

# V&V Reference Report

## L2 ASCDS Version : 10.5.1.1

Observation 19512 - L2 Version 1  
Chandra X-Ray Center

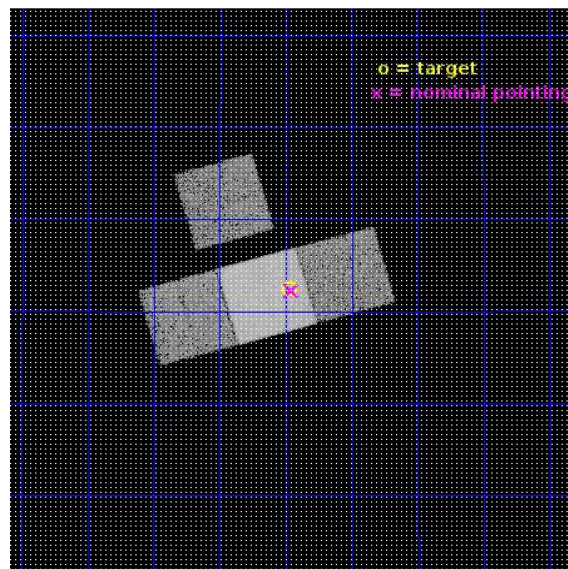
L2 Processing Date : Sep 14 2016

## Contents

<b>1</b>	<b>Front</b>	<b>2</b>
<b>2</b>	<b>OBI</b>	<b>3</b>
2.1	OBI . . . . .	3
2.1.1	Images . . . . .	3
2.1.2	Bias . . . . .	3
2.1.3	Parameters . . . . .	4
2.1.4	Events . . . . .	4
2.2	Compared Parameters . . . . .	5
2.3	Aspect . . . . .	6
2.4	Star Slots . . . . .	9
2.4.1	Slot 3 . . . . .	9
2.4.2	Slot 4 . . . . .	10
2.4.3	Slot 5 . . . . .	11
2.4.4	Slot 6 . . . . .	12
2.4.5	Slot 7 . . . . .	13
2.5	FID Slots . . . . .	14
2.5.1	Slot 0 . . . . .	14
2.5.2	Slot 1 . . . . .	15
2.5.3	Slot 2 . . . . .	16
<b>A</b>	<b>Summary</b>	<b>17</b>
A.1	Status . . . . .	17
A.2	Comments . . . . .	17

# 1 Front

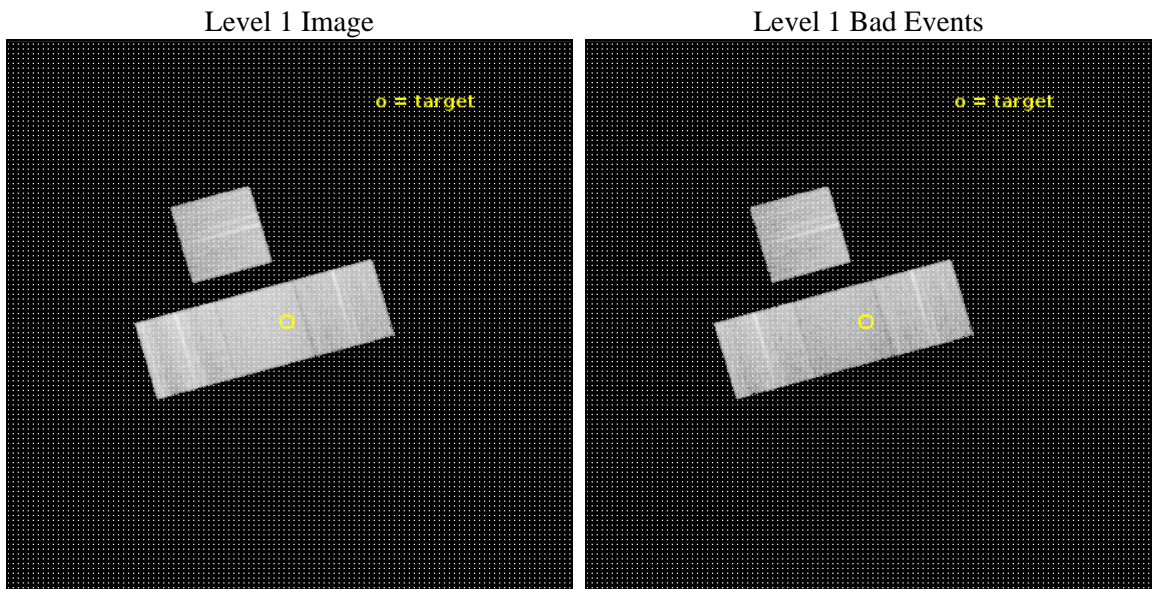
seq_num	703360	Sequence number
obs_id	19512	Observation id
title	Extreme rotation measures and high-redshift clusters	Proposal titl
observer	Mark Birkinshaw	Principal investigator
object	4C +22.65	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	359.36875	Observer's specified target RA [deg]
dec_targ	23.040583	Observer's specified target Dec [deg]
ra_nom	359.36426514063	Nominal RA [deg]
dec_nom	23.037633908115	Nominal Dec [deg]
roll_nom	164.2072159133	Nominal Roll [deg]
revision	1	Processing version of data
ontime	20069.400154471	Sum of GTIs [s]
livetime	19807.178666576	Livetime [s]
ontime3	20069.400154471	Sum of GTIs [s]
ontime6	20069.400154471	Sum of GTIs [s]
ontime7	20069.400154471	Sum of GTIs [s]
ontime8	20063.118094087	Sum of GTIs [s]
l2events	113574	Number of level 2 events



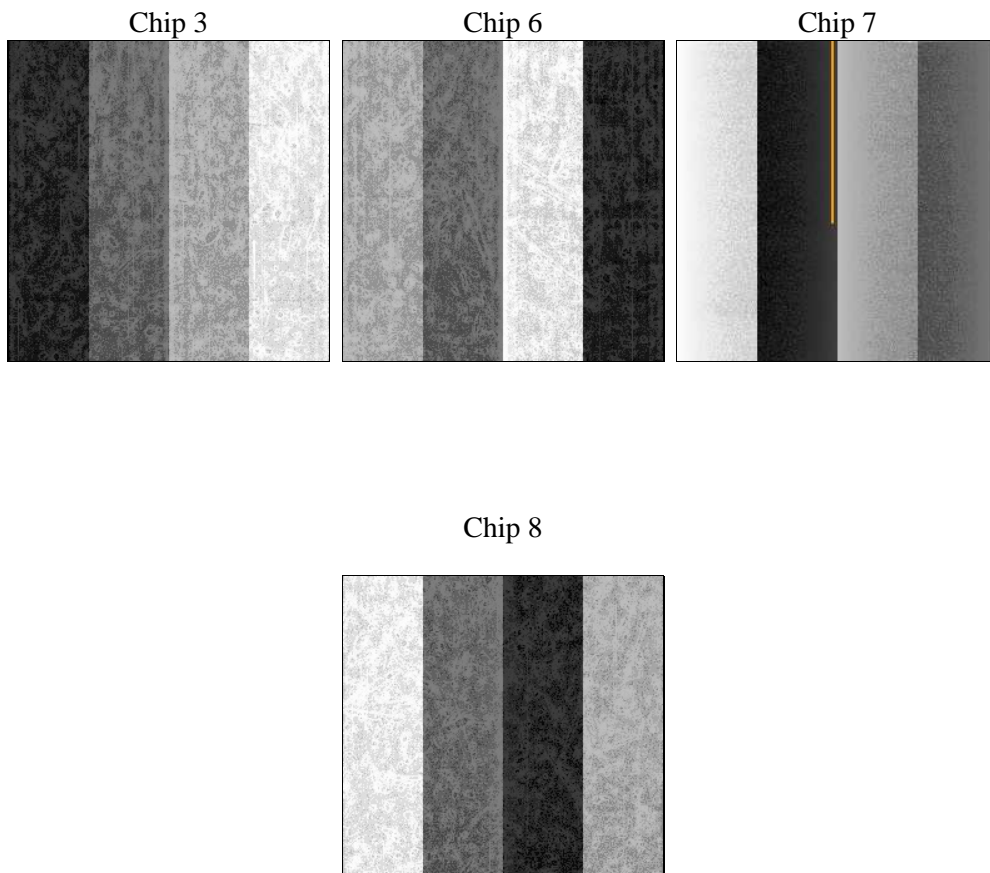
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ascdsver	10.5.1.1	Processing system revision	ontime	20069.400154471	Sum of GTIs [s]
caldsver	4.7.2	&#160	ontime3	20069.400154471	Sum of GTIs [s]
date	2016-09-14T17:58:36	Date and time of file creation	ontime6	20069.400154471	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	20069.400154471	Sum of GTIs [s]
			ontime8	20063.118094087	Sum of GTIs [s]
			l1events	604707	Number of level 1 events

