

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 19373 - L2 Version 2  
Chandra X-Ray Center

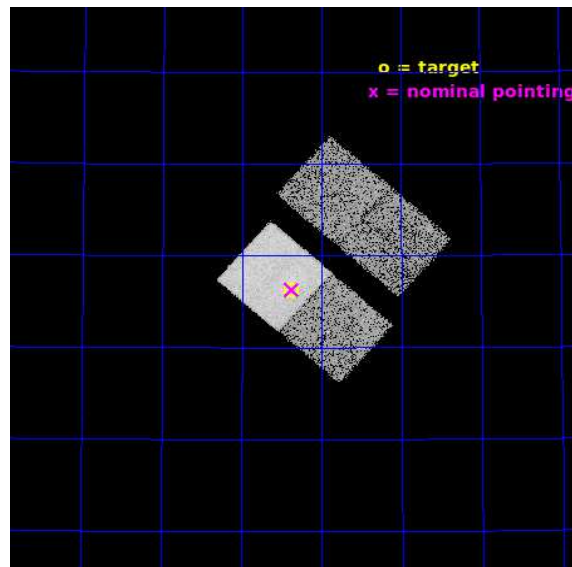
L2 Processing Date : Oct 25 2020

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# 1 Front

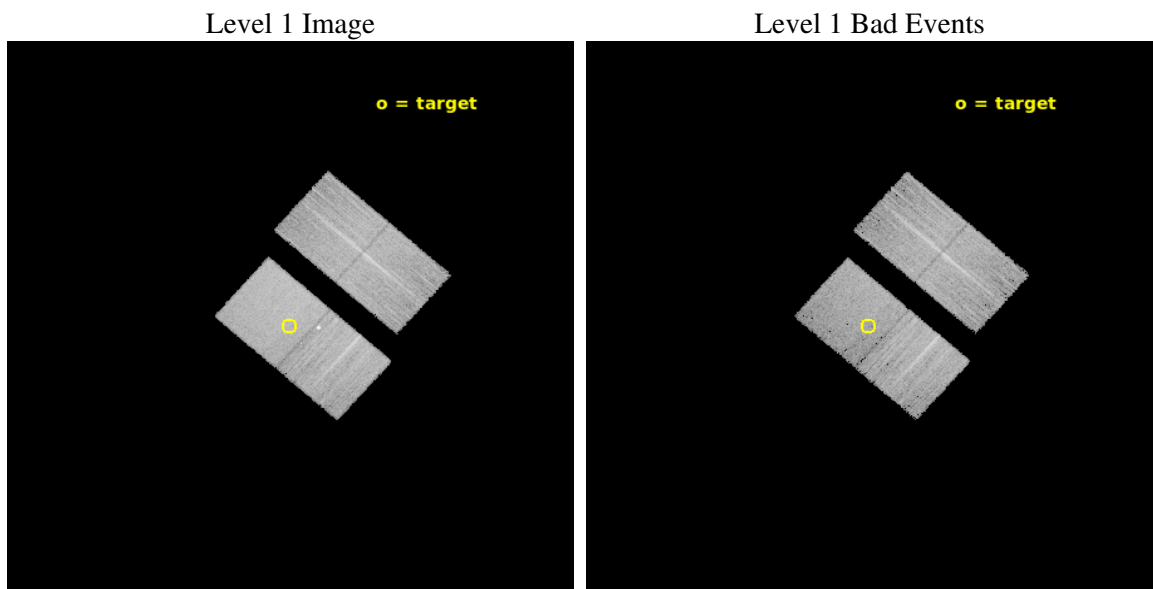
seq_num	601330	Sequence number
obs_id	19373	Observation id
title	A Statistically Complete High Resolution Chandra and Radio (eMERLIN) Survey of the Palomar Nearby Galaxies Sample	Proposal title
observer	Ian McHardy	Principal investigator
object	NGC 3780	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	174.843333	Observer's specified target RA [deg]
dec_targ	56.270722	Observer's specified target Dec [deg]
ra_nom	174.84320683739	Nominal RA [deg]
dec_nom	56.271930942671	Nominal Dec [deg]
roll_nom	221.39180162973	Nominal Roll [deg]
revision	2	Processing version of data
ontime	10065.700077534	Sum of GTIs [s]
livetime	9934.1842957602	Livetime [s]
ontime2	10065.700077534	Sum of GTIs [s]
ontime3	10065.700077534	Sum of GTIs [s]
ontime6	10065.700077534	Sum of GTIs [s]
ontime7	10065.700077534	Sum of GTIs [s]
l2events	60004	Number of level 2 events



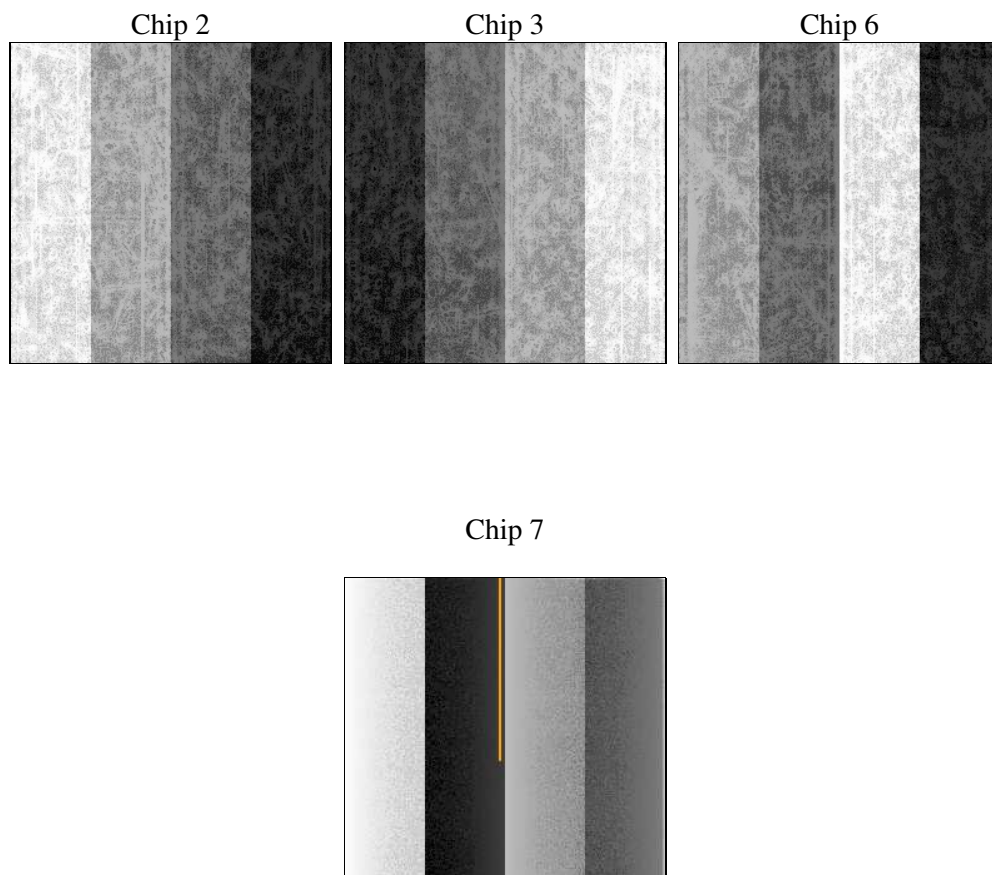
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	10065.700077534	Sum of GTIs [s]
caldsver	4.9.3	&#160	ontime2	10065.700077534	Sum of GTIs [s]
date	2020-10-25T15:59:34	Date and time of file creation	ontime3	10065.700077534	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	10065.700077534	Sum of GTIs [s]
			ontime7	10065.700077534	Sum of GTIs [s]
			l1events	324020	Number of level 1 events

### 2.1.4 Events

	ccd 2	ccd 3	ccd 6	ccd 7
level 1 events	74825	74000	80217	94978
rejected events	67401	66590	70486	53835
rejected %	90%	89%	87%	56%

	ccd 2	ccd 3	ccd 6	ccd 7
grade 0 events	2634	2608	2651	3431
	3%	3%	3%	3%
grade 1 events	37	36	39	131
	0%	0%	0%	0%
grade 2 events	1753	1575	3420	8766
	2%	2%	4%	9%
grade 3 events	787	838	763	3153
	1%	1%	0%	3%
grade 4 events	774	832	757	3142
	1%	1%	0%	3%
grade 5 events	2832	3357	3255	9170
	3%	4%	4%	9%
grade 6 events	1477	1557	2145	22666
	1%	2%	2%	23%
grade 7 events	64531	63197	67187	44519
	86%	85%	83%	46%

