

# V&V Reference Report

## L2 ASCDS Version : 10.1.1

Observation 15969 - L2 Version 2  
Chandra X-Ray Center

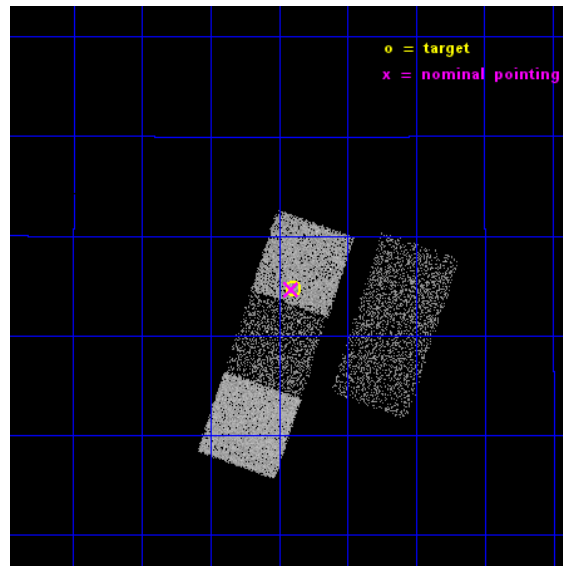
L2 Processing Date : Dec 9 2014

## 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

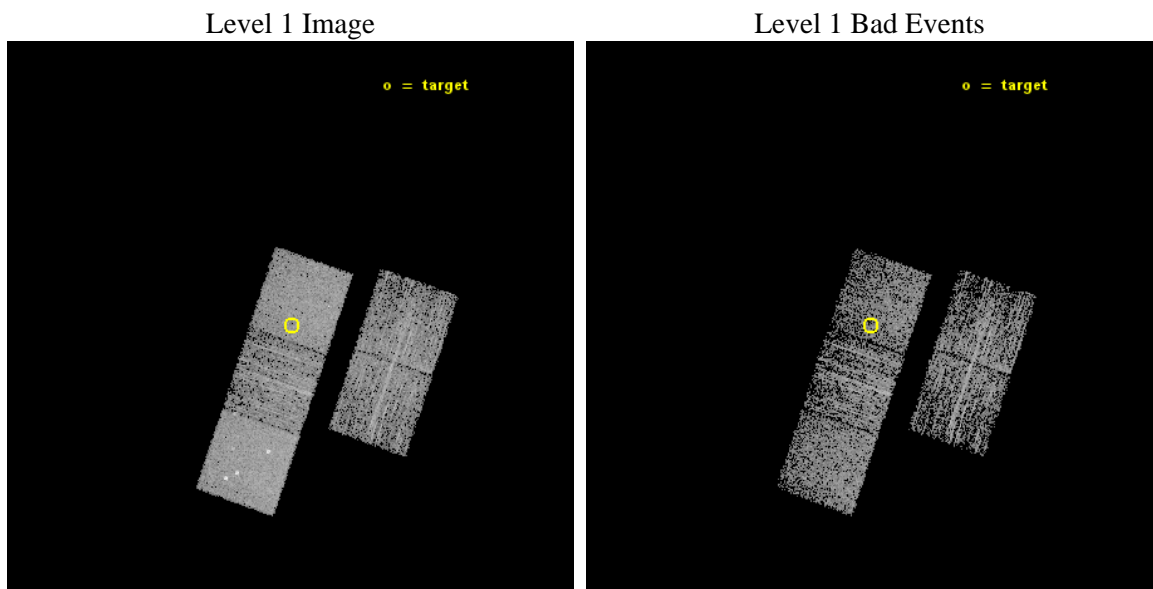
seq_num	502202	Sequence number
obs_id	15969	Observation id
title	Where Have All The Central Compact Objects Gone?	Proposal title
observer	Dr. Eric Gotthelf	Principal investigator
object	PSR J0137+1654	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	24.349167	Observer's specified target RA [deg]
dec_targ	16.911694	Observer's specified target Dec [deg]
ra_nom	24.352220816226	Nominal RA [deg]
dec_nom	16.910973355136	Nominal Dec [deg]
roll_nom	288.91505124013	Nominal Roll [deg]
revision	2	Processing version of data
ontime	3568.100027442	Sum of GTIs [s]
livetime	3521.4801737864	Livetime [s]
ontime2	3568.0469961762	Sum of GTIs [s]
ontime3	3568.0880361795	Sum of GTIs [s]
ontime5	3568.100027442	Sum of GTIs [s]
ontime6	3564.9590569735	Sum of GTIs [s]
ontime7	3568.100027442	Sum of GTIs [s]
l2events	28096	Number of level 2 events



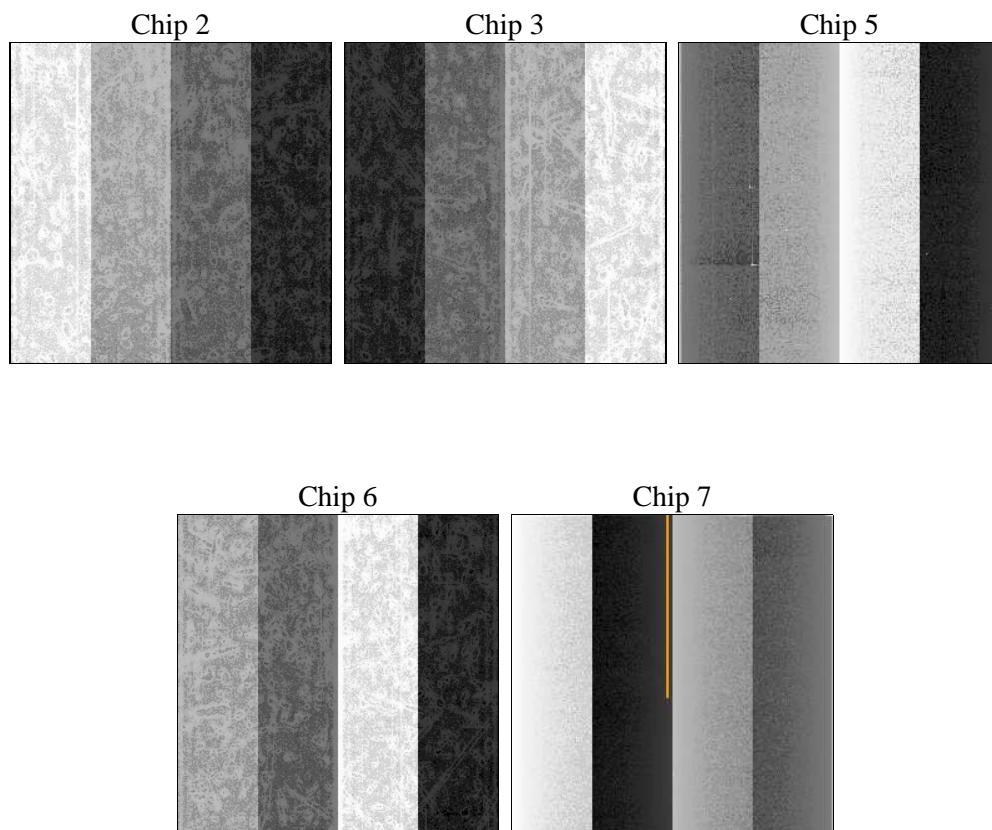
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	3500.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	3568.100027442	Sum of GTIs [s]
caldsver	4.6.4	&#160	ontime2	3568.0469961762	Sum of GTIs [s]
date	2014-12-09T09:12:09	Date and time of file creation	ontime3	3568.0880361795	Sum of GTIs [s]
revision	2	Processing version of data	ontime5	3568.100027442	Sum of GTIs [s]
			ontime6	3564.9590569735	Sum of GTIs [s]
			ontime7	3568.100027442	Sum of GTIs [s]
			l1events	103392	Number of level 1 events

### 2.1.4 Events

	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7
level 1 events	15898	16293	30514	17384	23303
rejected events	13999	14368	15154	15279	13176
rejected %	88%	88%	49%	87%	56%

