

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 15069 - L2 Version 2  
Chandra X-Ray Center

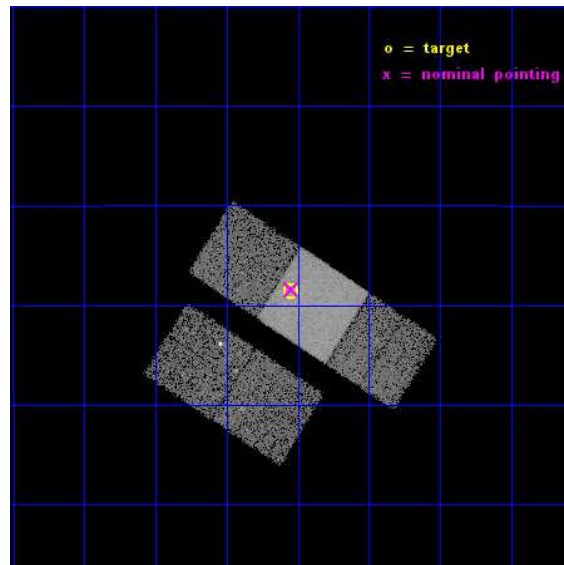
L2 Processing Date : Dec 1 2014

## 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

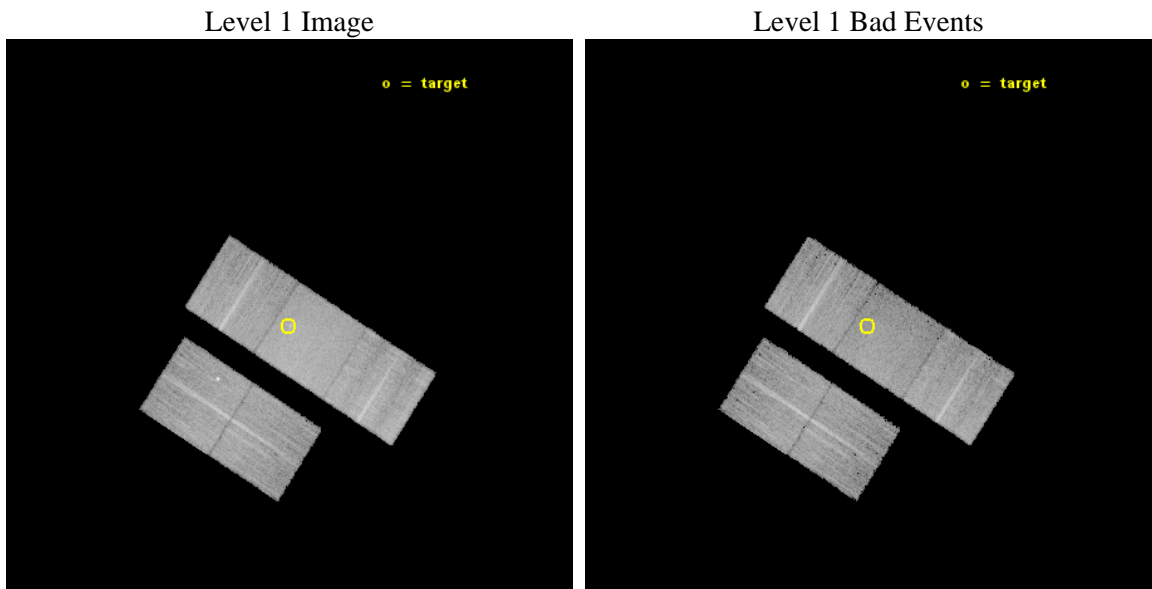
seq_num	702876	Sequence number
obs_id	15069	Observation id
title	C-GOALS: The Chandra-RBGS Survey of a Complete Sample of Major-Merger LIRGs	Proposal title
observer	Professor David Sanders	Principal investigator
object	NGC 3110	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	151.01125	Observer's specified target RA [deg]
dec_targ	-6.476389	Observer's specified target Dec [deg]
ra_nom	151.01125007382	Nominal RA [deg]
dec_nom	-6.4733787185599	Nominal Dec [deg]
roll_nom	32.716253081868	Nominal Roll [deg]
revision	2	Processing version of data
ontime	15066.000115871	Sum of GTIs [s]
livetime	14869.15173293	Livetime [s]
ontime2	15066.000115871	Sum of GTIs [s]
ontime3	15066.000115871	Sum of GTIs [s]
ontime6	15062.859055519	Sum of GTIs [s]
ontime7	15066.000115871	Sum of GTIs [s]
ontime8	15066.000115871	Sum of GTIs [s]
l2events	82724	Number of level 2 events



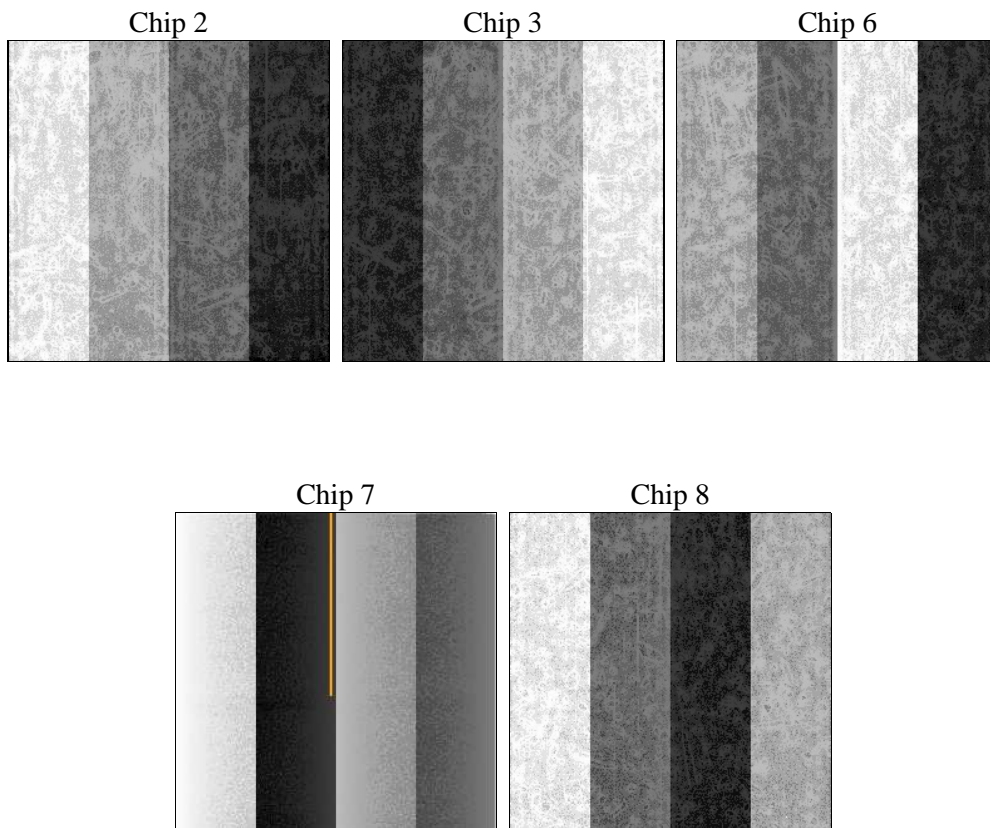
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	15000.000000	[s] Scheduled observation exposure time
ascdsver	10.3	Processing system revision	ontime	15066.000115871	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime2	15066.000115871	Sum of GTIs [s]
date	2014-12-01T08:40:26	Date and time of file creation	ontime3	15066.000115871	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	15062.859055519	Sum of GTIs [s]
			ontime7	15066.000115871	Sum of GTIs [s]
			ontime8	15066.000115871	Sum of GTIs [s]
			l1events	473736	Number of level 1 events