### 2.1.4 Events

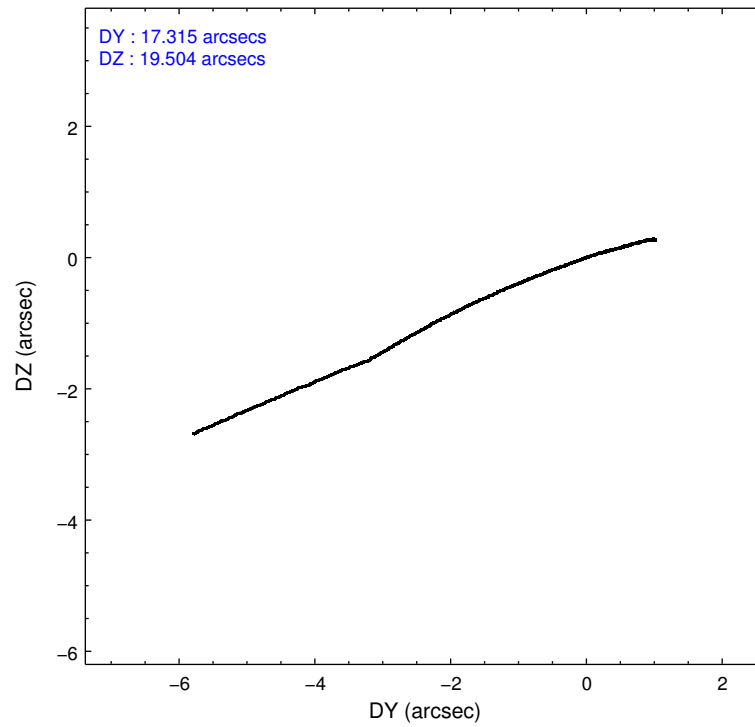
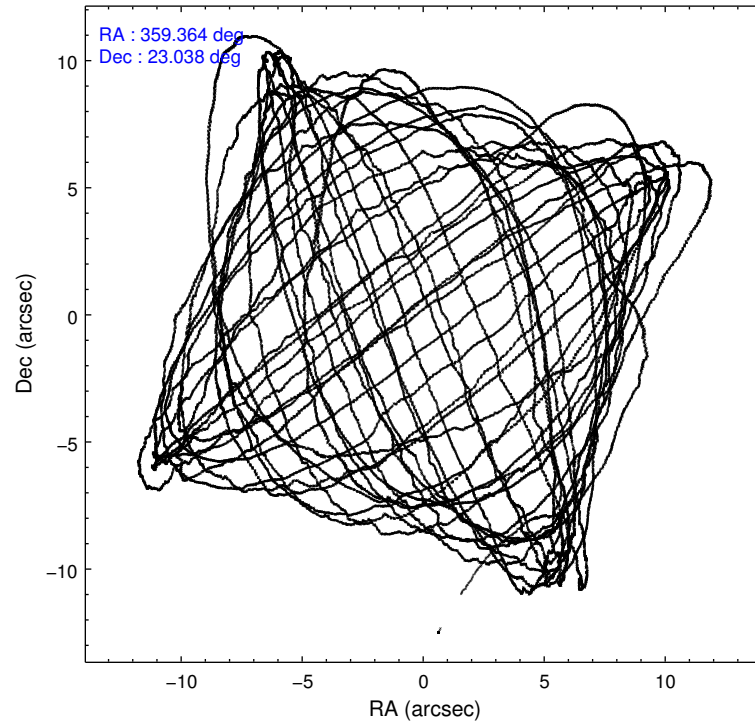
	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	124259	134102	172541	173805
rejected events	110836	118905	97742	127195
rejected %	89%	88%	56%	73%

