

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 15148 - L2 Version 2  
Chandra X-Ray Center

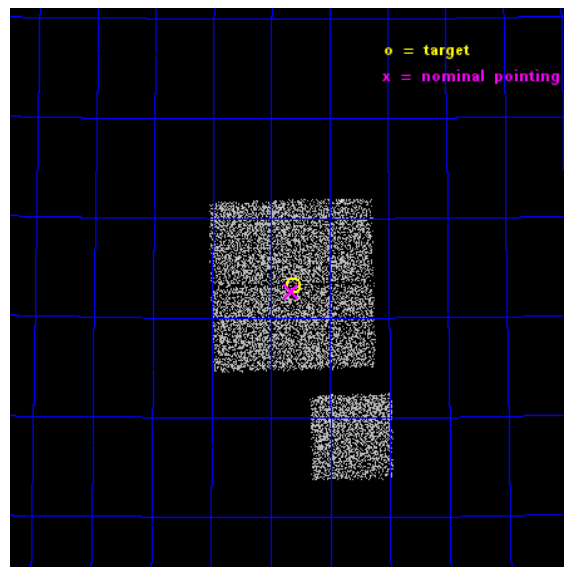
L2 Processing Date : Dec 1 2014

## 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

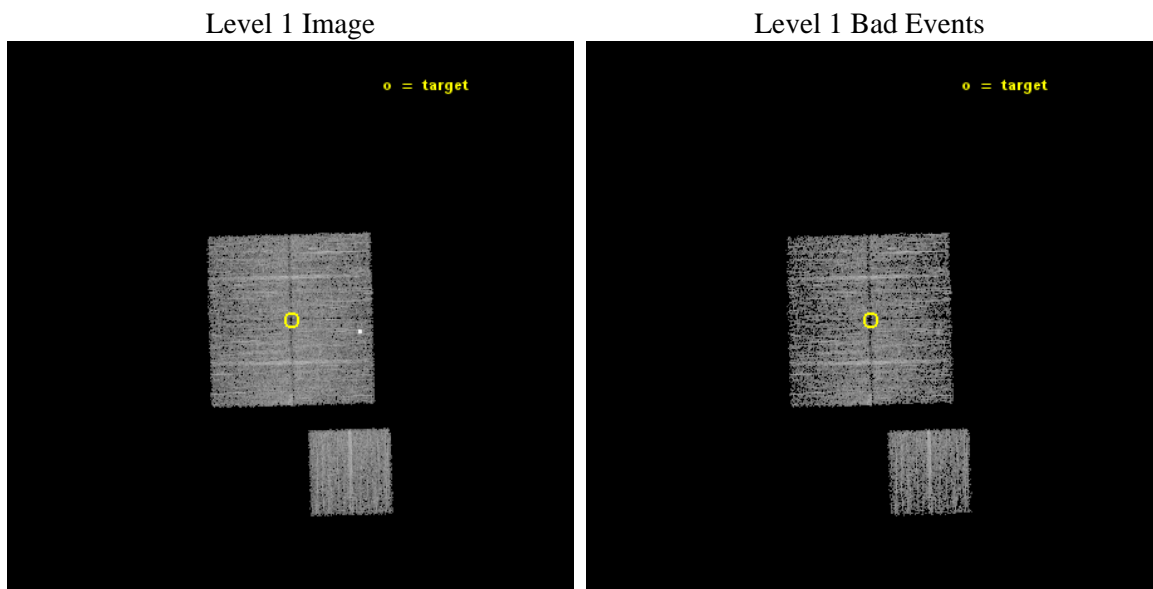
seq_num	801277	Sequence number
obs_id	15148	Observation id
title	TO THE OUTER LIMITS OF CLUSTERS WITH CHANDRA AND SUZAKU	Proposal t
observer	Dr. Eric Miller	Principal investigator
object	A665	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	127.157708	Observer's specified target RA [deg]
dec_targ	65.721989	Observer's specified target Dec [deg]
ra_nom	127.16355106632	Nominal RA [deg]
dec_nom	65.711295677276	Nominal Dec [deg]
roll_nom	178.5238851085	Nominal Roll [deg]
revision	2	Processing version of data
ontime	5077.800039053	Sum of GTIs [s]
livetime	5011.4548433207	Livetime [s]
ontime0	5077.800039053	Sum of GTIs [s]
ontime1	5077.800039053	Sum of GTIs [s]
ontime2	5077.800039053	Sum of GTIs [s]
ontime3	5074.6589382291	Sum of GTIs [s]
ontime6	5077.800039053	Sum of GTIs [s]
l2events	13715	Number of level 2 events



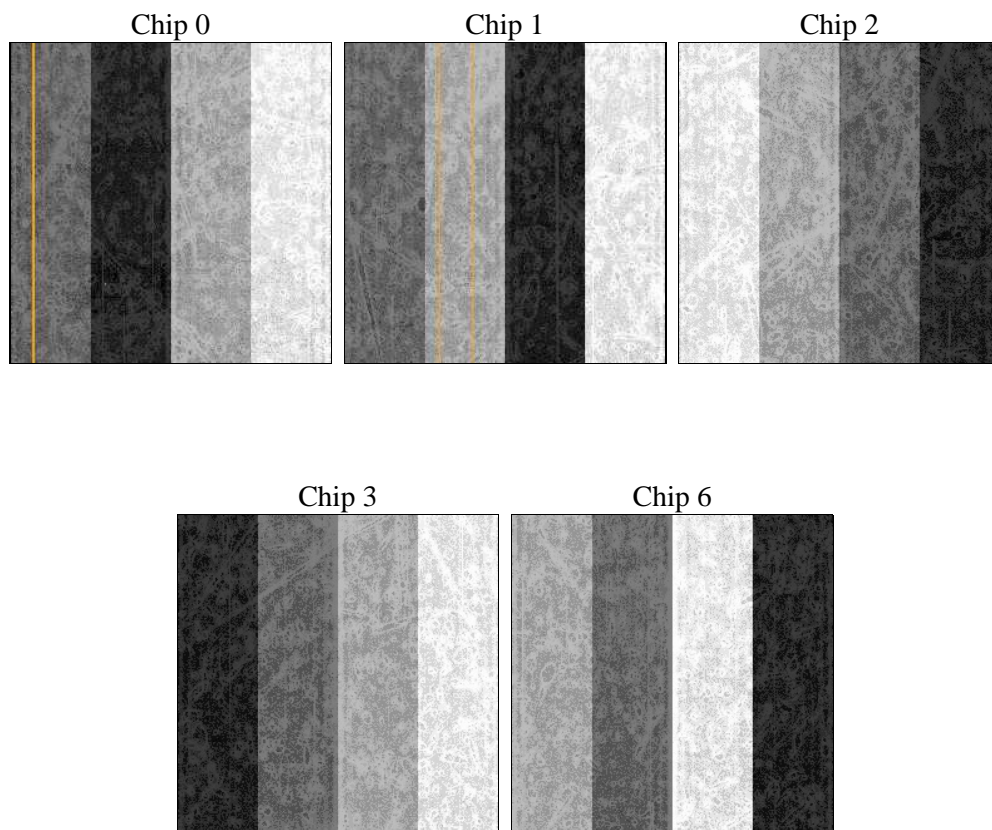
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	5000.000000	[s] Scheduled observation exposure time
ascdsver	10.3	Processing system revision	ontime	5077.800039053	Sum of GTIs [s]
caldsver	4.6.4	&#160	ontime0	5077.800039053	Sum of GTIs [s]
date	2014-12-01T11:56:31	Date and time of file creation	ontime1	5077.800039053	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	5077.800039053	Sum of GTIs [s]
			ontime3	5074.6589382291	Sum of GTIs [s]
			ontime6	5077.800039053	Sum of GTIs [s]
			l1events	139463	Number of level 1 events

