

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 21101 - L2 Version 2  
Chandra X-Ray Center

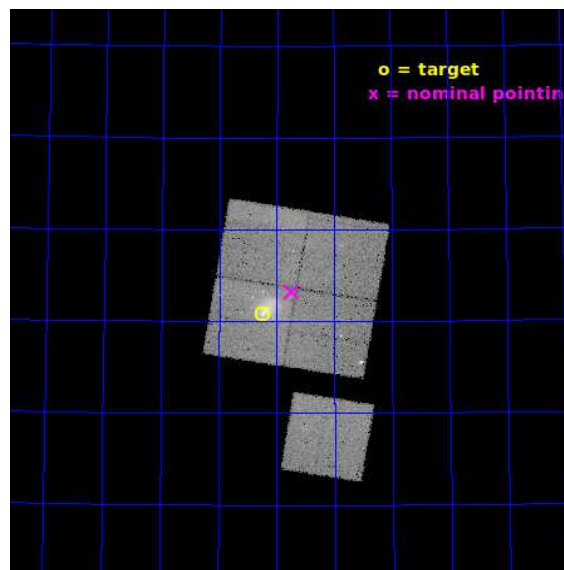
L2 Processing Date : Oct 26 2020

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# 1 Front

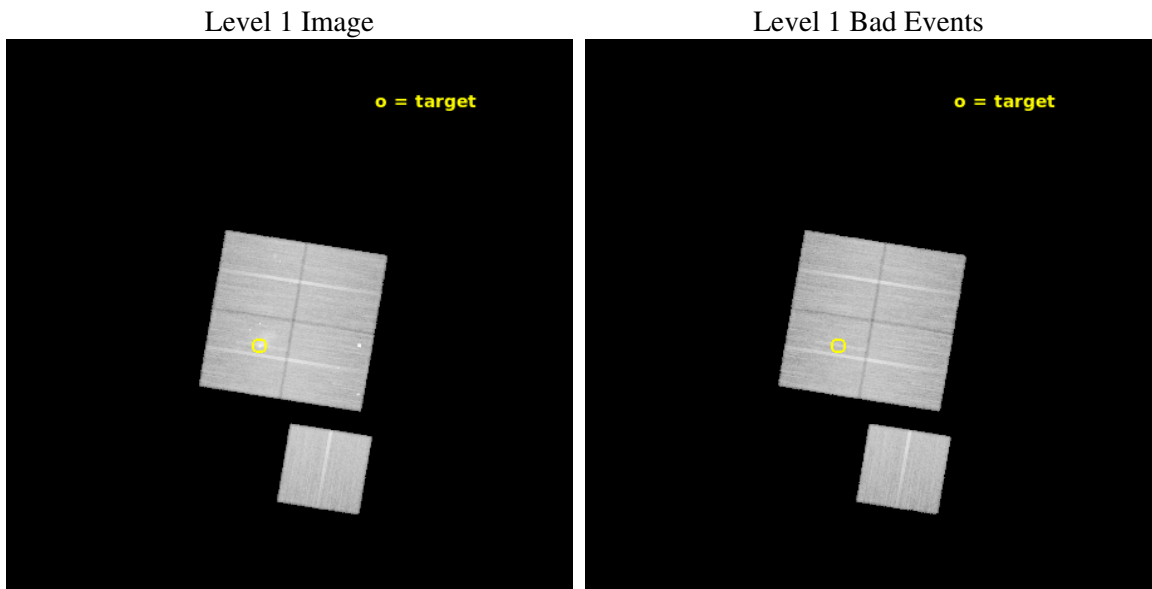
seq_num	801762	Sequence number
obs_id	21101	Observation id
title	Shock structure, the electron-ion equilibration timescale and the disintegrating cool core in A2146	Proposal title
observer	Helen Russell	Principal investigator
object	Abell 2146	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	239.06125	Observer's specified target RA [deg]
dec_targ	66.346917	Observer's specified target Dec [deg]
ra_nom	238.93366954443	Nominal RA [deg]
dec_nom	66.387514878713	Nominal Dec [deg]
roll_nom	189.32055939613	Nominal Roll [deg]
revision	2	Processing version of data
ontime	35070.300269842	Sum of GTIs [s]
livetime	34612.080978437	Livetime [s]
ontime0	35070.300269842	Sum of GTIs [s]
ontime1	35067.159309626	Sum of GTIs [s]
ontime2	35064.018349409	Sum of GTIs [s]
ontime3	35070.300269842	Sum of GTIs [s]
ontime6	35070.300269842	Sum of GTIs [s]
l2events	143762	Number of level 2 events



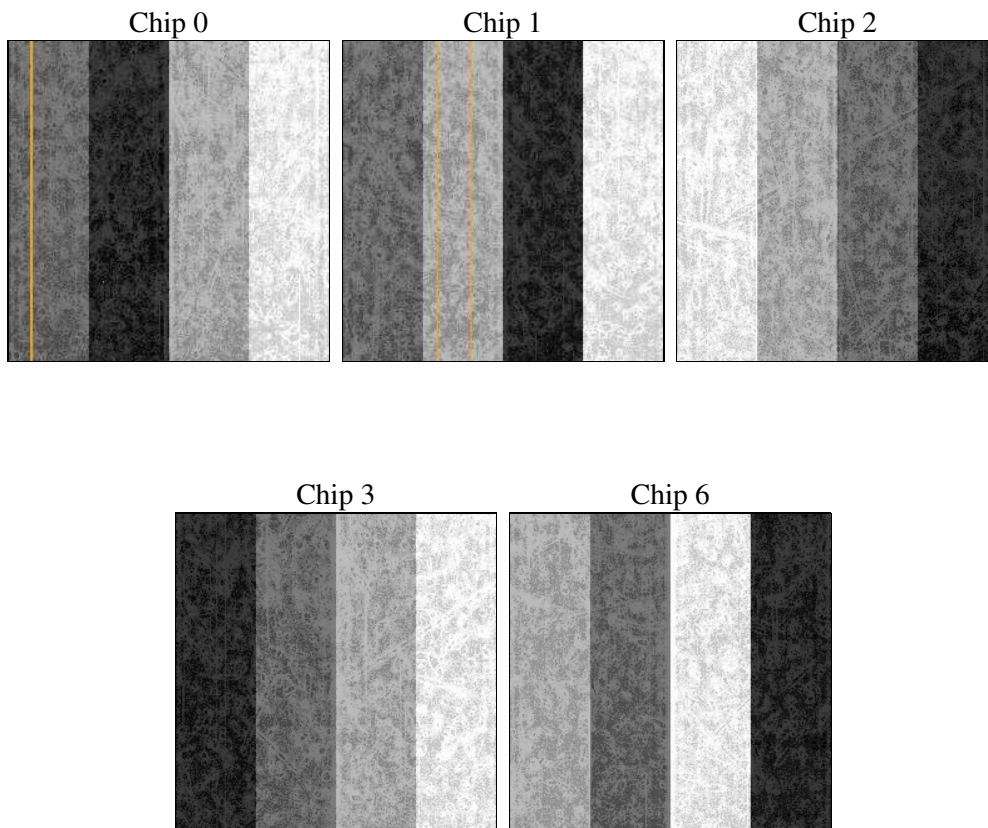
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	35000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	35070.300269842	Sum of GTIs [s]
caldbver	4.9.3	&#160	ontime0	35070.300269842	Sum of GTIs [s]
date	2020-10-26T07:31:58	Date and time of file creation	ontime1	35067.159309626	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	35064.018349409	Sum of GTIs [s]
			ontime3	35070.300269842	Sum of GTIs [s]
			ontime6	35070.300269842	Sum of GTIs [s]
			l1events	1316371	Number of level 1 events

