

# V&V Reference Report

## L2 ASCDS Version : 10.9.2

Observation 20974 - L2 Version 3  
Chandra X-Ray Center

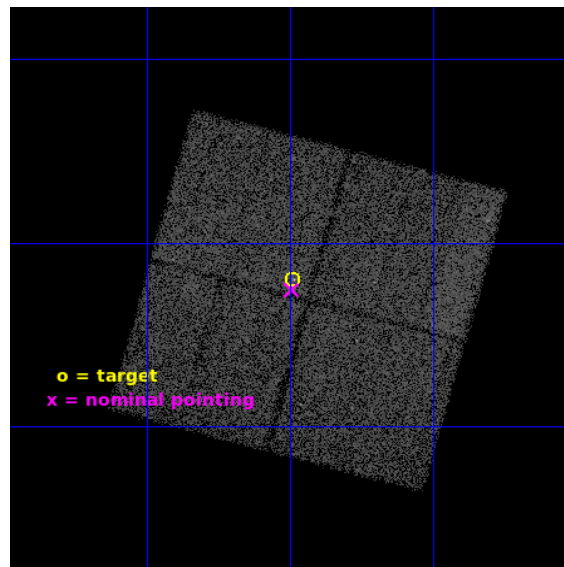
L2 Processing Date : Oct 26 2020

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# 1 Front

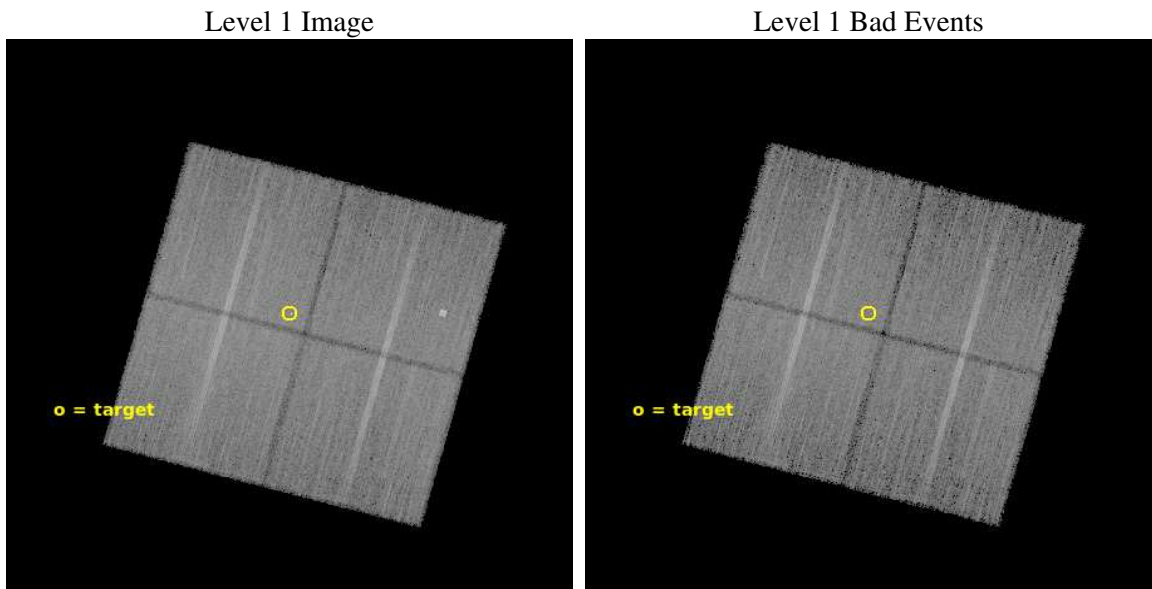
seq_num	402023	Sequence number
obs_id	20974	Observation id
title	X-RAY IMAGING OF THE HIGH-MASS GAMMA-RAY BINARY HESS J0632+057	Pro
observer	Oleg Kargaltsev	Principal investigator
object	HESS J0632+057	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	98.2475	Observer's specified target RA [deg]
dec_targ	5.799972	Observer's specified target Dec [deg]
ra_nom	98.248492469364	Nominal RA [deg]
dec_nom	5.7910373289795	Nominal Dec [deg]
roll_nom	285.19910703562	Nominal Roll [deg]
revision	3	Processing version of data
ontime	32077.509234786	Sum of GTIs [s]
livetime	31658.392961515	Livetime [s]
ontime0	32077.386114836	Sum of GTIs [s]
ontime1	32077.427154779	Sum of GTIs [s]
ontime2	32064.90411377	Sum of GTIs [s]
ontime3	32077.509234786	Sum of GTIs [s]
l2events	90135	Number of level 2 events



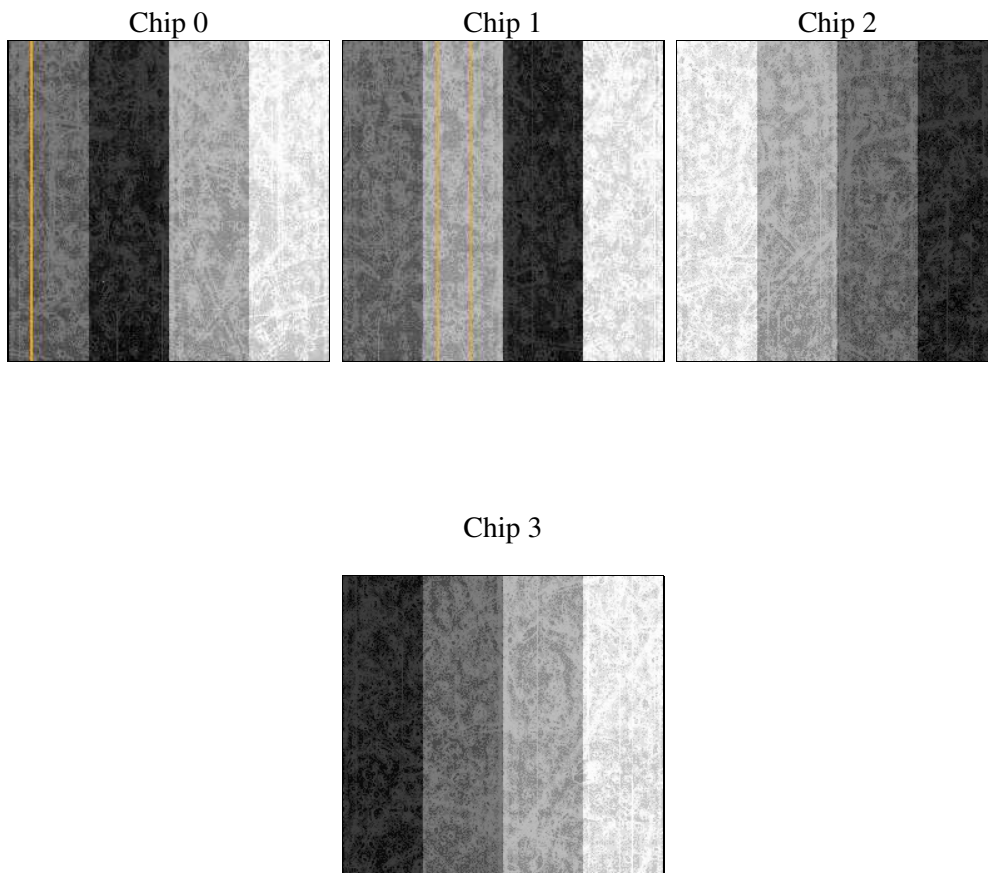
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	32000.000000	[s] Scheduled observation exposure time
ascdsver	10.9.2	Processing system revision	ontime	32077.509234786	Sum of GTIs [s]
caldbver	4.9.3	&#160	ontime0	32077.386114836	Sum of GTIs [s]
date	2020-10-27T00:13:20	Date and time of file creation	ontime1	32077.427154779	Sum of GTIs [s]
revision	3	Processing version of data	ontime2	32064.90411377	Sum of GTIs [s]
			ontime3	32077.509234786	Sum of GTIs [s]
			l1events	952646	Number of level 1 events

