

# V&V Reference Report

## L2 ASCDS Version : 10.6

Observation 21092 - L2 Version 2  
Chandra X-Ray Center

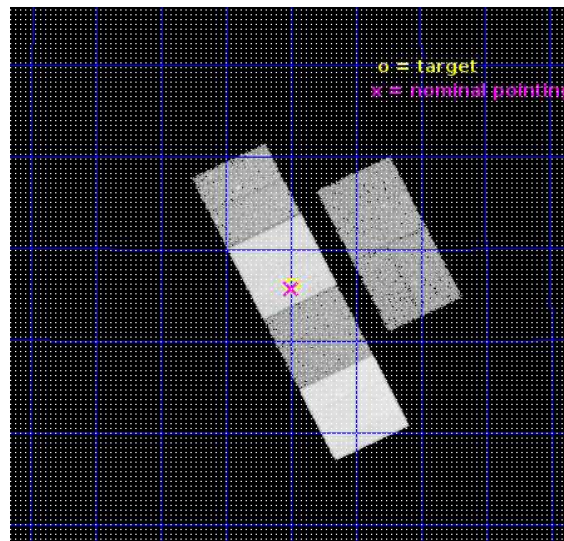
L2 Processing Date : May 30 2018

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# 1 Front

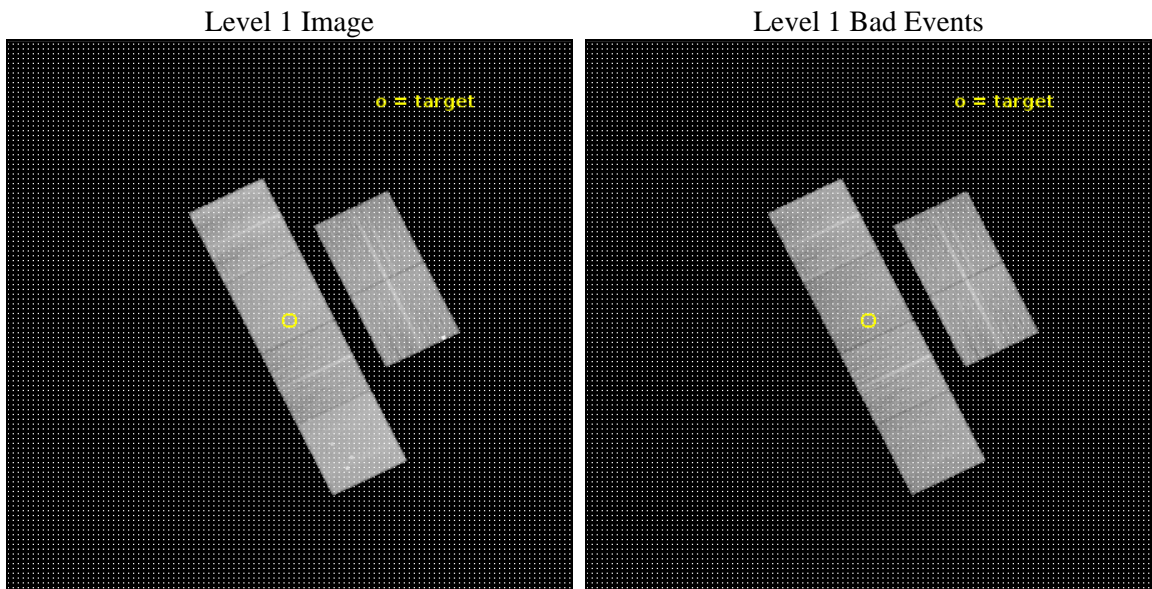
seq_num	402027	Sequence number
obs_id	21092	Observation id
title	The Late-time X-ray Behavior of Short Gamma-ray Bursts: Implications for Energetics and Rates	Proposal title
observer	Wen-fai Fong	Principal investigator
object	sGRB180418A	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	170.121667	Observer's specified target RA [deg]
dec_targ	24.933	Observer's specified target Dec [deg]
ra_nom	170.12413801952	Nominal RA [deg]
dec_nom	24.928161358259	Nominal Dec [deg]
roll_nom	243.84983517241	Nominal Roll [deg]
revision	2	Processing version of data
ontime	27947.885462165	Sum of GTIs [s]
livetime	27593.992508247	Livetime [s]
ontime2	27944.685471773	Sum of GTIs [s]
ontime3	27947.762342095	Sum of GTIs [s]
ontime5	27947.844422102	Sum of GTIs [s]
ontime6	27944.562351823	Sum of GTIs [s]
ontime7	27947.885462165	Sum of GTIs [s]
ontime8	27947.721302152	Sum of GTIs [s]
l2events	340077	Number of level 2 events



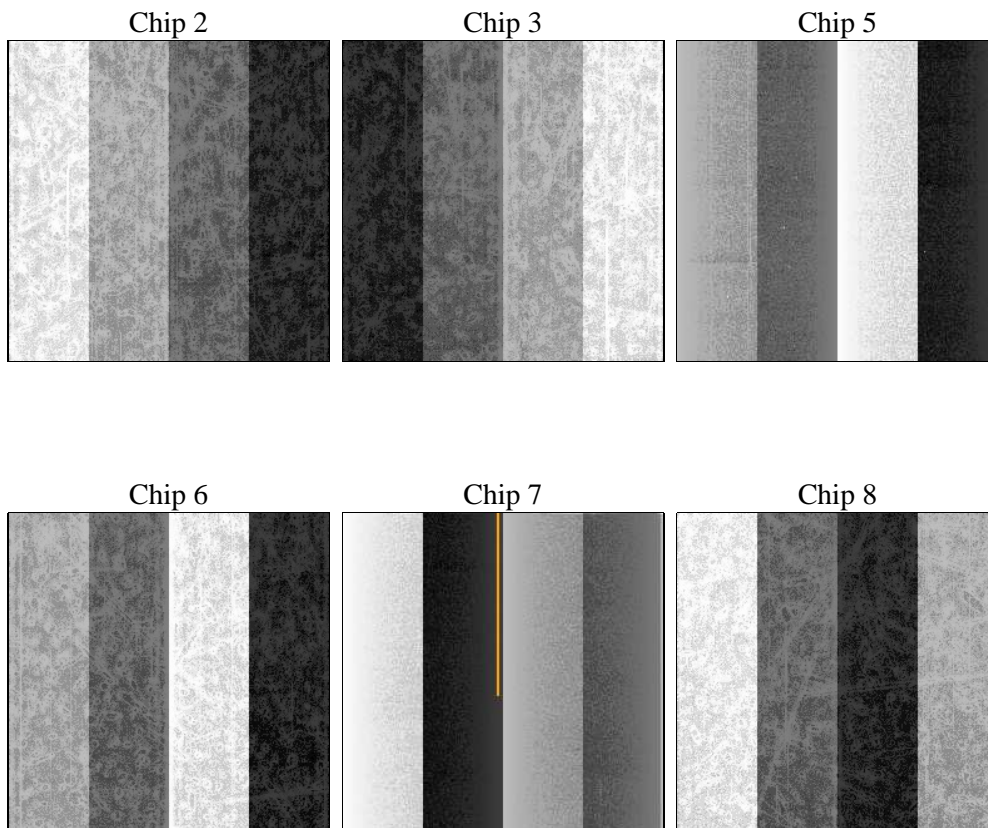
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	28000.000000	[s] Scheduled observation exposure time
ascdsver	10.6	Processing system revision	ontime	27947.885462165	Sum of GTIs [s]
caldbver	4.7.8	&#160	ontime2	27944.685471773	Sum of GTIs [s]
date	2018-05-30T23:36:57	Date and time of file creation	ontime3	27947.762342095	Sum of GTIs [s]
revision	2	Processing version of data	ontime5	27947.844422102	Sum of GTIs [s]
			ontime6	27944.562351823	Sum of GTIs [s]
			ontime7	27947.885462165	Sum of GTIs [s]
			ontime8	27947.721302152	Sum of GTIs [s]
			l1events	1488553	Number of level 1 events