### 2.1.4 Events

	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	26874	25480	31931	27665	27513
rejected events	23682	22122	25675	24607	24241
rejected %	88%	86%	80%	88%	88%

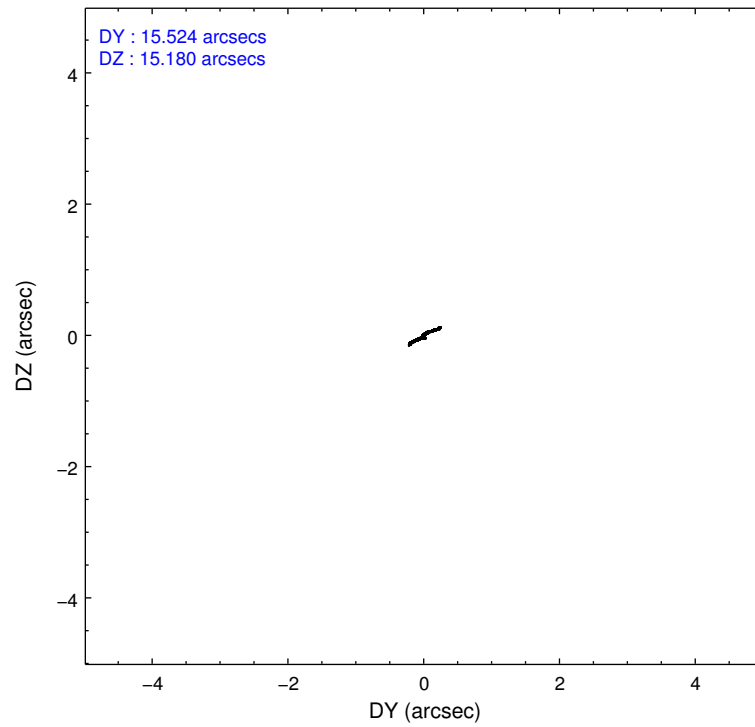
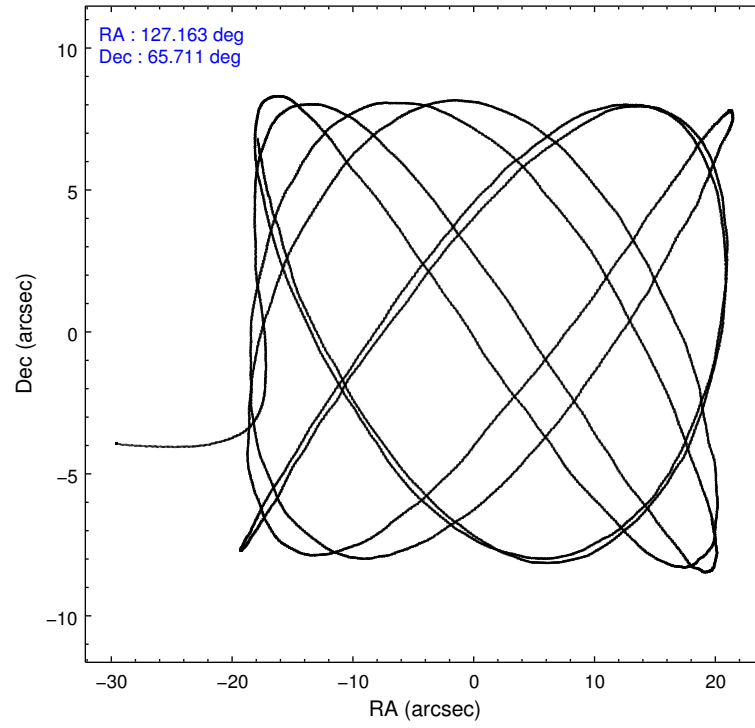
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	1049	1209	1086	1069	1118
	3%	4%	3%	3%	4%
grade 1 events	15	20	17	19	19
	0%	0%	0%	0%	0%
grade 2 events	789	710	3900	669	732
	2%	2%	12%	2%	2%
grade 3 events	352	337	336	324	321
	1%	1%	1%	1%	1%
grade 4 events	352	326	342	331	350
	1%	1%	1%	1%	1%
grade 5 events	1262	1337	1159	1490	1355
	4%	5%	3%	5%	4%
grade 6 events	655	779	601	669	758
	2%	3%	1%	2%	2%
grade 7 events	22400	20762	24490	23094	22860
	83%	81%	76%	83%	83%

