

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 20941 - L2 Version 3  
Chandra X-Ray Center

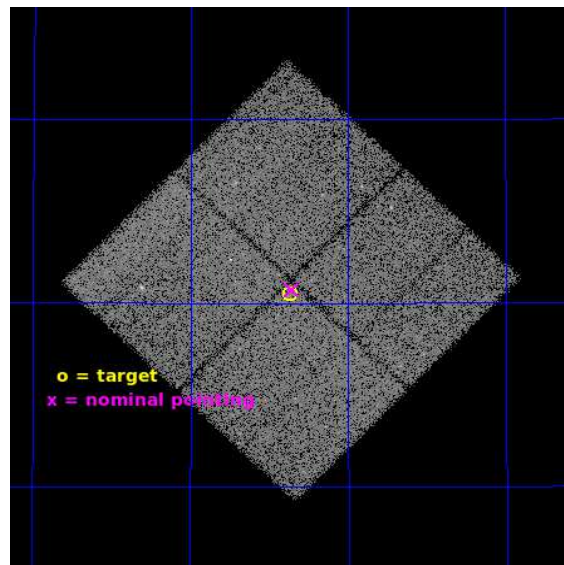
L2 Processing Date : Oct 24 2020

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# 1 Front

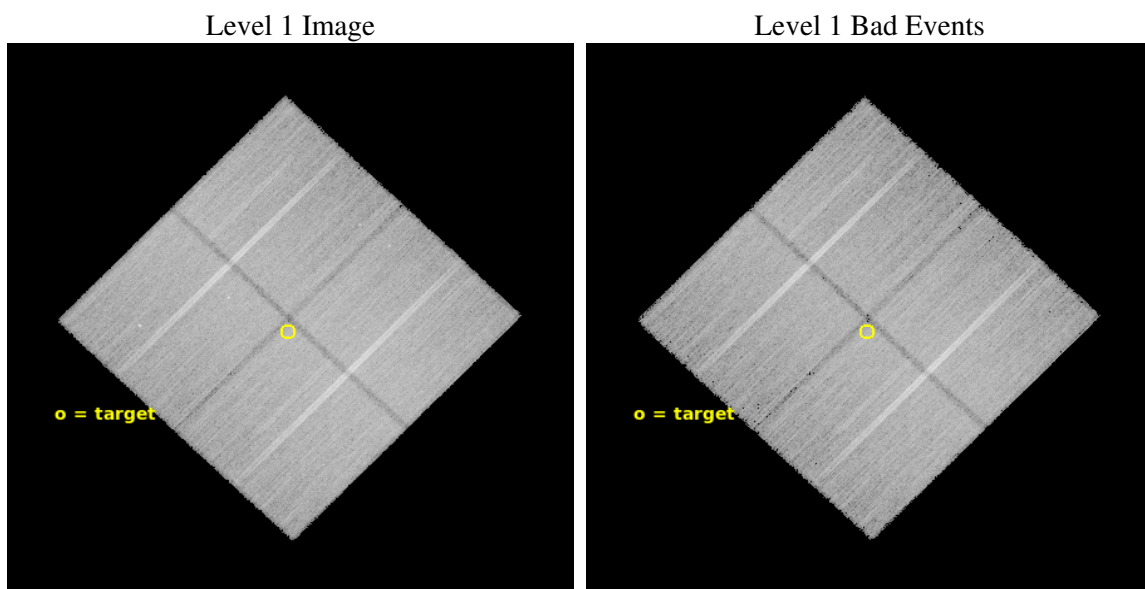
seq_num	801742	Sequence number
obs_id	20941	Observation id
title	Chandra observations of an exceptional cluster of galaxies at z=1.7	&#160
observer	Julie Hlavacek-Larrondo	Principal investigator
object	SpARCS104922.6+564032.5	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	162.341667	Observer's specified target RA [deg]
dec_targ	56.675556	Observer's specified target Dec [deg]
ra_nom	162.33932004747	Nominal RA [deg]
dec_nom	56.678906142213	Nominal Dec [deg]
roll_nom	134.21555723478	Nominal Roll [deg]
revision	3	Processing version of data
ontime	45365.359298944	Sum of GTIs [s]
livetime	44772.627482212	Livetime [s]
ontime0	45368.500349045	Sum of GTIs [s]
ontime1	45362.218288064	Sum of GTIs [s]
ontime2	45365.359278798	Sum of GTIs [s]
ontime3	45365.359298944	Sum of GTIs [s]
l2events	120618	Number of level 2 events



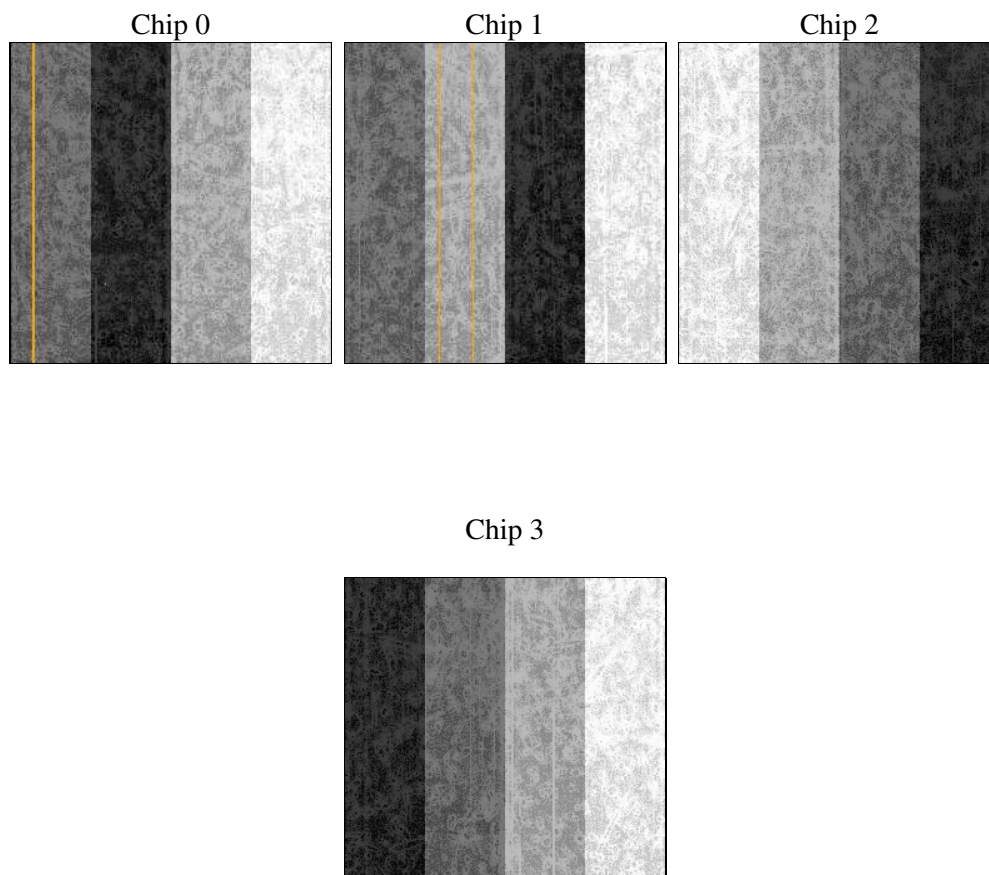
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	45293.207000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	45365.359298944	Sum of GTIs [s]
caldbver	4.9.3	&#160	ontime0	45368.500349045	Sum of GTIs [s]
date	2020-10-24T09:49:28	Date and time of file creation	ontime1	45362.218288064	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	45365.359278798	Sum of GTIs [s]
			ontime3	45365.359298944	Sum of GTIs [s]
			l1events	1288652	Number of level 1 events