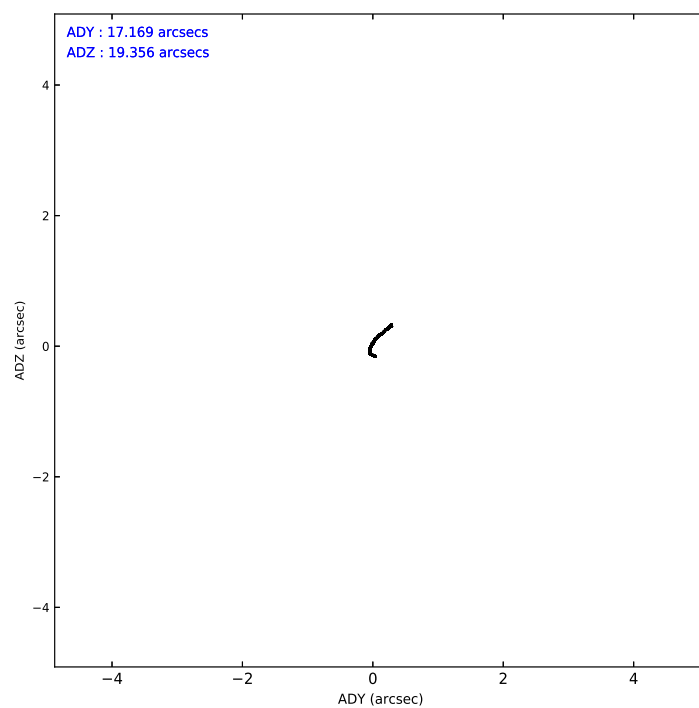
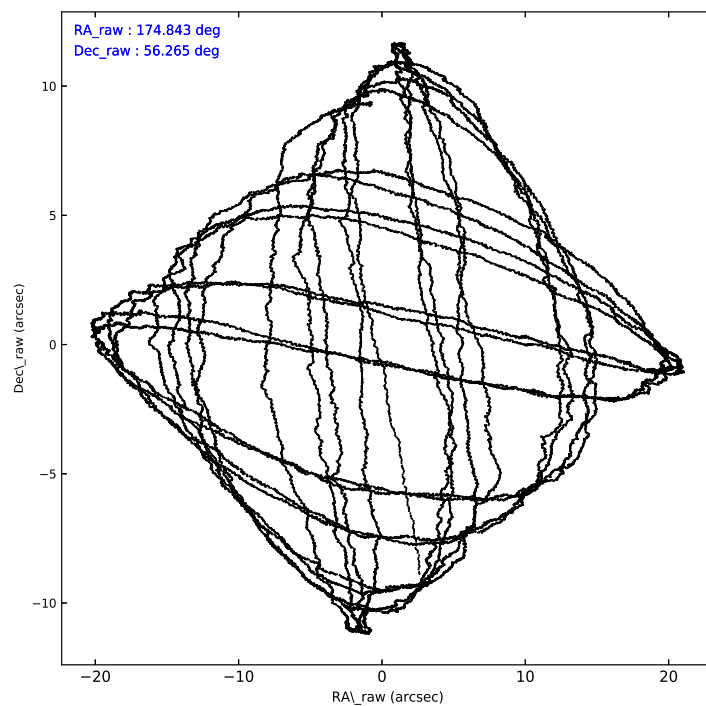


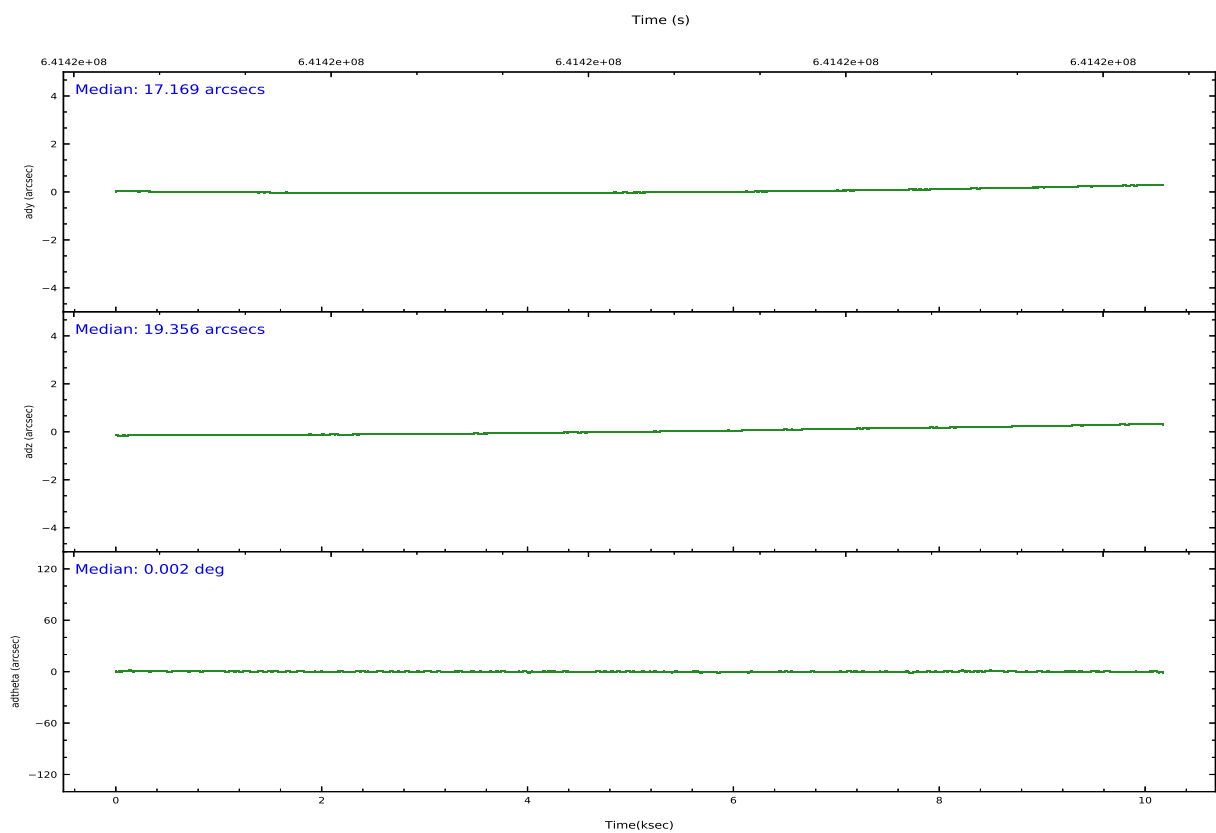
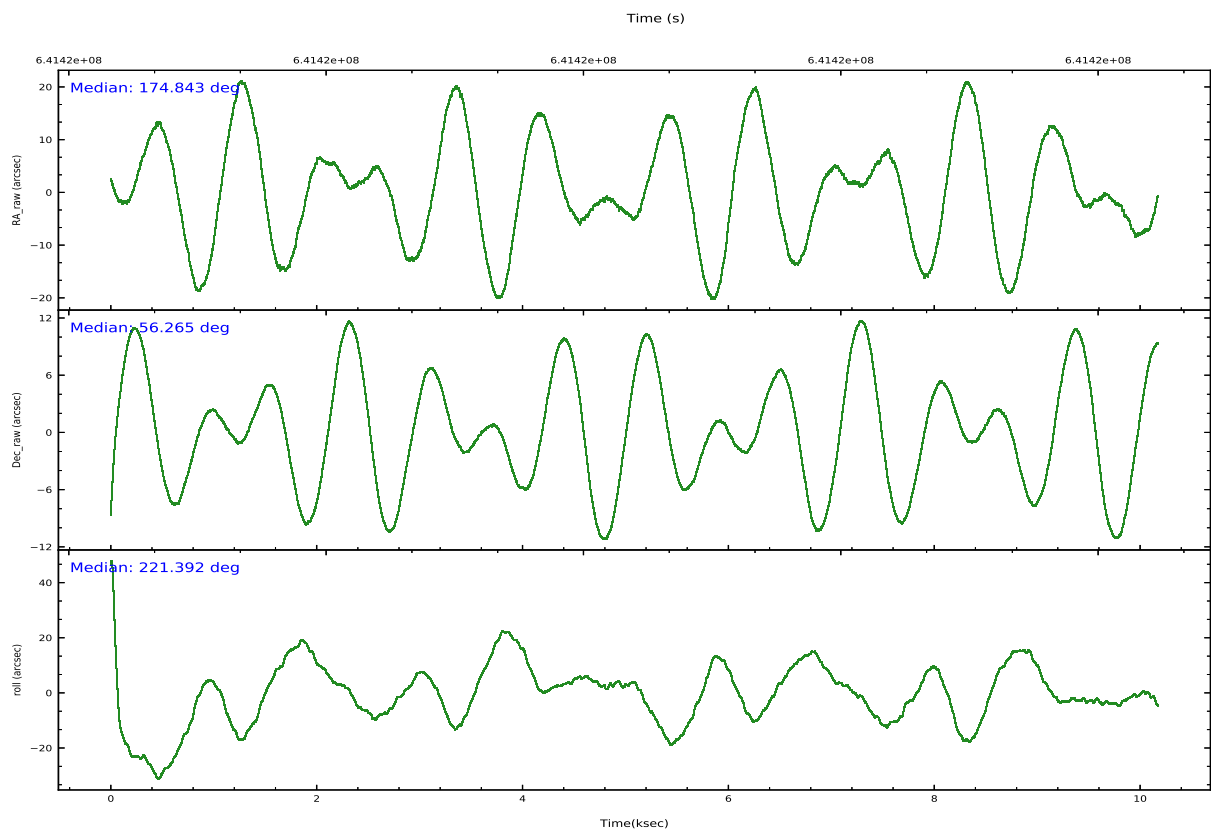
## 2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-2367	ACIS-2367
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	174.858151	174.84320683739
[deg] Pointing Dec	56.290561	56.271930942671
[deg] Pointing Roll	221.235554	221.39180162973
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1425803651734
[mm] SIM translation stage offset	0	0.01005778216563158
[s] Observation start time (MET)	641415584.184000	641414506.9694099
Observation start date	2018-04-29T18:58:35	2018-04-29T18:41:46
[s] Observation end time (MET)	641425584.184000	641425912.65759
Observation end date	2018-04-29T21:45:15	2018-04-29T21:51:52
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar version number	8	8
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