### 2.1.4 Events

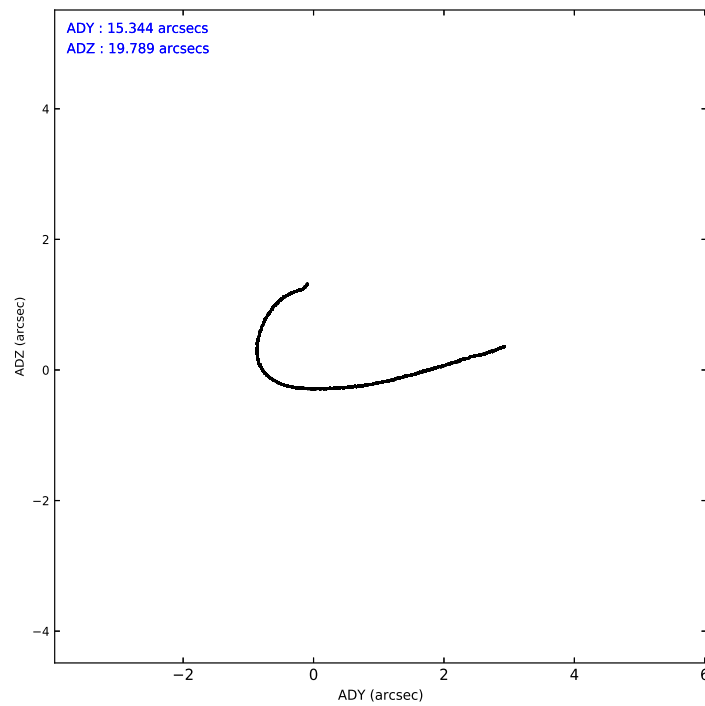
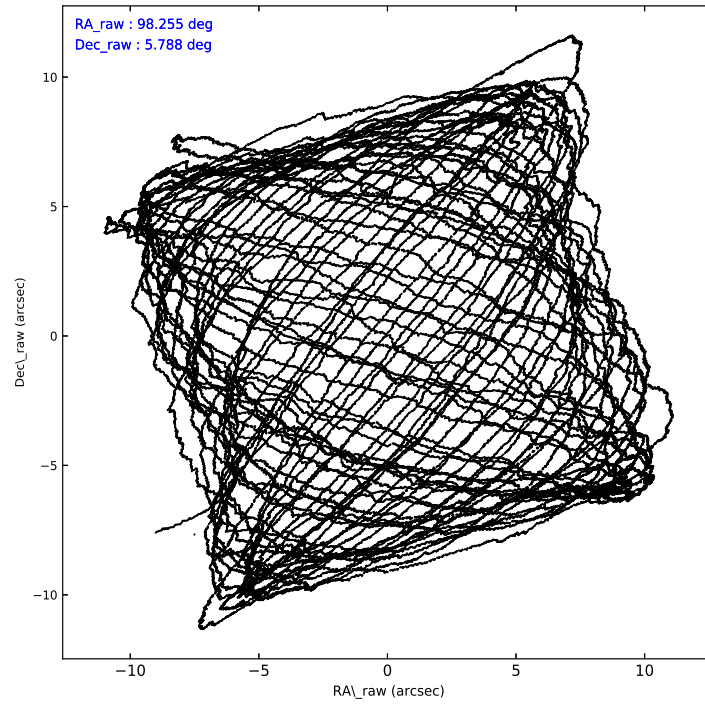
	ccd 0	ccd 1	ccd 2	ccd 3
level 1 events	227037	229244	251182	245183
rejected events	200625	197615	225592	218670
rejected %	88%	86%	89%	89%

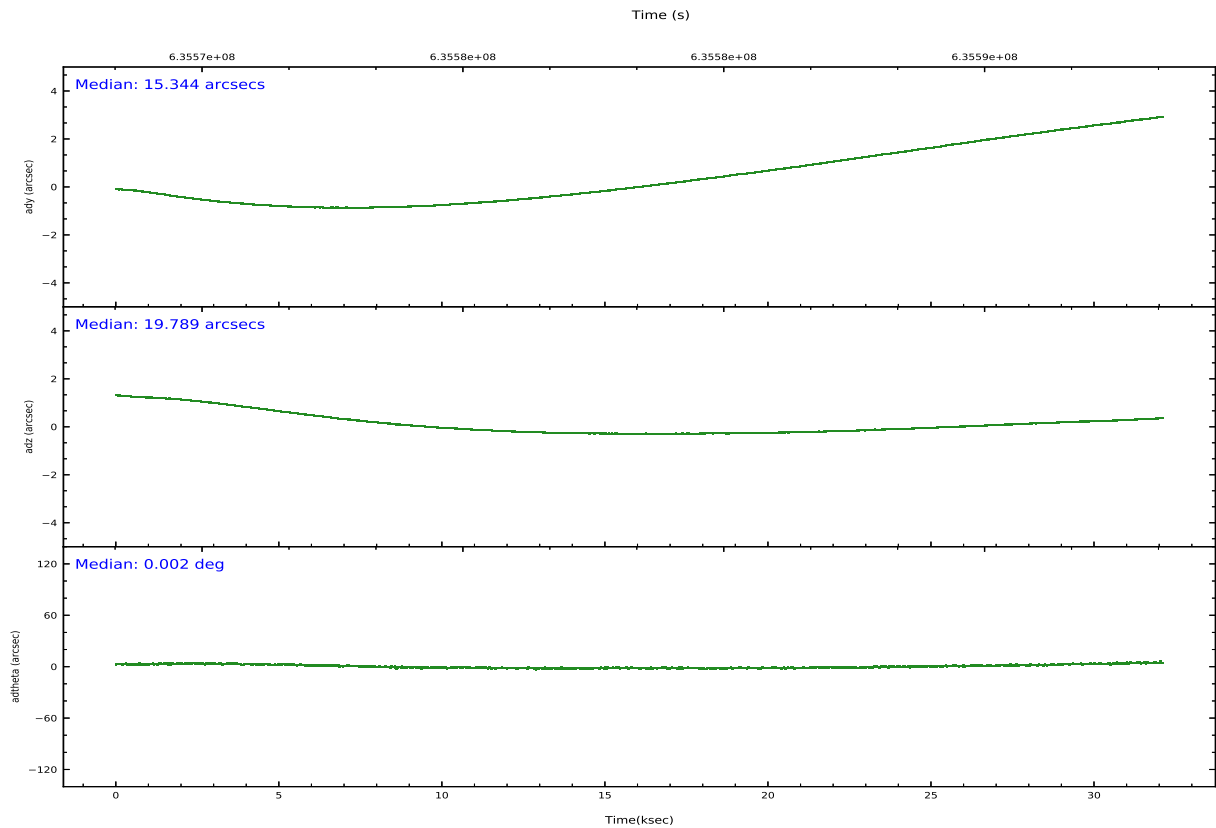
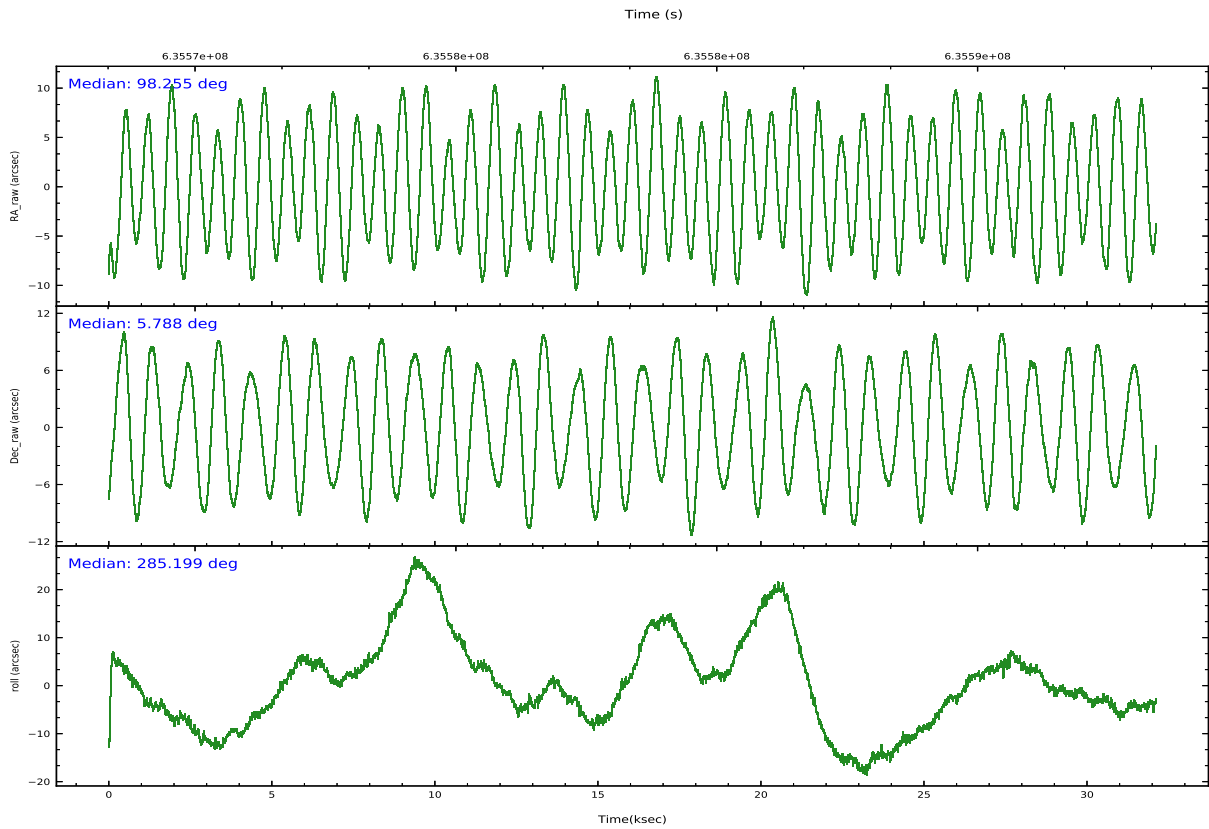
	ccd 0	ccd 1	ccd 2	ccd 3
grade 0 events	8901	11630	9013	10172
	3%	5%	3%	4%
grade 1 events	125	150	164	158
	0%	0%	0%	0%
grade 2 events	6747	7870	6401	5566
	2%	3%	2%	2%
grade 3 events	2679	2827	2545	2775
	1%	1%	1%	1%
grade 4 events	2563	2633	2645	2643
	1%	1%	1%	1%
grade 5 events	10010	10253	9123	11272
	4%	4%	3%	4%
grade 6 events	5530	6673	4989	5372
	2%	2%	1%	2%
grade 7 events	190482	187208	216302	207225
	83%	81%	86%	84%

