

V&V Reference Report

L2 ASCDS Version : 10.9.2

Observation 21079 - L2 Version 3
Chandra X-Ray Center

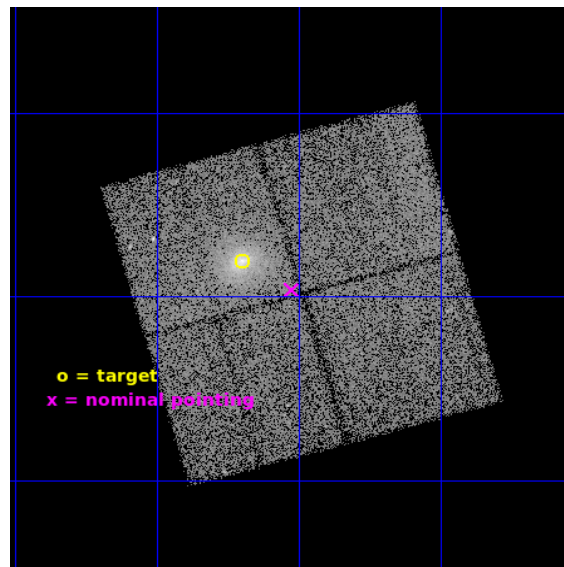
L2 Processing Date : Oct 26 2020

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1 Front

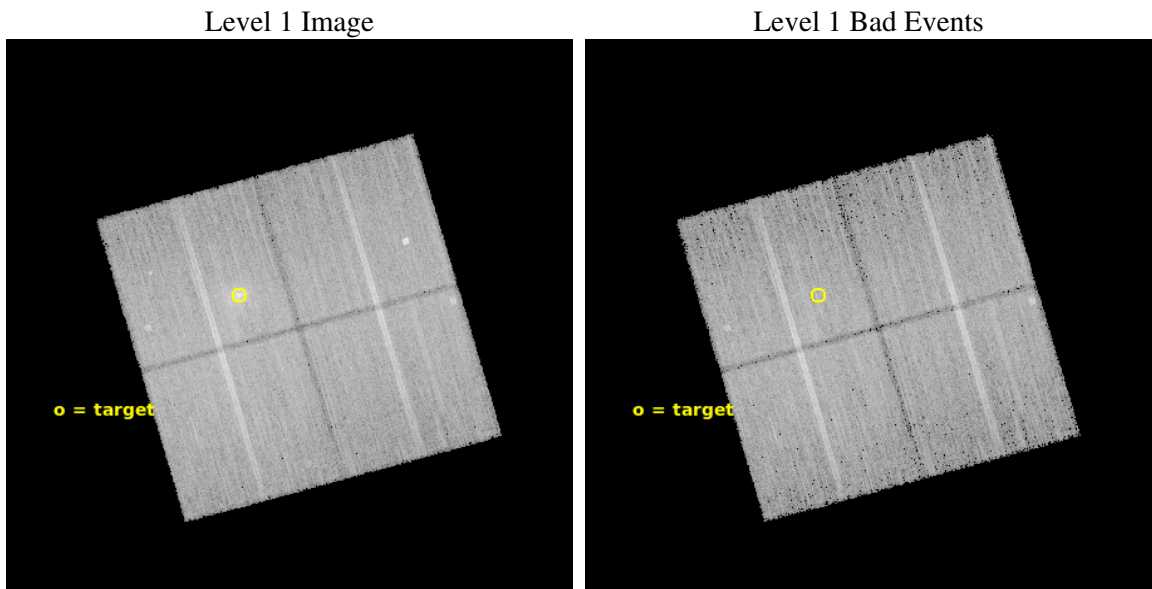
seq_num	801754	Sequence number
obs_id	21079	Observation id
title	Measuring the mass distribution with unprecedented accuracy: the CLASH cluster MACSJ1206	Proposal title
observer	Stefano Ettori	Principal investigator
object	MACS J1206-0847	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	181.550417	Observer's specified target RA [deg]
dec_targ	-8.800917	Observer's specified target Dec [deg]
ra_nom	181.5063770269	Nominal RA [deg]
dec_nom	-8.8268988406498	Nominal Dec [deg]
roll_nom	254.19746333835	Nominal Roll [deg]
revision	3	Processing version of data
ontime	33073.818114042	Sum of GTIs [s]
livetime	32641.684331792	Livetime [s]
ontime0	33080.100254536	Sum of GTIs [s]
ontime1	33080.100254536	Sum of GTIs [s]
ontime2	33080.100254536	Sum of GTIs [s]
ontime3	33073.818114042	Sum of GTIs [s]
l2events	102864	Number of level 2 events



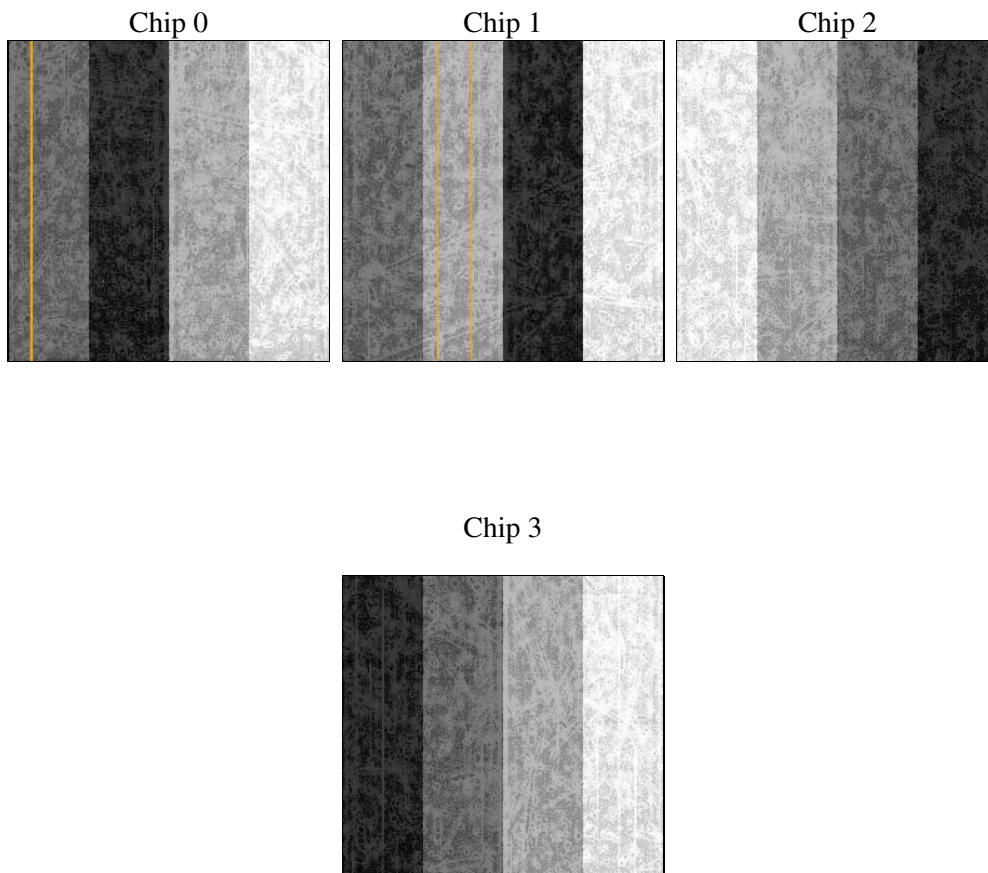
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	33000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	33073.818114042	Sum of GTIs [s]
caldsver	4.9.3	 	ontime0	33080.100254536	Sum of GTIs [s]
date	2020-10-27T00:49:56	Date and time of file creation	ontime1	33080.100254536	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	33080.100254536	Sum of GTIs [s]
			ontime3	33073.818114042	Sum of GTIs [s]
			l1events	943721	Number of level 1 events

