

V&V Reference Report

L2 ASCDS Version : 10.9.2

Observation 20947 - L2 Version 2
Chandra X-Ray Center

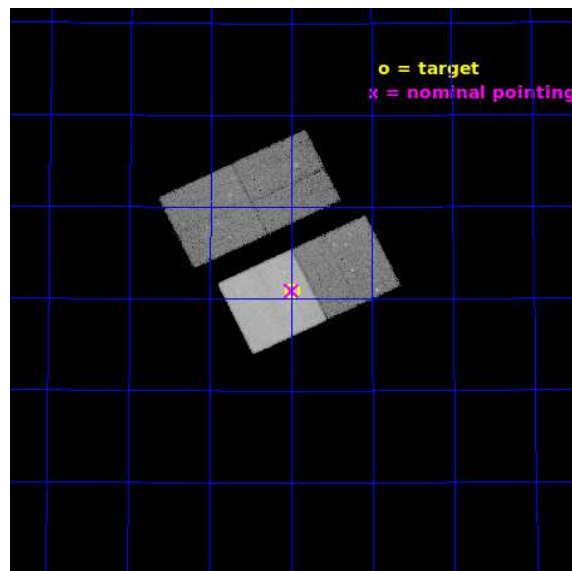
L2 Processing Date : Oct 24 2020

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

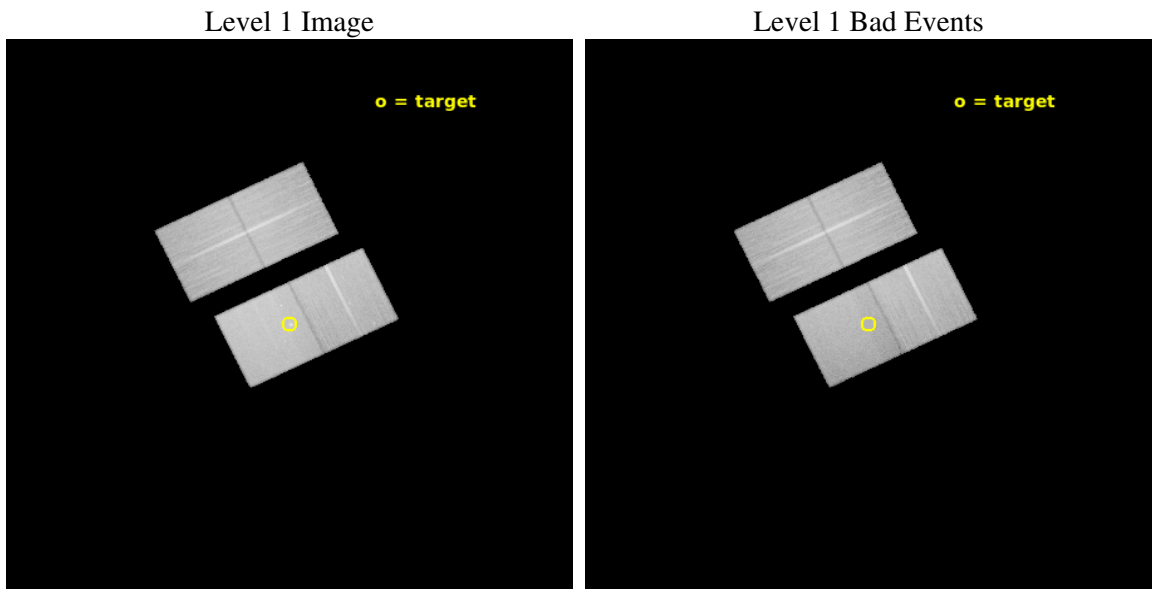
seq_num	601264	Sequence number
obs_id	20947	Observation id
title	Non-thermal X-ray emission from a 'Fermi bubble' in an external galaxy	Proposal title
observer	Jiang-Tao Li	Principal investigator
object	NGC3079	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	150.495	Observer's specified target RA [deg]
dec_targ	55.680806	Observer's specified target Dec [deg]
ra_nom	150.49749692592	Nominal RA [deg]
dec_nom	55.681578146845	Nominal Dec [deg]
roll_nom	154.15888117361	Nominal Roll [deg]
revision	2	Processing version of data
ontime	45064.700346708	Sum of GTIs [s]
livetime	44475.896860529	Livetime [s]
ontime2	45064.700346708	Sum of GTIs [s]
ontime3	45064.700346708	Sum of GTIs [s]
ontime6	45061.559256196	Sum of GTIs [s]
ontime7	45064.700346708	Sum of GTIs [s]
l2events	271142	Number of level 2 events



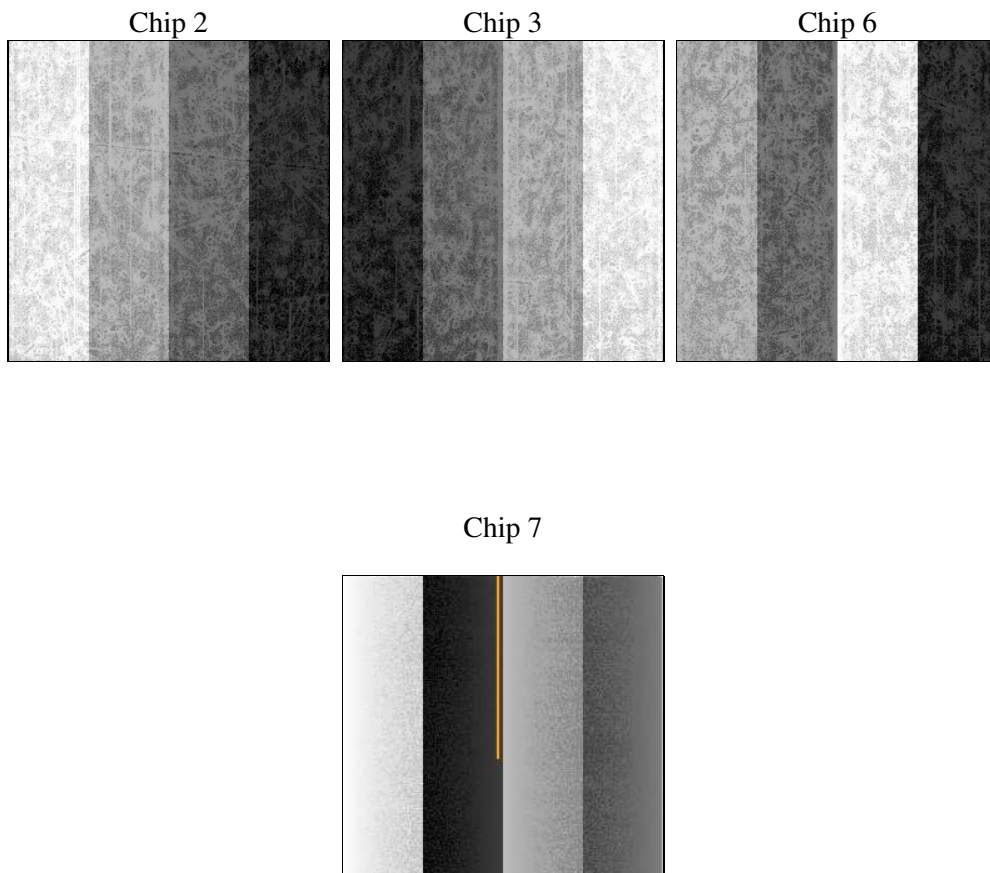
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	45000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	45064.700346708	Sum of GTIs [s]
caldsver	4.9.3	 	ontime2	45064.700346708	Sum of GTIs [s]
date	2020-10-24T14:31:35	Date and time of file creation	ontime3	45064.700346708	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	45061.559256196	Sum of GTIs [s]
			ontime7	45064.700346708	Sum of GTIs [s]
			l1events	1435893	Number of level 1 events