## 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	98.235480	98.248492469364	CCD I2 on	Y	Y
[deg] Pointing Dec	5.807456	5.7910373289795	CCD I3 on	Y	Y
[deg] Pointing Roll	285.001216	285.19910703562	CCD S0 on	N	N
[s] Window start time (MET)	633960069.184000	633960069.184000	CCD S1 on	N	N
[s] Window stop time (MET)	635601669.184000	635601669.184000	CCD S2 on	O1	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S3 on	O2	N
[mm] SIM defocus	0	0.001439871863259334	CCD S4 on	N	N
[mm] SIM translation stage pos	-232.127463	-232.1190743247176	CCD S5 on	N	N
[mm] SIM translation stage offset	-1.465	-1.473378678212043	Number of optional ACIS chips dropped	2	2
[s] Observation start time (MET)	635565475.184000	635564149.99928	On-chip summing requested	N	N
Observation start date	2018-02-21T01:56:46	2018-02-21T01:35:49	Subarray requested	NONE	NONE
[s] Observation end time (MET)	635597475.184000	635598581.28881	Alternating exposures requested	N	N
Observation end date	2018-02-21T10:50:06	2018-02-21T11:09:41	[s] Primary exposure time	0.000000	3.1
Read mode	TIMED	TIMED			

## 2.3 Aspect





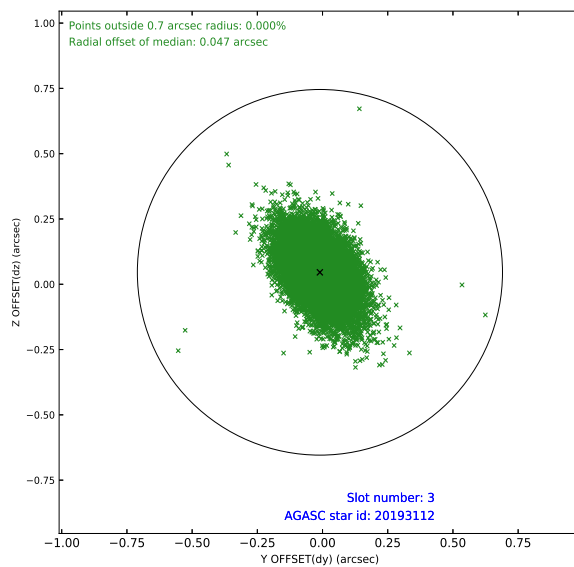
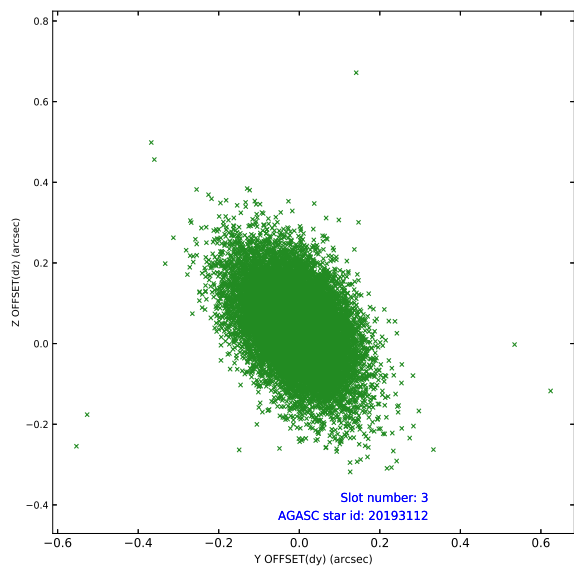
### Slot Statistics

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	7.23	7832	1.000	0.209	-0.146	0.024	0.034	0.000000	0.000000	923.77	-874
1	FID		ACIS-I-5	7.20	7835	1.000	-0.318	0.176	0.012	0.020	0.000000	0.000000	-1824.72	1023
2	FID		ACIS-I-6	7.22	7835	1.000	0.017	0.041	0.019	0.025	0.000000	0.000000	389.22	1668
3	GUIDE	used	20193112	8.48	15655	1.000	-0.010	0.046	0.119	0.210	98.537870	5.430651	1591.34	695
4	GUIDE	used	20193464	7.20	15670	1.000	-0.077	0.024	0.106	0.186	98.229775	5.396674	1423.86	-402
5	GUIDE	used	20727600	6.75	15669	1.000	-0.149	0.173	0.133	0.250	97.637242	5.866998	-762.07	-2013
6	GUIDE	used	20192040	8.29	15658	1.000	0.372	-0.276	0.152	0.254	97.909981	5.026773	2413.28	-1855
7	GUIDE	used	20193288	7.09	15666	1.000	-0.138	0.040	0.142	0.244	98.869961	5.512572	1612.95	1921

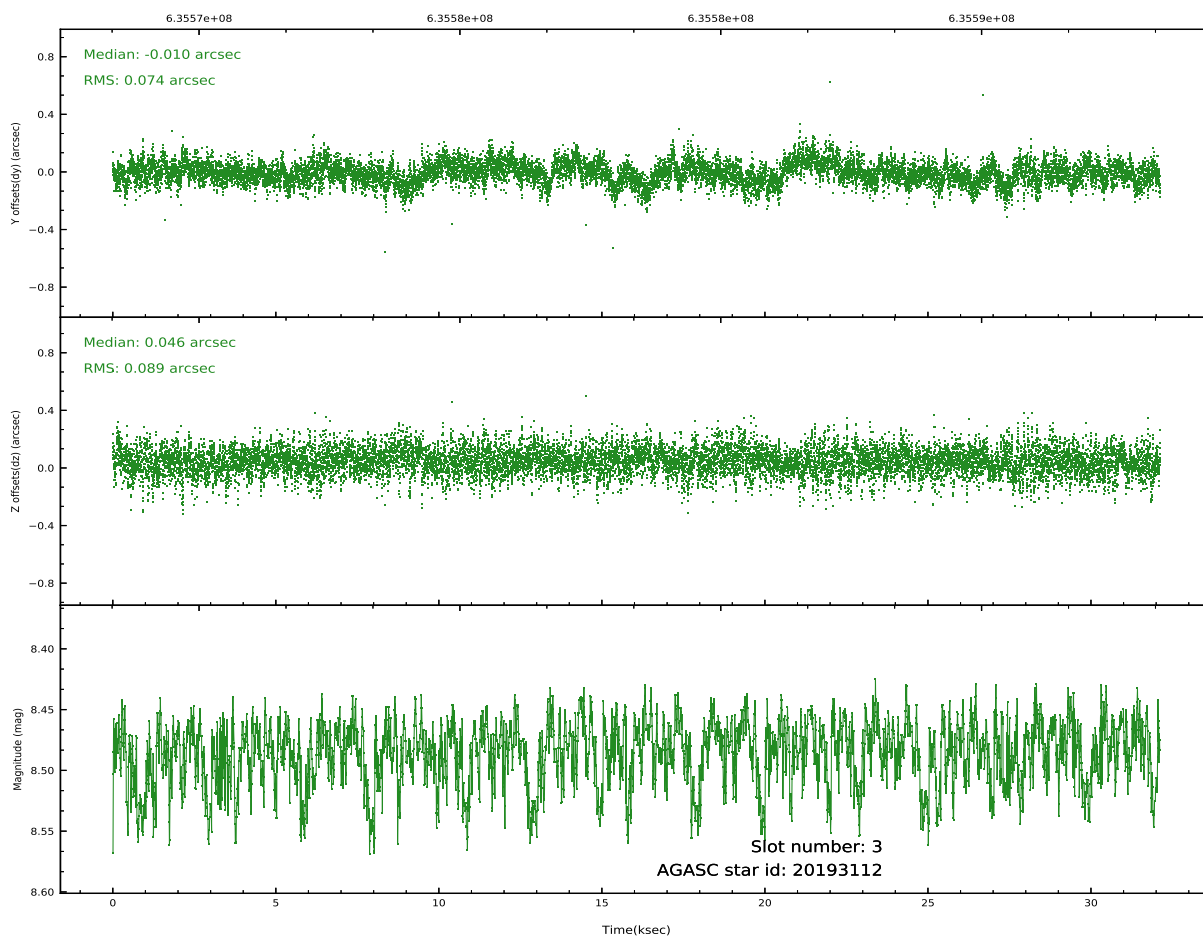
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## 2.4 Star Slots

