

# V&V Reference Report

## L2 ASCDS Version : 10.3.3

Observation 16091 - L2 Version 3  
Chandra X-Ray Center

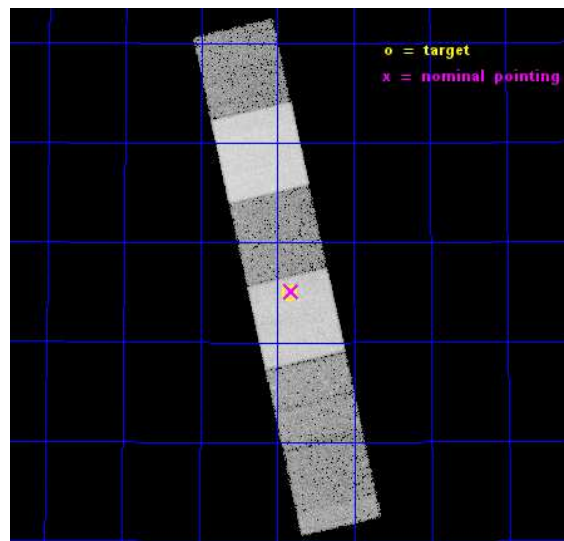
L2 Processing Date : Mar 10 2015

## 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

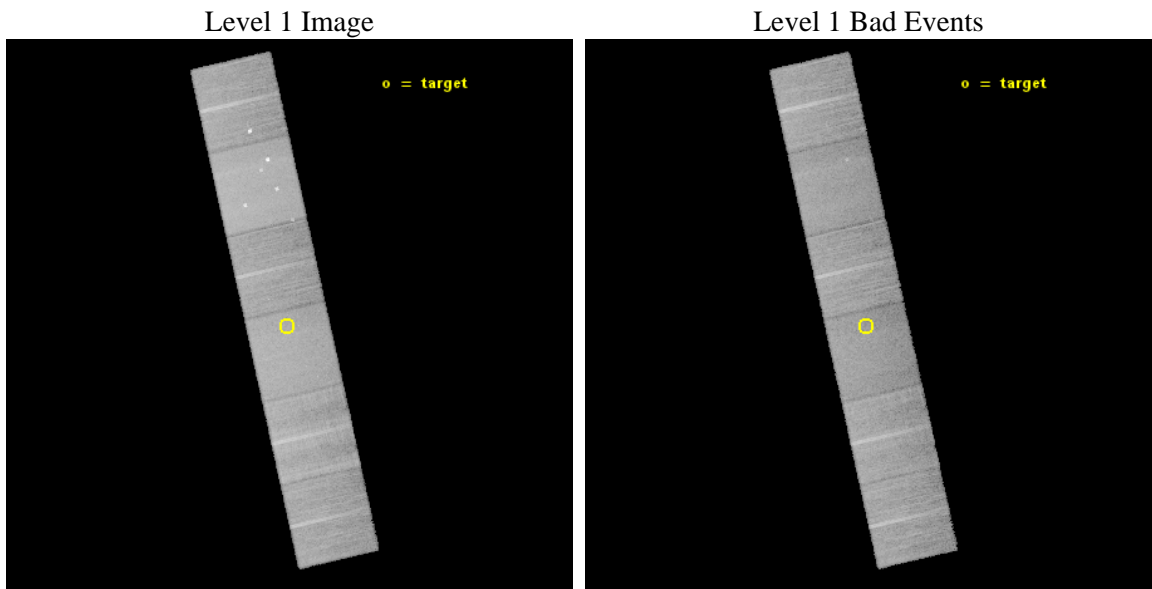
seq_num	702980	Sequence number
obs_id	16091	Observation id
title	LATE TIME MONITORING OF THE EXCEPTIONAL TIDAL DISRUPTION EVENT SWIFT J1644+57	Proposal title
observer	PROF ANDREW LEVAN	Principal investigator
object	Swift J1644+57	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	251.207917	Observer's specified target RA [deg]
dec_targ	57.583389	Observer's specified target Dec [deg]
ra_nom	251.20390036098	Nominal RA [deg]
dec_nom	57.585624974744	Nominal Dec [deg]
roll_nom	77.160048170472	Nominal Roll [deg]
revision	3	Processing version of data
ontime	28156.377557278	Sum of GTIs [s]
livetime	27799.844550912	Livetime [s]
ontime4	28156.418597221	Sum of GTIs [s]
ontime5	28156.336517215	Sum of GTIs [s]
ontime6	28156.295477271	Sum of GTIs [s]
ontime7	28156.377557278	Sum of GTIs [s]
ontime8	28156.254437208	Sum of GTIs [s]
ontime9	28156.213397264	Sum of GTIs [s]
l2events	243995	Number of level 2 events



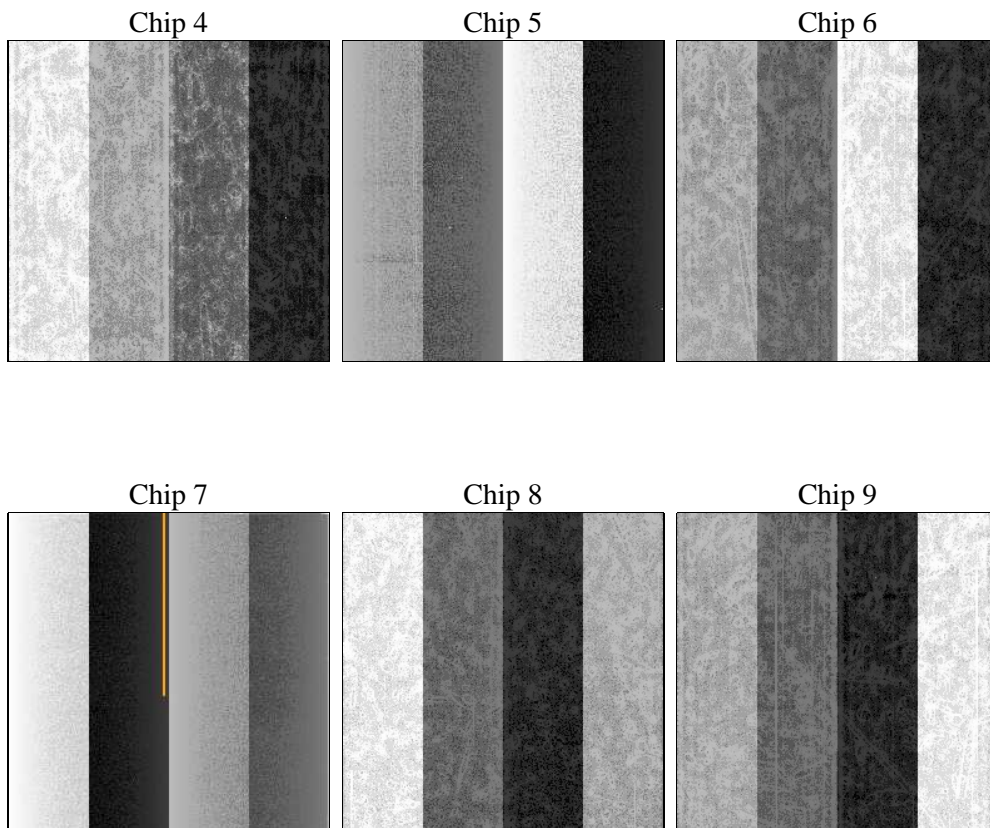
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	28232.606000	[s] Scheduled observation exposure time
ascdsver	10.3.3	Processing system revision	ontime	28156.377557278	Sum of GTIs [s]
caldbver	4.6.7	&#160	ontime4	28156.418597221	Sum of GTIs [s]
date	2015-03-10T21:30:00	Date and time of file creation	ontime5	28156.336517215	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	28156.295477271	Sum of GTIs [s]
			ontime7	28156.377557278	Sum of GTIs [s]
			ontime8	28156.254437208	Sum of GTIs [s]
			ontime9	28156.213397264	Sum of GTIs [s]
			l1events	1073787	Number of level 1 events