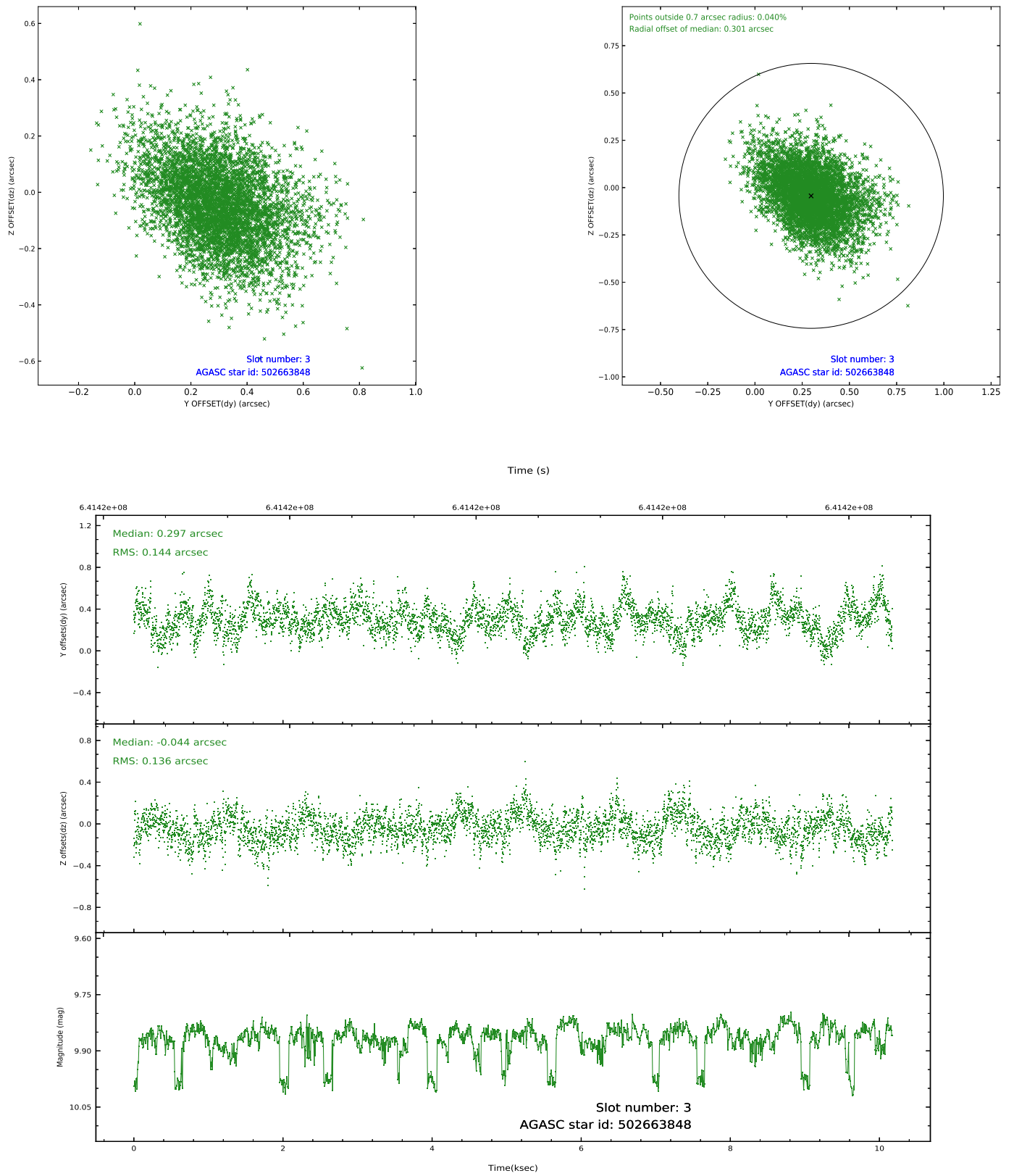


Slot Statistics

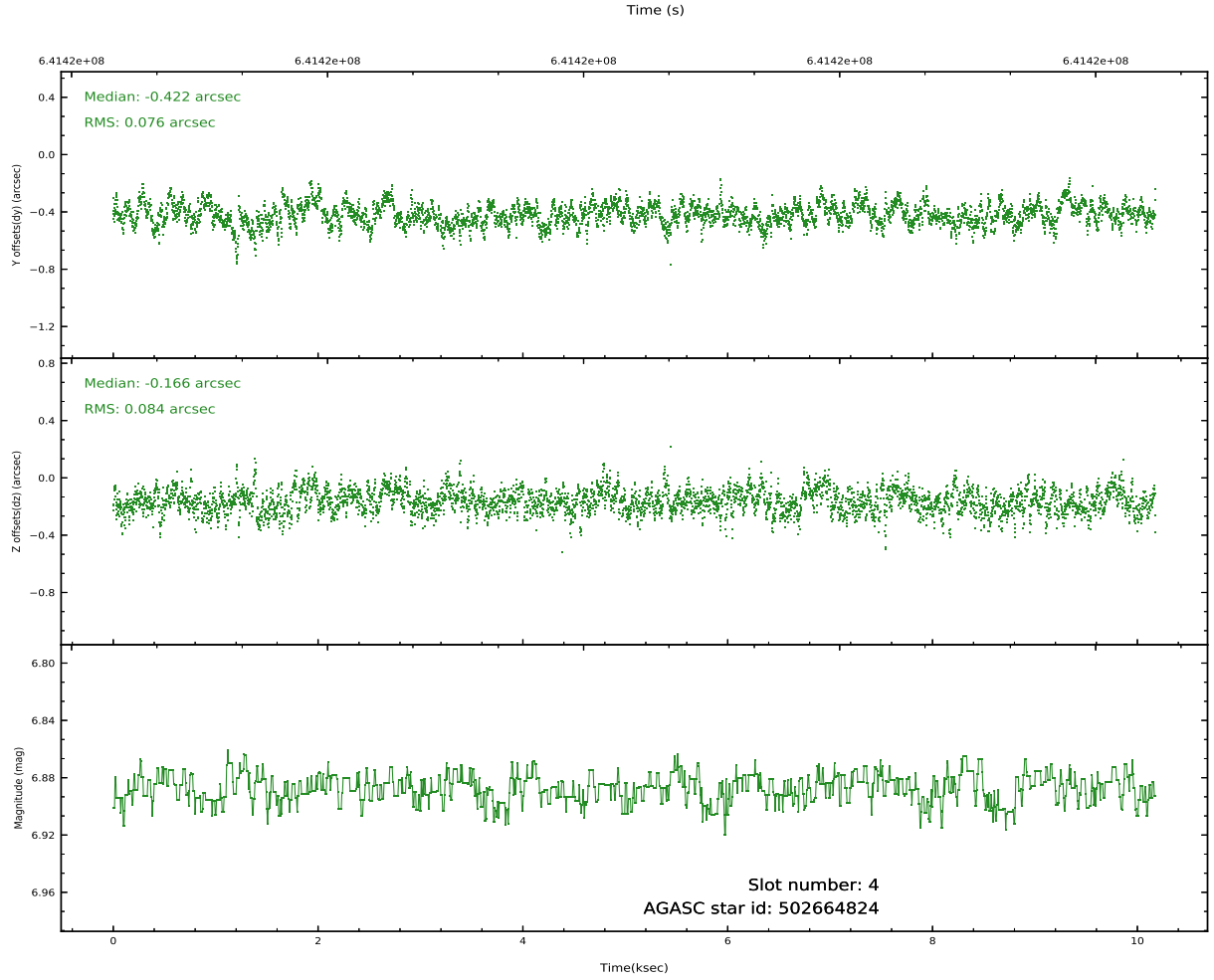
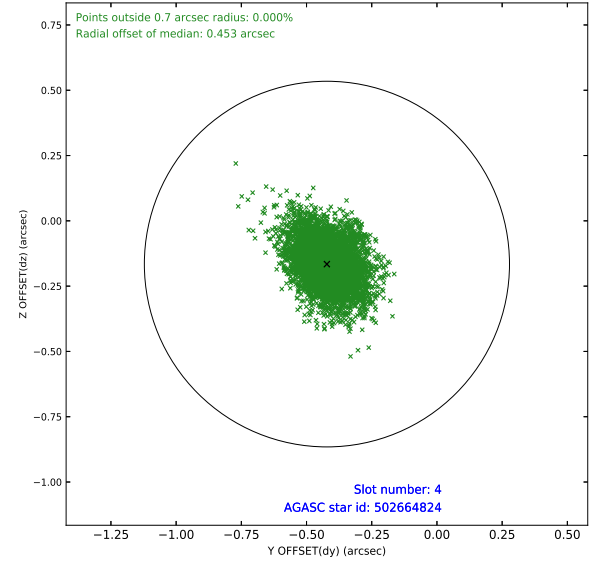
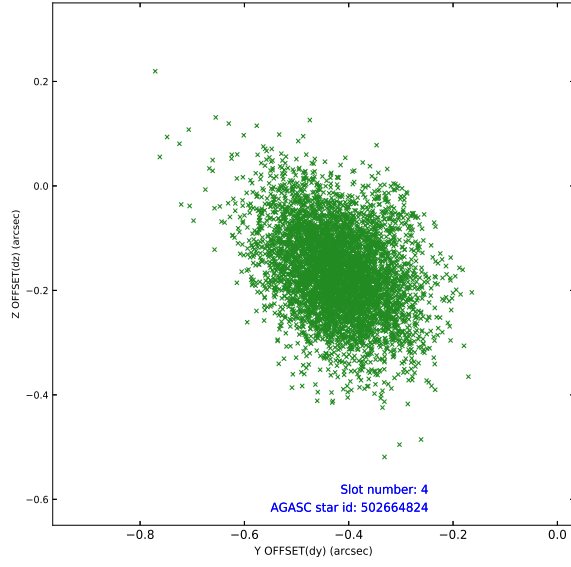
pt	status	used	id	mag	n_pts	frac_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mea
0	FID		ACIS-S-2	7.11	2481	1.000	0.102	-0.120	0.009	0.016	0.000000	0.000000	-770.32	-1740
1	FID		ACIS-S-4	7.21	2482	1.000	0.174	-0.017	0.007	0.014	0.000000	0.000000	2142.99	166
2	FID		ACIS-S-5	7.19	2482	1.000	-0.308	0.146	0.007	0.013	0.000000	0.000000	-1822.71	161
3	GUIDE	used	502663848	9.86	4955	1.000	0.297	-0.044	0.207	0.355	174.267125	55.806070	2046.26	520
4	GUIDE	used	502664824	6.89	4965	1.000	-0.422	-0.166	0.118	0.200	175.793574	56.019745	-780.18	1964
5	GUIDE	used	502666504	9.92	4927	1.000	-0.029	0.084	0.257	0.419	173.941886	56.698048	388.34	-2305
6	GUIDE	used	502667672	8.25	4963	1.000	-0.027	0.210	0.137	0.225	175.402268	56.711911	-1810.47	-435
7	GUIDE	used	502669400	9.83	4956	1.000	0.165	-0.081	0.280	0.411	174.815589	55.815680	1191.71	1229

## 2.4 Star Slots

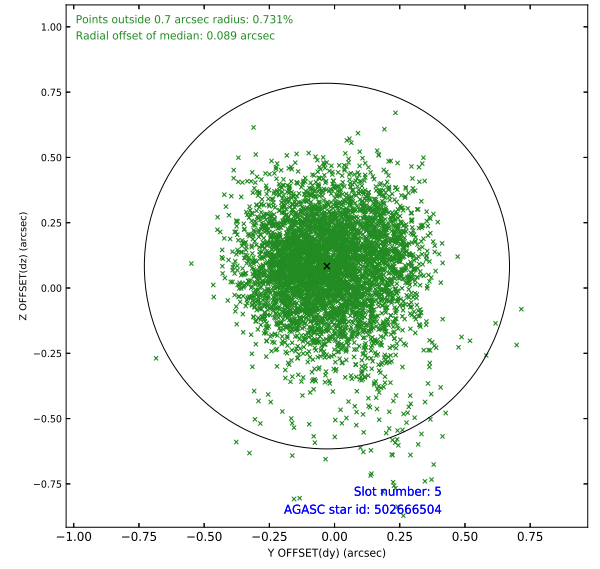
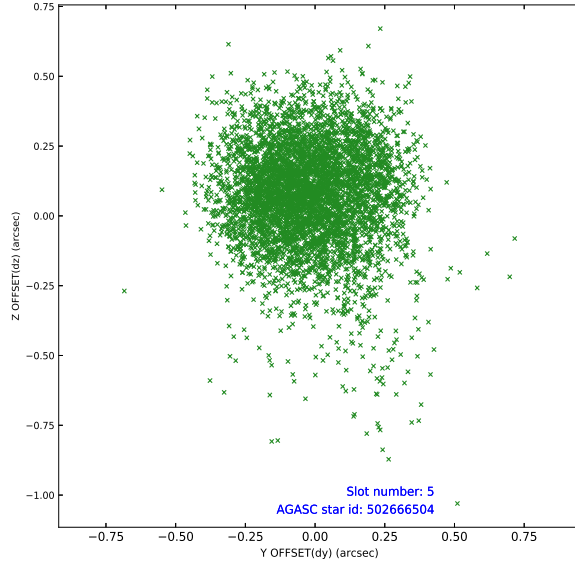
### 2.4.1 Slot 3