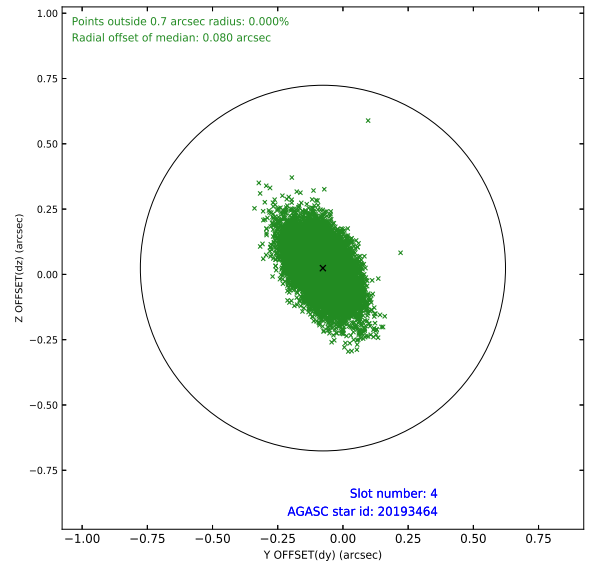
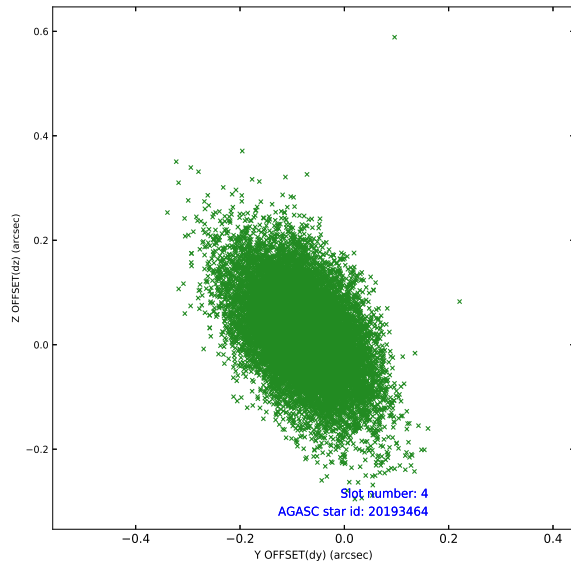
### 2.4.1 Slot 3



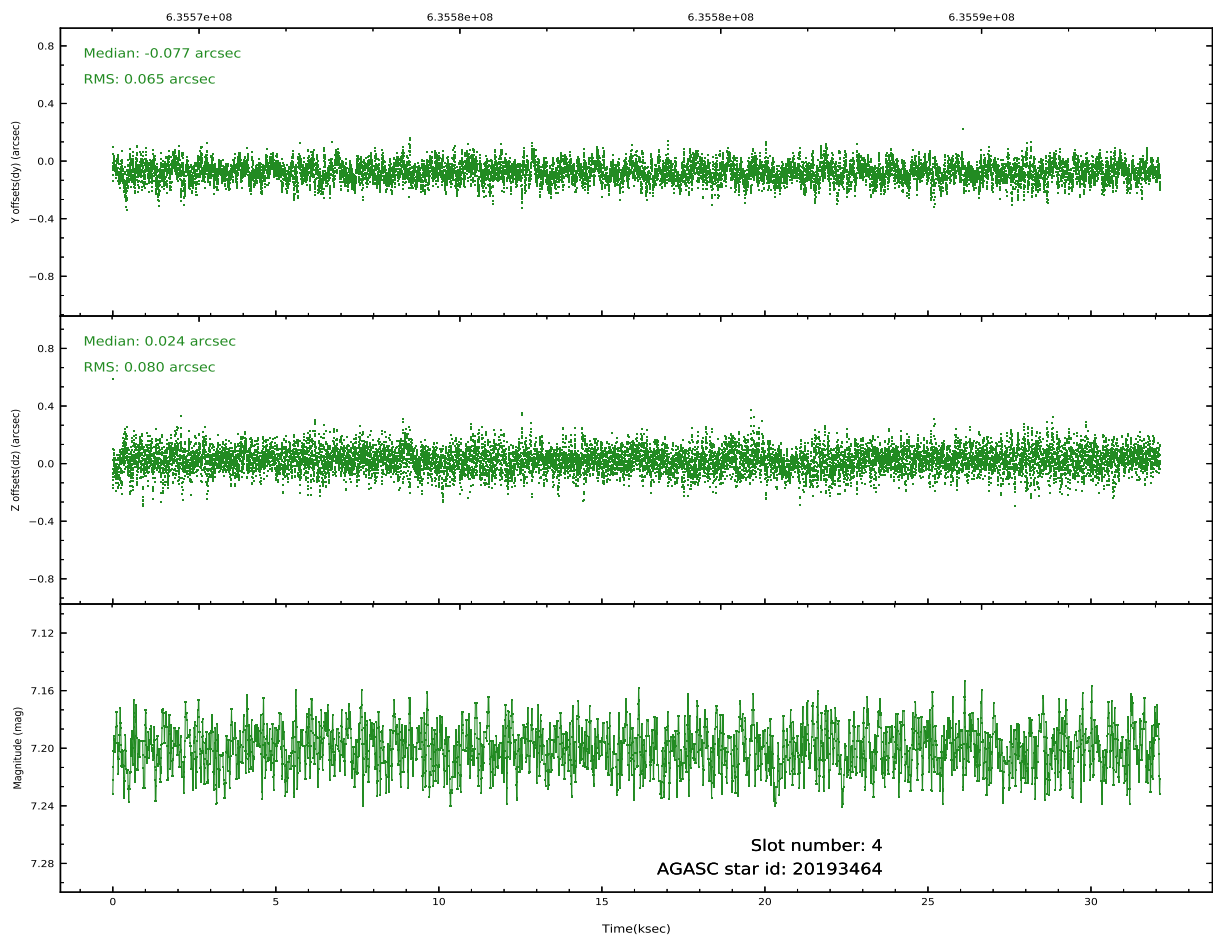
Time (s)



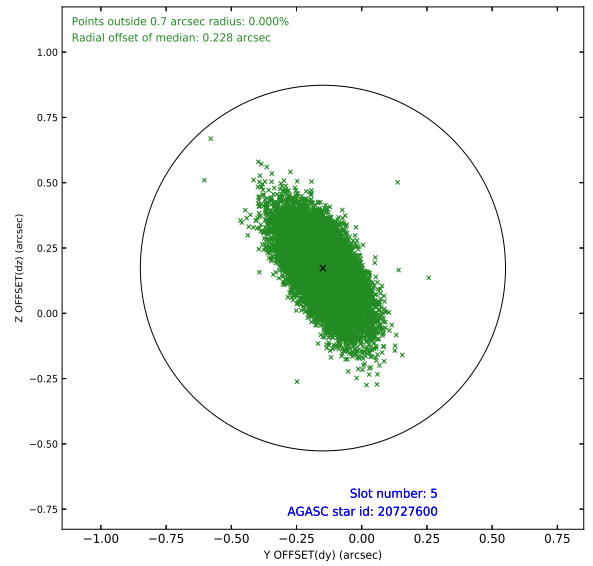
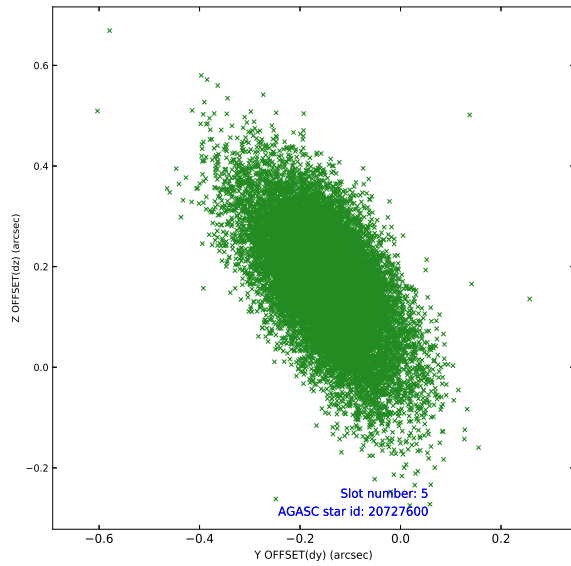
## 2.4.2 Slot 4