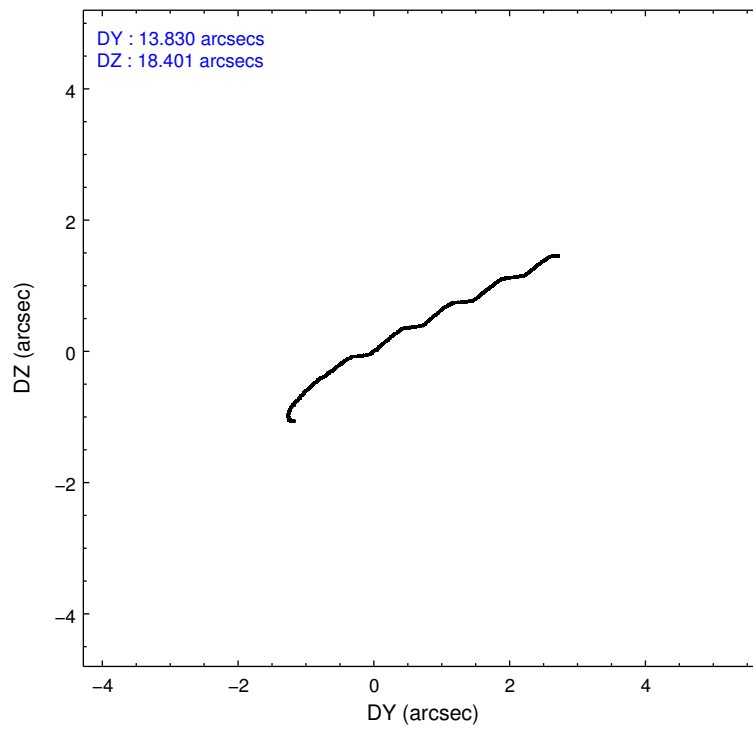
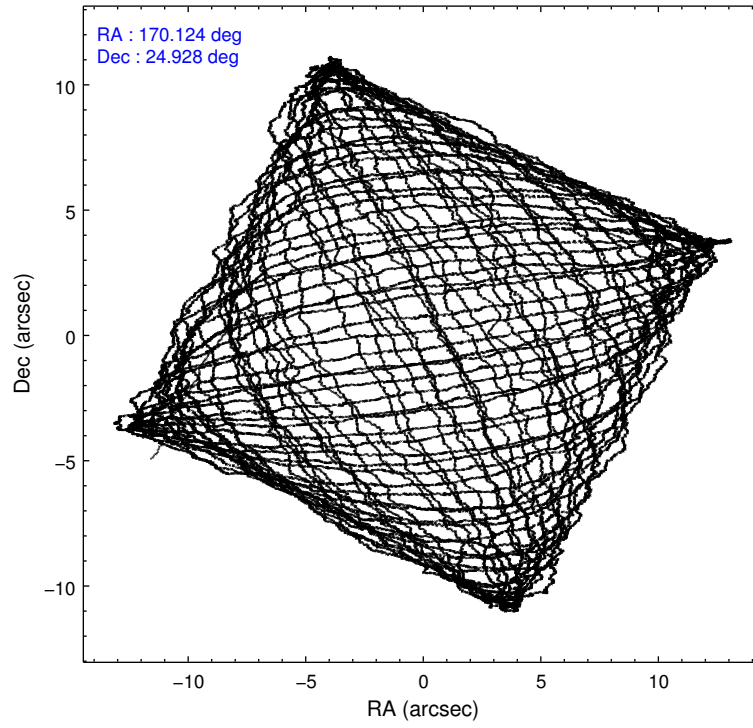
### 2.1.4 Events

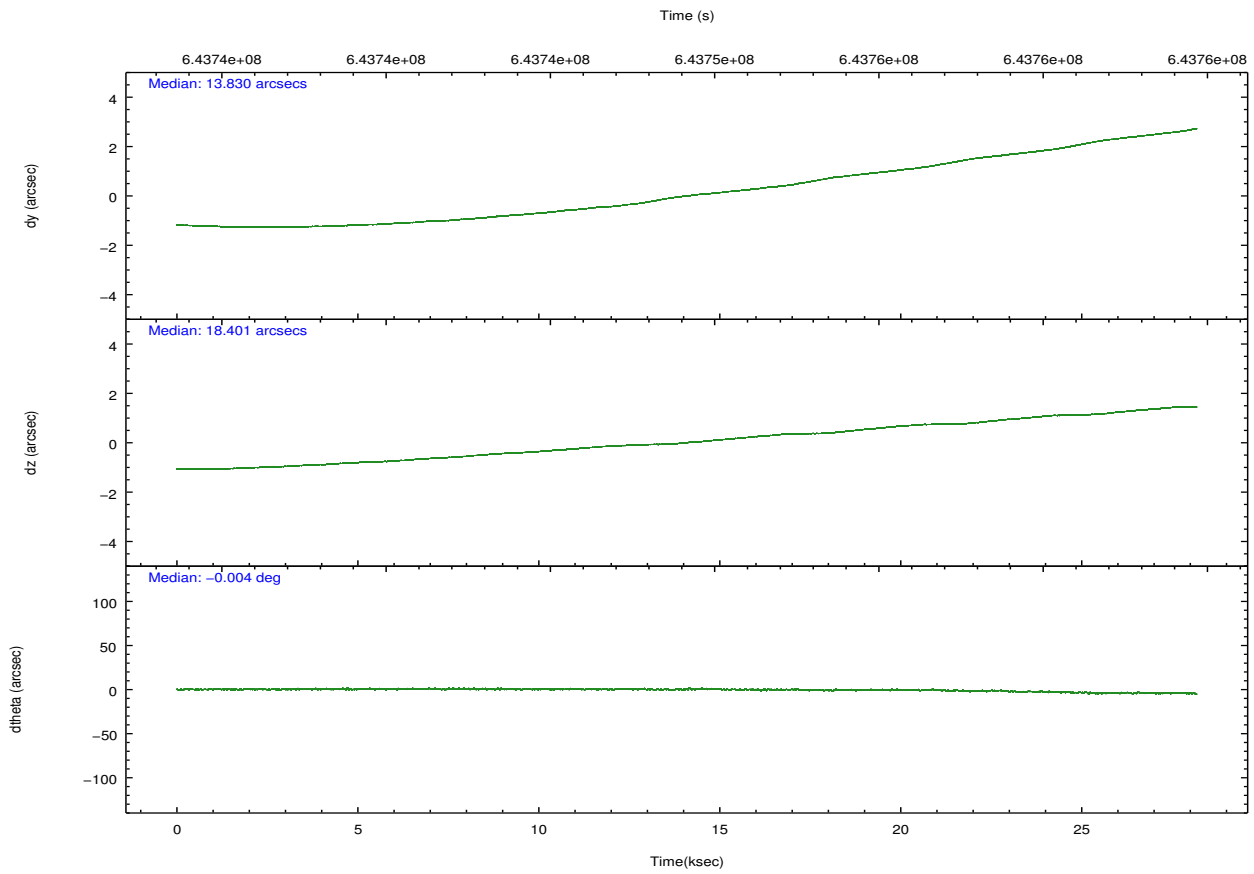
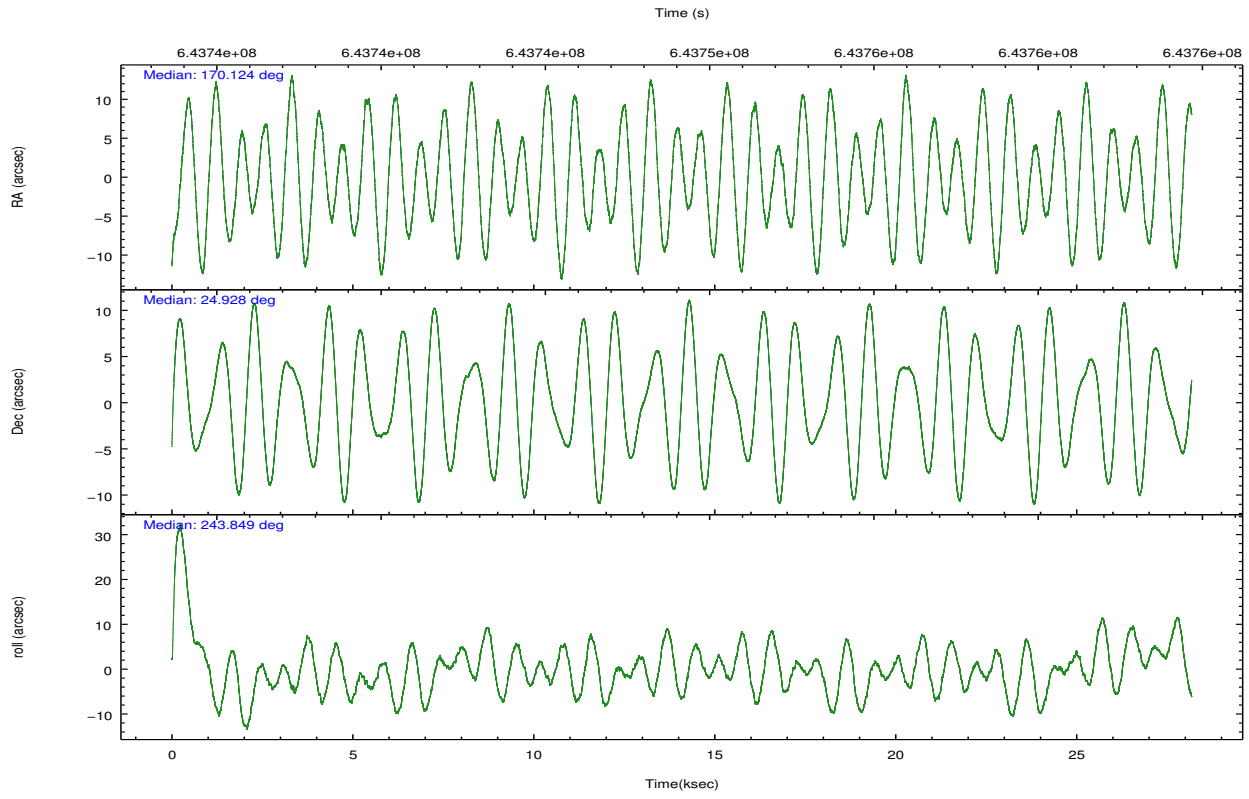
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	224391	195446	325178	210535	262676	270327	grade 0 events	15722	7385	12528	7363	9554	20380
rejected events	194515	174643	167596	187373	149117	199364		7%	3%	3%	3%	3%	7%
rejected %	86%	89%	51%	88%	56%	73%	grade 1 events	144	113	820	98	367	202
								0%	0%	0%	0%	0%	0%
							grade 2 events	5441	4475	49450	5706	23964	17411
								2%	2%	15%	2%	9%	6%
							grade 3 events	2230	2200	4759	2189	8869	7245
								0%	1%	1%	1%	3%	2%
							grade 4 events	2134	2154	4459	2135	8957	6762
								0%	1%	1%	1%	3%	2%
							grade 5 events	7870	9204	21779	9276	26014	14522
								3%	4%	6%	4%	9%	5%
							grade 6 events	4356	4590	86430	5771	62238	19181
								1%	2%	26%	2%	23%	7%
							grade 7 events	186494	165325	144953	177997	122713	184624
								83%	84%	44%	84%	46%	68%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-235678	ACIS-235678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	170.121706	170.1241380195162	CCD I2 on	O1	Y
[deg] Pointing Dec	24.955520	24.928161358259	CCD I3 on	O2	Y
[deg] Pointing Roll	243.694241	243.849835172411	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[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	Y	Y
[s] Observation start time (MET)	643735246.184000	643733652.63146	CCD S5 on	N	N
Observation start date	2018-05-26T15:19:37	2018-05-26T14:54:12	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	643763246.184000	643763896.28325	On-chip summing requested	N	N
Observation end date	2018-05-26T23:06:17	2018-05-26T23:18:16	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect