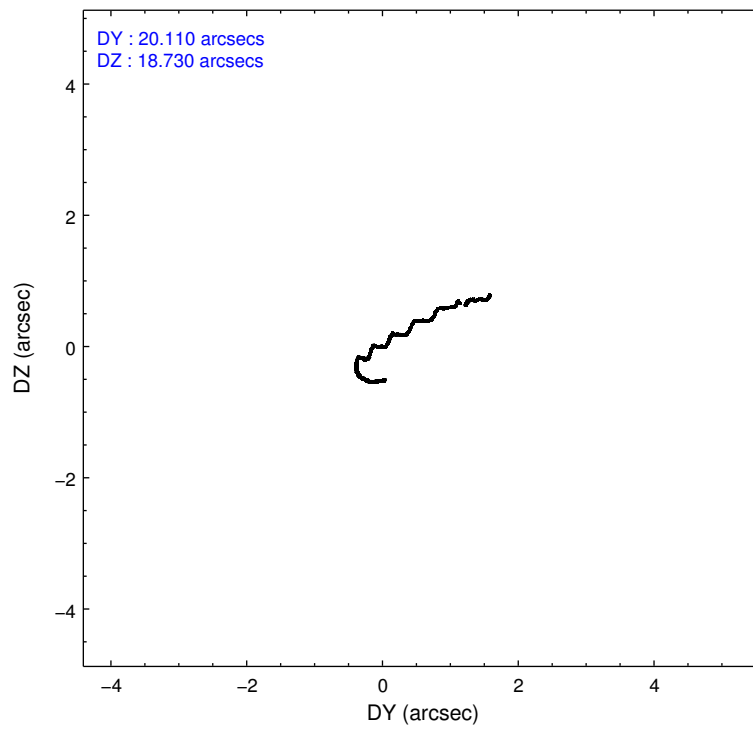
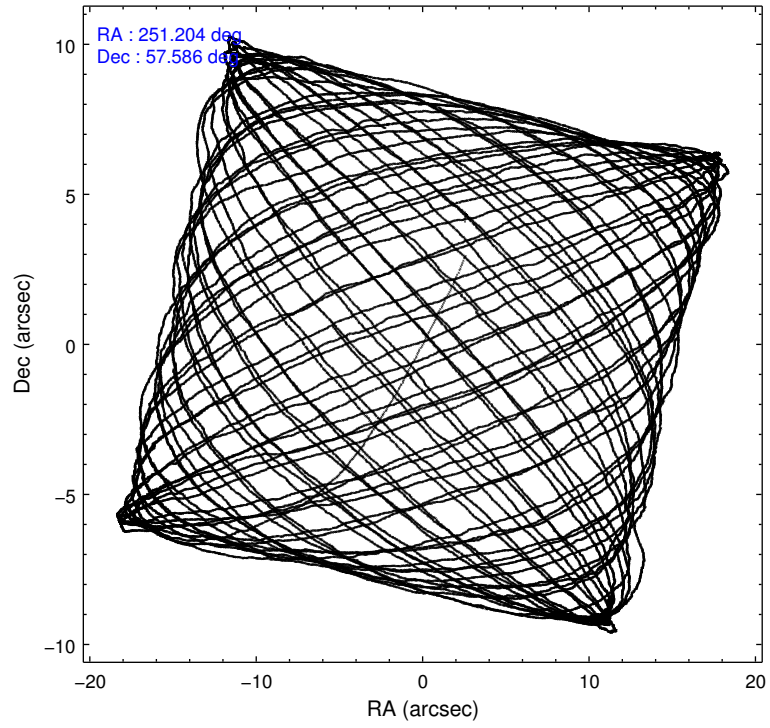
### 2.1.4 Events

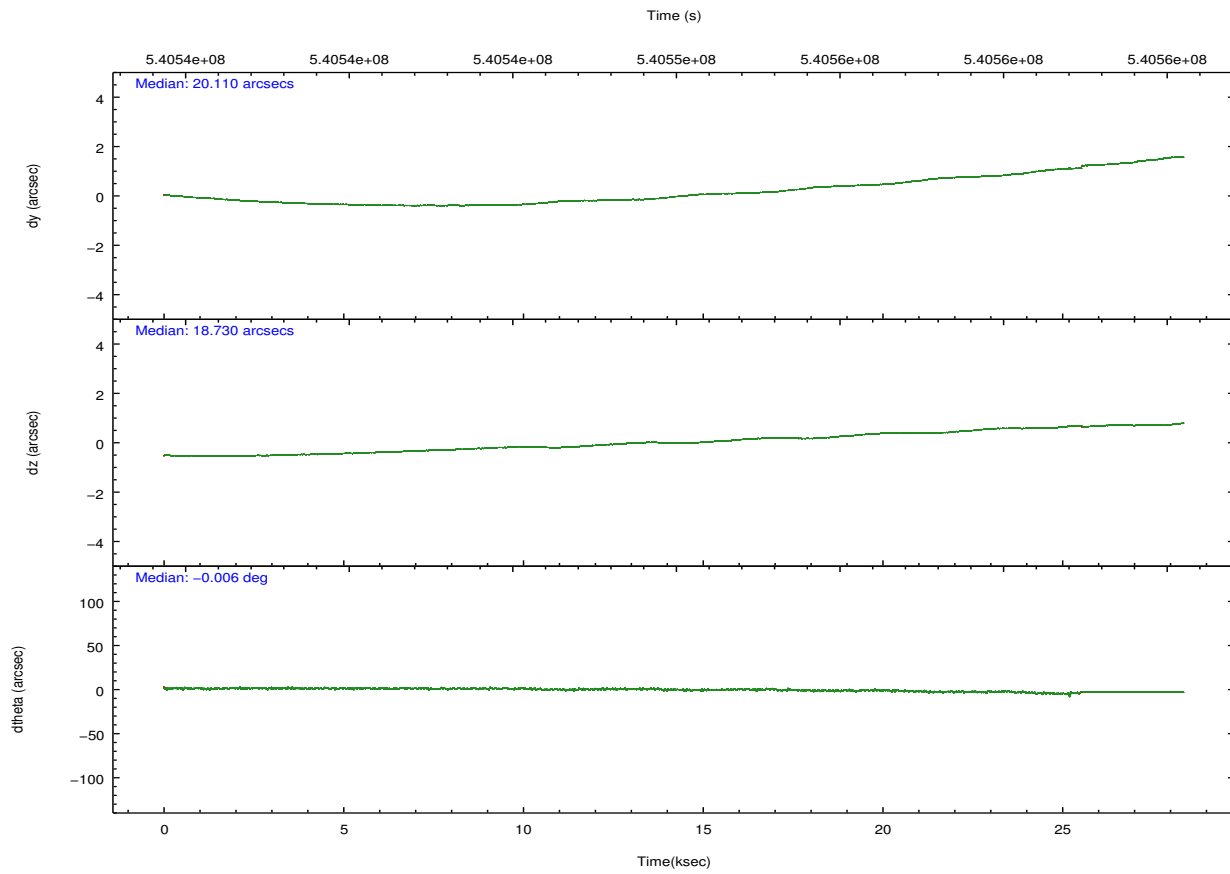
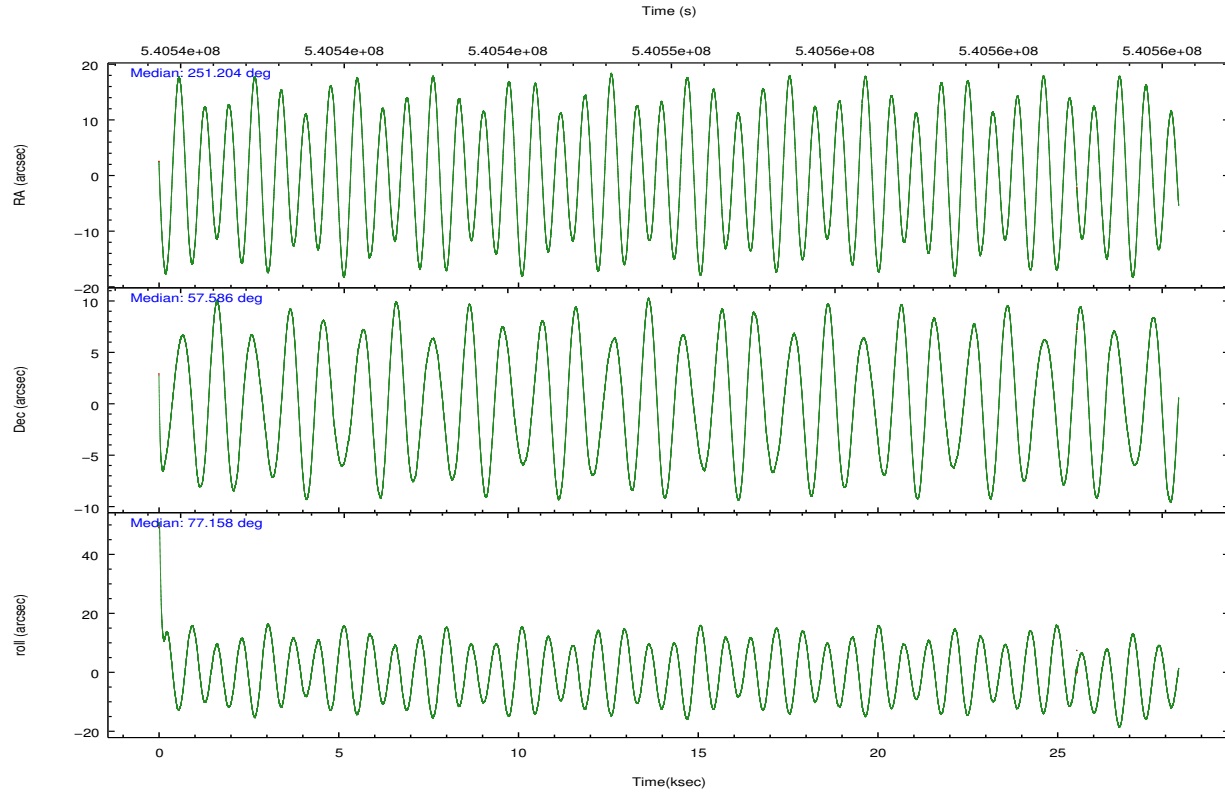
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	164217	235431	147275	189890	189039	147935	grade 0 events	9992	11715	5665	6946	13625	6047
rejected events	143389	120954	130353	108543	140577	130287		6%	4%	3%	3%	7%	4%
rejected %	87%	51%	88%	57%	74%	88%	grade 1 events	149	853	70	253	131	85
								0%	0%	0%	0%	0%	0%
							grade 2 events	4132	35283	3823	16926	11610	3882
								2%	14%	2%	8%	6%	2%
							grade 3 events	1888	3395	1684	6362	5058	1913
								1%	1%	1%	3%	2%	1%
							grade 4 events	1804	3392	1602	6322	4758	1778
								1%	1%	1%	3%	2%	1%
							grade 5 events	7129	15926	6930	18781	10375	7634
								4%	6%	4%	9%	5%	5%
							grade 6 events	3020	60726	4152	44830	13434	4034
								1%	25%	2%	23%	7%	2%
							grade 7 events	136103	104141	123349	89470	130048	122562
								82%	44%	83%	47%	68%	82%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	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	251.219651	251.2039003609805	CCD I2 on	N	N
[deg] Pointing Dec	57.559531	57.58562497474404	CCD I3 on	N	N
[deg] Pointing Roll	76.990094	77.16004817047197	CCD S0 on	O1	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O2	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-190.132523	-190.1425803651734	CCD S3 on	Y	Y
[mm] SIM translation stage offset	0	0.01005778216563158	CCD S4 on	O4	Y
[s] Observation start time (MET)	540535877.184000	540534809.16712	CCD S5 on	O3	Y
Observation start date	2015-02-17T04:50:10	2015-02-17T04:33:29	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	540564110.184000	540564335.83128	On-chip summing requested	N	N
Observation end date	2015-02-17T12:40:43	2015-02-17T12:45:35	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect





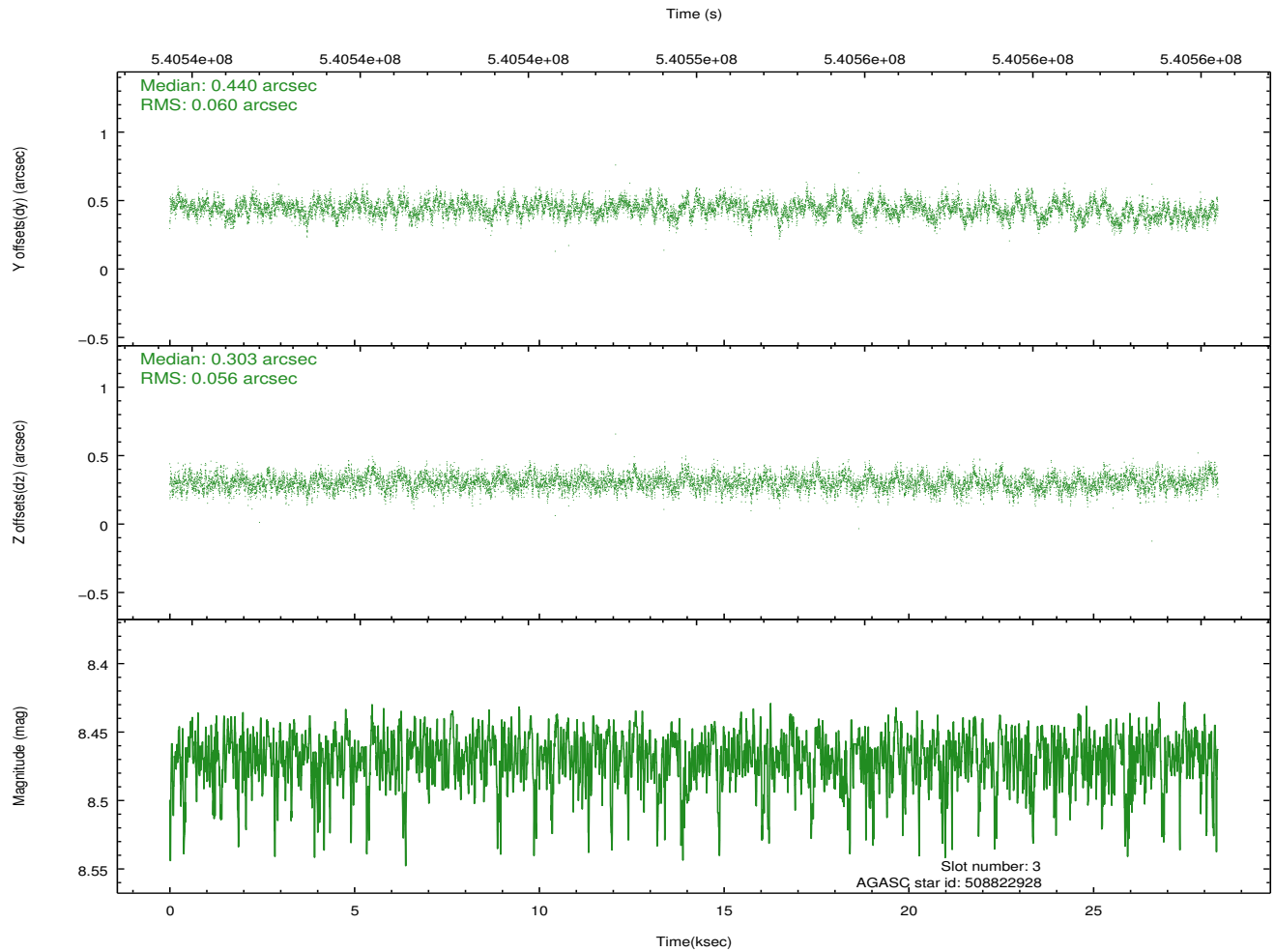
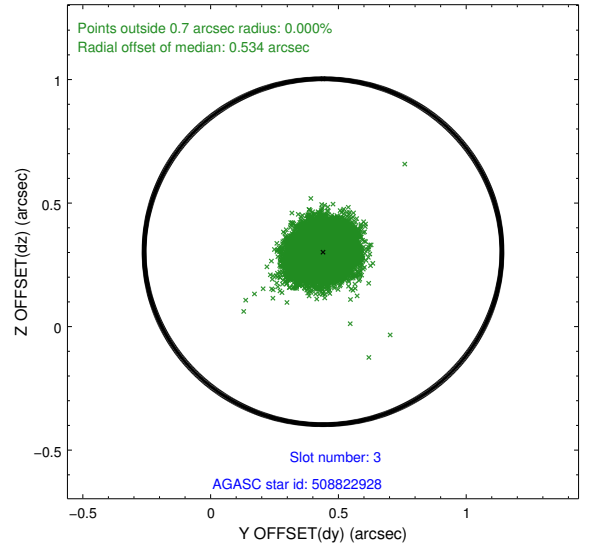
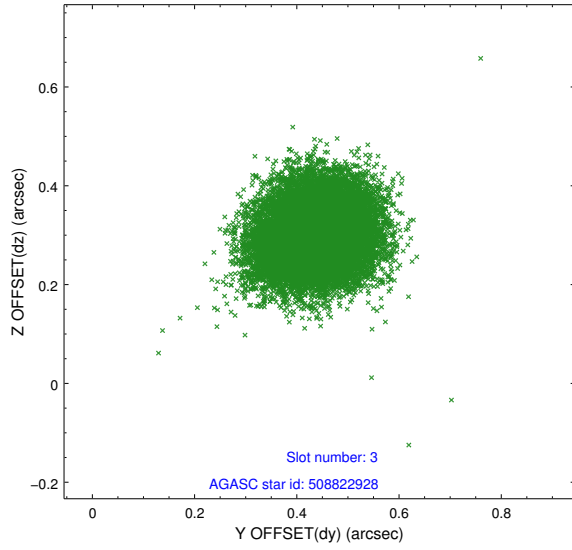
### Slot Statistics