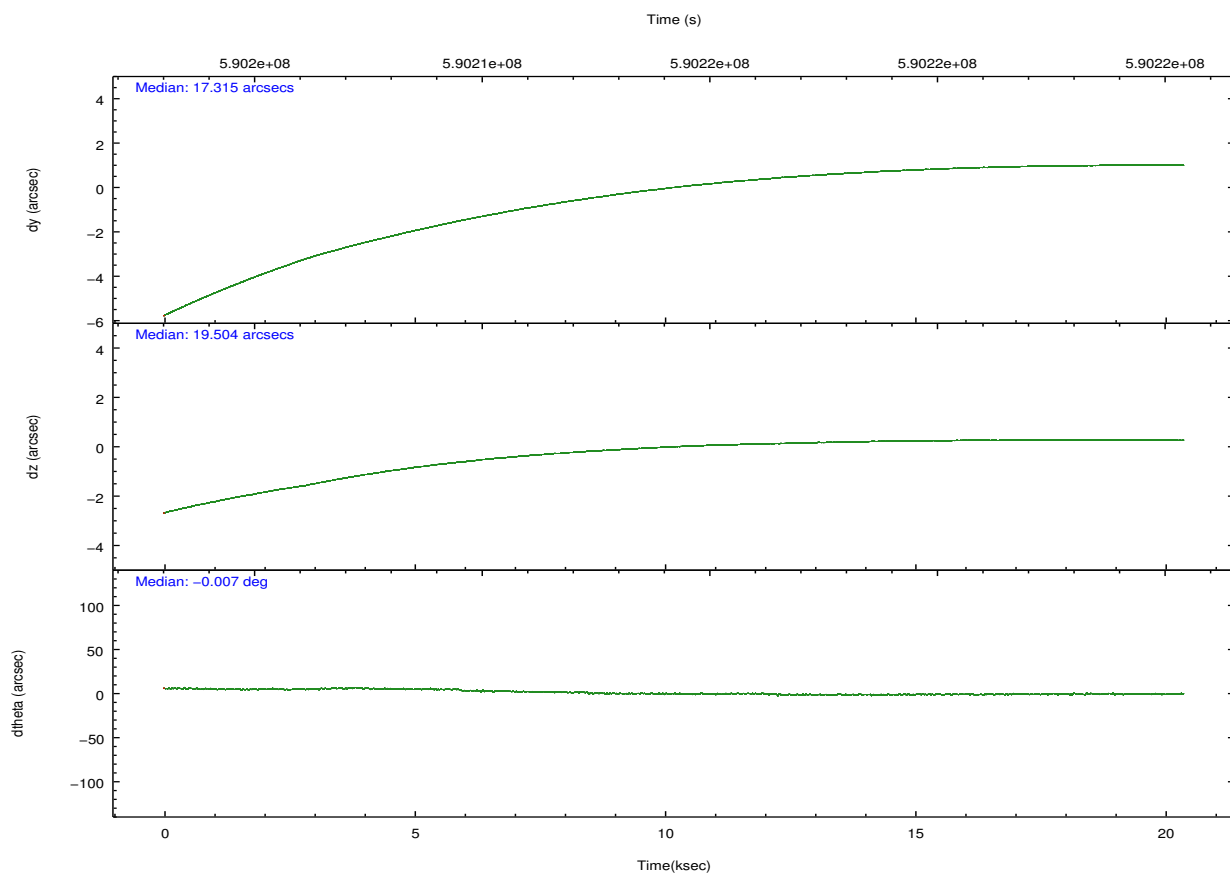
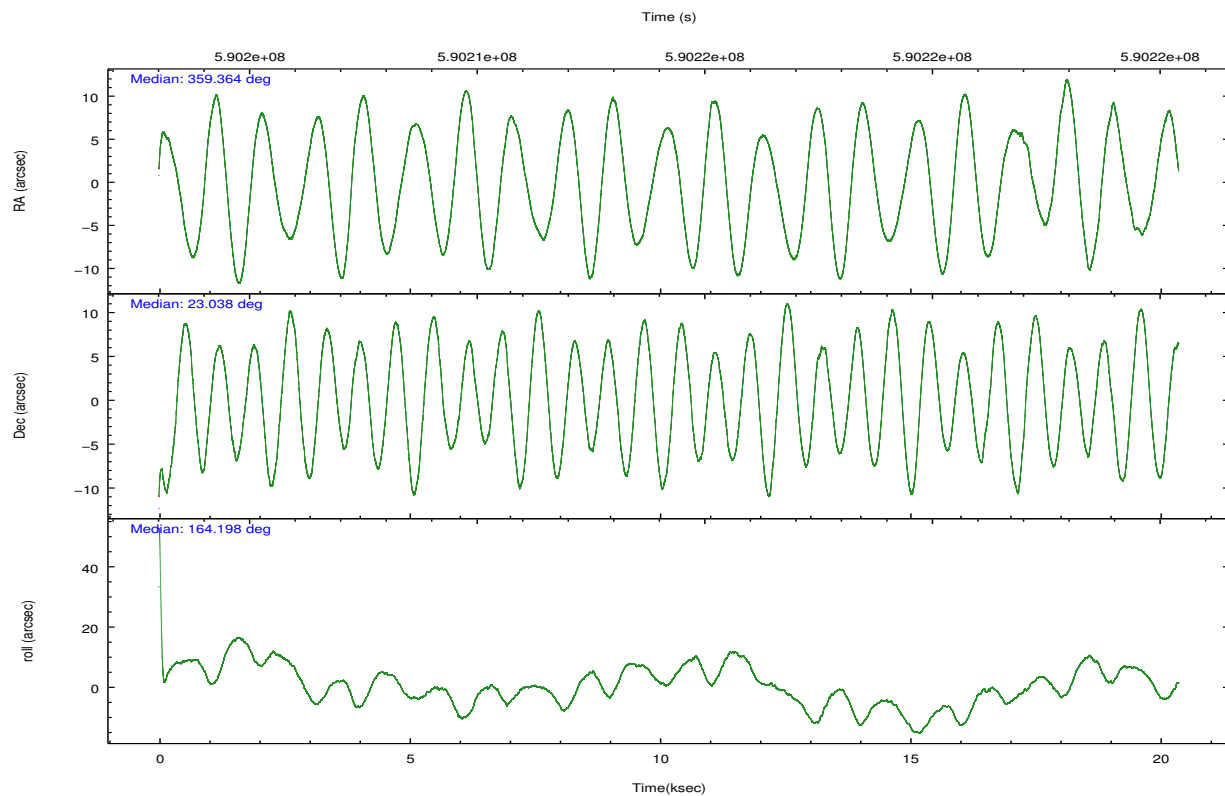
	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	4634	4983	6482	12847
	3%	3%	3%	7%
grade 1 events	77	61	228	140
	0%	0%	0%	0%
grade 2 events	2975	3576	15712	11421
	2%	2%	9%	6%
grade 3 events	1454	1521	5965	4816
	1%	1%	3%	2%
grade 4 events	1511	1567	6125	4571
	1%	1%	3%	2%
grade 5 events	6461	6500	17523	9495
	5%	4%	10%	5%
grade 6 events	2851	3551	40525	12959
	2%	2%	23%	7%
grade 7 events	104296	112343	79981	117556
	83%	83%	46%	67%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-3678	ACIS-3678	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	359.393037	359.3642651406297	CCD I2 on	N	N
[deg] Pointing Dec	23.044734	23.03763390811487	CCD I3 on	O1	Y
[deg] Pointing Roll	164.039289	164.2072159132975	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	N	N
[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	O2	Y
[s] Observation start time (MET)	590204382.184000	590203141.35777	CCD S5 on	N	N
Observation start date	2016-09-14T01:38:34	2016-09-14T01:19:01	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	590224382.184000	590225469.44656	On-chip summing requested	N	N
Observation end date	2016-09-14T07:11:54	2016-09-14T07:31:09	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