2.1.4 Events

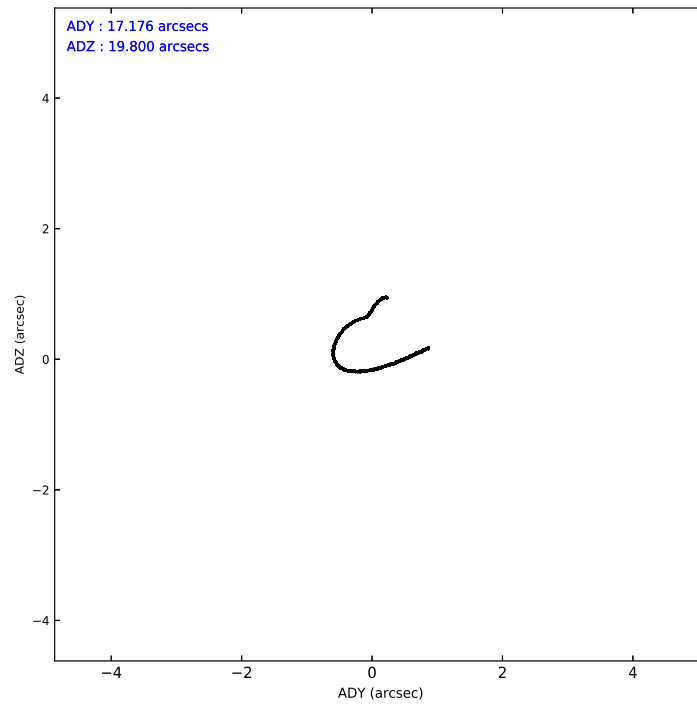
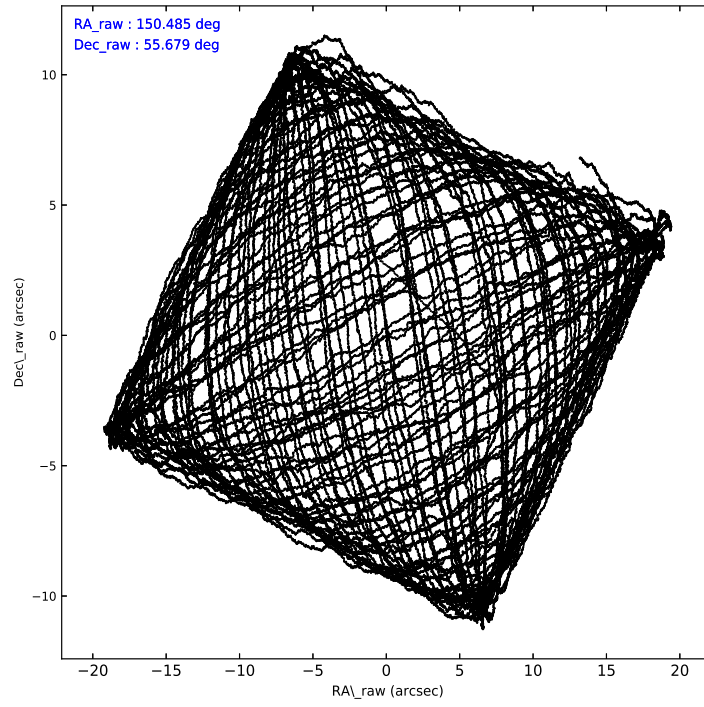
	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	344093	320888	346363	424549
rejected events	310427	287624	308584	238401
rejected %	90%	89%	89%	56%

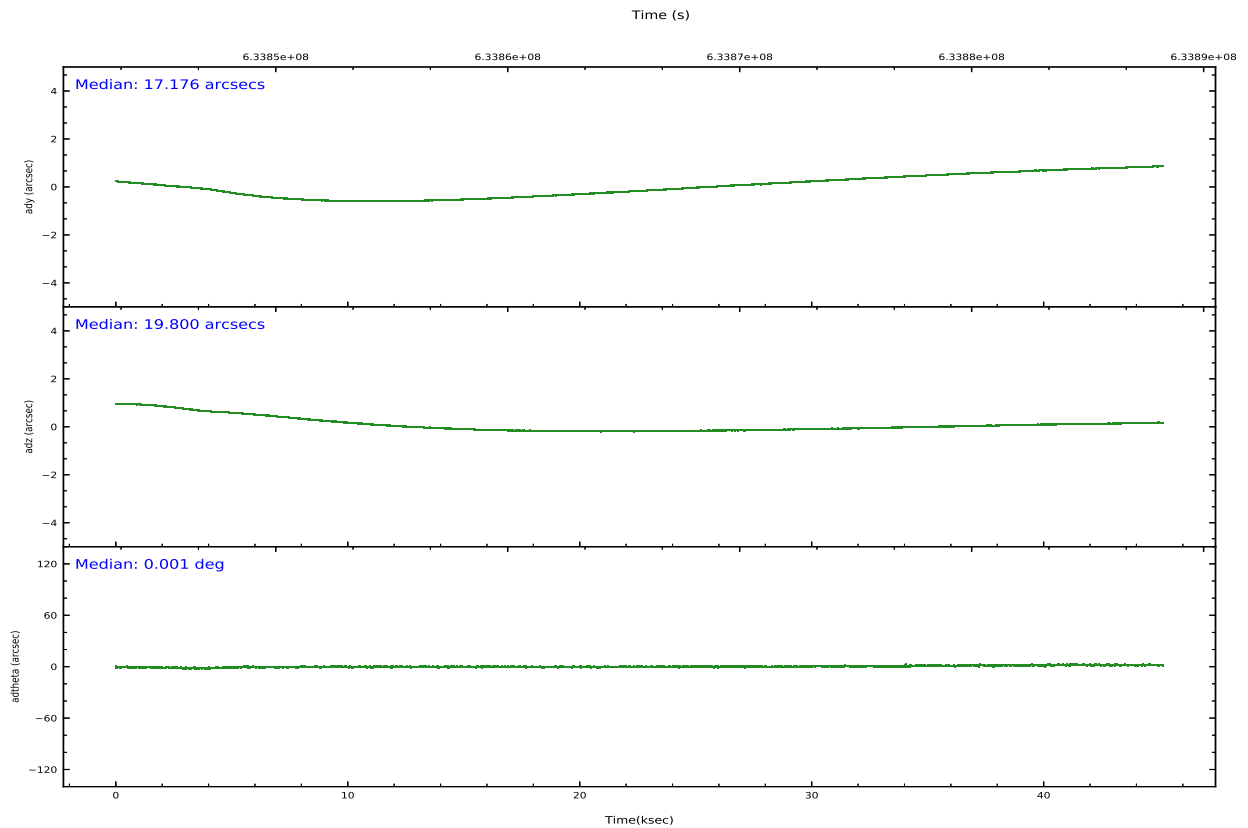
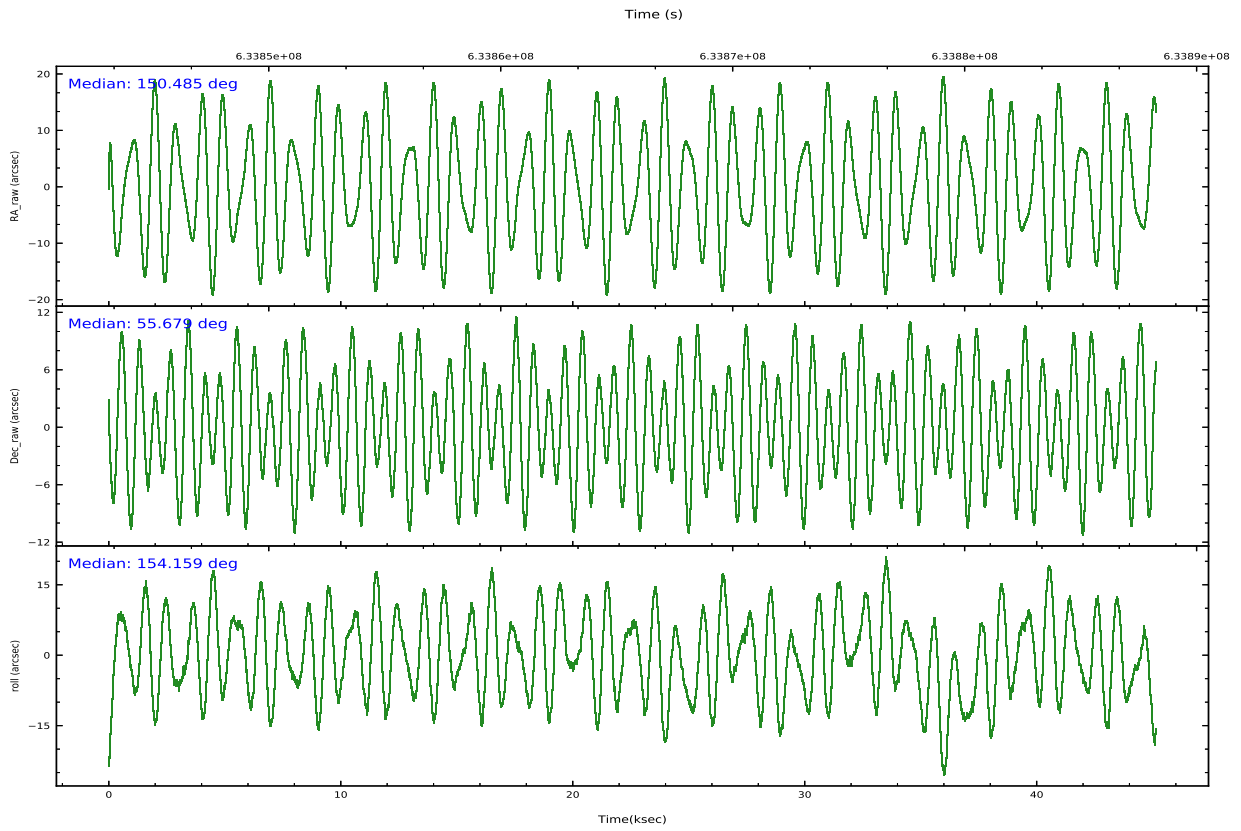
	ccd 2	ccd 3	ccd 6	ccd 7
grade 0 events	11956	11421	12099	16569
	3%	3%	3%	3%
grade 1 events	174	199	159	557
	0%	0%	0%	0%
grade 2 events	8003	7257	9521	38894
	2%	2%	2%	9%
grade 3 events	3441	3609	3371	15355
	1%	1%	0%	3%
grade 4 events	3435	3489	3275	14902
	0%	1%	0%	3%
grade 5 events	12337	14932	14292	41672
	3%	4%	4%	9%
grade 6 events	6836	7493	9517	100452
	1%	2%	2%	23%
grade 7 events	297911	272488	294129	196148
	86%	84%	84%	46%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar version number	8	8
Detector	ACIS-2367	ACIS-2367	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	150.533705	150.49749692592	CCD I2 on	Y	Y
[deg] Pointing Dec	55.680907	55.681578146845	CCD I3 on	Y	Y
[deg] Pointing Roll	153.968035	154.15888117361	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O1	N
[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	O2	N
[s] Observation start time (MET)	633843256.184000	633842046.37284	CCD S5 on	N	N
Observation start date	2018-02-01T03:33:07	2018-02-01T03:14:06	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	633888256.184000	633889053.38811	On-chip summing requested	N	N
Observation end date	2018-02-01T16:03:07	2018-02-01T16:17:33	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