### 2.1.4 Events

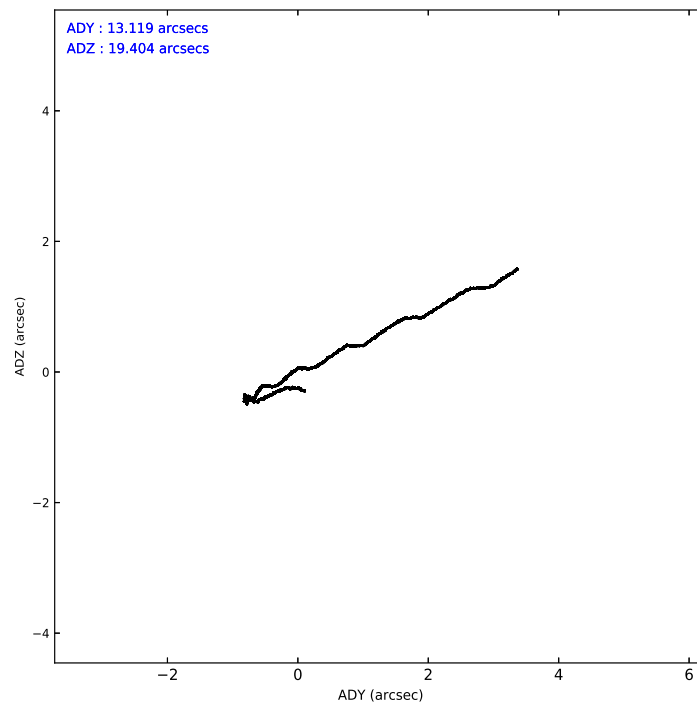
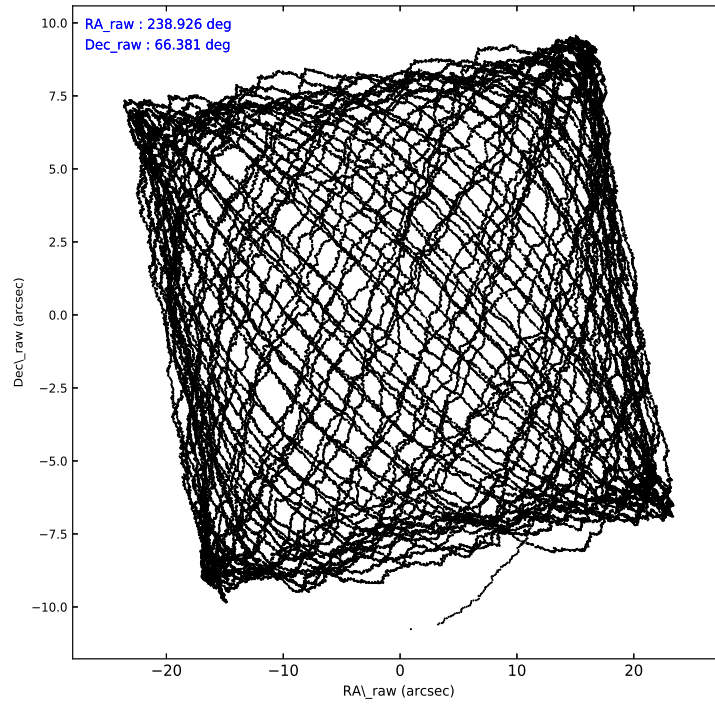
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	244854	254551	279262	271906	265798
rejected events	215252	220780	246026	225690	235943
rejected %	87%	86%	88%	83%	88%

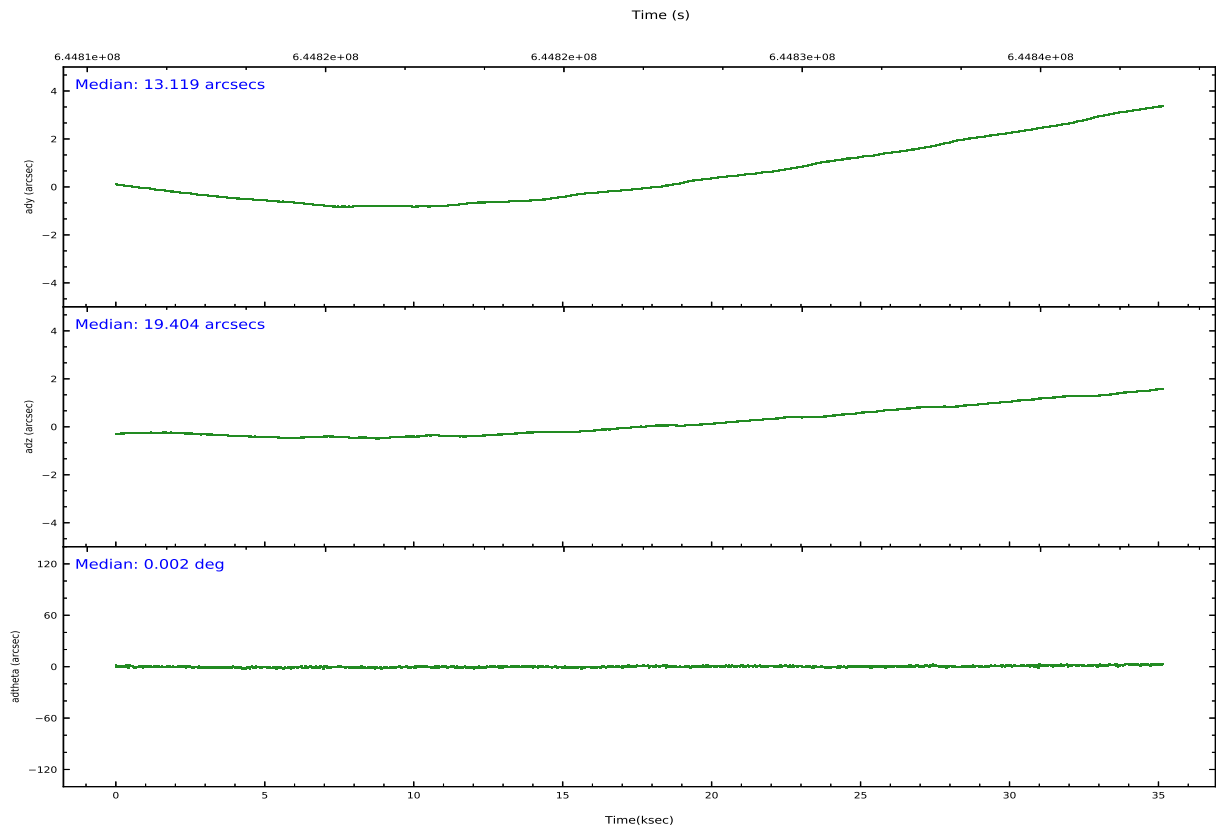
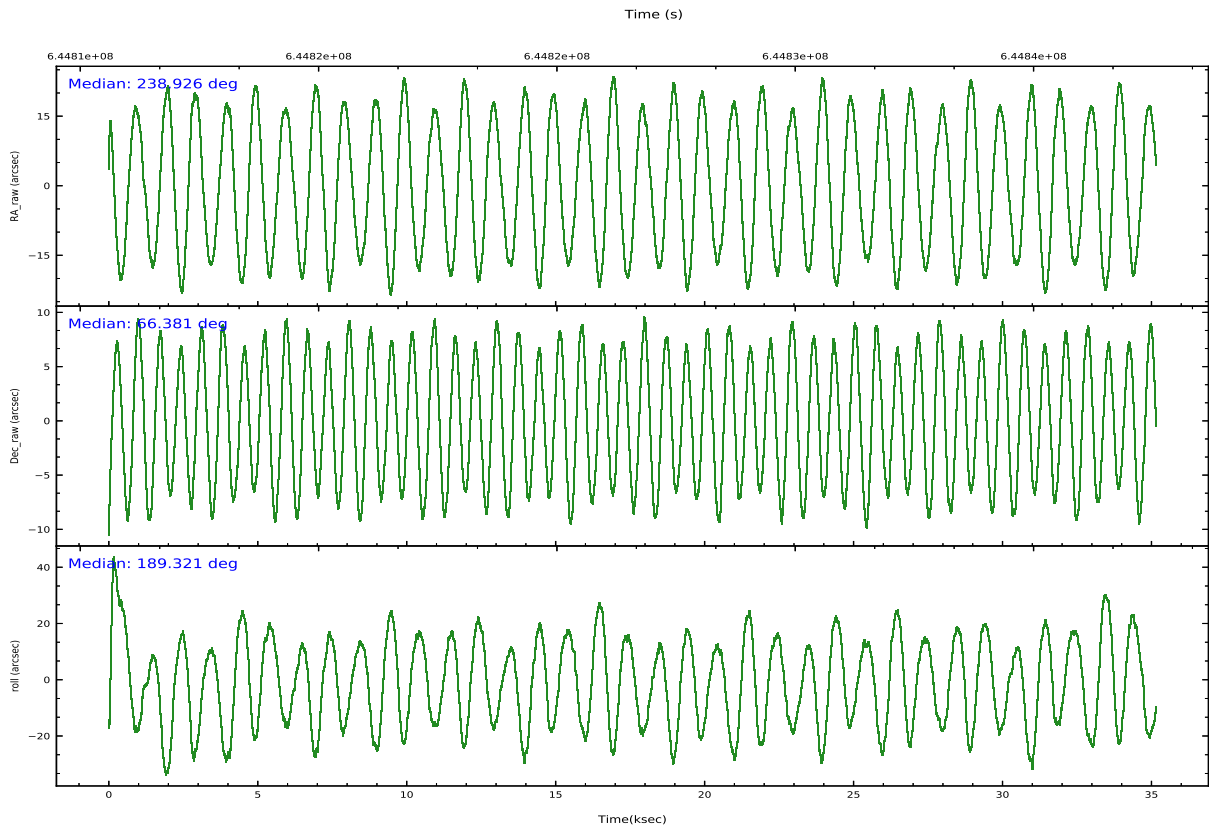
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	9835	11658	14016	24754	9886
	4%	4%	5%	9%	3%
grade 1 events	144	153	205	224	129
	0%	0%	0%	0%	0%
grade 2 events	7912	8550	7752	8206	6947
	3%	3%	2%	3%	2%
grade 3 events	3008	3225	2808	3437	3009
	1%	1%	1%	1%	1%
grade 4 events	2807	3078	2967	3422	2941
	1%	1%	1%	1%	1%
grade 5 events	11590	12005	10846	12792	12398
	4%	4%	3%	4%	4%
grade 6 events	6046	7264	5696	6404	7078
	2%	2%	2%	2%	2%
grade 7 events	203512	208618	234972	212667	223410
	83%	81%	84%	78%	84%