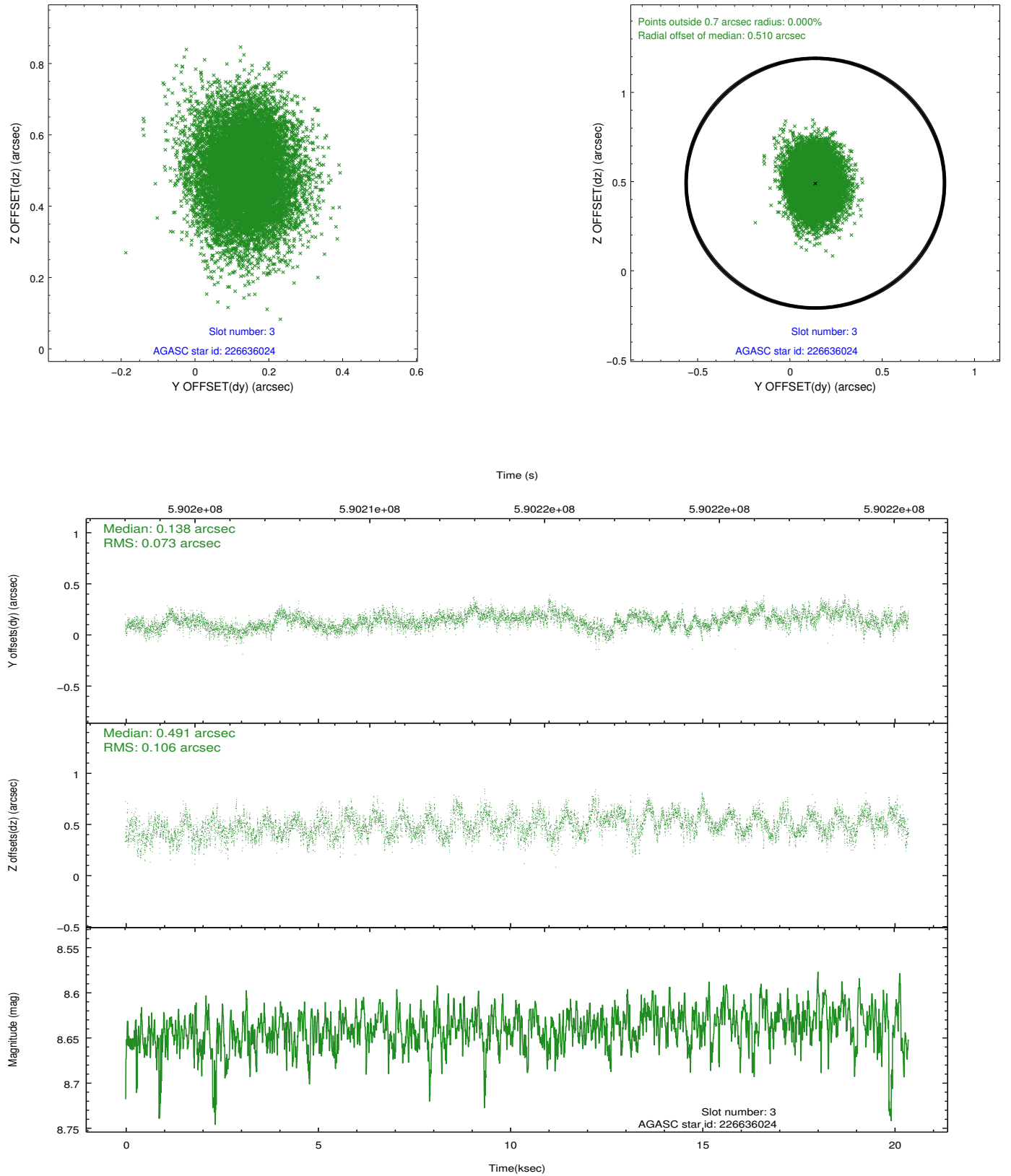


### Slot Statistics

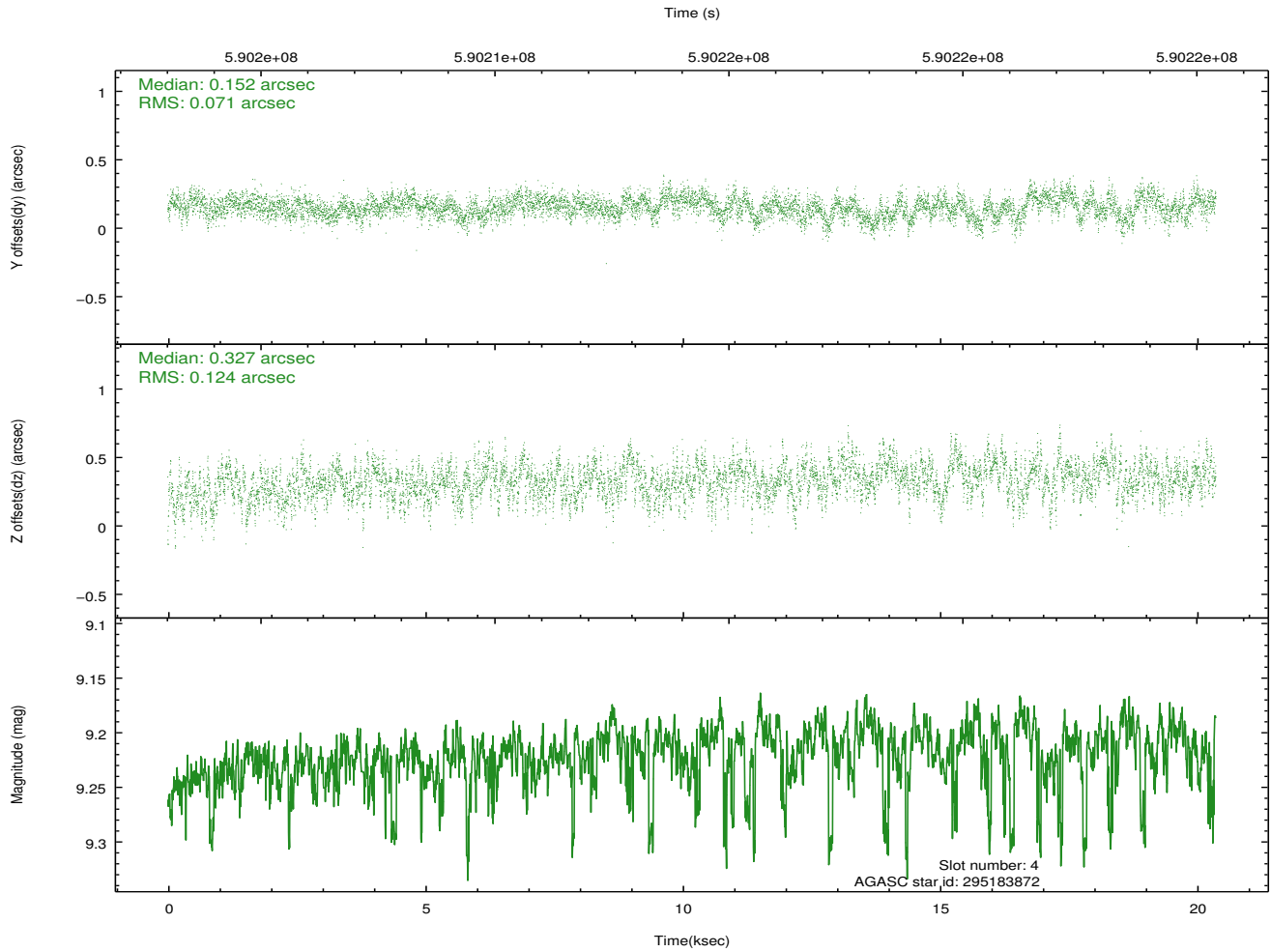
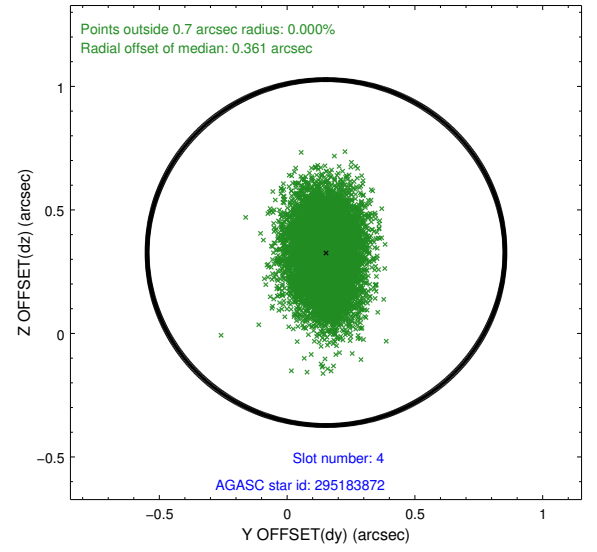
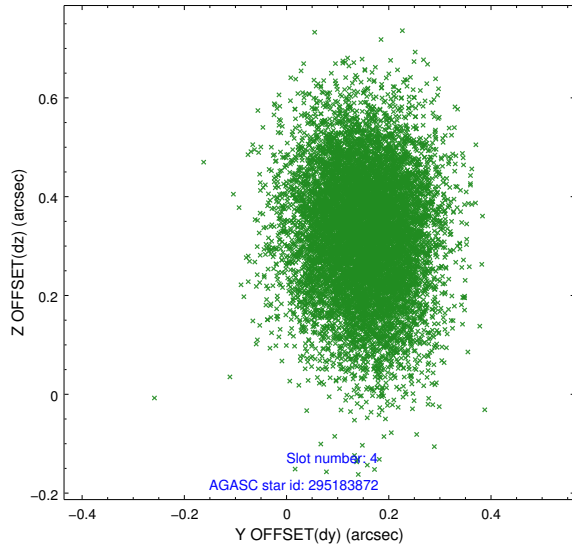
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.08	4968	0.070	-0.090	0.028	0.053	0.000000	0.000000	926.58	-1736.29
1	FID		ACIS-S-4	7.10	4968	0.374	0.030	0.043	0.103	0.000000	0.000000	2144.32	167.83
2	FID		ACIS-S-5	7.09	4968	-0.479	0.070	0.030	0.080	0.000000	0.000000	-1822.67	161.56
3	GUIDE	used	226636024	8.64	9933	0.138	0.491	0.137	0.220	0.063050	23.529230	-1644.96	-2289.26
4	GUIDE	used	295183872	9.22	9928	0.152	0.327	0.148	0.255	359.784506	23.454603	-836.40	-1775.05
5	GUIDE	used	295189208	8.87	9929	-0.194	-0.323	0.135	0.218	359.033129	22.882360	987.68	890.43
6	GUIDE	used	295189840	8.96	9932	0.109	-0.097	0.135	0.217	359.448492	22.882733	-336.60	510.20
7	GUIDE	used	226498496	8.02	9935	-0.199	-0.392	0.120	0.196	359.334050	22.367987	-483.36	2396.52