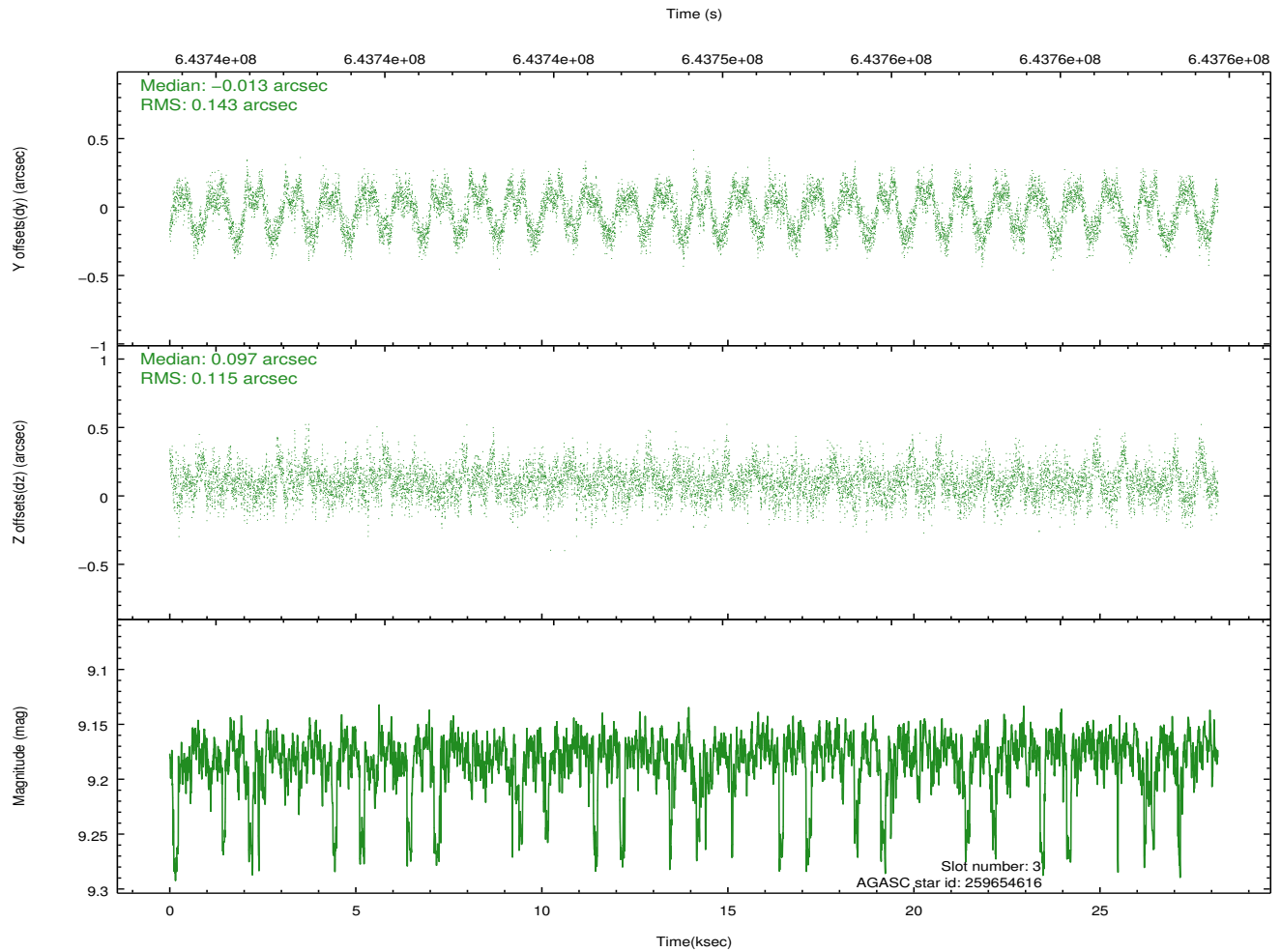
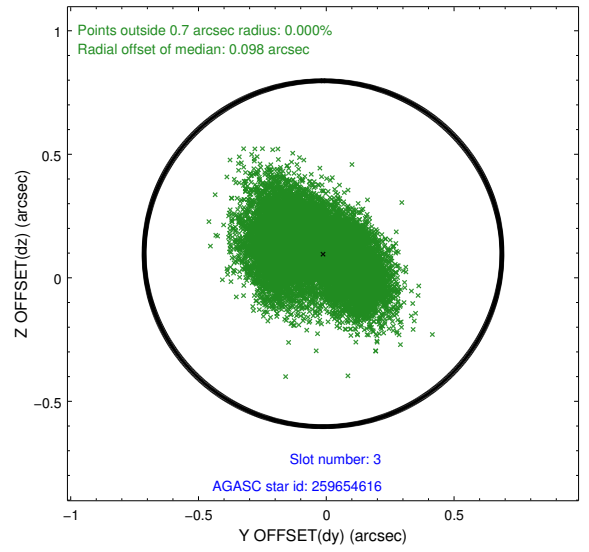
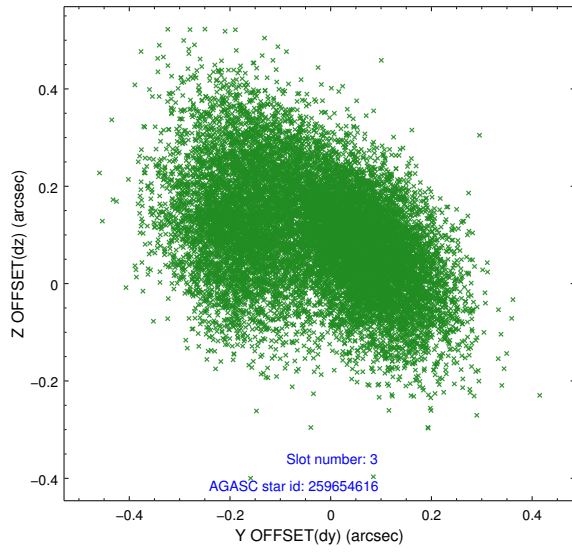
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.08	6872	-0.152	-0.114	0.047	0.071	0.000000	0.000000	-767.14	-1740.07
1	FID		ACIS-S-4	7.21	6871	0.469	0.110	0.047	0.074	0.000000	0.000000	2146.71	168.56
2	FID		ACIS-S-5	7.19	6872	-0.320	0.023	0.033	0.058	0.000000	0.000000	-1820.03	162.21
3	GUIDE	used	259654616	9.18	13732	-0.013	0.097	0.199	0.308	170.040640	25.494737	-1622.90	-1095.98
4	GUIDE	used	259655672	9.38	13730	0.001	-0.060	0.206	0.329	170.496212	25.483880	-2245.50	247.59
5	GUIDE	used	259662544	7.67	13743	-0.128	0.028	0.146	0.254	169.440651	25.051356	670.45	-2145.60
6	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
7	GUIDE	used	259667432	9.08	13726	0.154	-0.068	0.158	0.264	169.597557	25.235111	-147.77	-1978.21