### 2.1.4 Events

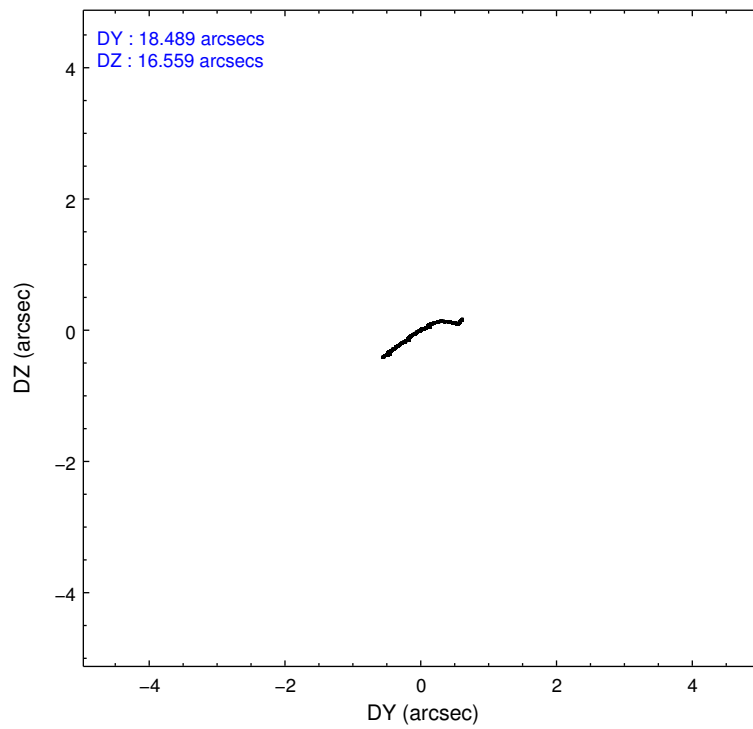
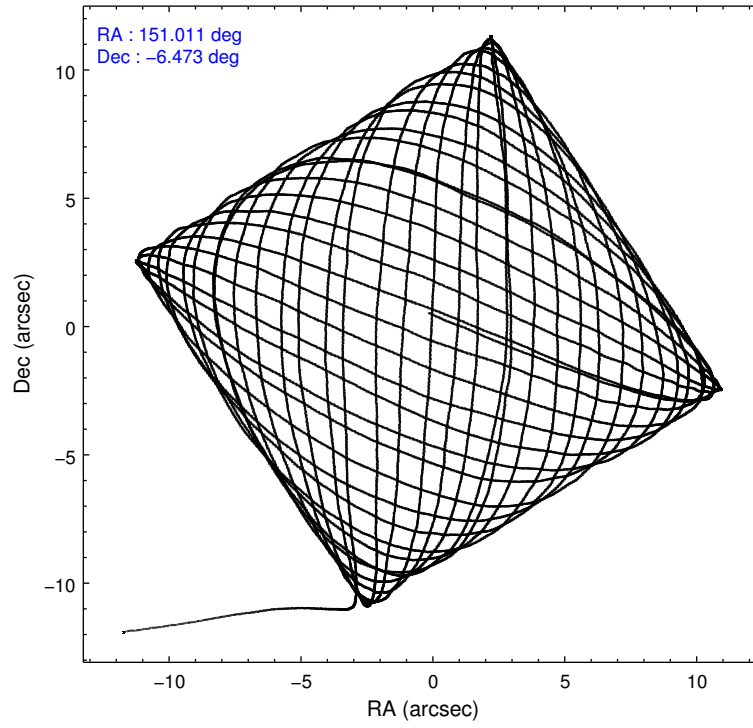
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	86710	79007	86162	112982	108875
rejected events	76133	70093	76149	63928	81025
rejected %	87%	88%	88%	56%	74%

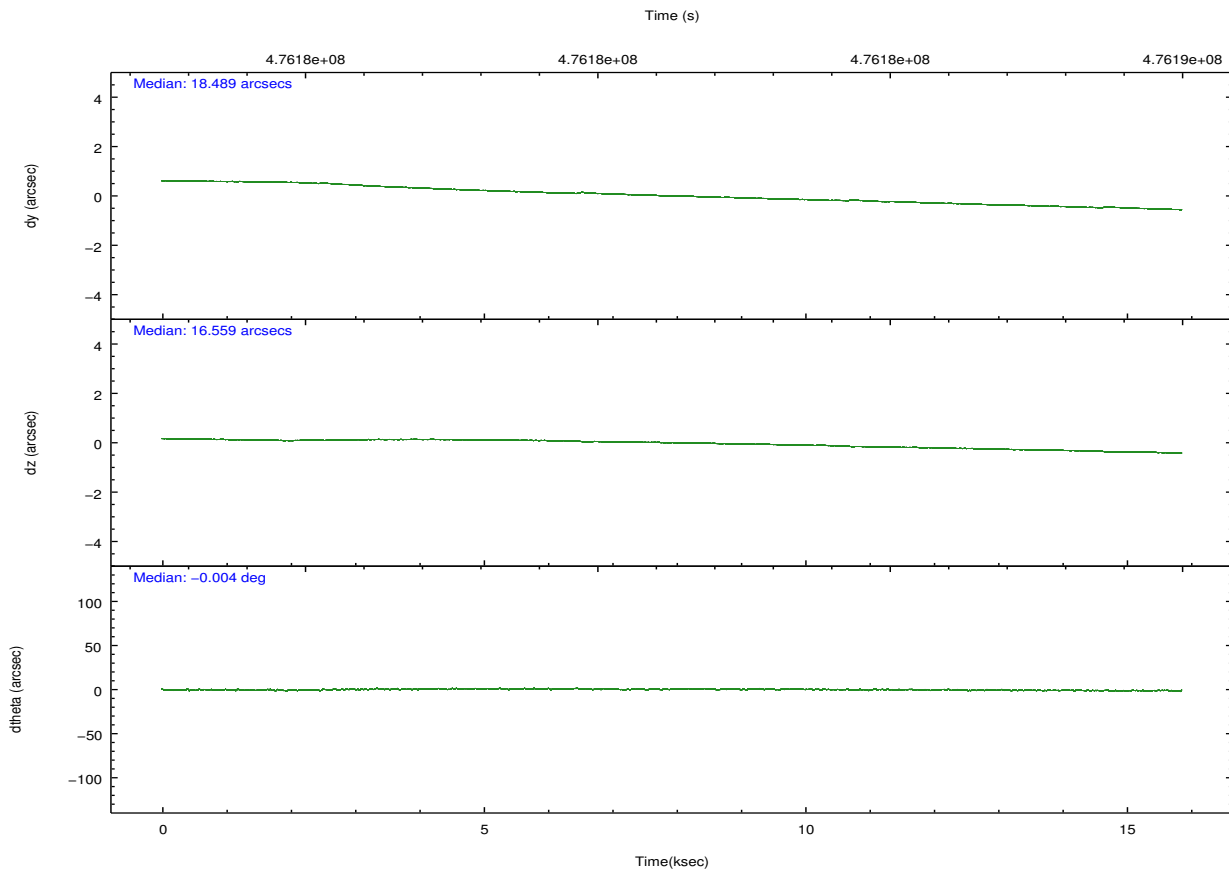
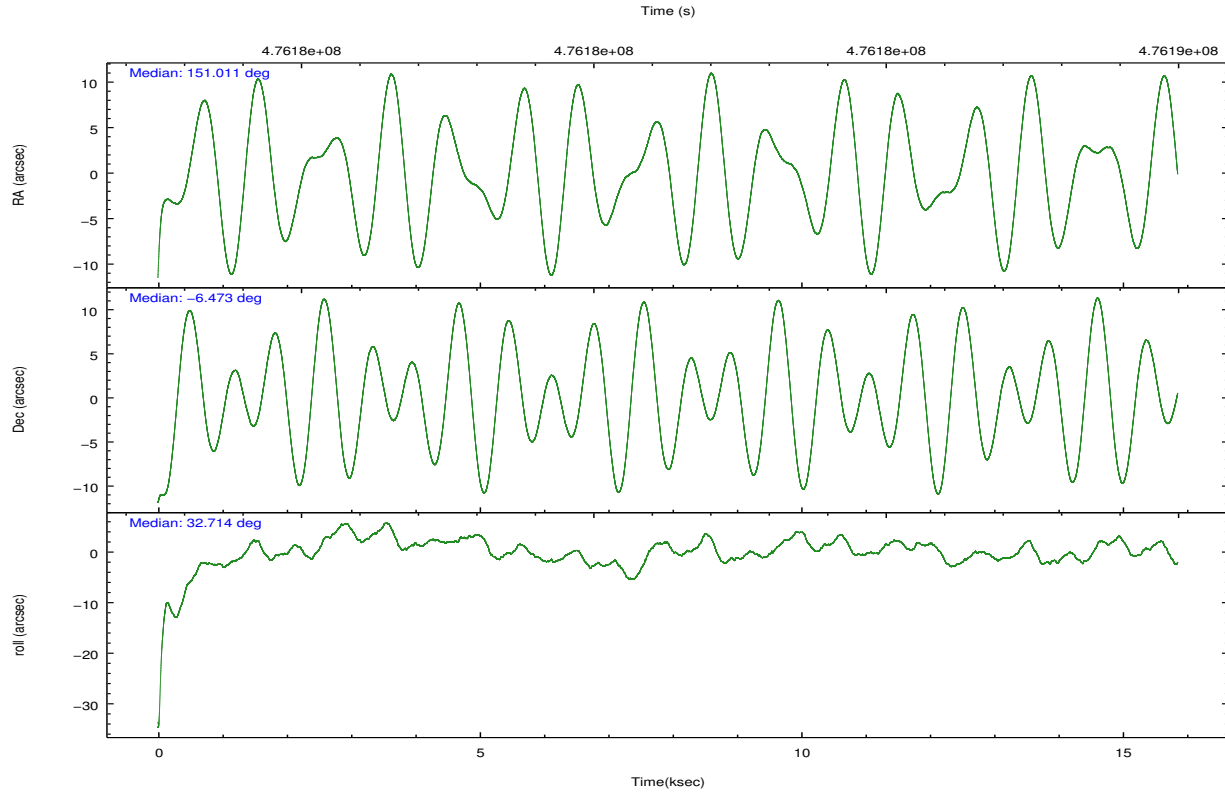
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	4379	3229	3343	4400	7626
	5%	4%	3%	3%	7%
grade 1 events	54	39	38	108	82
	0%	0%	0%	0%	0%
grade 2 events	2465	1925	2264	9979	6681
	2%	2%	2%	8%	6%
grade 3 events	910	936	1030	4135	3001
	1%	1%	1%	3%	2%
grade 4 events	1022	939	1052	4160	2806
	1%	1%	1%	3%	2%
grade 5 events	3498	4209	4218	11582	6251
	4%	5%	4%	10%	5%
grade 6 events	1803	1888	2324	26388	7737
	2%	2%	2%	23%	7%
grade 7 events	72579	65842	71893	52230	74691
	83%	83%	83%	46%	68%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-23678	ACIS-23678	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	150.998956	151.0112500738235	CCD I2 on	O2	Y
[deg] Pointing Dec	-6.497830	-6.473378718559873	CCD I3 on	Y	Y
[deg] Pointing Roll	32.558251	32.716253081868	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O1	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	Y	Y
[s] Observation start time (MET)	476174187.184000	476172540.27905	CCD S5 on	N	N
Observation start date	2013-02-02T06:35:20	2013-02-02T06:09:00	Number of optional ACIS chips dropped	1	1
[s] Observation end time (MET)	476189187.184000	476190174.38001	On-chip summing requested	N	N
Observation end date	2013-02-02T10:45:20	2013-02-02T11:02:54	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