2.1.4 Events

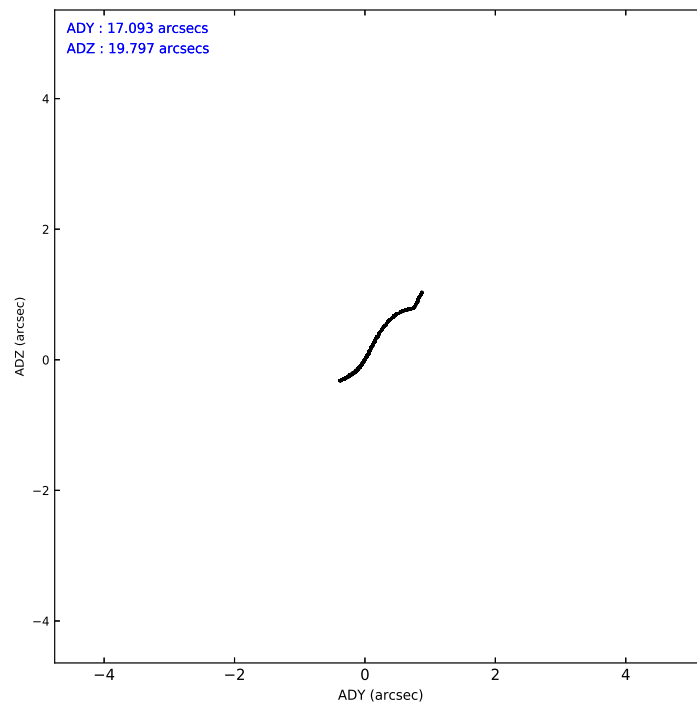
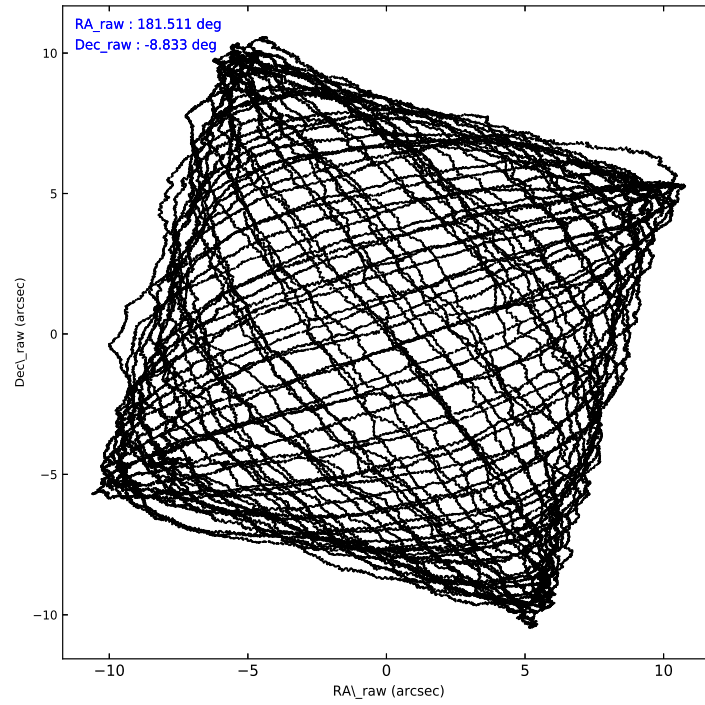
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	224373	224872	245887	248589
rejected events	197138	193639	219302	210454
rejected %	87%	86%	89%	84%

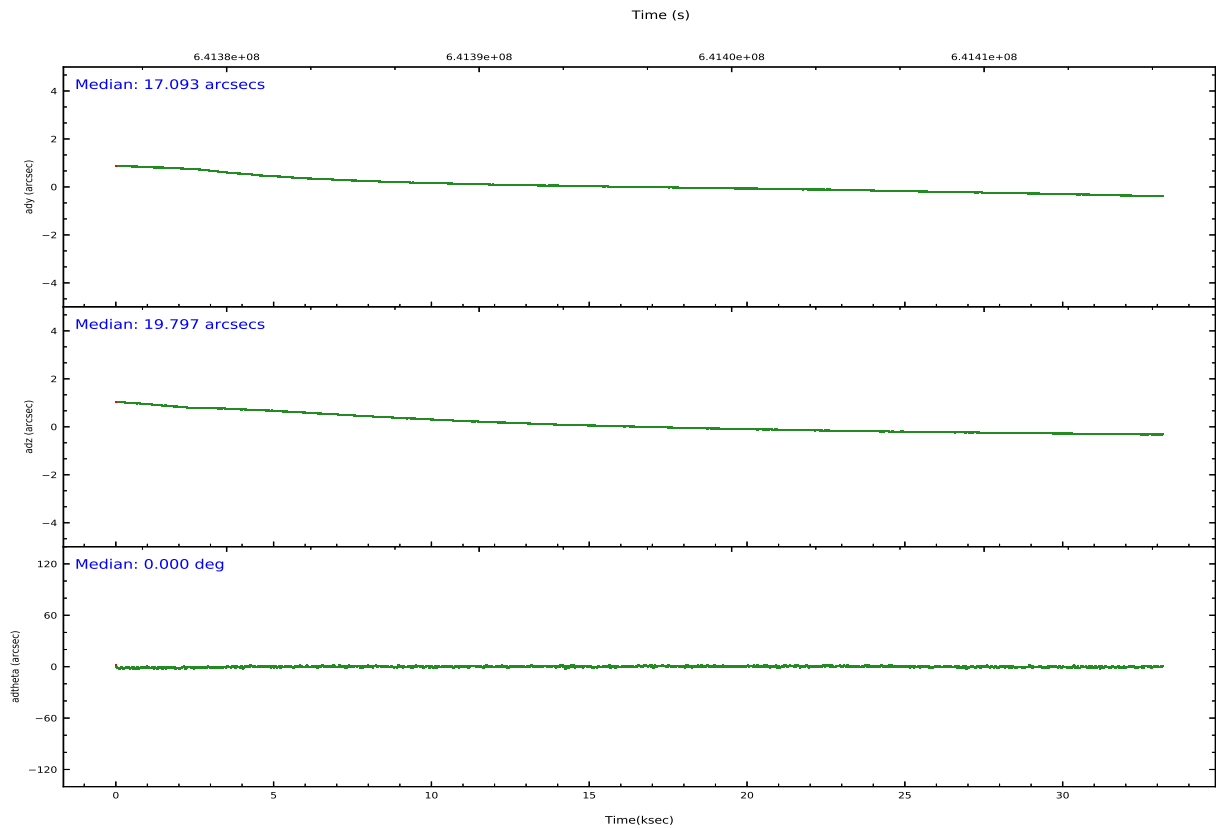
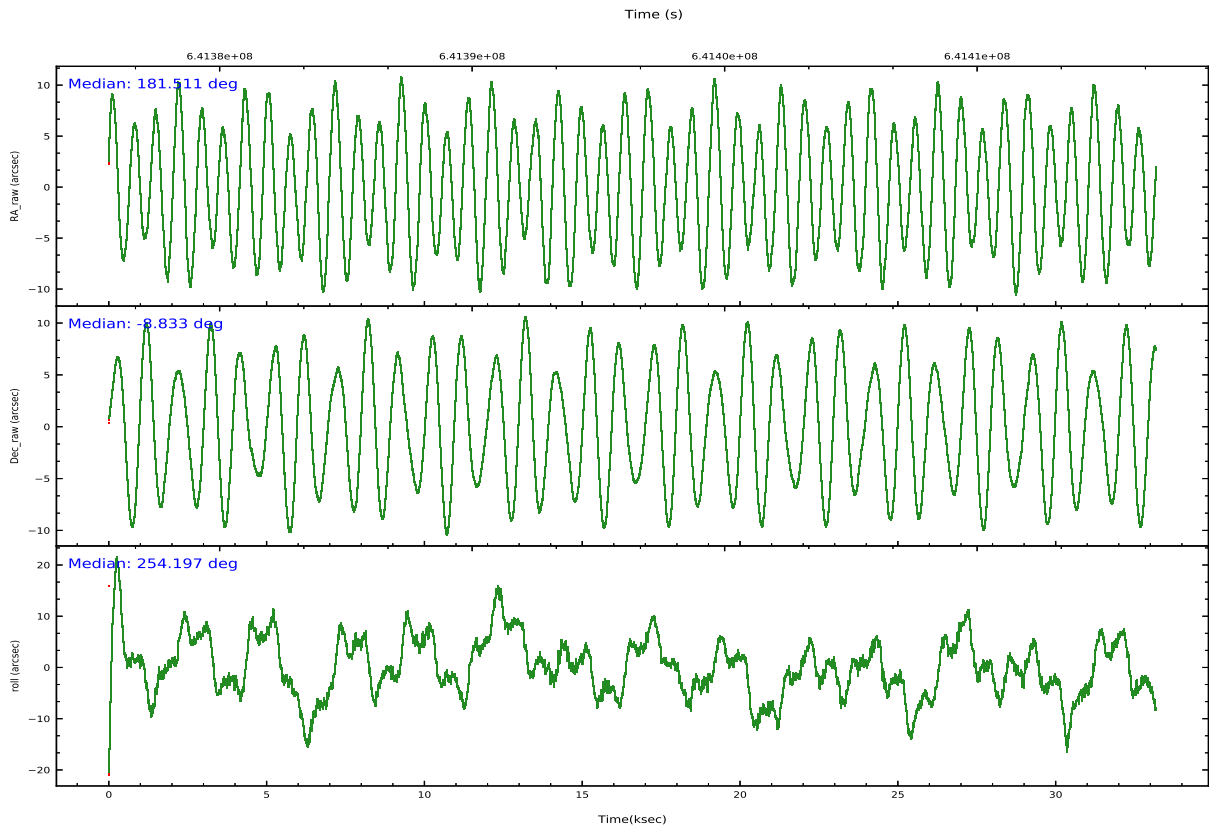
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	9091	11829	9551	18847
	4%	5%	3%	7%
grade 1 events	144	129	161	266
	0%	0%	0%	0%
grade 2 events	6948	7089	6384	7126
	3%	3%	2%	2%
grade 3 events	2723	2782	2681	3137
	1%	1%	1%	1%
grade 4 events	2646	2769	2706	3041
	1%	1%	1%	1%
grade 5 events	10537	10804	9702	11733
	4%	4%	3%	4%
grade 6 events	5828	6766	5266	5987
	2%	3%	2%	2%
grade 7 events	186456	182704	209436	198452
	83%	81%	85%	79%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-0123	ACIS-0123	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	181.503659	181.5063770269	CCD I2 on	Y	Y
[deg] Pointing Dec	-8.806516	-8.8268988406498	CCD I3 on	Y	Y
[deg] Pointing Roll	253.992841	254.19746333835	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	O2	N
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	O1	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	641380672.184000	641379524.2298501	CCD S5 on	N	N
Observation start date	2018-04-29T09:16:43	2018-04-29T08:58:44	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	641413672.184000	641414506.9694099	On-chip summing requested	N	N
Observation end date	2018-04-29T18:26:43	2018-04-29T18:41:46	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect





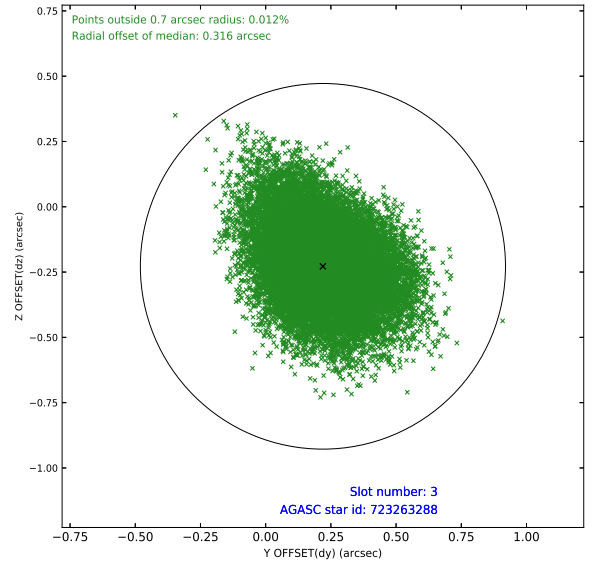
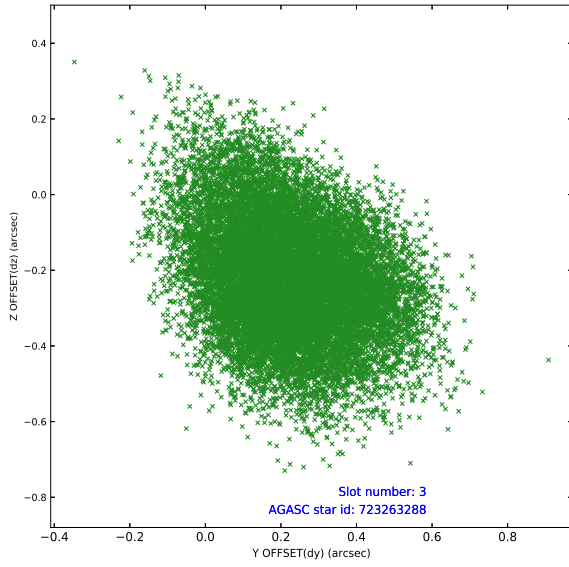
Slot Statistics

pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-1	7.14	8092	1.000	-0.029	-0.045	0.014	0.041	0.000000	0.000000	922.17	-843
1	FID		ACIS-I-4	7.08	8092	1.000	0.039	0.015	0.010	0.020	0.000000	0.000000	2142.38	1056
2	FID		ACIS-I-6	7.14	8093	1.000	-0.107	0.097	0.013	0.030	0.000000	0.000000	388.16	1698
3	GUIDE	used	723263288	9.31	16168	1.000	0.219	-0.228	0.234	0.370	181.077399	-9.358326	2328.69	-907
4	GUIDE	used	723263376	8.47	16175	1.000	0.067	0.068	0.135	0.229	181.274677	-9.308585	1962.86	-283
5	GUIDE	used	723264944	8.71	16171	1.000	0.026	-0.009	0.135	0.230	181.255643	-8.527713	-719.96	-1124
6	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0
7	GUIDE	used	723397104	7.72	16182	1.000	-0.323	0.164	0.154	0.266	181.946290	-8.486028	-1541.93	1194

