

# V&V Reference Report

## L2 ASCDS Version : 10.2.2

Observation 15642 - L2 Version 3  
Chandra X-Ray Center

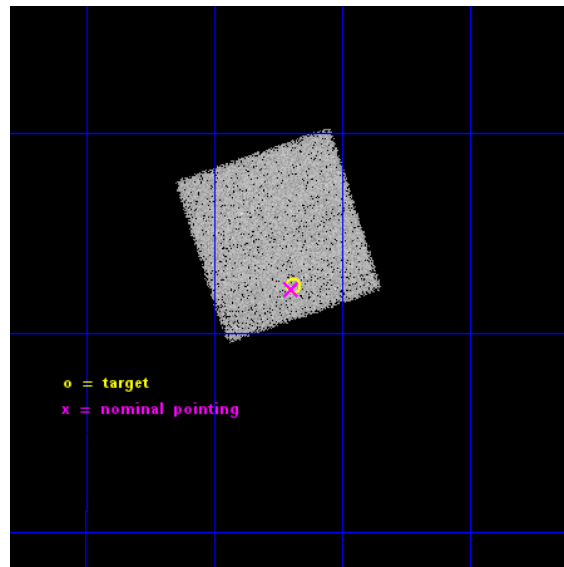
L2 Processing Date : Dec 11 2014

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# 1 Front

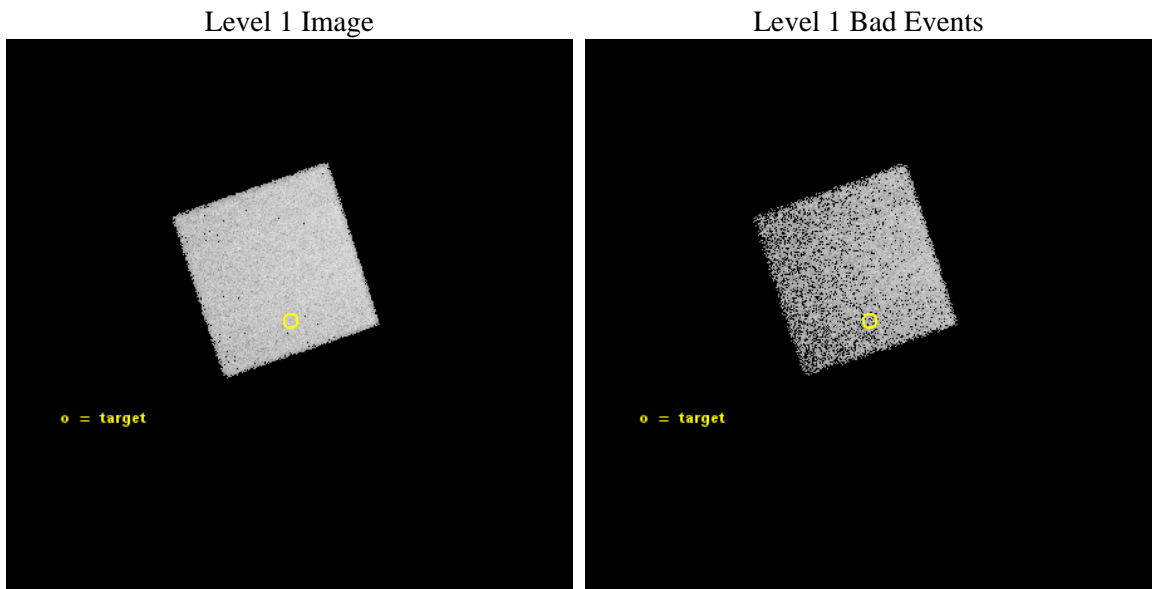
seq_num	200912	Sequence number
obs_id	15642	Observation id
title	Properties and dynamics of the upper atmosphere of the hot-Neptune GJ 436b	Proposal title
observer	Dr David Ehrenreich	Principal investigator
object	GJ 436	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	175.5475	Observer's specified target RA [deg]
dec_targ	26.705528	Observer's specified target Dec [deg]
ra_nom	175.54962158686	Nominal RA [deg]
dec_nom	26.703179362242	Nominal Dec [deg]
roll_nom	251.43779983806	Nominal Roll [deg]
revision	3	Processing version of data
ontime	19023.0	Sum of GTIs [s]
livetime	18766.277326178	Livetime [s]
ontime7	19023.0	Sum of GTIs [s]
l2events	50079	Number of level 2 events



## 2 OBI

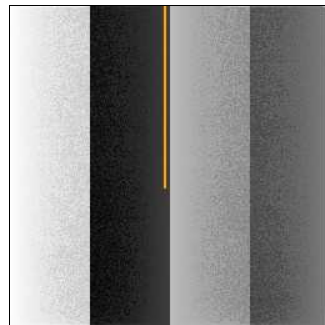
### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias

Chip 7



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	19000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	19023.0	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime7	19023.0	Sum of GTIs [s]
date	2014-12-12T04:25:21	Date and time of file creation	l1events	118540	Number of level 1 events
revision	3	Processing version of data			