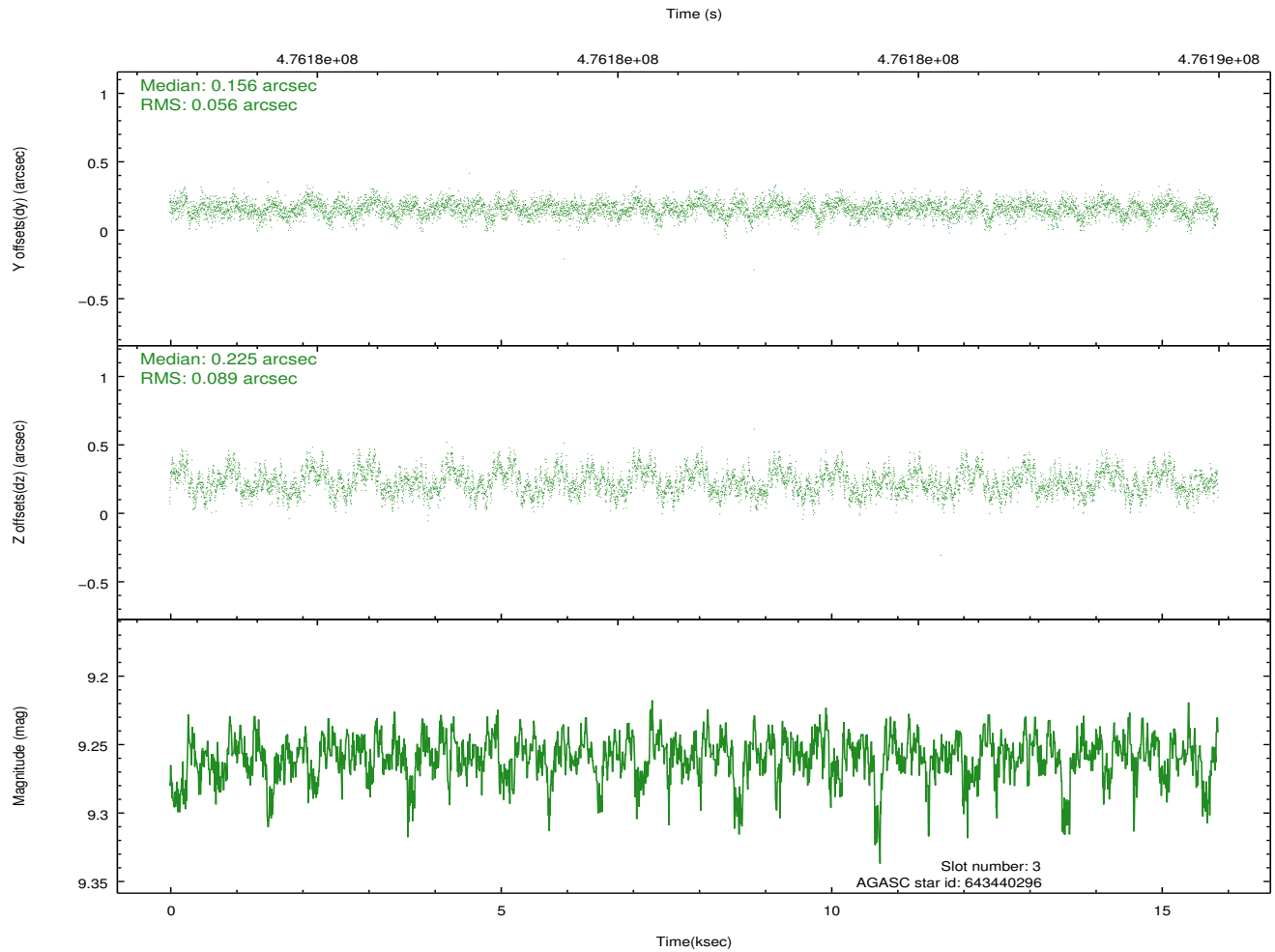
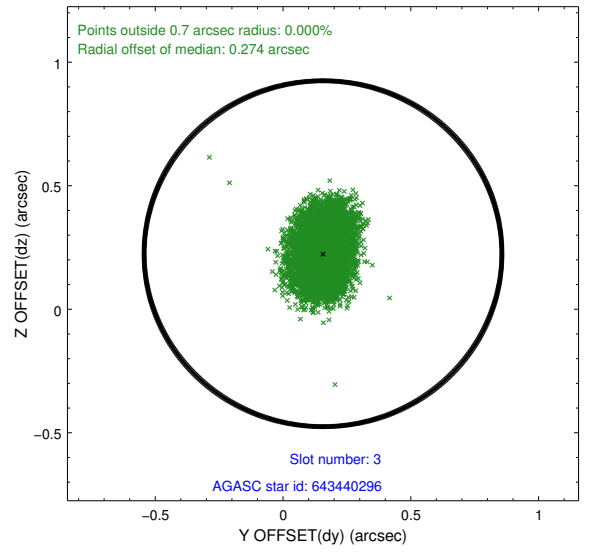
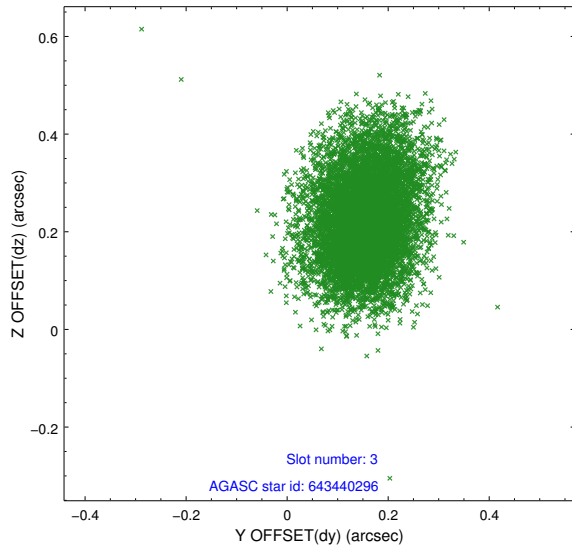
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.01	3867	-0.105	-0.019	0.008	0.013	0.000000	0.000000	-771.69	-1737.94
1	FID		ACIS-S-4	7.09	3868	0.267	0.056	0.007	0.013	0.000000	0.000000	2141.83	170.32
2	FID		ACIS-S-5	7.12	3868	-0.192	-0.029	0.008	0.014	0.000000	0.000000	-1824.26	164.23
3	GUIDE	used	643440296	9.26	7728	0.156	0.225	0.111	0.184	150.751069	-6.849297	-1427.80	-589.25
4	GUIDE	used	643442136	9.42	7730	-0.332	-0.254	0.115	0.186	150.890181	-6.001661	632.32	1715.47
5	GUIDE	used	643444352	8.61	7730	0.012	-0.171	0.082	0.134	150.678213	-6.503631	-978.36	599.76
6	GUIDE	used	643443144	9.21	7708	0.198	-0.168	0.098	0.156	150.614402	-6.584319	-1326.83	477.15
7	GUIDE	used	643433040	7.55	7736	-0.029	0.366	0.075	0.119	151.111617	-7.218386	-1056.66	-2405.64