## 2.4 Star Slots

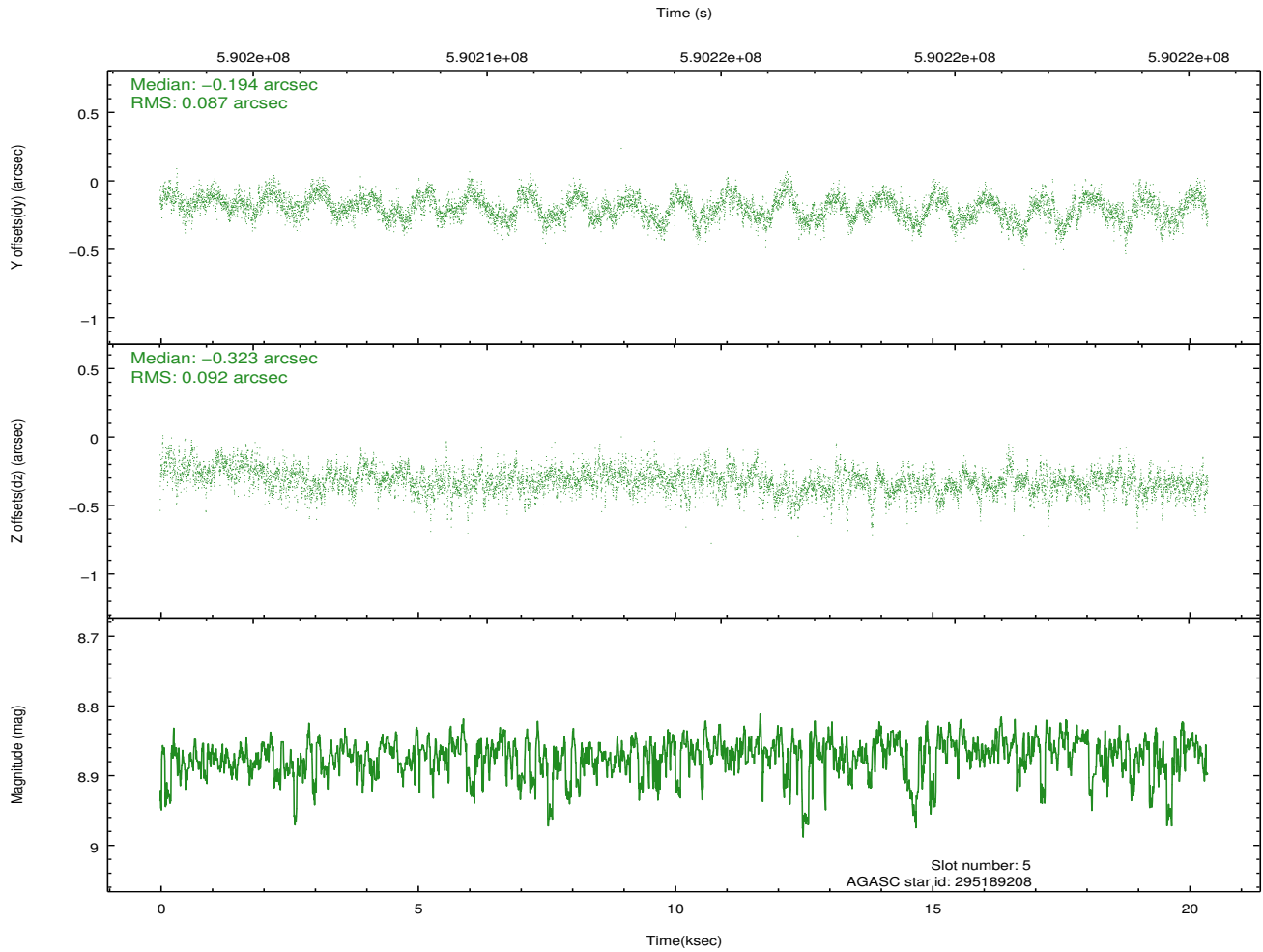
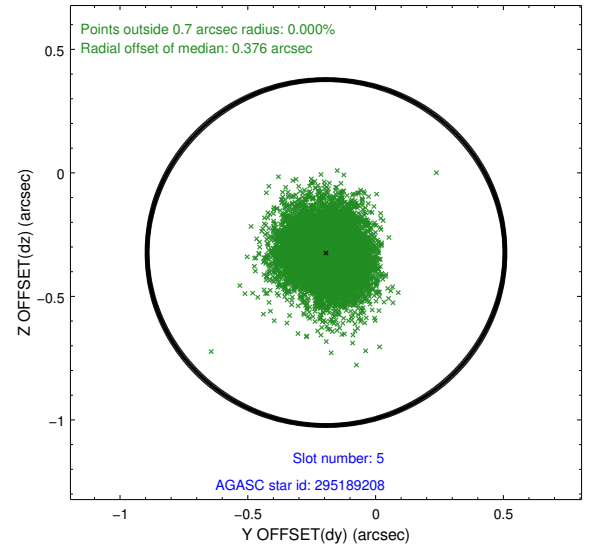
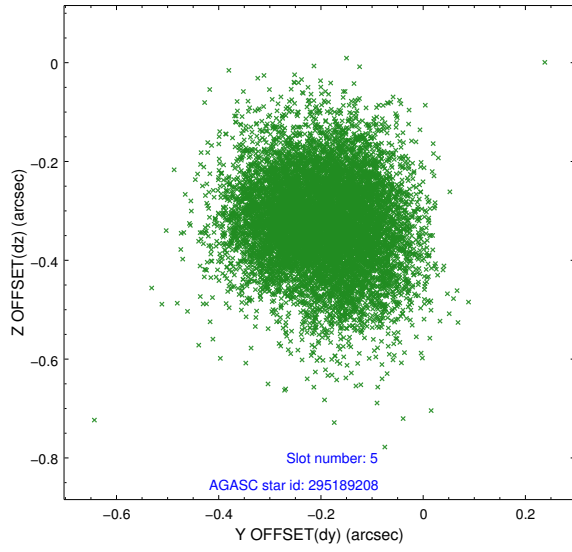
### 2.4.1 Slot 3