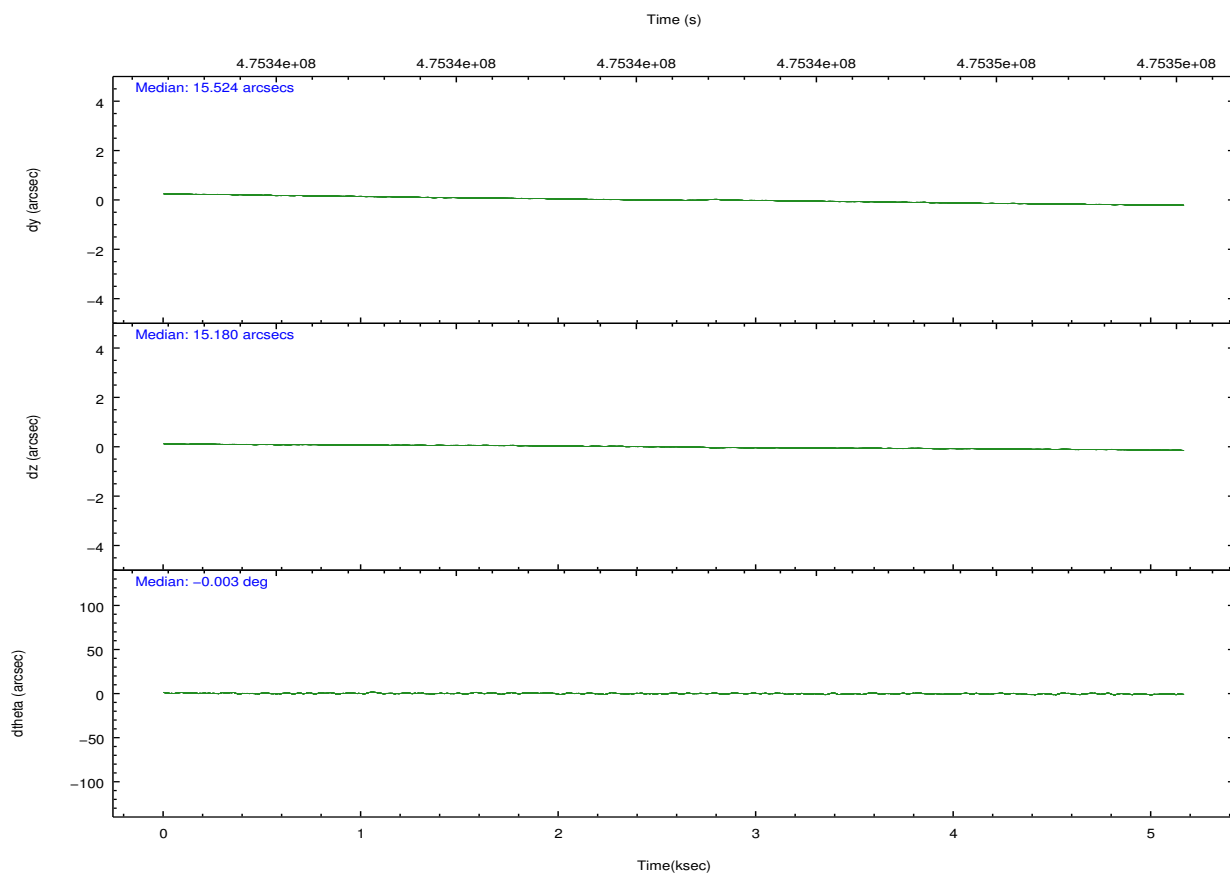
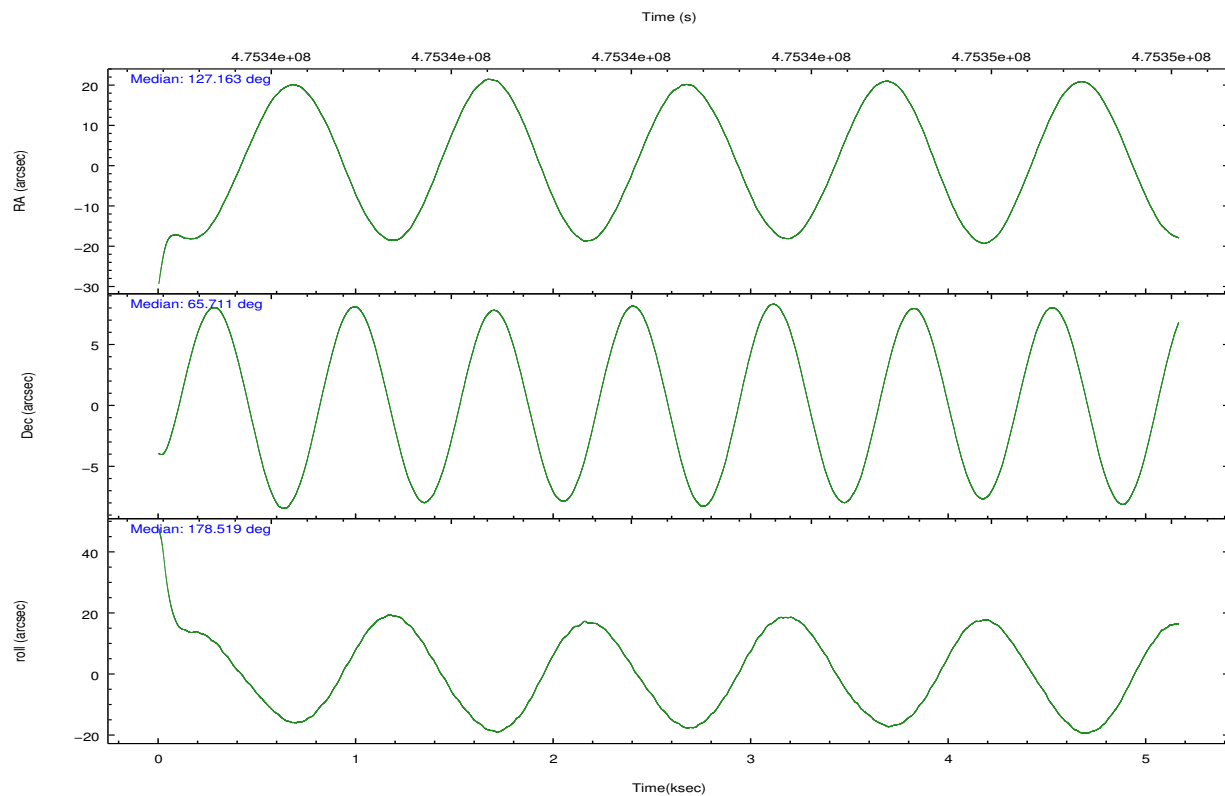


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-01236	ACIS-01236	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	127.222365	127.1635510663246	CCD I2 on	Y	Y
[deg] Pointing Dec	65.724522	65.71129567727556	CCD I3 on	Y	Y
[deg] Pointing Roll	178.261533	178.5238851084975	CCD S0 on	N	N
[mm] SIM focus pos	-0.782348	-0.7809083437167272	CCD S1 on	N	N
[mm] SIM defocus	0	0.001439871863259334	CCD S2 on	O1	Y
[mm] SIM translation stage pos	-233.592463	-233.5874344608287	CCD S3 on	N	N
[mm] SIM translation stage offset	0	-0.005018542100998502	CCD S4 on	N	N
[s] Observation start time (MET)	475341799.184000	475340620.50912	CCD S5 on	N	N
Observation start date	2013-01-23T15:22:12	2013-01-23T15:03:40	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	475346799.184000	475348092.24703	On-chip summing requested	N	N
Observation end date	2013-01-23T16:45:32	2013-01-23T17:08:12	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