lot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_x
0	BAD		ACIS-S-1	7.18	6253	-0.003	-0.005	0.008	0.020	0.000000	0.000000	922.75	-1735.75
1	BAD		ACIS-S-5	7.23	340	-0.390	0.128	0.013	0.024	0.000000	0.000000	-1823.90	157.48
2	FID		ACIS-S-6	7.33	6920	-0.008	0.010	0.010	0.110	0.000000	0.000000	388.05	805.70
3	GUIDE	used	508822928	8.47	13837	0.440	0.303	0.087	0.139	251.922984	56.892498	-2019.91	-1886.23
4	GUIDE	used	508826952	7.03	13840	0.211	0.152	0.084	0.135	252.003832	57.489272	103.87	-1533.20
5	GUIDE	used	509214760	8.33	13836	-0.175	-0.089	0.072	0.116	250.589992	57.556199	-279.89	1183.40
6	GUIDE	used	509223192	7.71	13838	-0.273	-0.178	0.064	0.106	251.320493	58.085113	1886.83	239.15
7	BAD	used	509225640	5.21	6918	-0.237	-0.292	0.052	0.088	252.069297	57.813712	1268.80	-1378.36

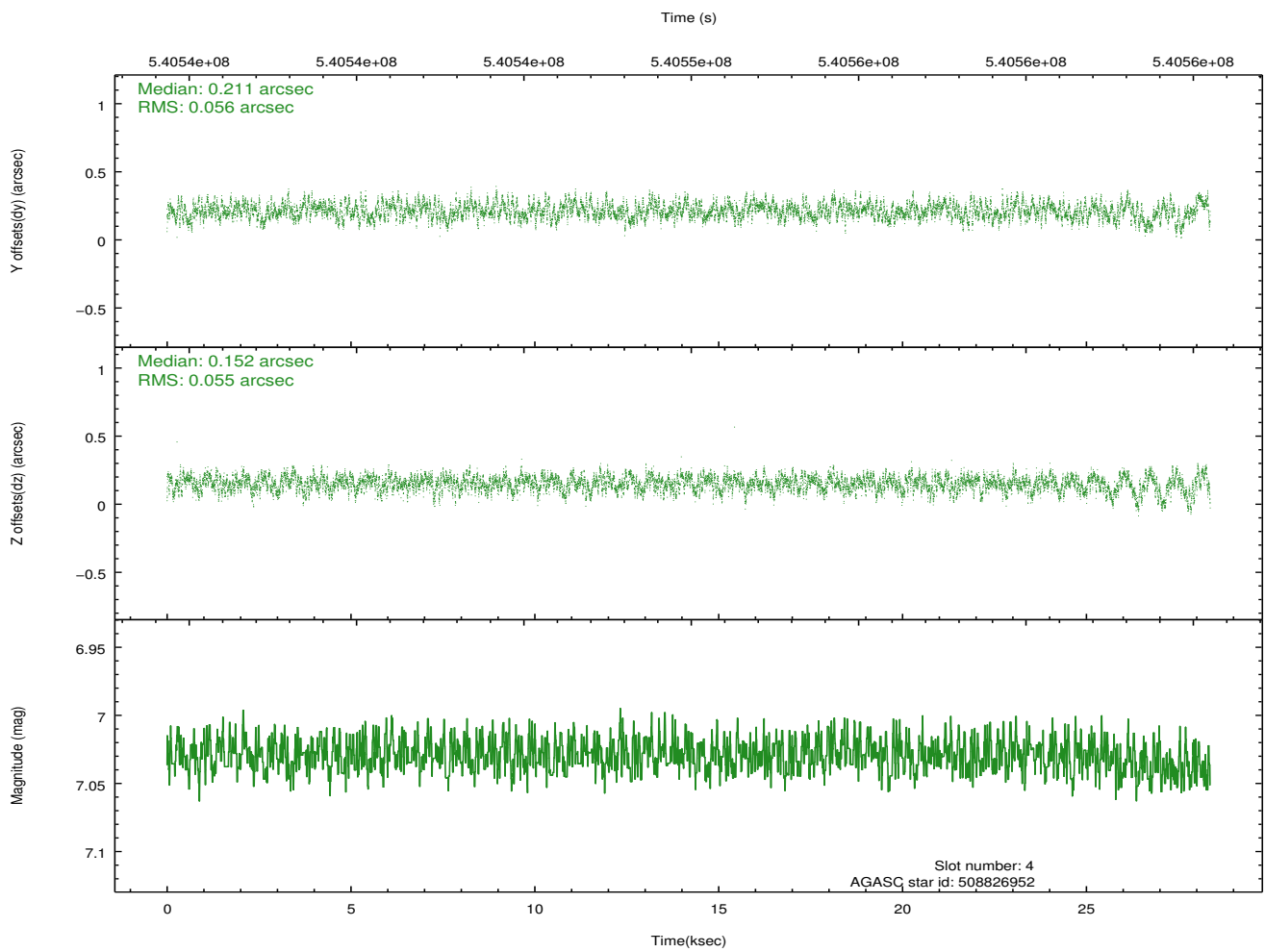
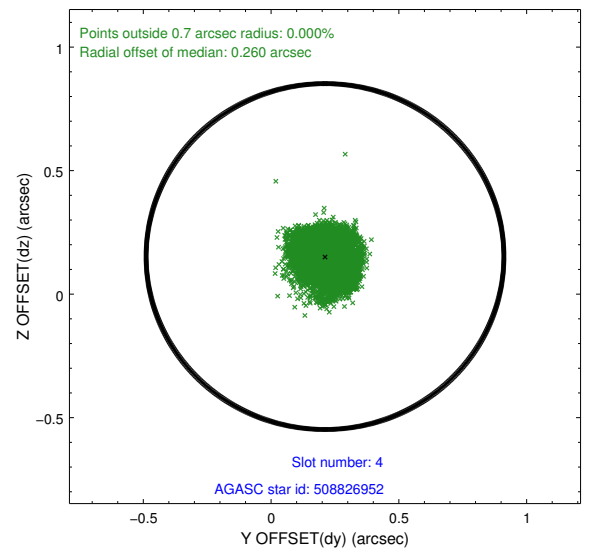
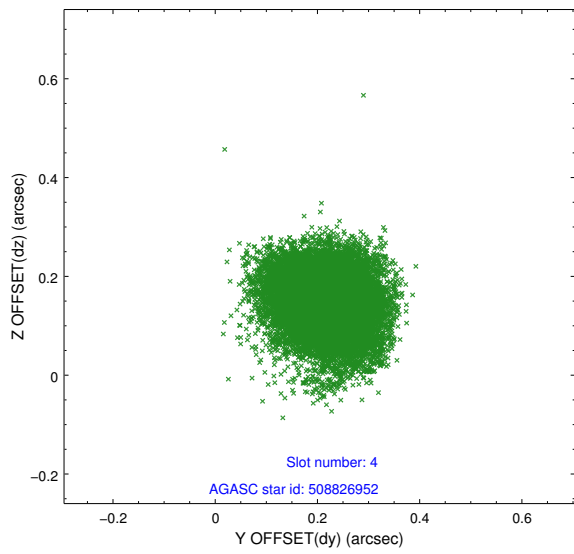
∞