## 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	CCD I0 on	Y	Y
Observation mode	POINTING	POINTING	CCD I1 on	Y	Y
[deg] Pointing RA	238.979279	238.93366954443	CCD I2 on	Y	Y
[deg] Pointing Dec	66.398864	66.38751487871301	CCD I3 on	Y	Y
[deg] Pointing Roll	189.075102	189.32055939613	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	O1	Y
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	N	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	644809115.184000	644808207.345	CCD S5 on	N	N
Observation start date	2018-06-08T01:37:26	2018-06-08T01:23:27	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	644844115.184000	644844861.34717	On-chip summing requested	N	N
Observation end date	2018-06-08T11:20:46	2018-06-08T11:34:21	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



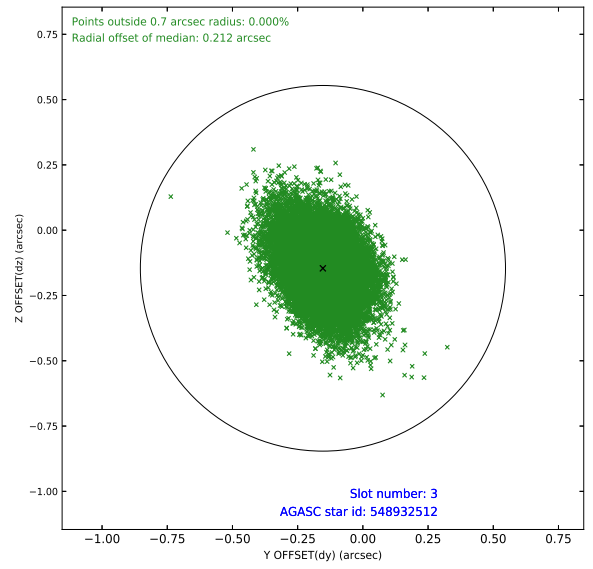
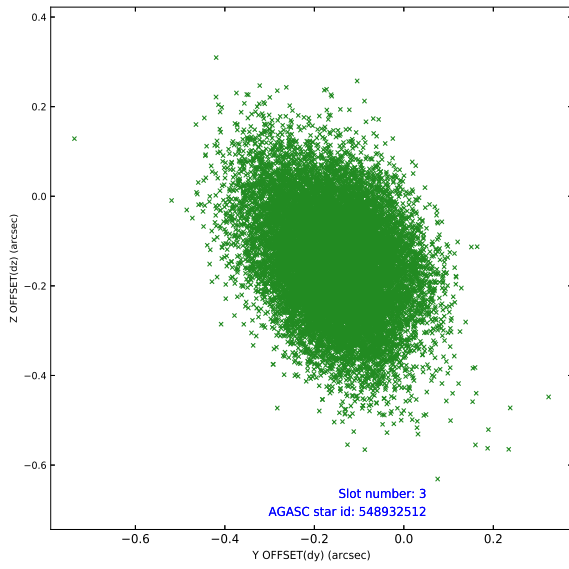


### Slot Statistics

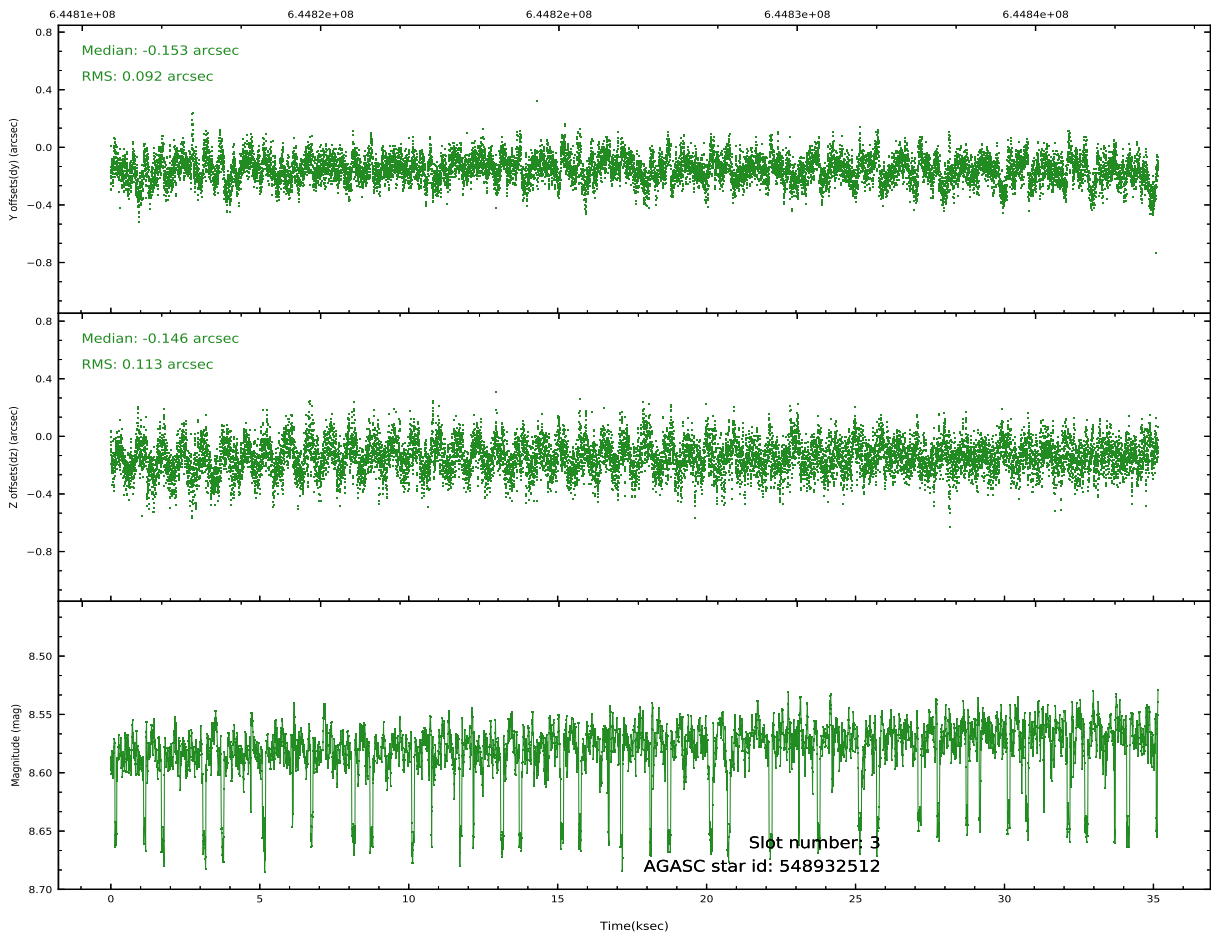
slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	FID		ACIS-I-1	7.07	8574	1.000	0.108	-0.032	0.039	0.113	0.000000	0.000000	925.91	-843
1	FID		ACIS-I-4	7.03	8574	1.000	0.102	-0.005	0.028	0.070	0.000000	0.000000	2146.07	1056
2	FID		ACIS-I-5	7.05	8575	1.000	-0.310	0.108	0.024	0.052	0.000000	0.000000	-1822.34	1054
3	GUIDE	used	548932512	8.58	17128	1.000	-0.153	-0.146	0.152	0.255	239.727627	66.054972	-885.68	1388
4	GUIDE	used	548933960	8.44	17139	1.000	0.185	-0.139	0.151	0.257	237.671184	66.428675	1840.34	-420
5	GUIDE	used	548937184	9.86	16891	1.000	-0.049	0.040	0.274	0.479	238.771821	66.565432	198.99	-639
6	GUIDE	used	548938256	10.41	17034	0.999	0.062	0.189	0.349	0.588	238.998533	67.051685	-396.51	-2316
7	GUIDE	used	549849072	9.05	17138	1.000	-0.039	0.074	0.187	0.319	240.420863	66.802816	-2250.91	-1137