### 2.1.4 Events

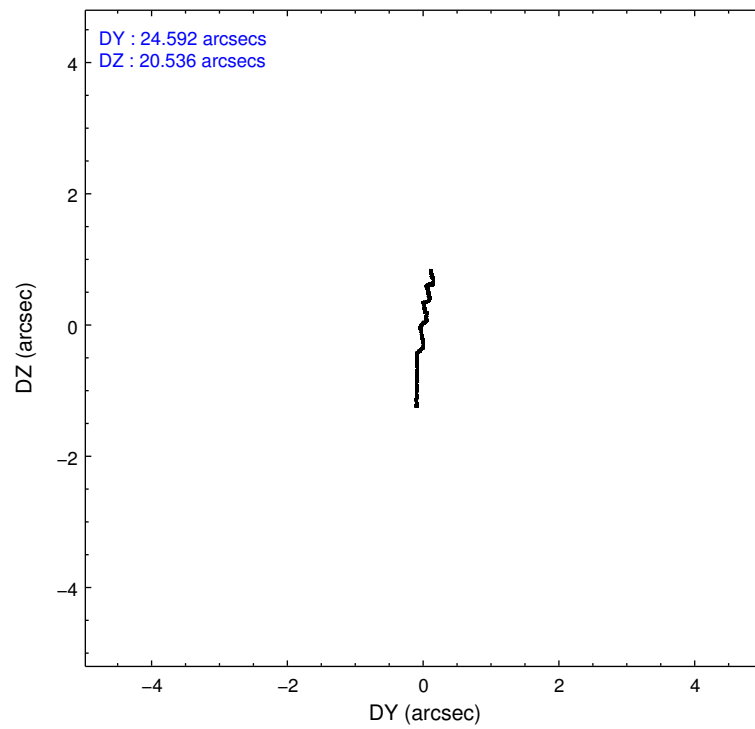
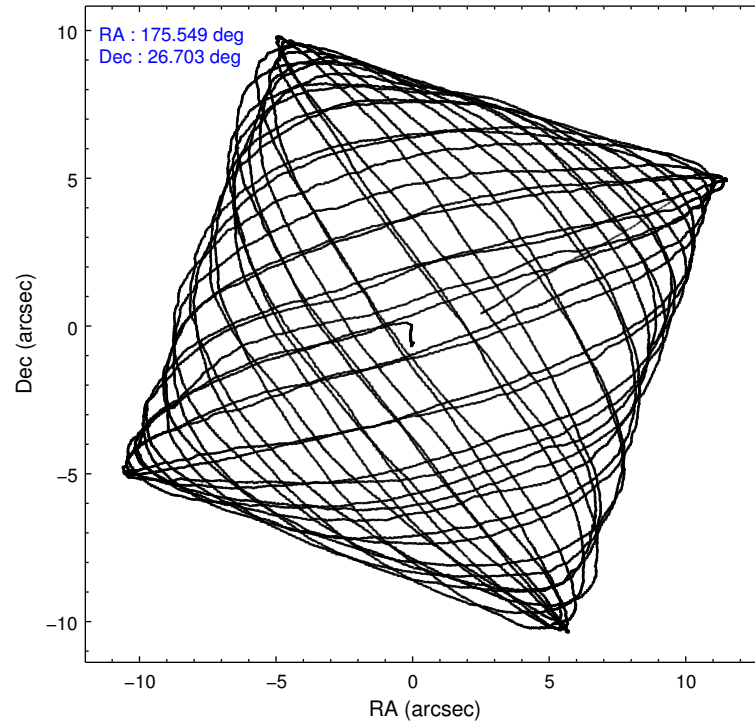
	<b>ccd 7</b>
level 1 events	118540
rejected events	67255
rejected %	<b>56%</b>

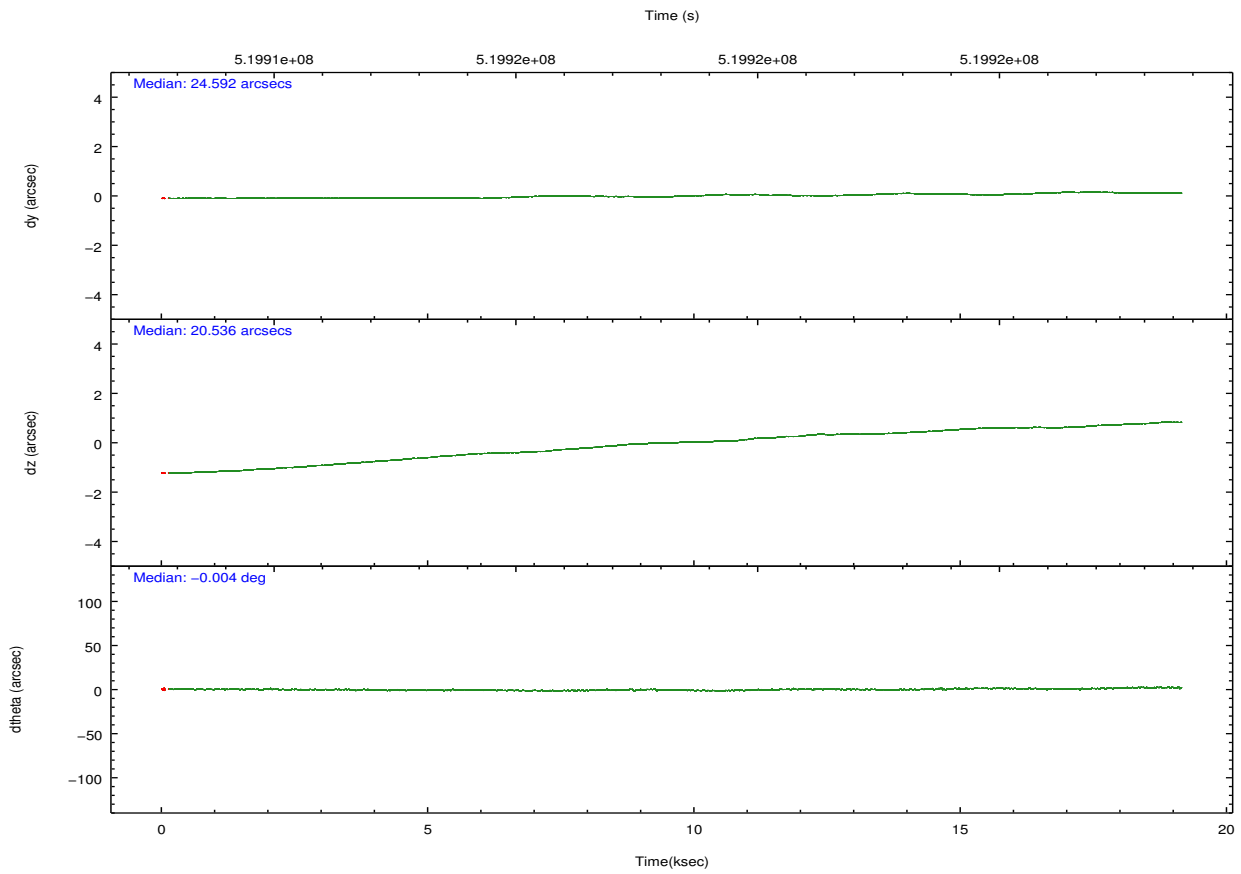
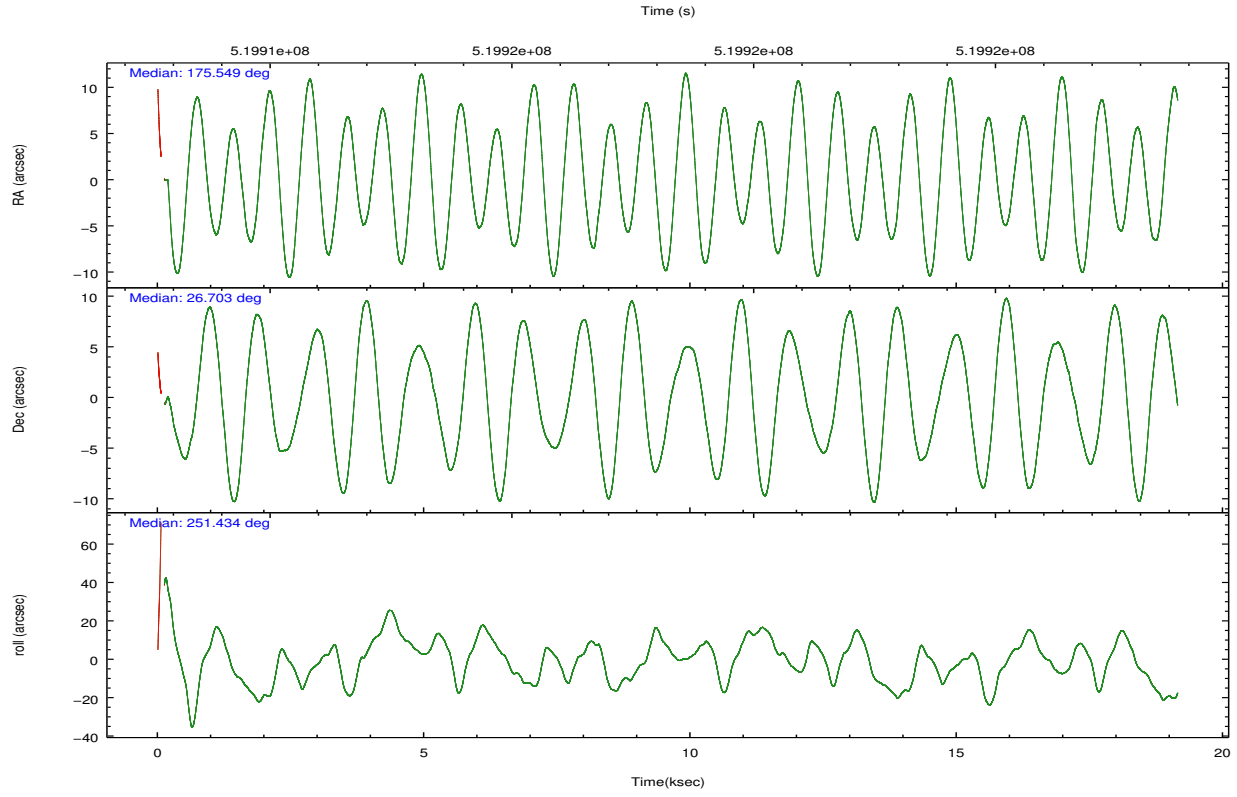
	<b>ccd 7</b>
grade 0 events	4654
	3%
grade 1 events	133
	0%
grade 2 events	10669
	9%
grade 3 events	4454
	3%
grade 4 events	4328
	3%
grade 5 events	12253
	10%
grade 6 events	28053
	23%
grade 7 events	53996
	45%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-7	ACIS-7	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	175.543147	175.5496215868577	Subarray requested	NONE	NONE
[deg] Pointing Dec	26.729898	26.70317936224195	Alternating exposures requested	N	N
[deg] Pointing Roll	251.284091	251.4377998380627	[s] Primary exposure time	0.000000	3
[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			
Phase constraints	Y	Y			
[d] Phase period	2.643898	2.643898			
[d] Phase epoch (MJD)	54864.583210	54864.583210			
Phase start	0.900000	0.900000			
Phase end	0.990000	0.990000			
Phase start error	0.030000	0.030000			
Phase end error	0.030000	0.030000			
[s] Observation start time (MET)	519908800.184000	519907419.48264			
Observation start date	2014-06-23T11:05:33	2014-06-23T10:43:39			
[s] Observation end time (MET)	519927800.184000	519928373.5588			
Observation end date	2014-06-23T16:22:13	2014-06-23T16:32:53			
Read mode	TIMED	TIMED			