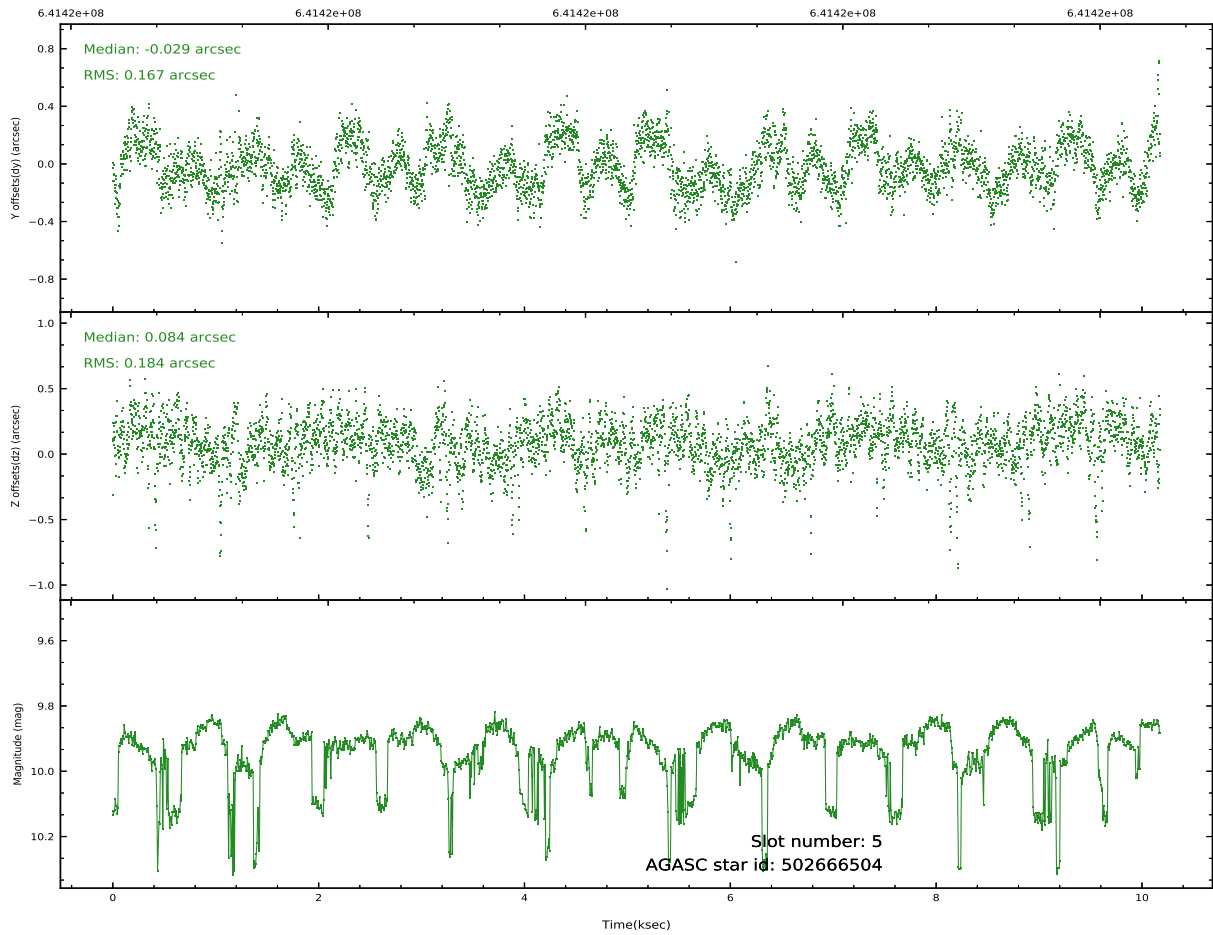
## 2.4.2 Slot 4



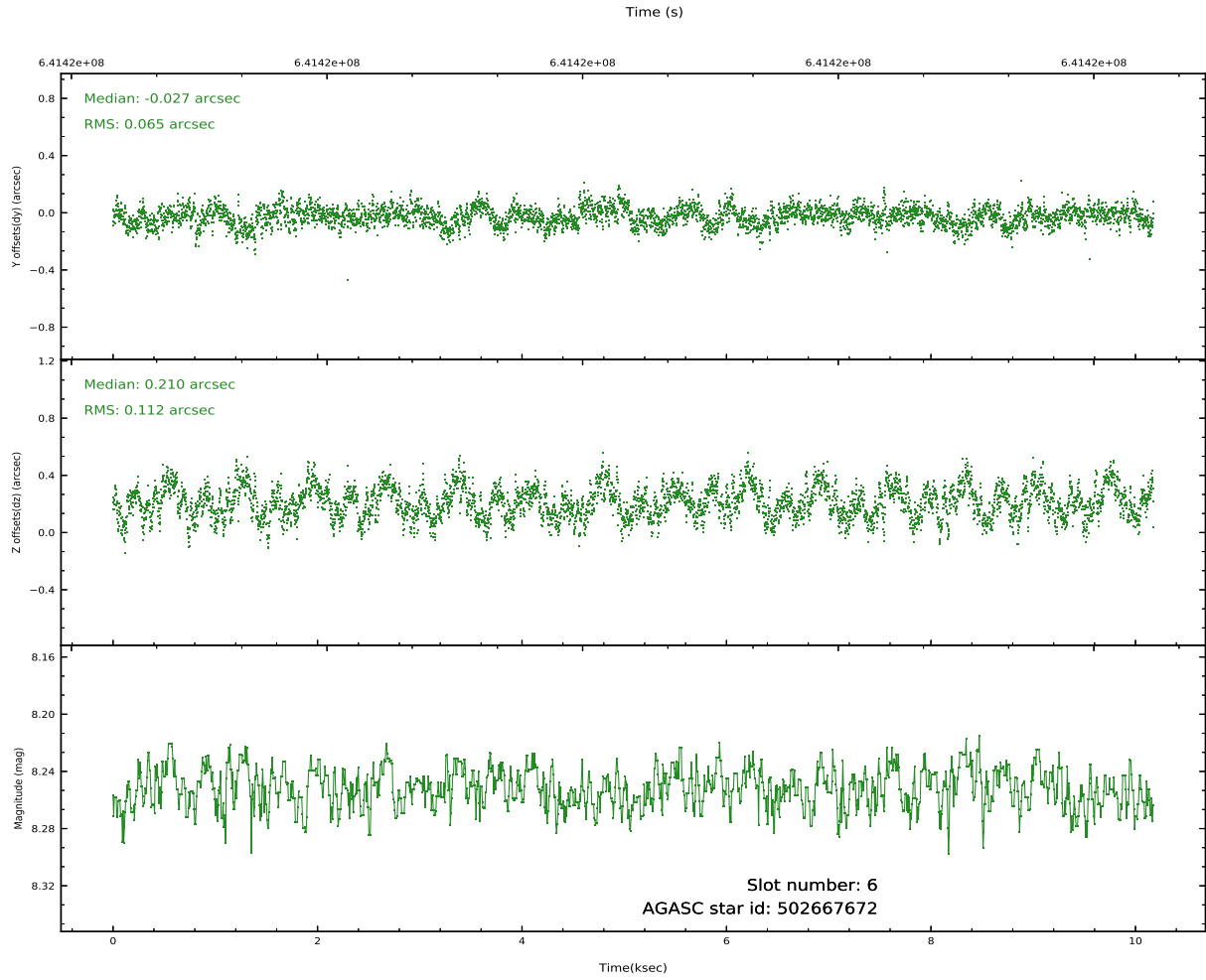
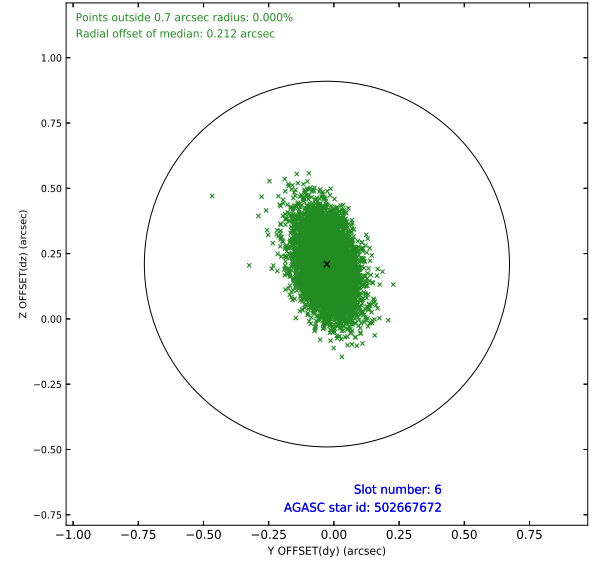
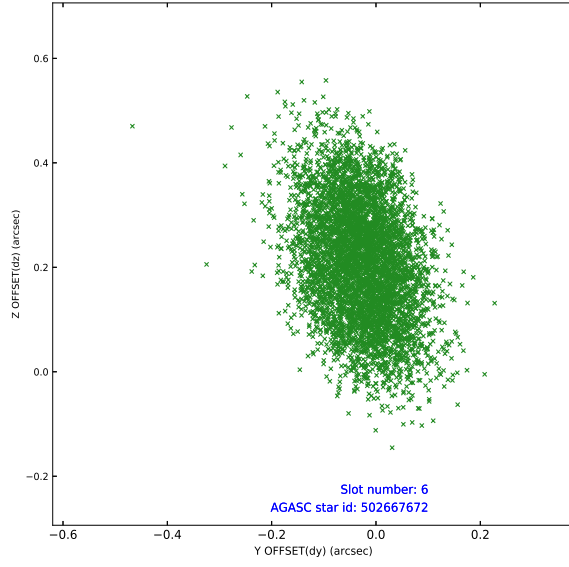
### 2.4.3 Slot 5