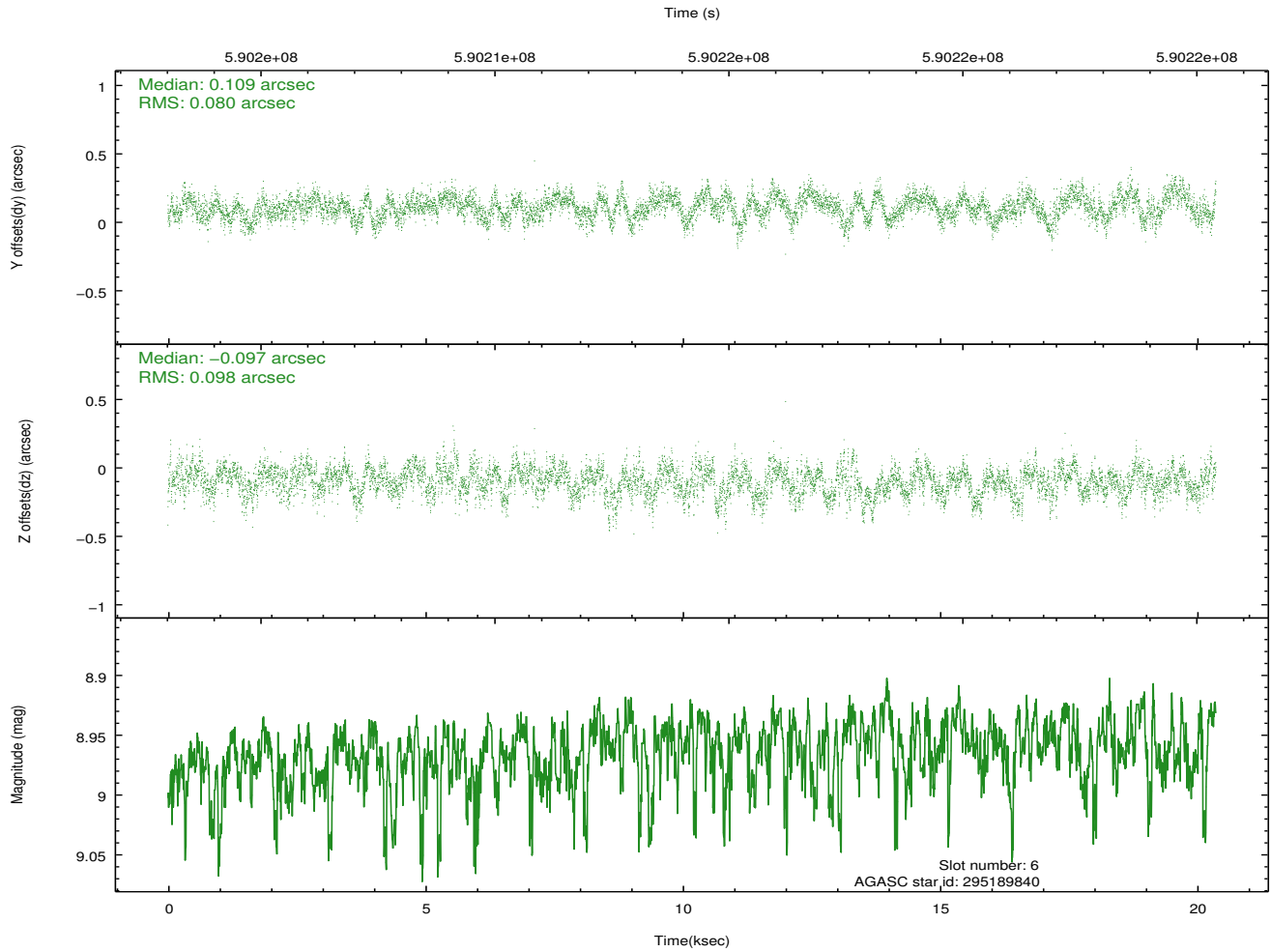
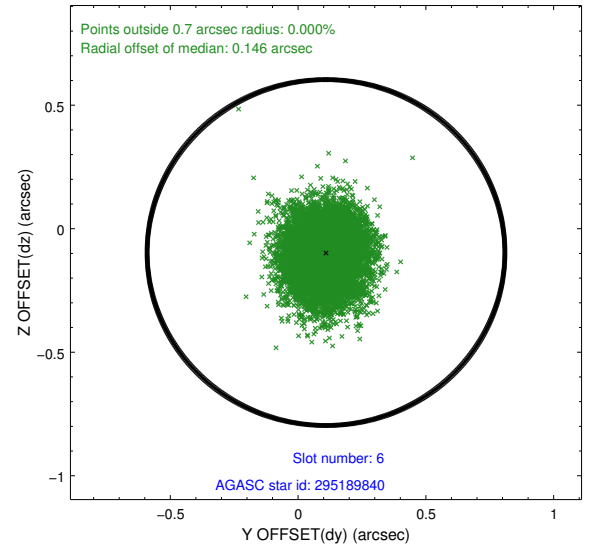
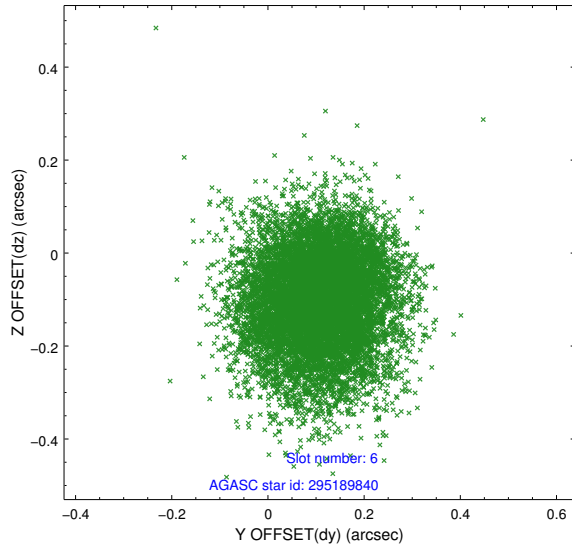
## 2.4.2 Slot 4