## 2.3 Aspect



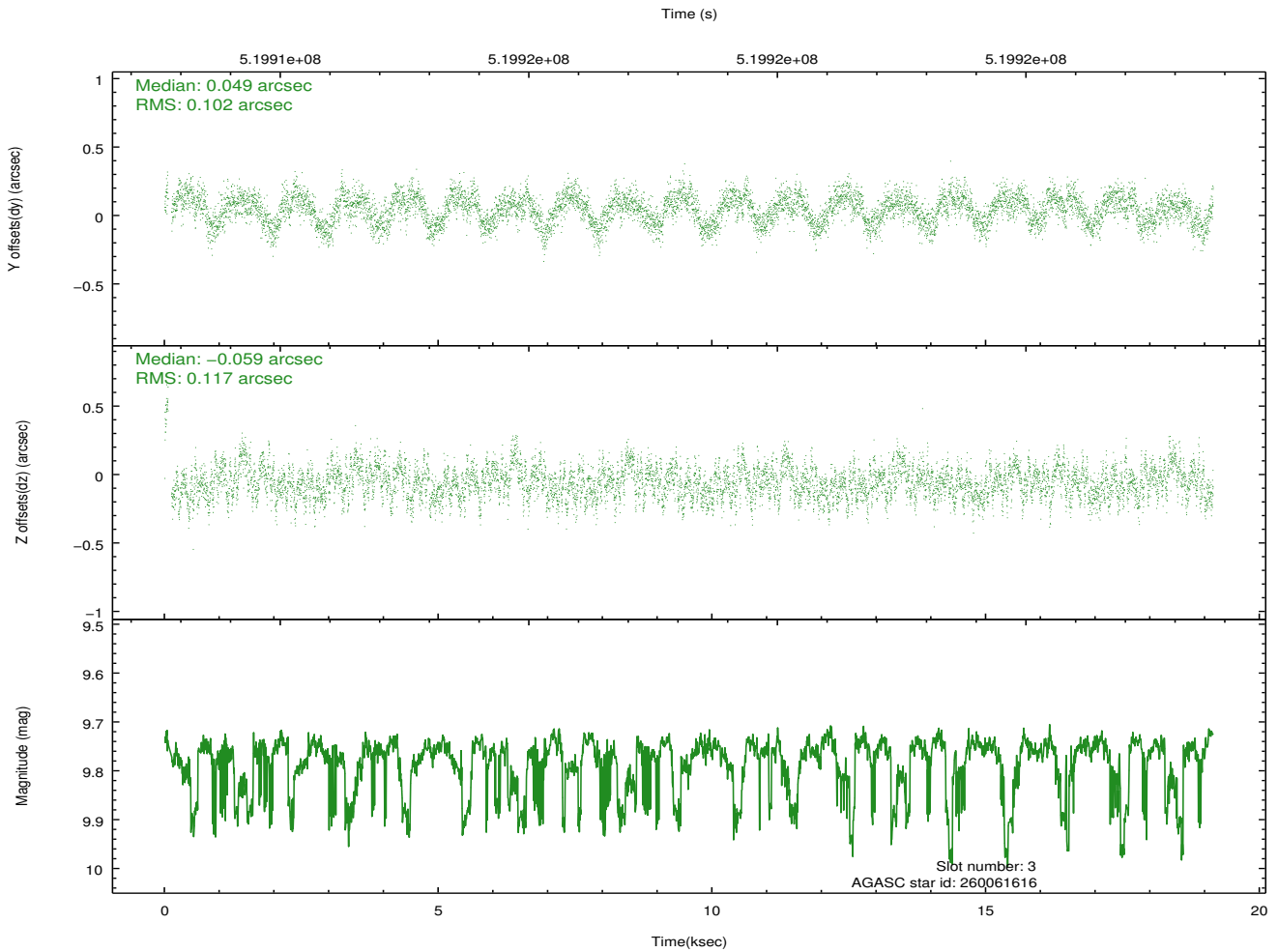
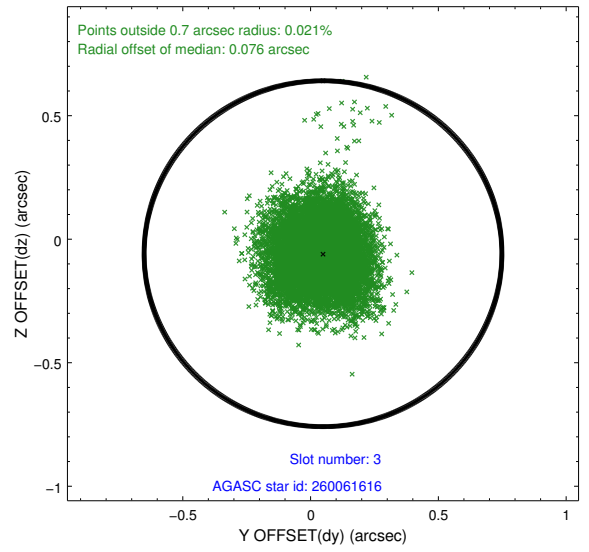
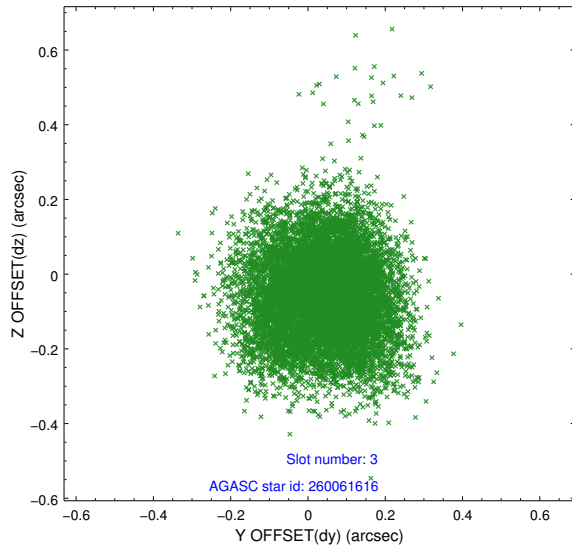


### Slot Statistics

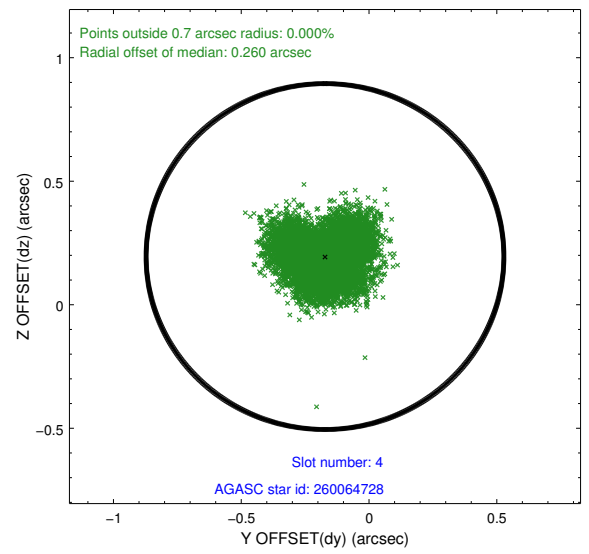
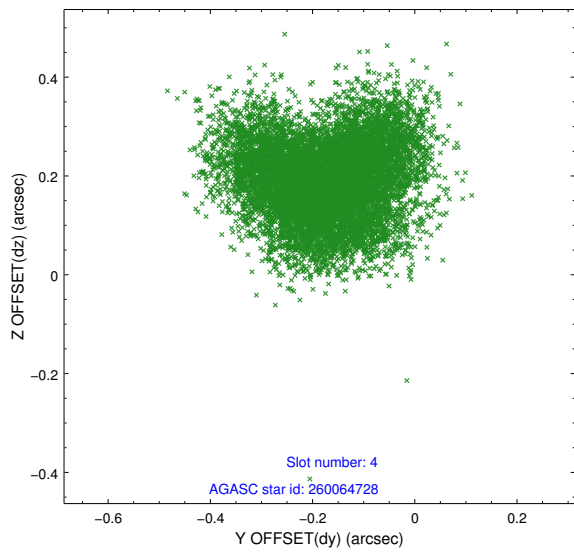
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.02	4655	-0.190	-0.015	0.014	0.023	0.000000	0.000000	-778.01	-1741.93
1	FID		ACIS-S-4	7.11	4656	0.366	0.095	0.010	0.018	0.000000	0.000000	2135.72	166.45
2	FID		ACIS-S-5	7.13	4655	-0.208	-0.071	0.011	0.018	0.000000	0.000000	-1830.61	160.19
3	GUIDE	used	260061616	9.77	9305	0.049	-0.059	0.166	0.260	175.767684	26.863293	-686.21	529.20
4	GUIDE	used	260064728	9.03	9307	-0.172	0.195	0.133	0.207	175.679144	27.248869	-1907.33	-188.61
5	GUIDE	used	260064920	9.84	9043	0.138	-0.138	0.167	0.269	175.209684	27.211295	-1298.42	-1567.09
6	OMITTED			0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00