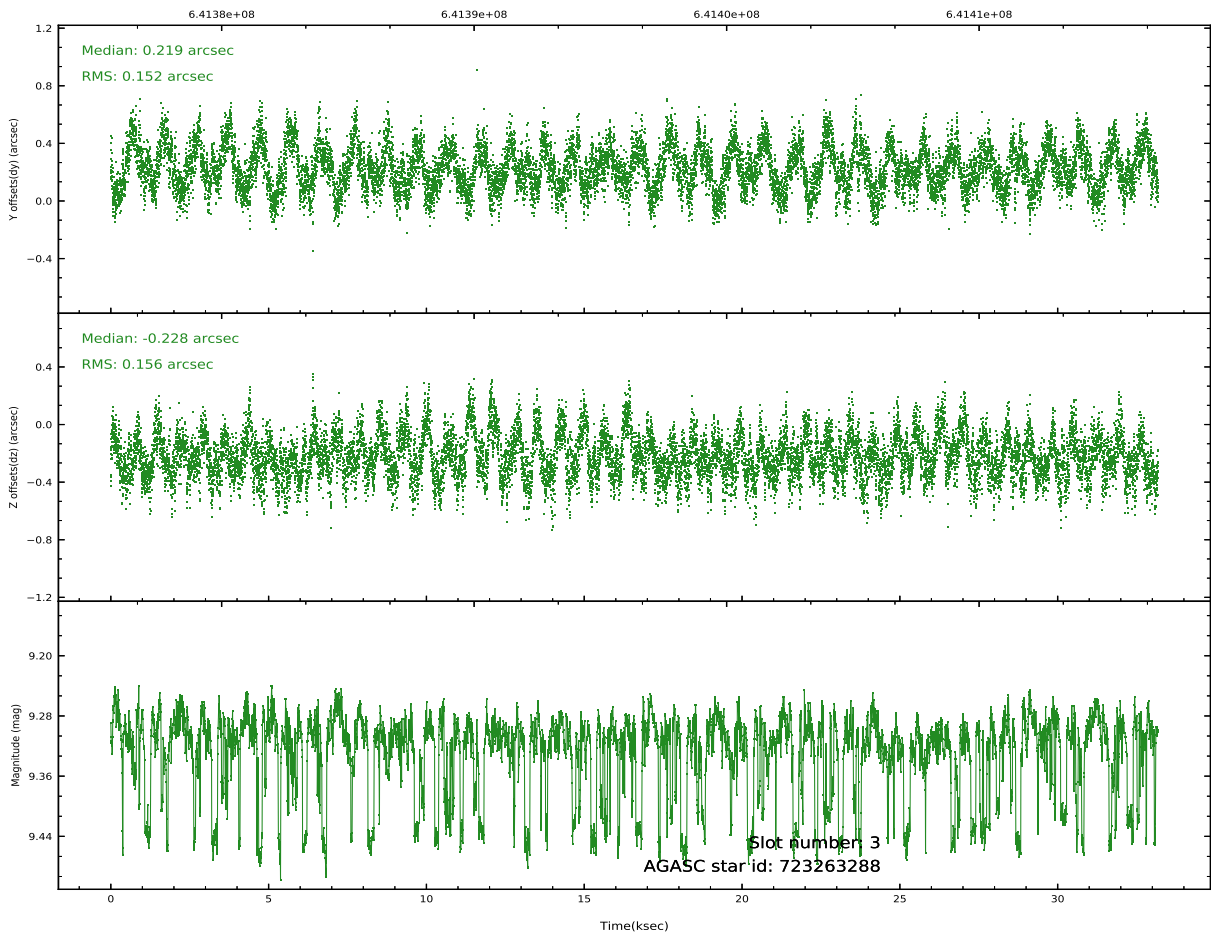
∞

2.4 Star Slots

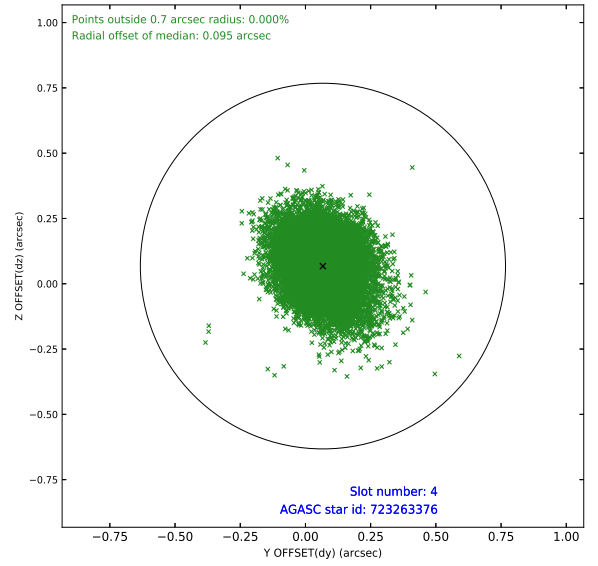
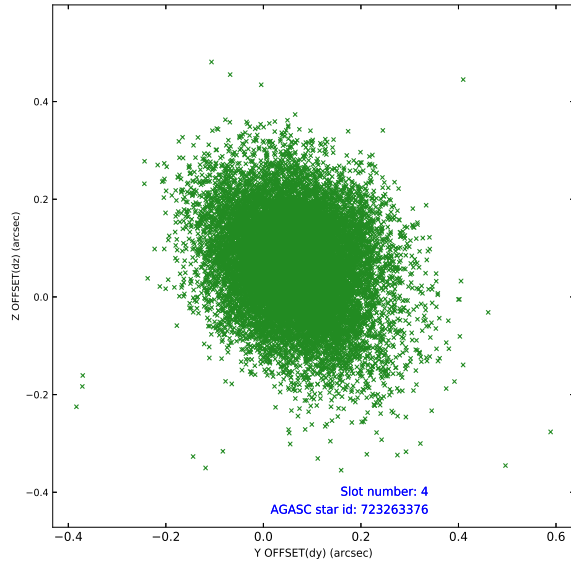
2.4.1 Slot 3



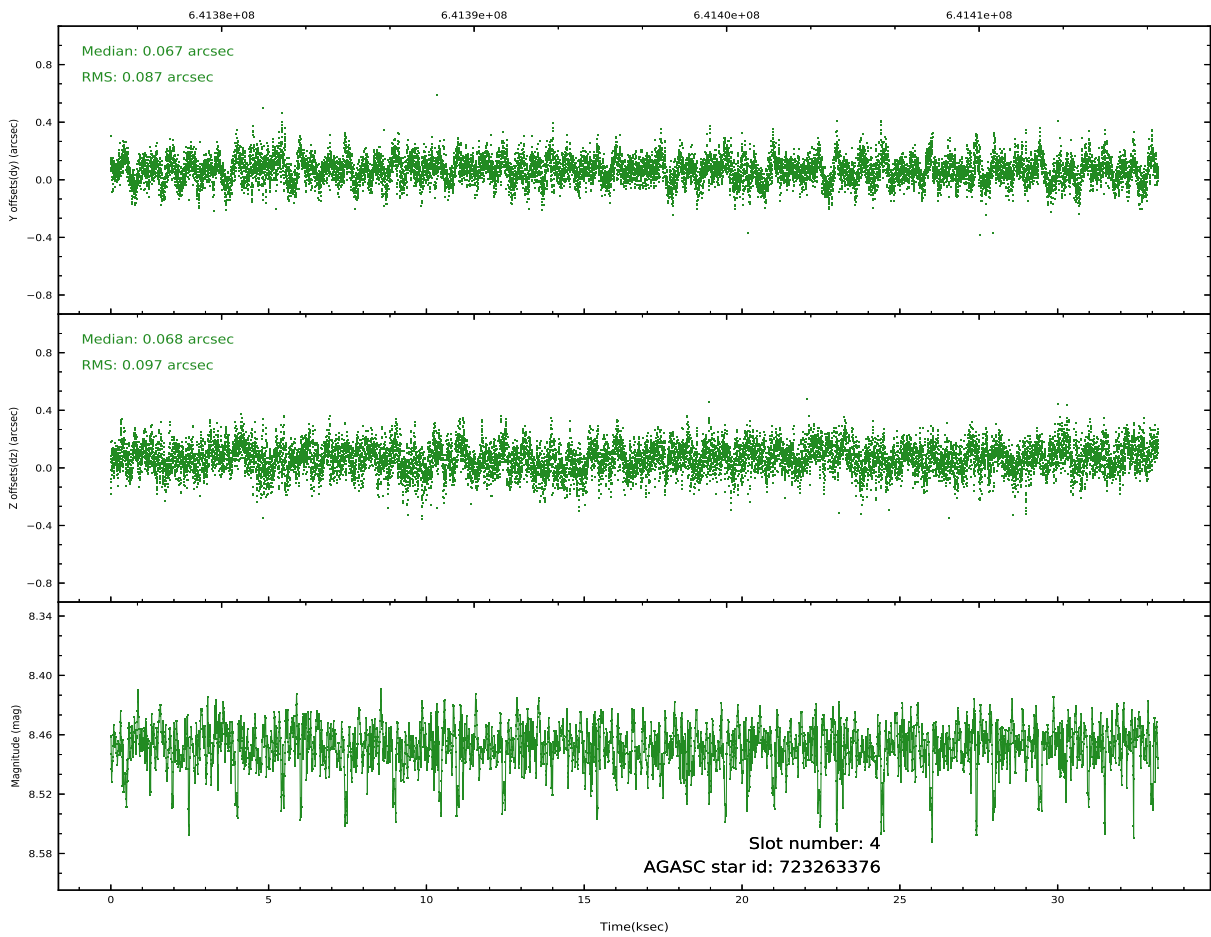
Time (s)