### 2.1.4 Events

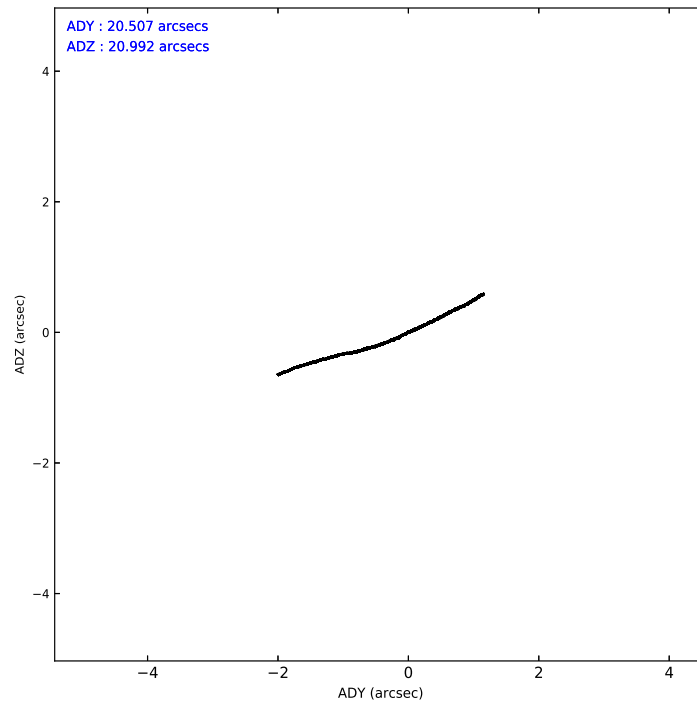
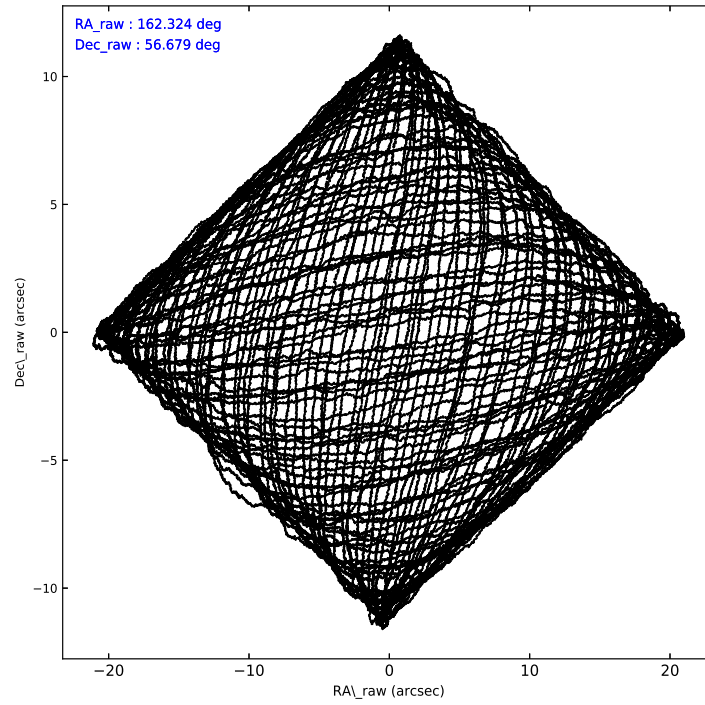
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	302298	310718	343804	331832
rejected events	266483	270986	309273	297976
rejected %	88%	87%	89%	89%

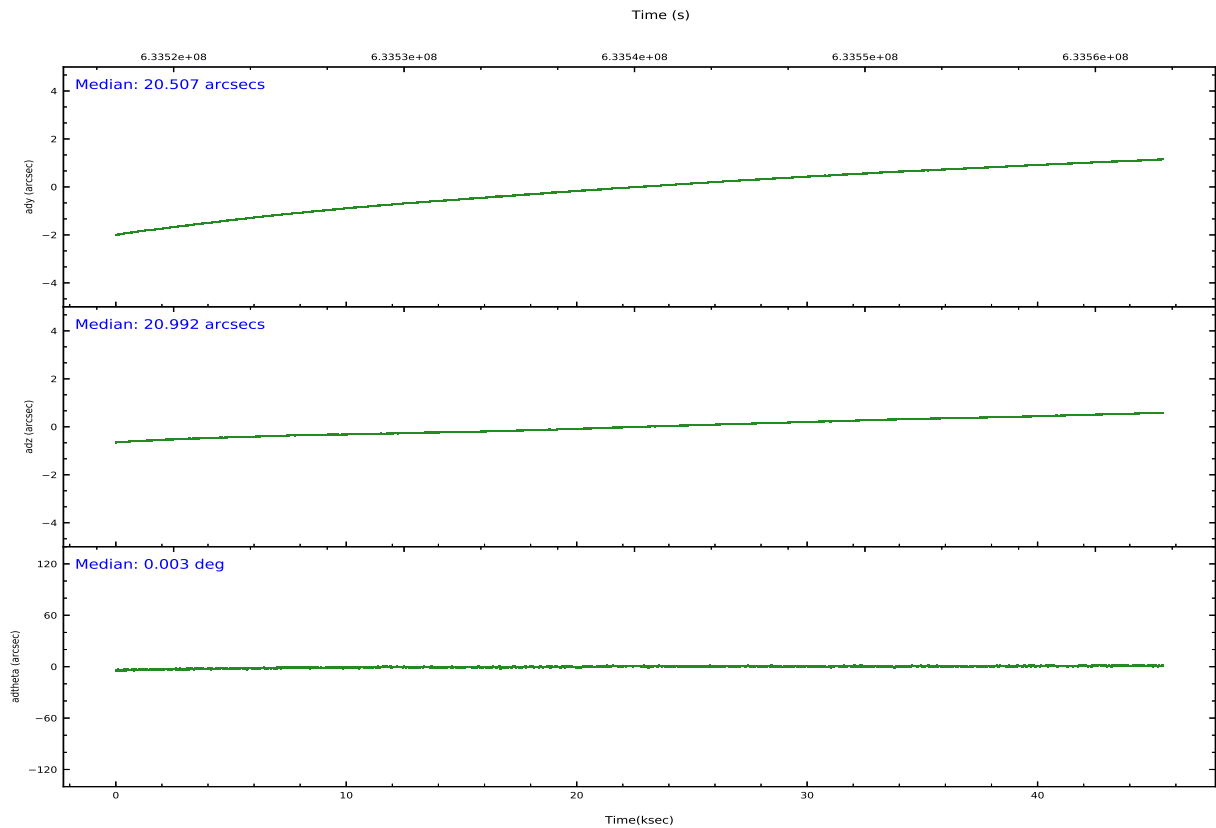
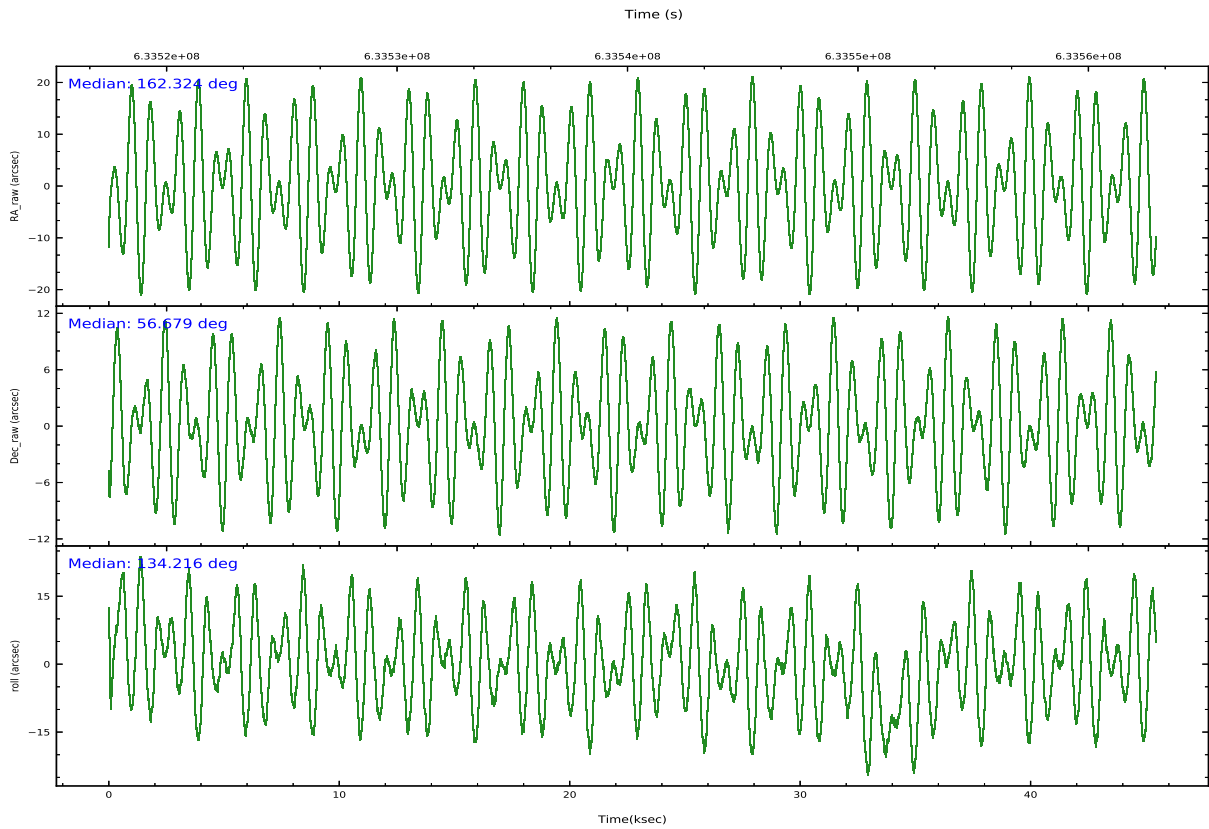
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	11843	12960	12301	12015
	3%	4%	3%	3%
grade 1 events	158	157	178	184
	0%	0%	0%	0%
grade 2 events	9150	10139	8342	7361
	3%	3%	2%	2%
grade 3 events	3718	3650	3386	3617
	1%	1%	0%	1%
grade 4 events	3348	3546	3633	3495
	1%	1%	1%	1%
grade 5 events	13553	13865	12509	15401
	4%	4%	3%	4%
grade 6 events	7765	9443	6875	7372
	2%	3%	1%	2%
grade 7 events	252763	256958	296580	282387
	83%	82%	86%	85%