2.3 Aspect





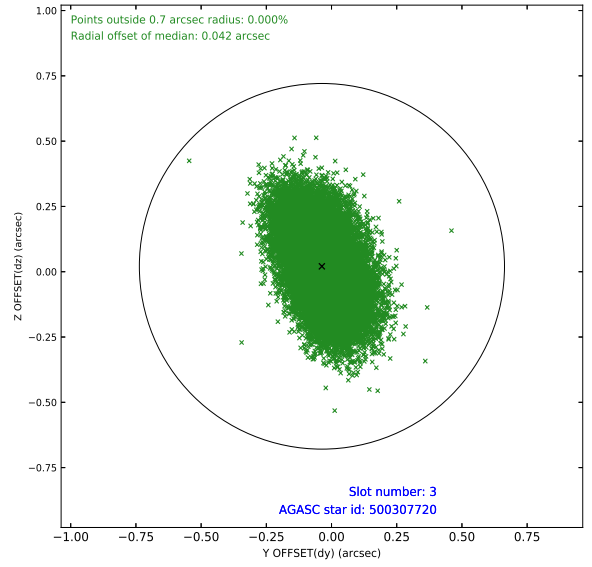
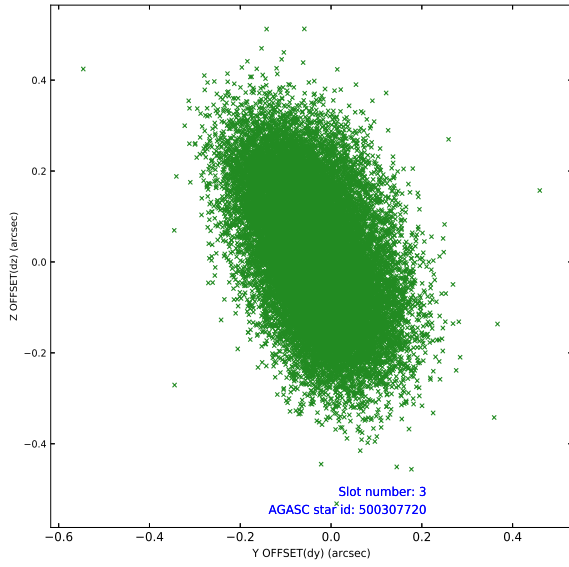
Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-S-1	7.15	11011	1.000	0.276	-0.135	0.027	0.035	0.000000	0.000000	925.88	-1737
1	FID		ACIS-S-4	7.16	11012	1.000	0.051	-0.038	0.011	0.024	0.000000	0.000000	2143.26	166
2	FID		ACIS-S-5	7.16	11013	1.000	-0.353	0.182	0.026	0.035	0.000000	0.000000	-1823.42	161
3	GUIDE	used	500307720	9.15	22005	1.000	-0.037	0.021	0.179	0.286	149.835368	56.109010	1939.24	-775
4	GUIDE	used	500310128	9.21	22002	1.000	0.011	-0.338	0.154	0.258	150.281852	55.096051	-457.68	2118
5	GUIDE	used	500437816	8.65	22018	1.000	0.253	0.052	0.128	0.212	151.181905	56.134575	-448.37	-2043
6	GUIDE	used	500442560	7.01	22020	1.000	-0.137	0.053	0.117	0.188	151.619747	55.769496	-1828.49	-1267
7	GUIDE	used	500445048	9.15	21997	1.000	-0.090	0.207	0.145	0.250	151.256801	55.105123	-2244.62	1202