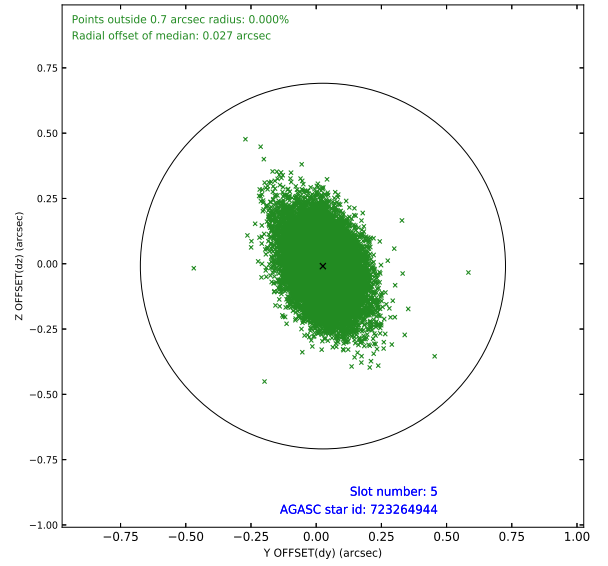
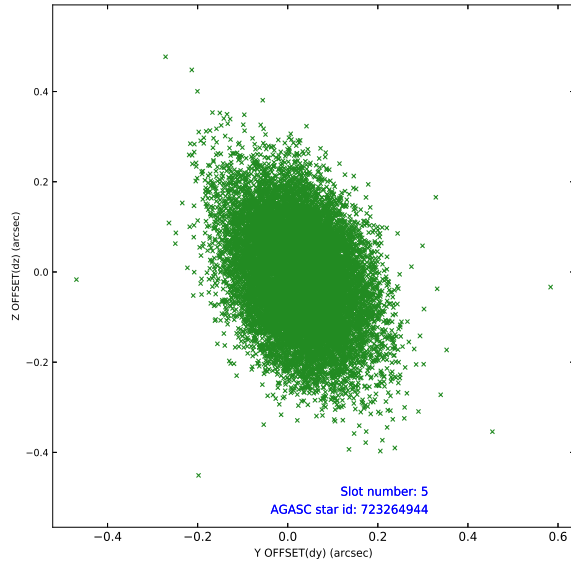
2.4.2 Slot 4



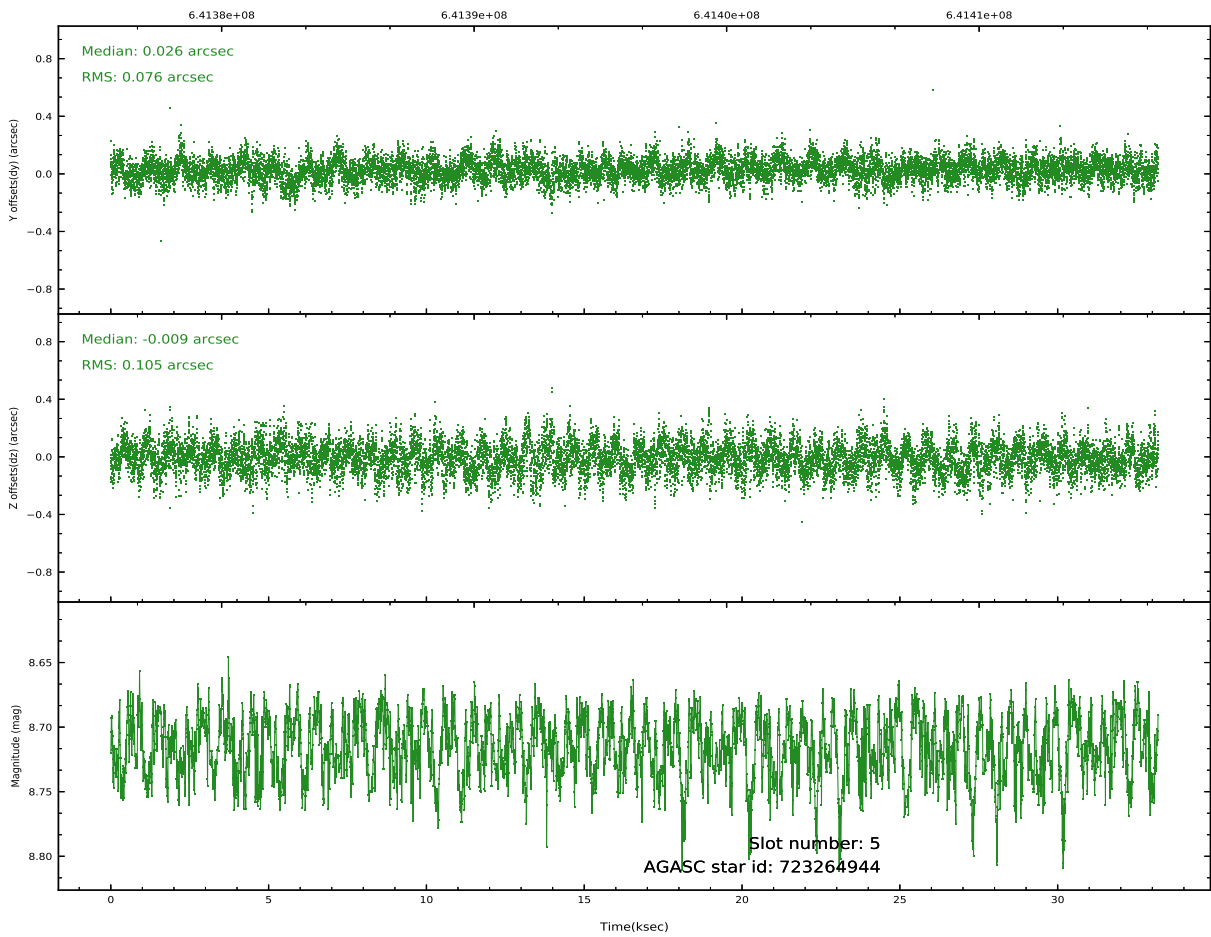
Time (s)



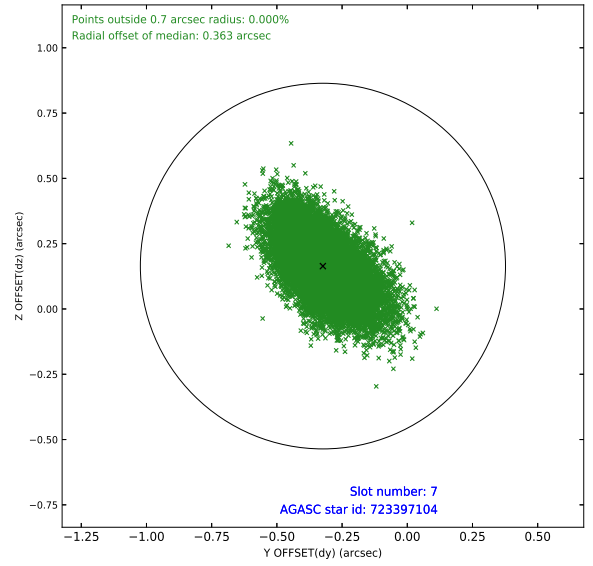
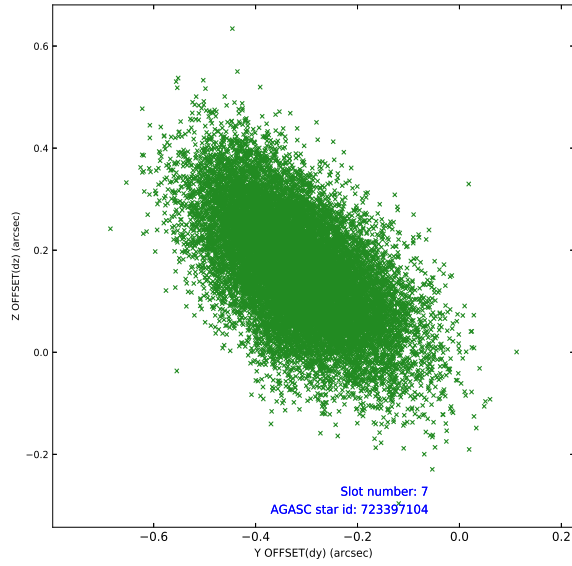
2.4.3 Slot 5