## 2.4 Star Slots

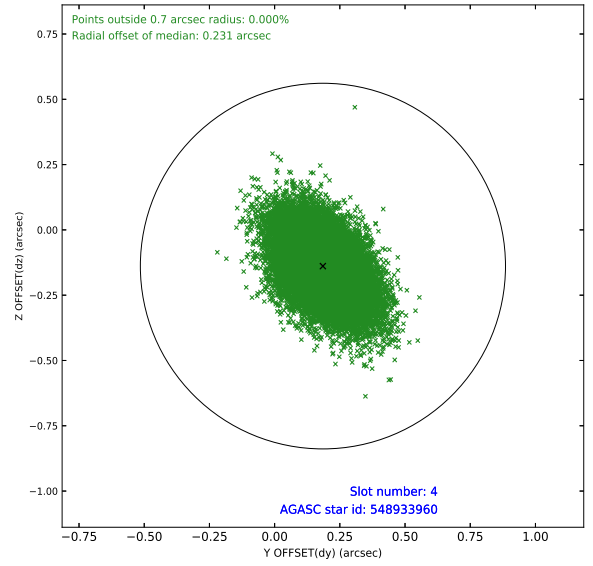
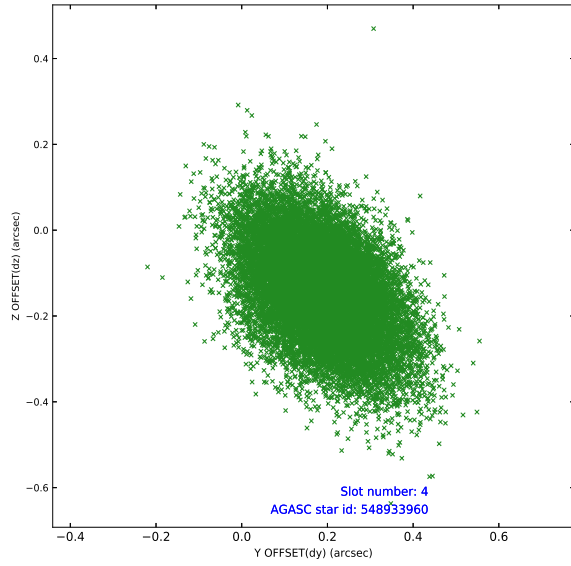
### 2.4.1 Slot 3



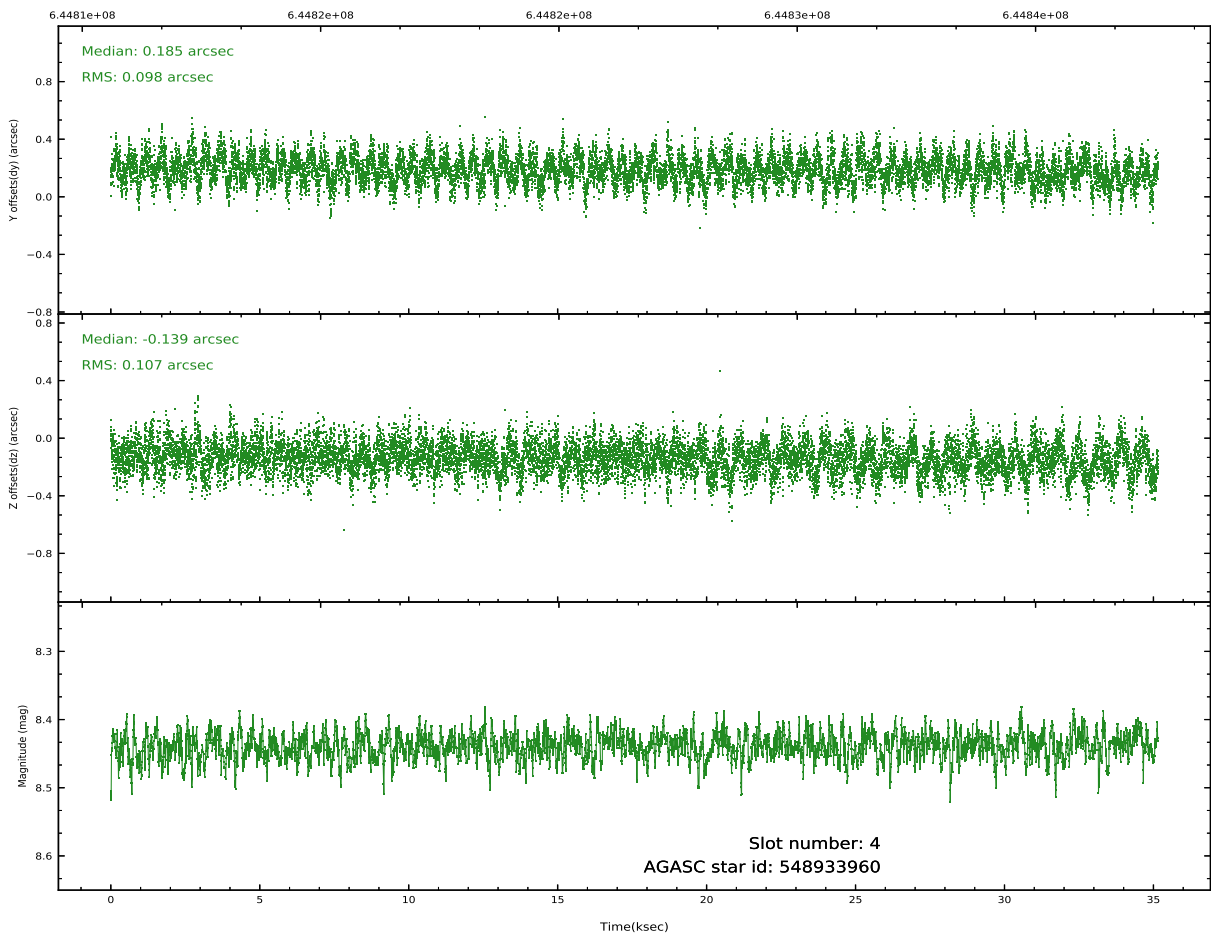
Time (s)



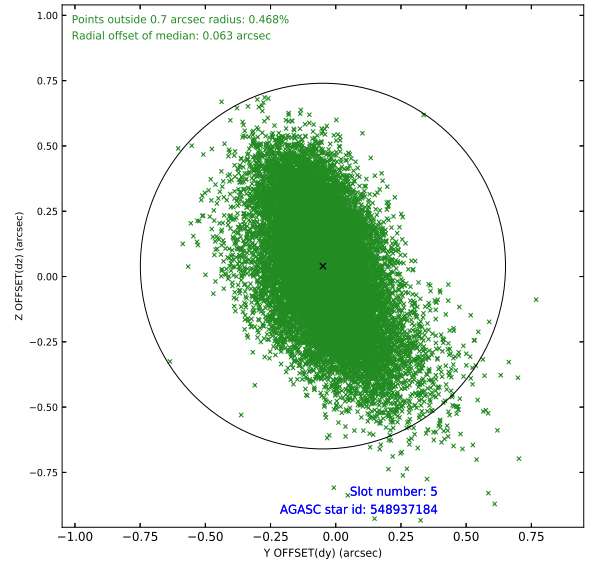
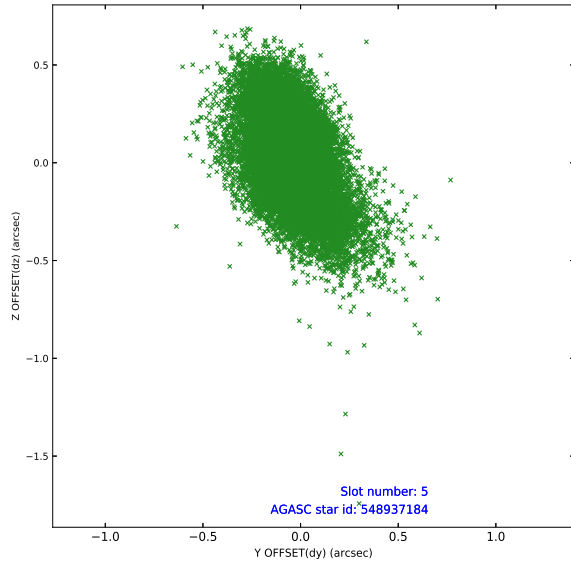
## 2.4.2 Slot 4