Time (s)

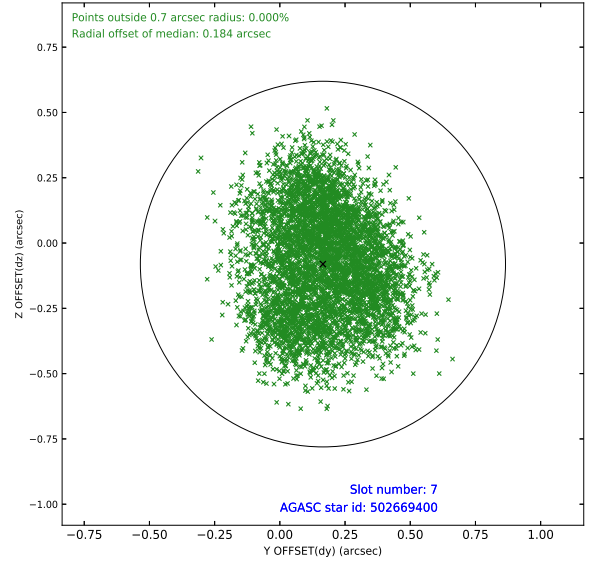
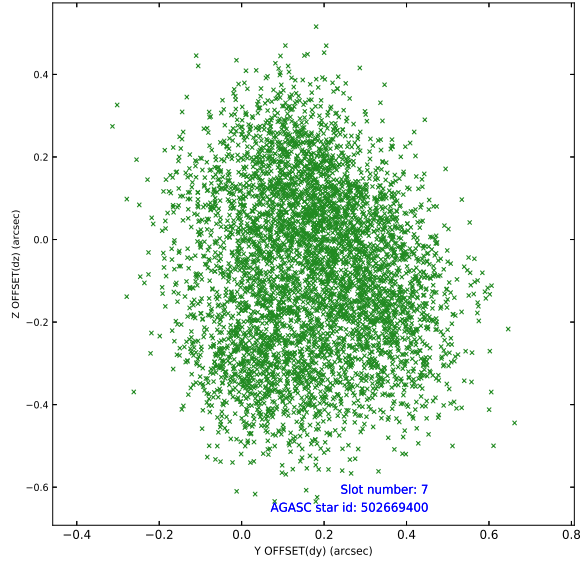