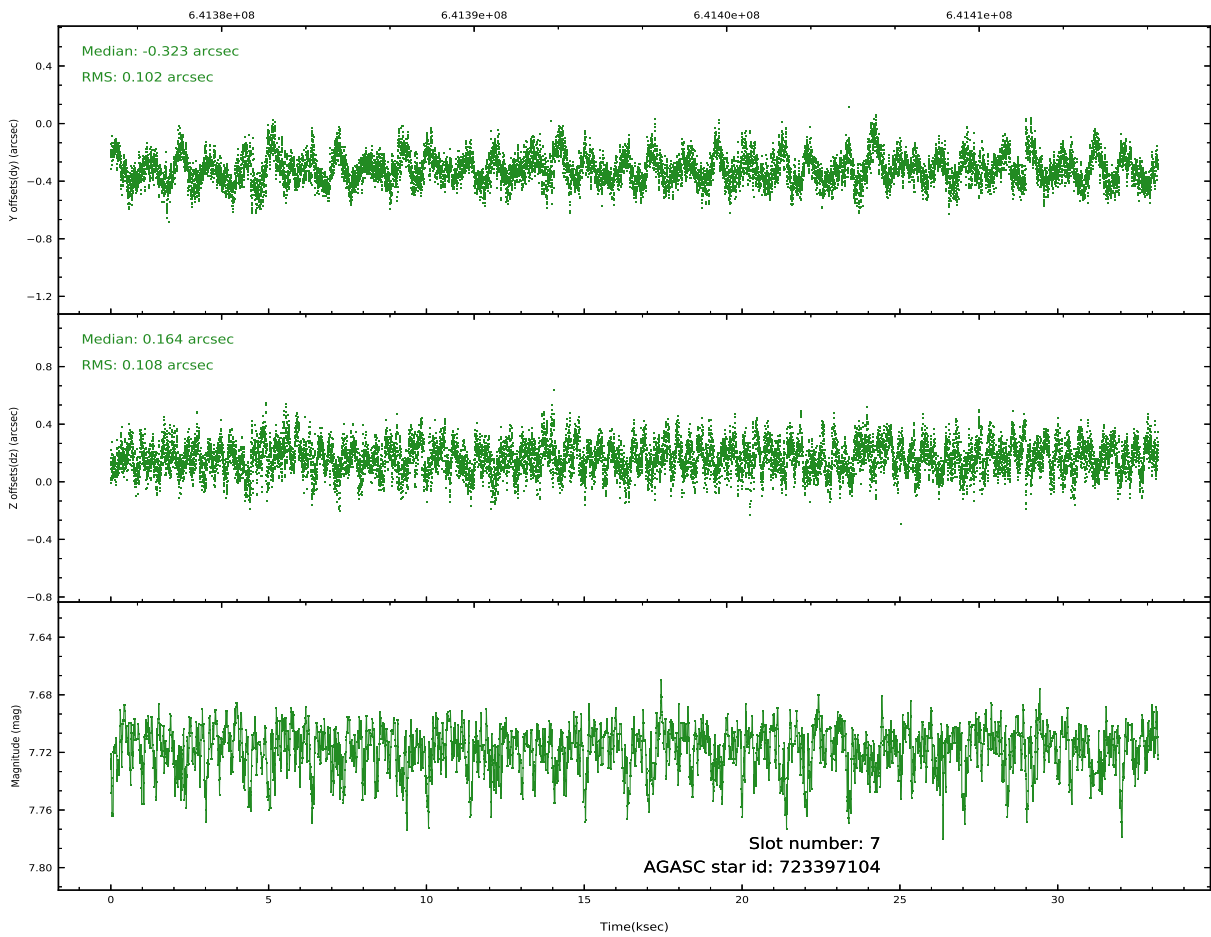
Time (s)



2.4.4 Slot 7

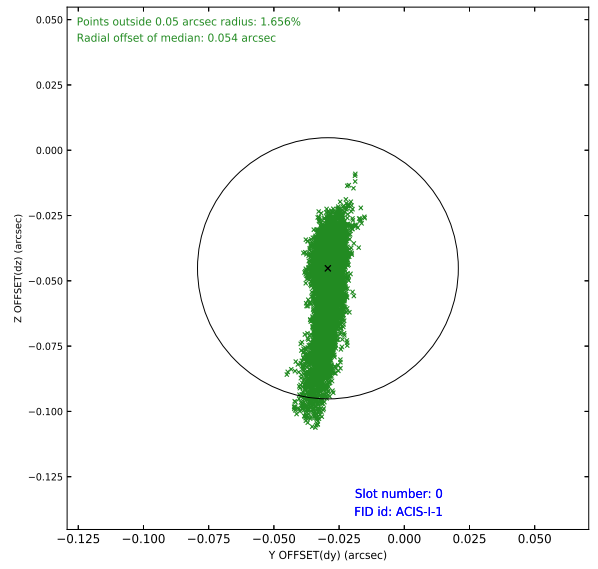
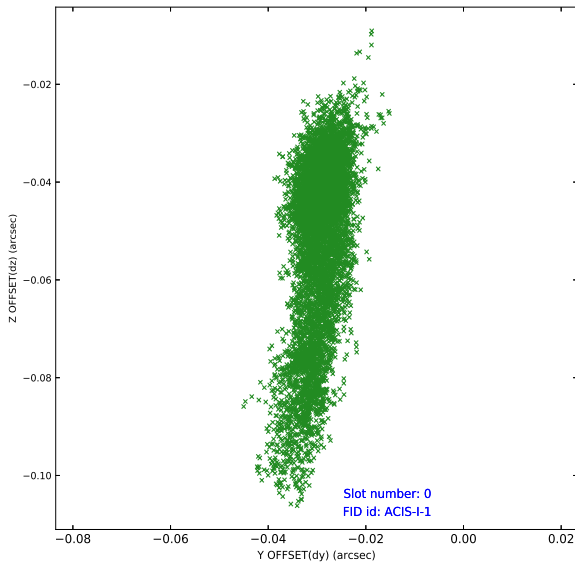


Time (s)