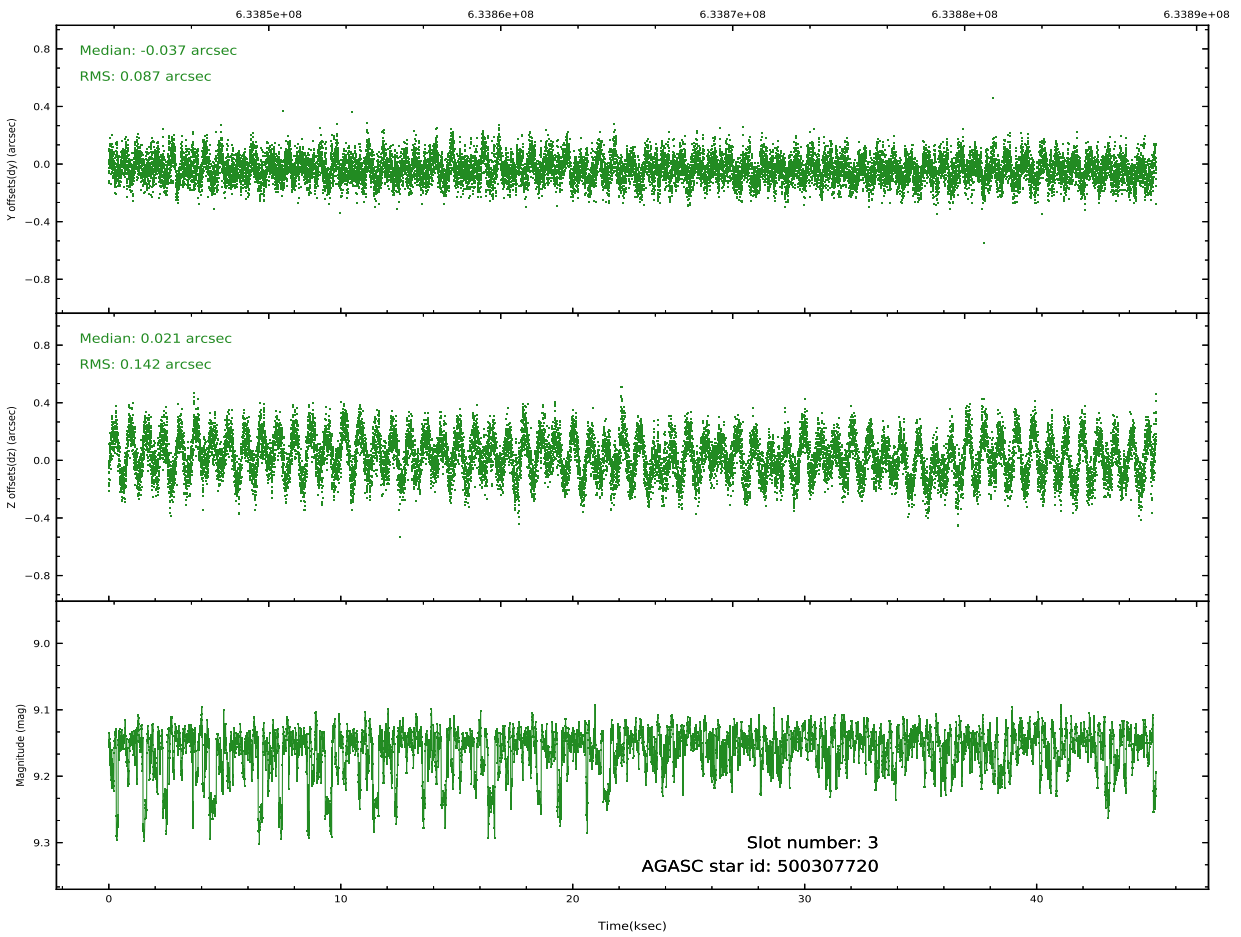
∞

2.4 Star Slots

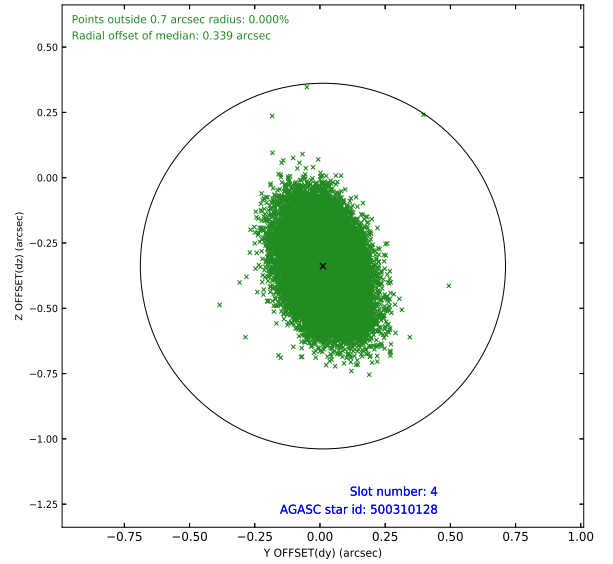
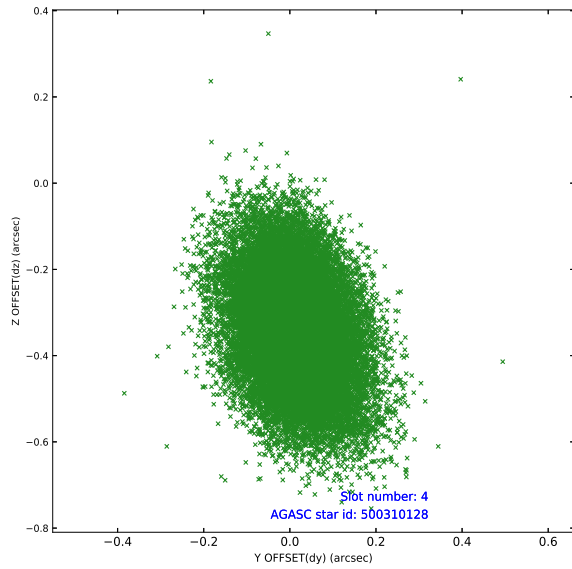
2.4.1 Slot 3



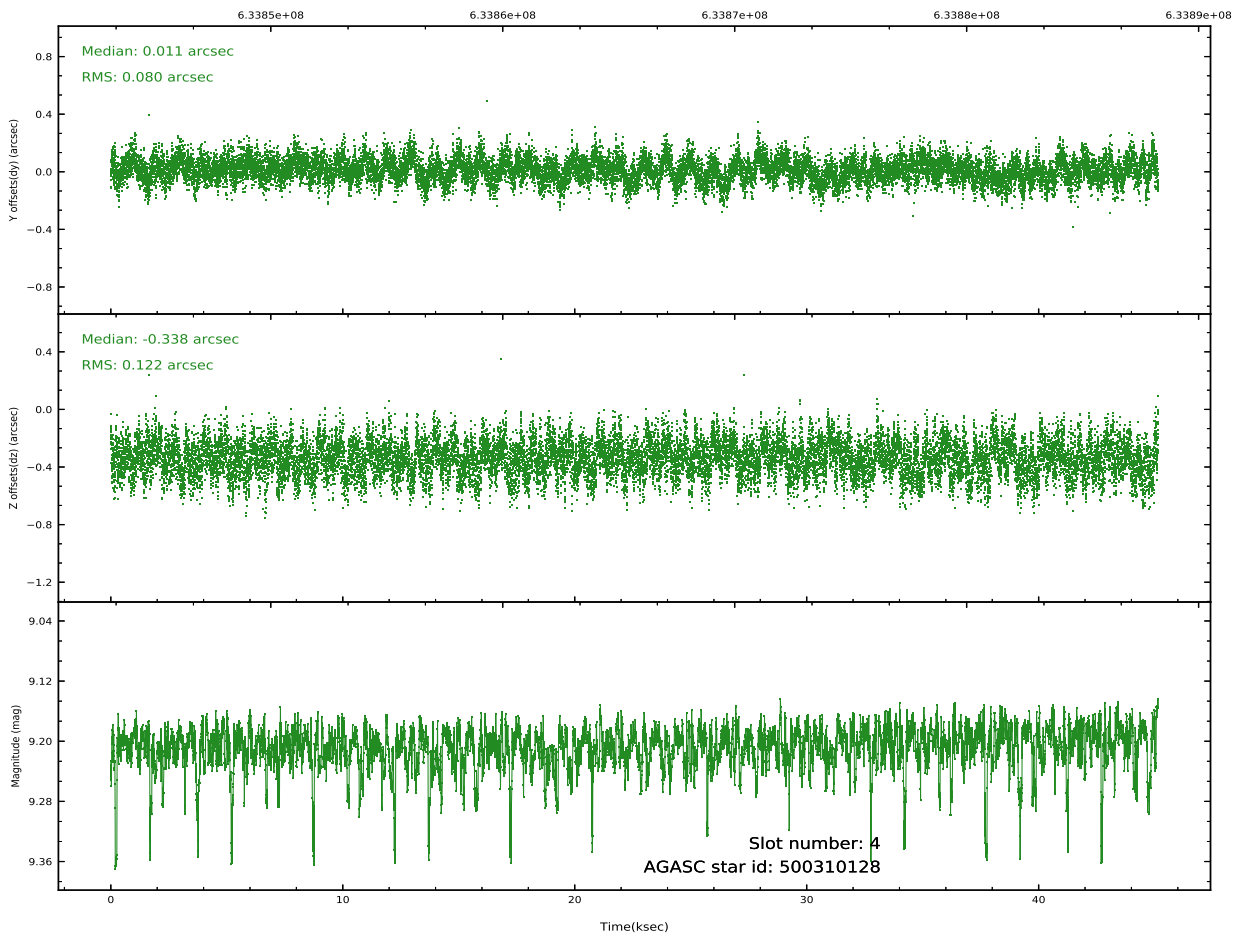
Time (s)



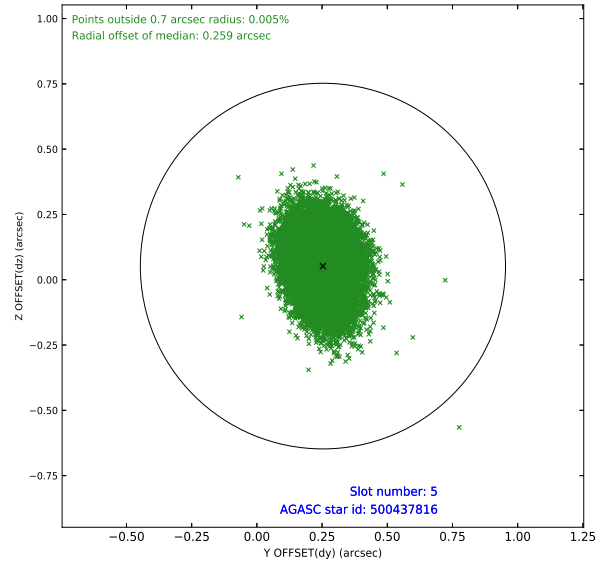
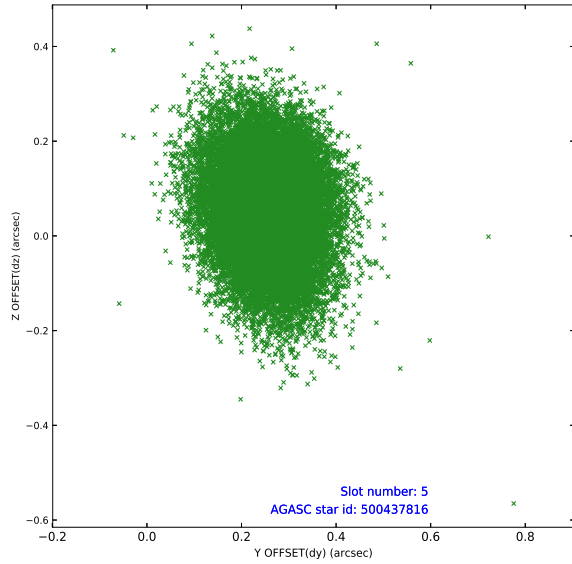
2.4.2 Slot 4