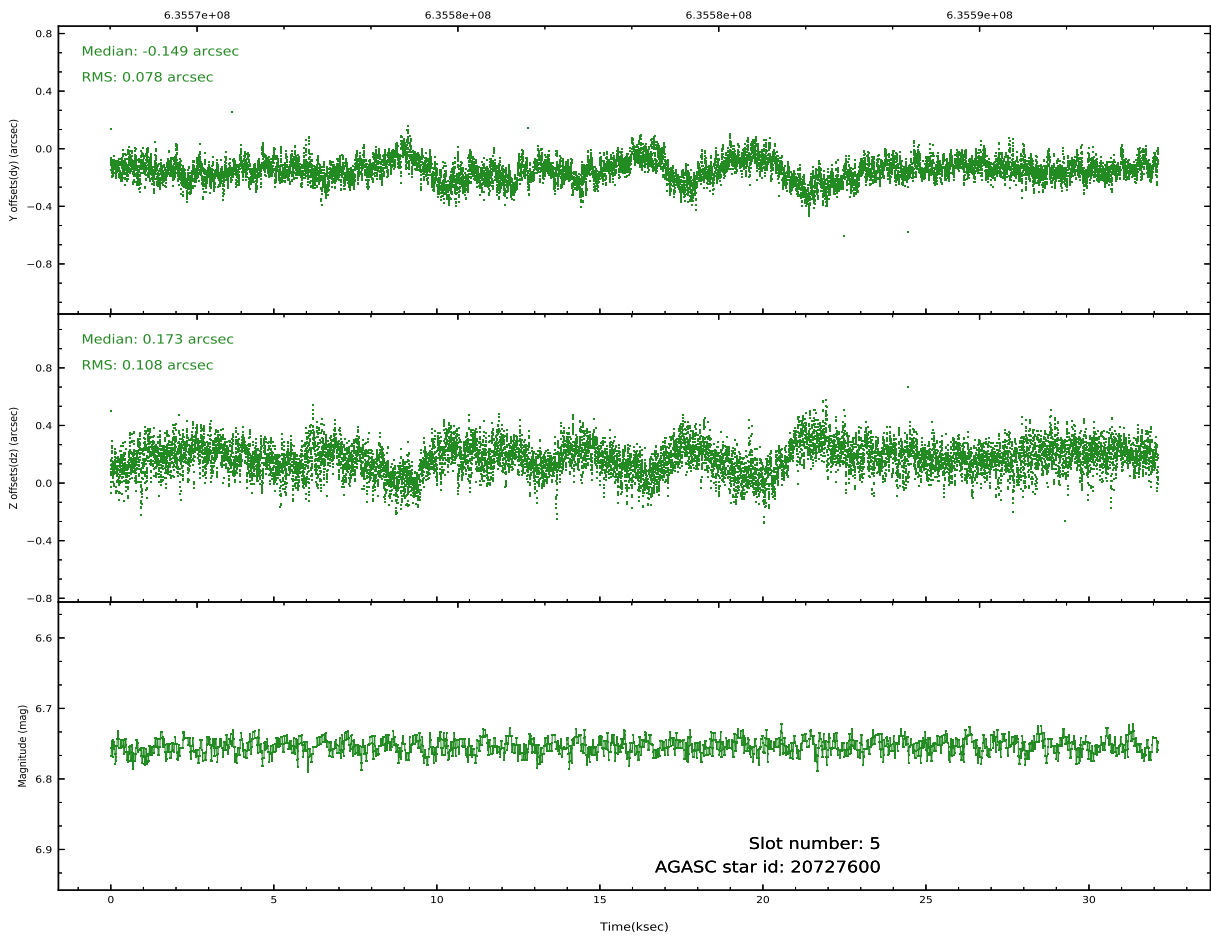
Time (s)



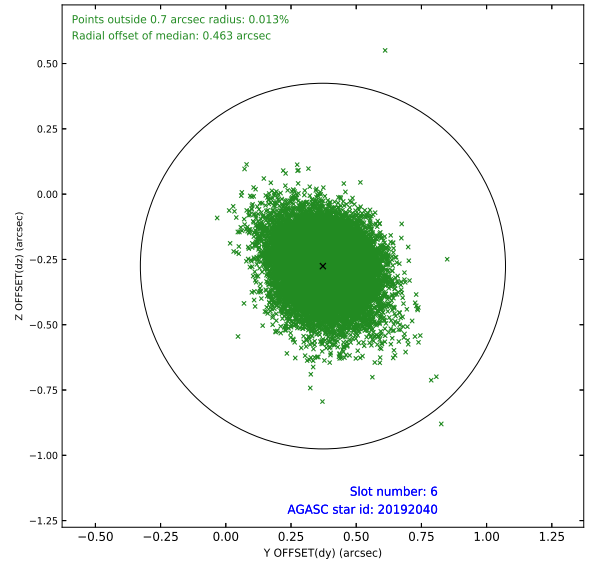
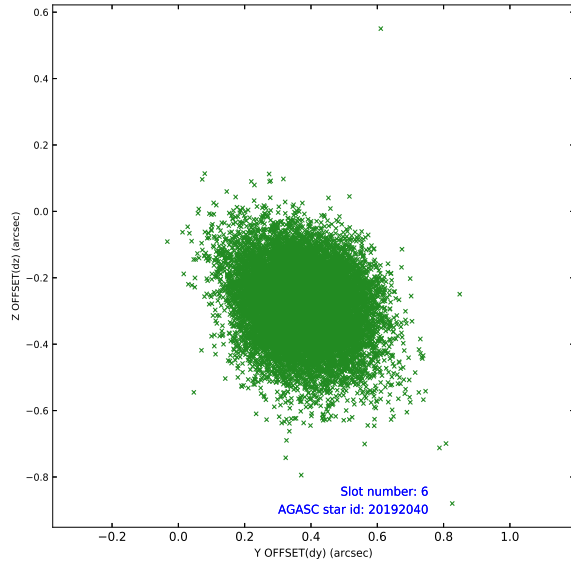
### 2.4.3 Slot 5



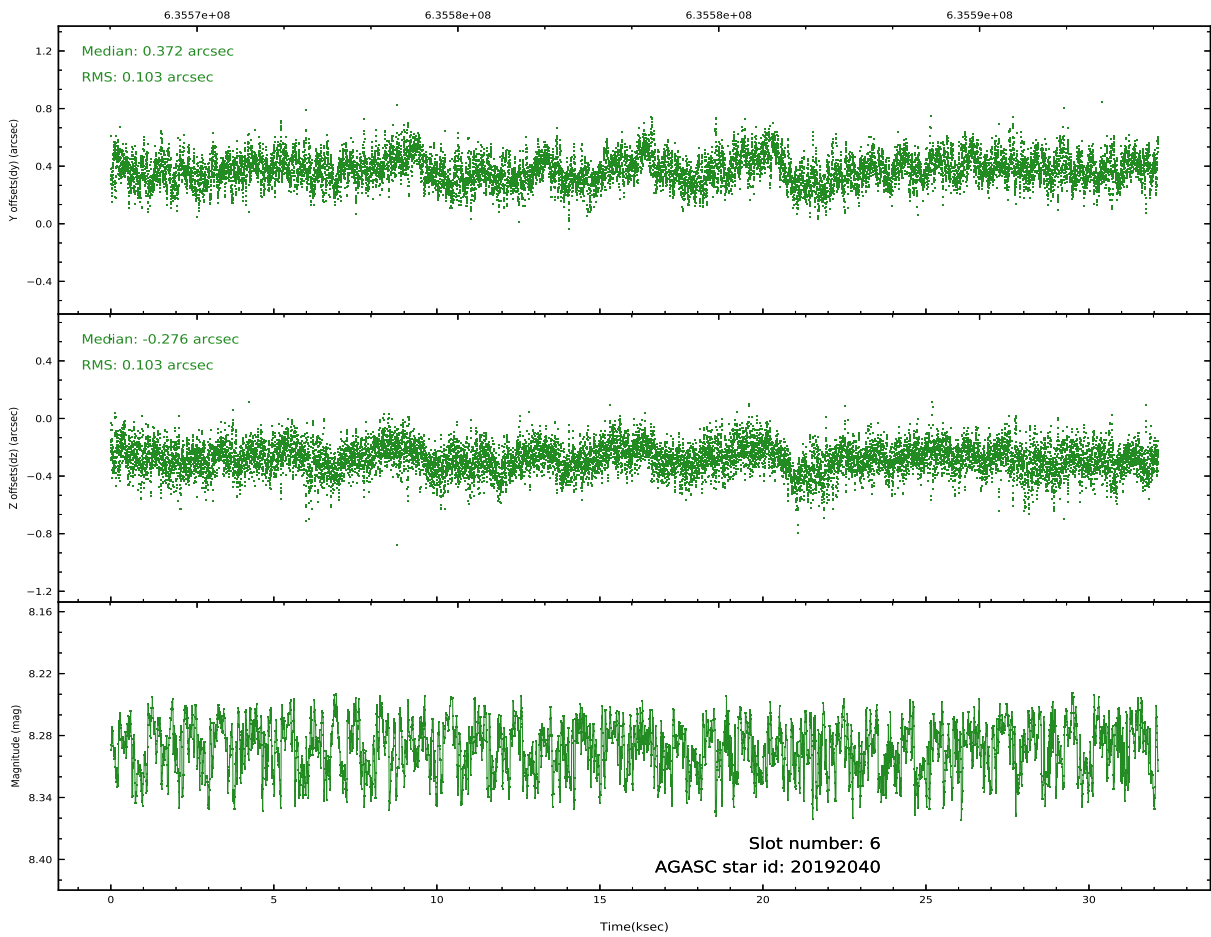
Time (s)