## 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	162.372537	162.33932004747	CCD I2 on	Y	Y
[deg] Pointing Dec	56.671428	56.678906142213	CCD I3 on	Y	Y
[deg] Pointing Roll	133.974204	134.21555723478	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	N
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	O2	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	633517647.184000	633516405.39117	CCD S5 on	N	N
Observation start date	2018-01-28T09:06:18	2018-01-28T08:46:45	Number of optional ACIS chips dropped	2	2
[s] Observation end time (MET)	633562940.184000	633563954.11897	On-chip summing requested	N	N
Observation end date	2018-01-28T21:41:11	2018-01-28T21:59:14	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





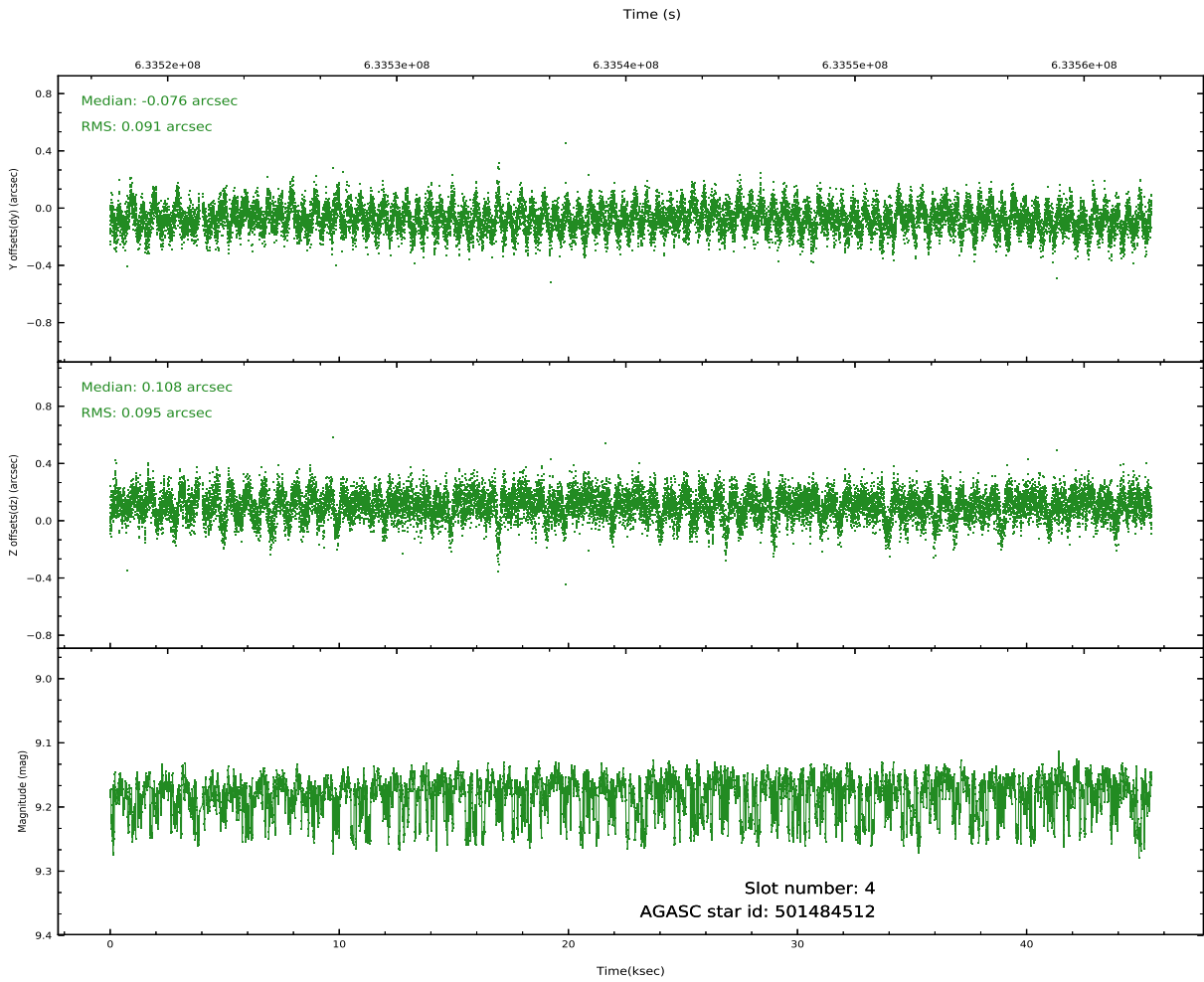
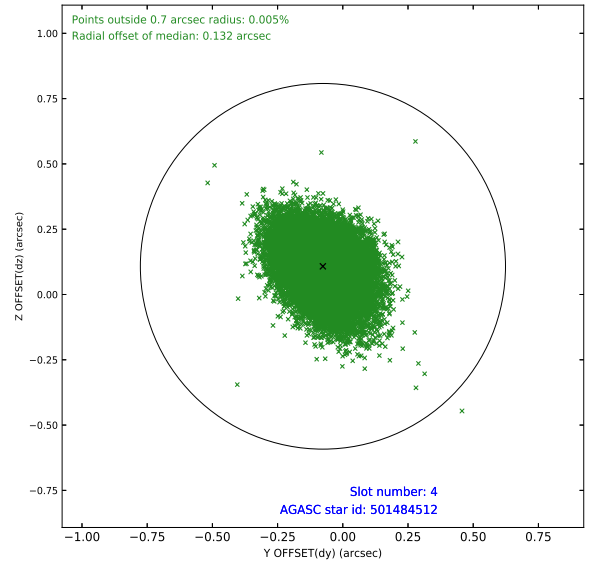
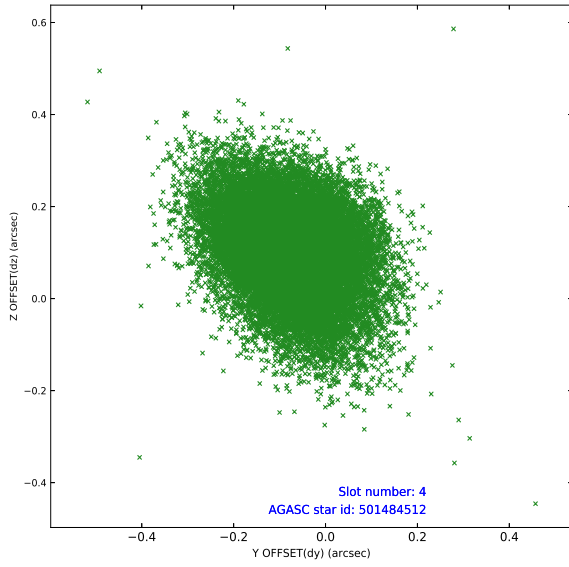
### Slot Statistics