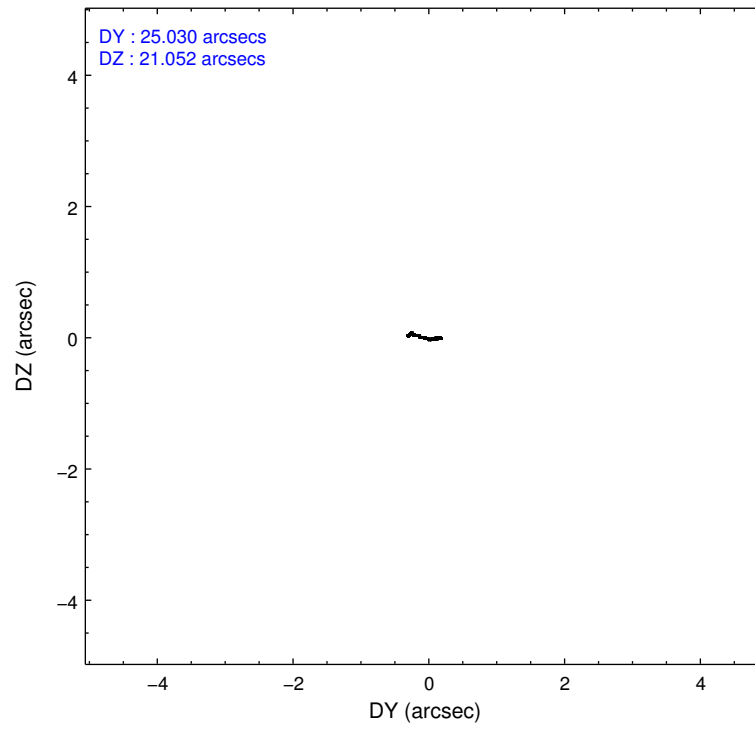
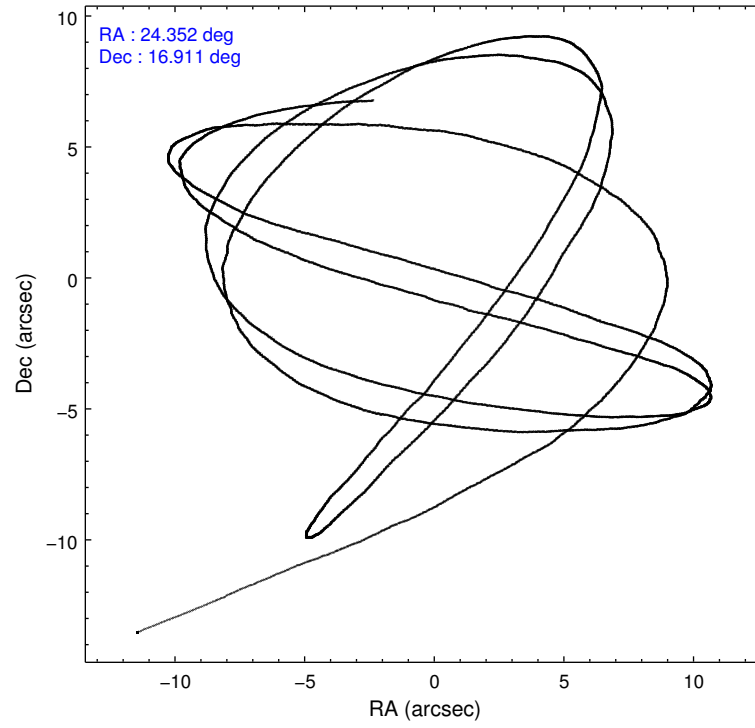
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7
grade 0 events	707	637	2480	725	928
	4%	3%	8%	4%	3%
grade 1 events	10	11	104	15	24
	0%	0%	0%	0%	0%
grade 2 events	474	450	4516	533	2055
	2%	2%	14%	3%	8%
grade 3 events	173	242	482	198	844
	1%	1%	1%	1%	3%
grade 4 events	179	194	507	237	902
	1%	1%	1%	1%	3%
grade 5 events	742	918	2243	897	2432
	4%	5%	7%	5%	10%
grade 6 events	366	405	7407	414	5416
	2%	2%	24%	2%	23%
grade 7 events	13247	13436	12775	14365	10702
	83%	82%	41%	82%	45%

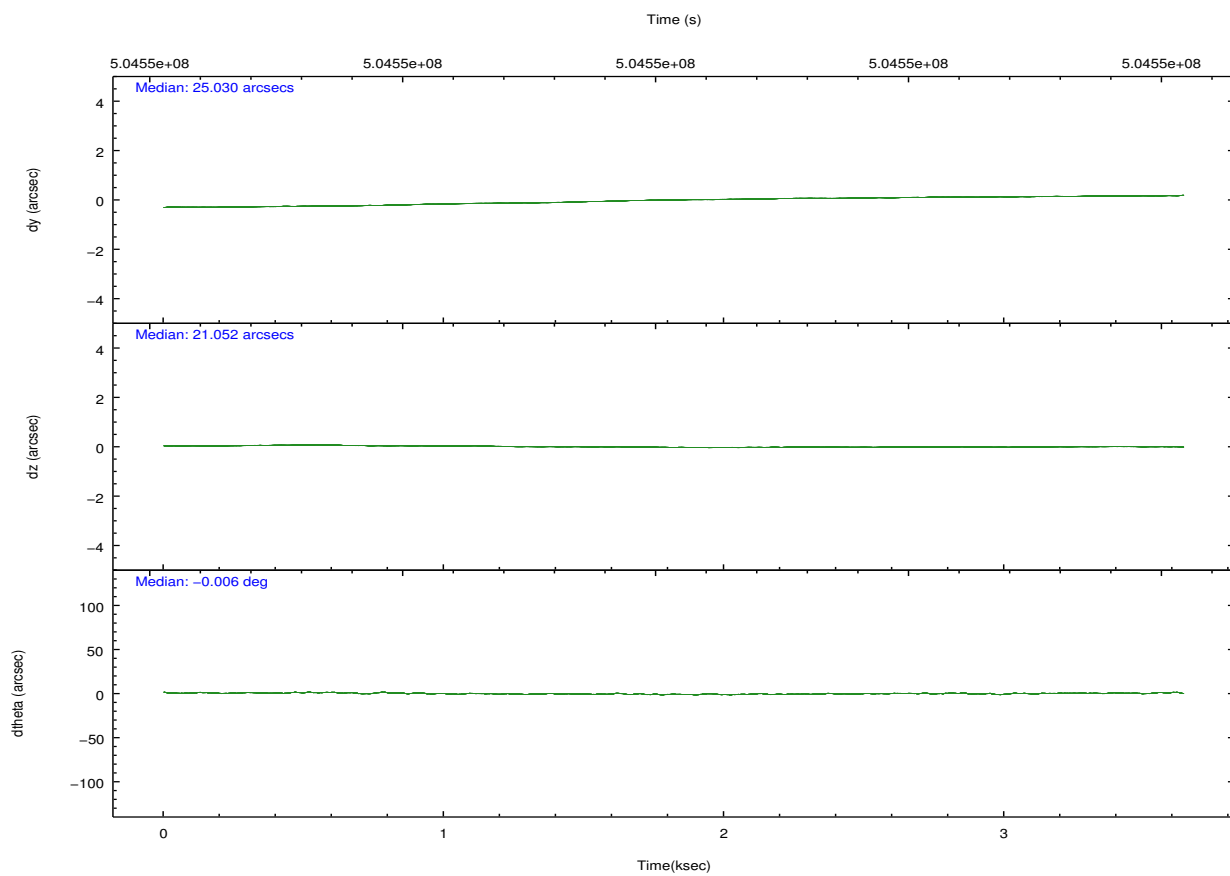
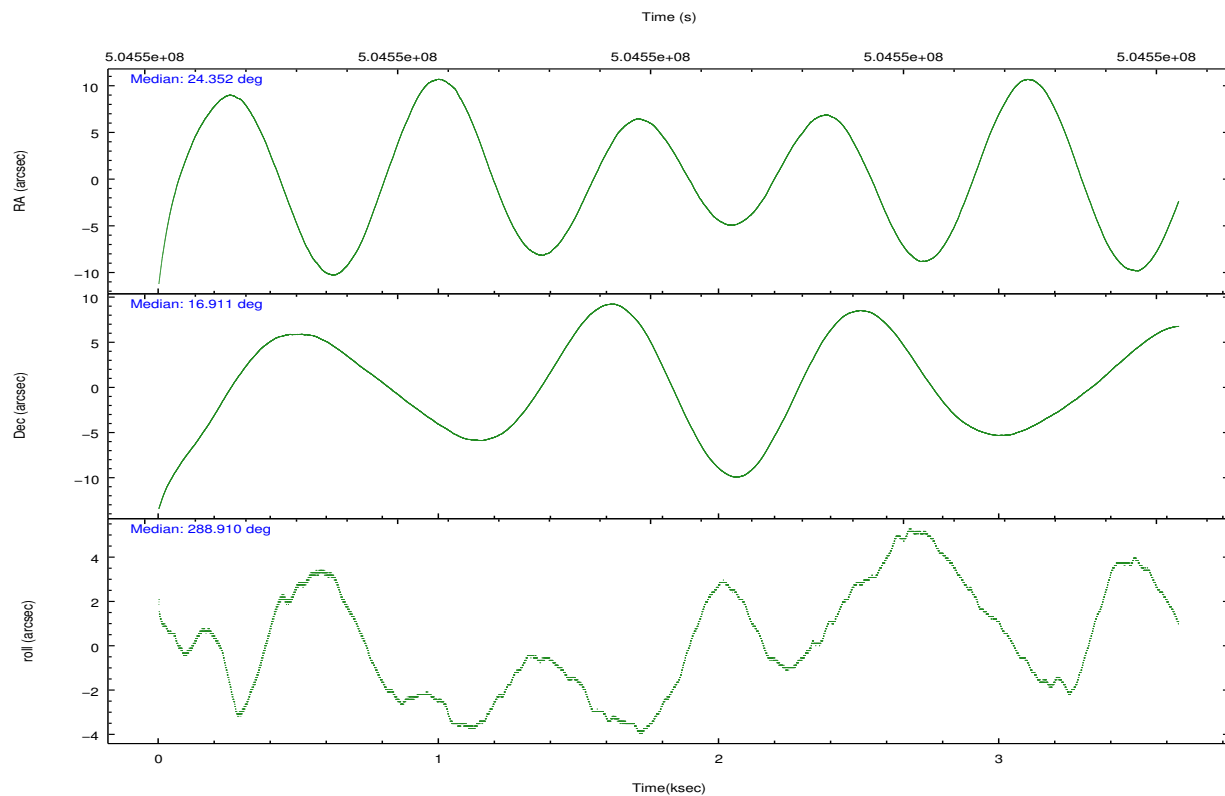


## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-23567	ACIS-23567	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	24.330446	24.3522208162255	CCD I2 on	O2	Y
[deg] Pointing Dec	16.928663	16.91097335513606	CCD I3 on	O3	Y
[deg] Pointing Roll	288.764768	288.9150512401282	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O1	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	O4	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	N	N
[s] Observation start time (MET)	504549391.184000	504548006.83598	CCD S5 on	N	N
Observation start date	2013-12-27T16:35:24	2013-12-27T16:13:26	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	504552891.184000	504553497.76128	On-chip summing requested	N	N
Observation end date	2013-12-27T17:33:44	2013-12-27T17:44:57	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect



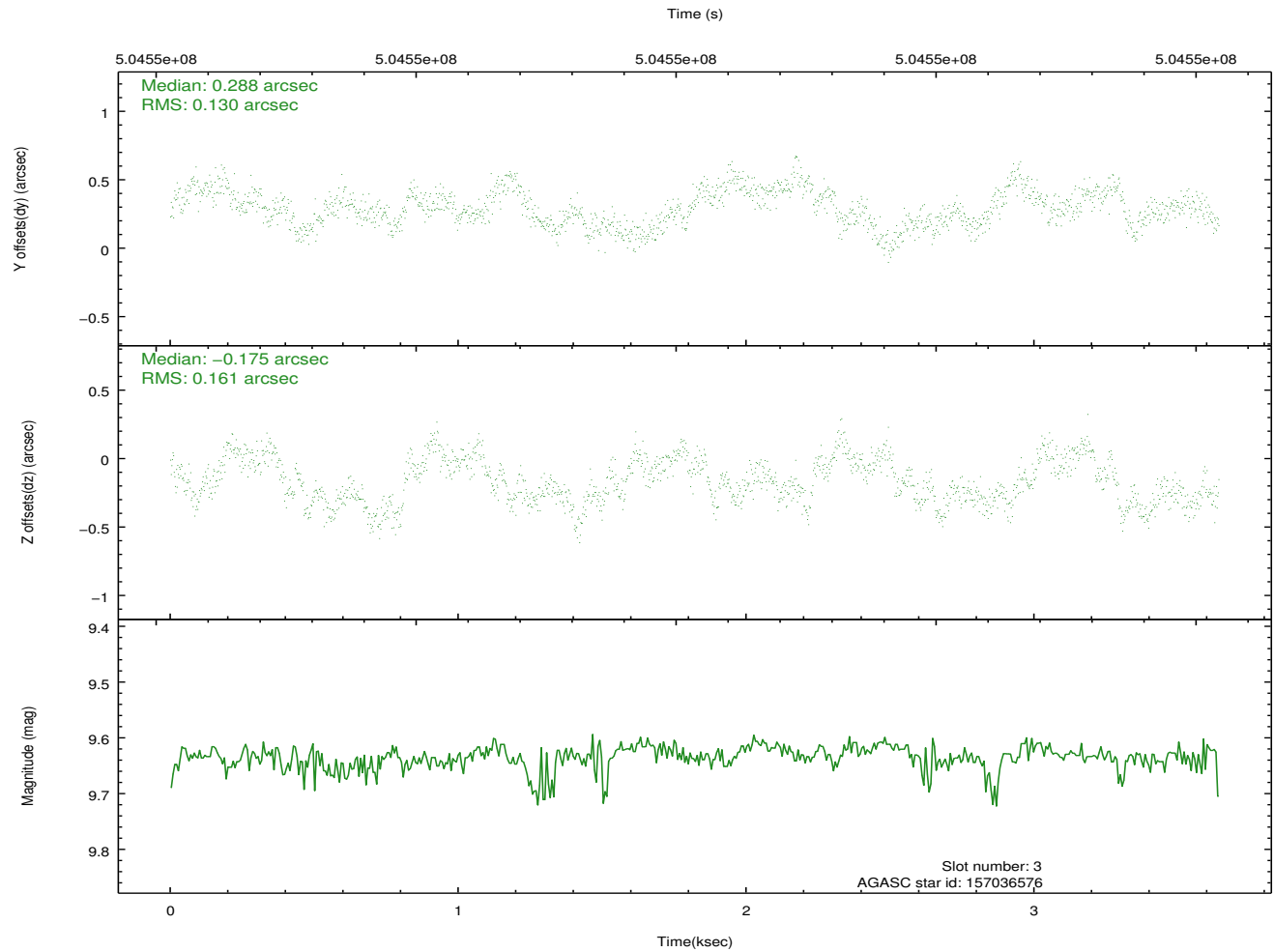
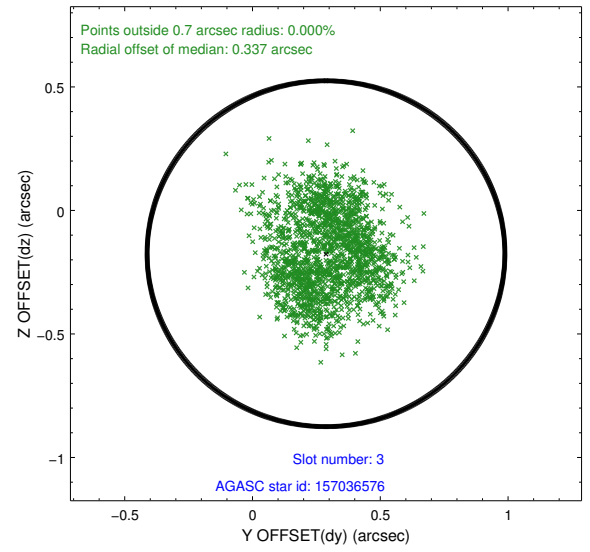
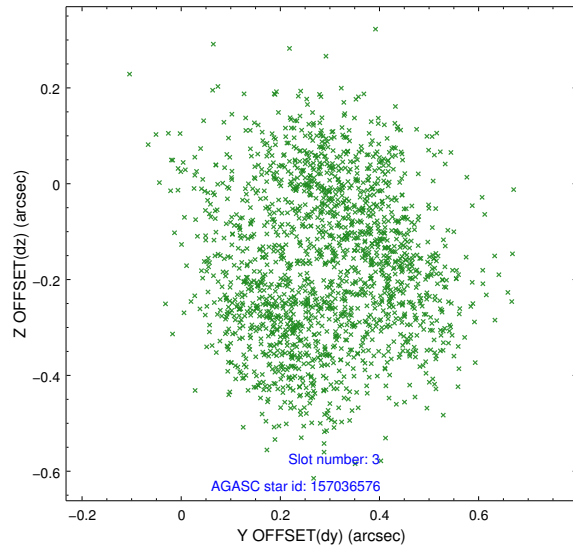