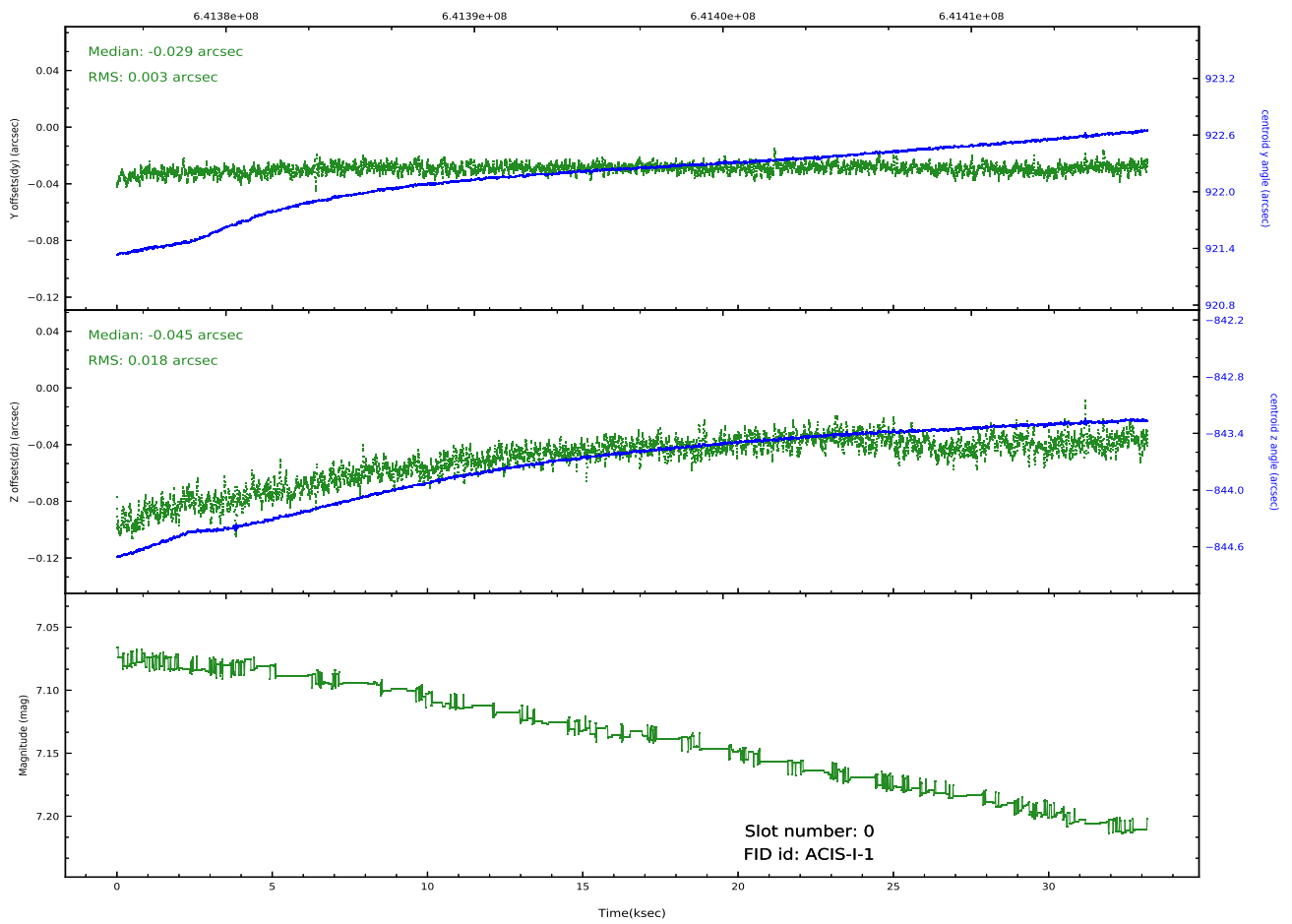


2.5 FID Slots

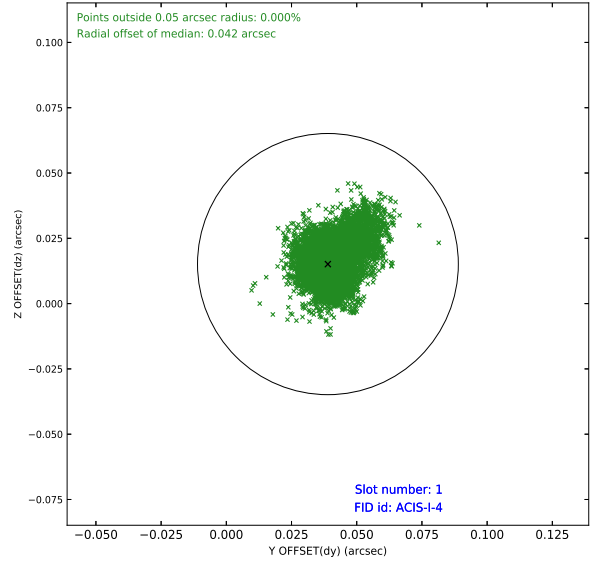
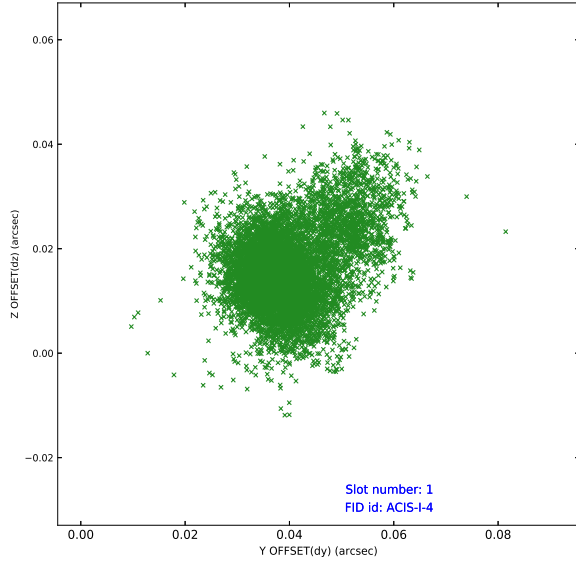
2.5.1 Slot 0



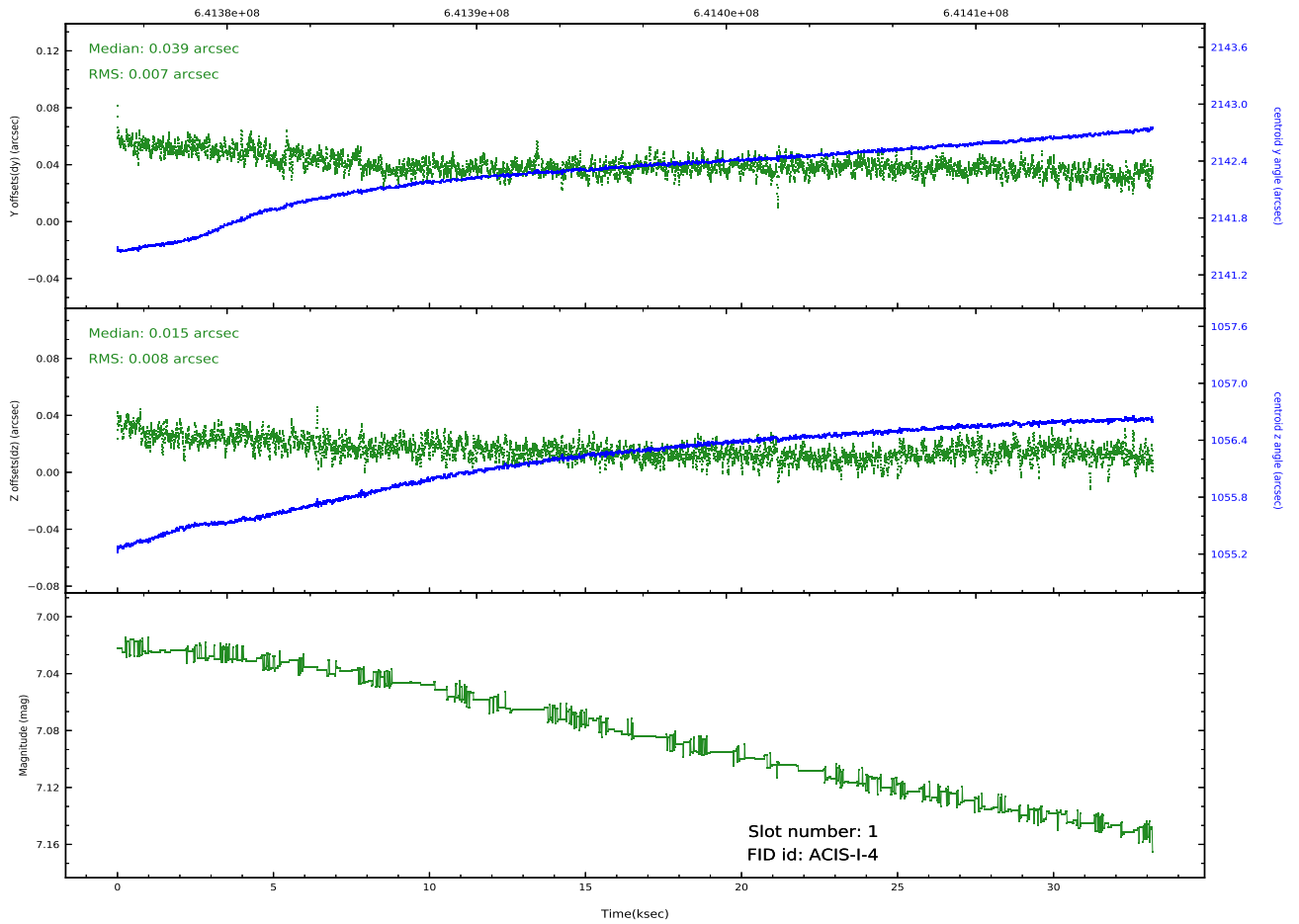
Time (s)