slot	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-I-1	7.25	11083	1.000	0.224	-0.166	0.020	0.029	0.000000	0.000000	919.07	-844
1	FID		ACIS-I-5	7.24	11084	1.000	-0.320	0.187	0.022	0.031	0.000000	0.000000	-1829.42	1053
2	FID		ACIS-I-6	7.26	11085	1.000	0.007	0.050	0.015	0.026	0.000000	0.000000	384.62	1697
3	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0
4	GUIDE	used	501484512	9.18	22077	1.000	-0.076	0.108	0.138	0.229	162.843287	56.129836	-2056.86	671
5	GUIDE	used	501487456	7.43	22167	1.000	-0.070	-0.160	0.103	0.177	161.499463	56.920840	1844.85	603
6	GUIDE	used	501488528	8.09	22156	1.000	0.153	0.082	0.119	0.196	162.150935	57.312270	1959.77	-1290
7	GUIDE	used	501483392	8.92	22155	1.000	0.002	-0.028	0.133	0.237	163.119491	56.165550	-2343.25	184

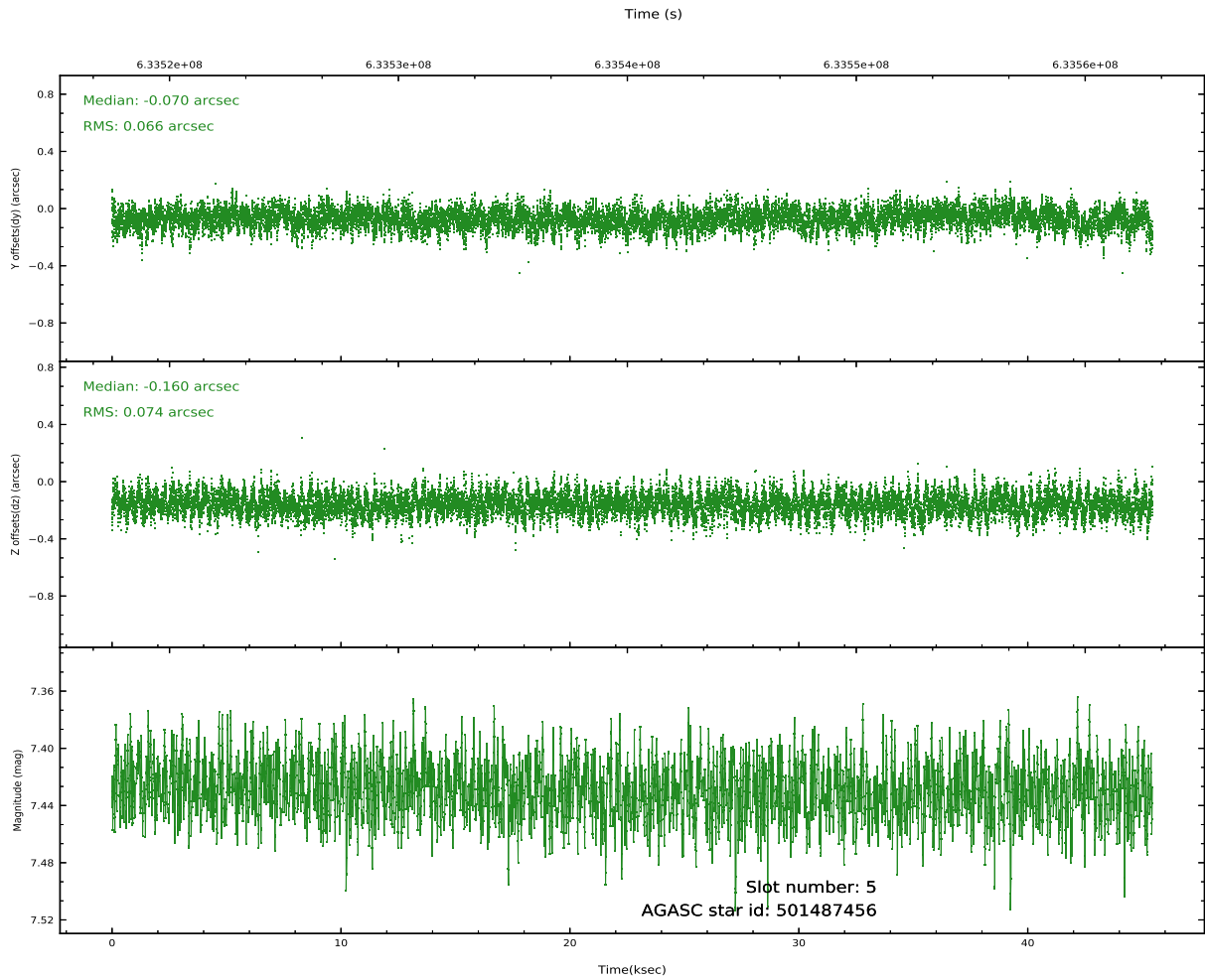
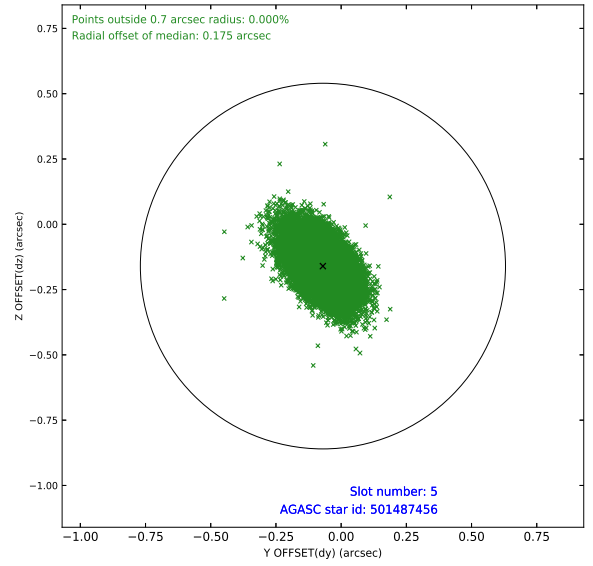
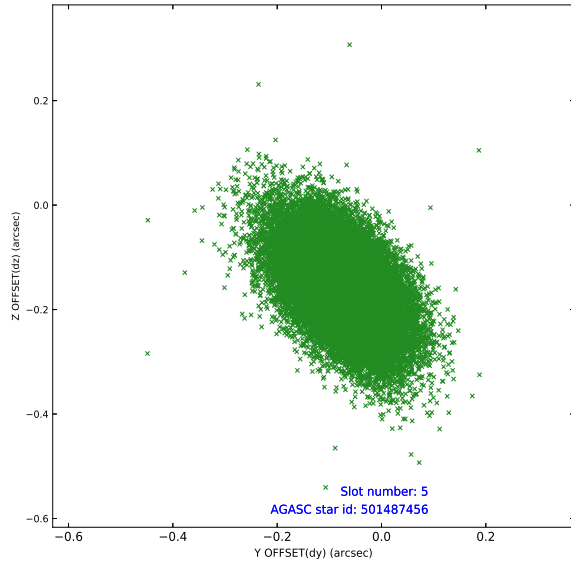
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## 2.4 Star Slots

