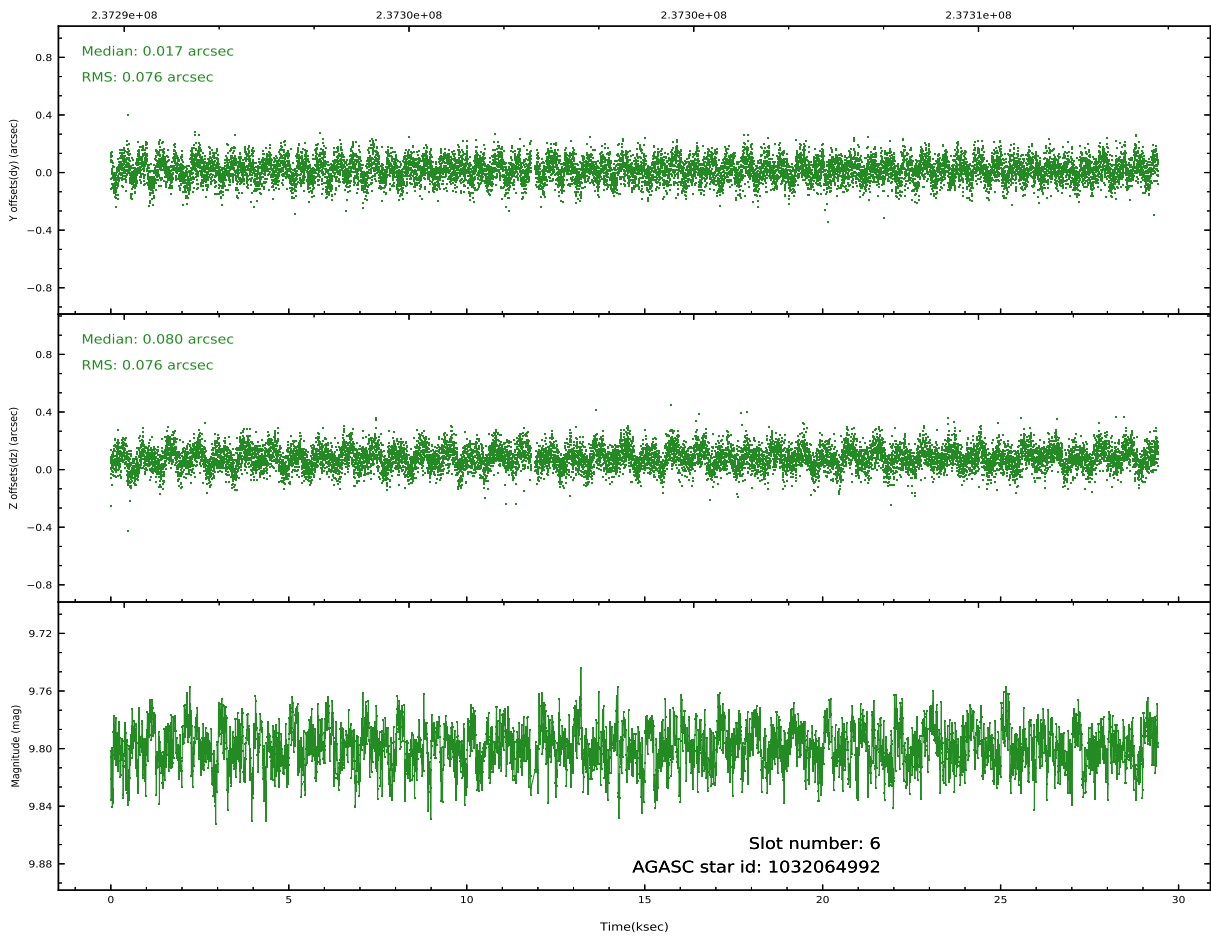
Time (s)



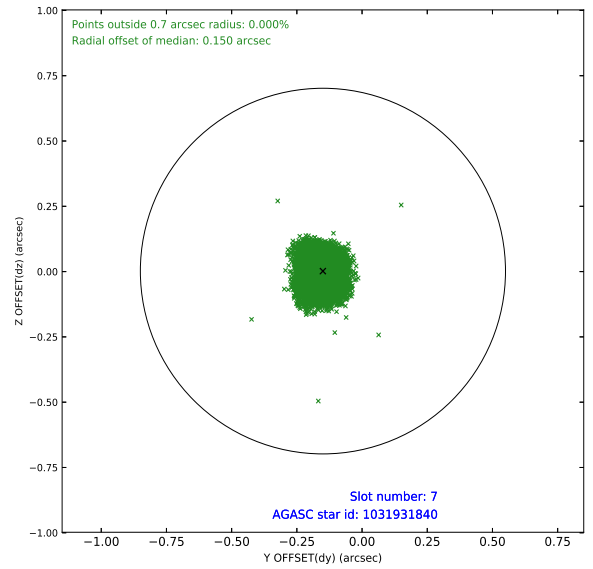
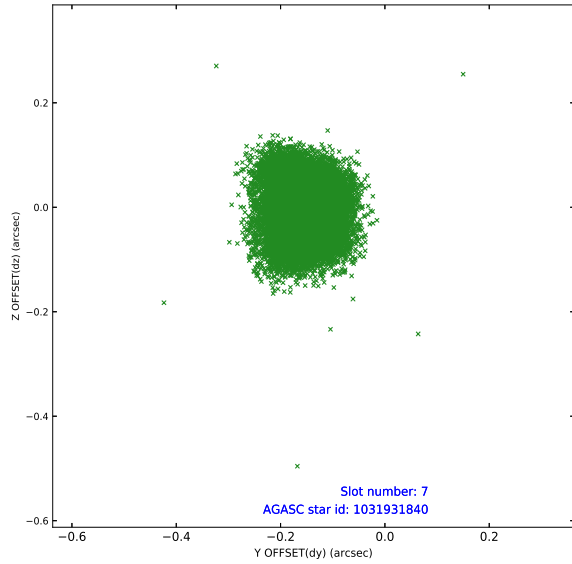
2.4.4 Slot 6



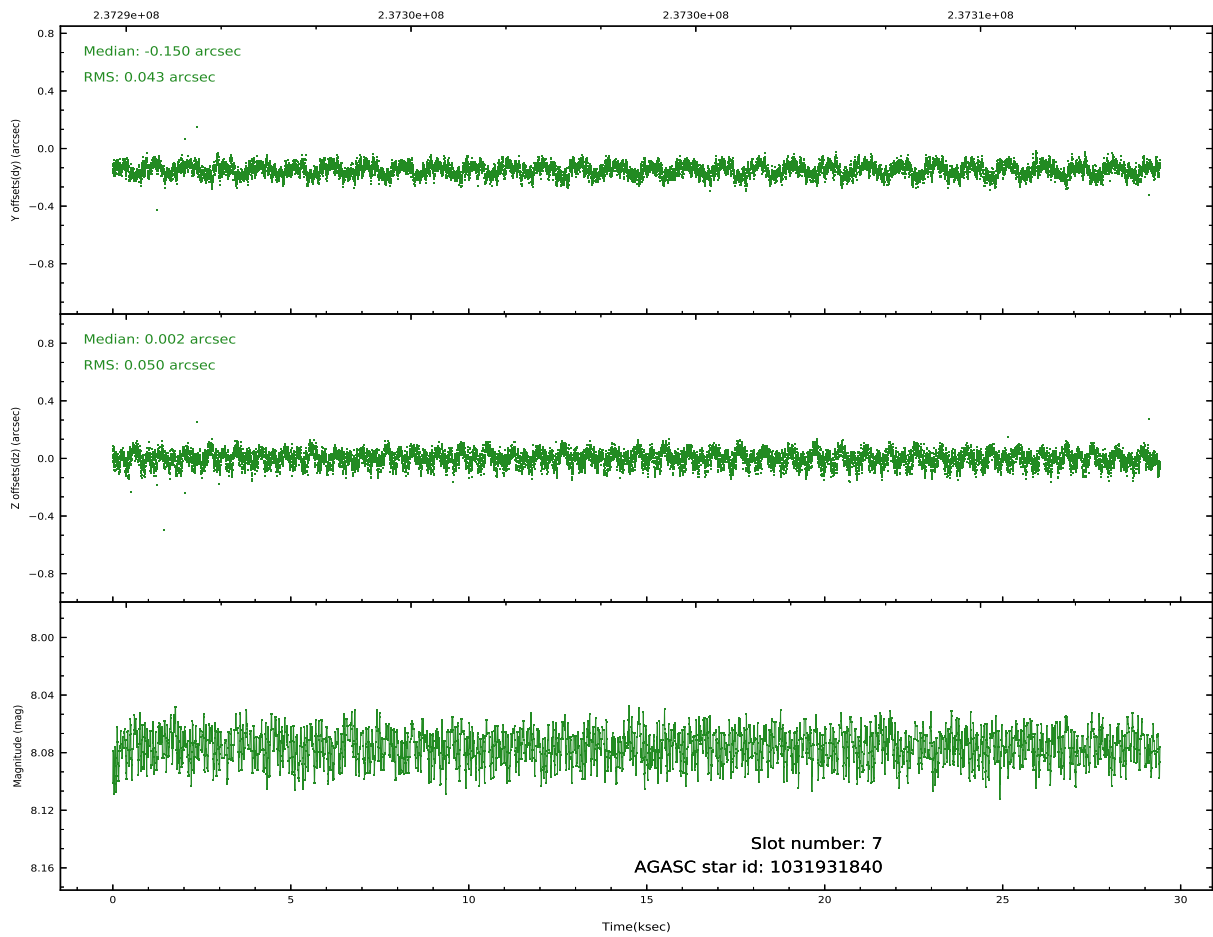
Time (s)



2.4.5 Slot 7

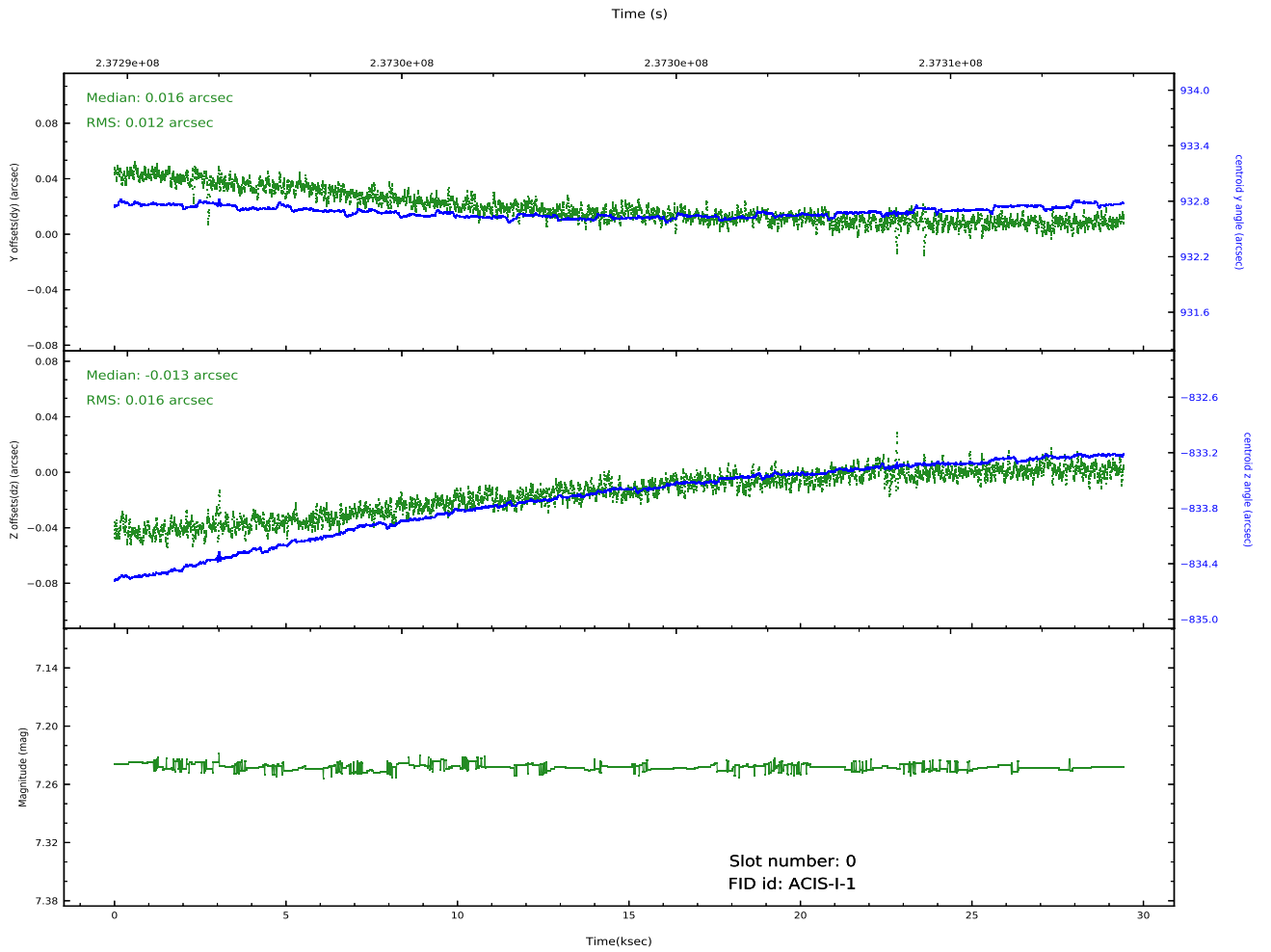
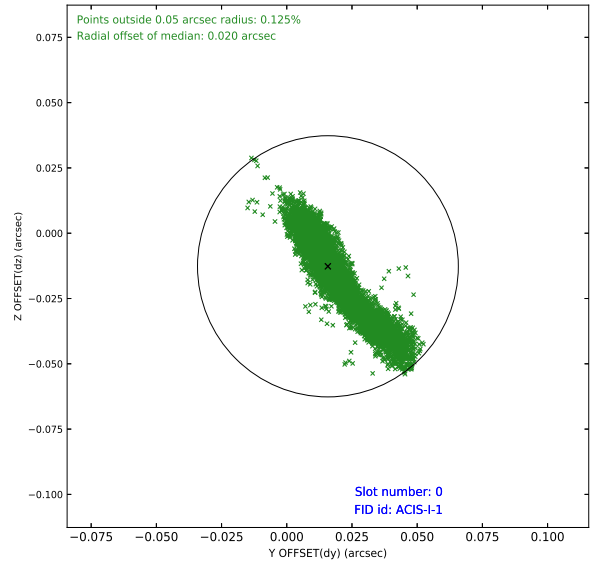