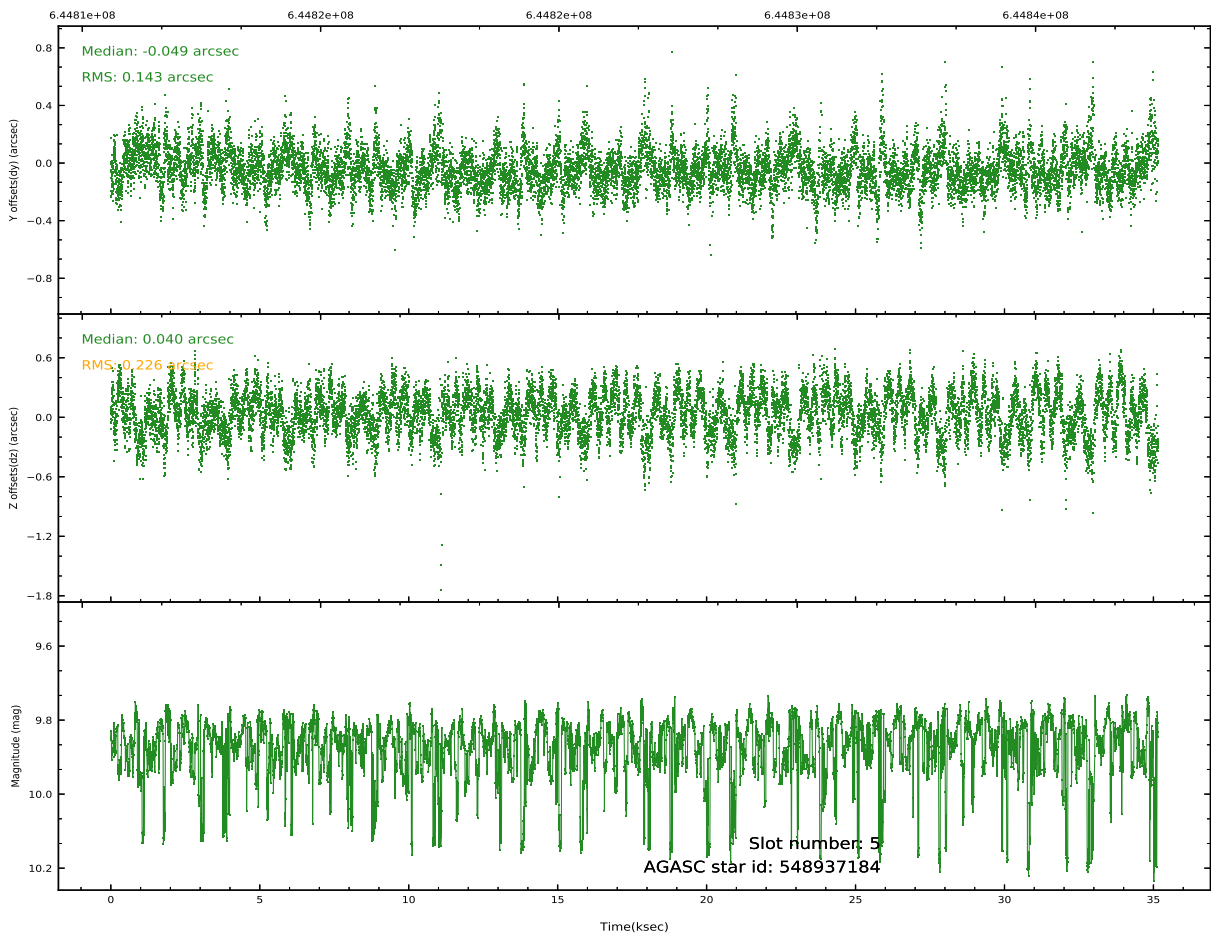
Time (s)



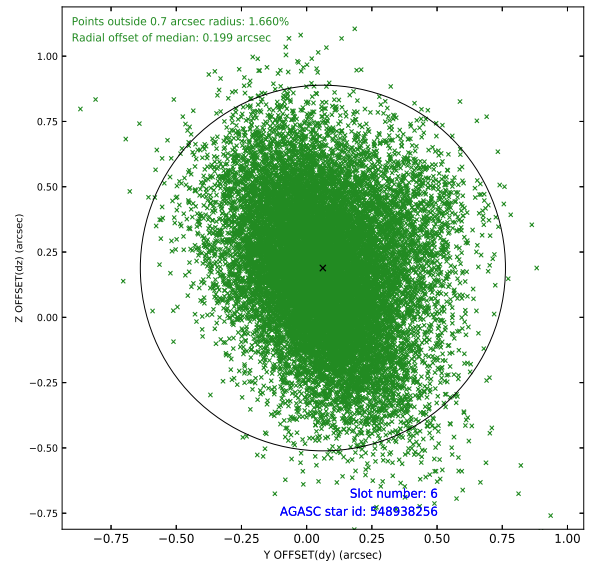
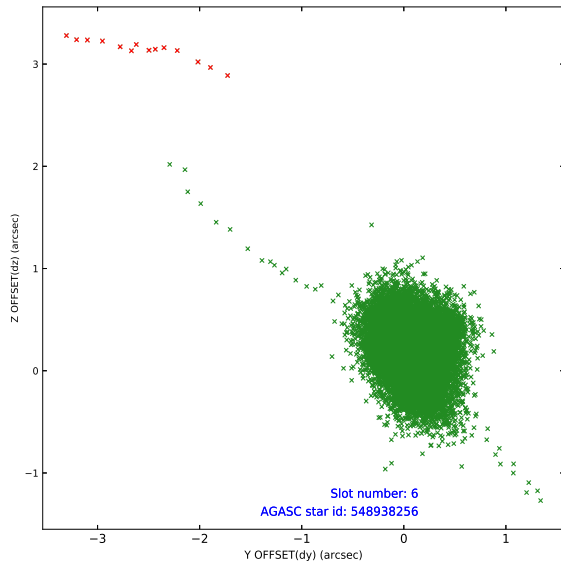
### 2.4.3 Slot 5



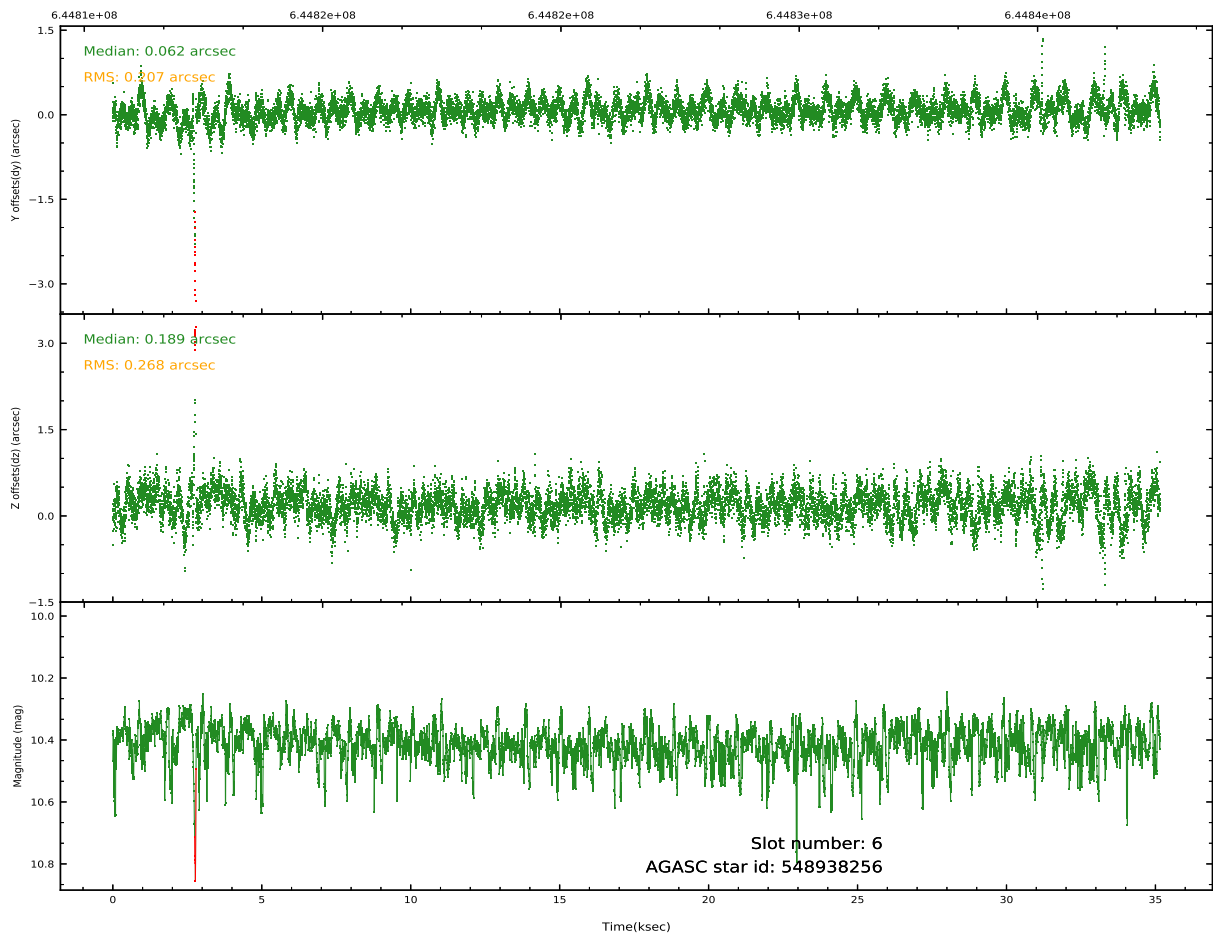
Time (s)