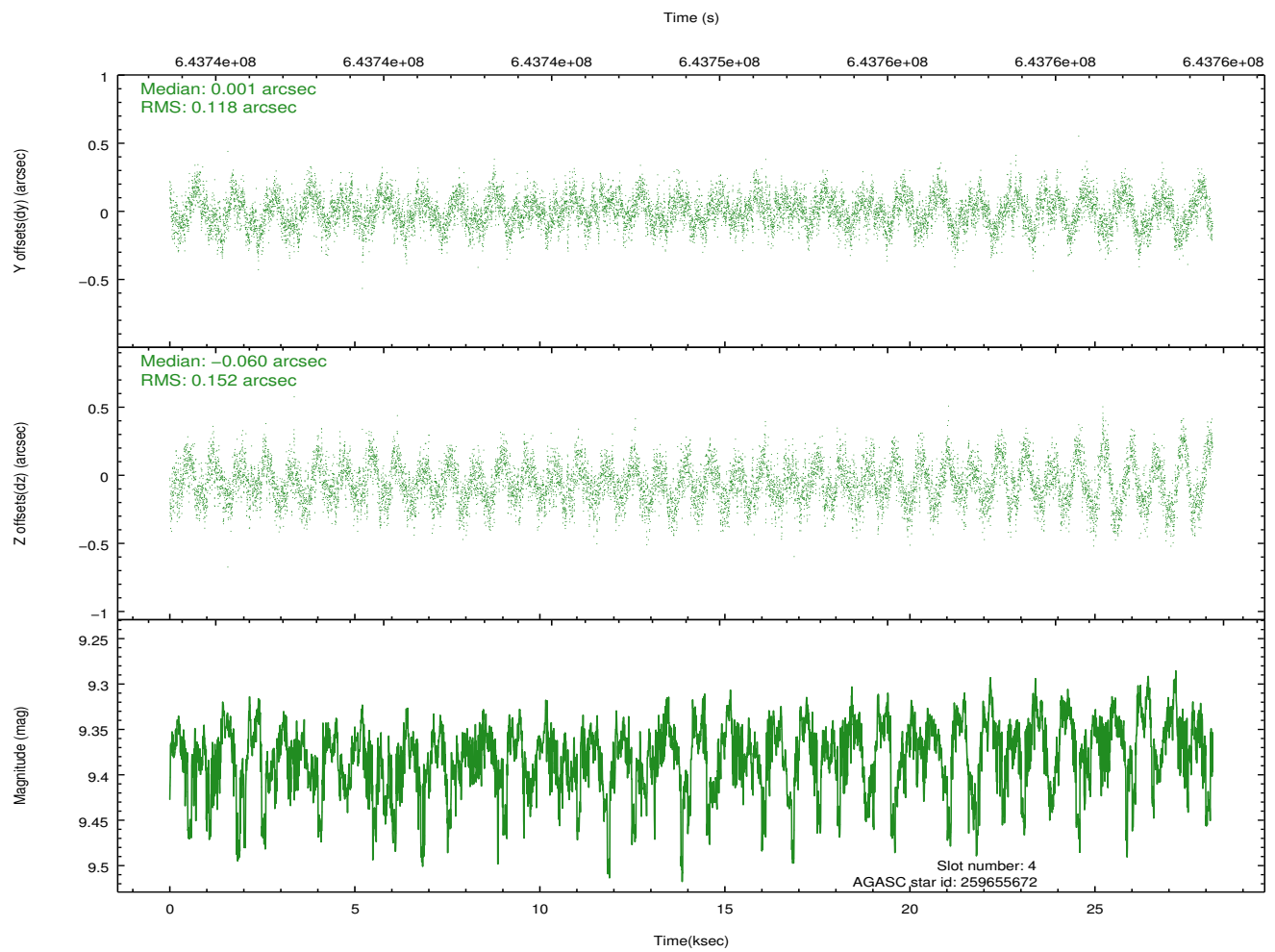
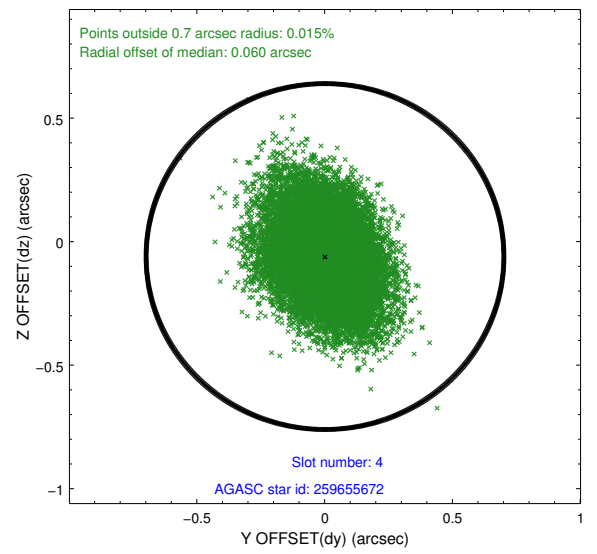
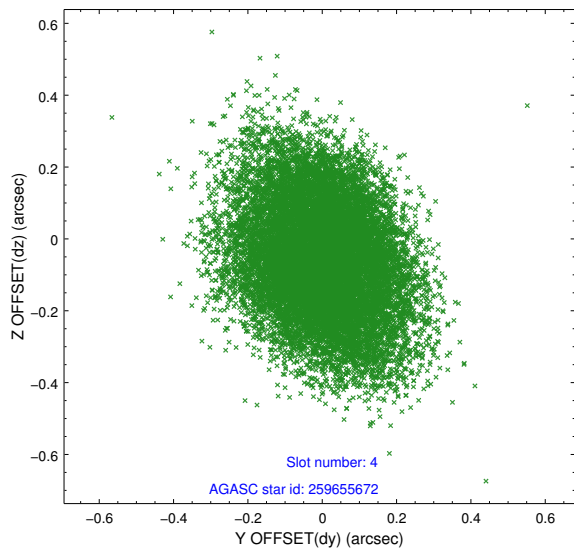
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## 2.4 Star Slots