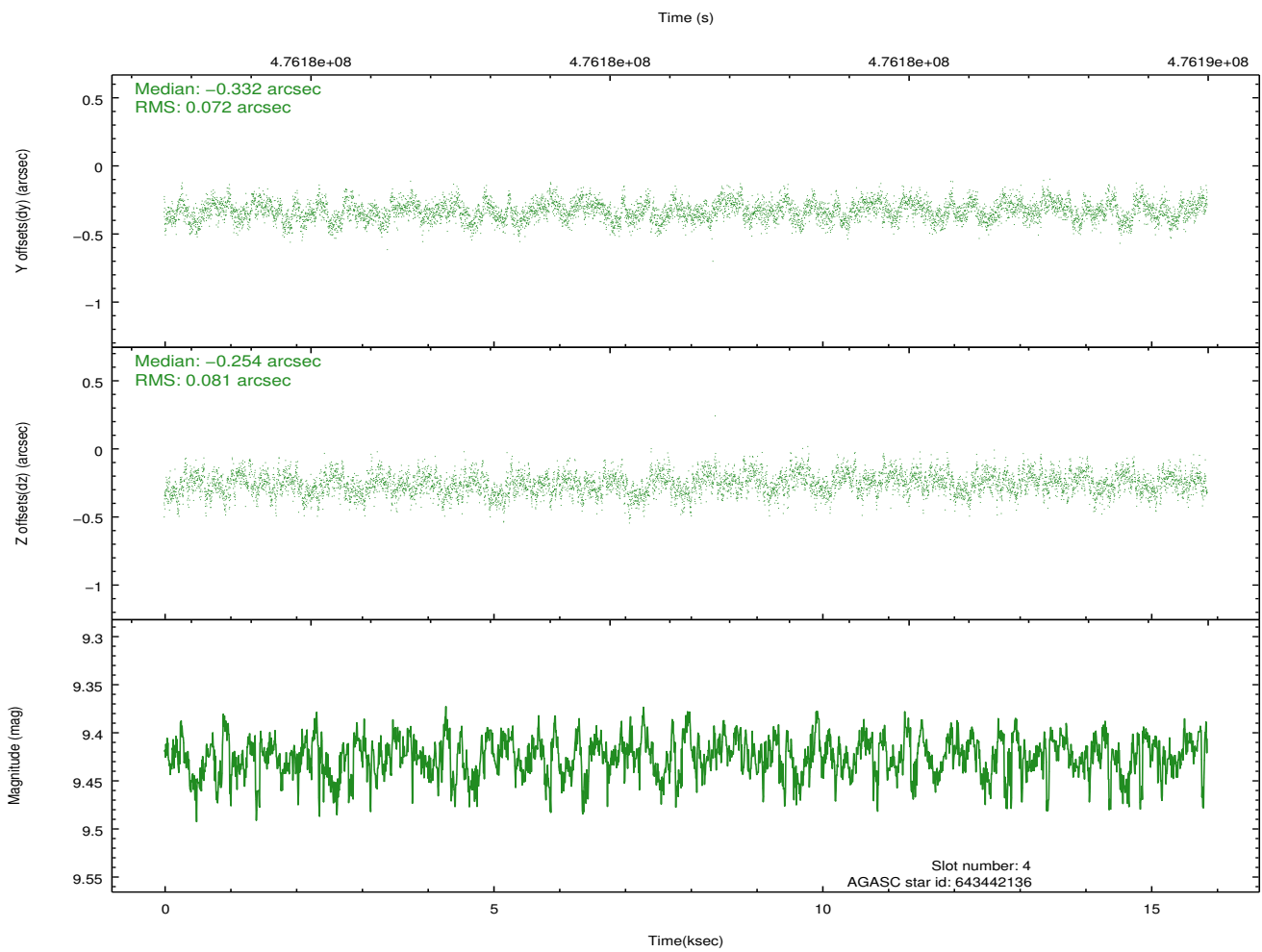
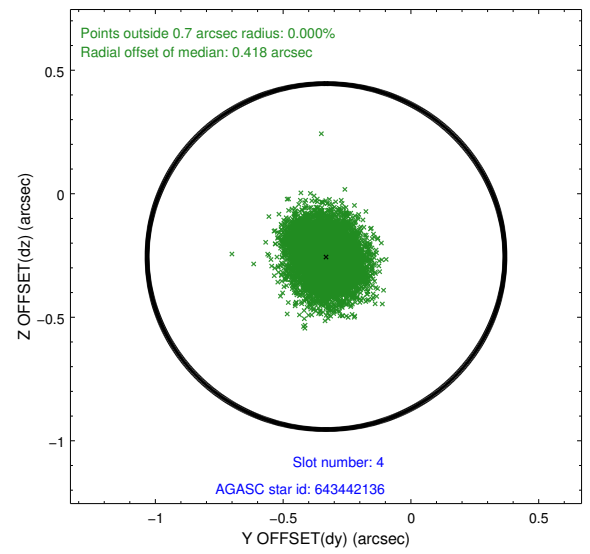
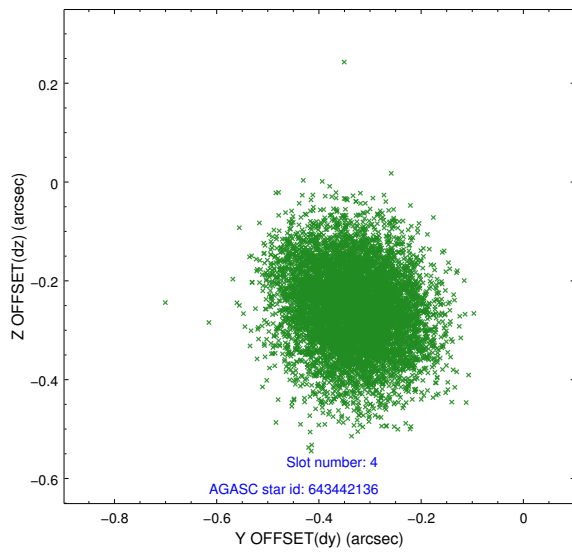
∞