## 2.4 Star Slots

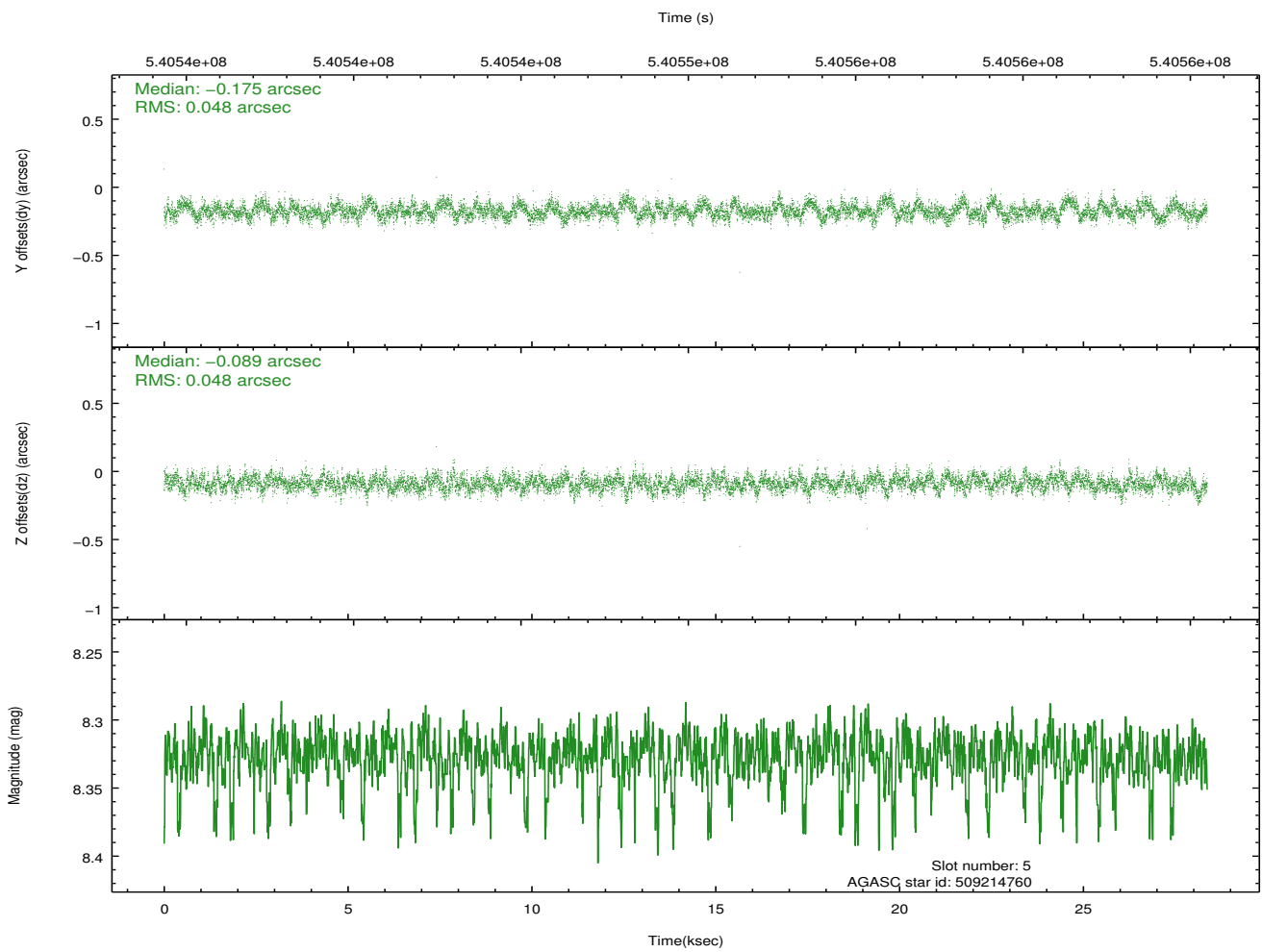
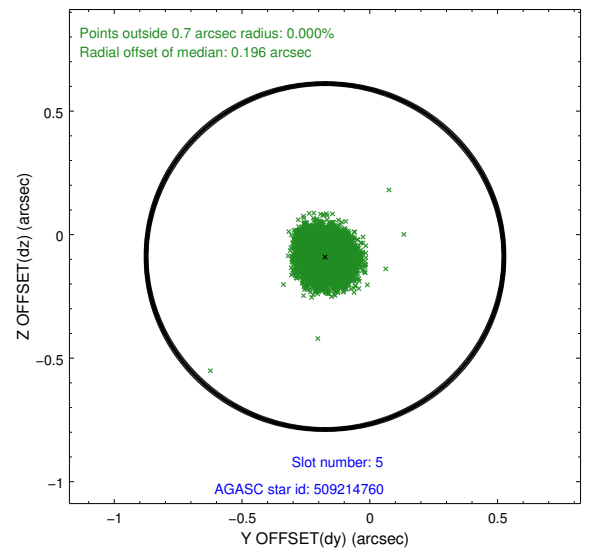
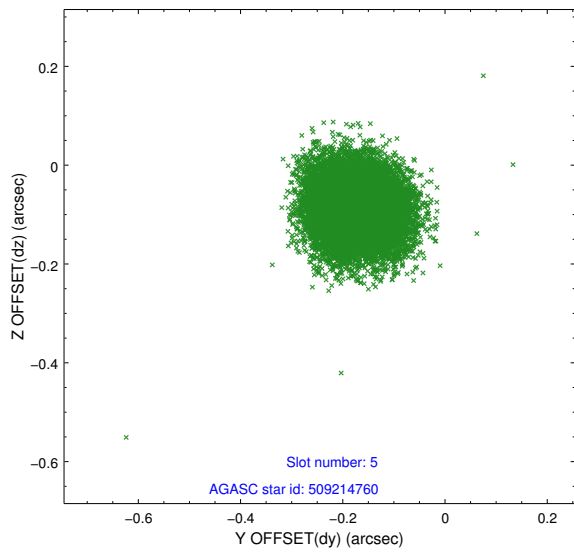
### 2.4.1 Slot 3



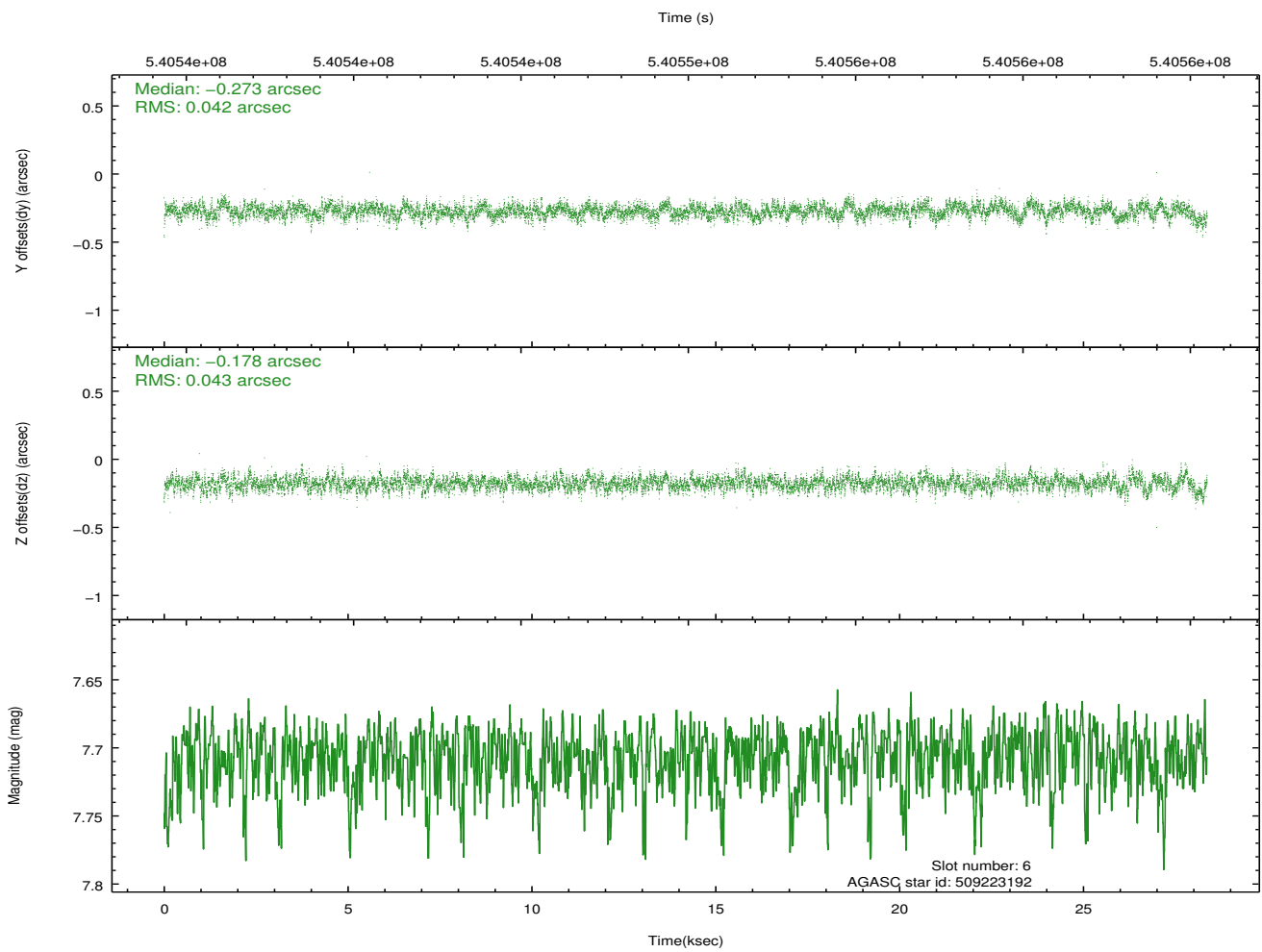
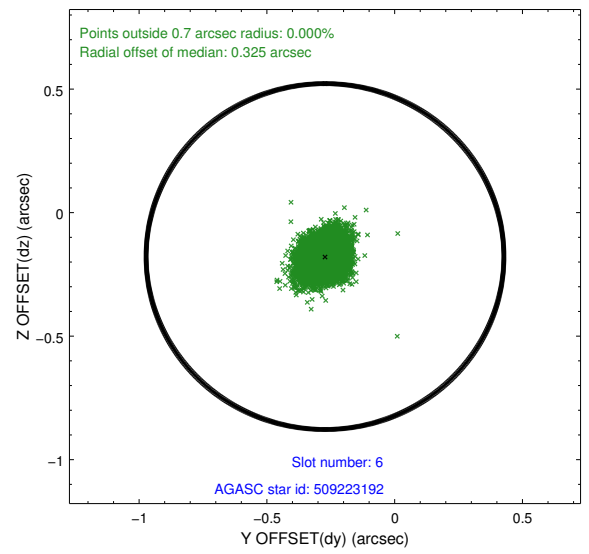
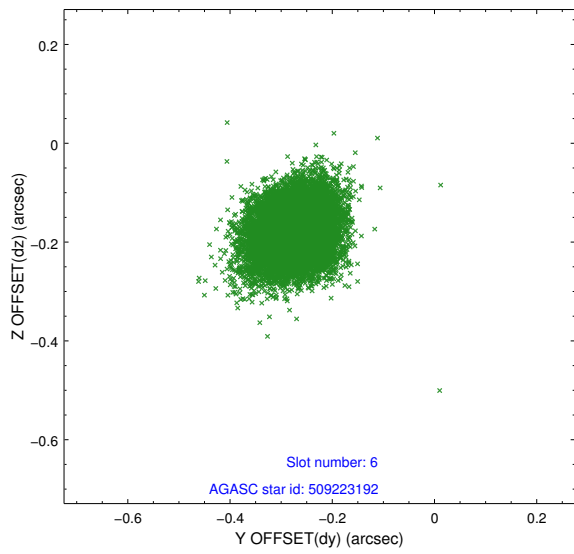
## 2.4.2 Slot 4