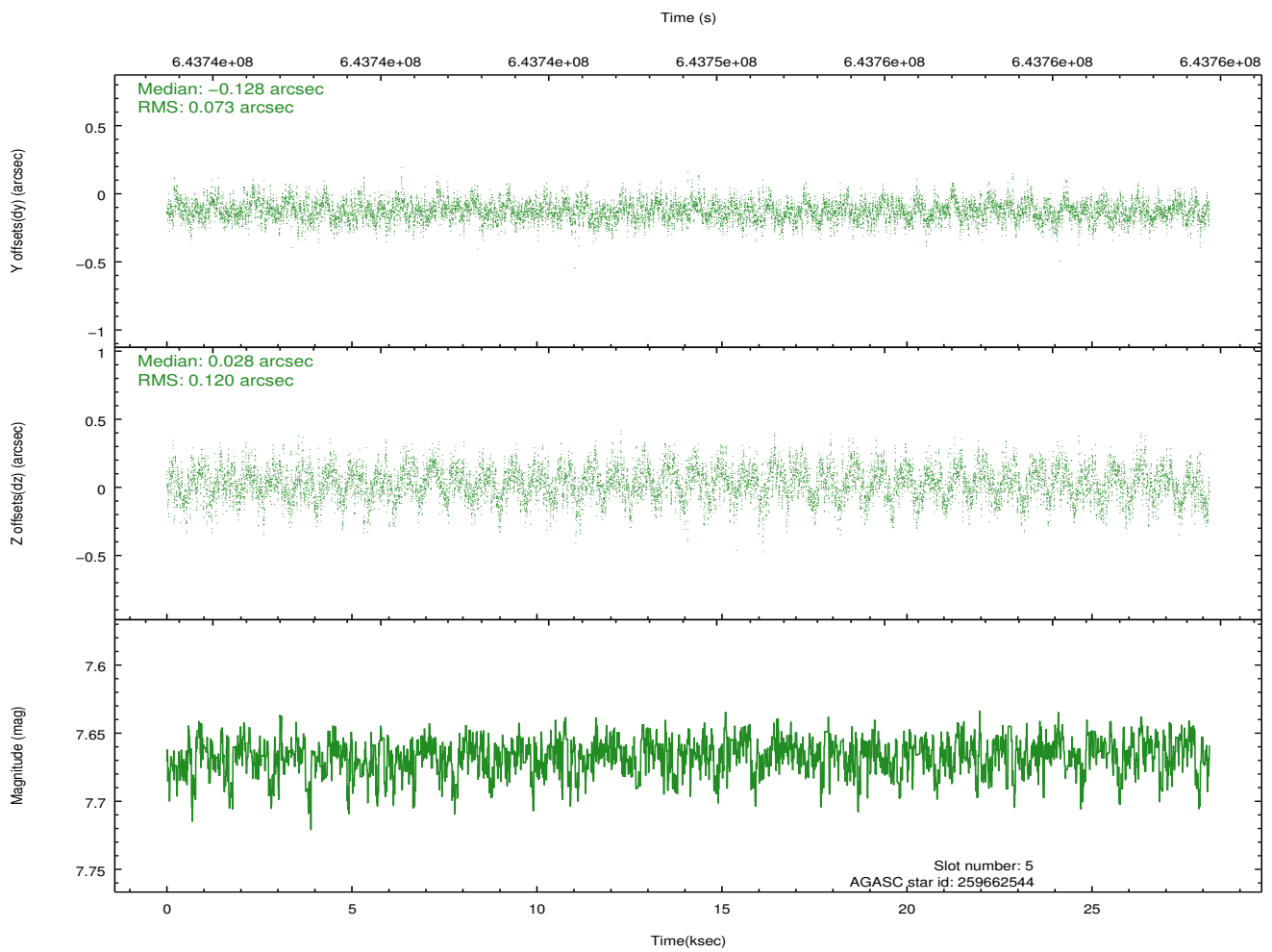
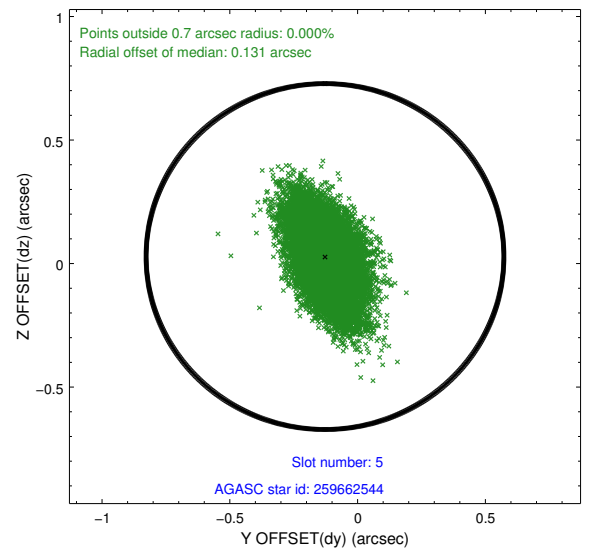
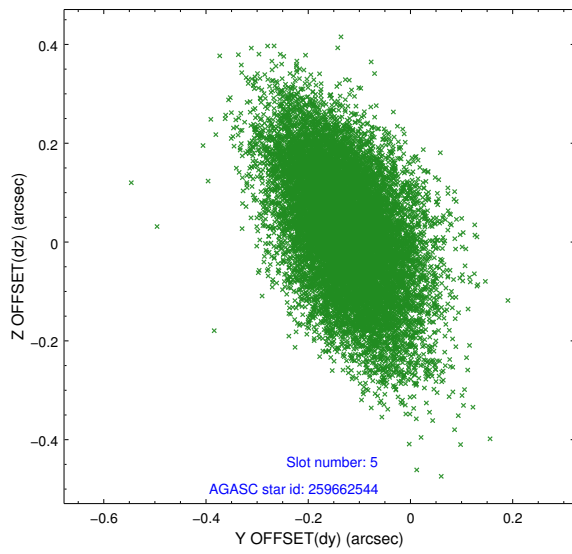
### 2.4.1 Slot 3