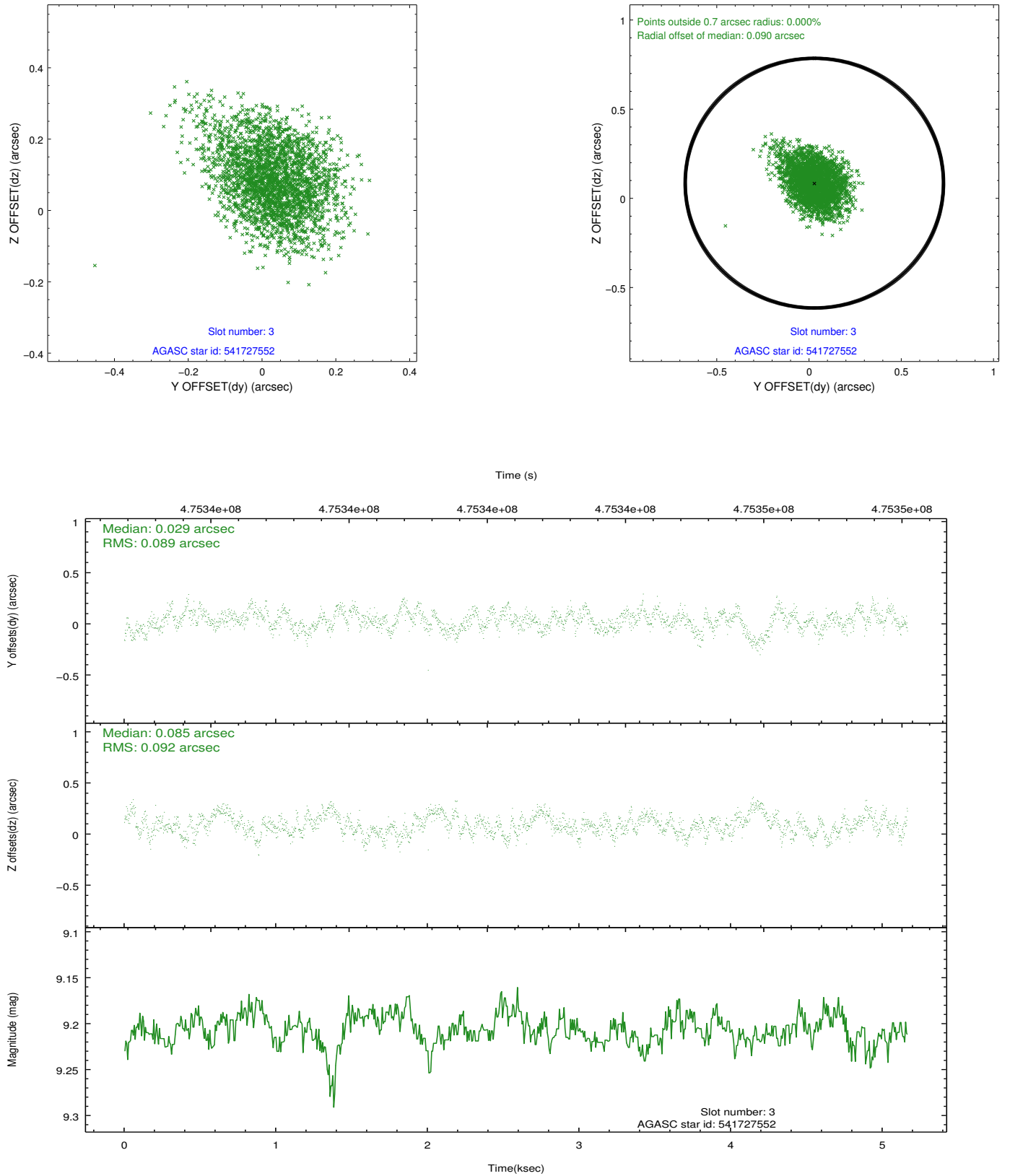


### Slot Statistics

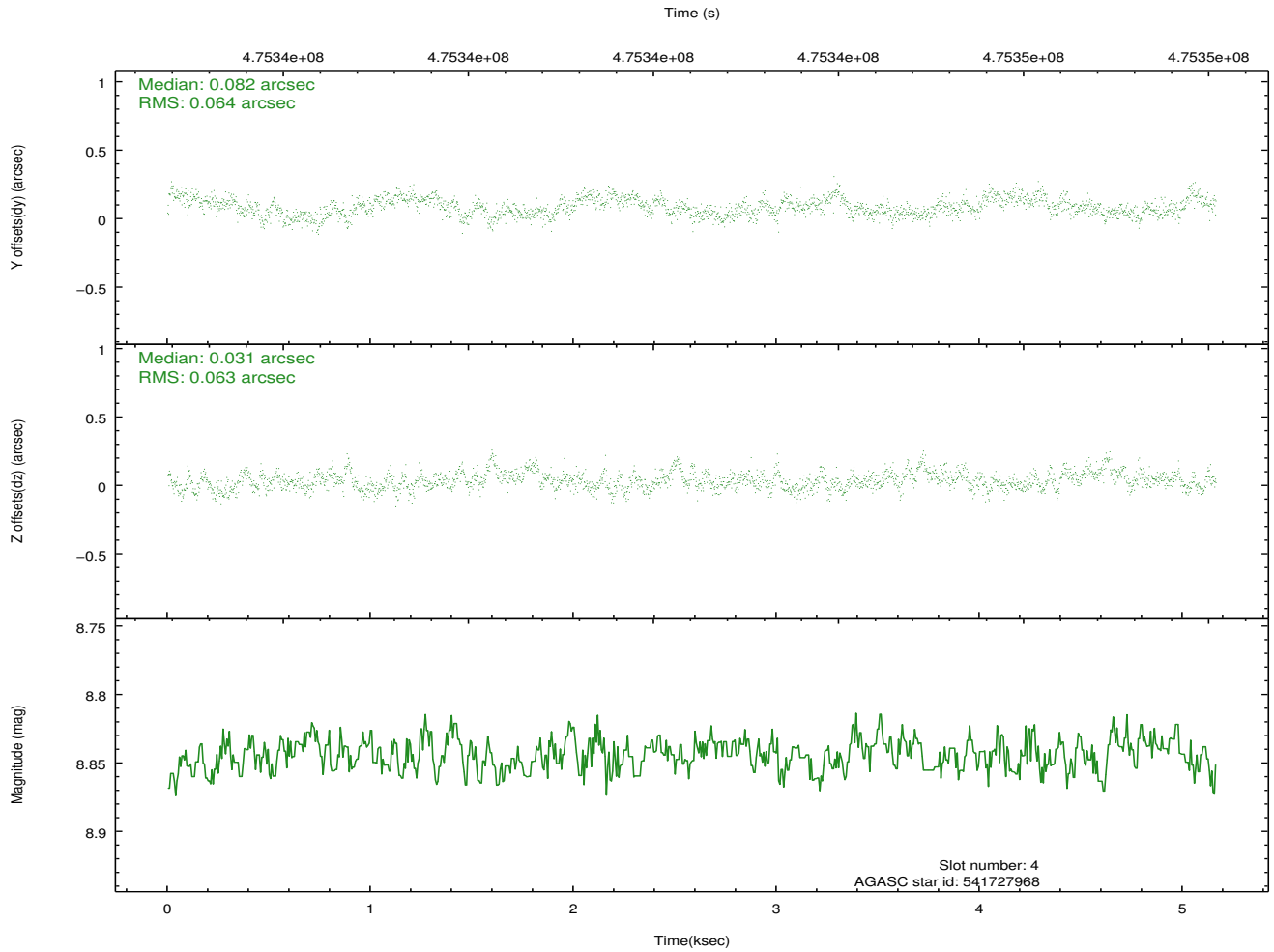
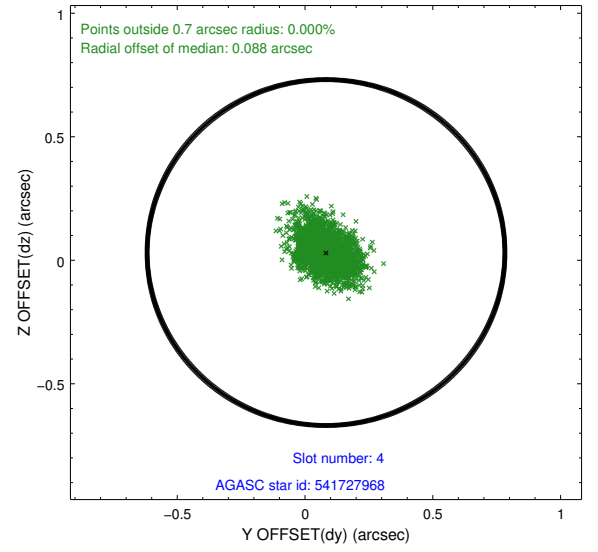
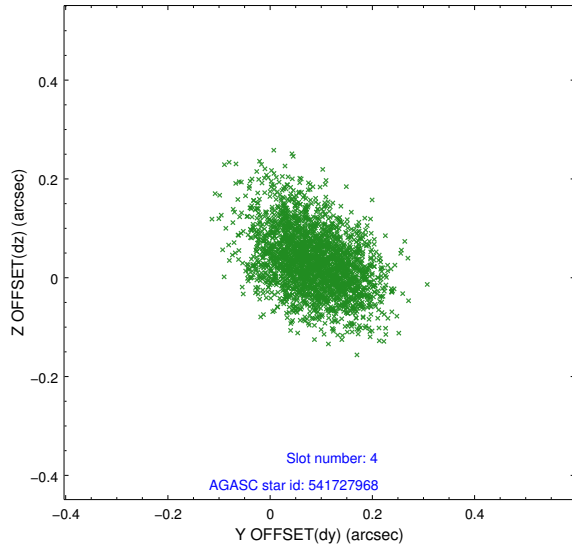
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-I-1	7.22	1260	0.039	-0.017	0.008	0.014	0.000000	0.000000	923.97	-838.78
1	FID		ACIS-I-5	7.21	1259	-0.224	0.038	0.007	0.012	0.000000	0.000000	-1823.78	1058.15
2	FID		ACIS-I-6	7.21	1260	0.094	0.049	0.007	0.012	0.000000	0.000000	388.26	1704.01
3	GUIDE	used	541727552	9.21	2519	0.029	0.085	0.135	0.219	126.194614	66.313173	1550.81	-2084.69
4	GUIDE	used	541727968	8.84	2520	0.082	0.031	0.096	0.158	126.269600	66.365414	1445.80	-2275.36
5	GUIDE	used	541730424	9.16	2516	-0.003	0.162	0.118	0.190	127.891536	65.345004	-1045.24	1329.14
6	GUIDE	used	541730880	8.08	2519	-0.064	-0.040	0.100	0.154	127.501712	65.260390	-472.64	1657.49
7	GUIDE	used	541731472	7.80	2519	-0.061	-0.237	0.088	0.132	125.964692	65.500308	1852.39	845.72