## 2.4.4 Slot 6

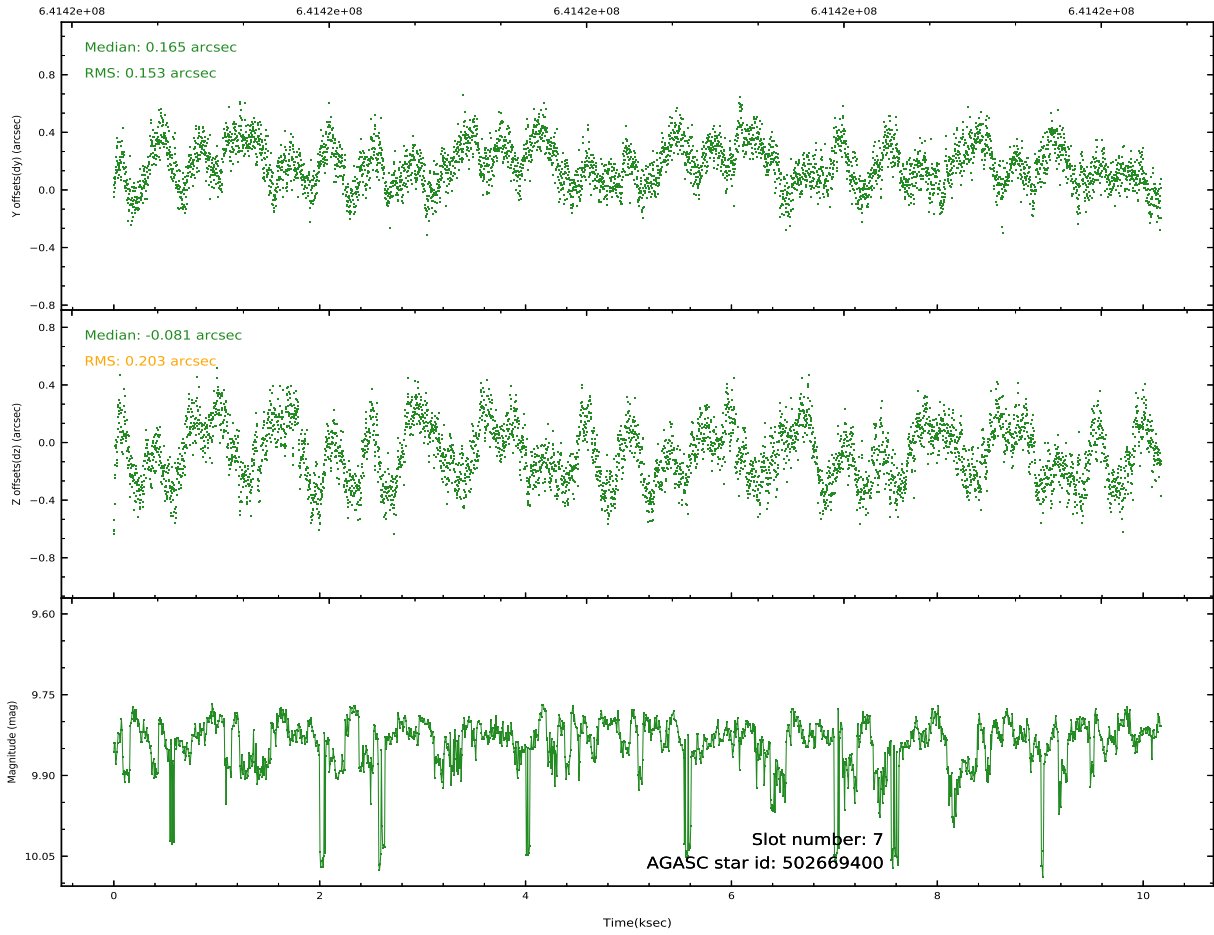




## 2.4.5 Slot 7

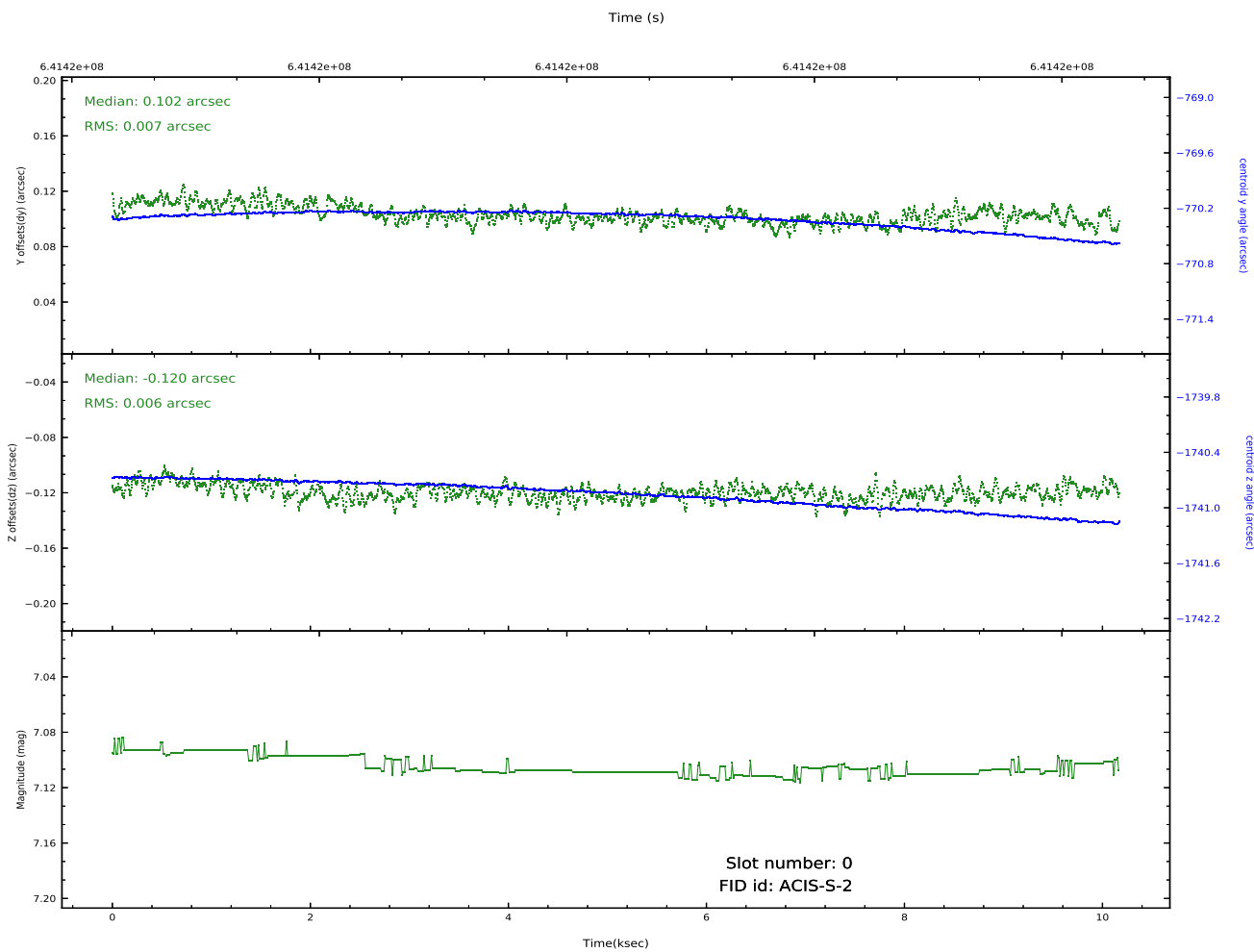
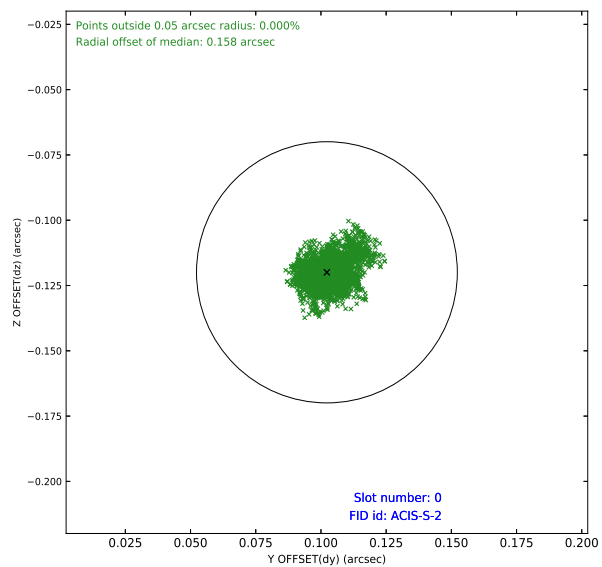