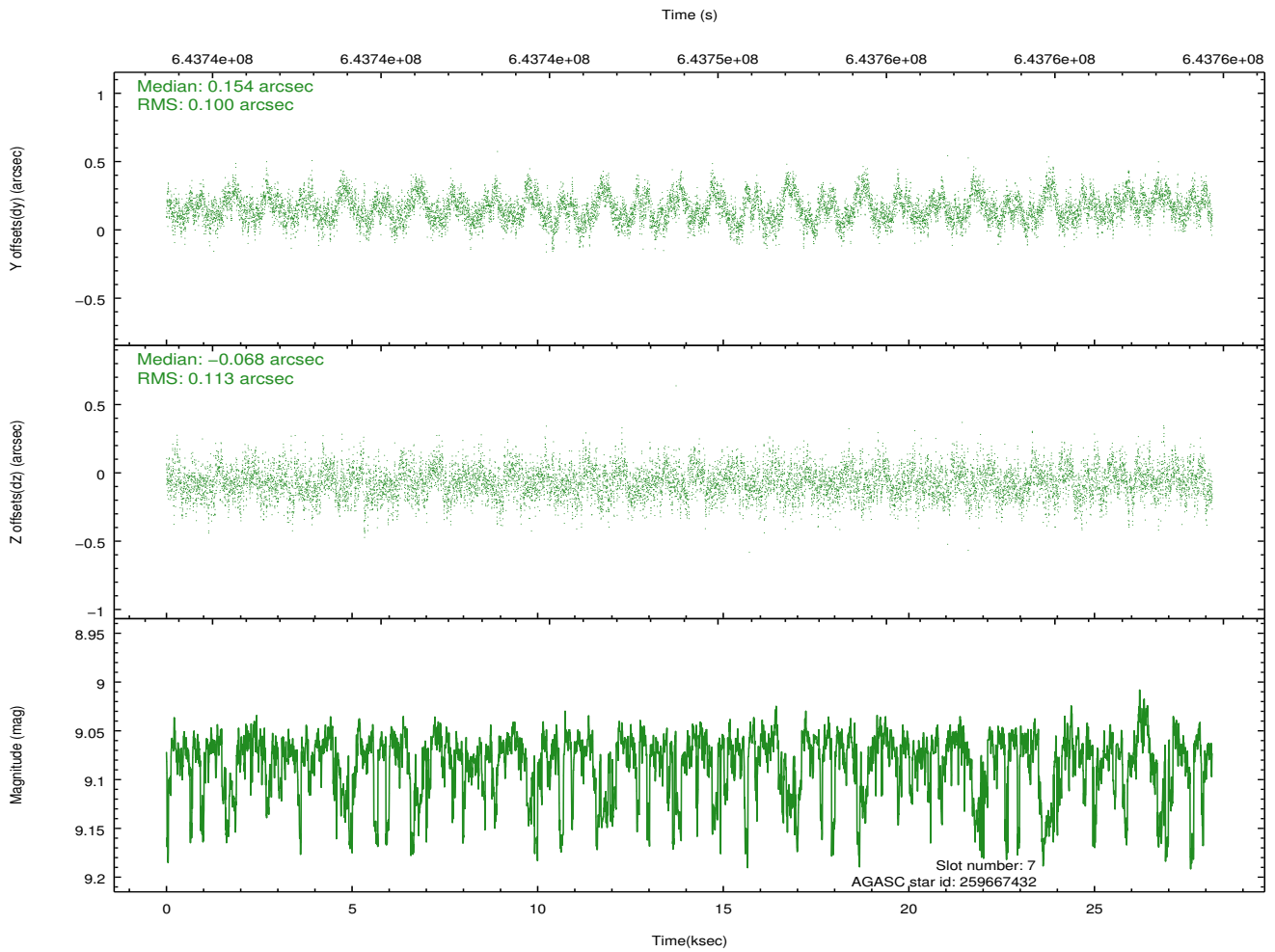
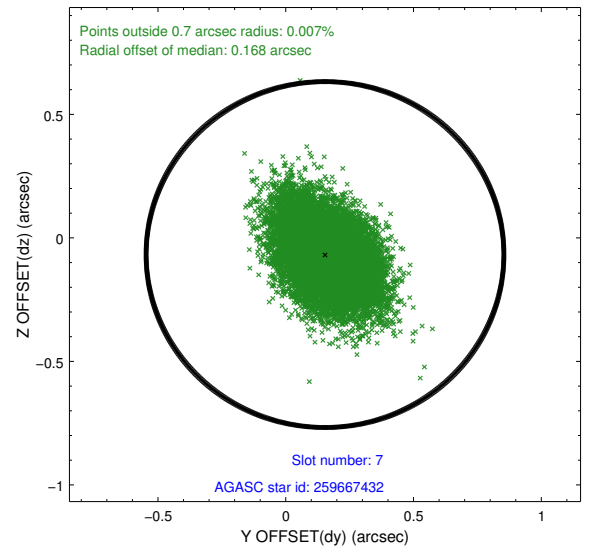
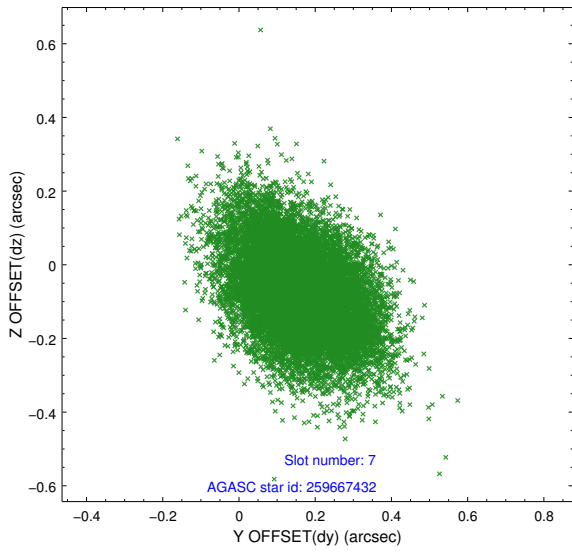
## 2.4.2 Slot 4