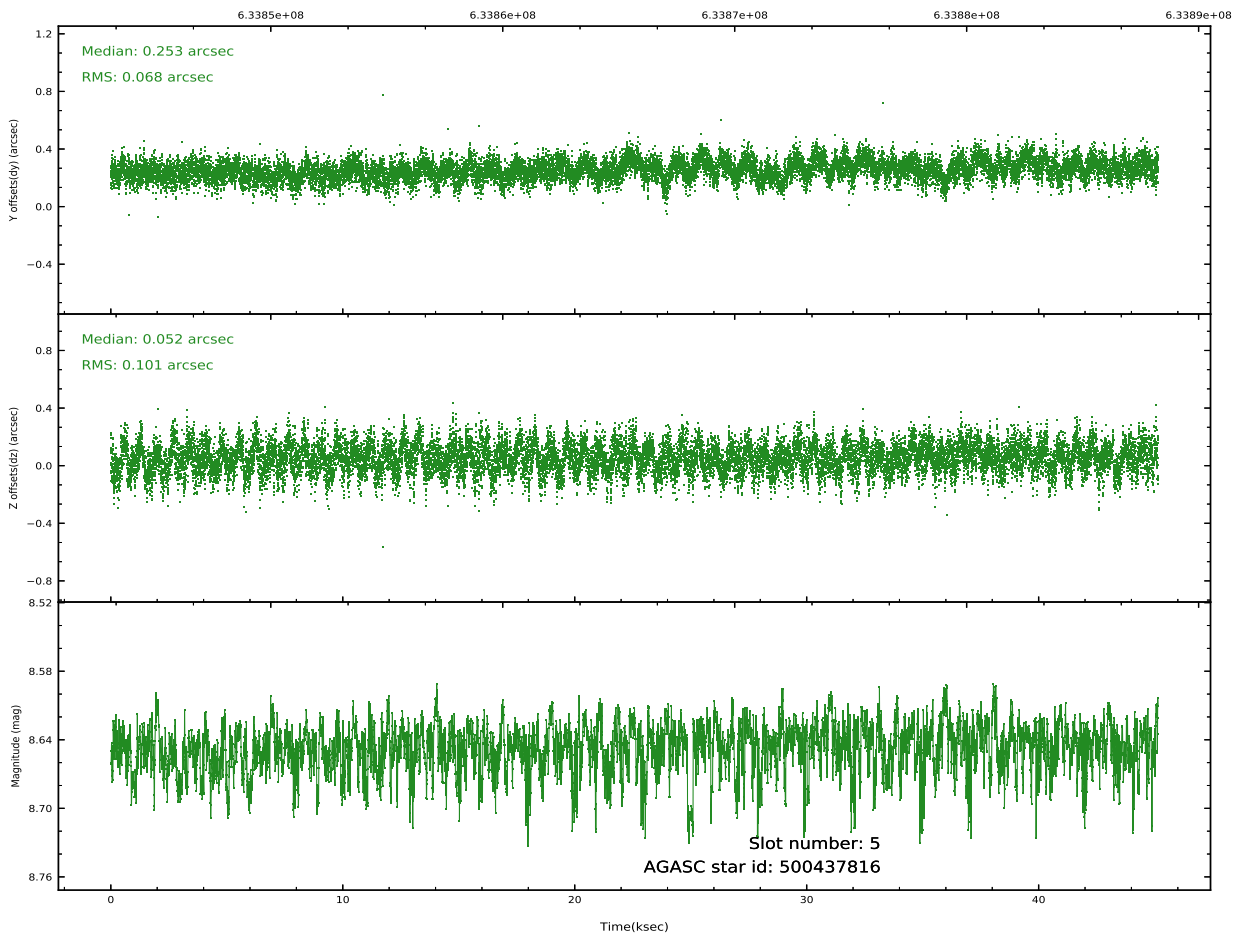
Time (s)



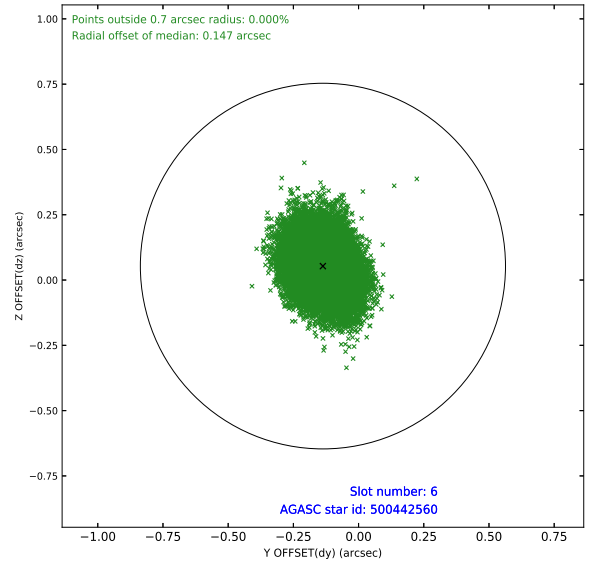
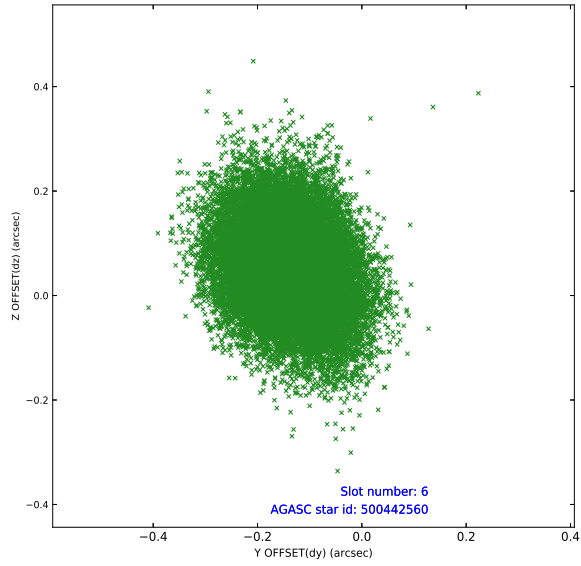
2.4.3 Slot 5



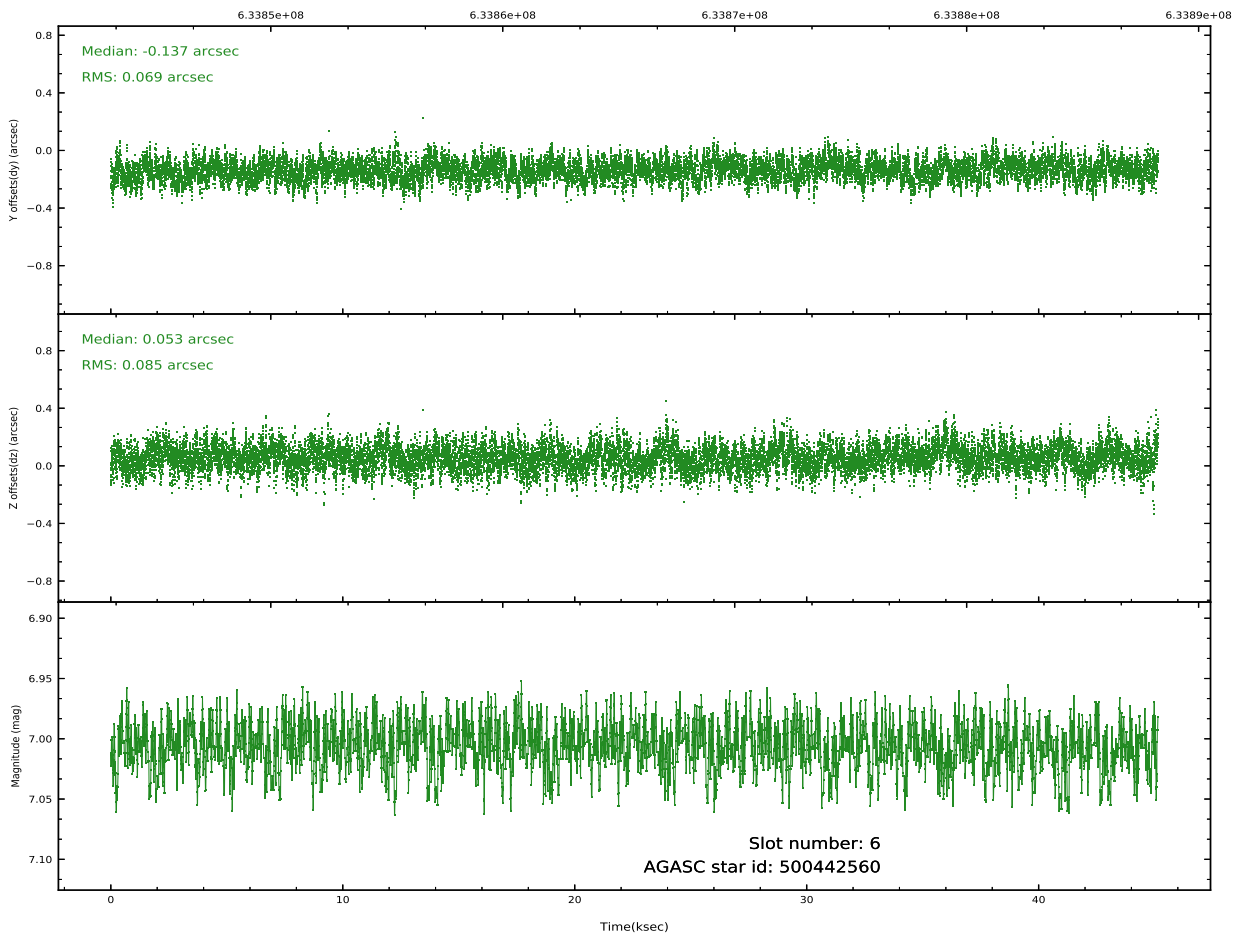
Time (s)