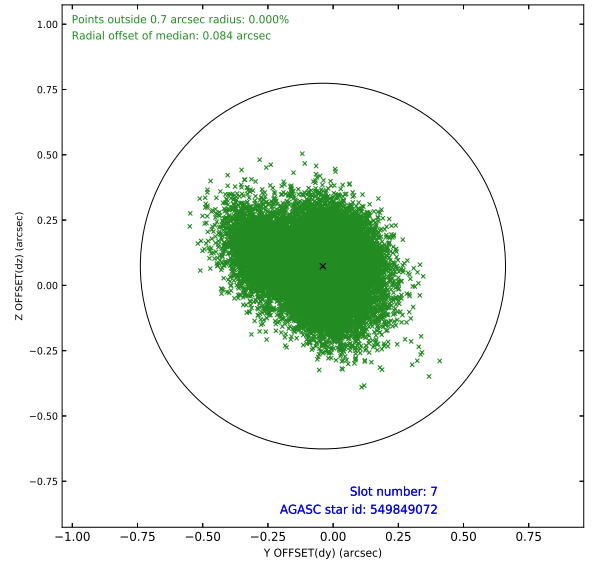
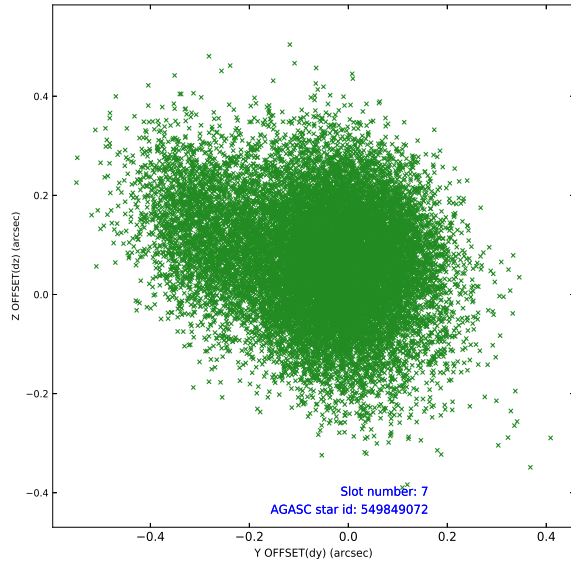
## 2.4.4 Slot 6



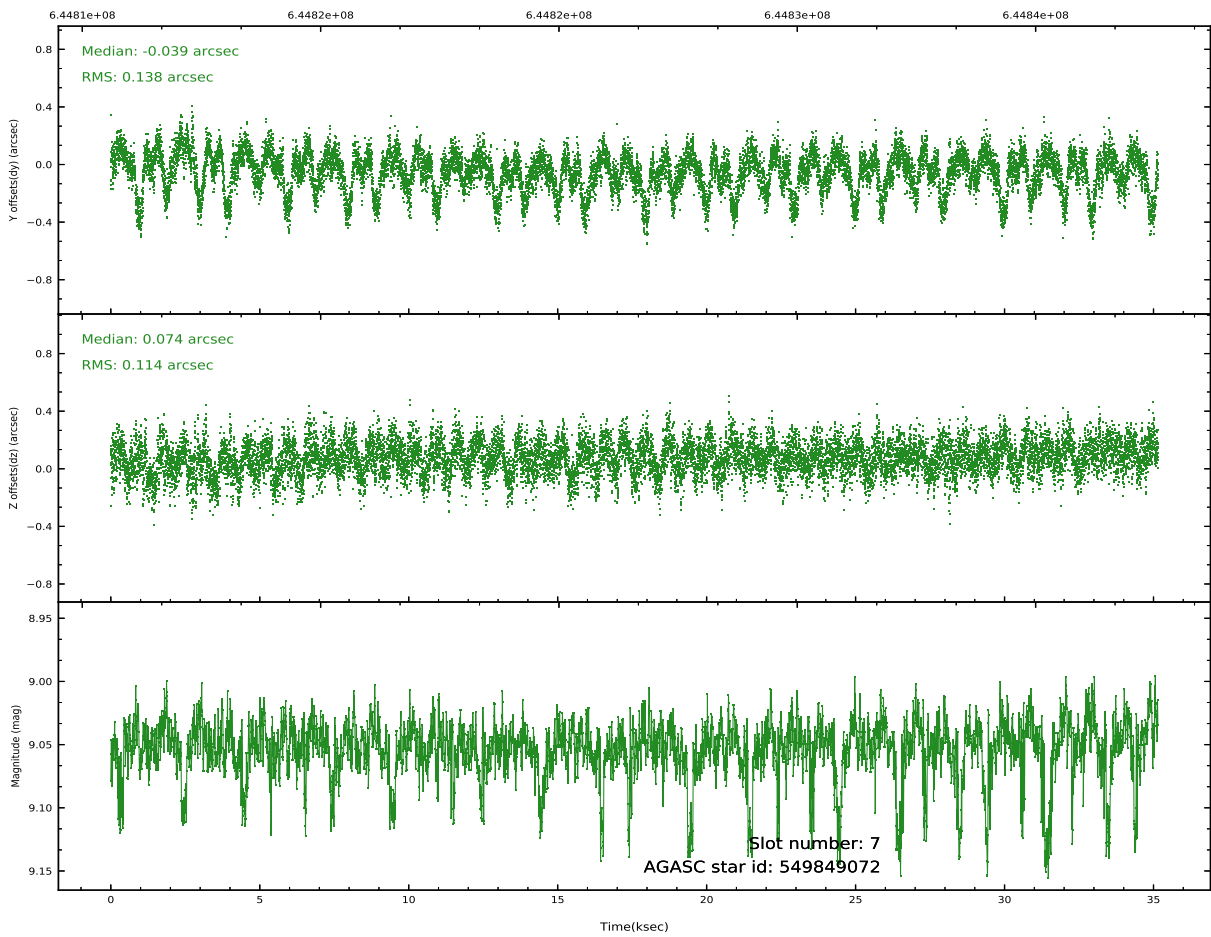
Time (s)



## 2.4.5 Slot 7

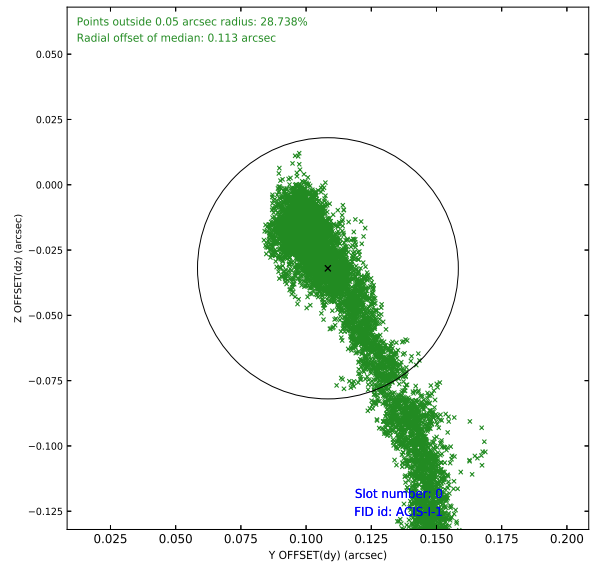
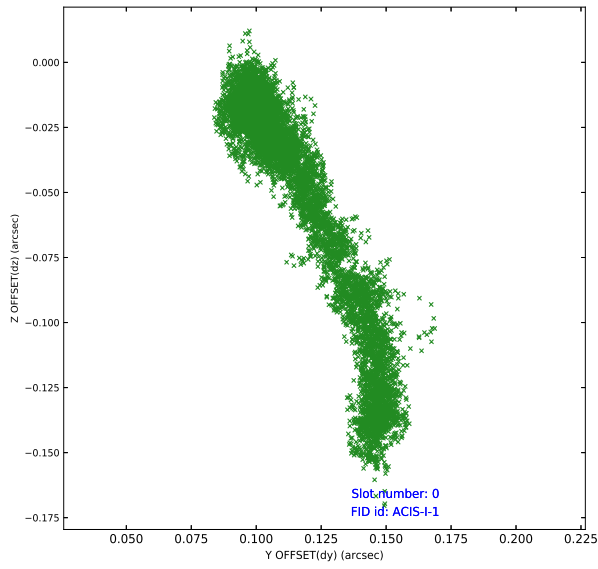