## 2.4 Star Slots

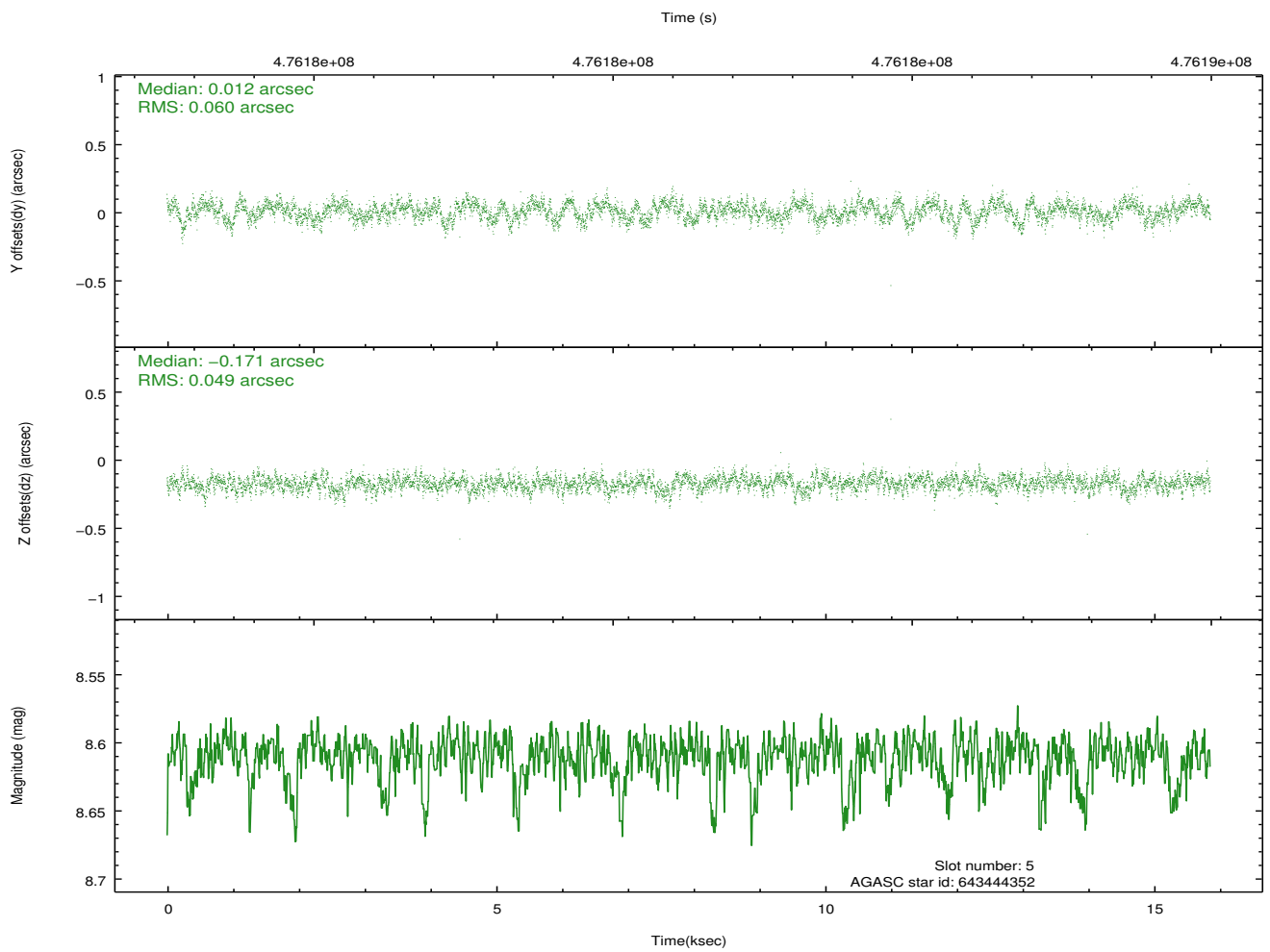
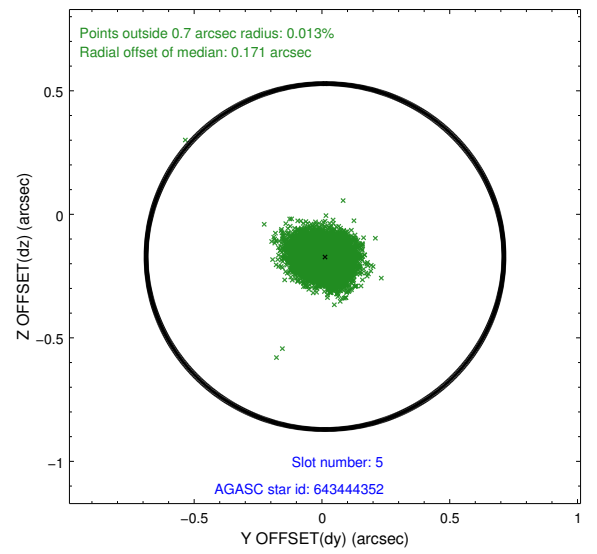
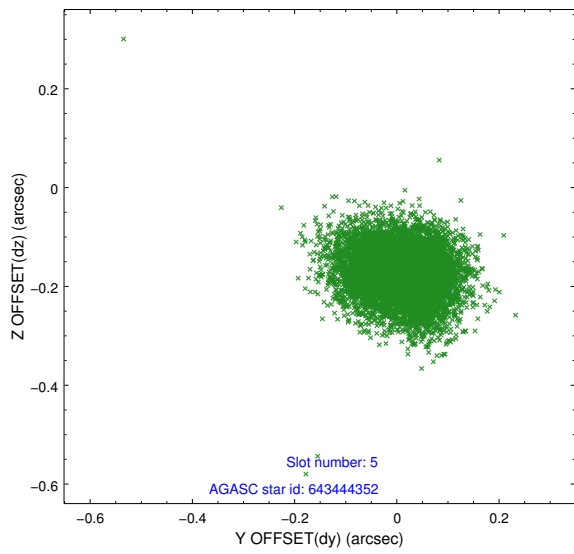
### 2.4.1 Slot 3



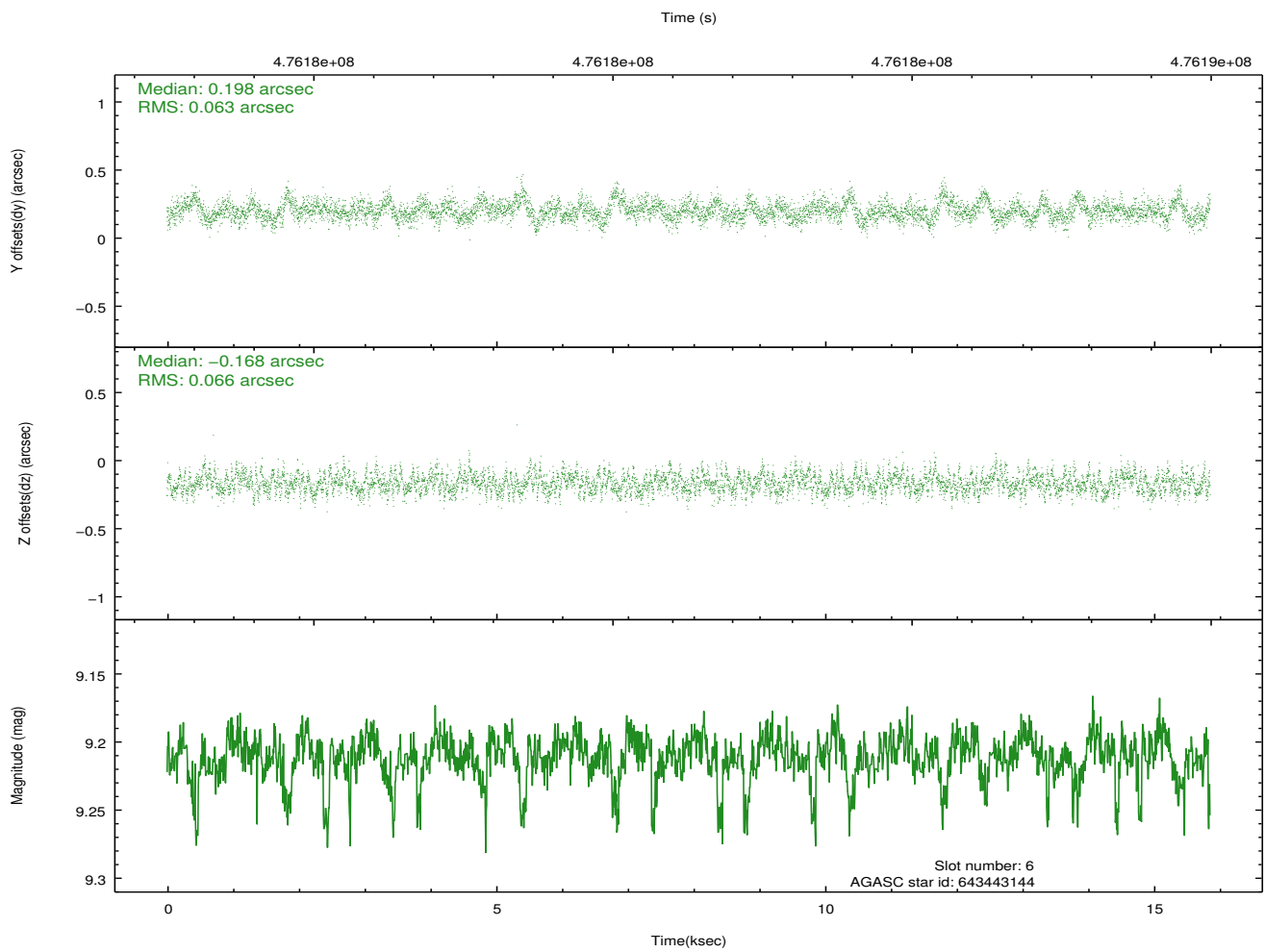
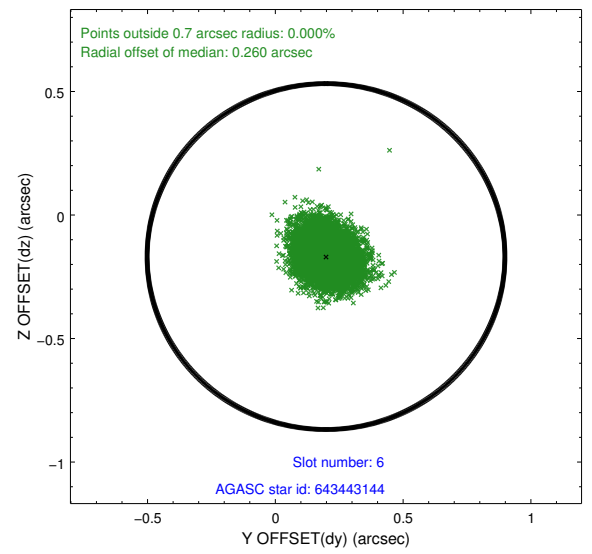
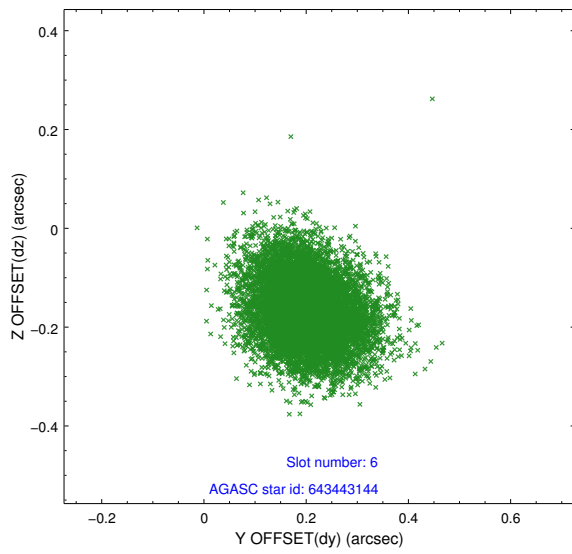
## 2.4.2 Slot 4