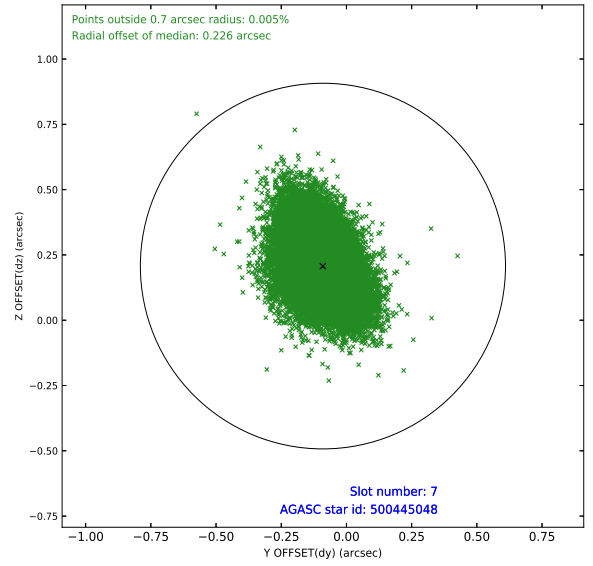
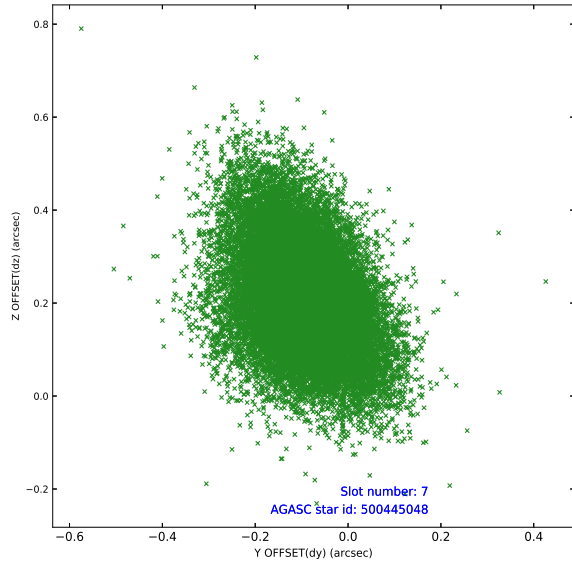
2.4.4 Slot 6



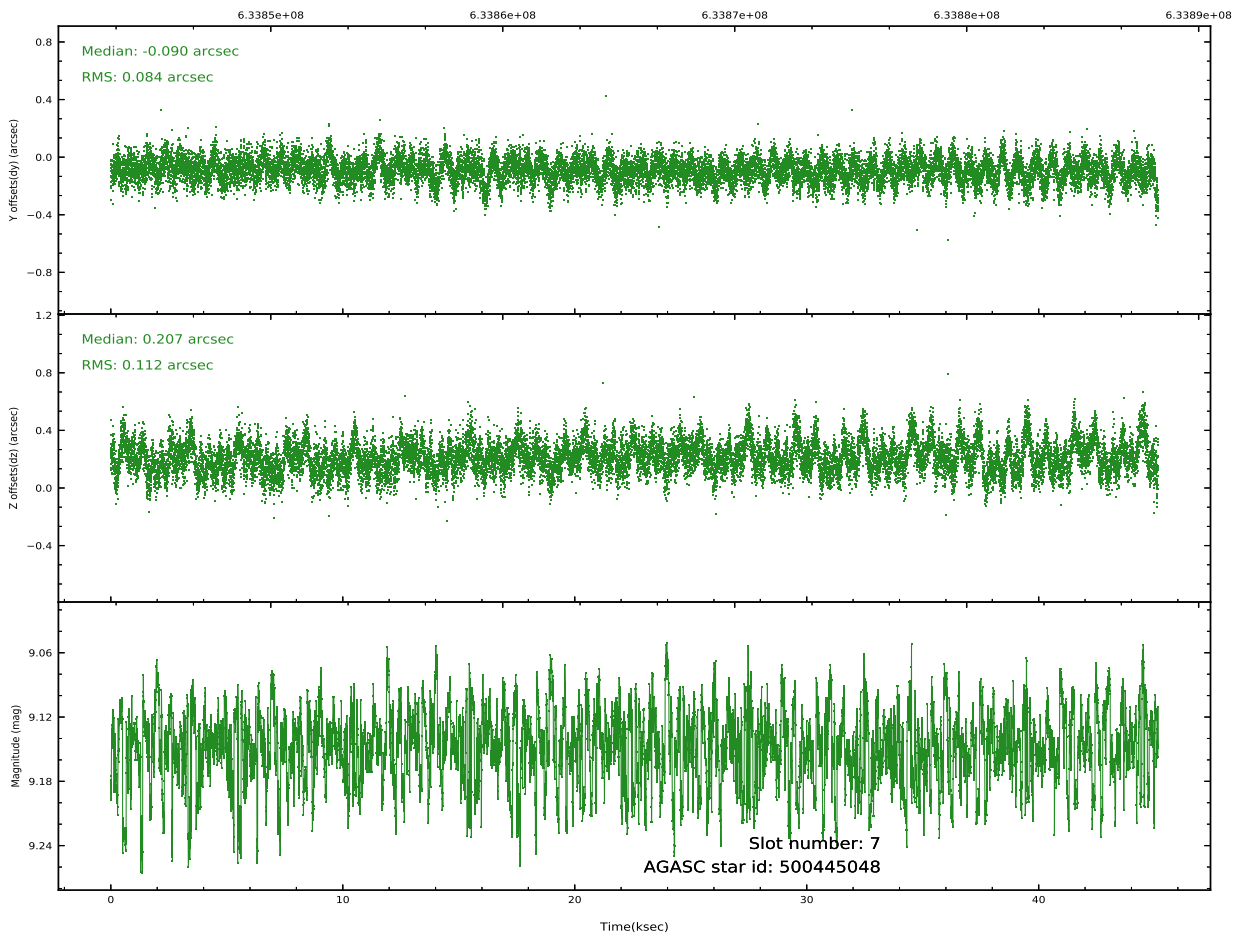
Time (s)