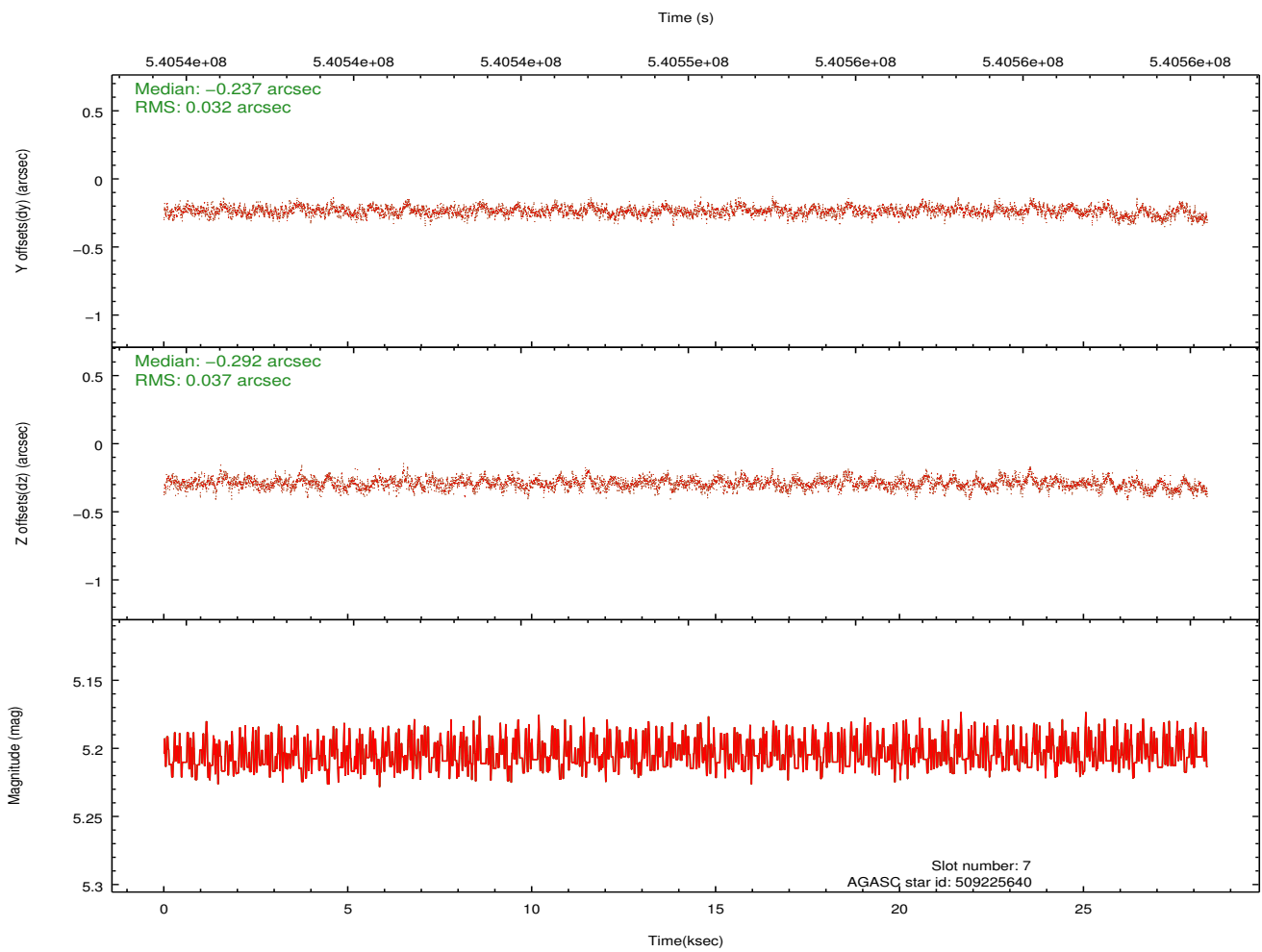
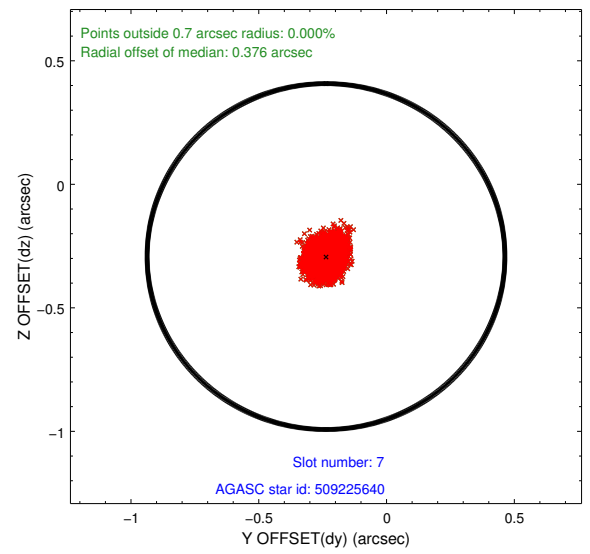
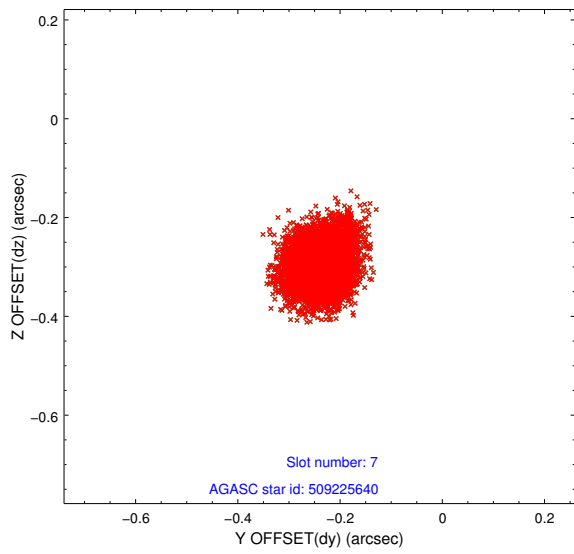
### 2.4.3 Slot 5