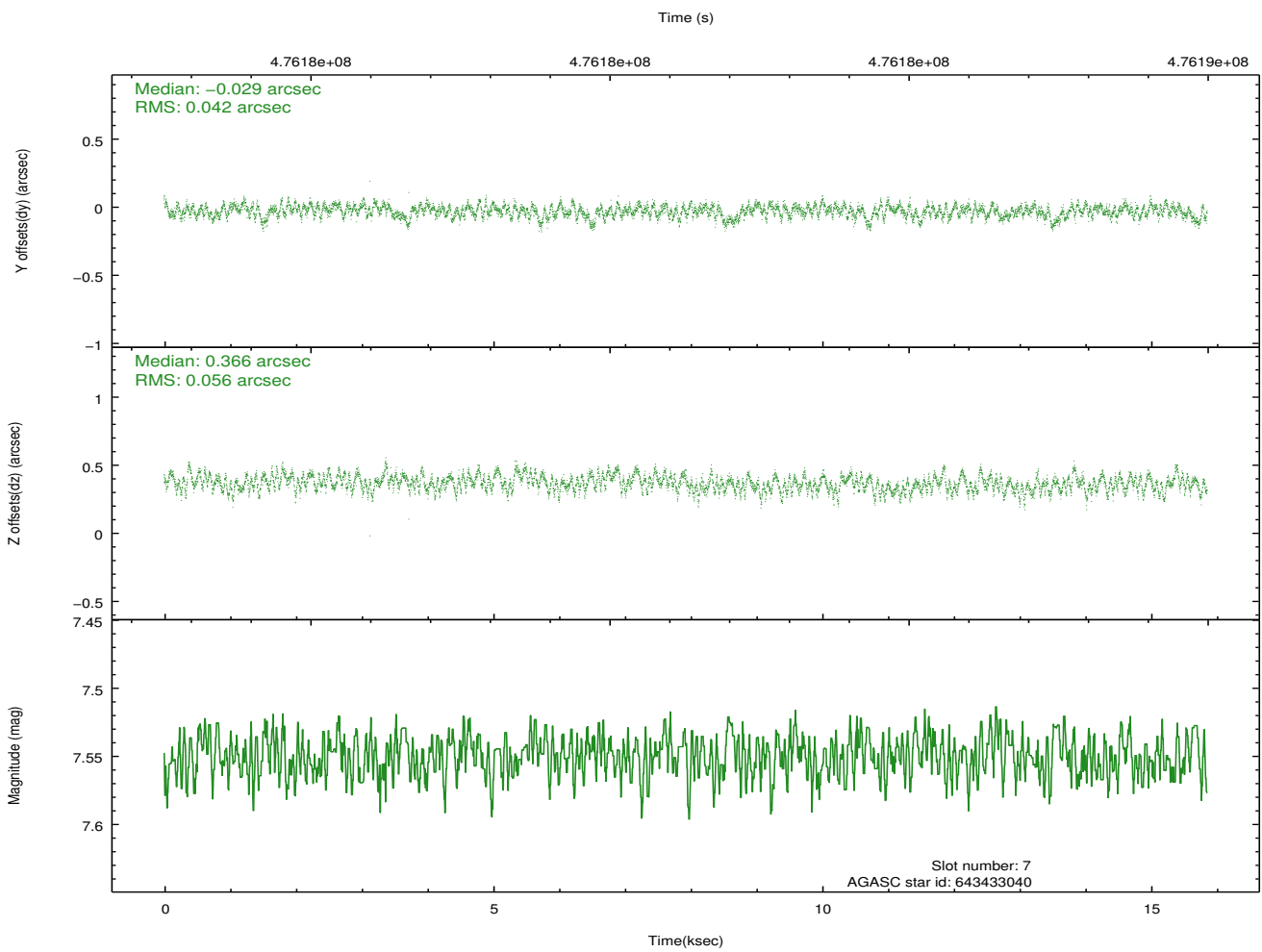
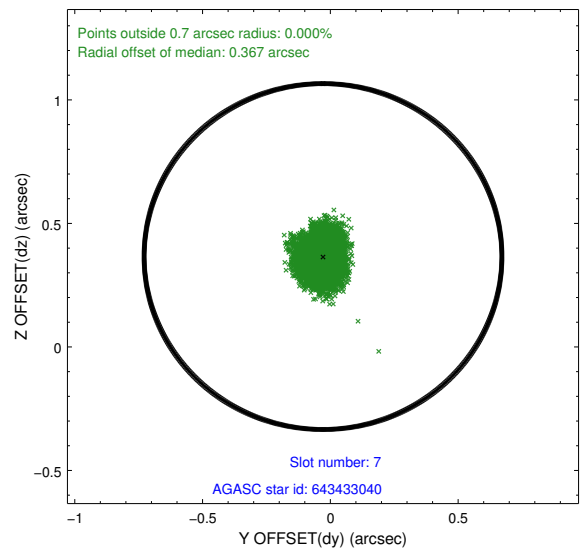
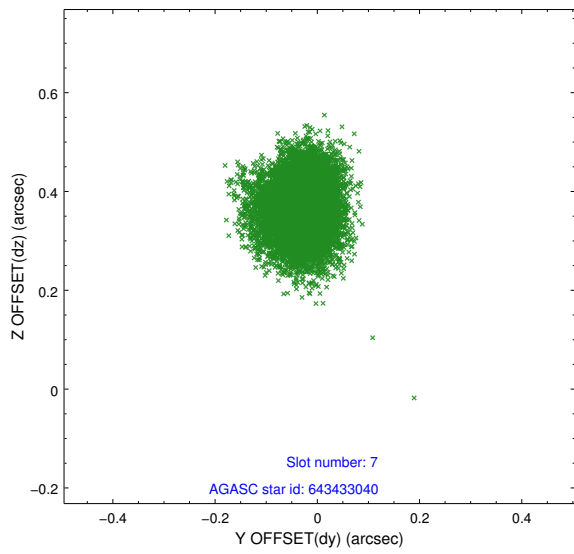
### 2.4.3 Slot 5