2.4.5 Slot 7

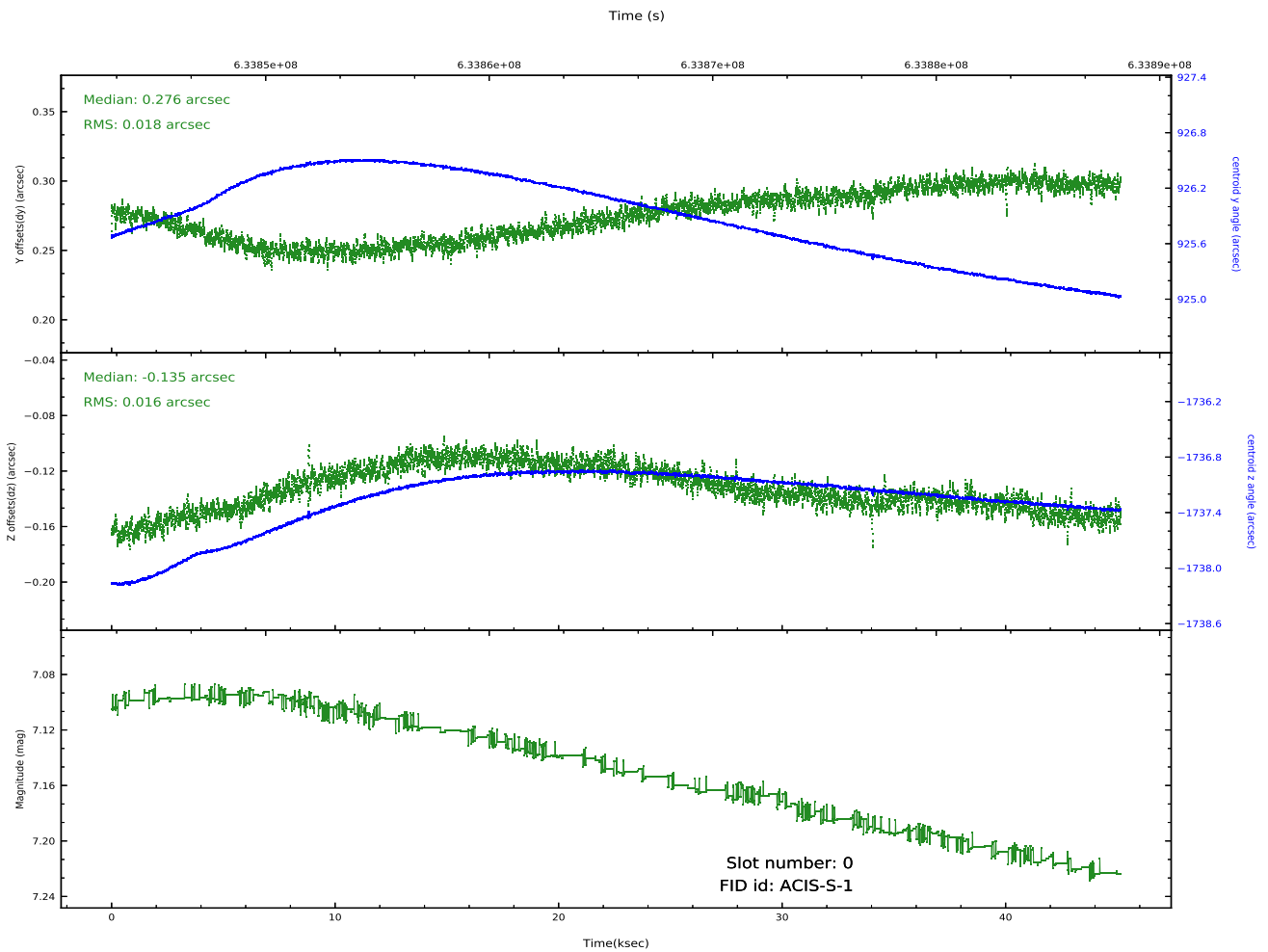
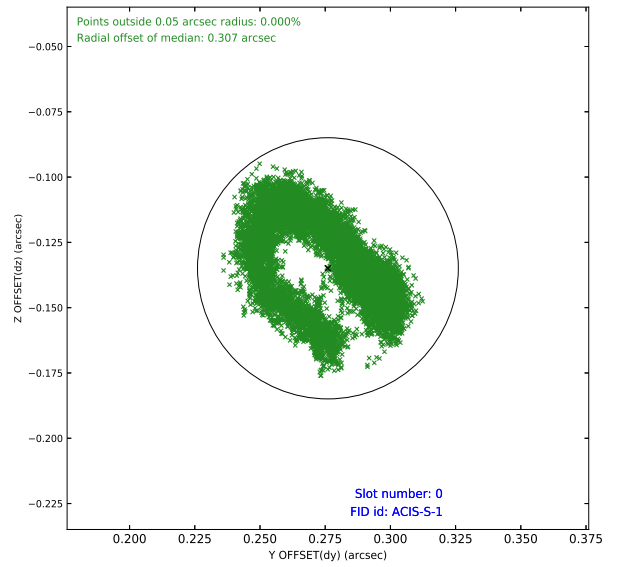
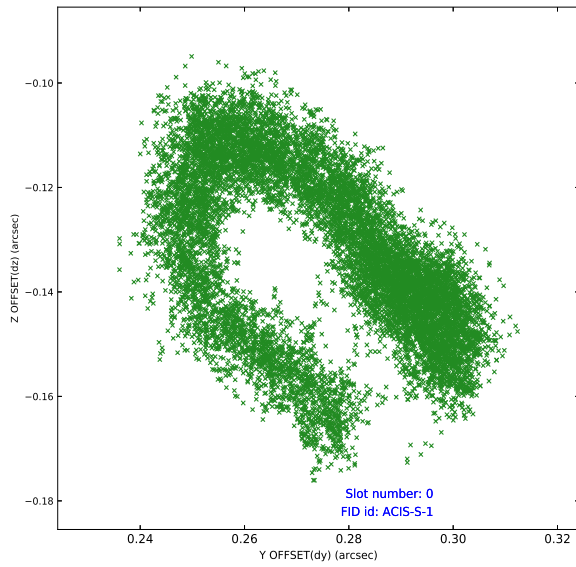


Time (s)

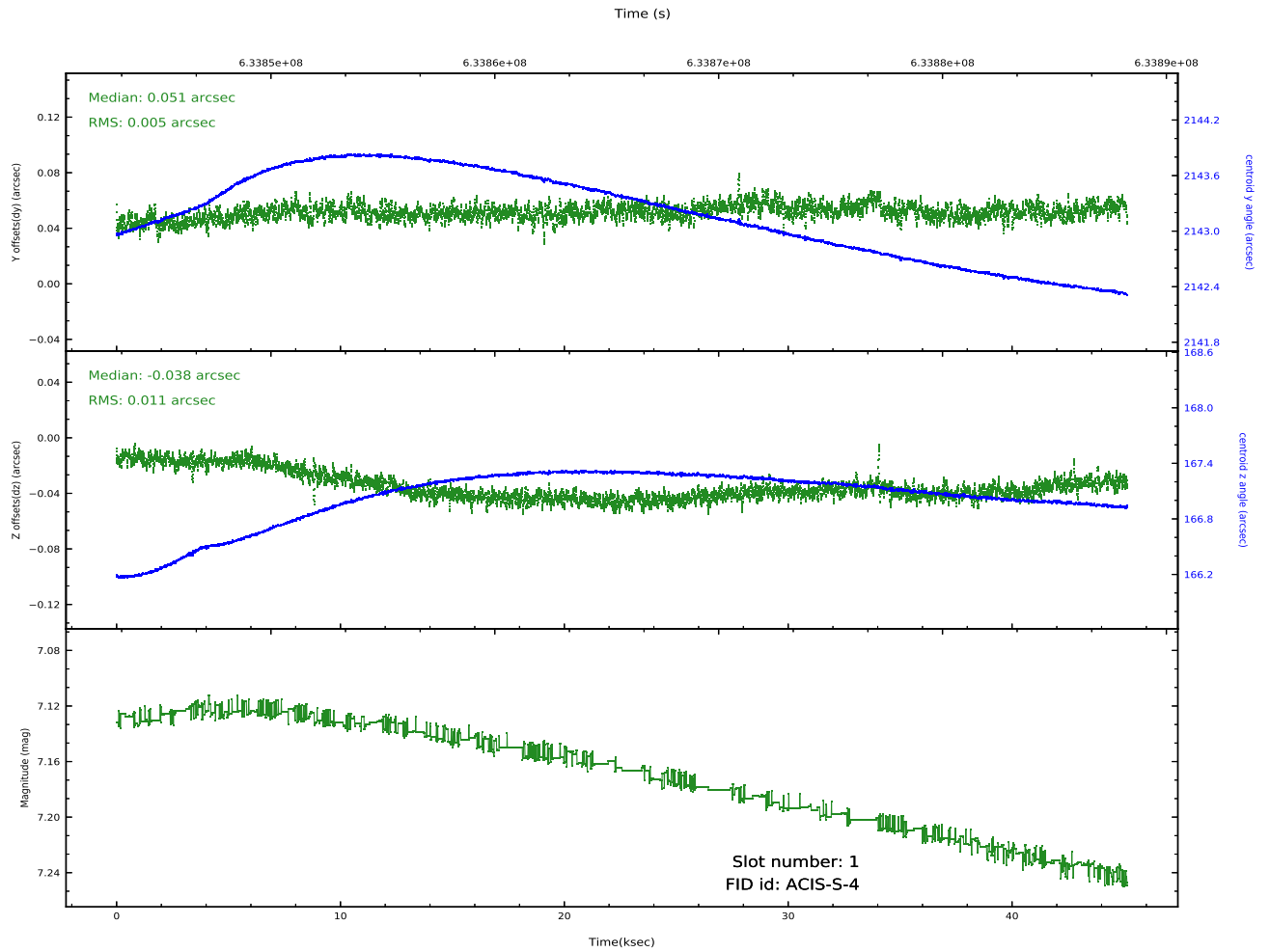
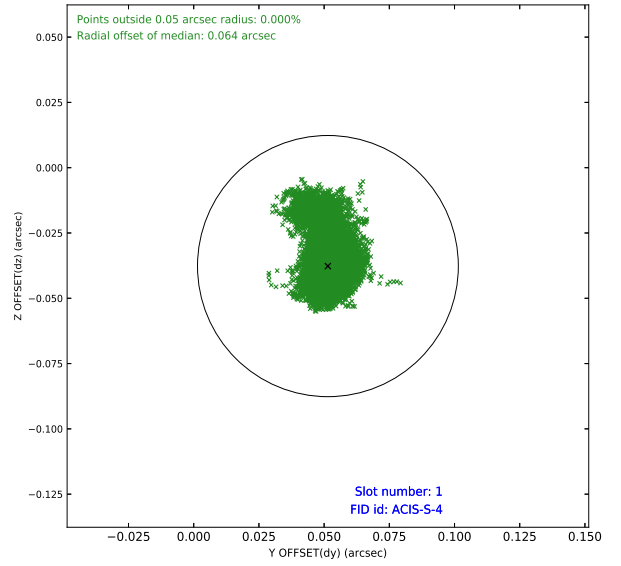
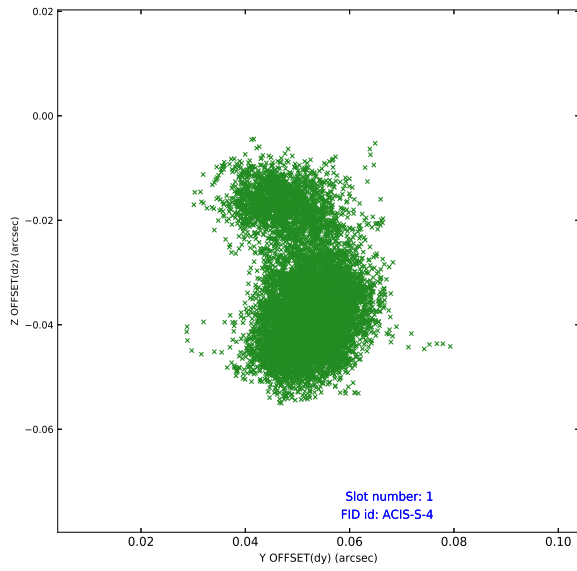