## 2.4 Star Slots

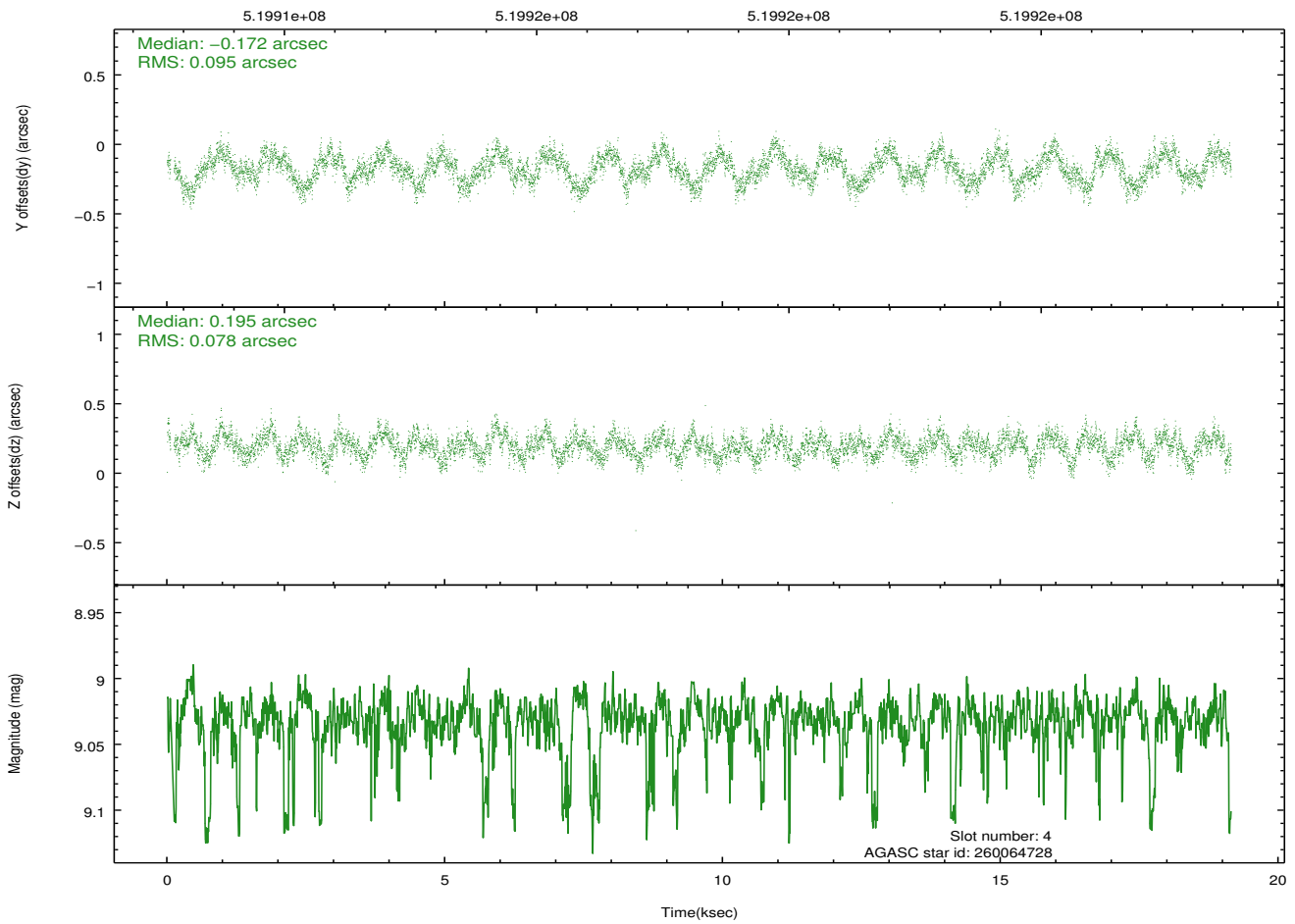
### 2.4.1 Slot 3



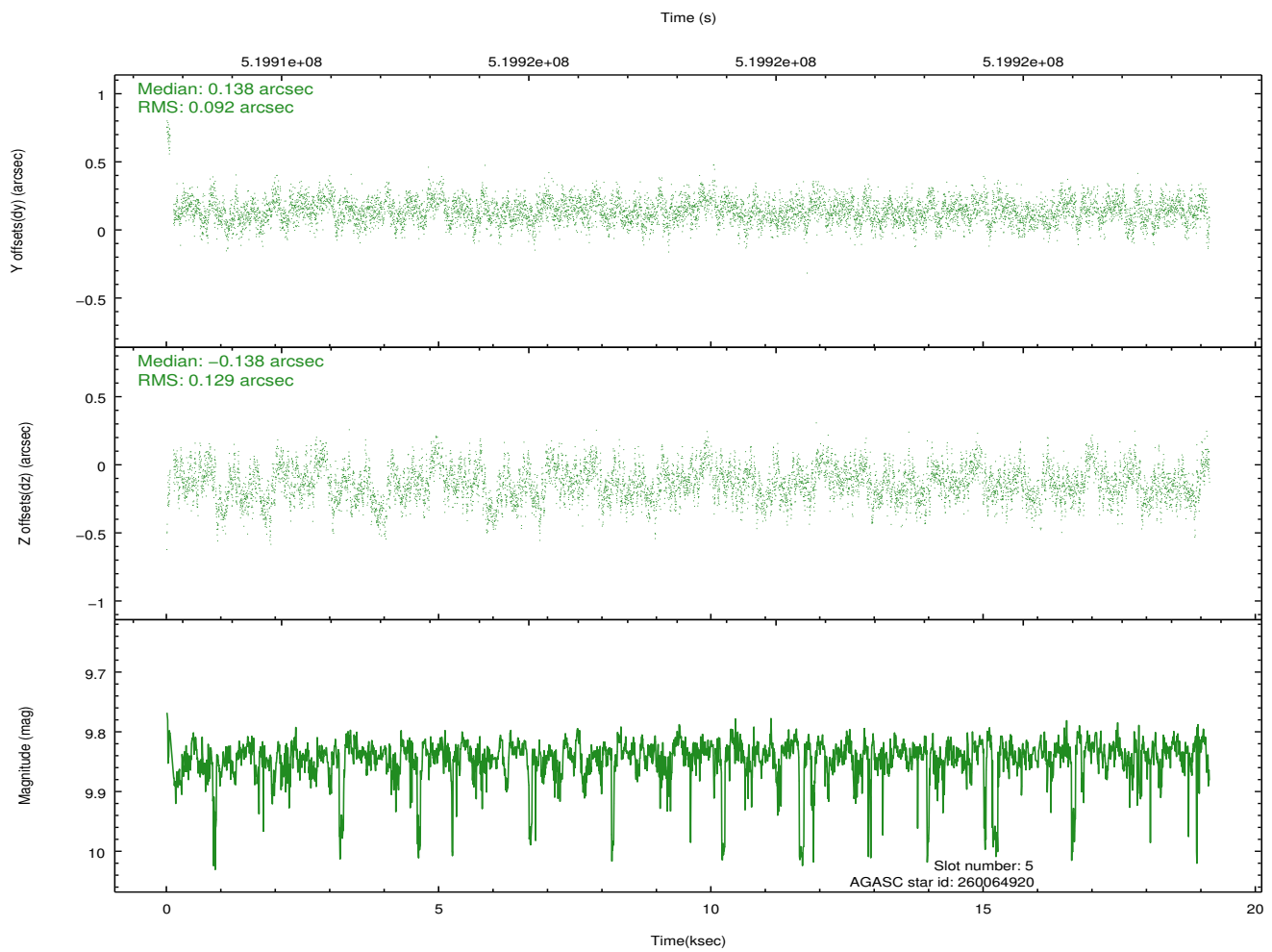
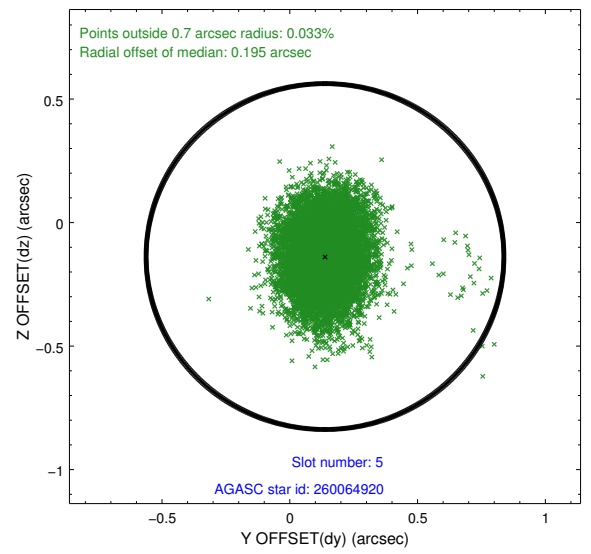
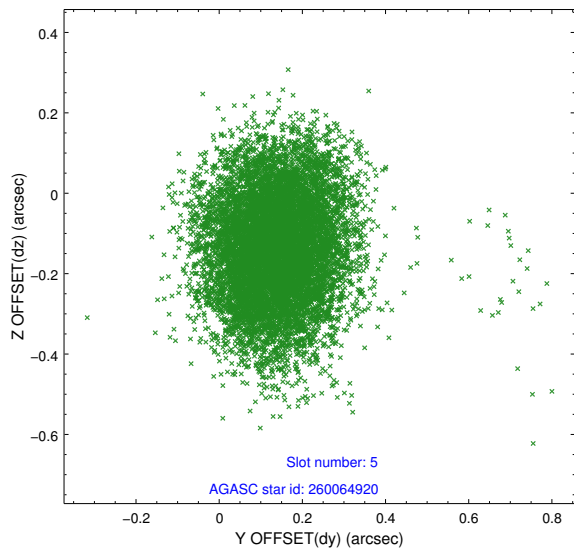
## 2.4.2 Slot 4



Time (s)