## 2.4.4 Slot 6

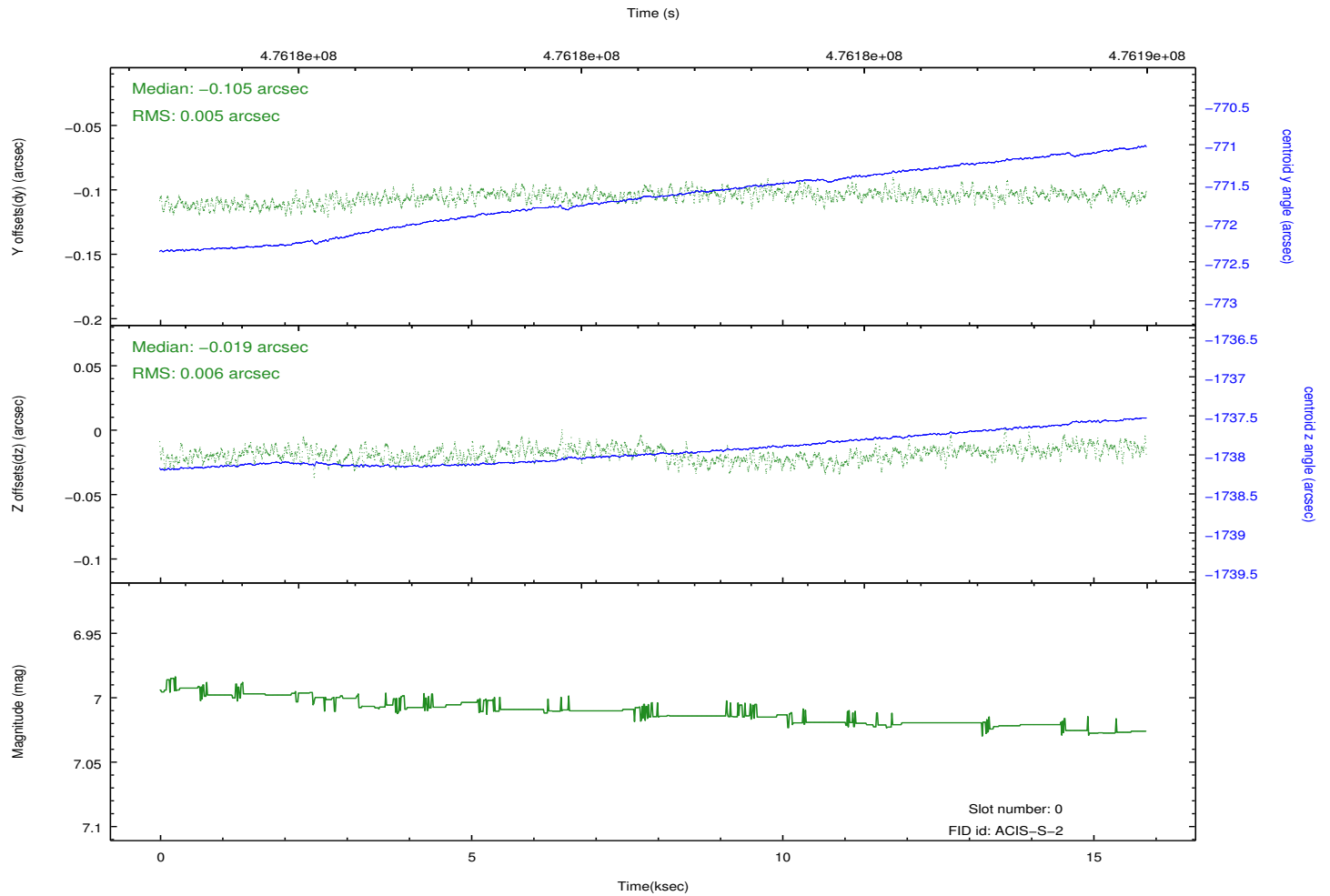
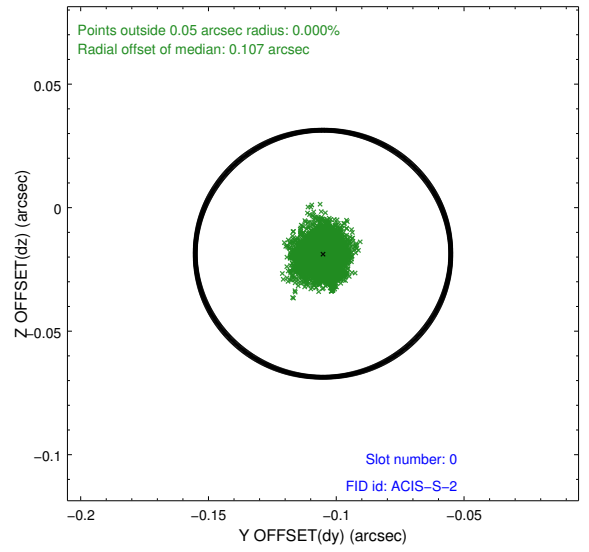
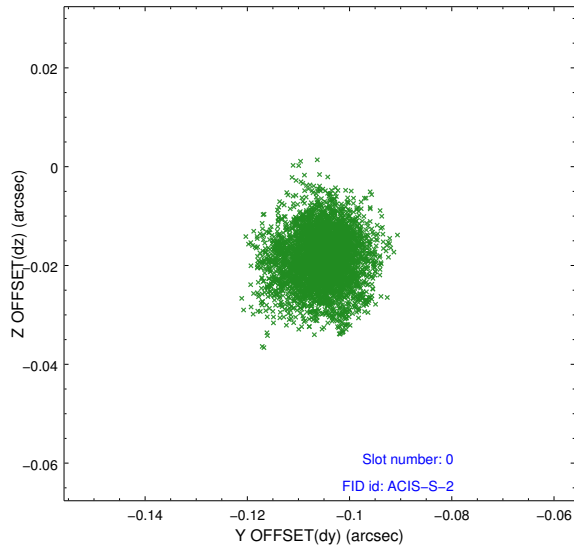


## 2.4.5 Slot 7

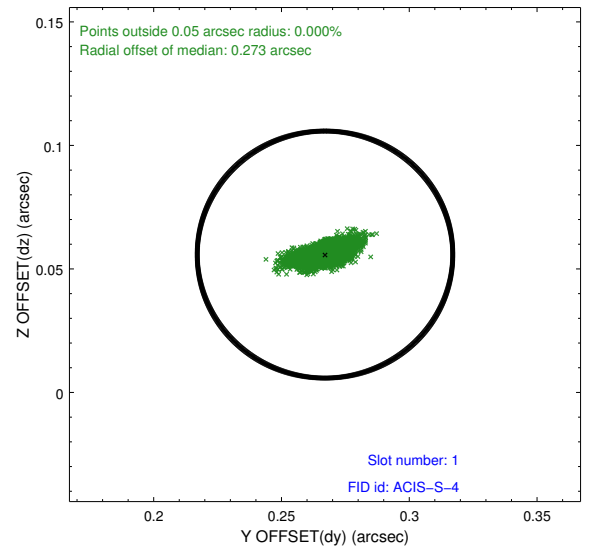
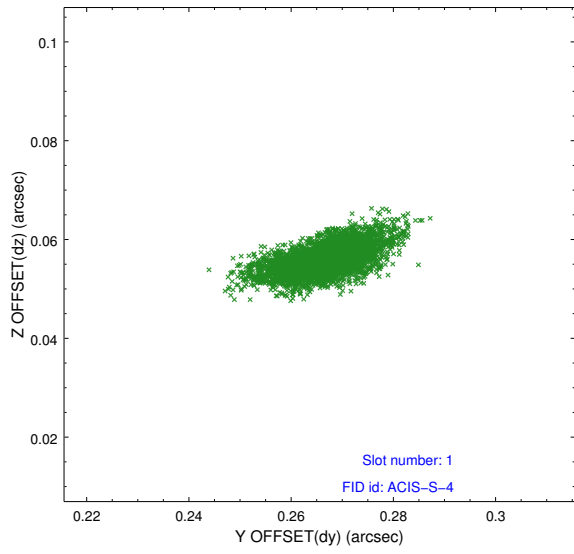