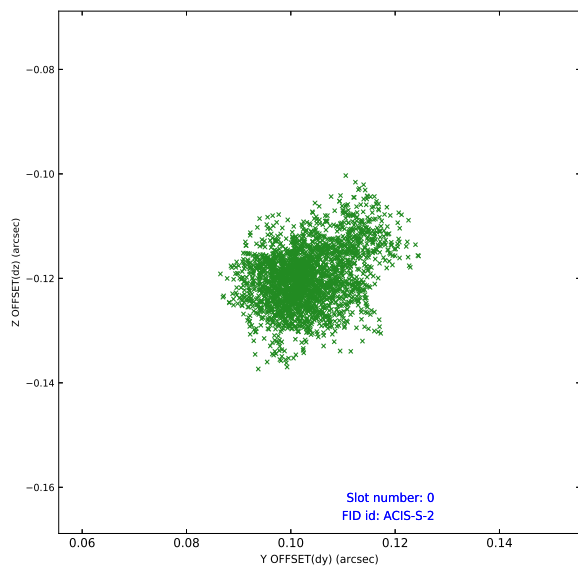


Time (s)

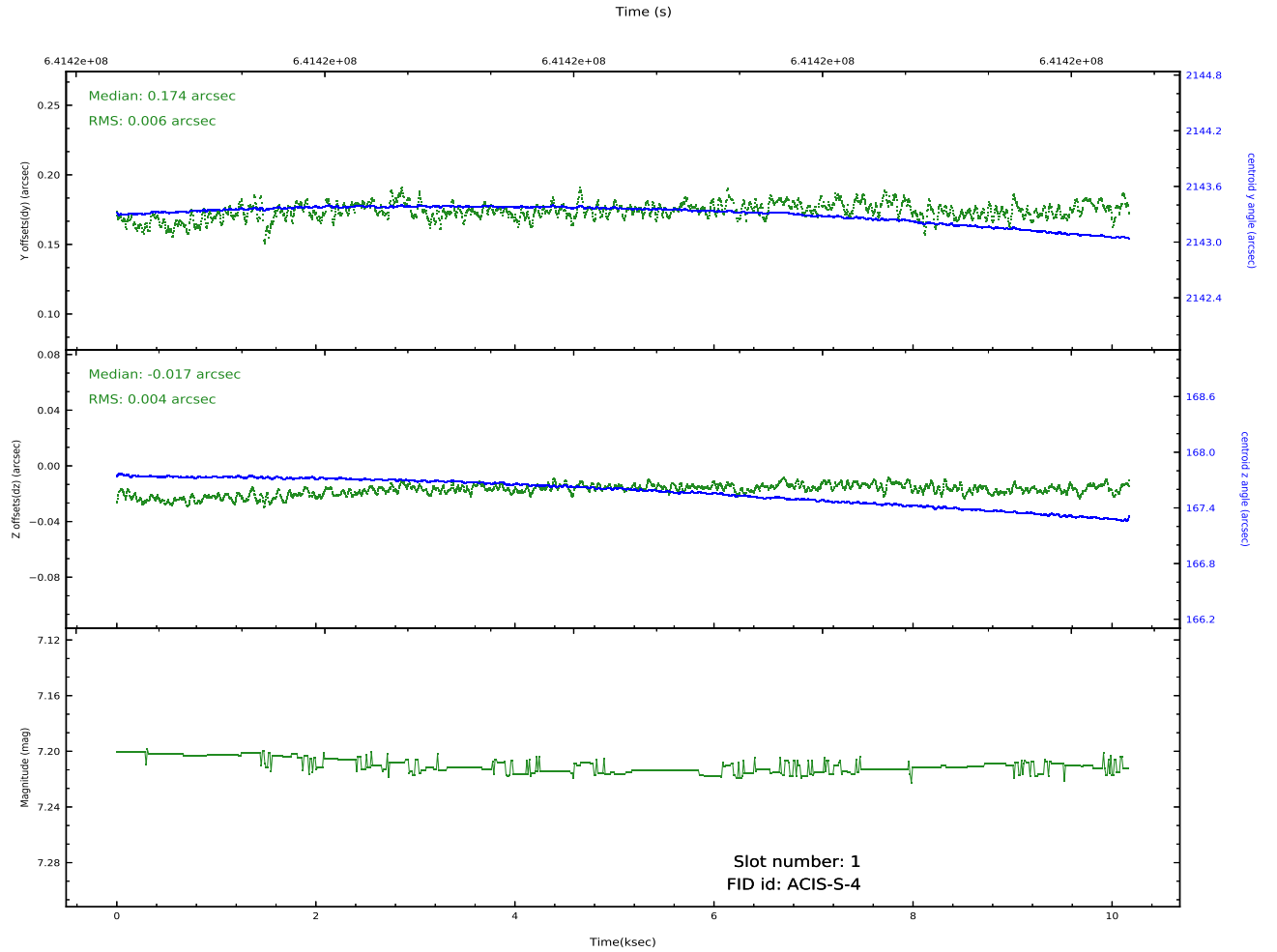
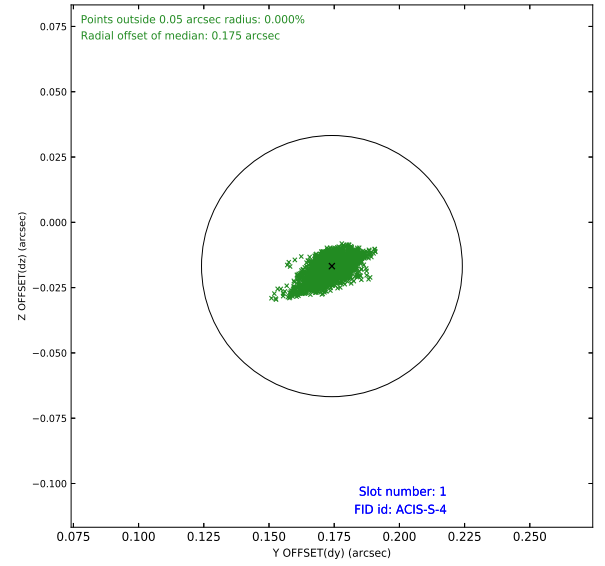
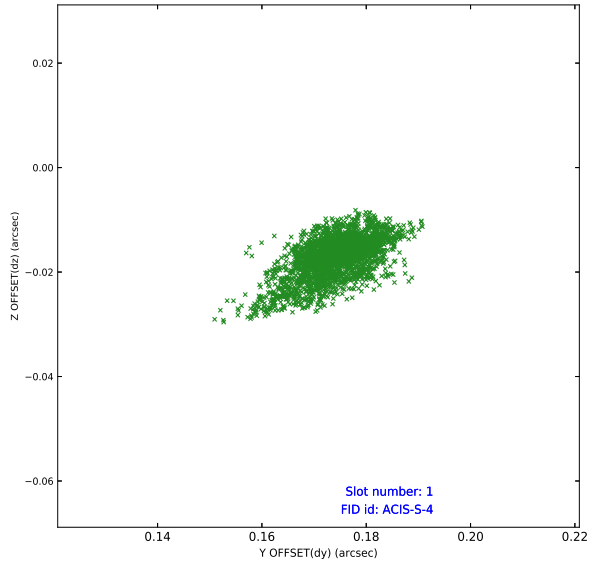