### 2.4.3 Slot 5

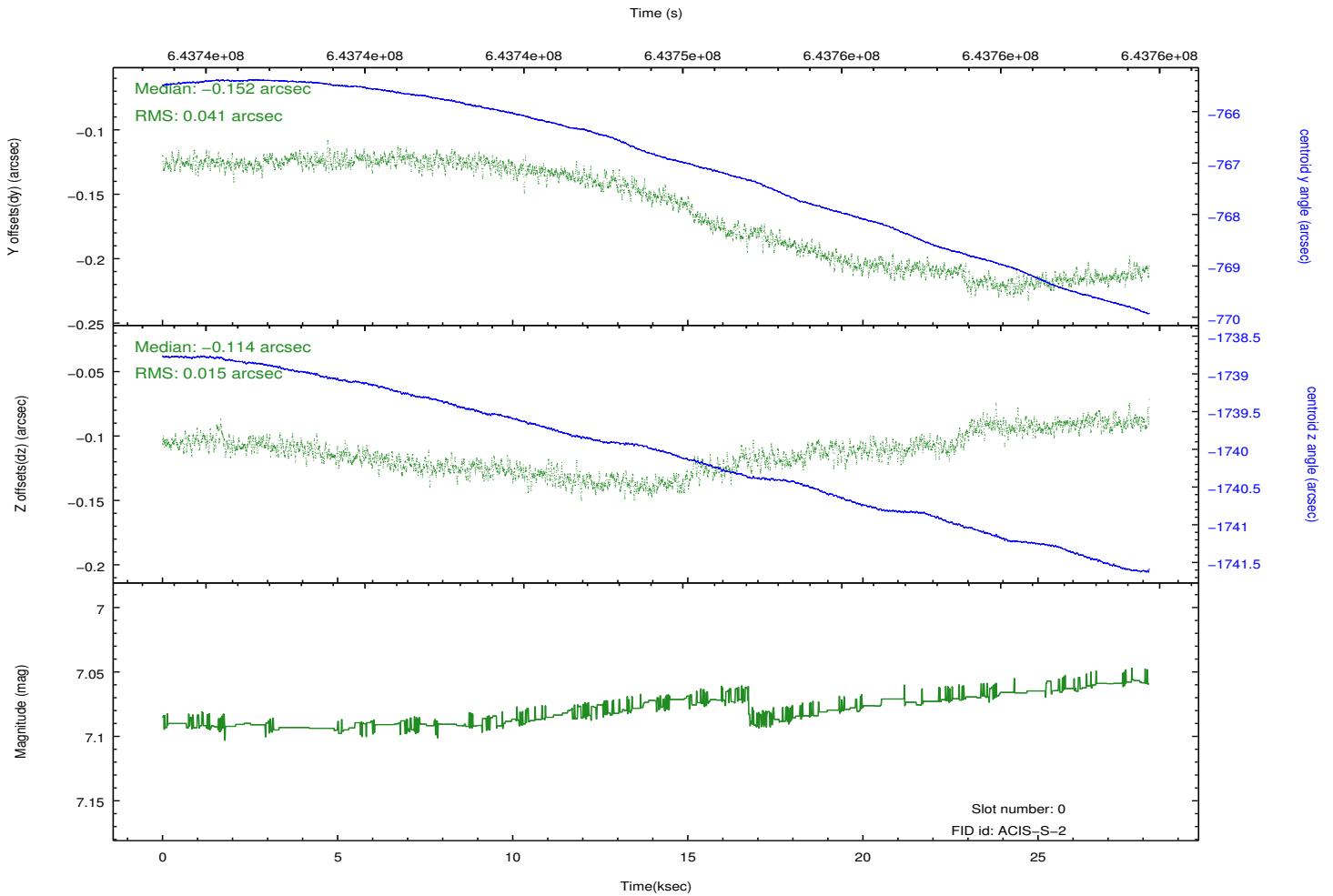
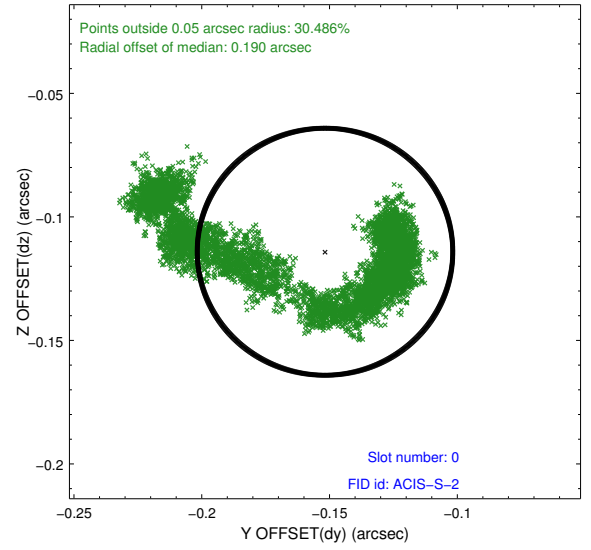
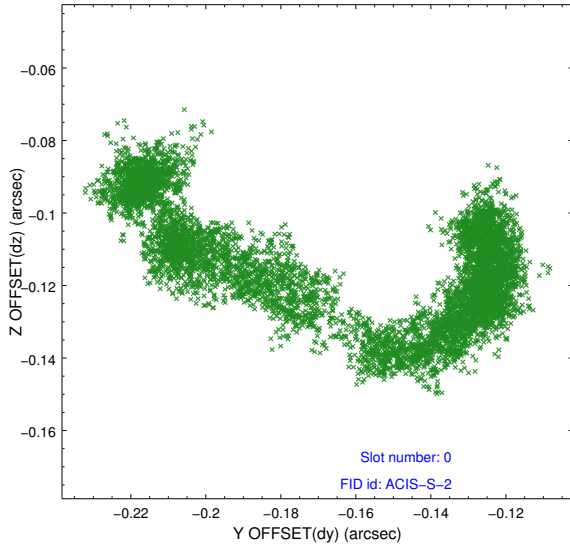


### 2.4.4 Slot 7

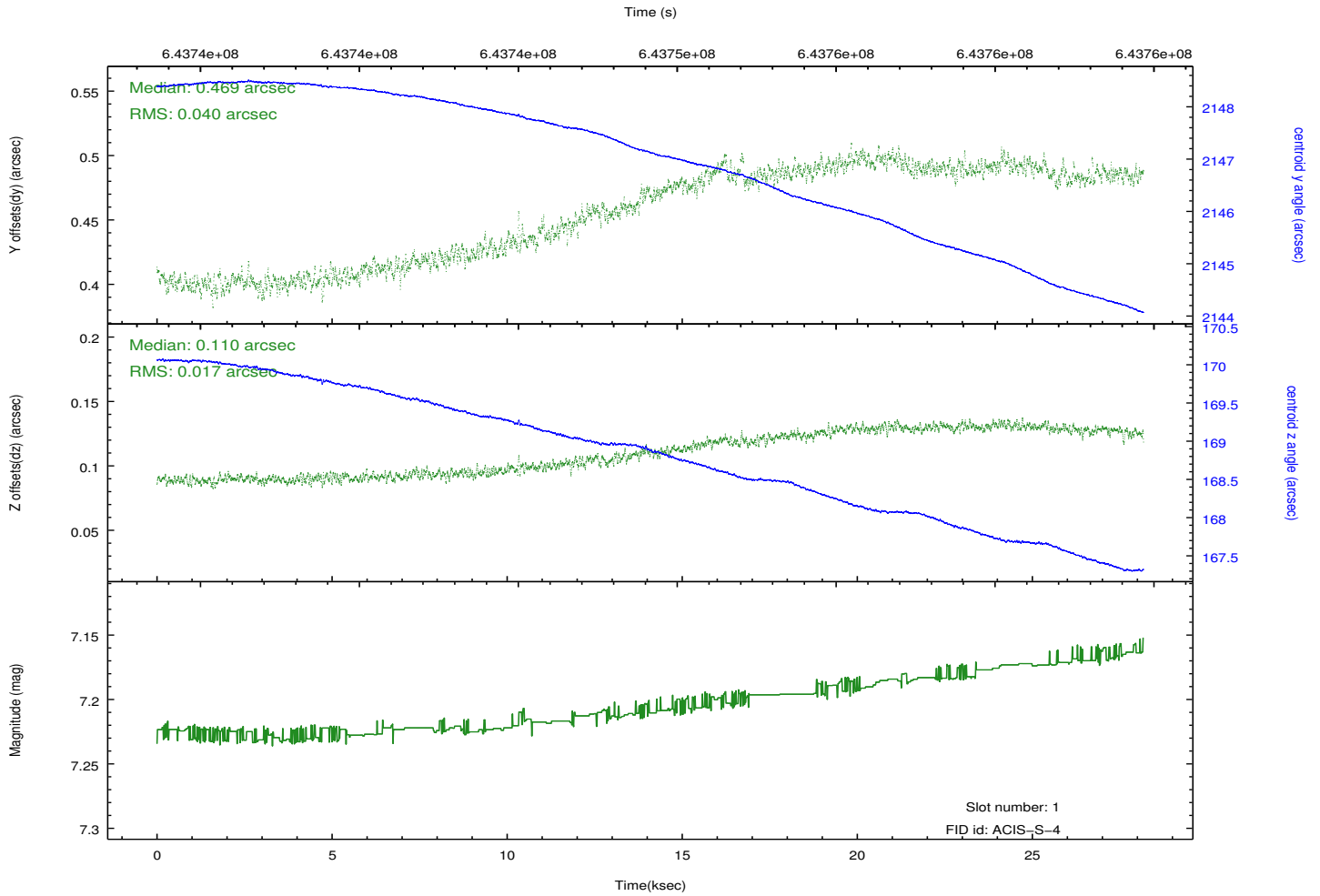
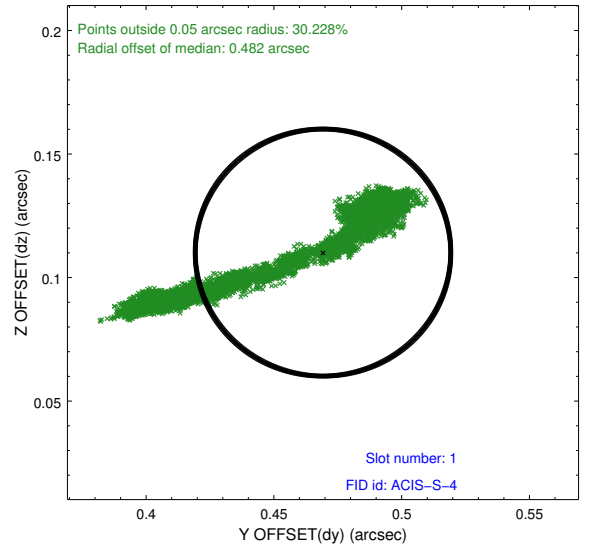
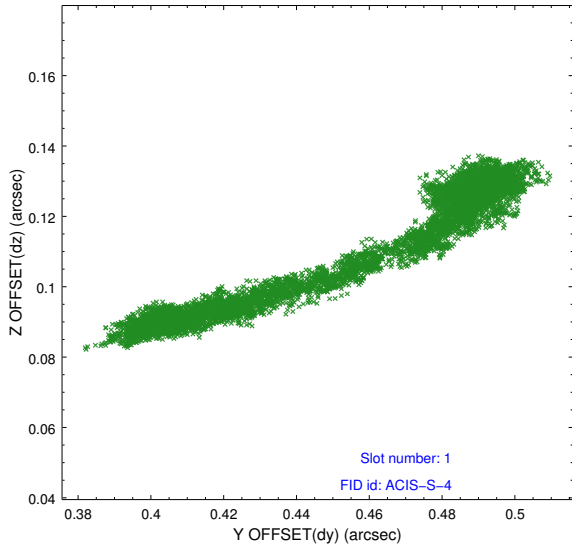