### Slot Statistics

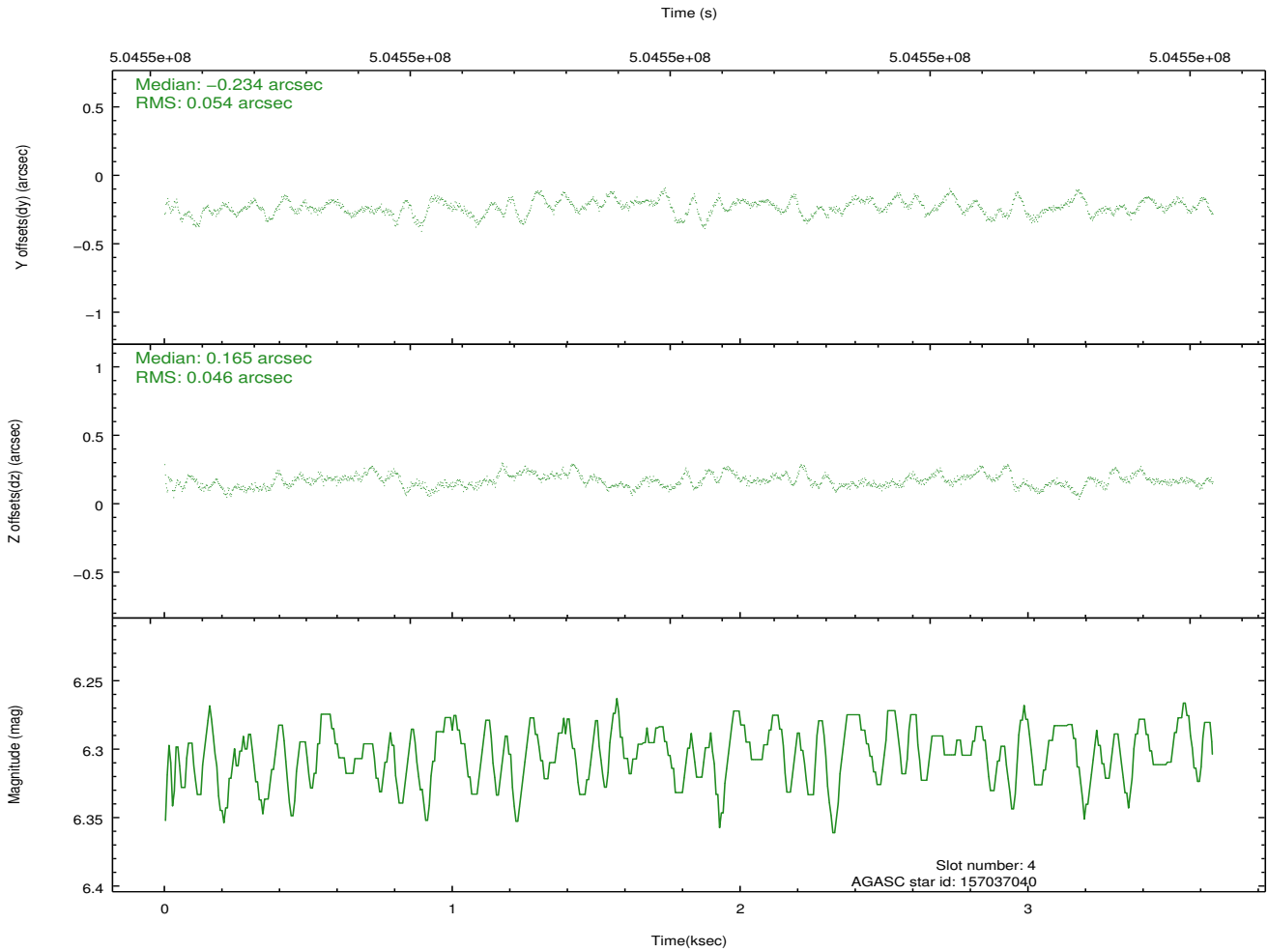
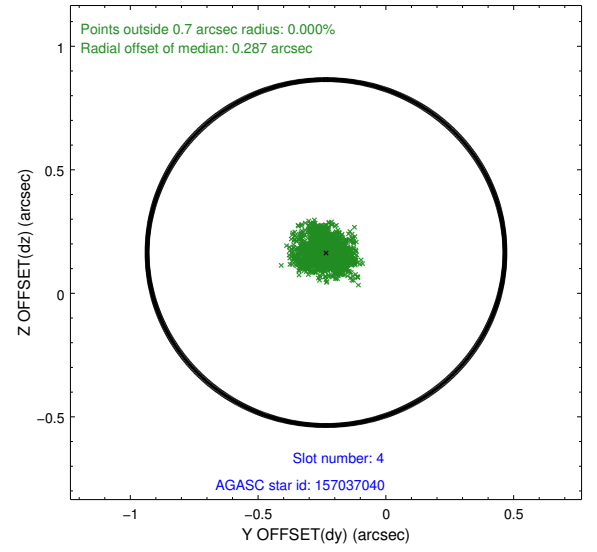
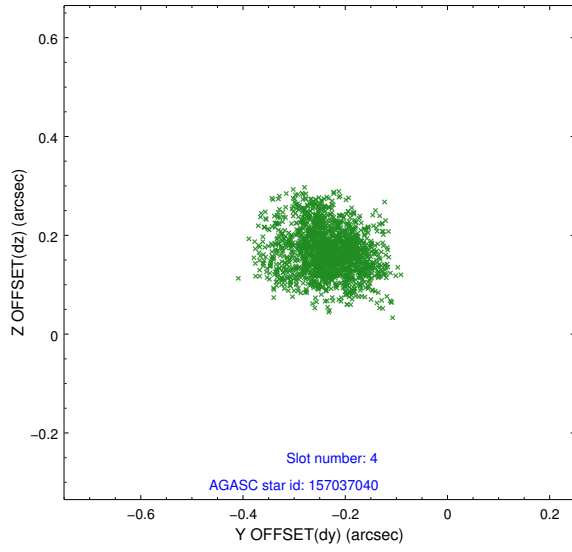
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-1	7.00	888	0.167	-0.057	0.008	0.020	0.000000	0.000000	917.99	-1738.28
1	FID		ACIS-S-2	6.92	887	-0.124	0.052	0.007	0.012	0.000000	0.000000	-777.25	-1744.54
2	FID		ACIS-S-5	7.04	888	-0.066	0.011	0.009	0.029	0.000000	0.000000	-1832.22	157.52
3	GUIDE	used	157036576	9.63	1777	0.288	-0.175	0.225	0.332	23.859578	16.337399	1491.19	-2224.15
4	GUIDE	used	157037040	6.30	1777	-0.234	0.165	0.076	0.121	23.978155	17.433844	-2110.89	-559.25
5	GUIDE	used	157943240	8.98	1777	0.137	-0.035	0.118	0.183	24.500363	16.361777	2120.13	-100.48
6	GUIDE	used	157944072	8.77	1776	-0.039	-0.011	0.098	0.159	24.734173	17.226692	-569.07	1660.20
7	GUIDE	used	157951128	9.18	1773	-0.154	0.042	0.101	0.162	24.416992	17.345998	-1327.00	766.19