## 2.4 Star Slots

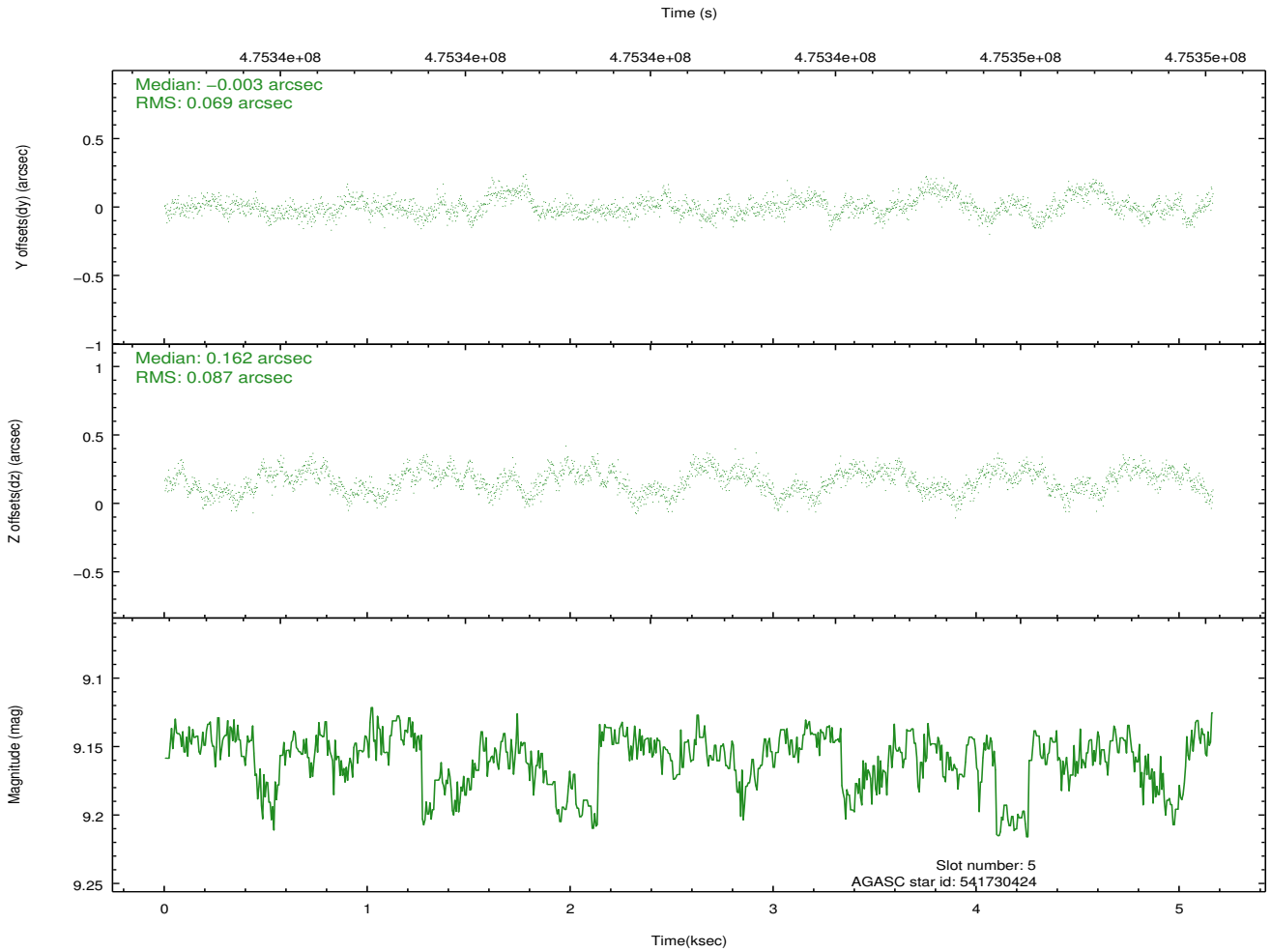
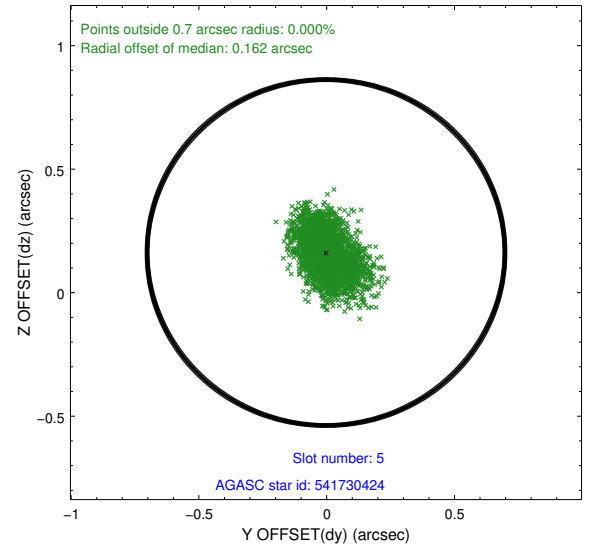
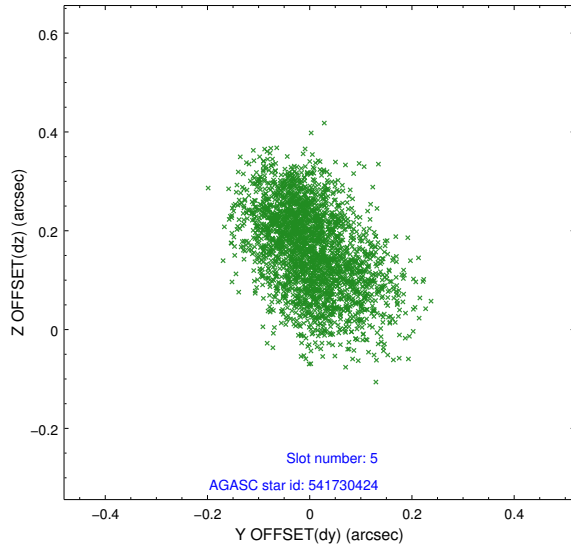
### 2.4.1 Slot 3