## 2.5 FID Slots

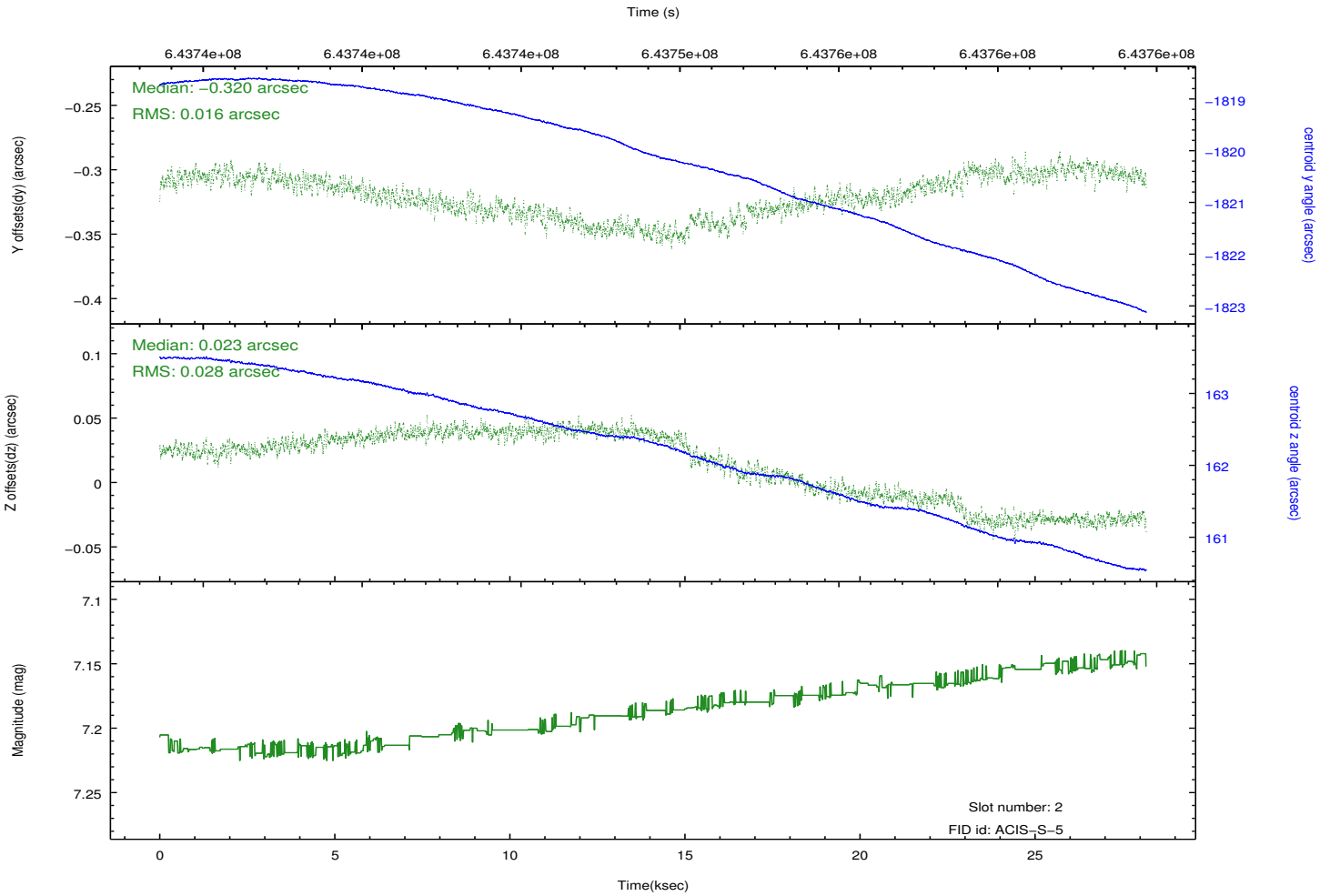
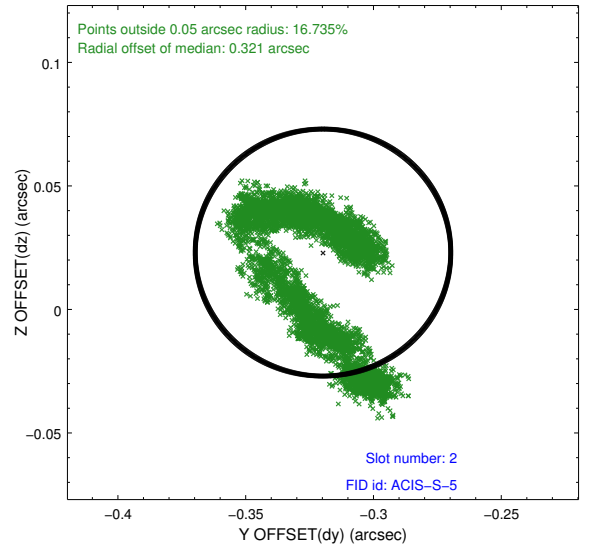
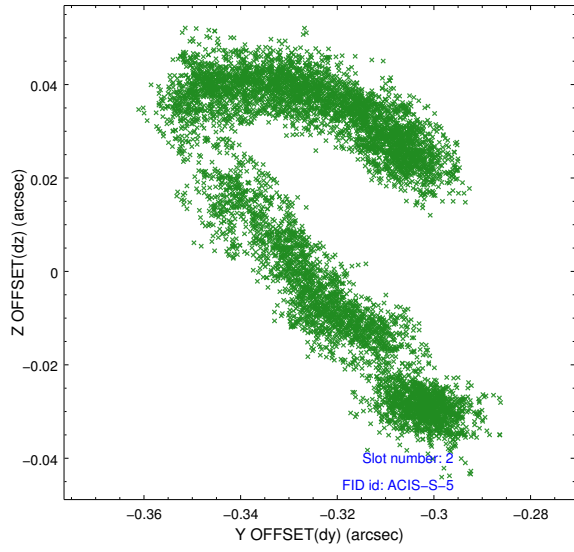
### 2.5.1 Slot 0



## 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)	2018.05.31
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	27.947885462165

## A.2 Comments

The guide star in slot 6 was removed from the aspect solution due to poor data quality. The aspect solution is improved by the removal of this slot from the solution.

==

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. The bias map for CCD = 3 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:

(169.99811,25.13934), (169.99392,25.14121), (169.97459,25.10545),  
(169.97911,25.10419).