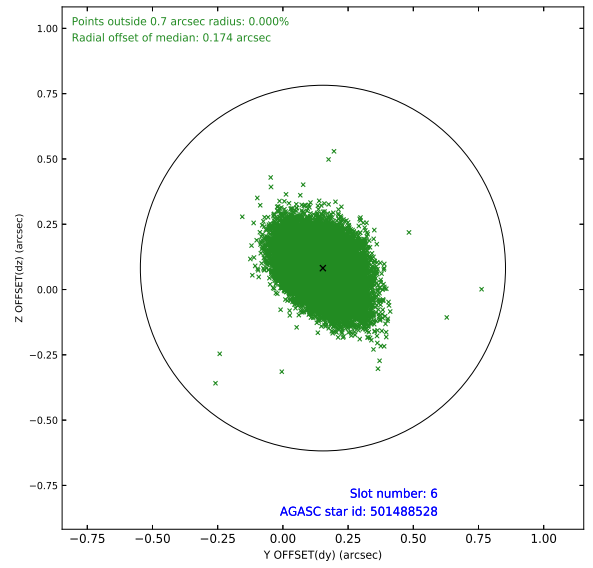
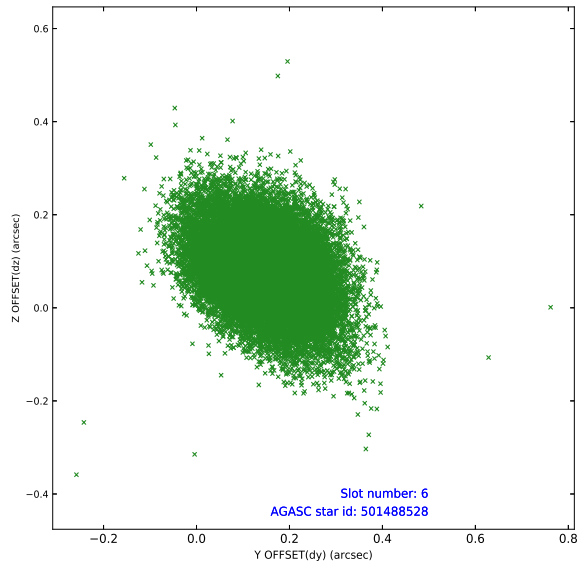
### 2.4.1 Slot 4