## 2.5 FID Slots

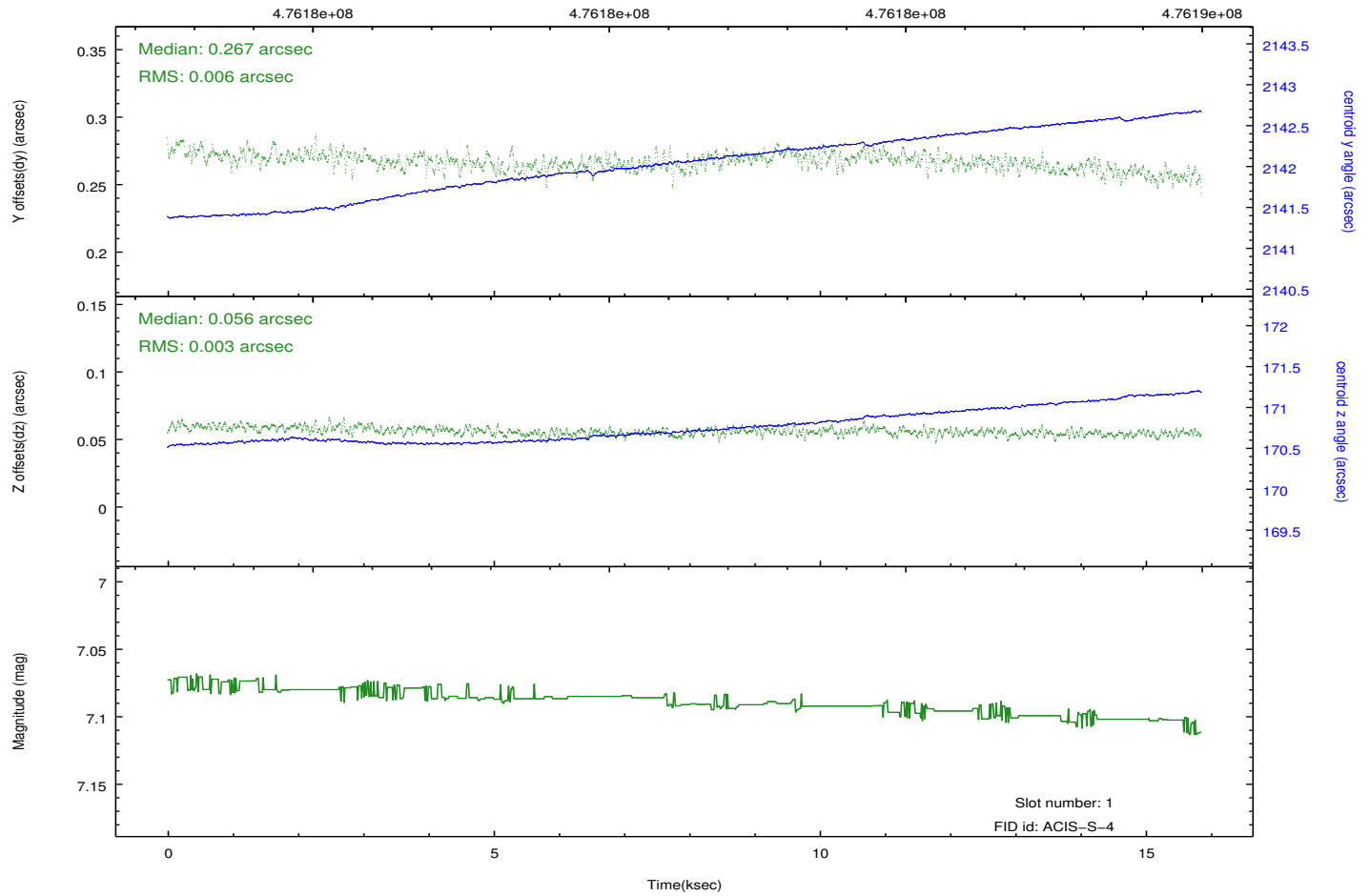
### 2.5.1 Slot 0



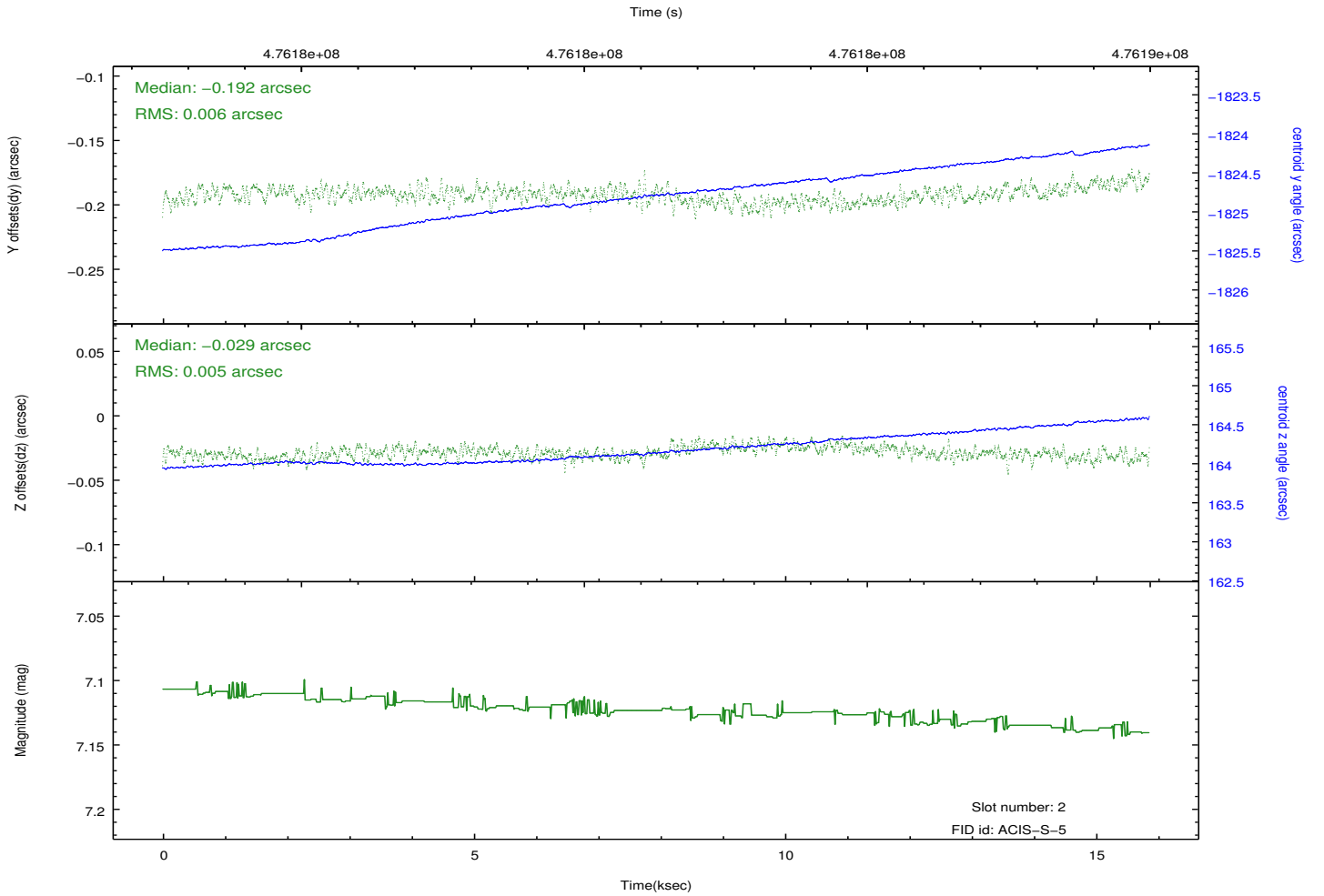
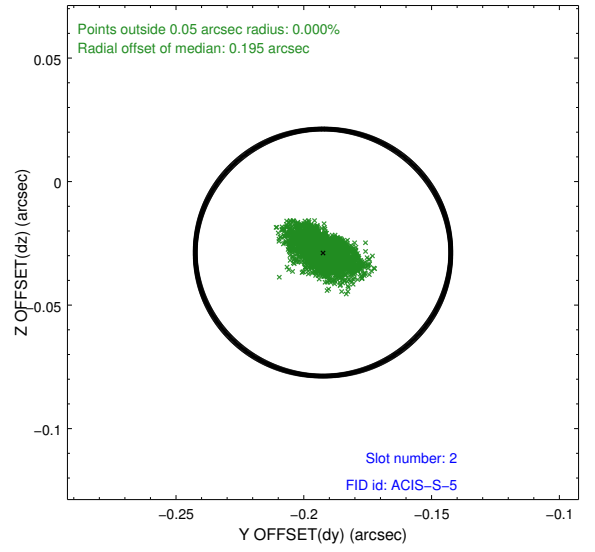
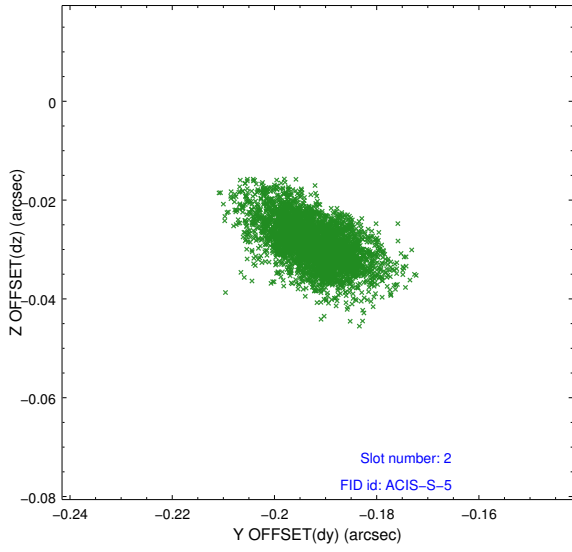
## 2.5.2 Slot 1



Time (s)



### 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	15.066000115871

## 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.