## 2.5 FID Slots

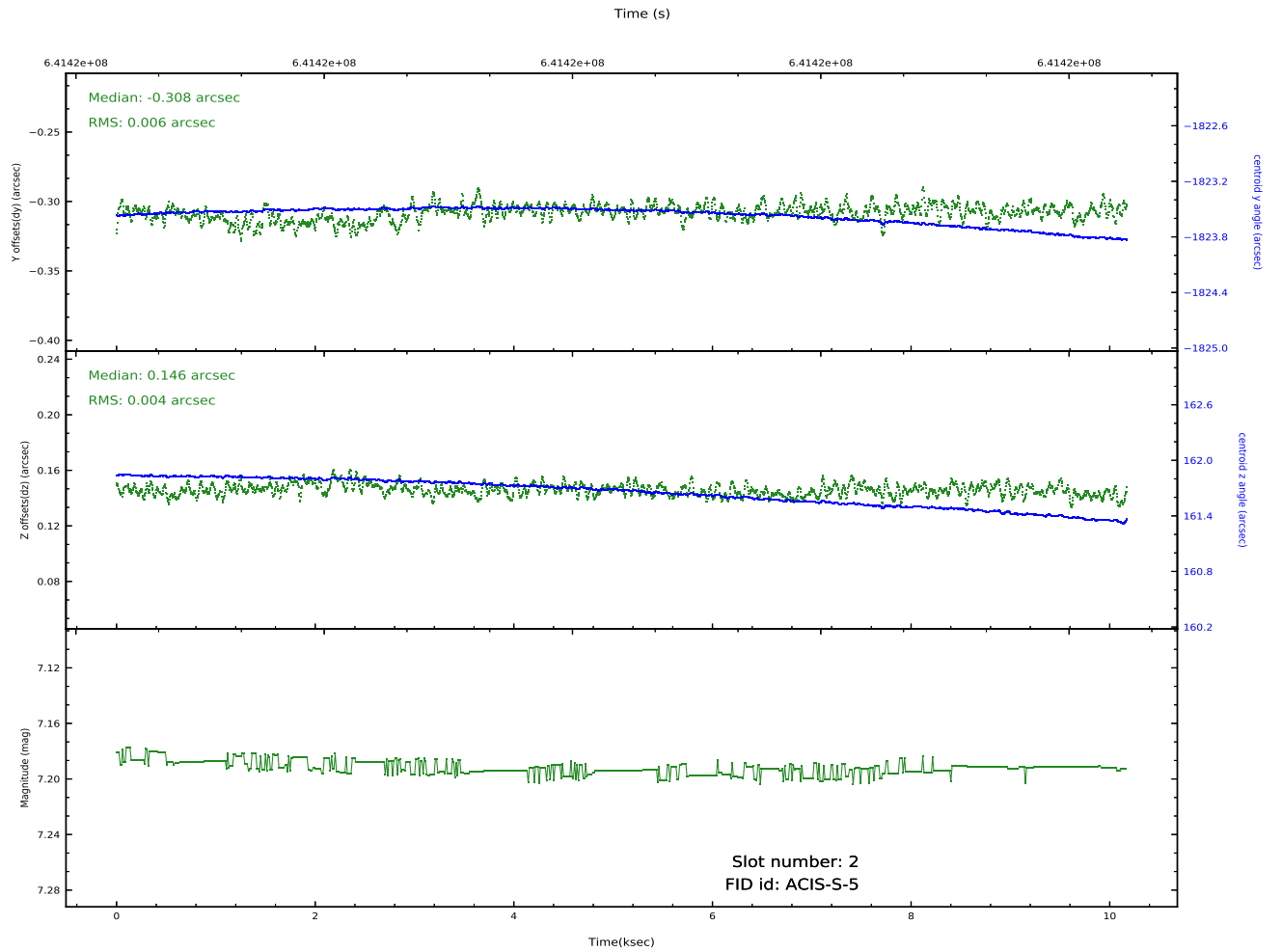
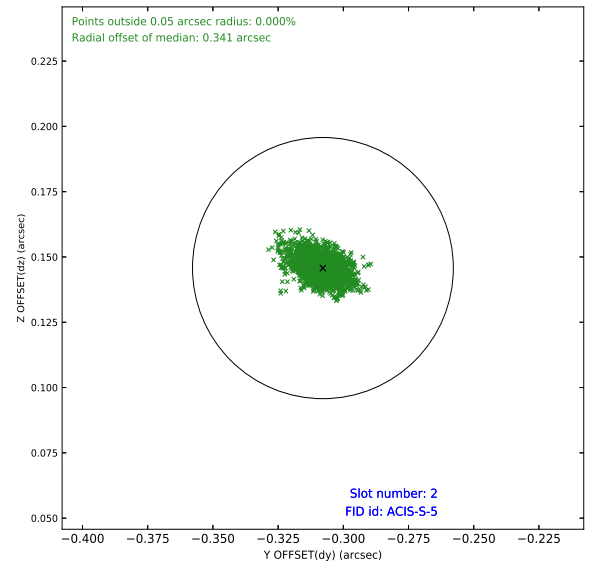
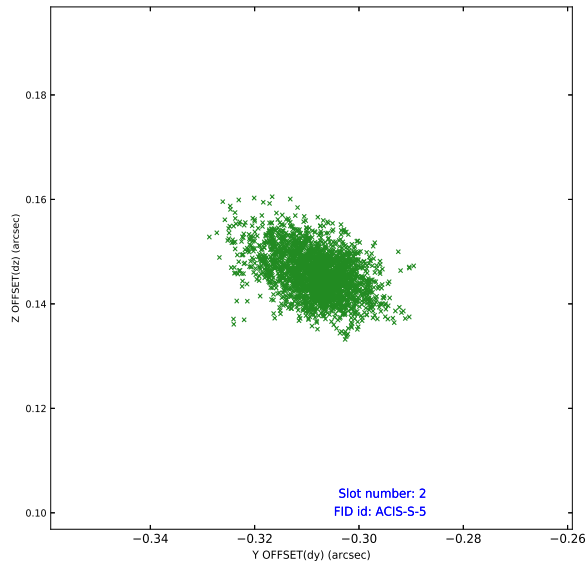
### 2.5.1 Slot 0



## 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)	2020.10.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.065700077534

## A.2 Comments

A spatial region of the original bias map for CCD = 6 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 ( $\sim 20$  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 = 6 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.