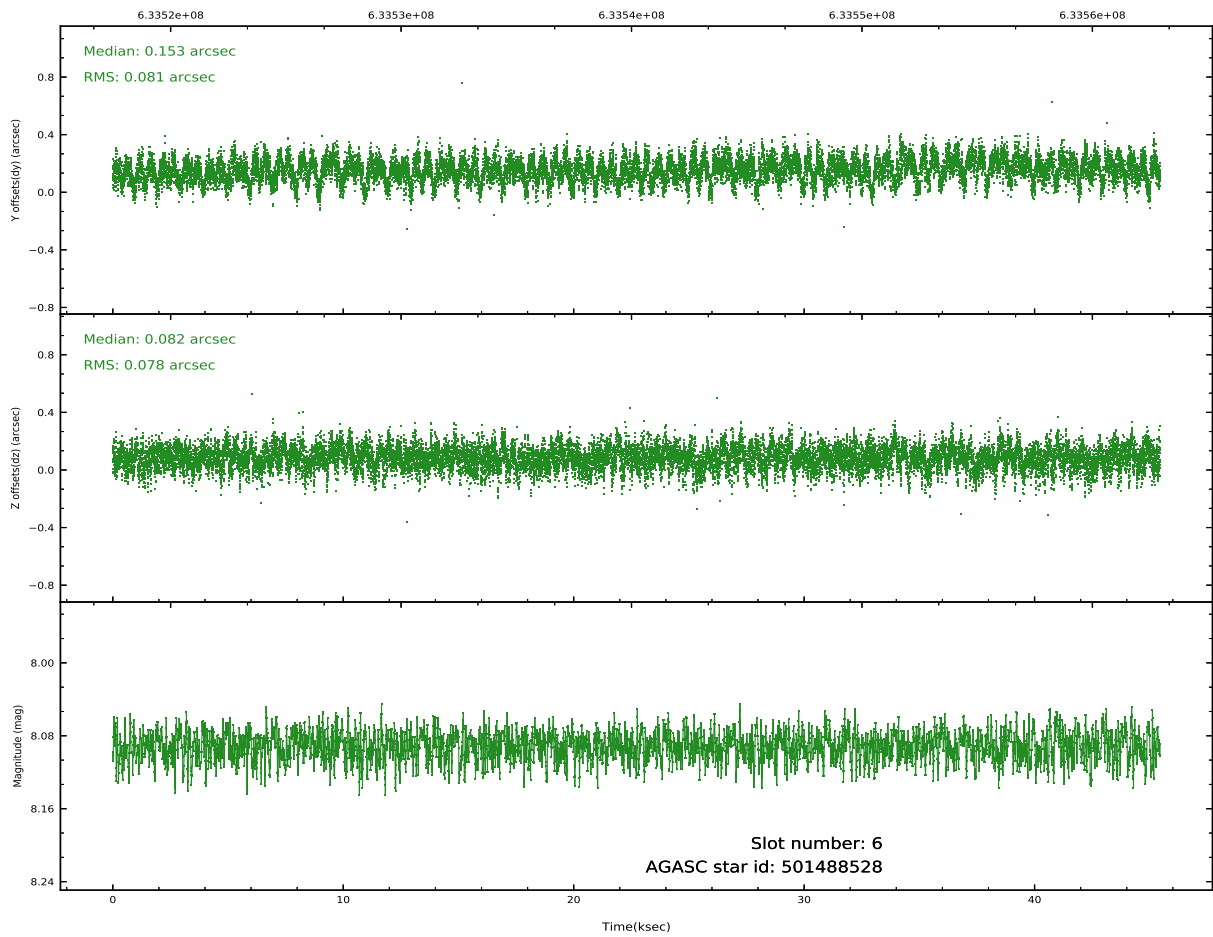
## 2.4.2 Slot 5



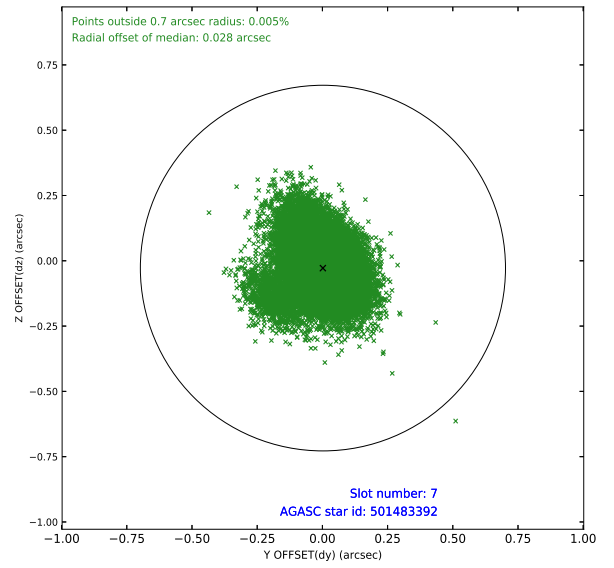
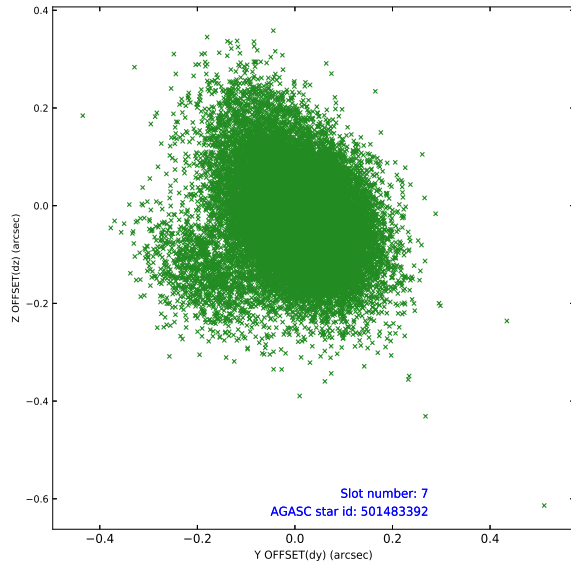
### 2.4.3 Slot 6



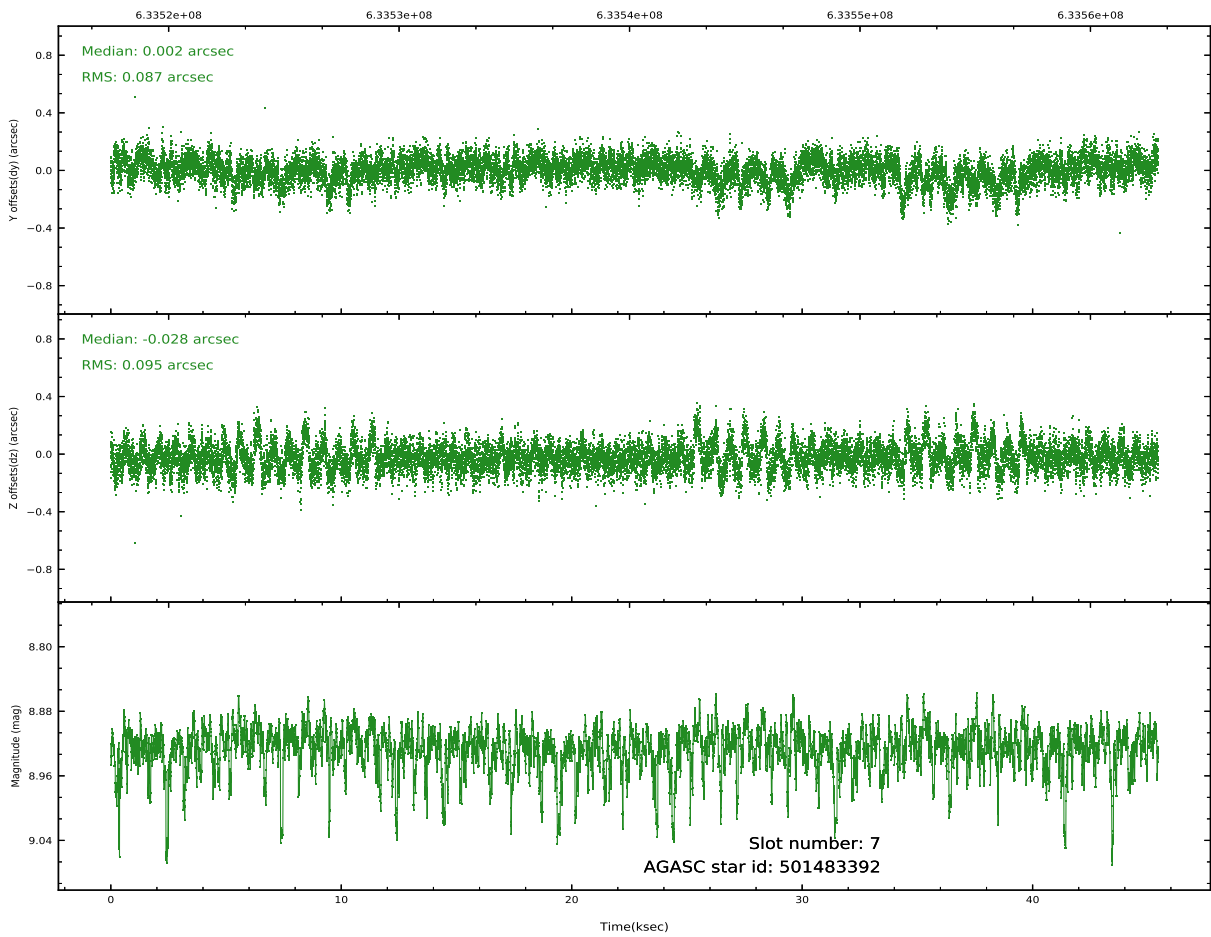
Time (s)