## 2.4 Star Slots

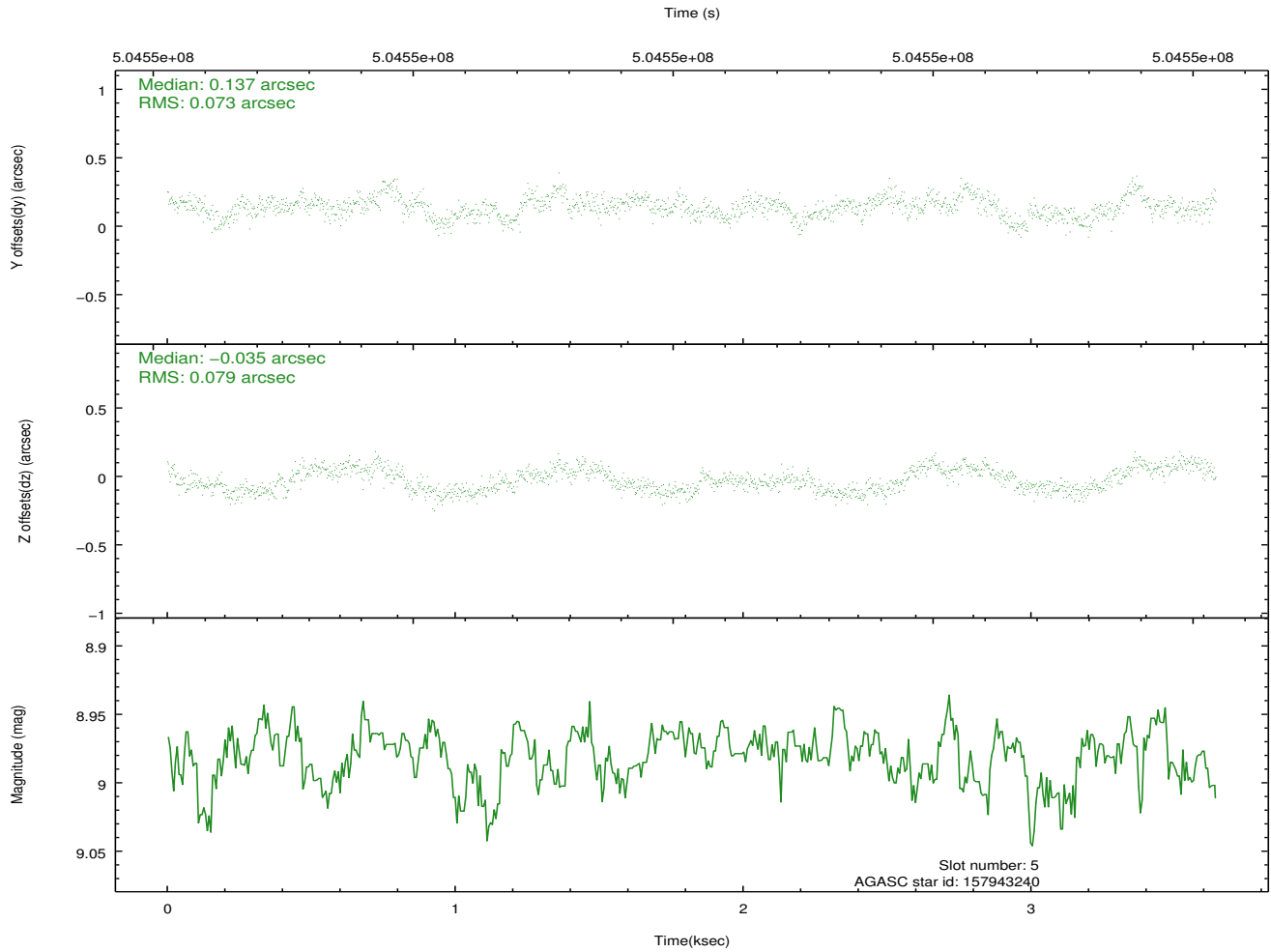
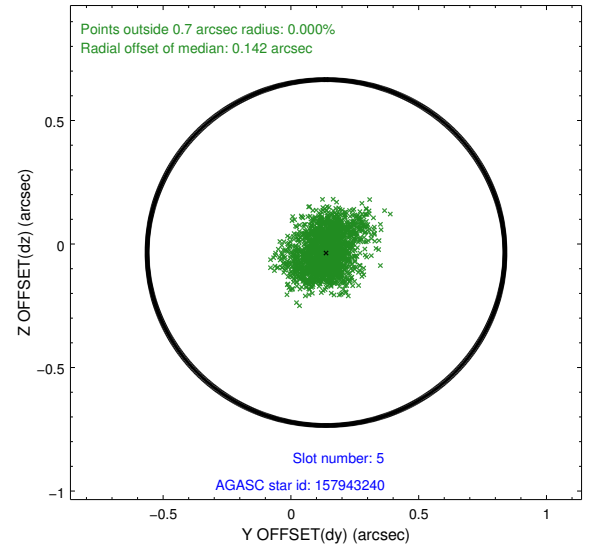
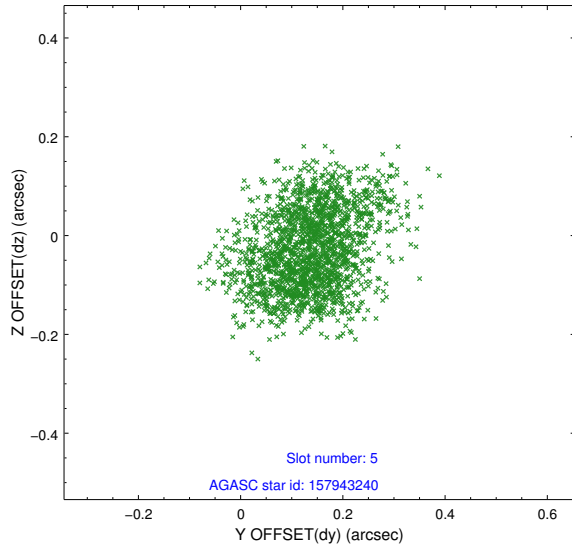
### 2.4.1 Slot 3