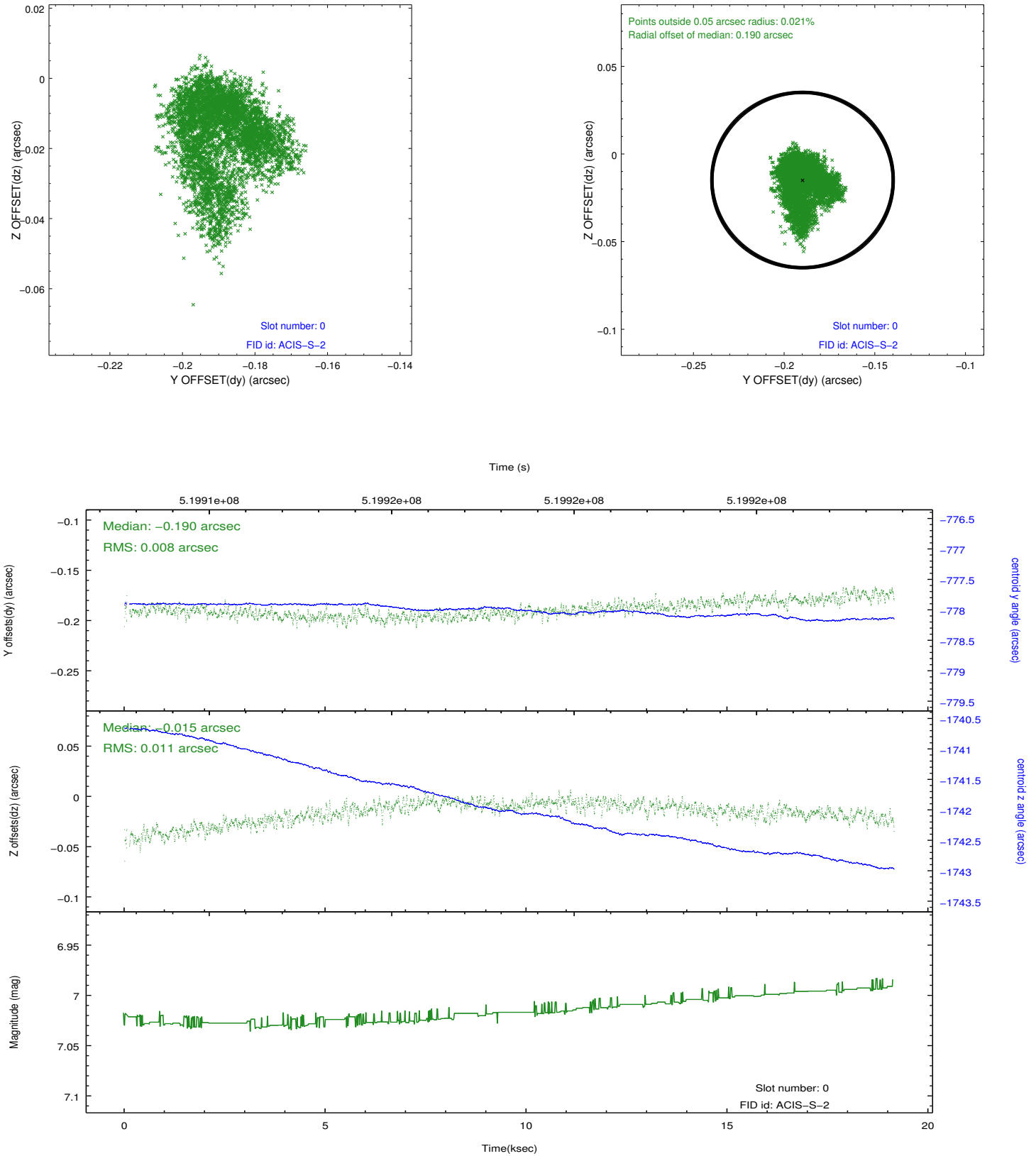


### 2.4.3 Slot 5

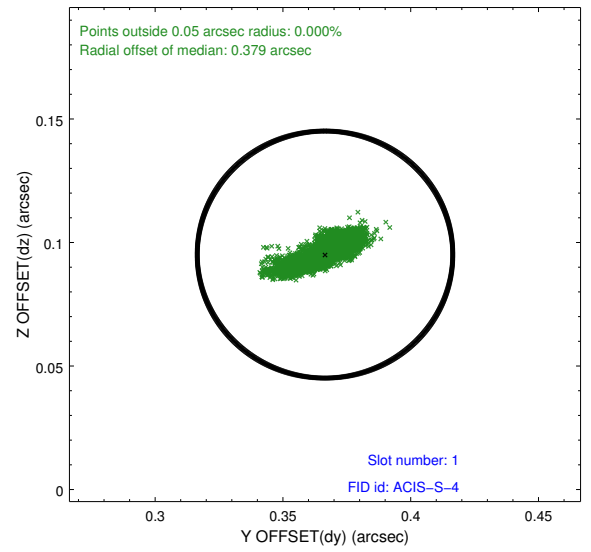
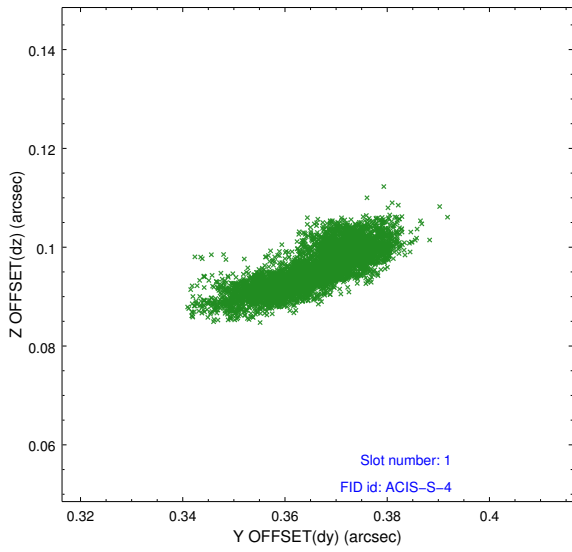