## 2.4.4 Slot 6

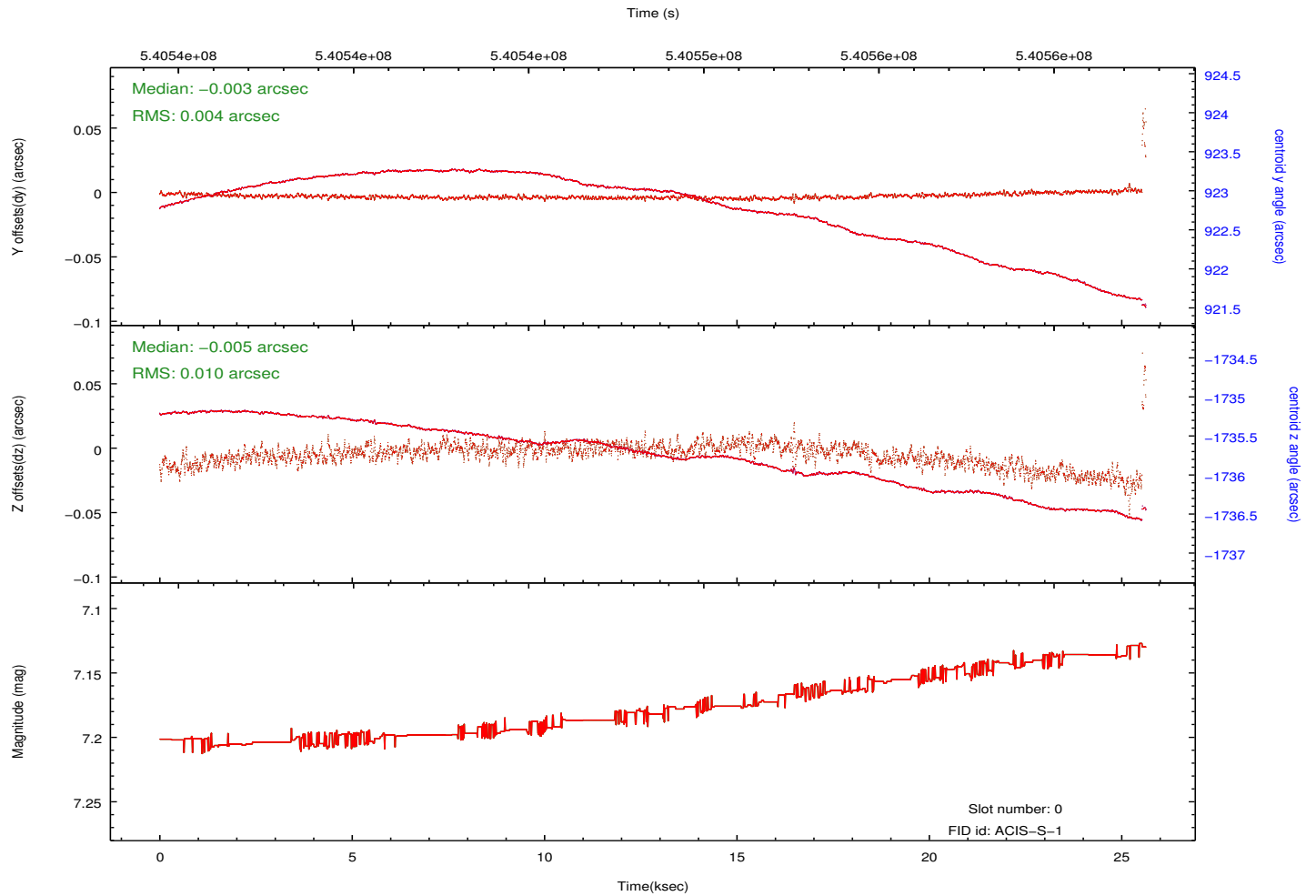
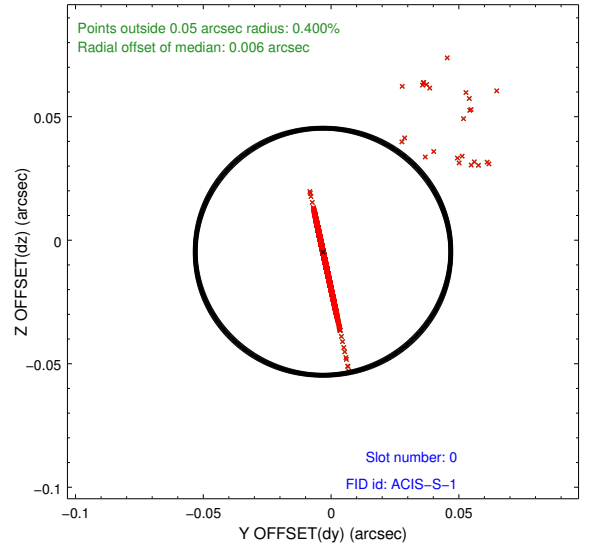
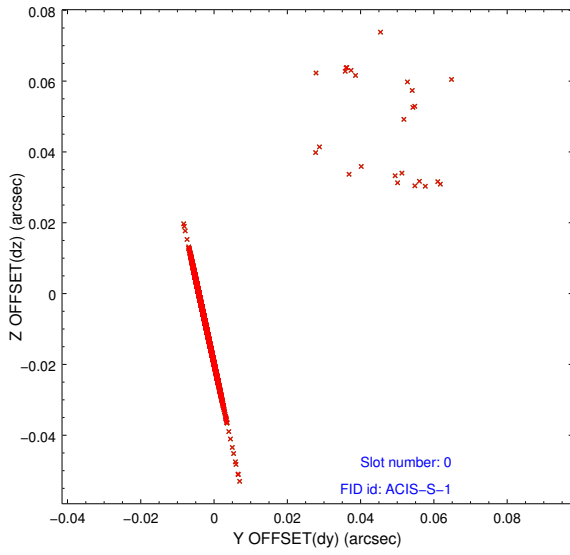