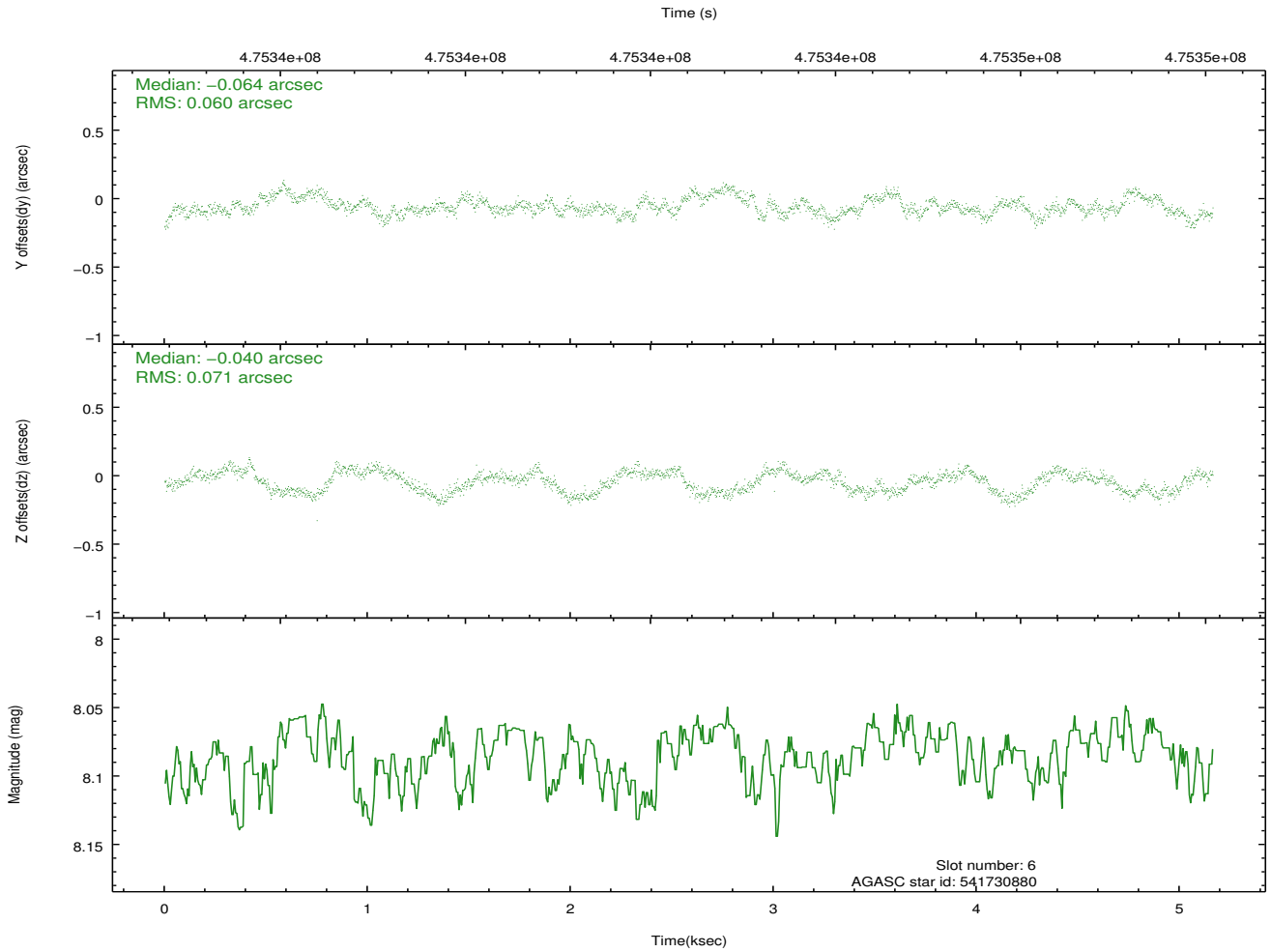
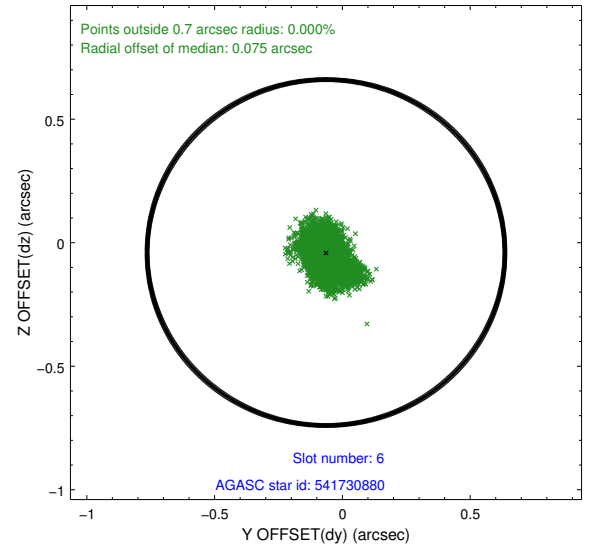
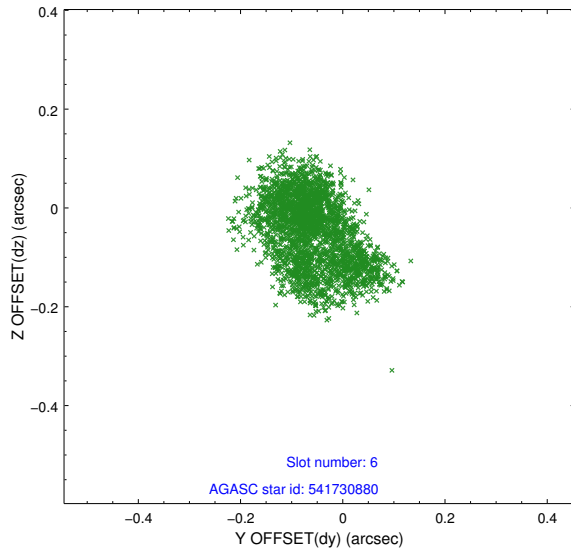
## 2.4.2 Slot 4