2.5 FID Slots

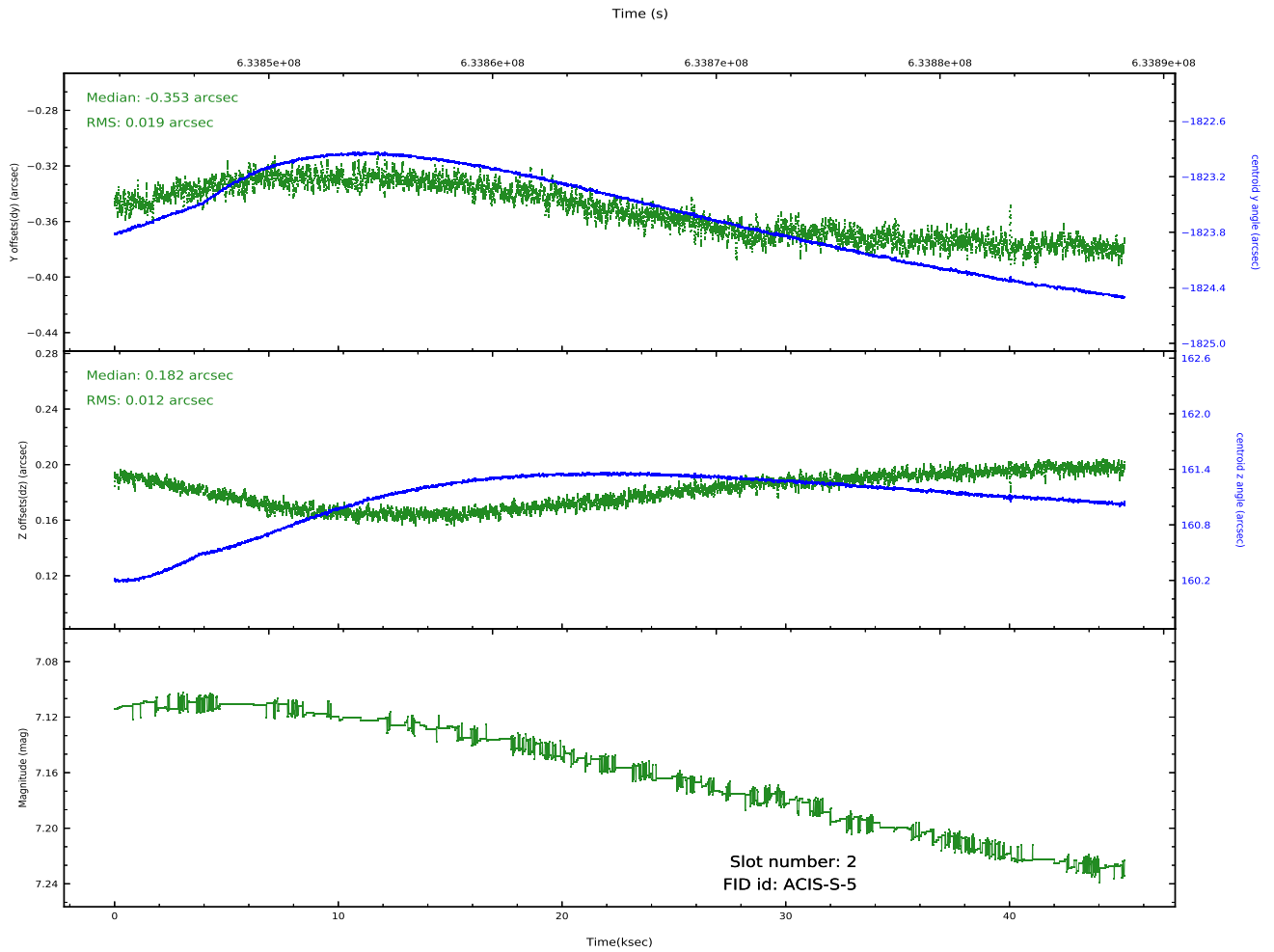
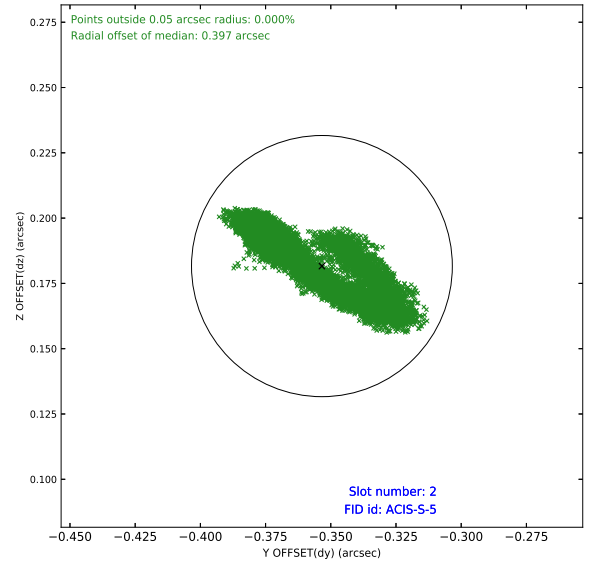
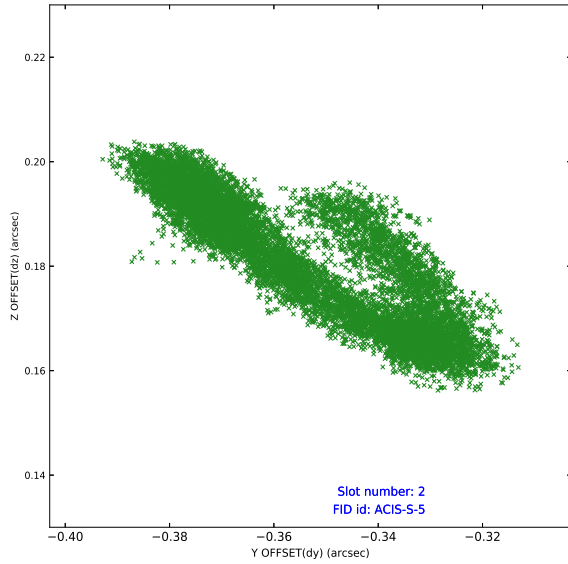
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.10.27
V&V Edition	2
V&V Disposition and Status	OK
V&V Charge Time	45.064700346708

A.2 Comments

A spatial region of the original bias map for CCD = 3 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. In this case, the bias map for CCD = 3 could not be improved because no suitable data at a compatible temperature and time range are available to use as replacement values. The bias map used in this processing is the original bias map telemetered with the observation.

===

Two optional chips were dropped.