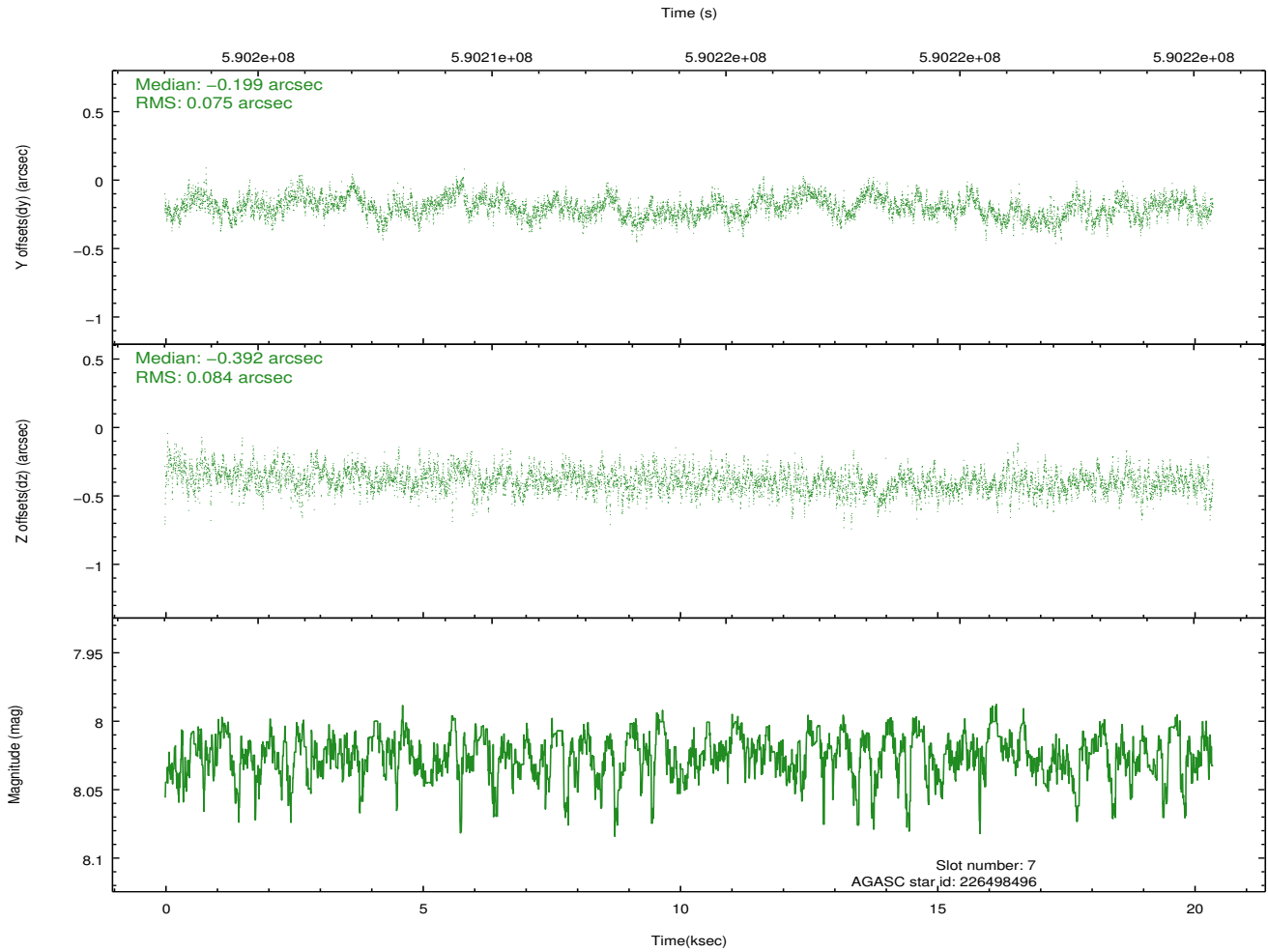
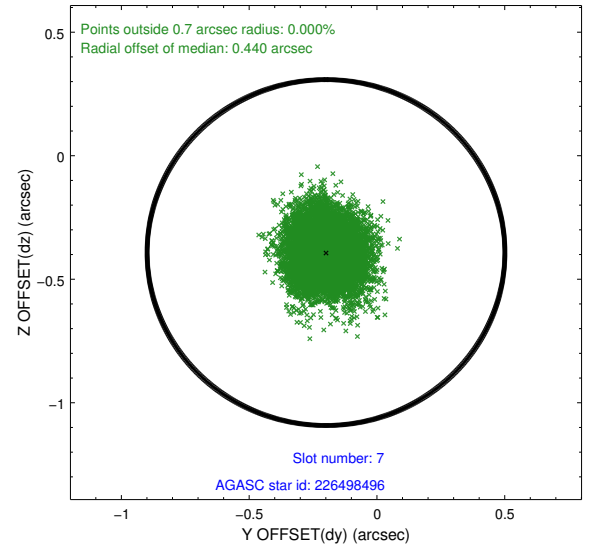
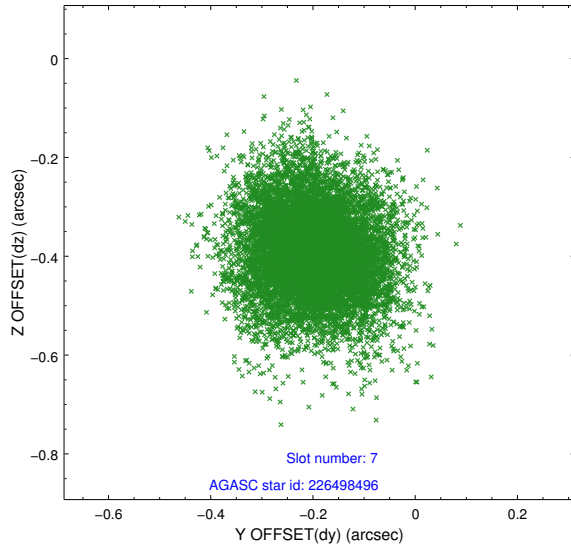
### 2.4.3 Slot 5