### 2.4.3 Slot 5

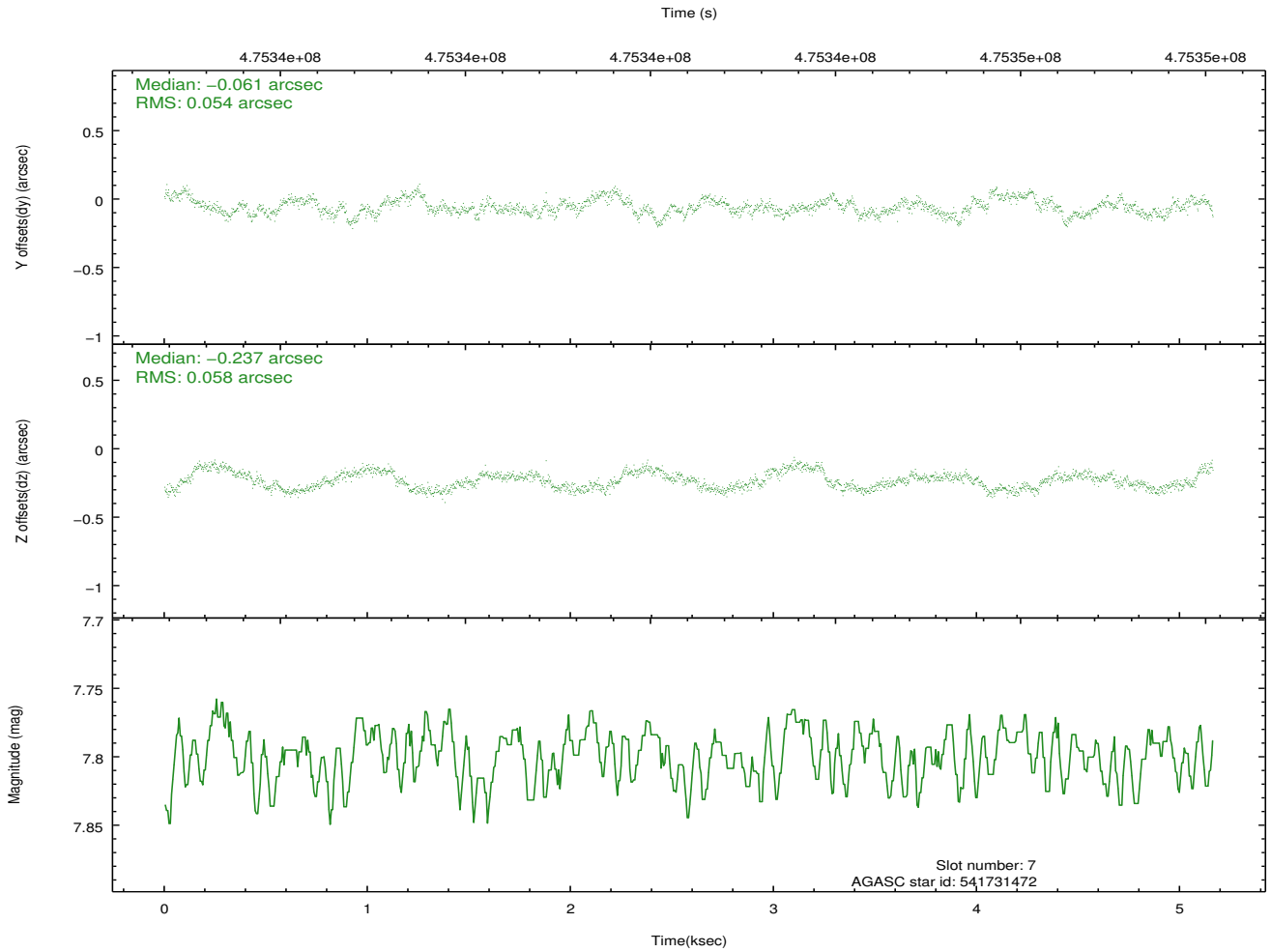
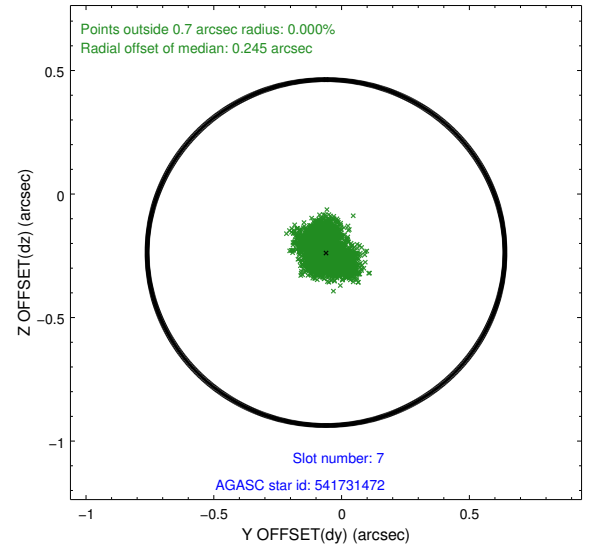
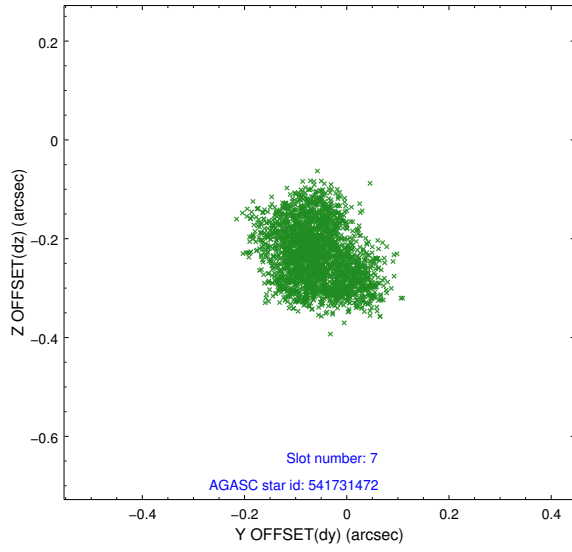