## 2.4.4 Slot 7

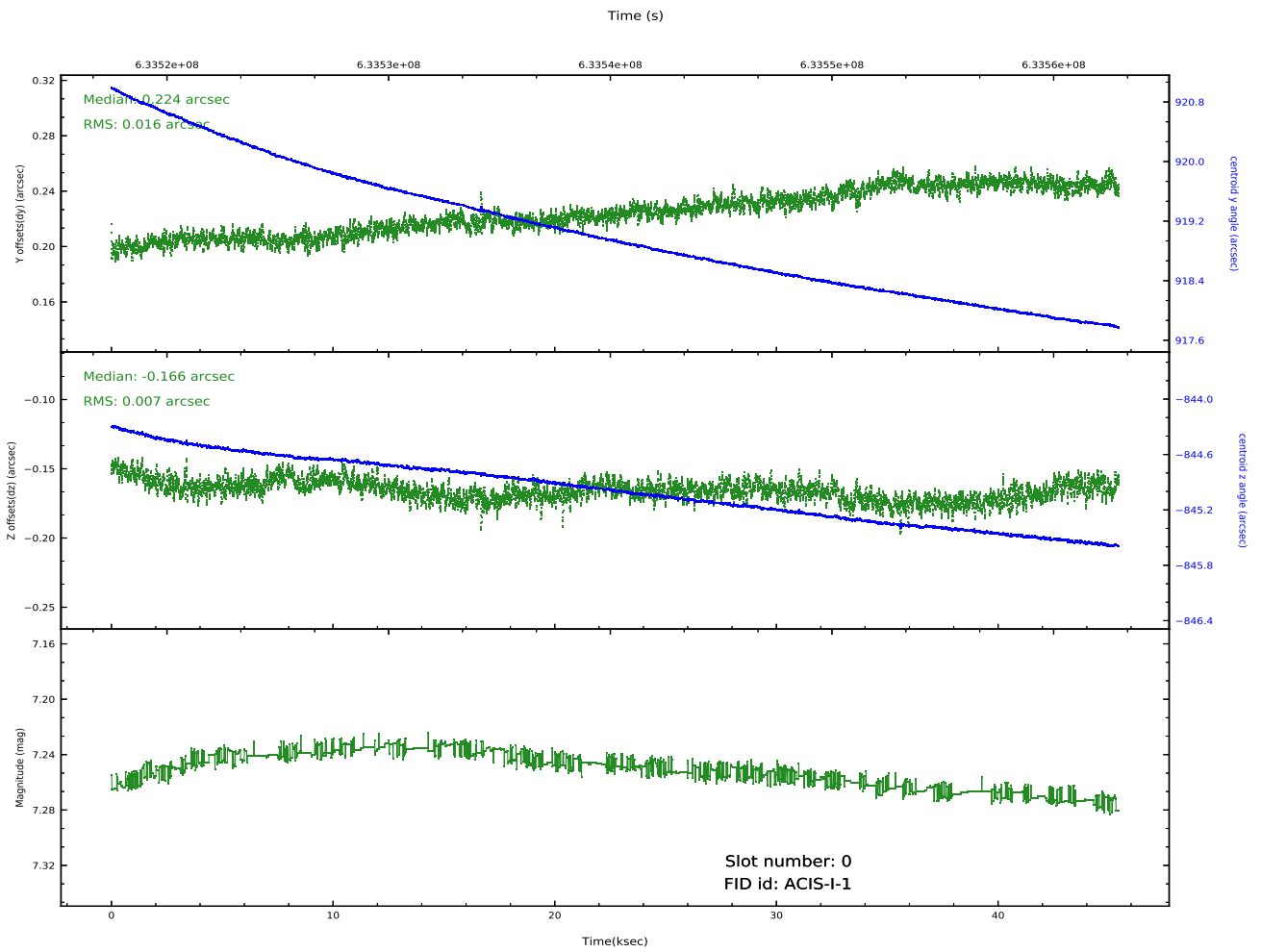
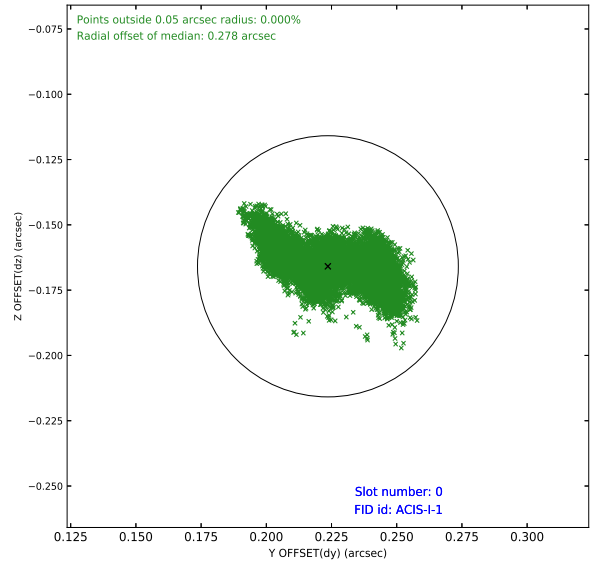
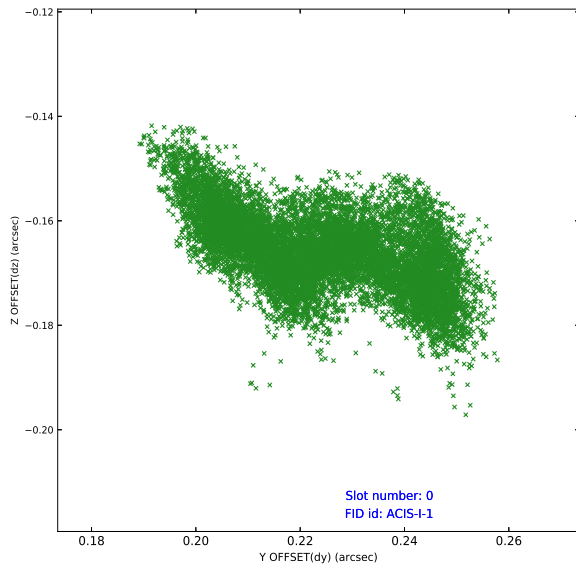


Time (s)

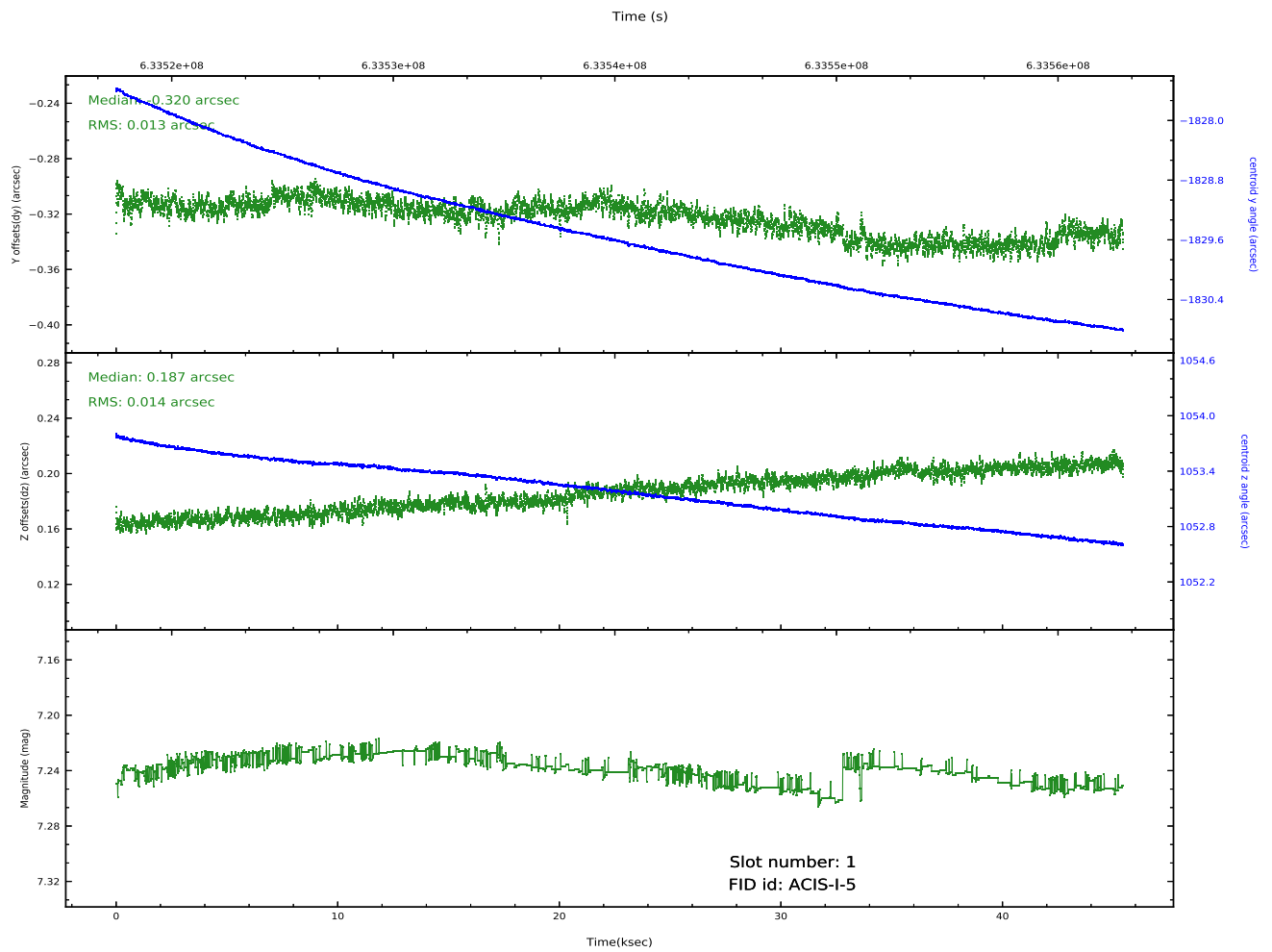
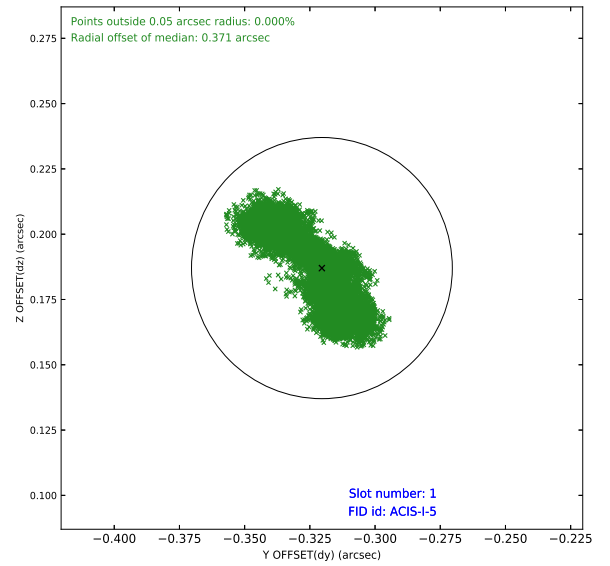
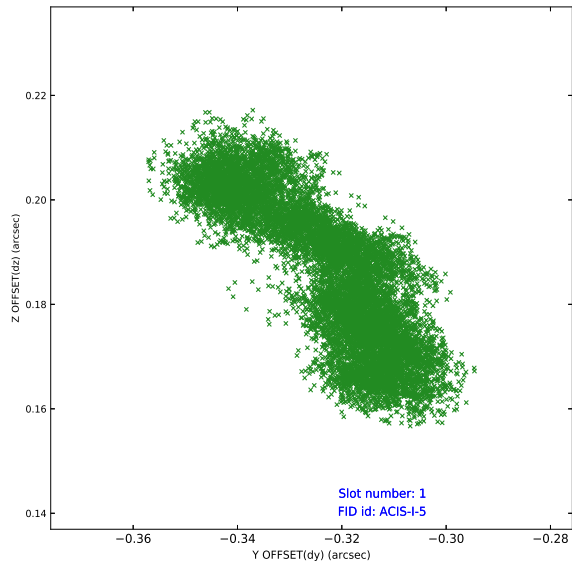