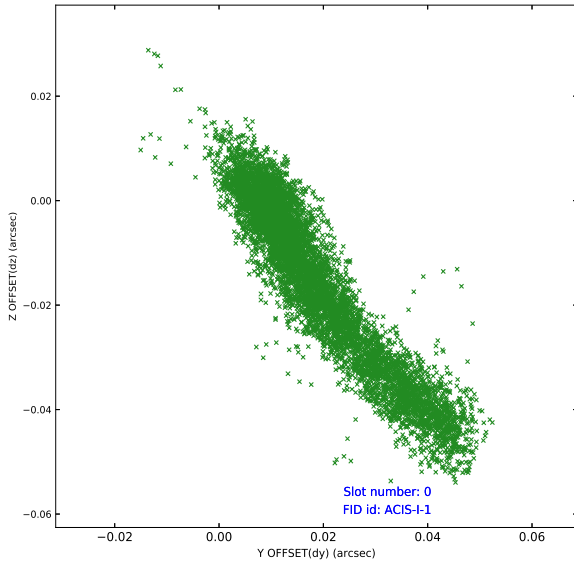


Time (s)

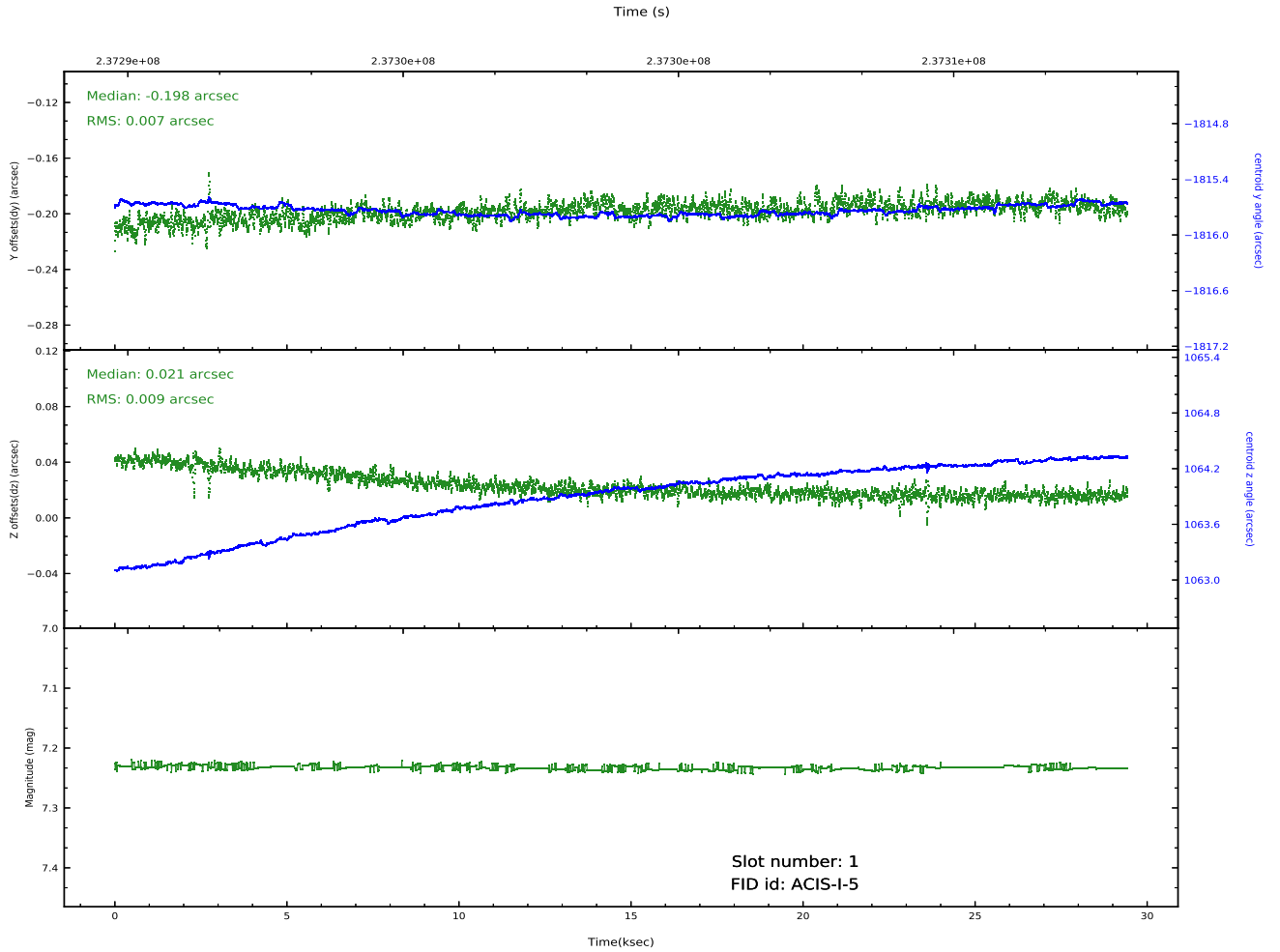
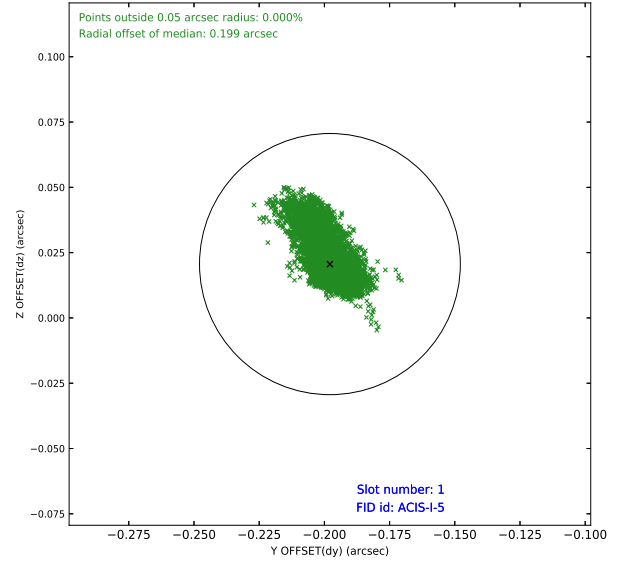
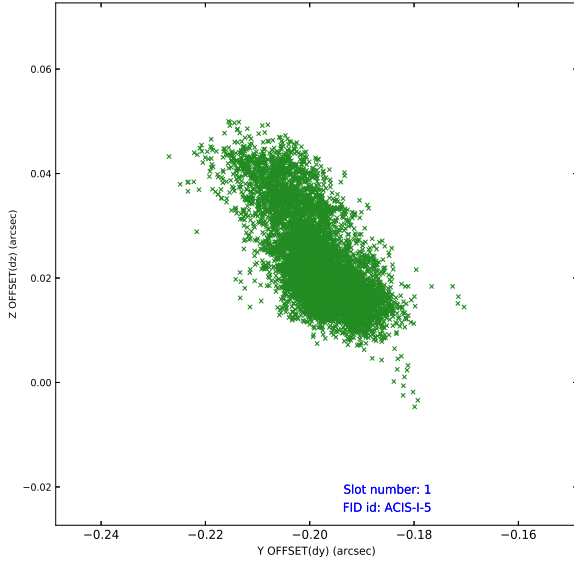


2.5 FID Slots

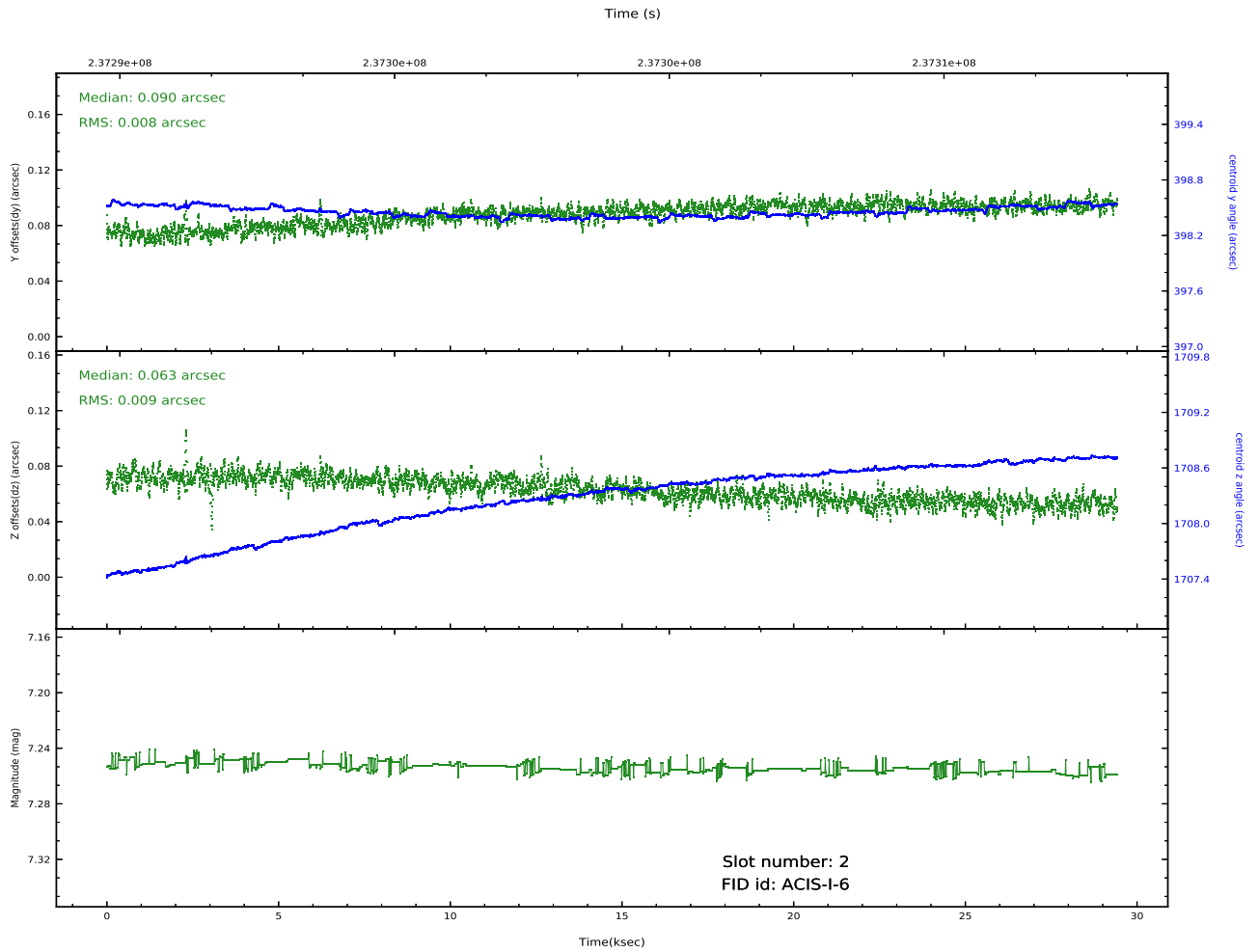
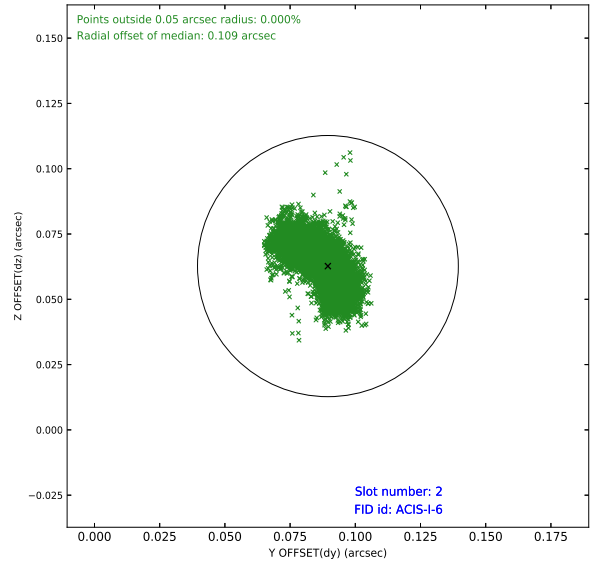