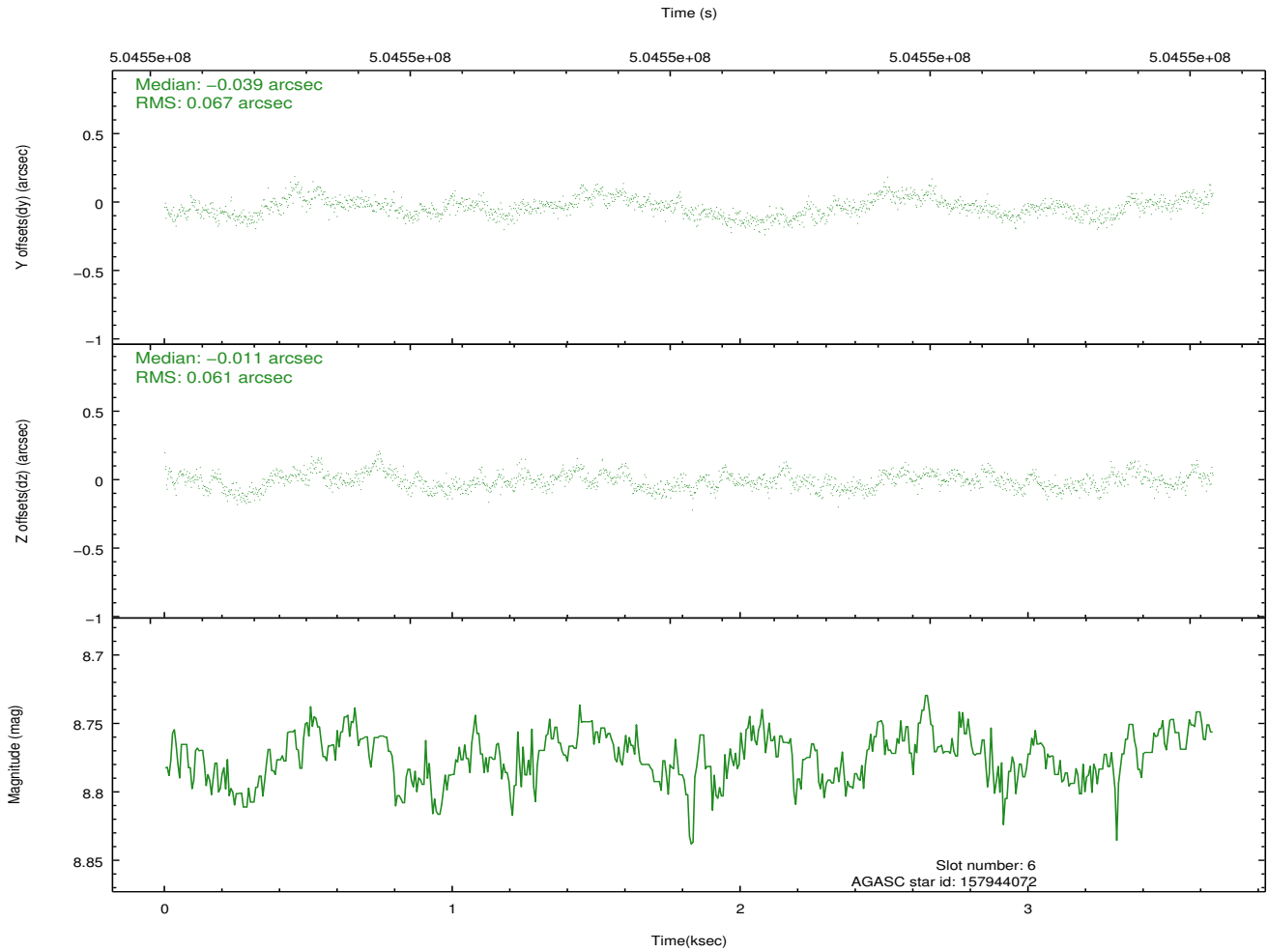
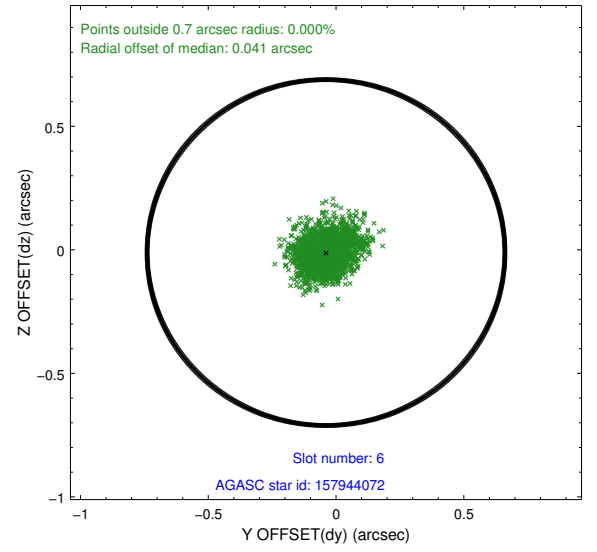
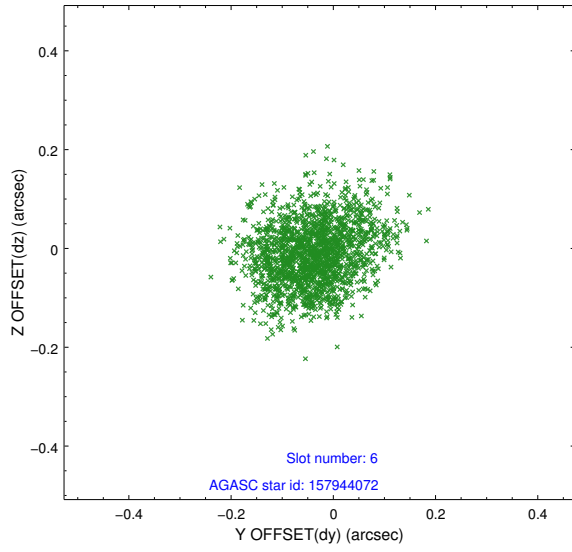
## 2.4.2 Slot 4



### 2.4.3 Slot 5

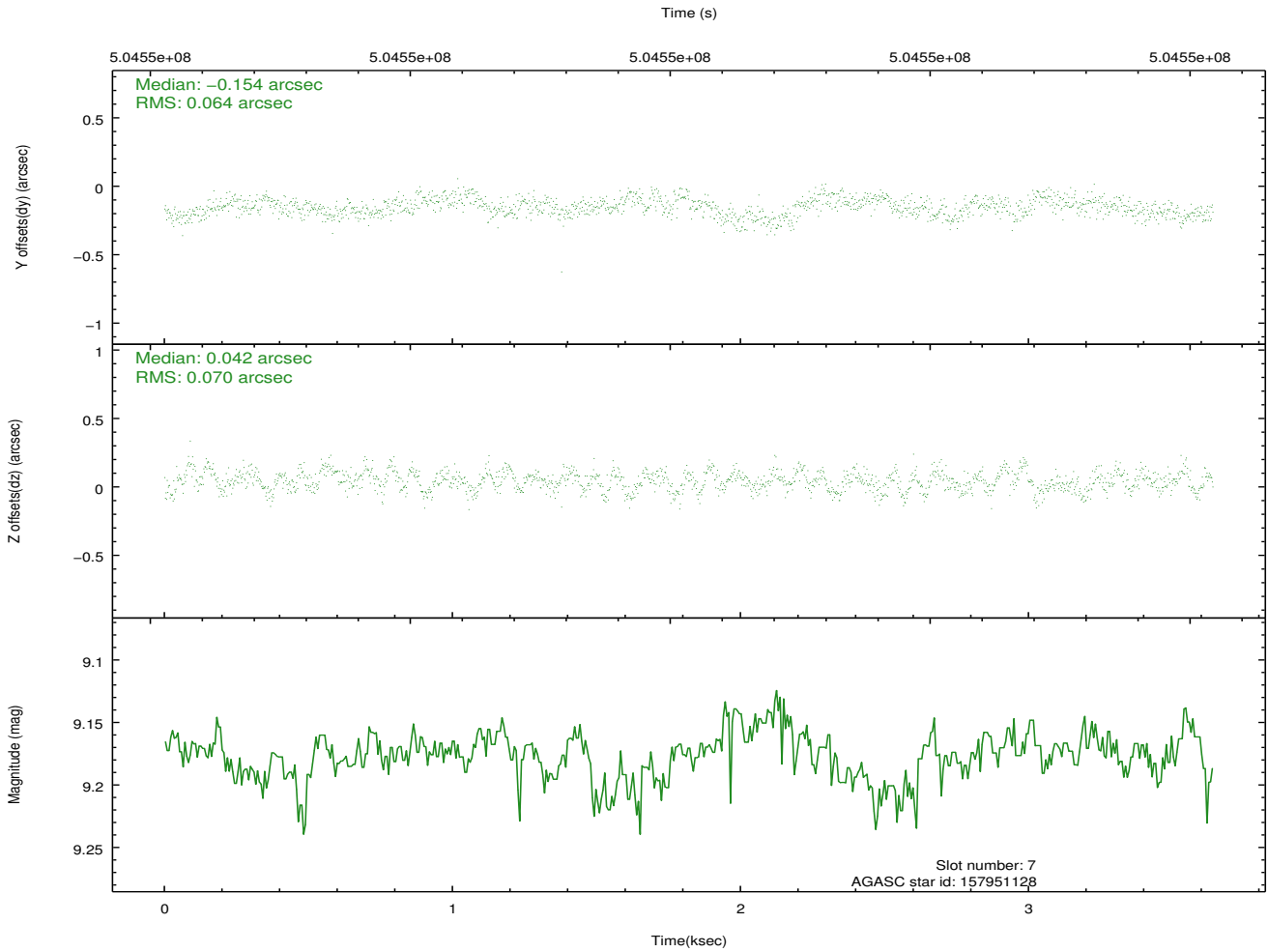
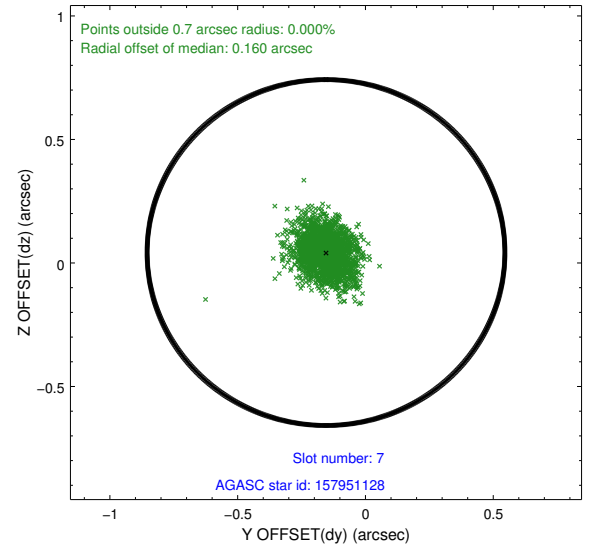
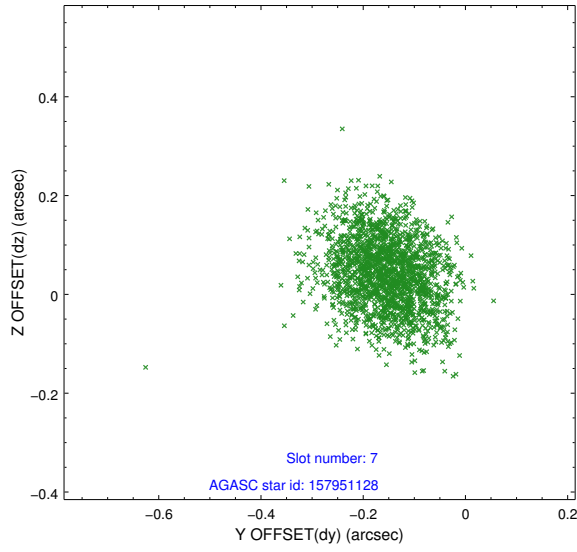