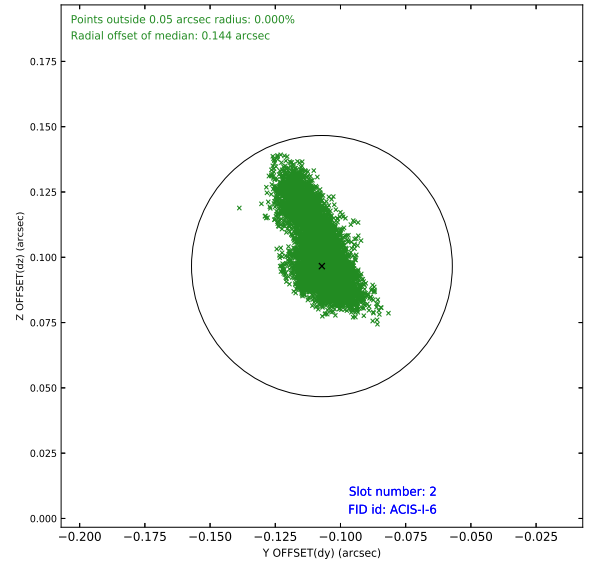
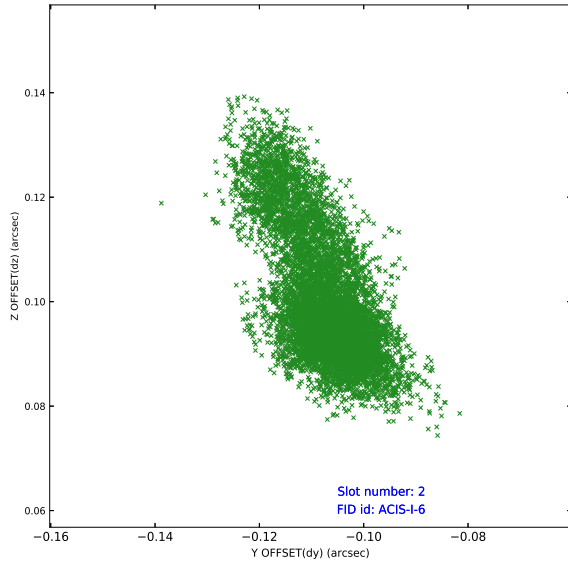
2.5.2 Slot 1



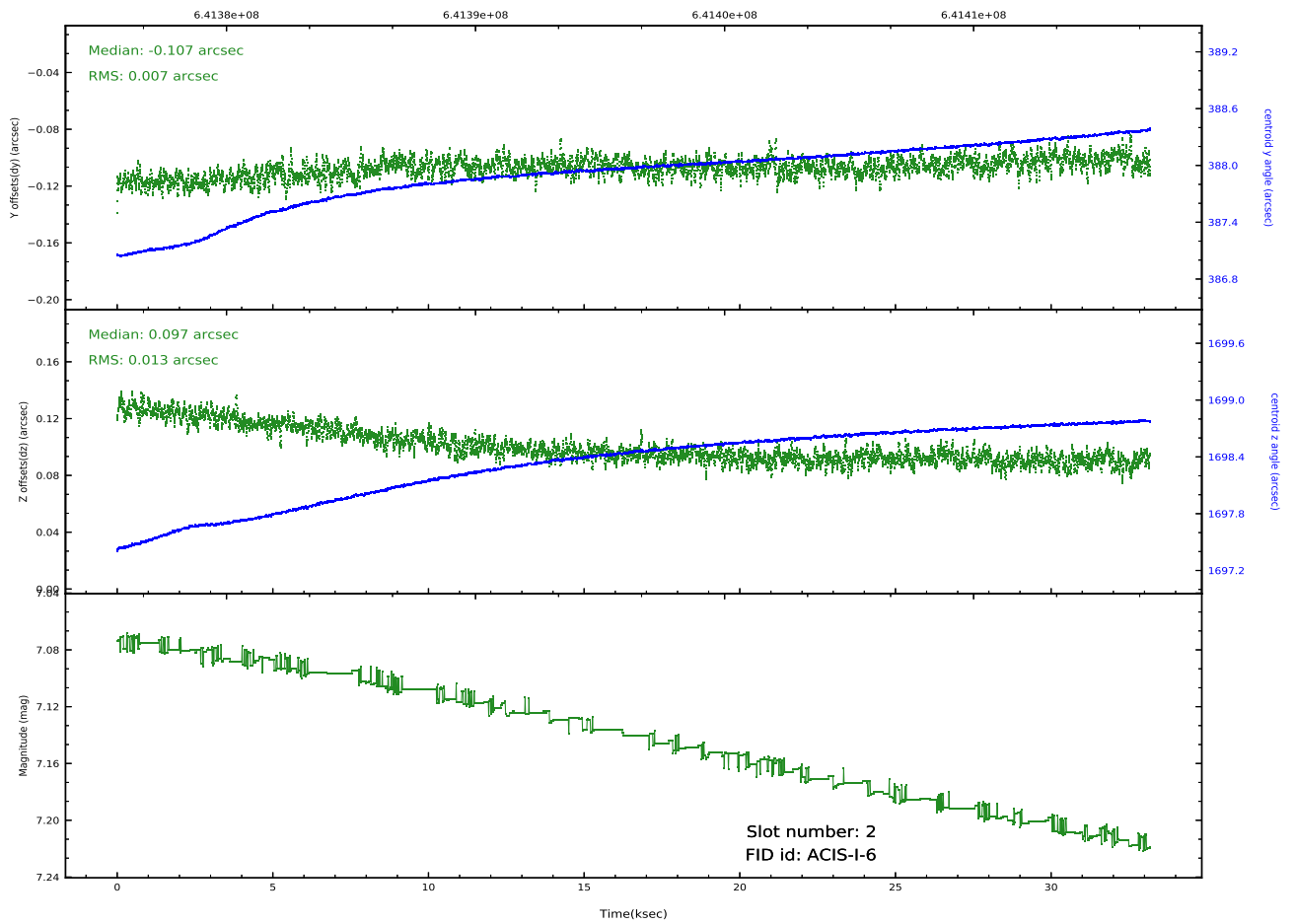
Time (s)



2.5.3 Slot 2



Time (s)



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.10.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	33.073818114042

A.2 Comments

Two optional chips were dropped.

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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.

===

A spatial region of the original bias map for CCD = 1 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 map for CCD = 1 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (181.53133, -8.69318), (181.52894, -8.69252), (181.51036, -8.75746), (181.51050, -8.76599).