Time (s)

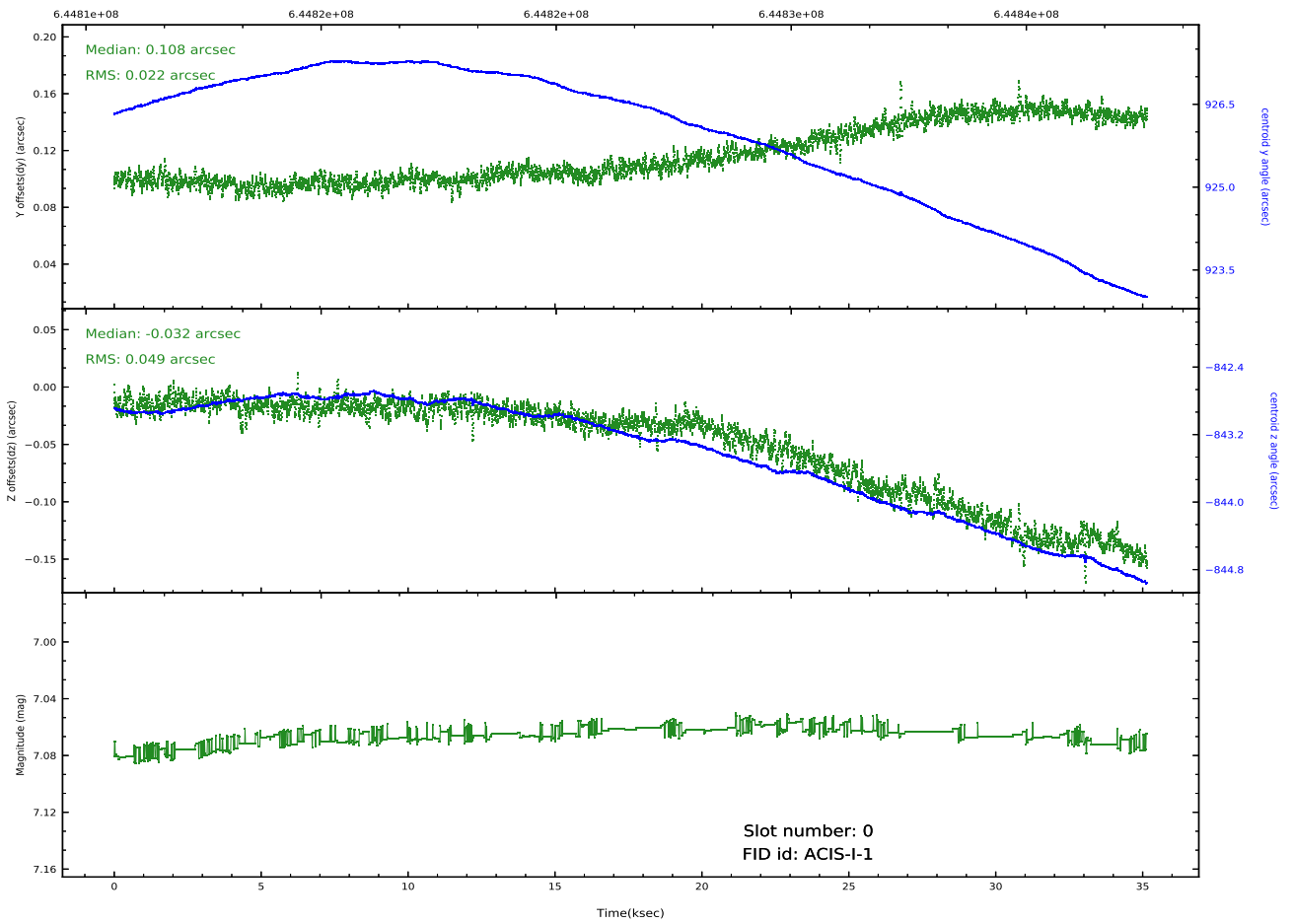


## 2.5 FID Slots

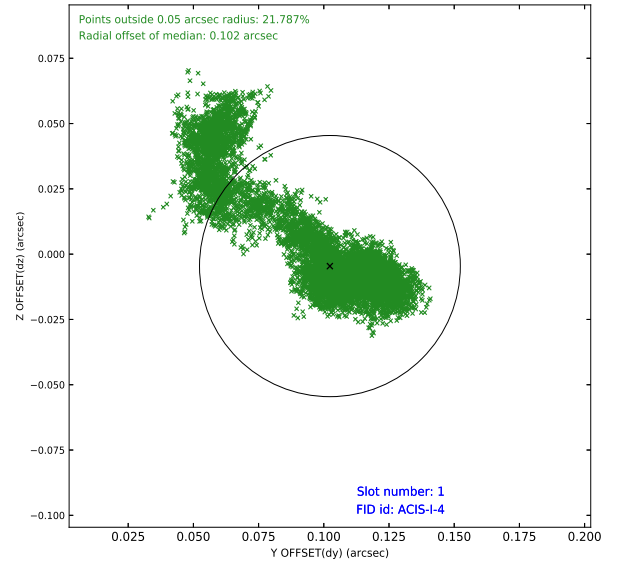
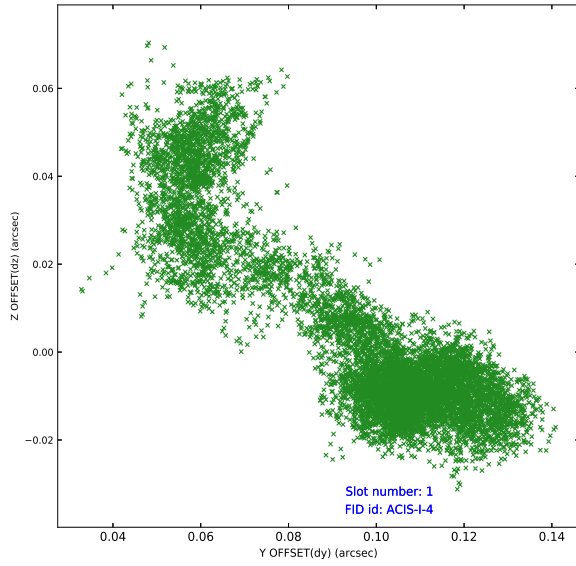
### 2.5.1 Slot 0