## 2.4.4 Slot 6



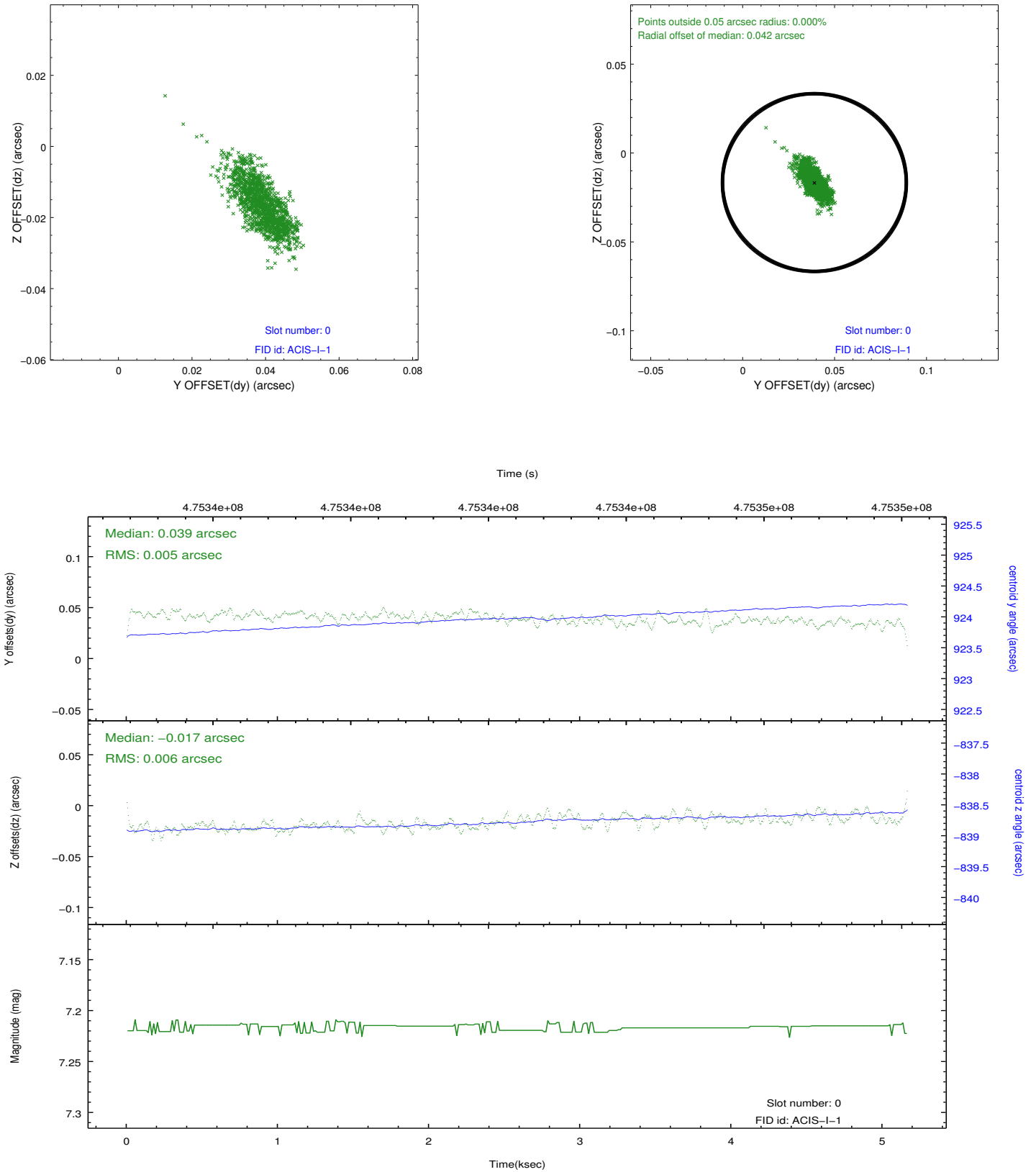


## 2.4.5 Slot 7

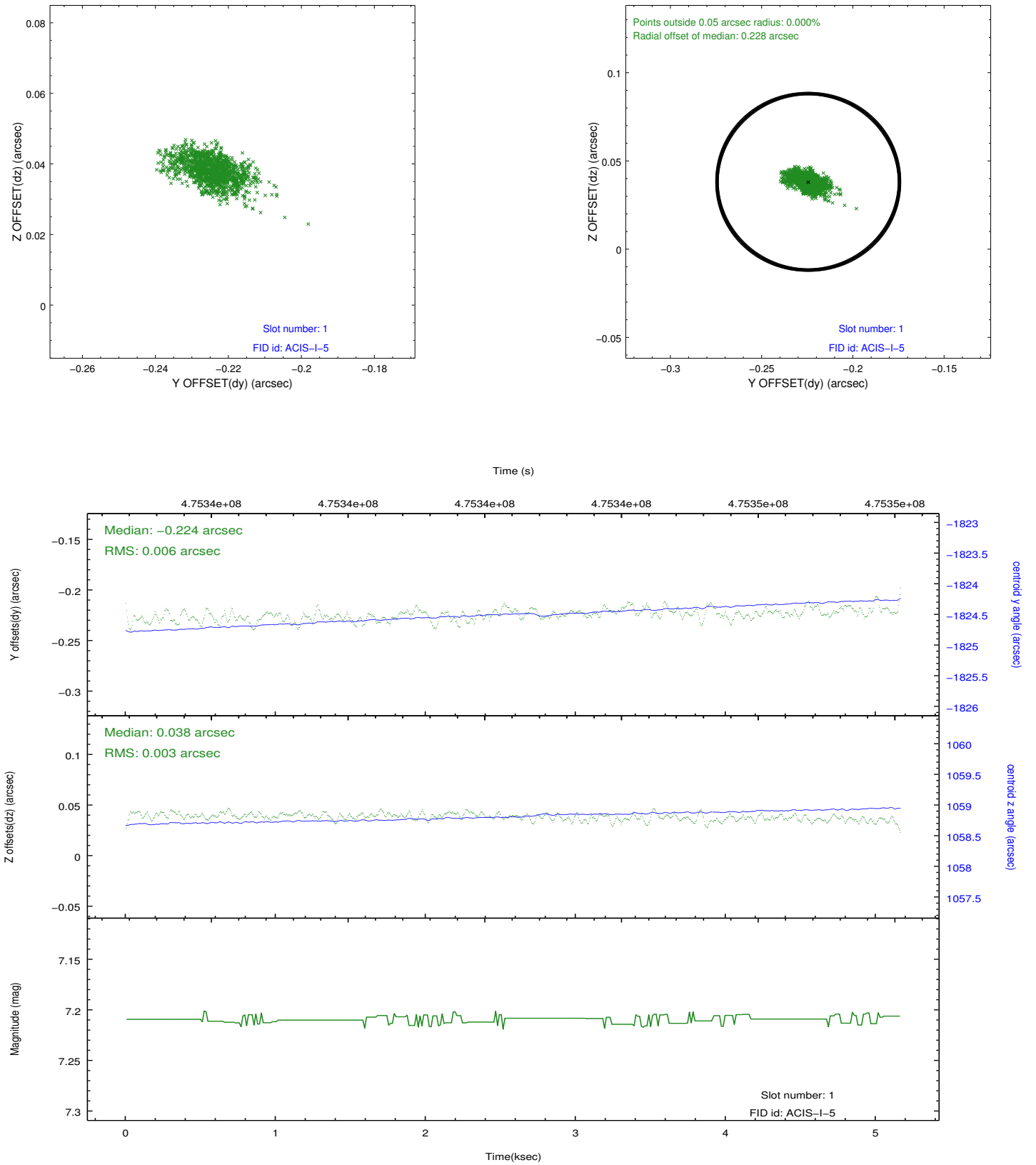


## 2.5 FID Slots

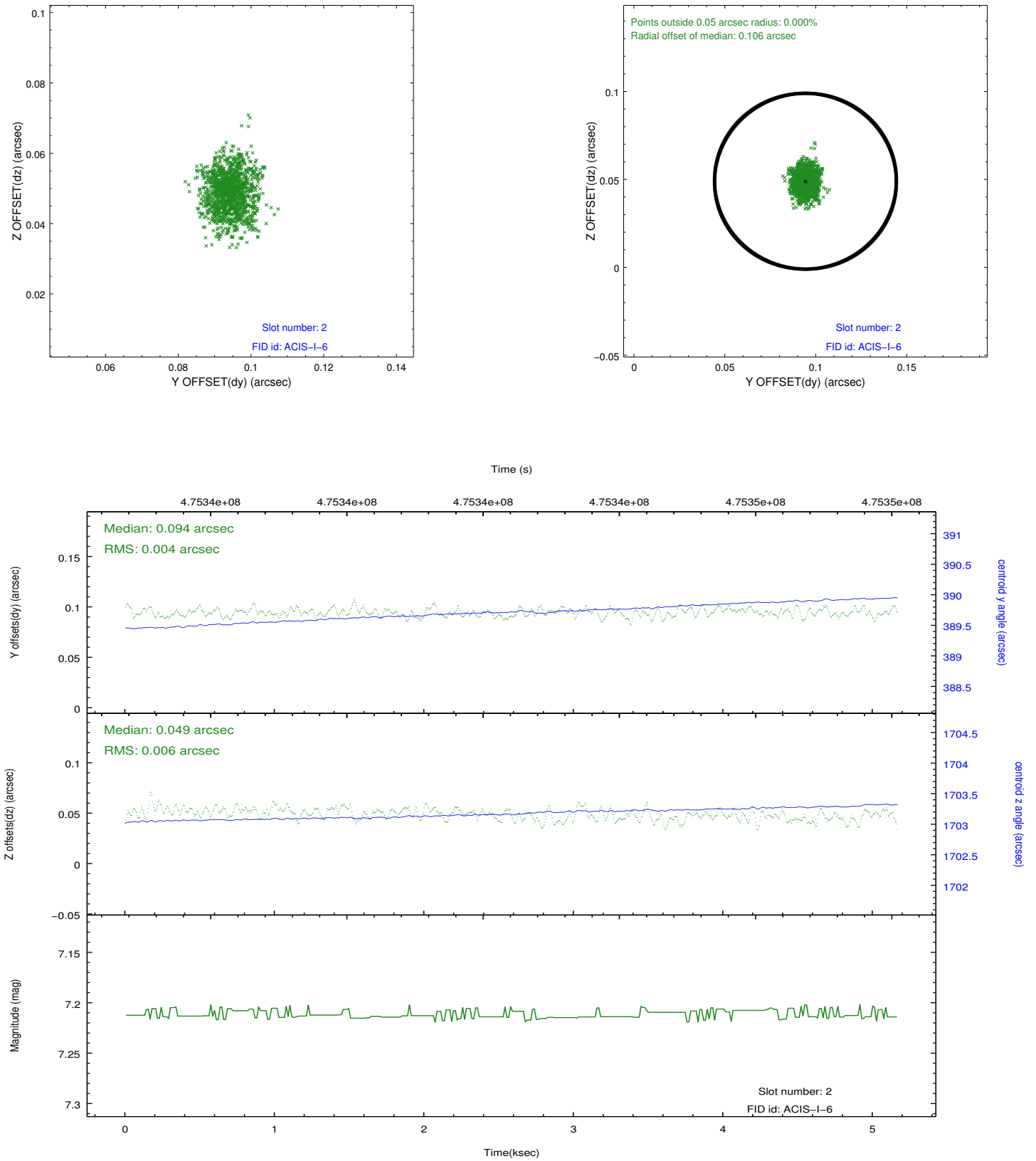
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2



# A Summary

## A.1 Status

V&V Scientist	Beth Sundheim
V&V Date (YYYY-MM-DD)	2014.12.08
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	5.077800039053

## A.2 Comments

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.