## 2.5 FID Slots

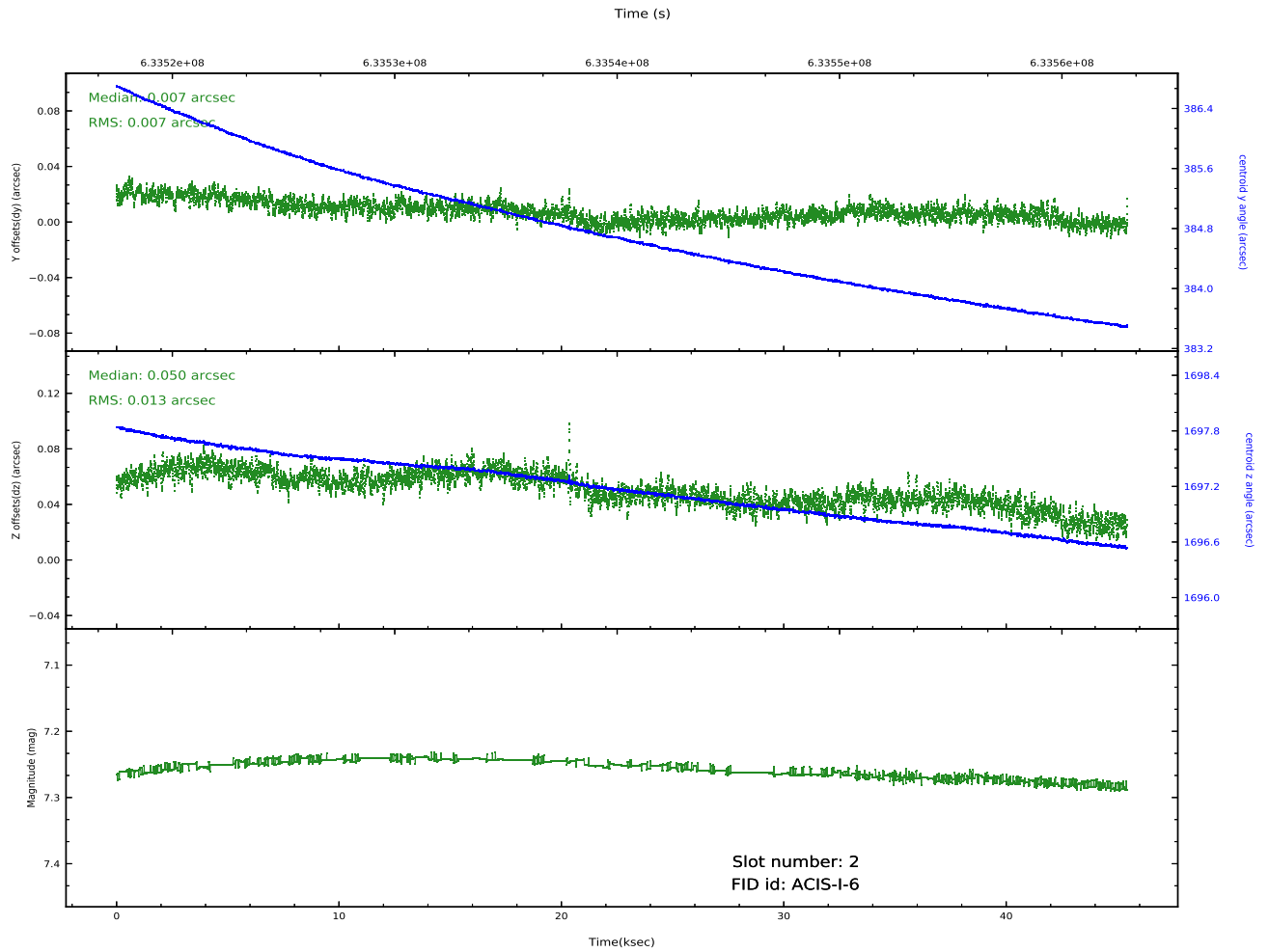
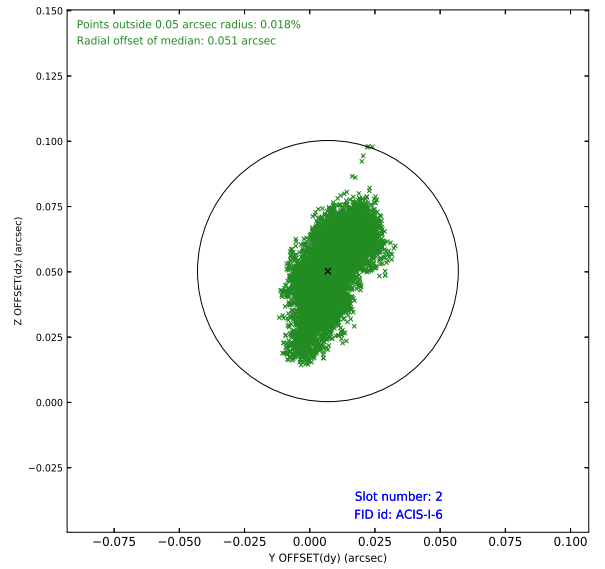
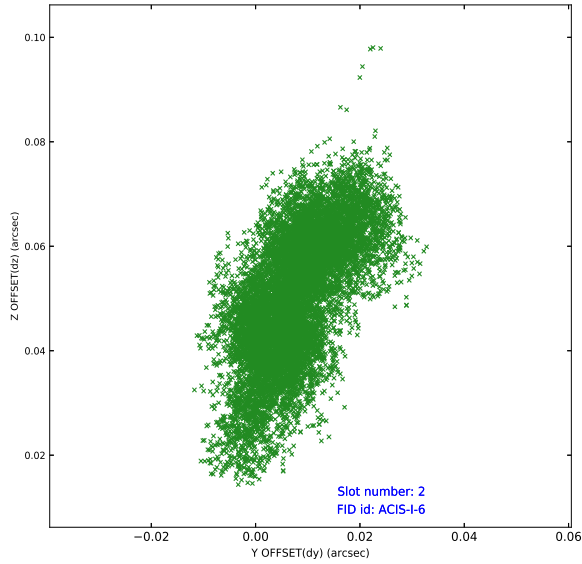
### 2.5.1 Slot 0



## 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	1
V&V Disposition and Status	OK
V&V Charge Time	45.365359298944

## A.2 Comments

The guide star in slot 3 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this gslot from the solution.

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Two optional chips were dropped.