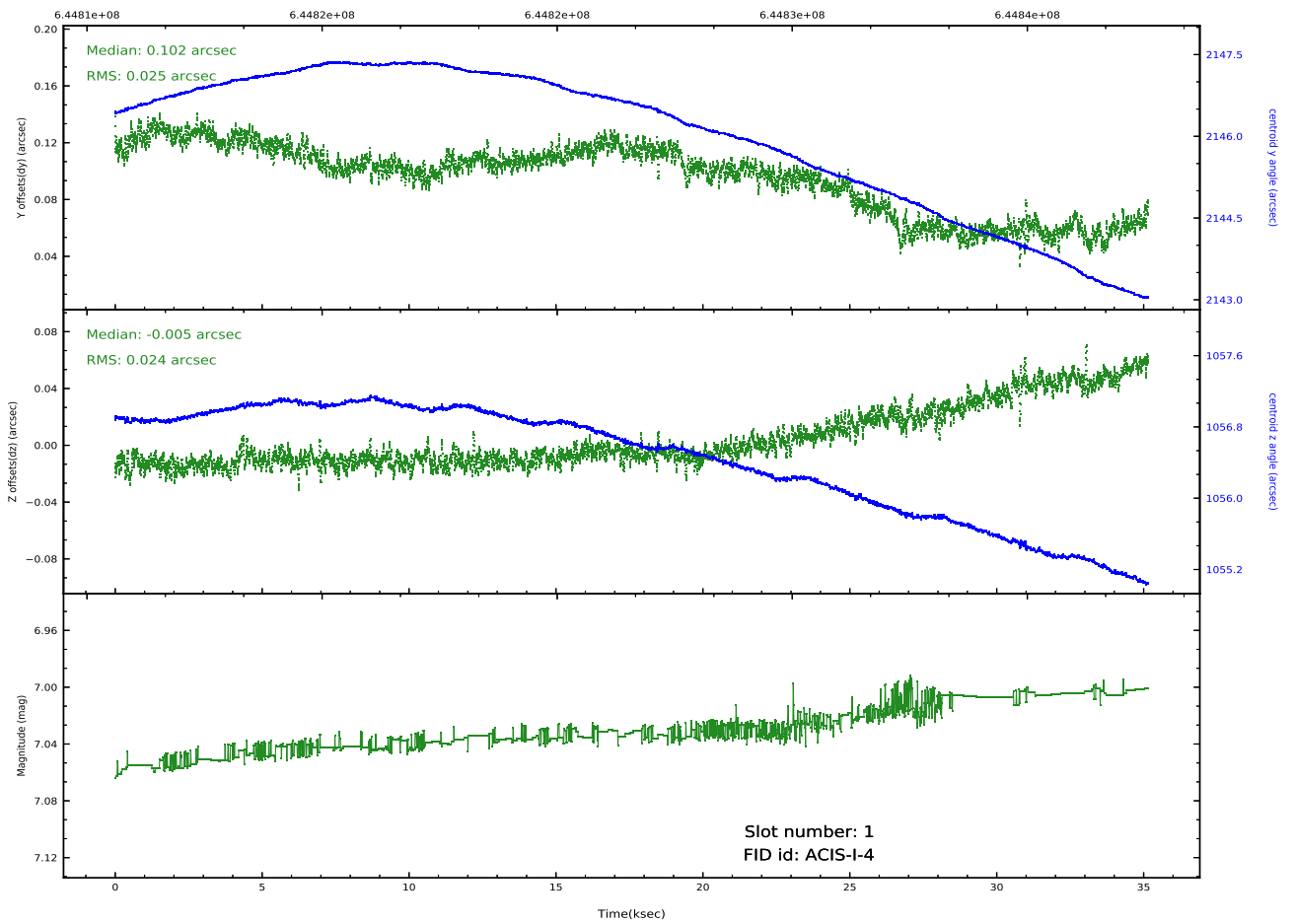
Time (s)



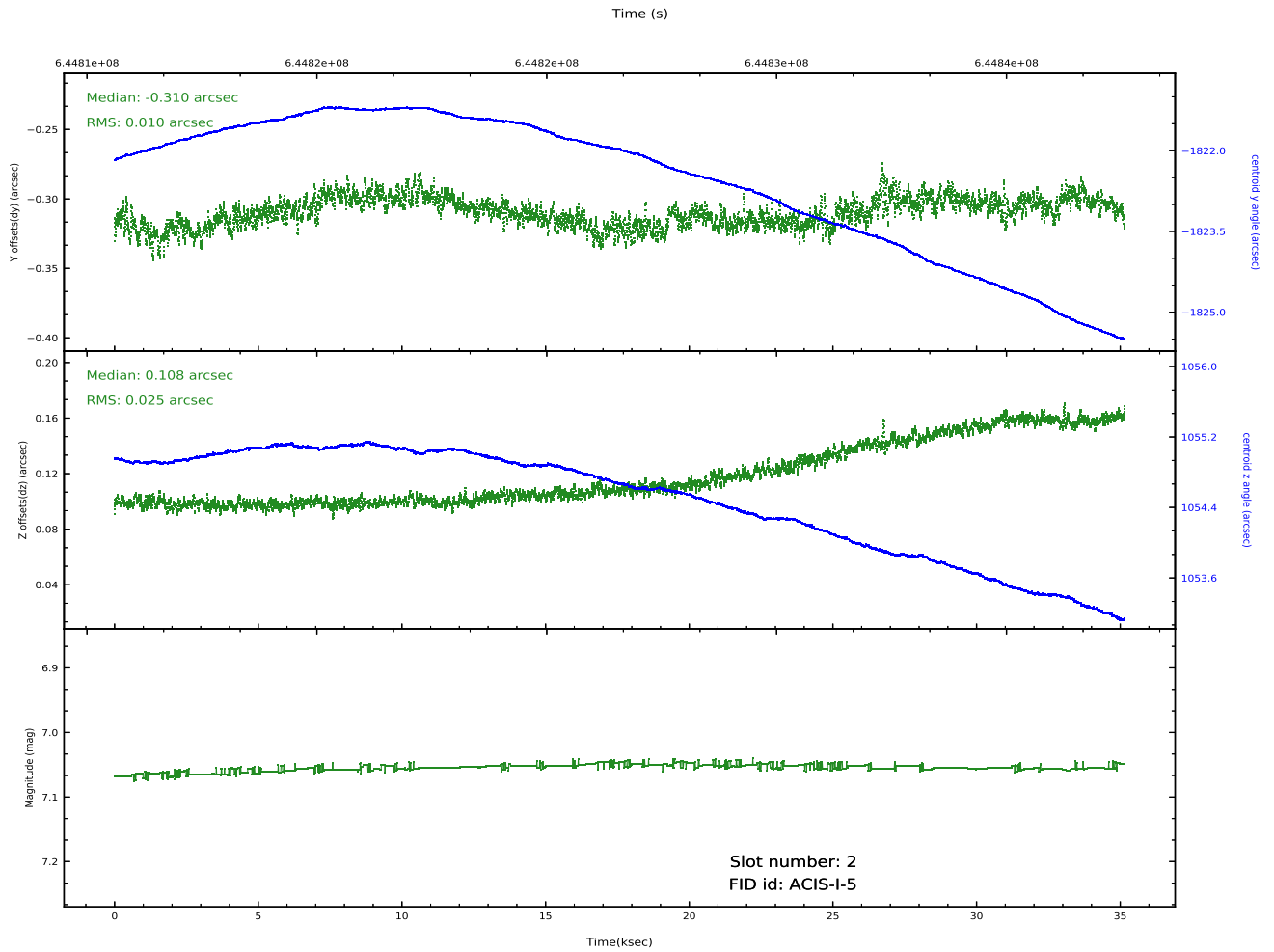
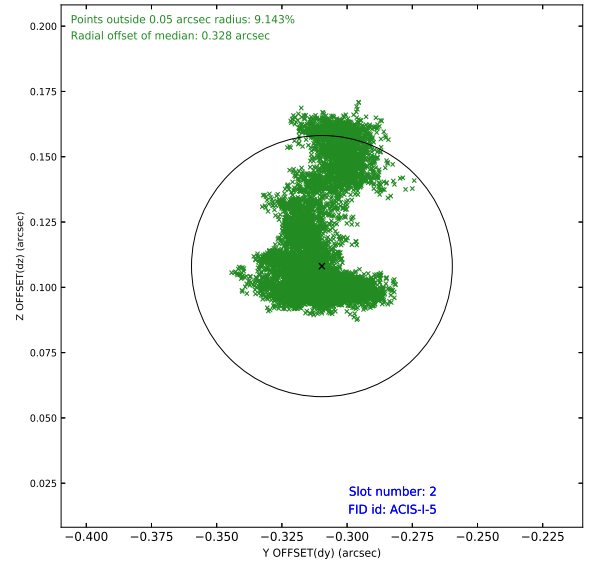
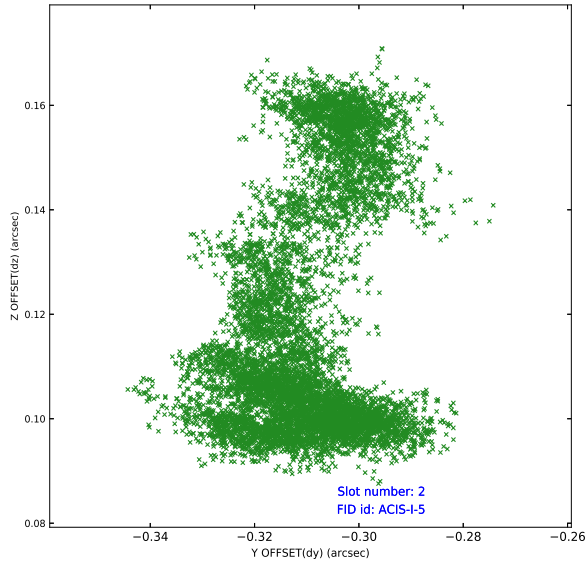
## 2.5.2 Slot 1



Time (s)



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2020.10.30
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	35.070300269842

## A.2 Comments