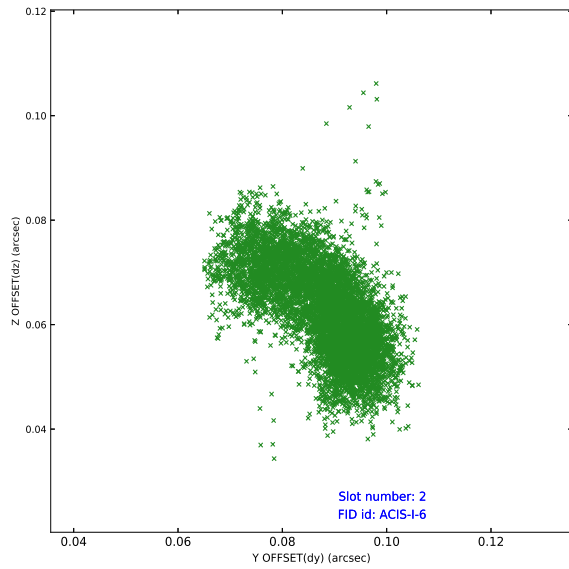
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2020.10.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.413

A.2 Comments

An ACIS Threshold-Plane Anomaly occurred for CCD chips I1 and S2. The flight s/w is intended to delay 'start events' until after 'end bias dump'. For some unknown reason, it occasionally fails to do so, and if the overlap lasts for more than a minute or so, one or more FEPs experience a firmware latch-up that renders them useless until they are power cycled. No event data were recorded for these chips; the bright pixels on these chips are due to previously known hot pixels with the applied dither correction. When a T plane latchup occurs, the effect is that events will be reported from the same pixel on the CCD frame after frame even if there is no event in that pixel in that frame. CCD S2 and CCD I1 were latched up from the beginning of the observation. So CCD S2 and CCD I1 were reporting events from the same pixels even though there were no events. In addition to this, CCD S2 and CCD I1 were reporting a large number of events, more than 1,000 events per frame. This caused massive telemetry saturation. The other CCDs that were reporting normally, I0, I1 and I3, suffered from telemetry saturation resulting in a large number of dropped exposures. The ONTIME value for these chips reflects the lost exposure time. Analysis of these data will require great care.