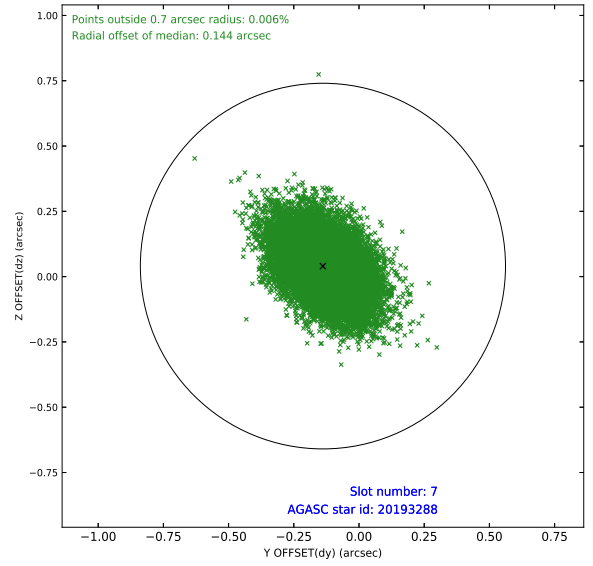
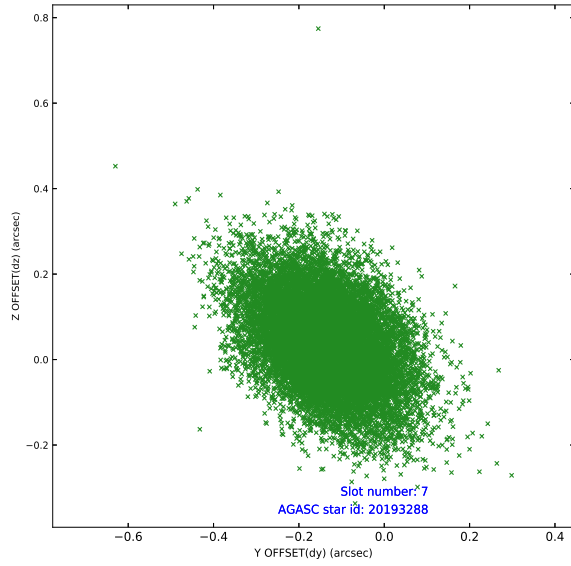
## 2.4.4 Slot 6



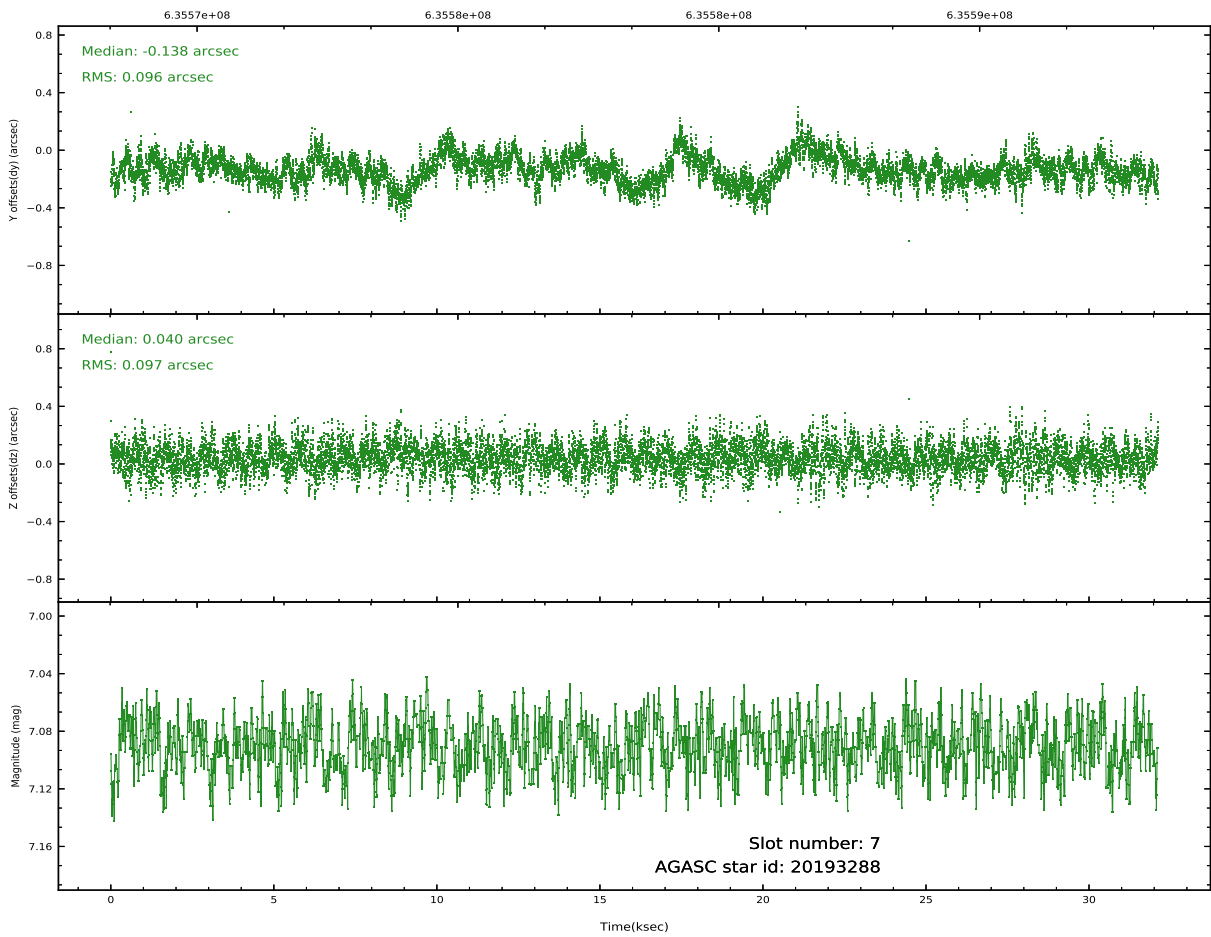
Time (s)