## 2.4.4 Slot 6

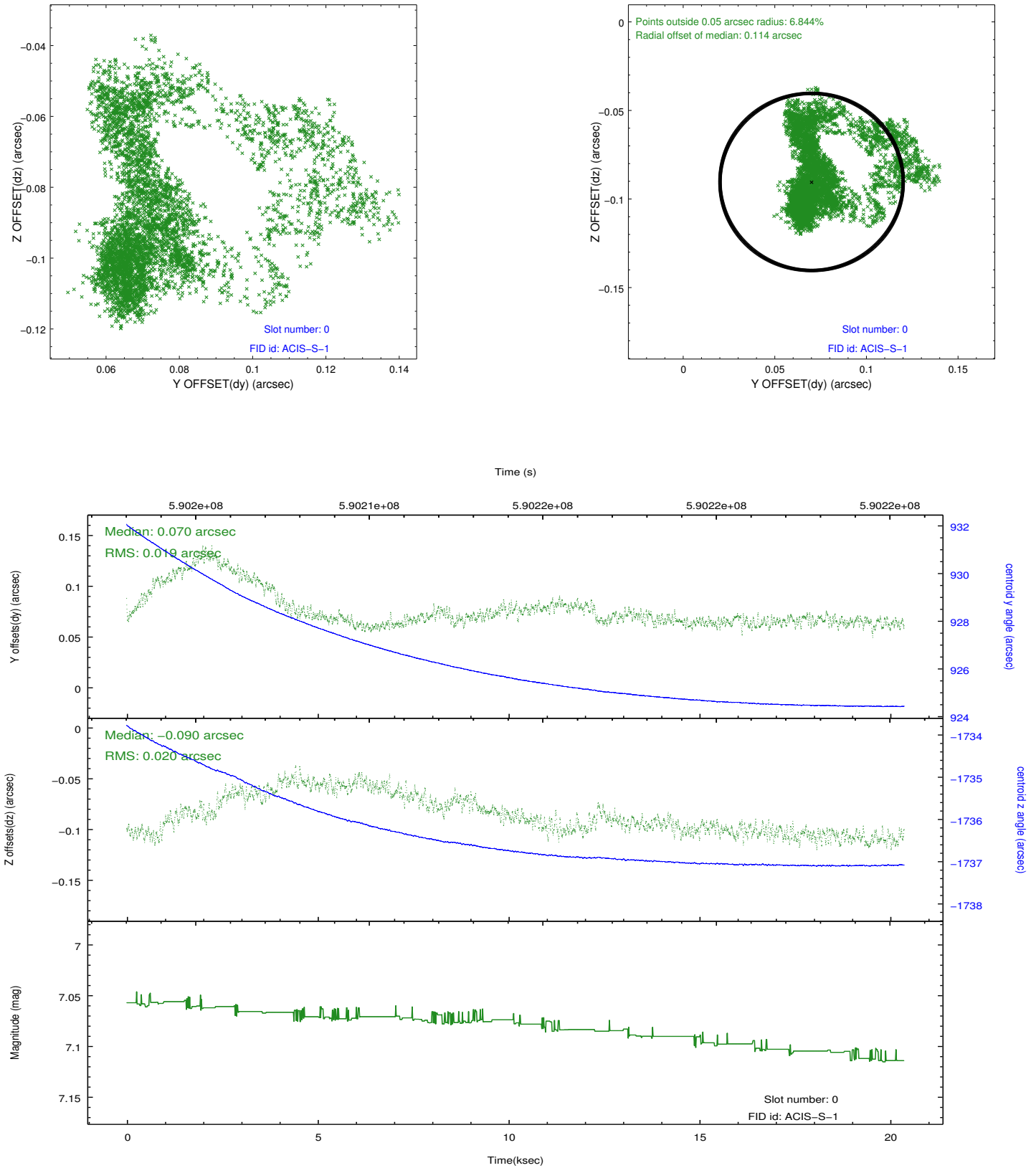


## 2.4.5 Slot 7

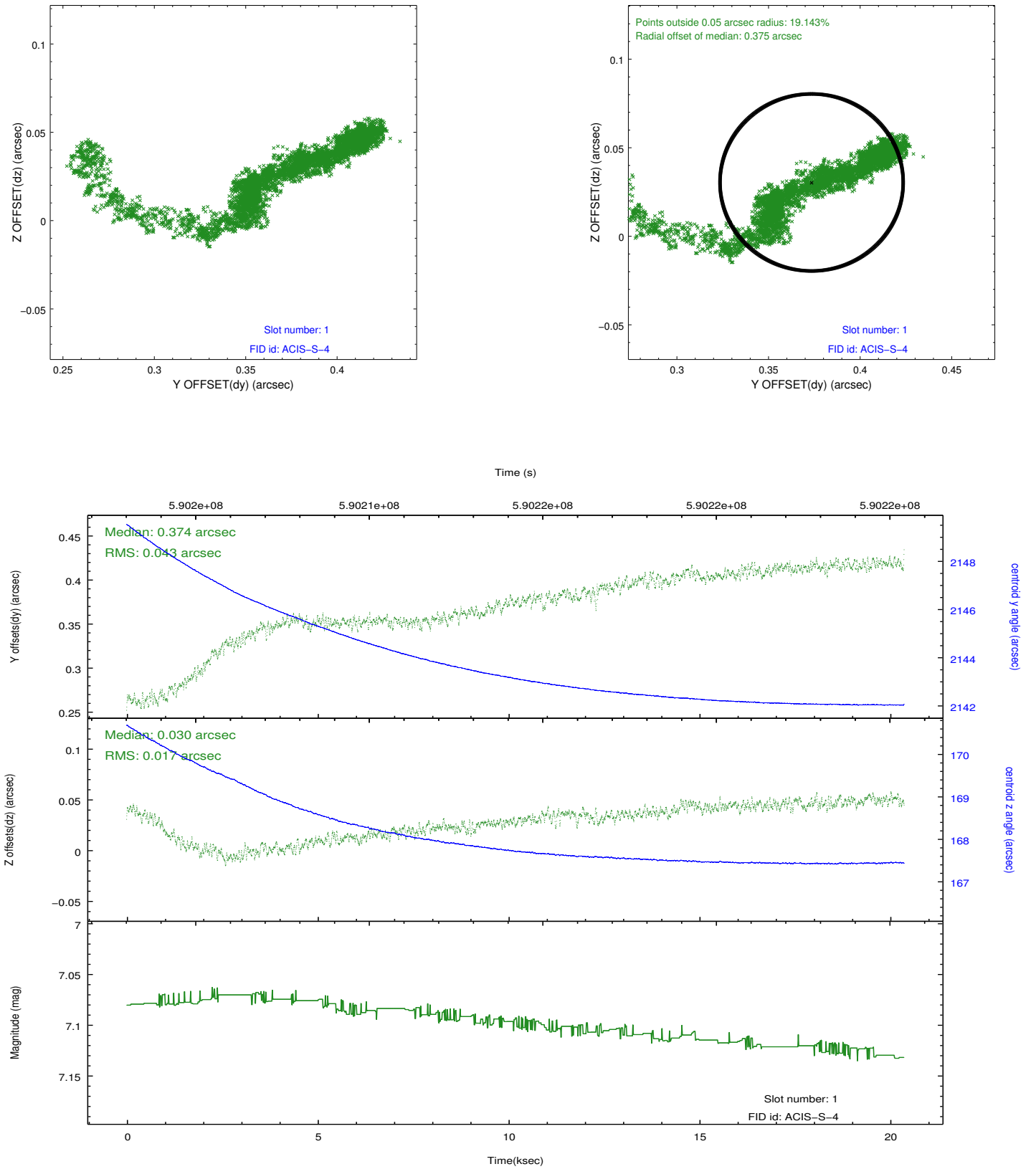


## 2.5 FID Slots

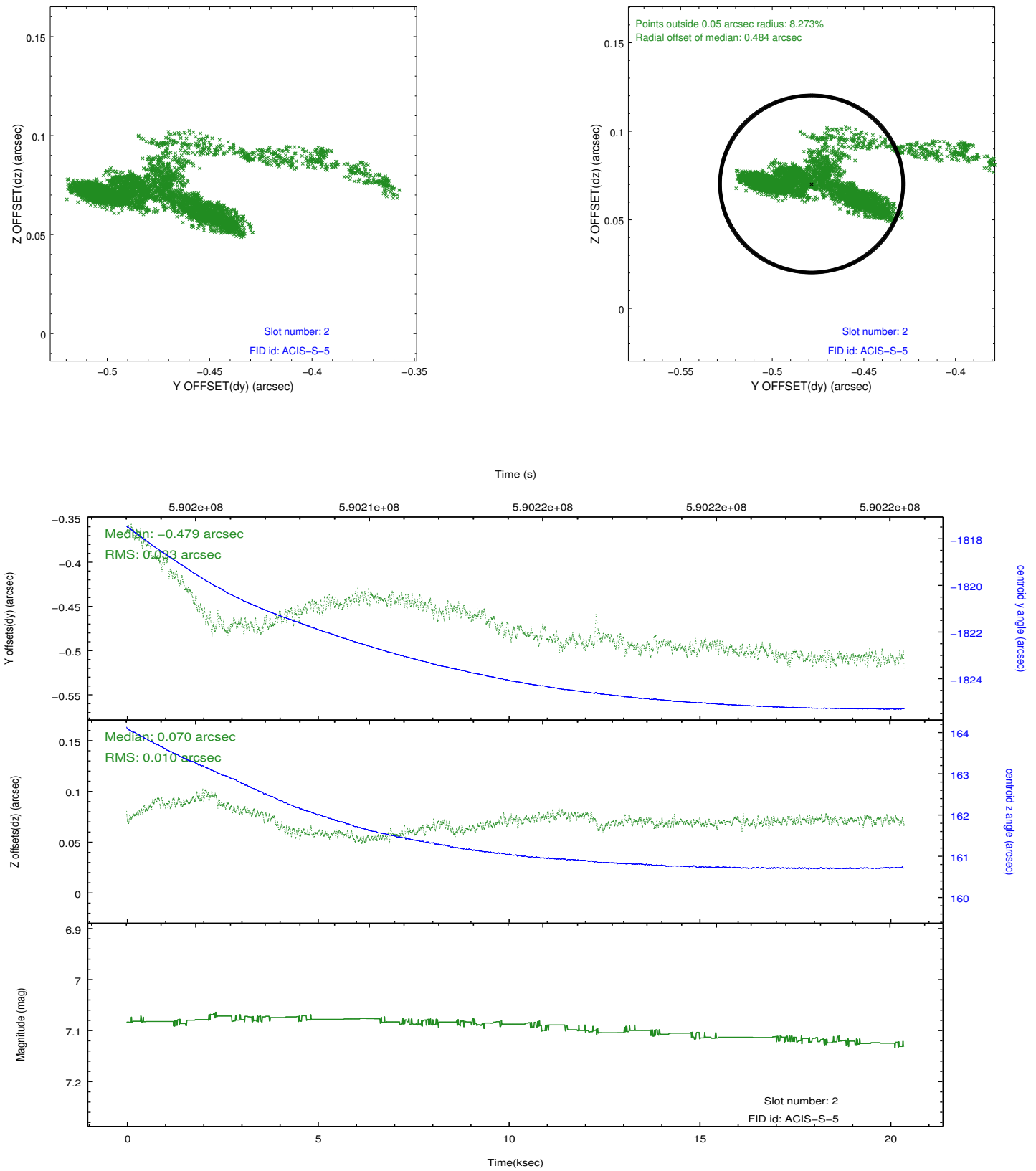
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



## **A Summary**

### **A.1 Status**

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2016.09.14
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.069400154471

### **A.2 Comments**