## 2.4.4 Slot 6



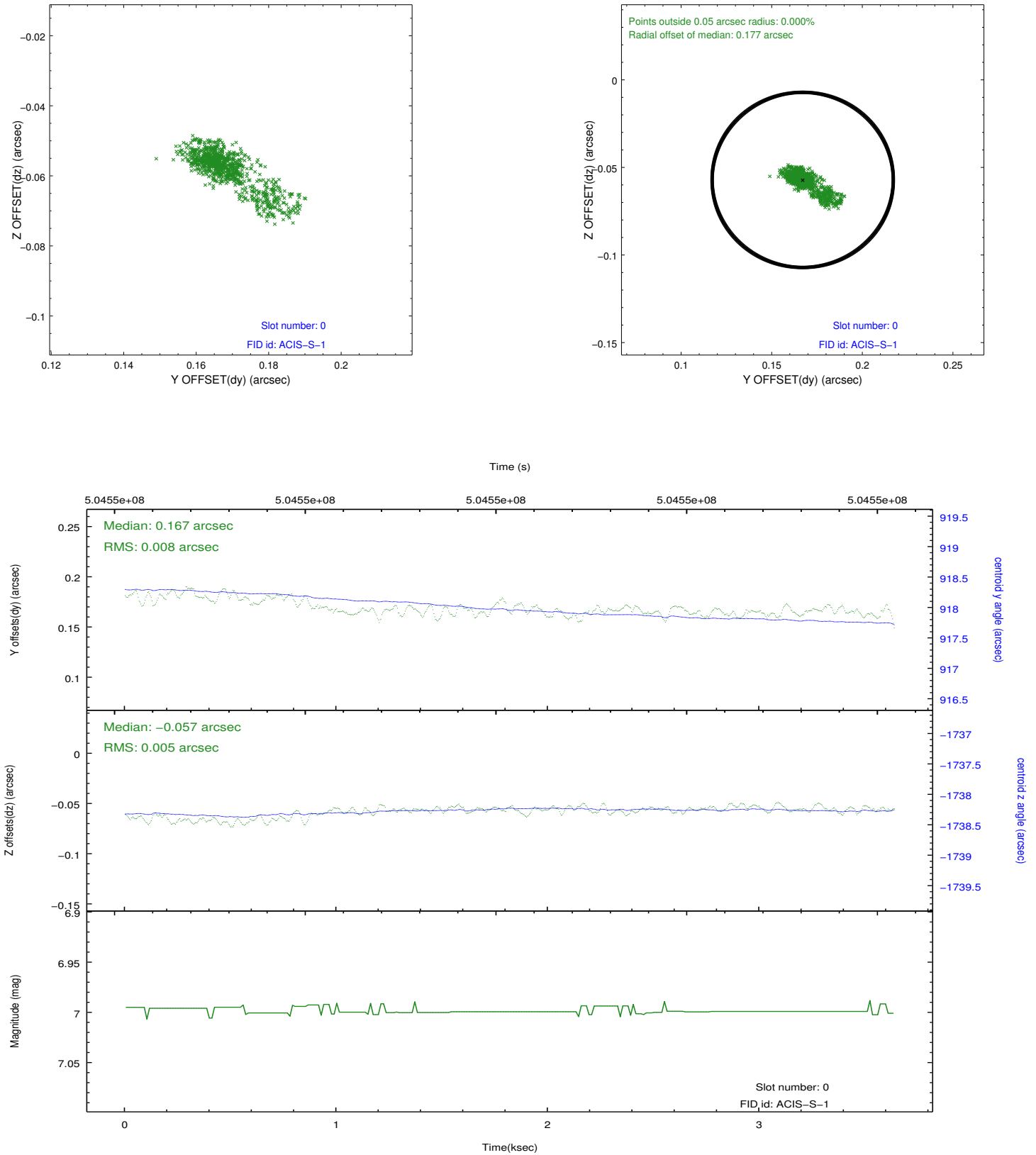


## 2.4.5 Slot 7

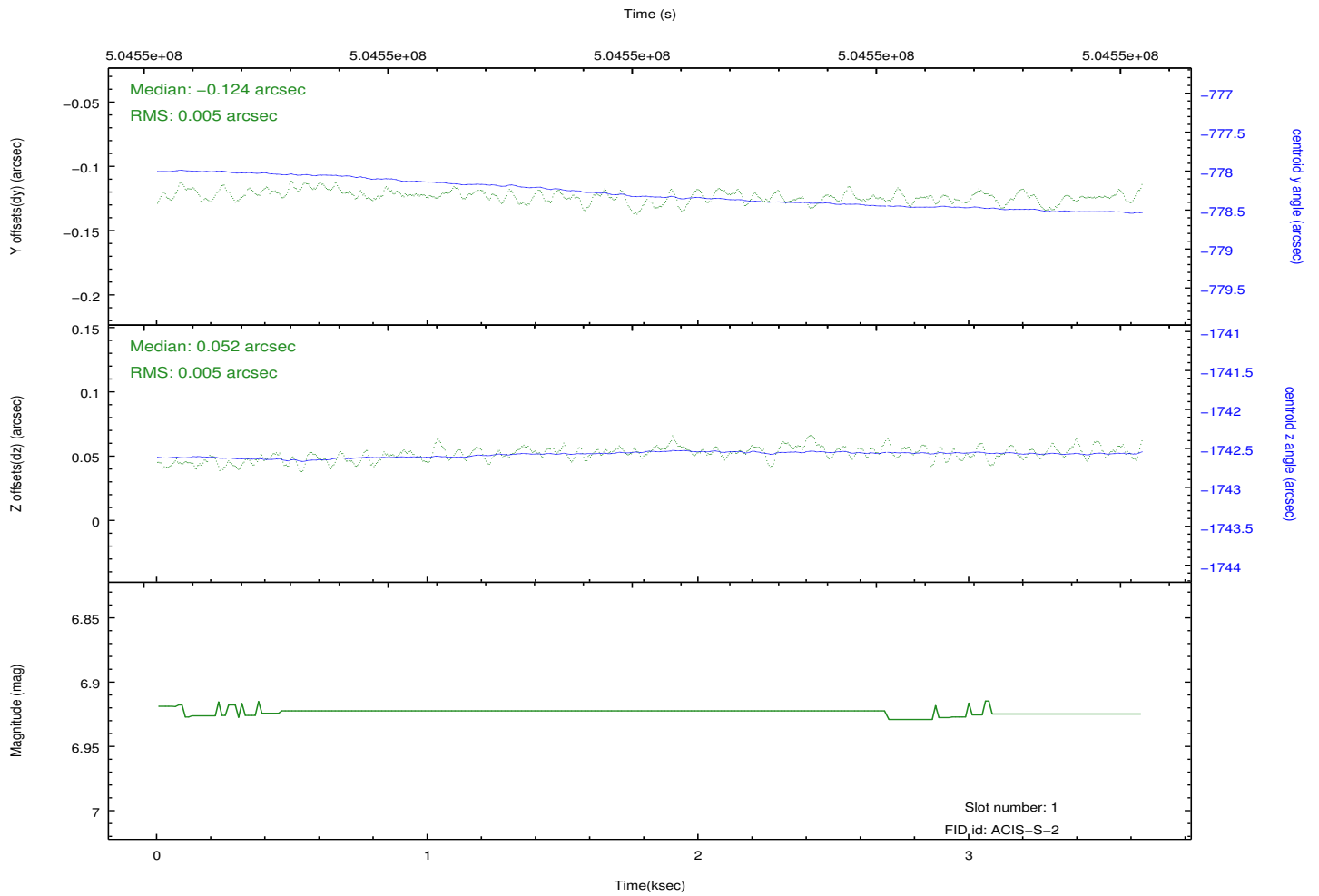
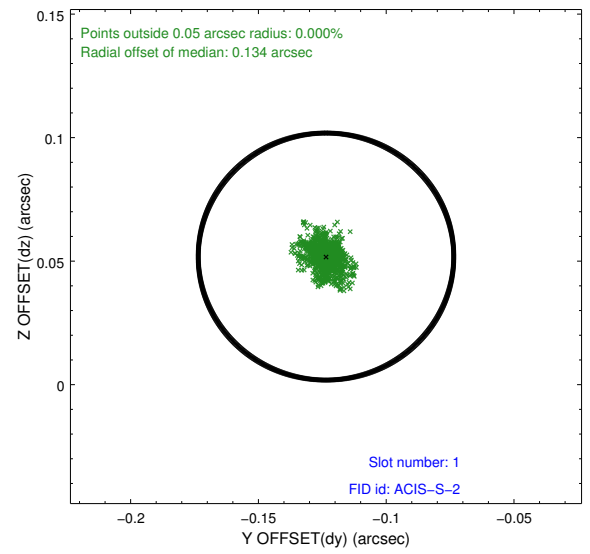
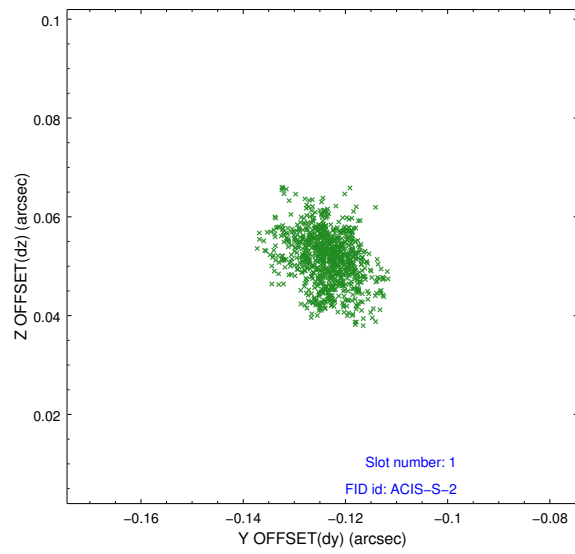


## 2.5 FID Slots

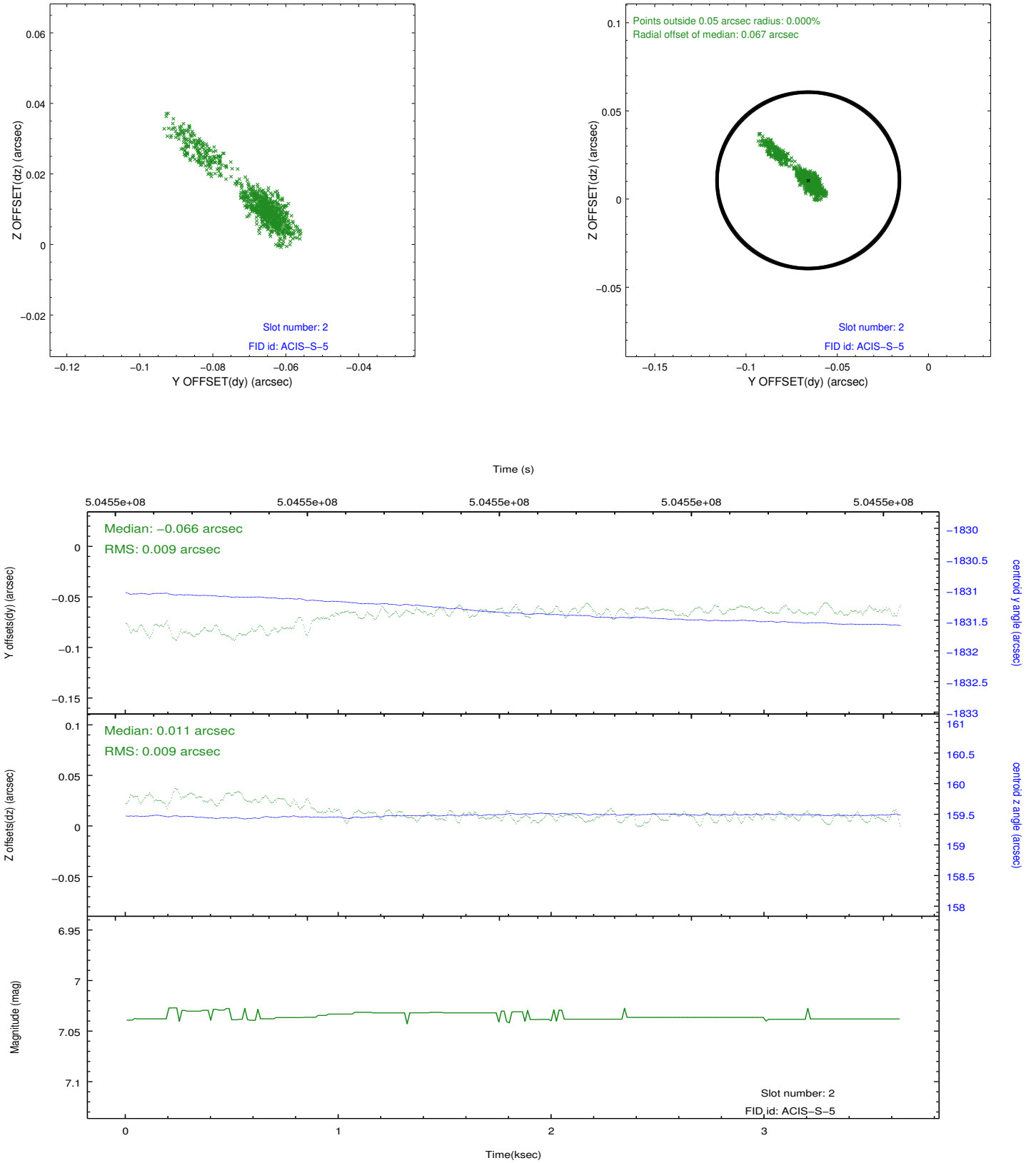
### 2.5.1 Slot 0



## 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)	2014.12.16
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	3.568100027442

## 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.