## 2.5 FID Slots

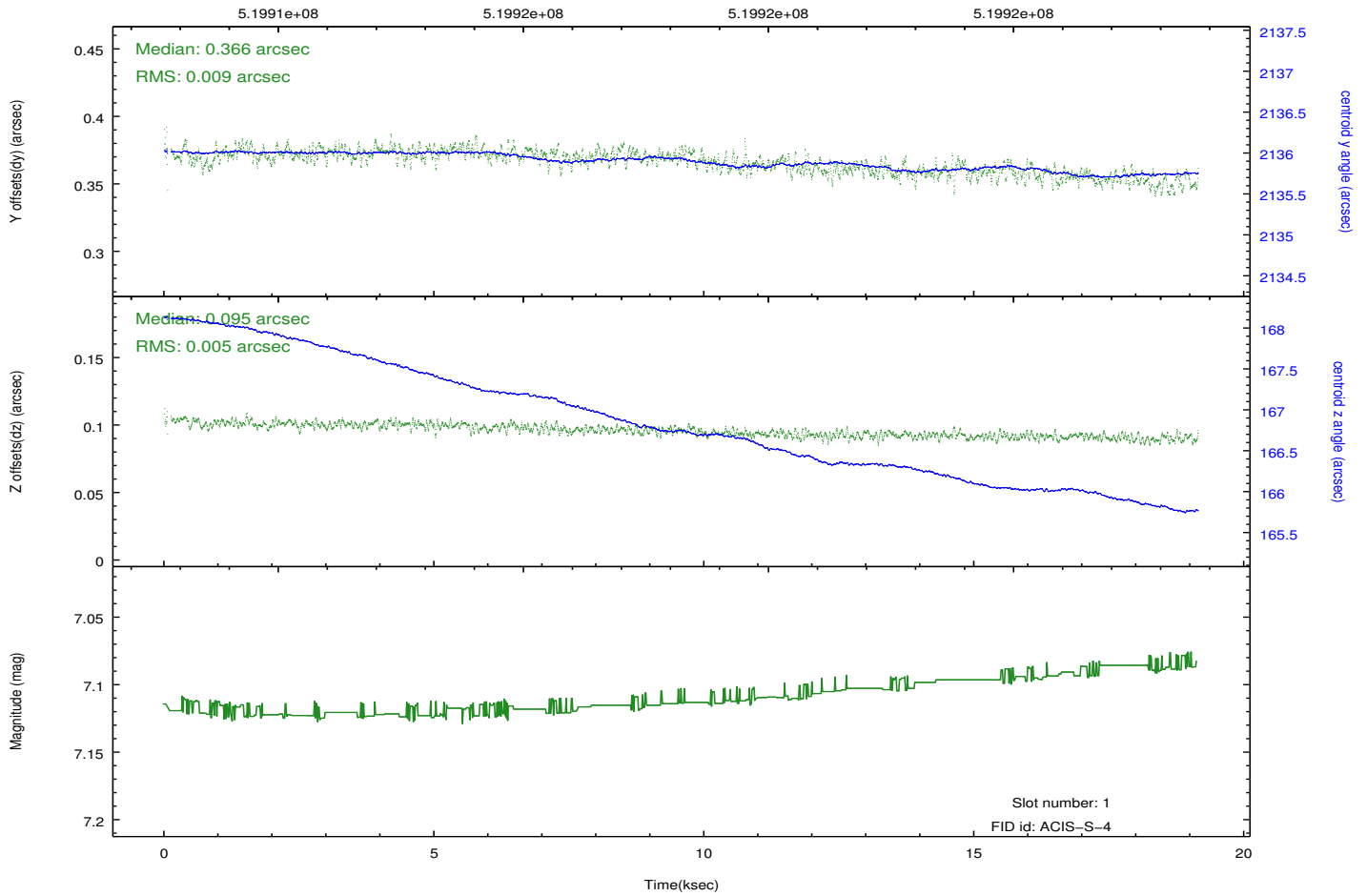
### 2.5.1 Slot 0



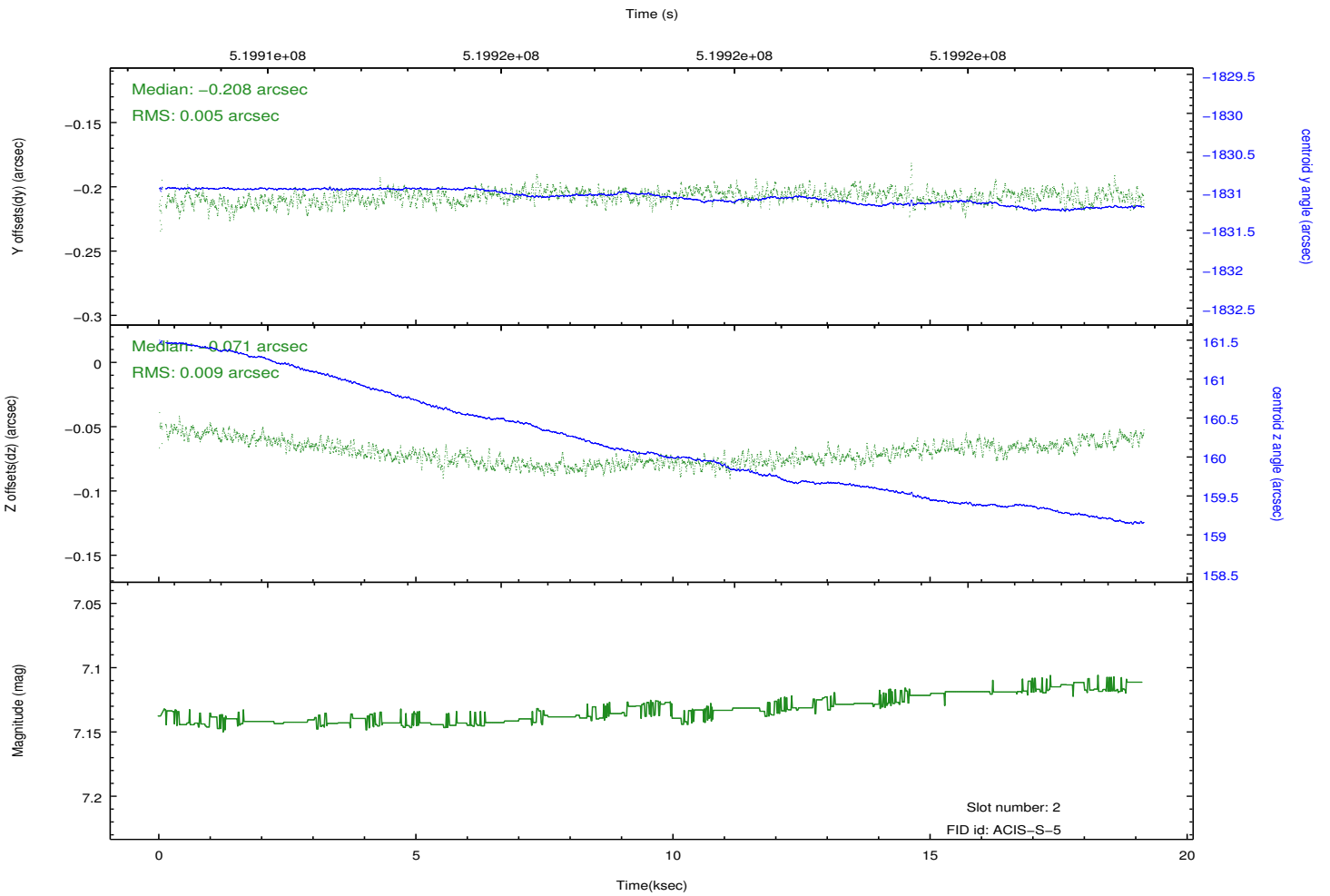
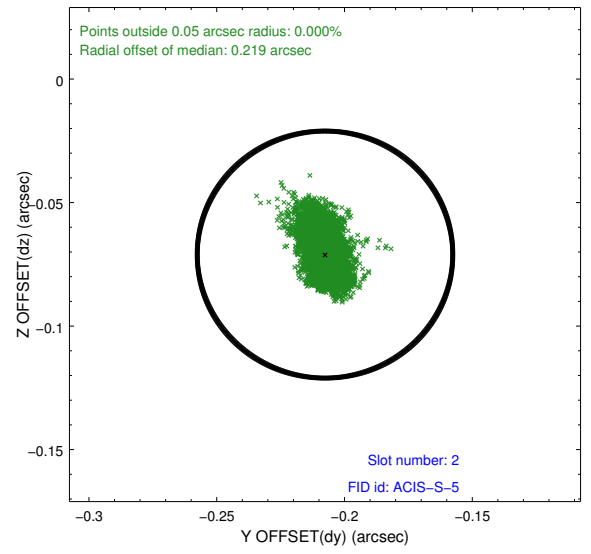
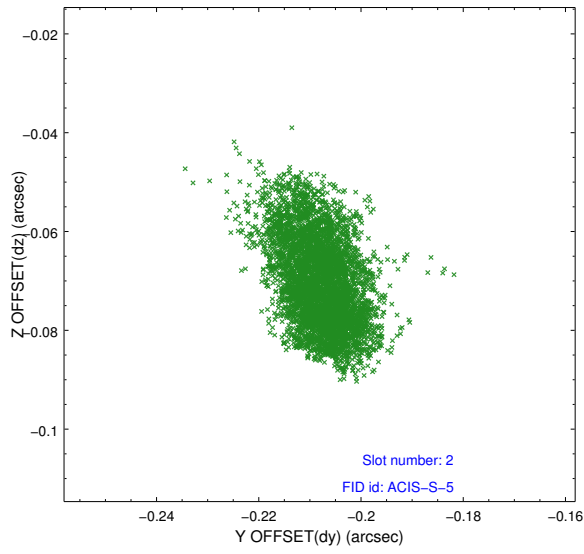
## 2.5.2 Slot 1



Time (s)



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2014.12.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.023

## A.2 Comments

Joint Proposal: CX0-HST

=====

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 guide star from the solution.

=====

These data have been reprocessed with new aspect alignment calibration files that correct small mean offsets (up to 0.4 arcsecs) and improve overall astrometric accuracy. The new calibration was determined using data from the time period being reprocessed and was performed using cross-correlation of X-ray sources with radio and optical counterparts.