## 2.4.5 Slot 7

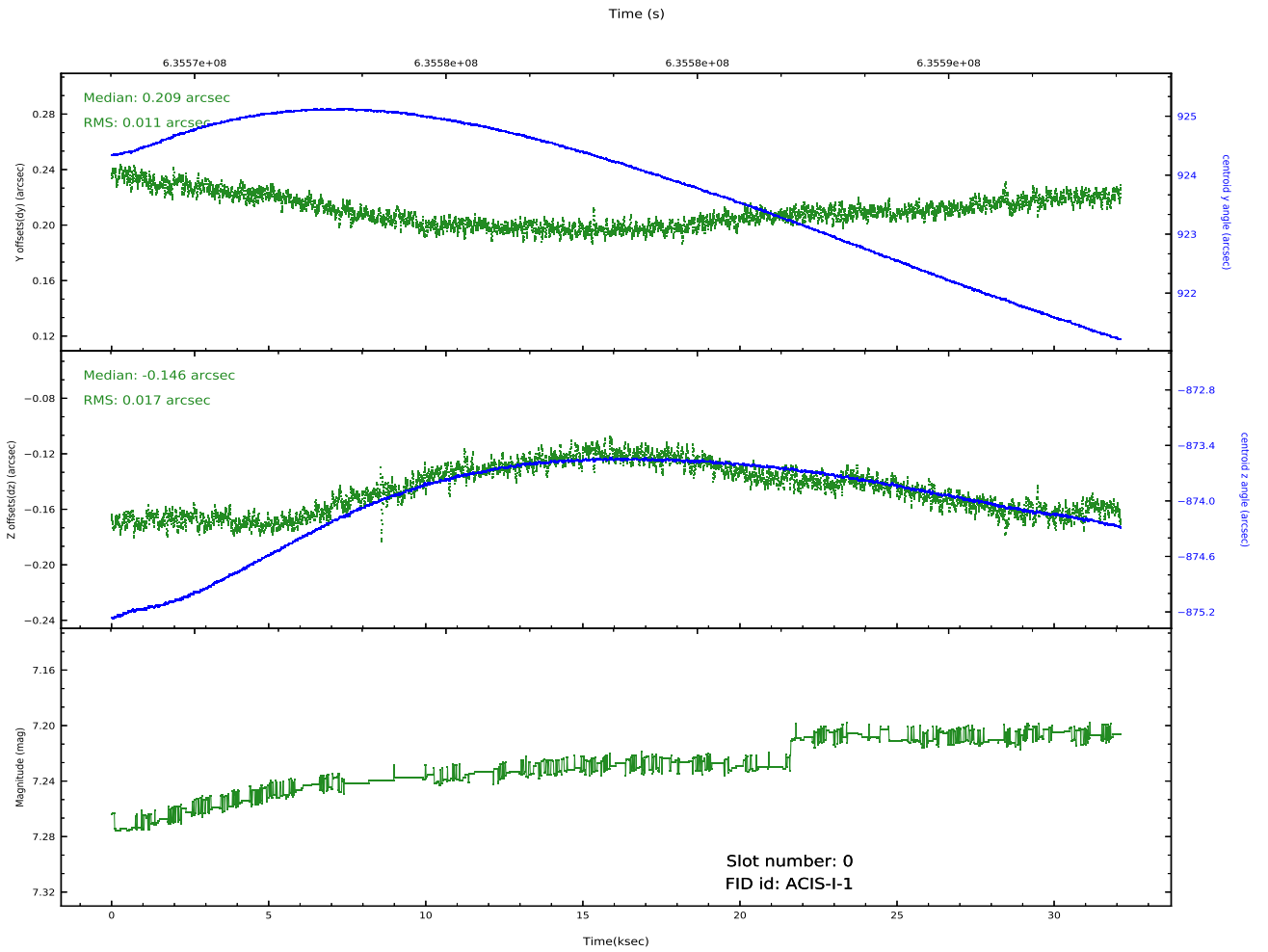
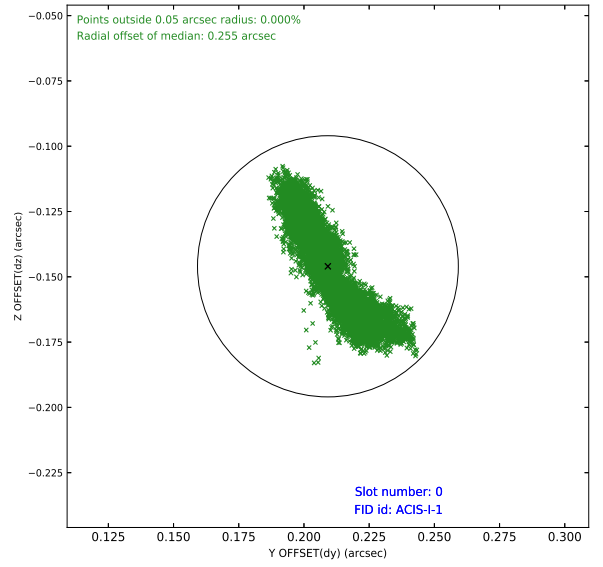
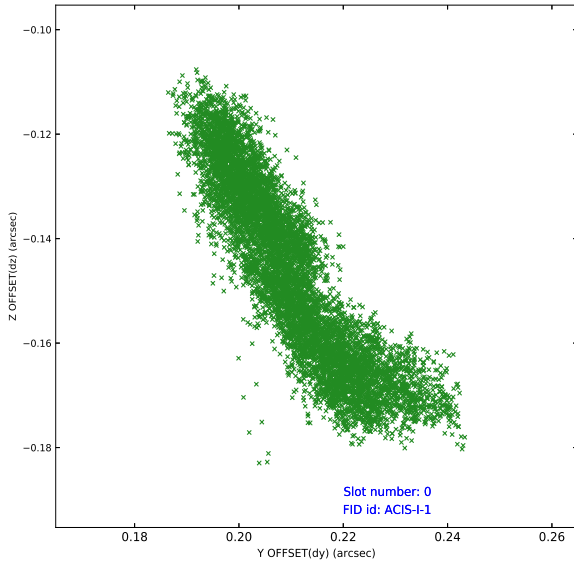


Time (s)

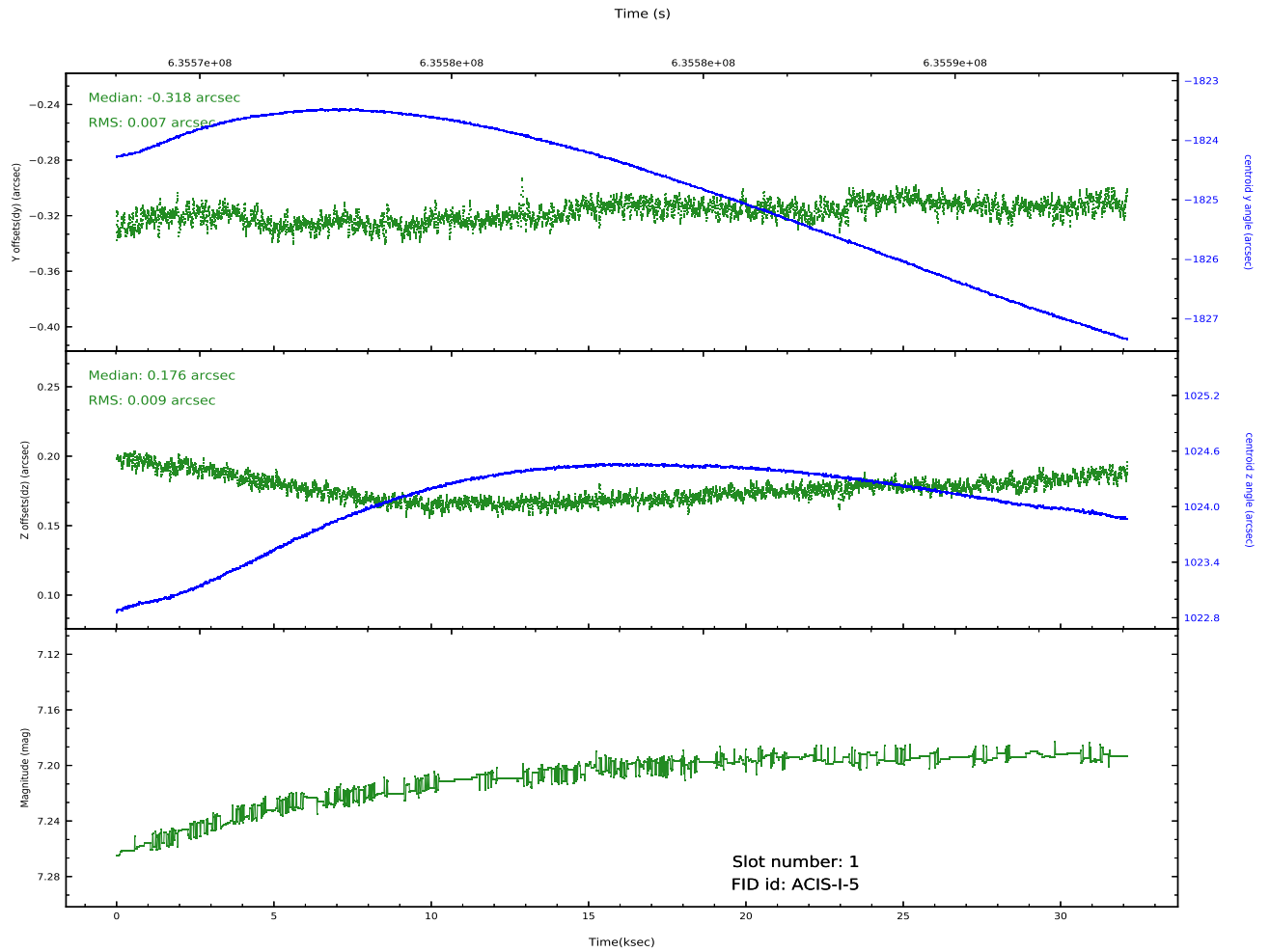
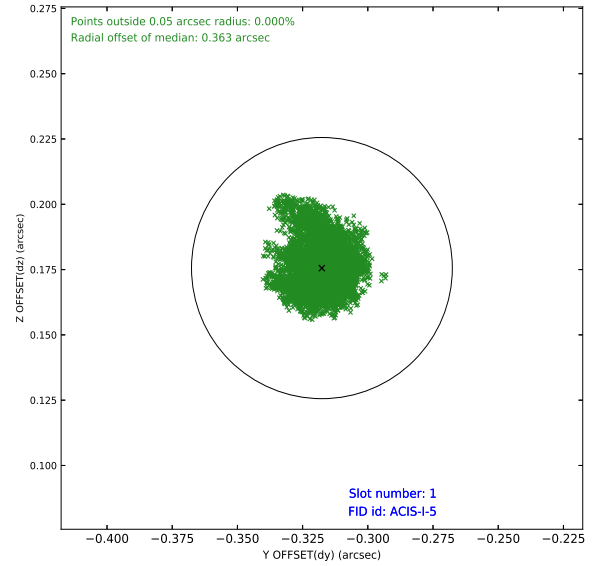
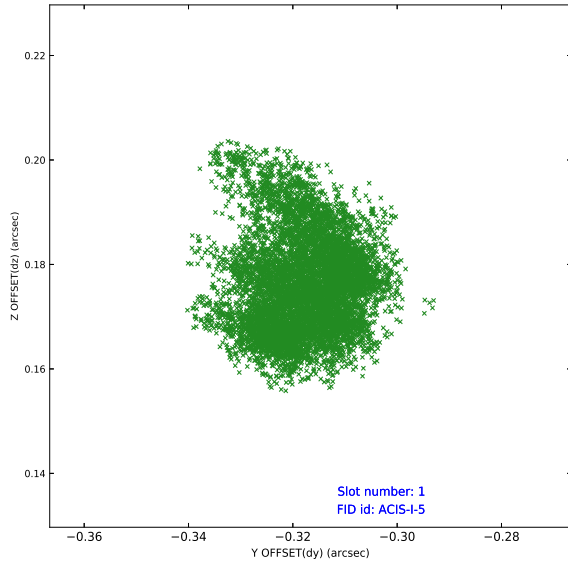


## 2.5 FID Slots

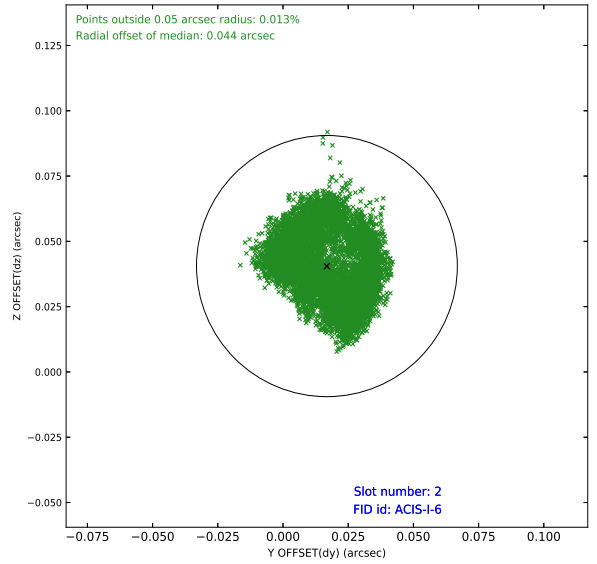
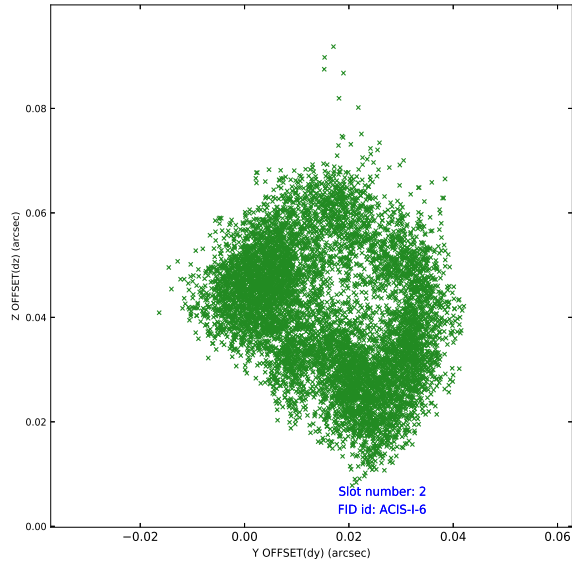
### 2.5.1 Slot 0



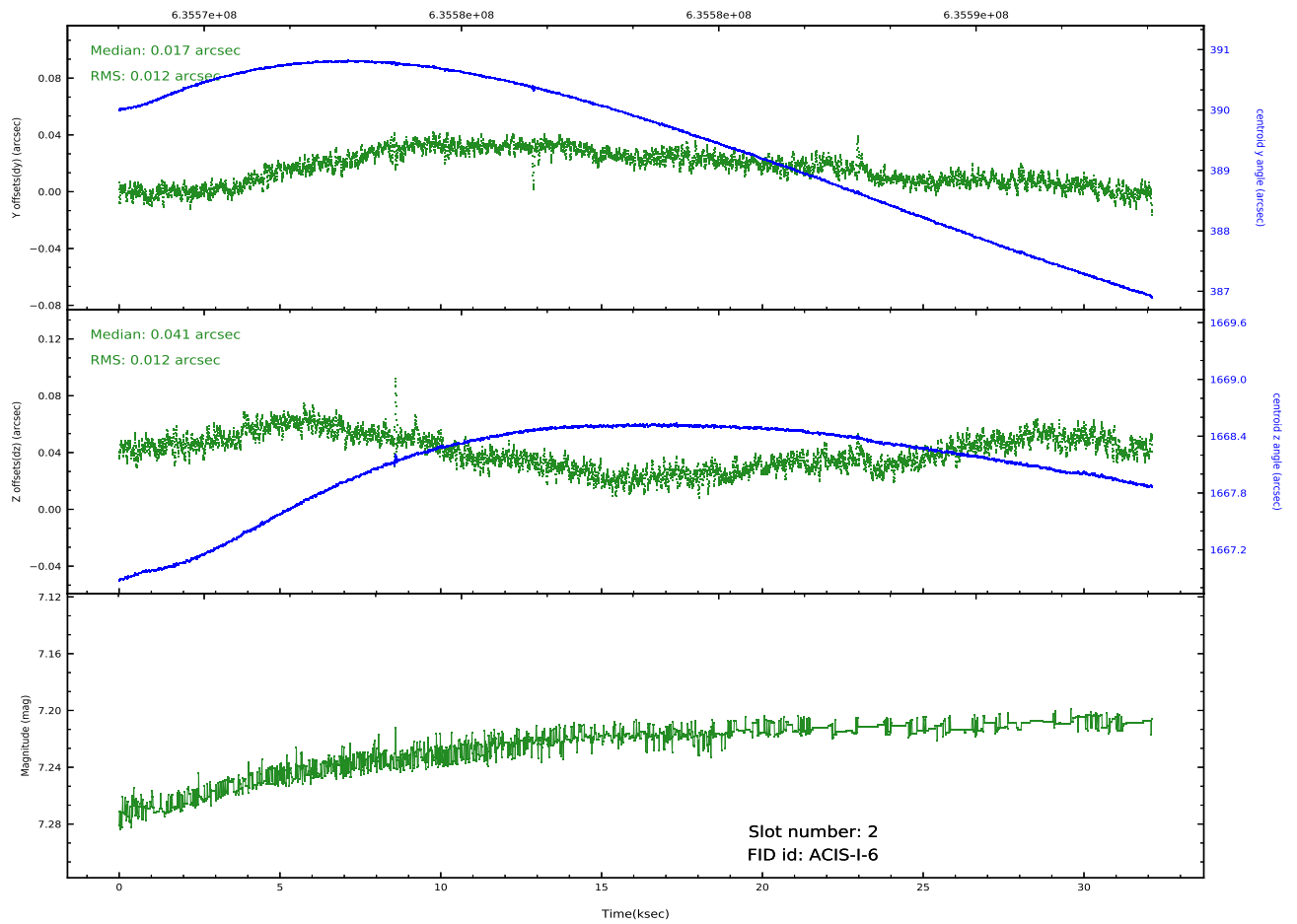
## 2.5.2 Slot 1



### 2.5.3 Slot 2



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	32.077509231329

## A.2 Comments

Window constraint was met.

===

Two optional chips were dropped.

===

A spatial region of the original bias map for CCD = 0 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 = 0 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: (98.13541,5.60858), (98.13925,5.60961), (98.12717,5.65382), (98.12261,5.65542).