## 2.4.5 Slot 7

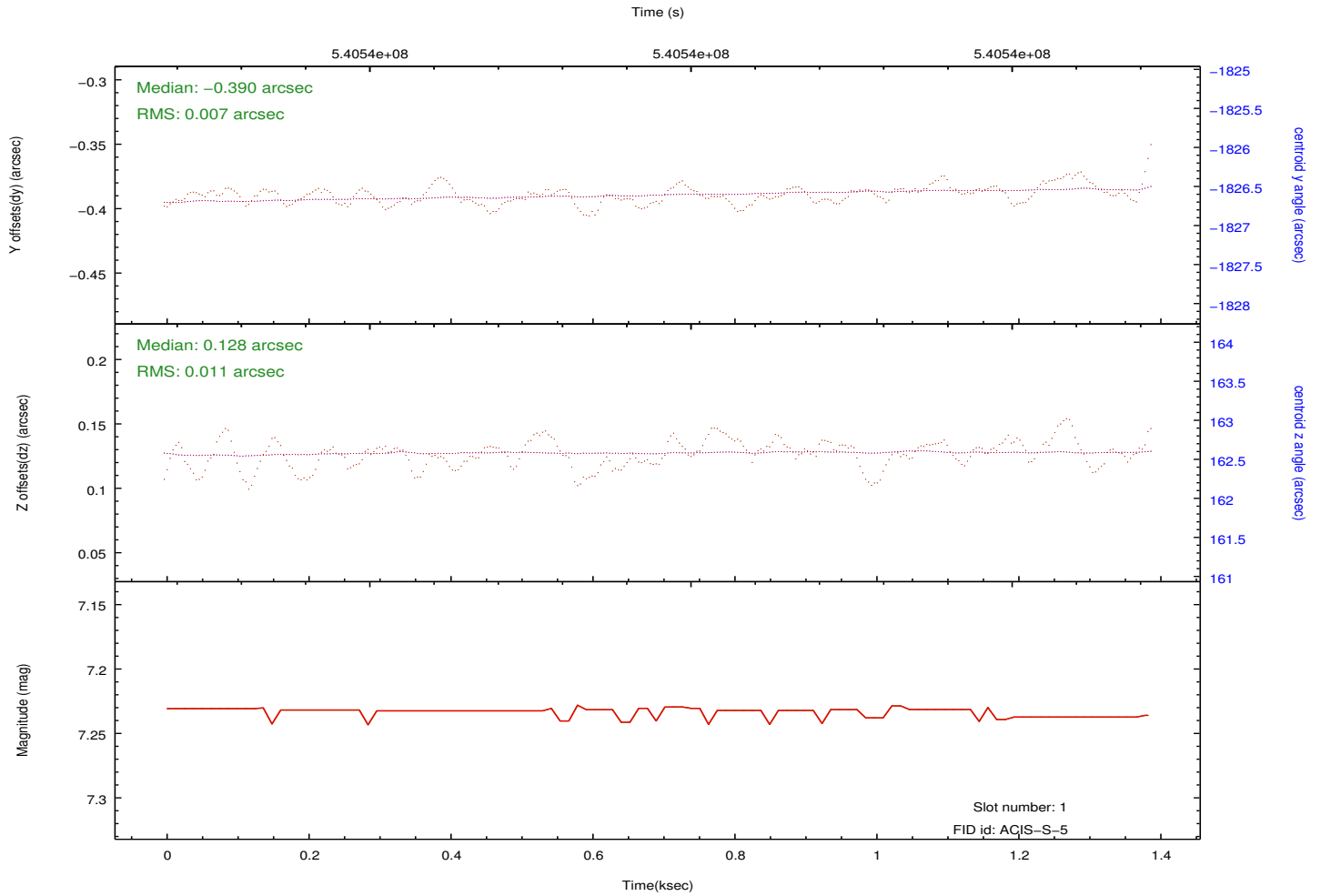
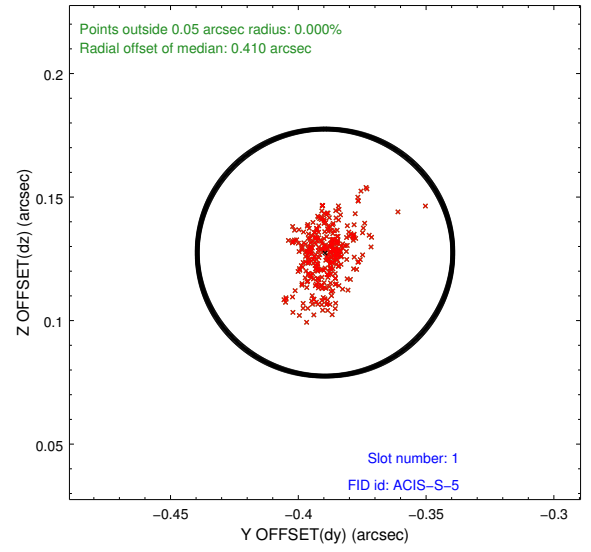
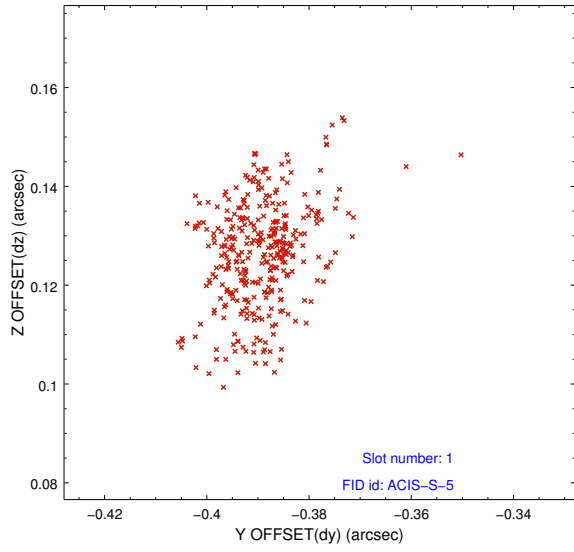


## 2.5 FID Slots

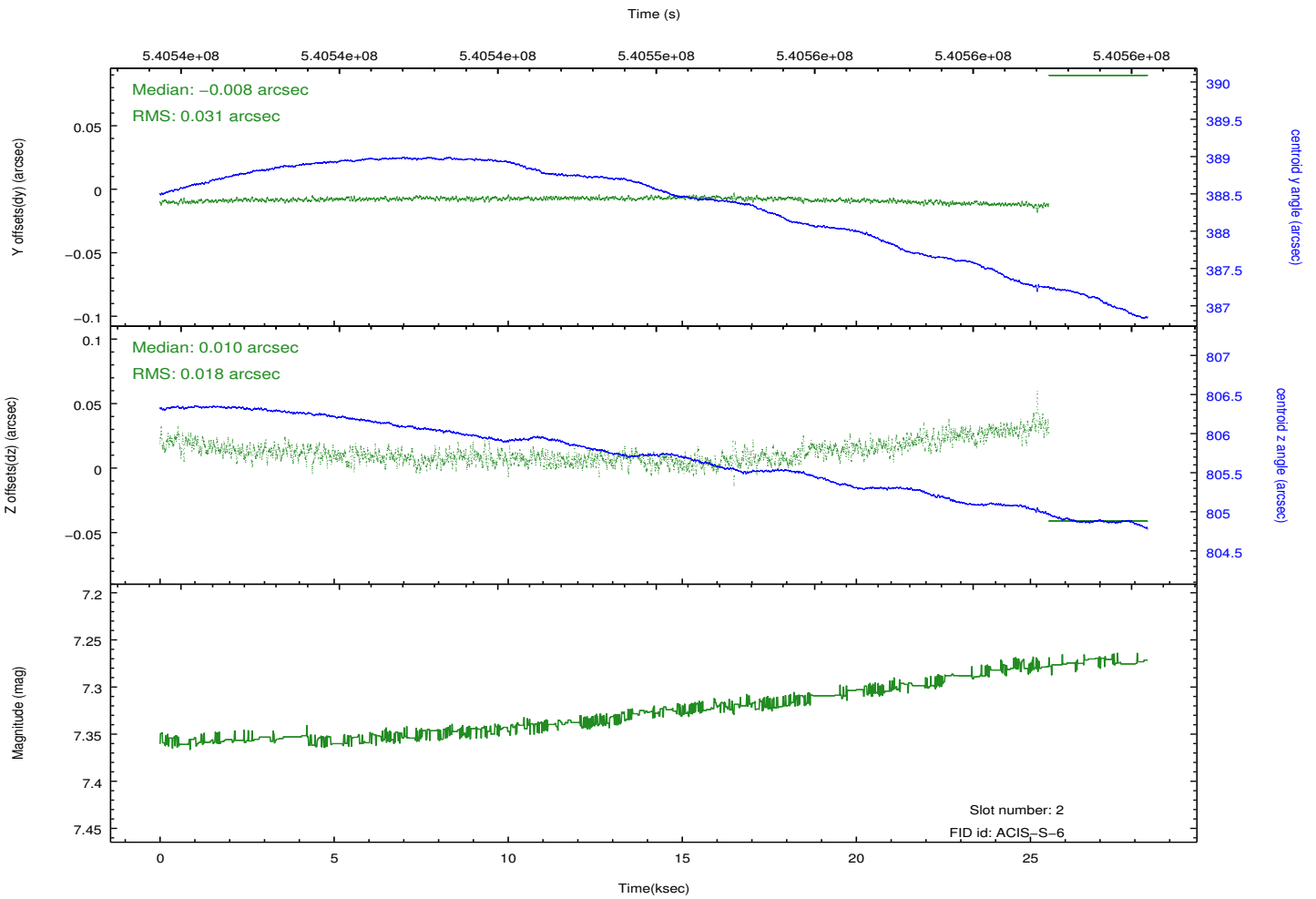
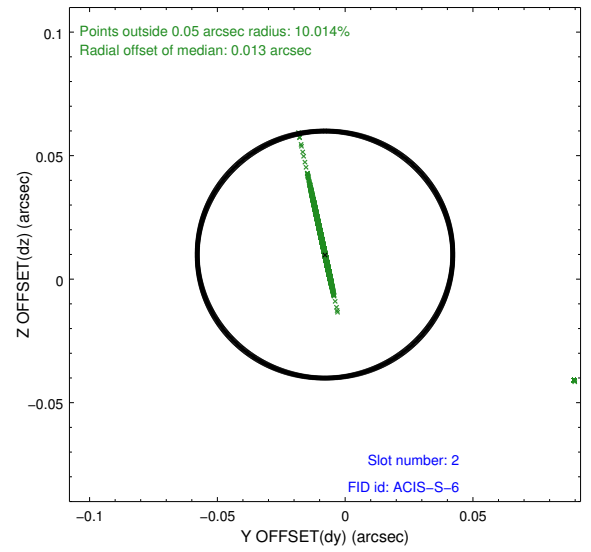
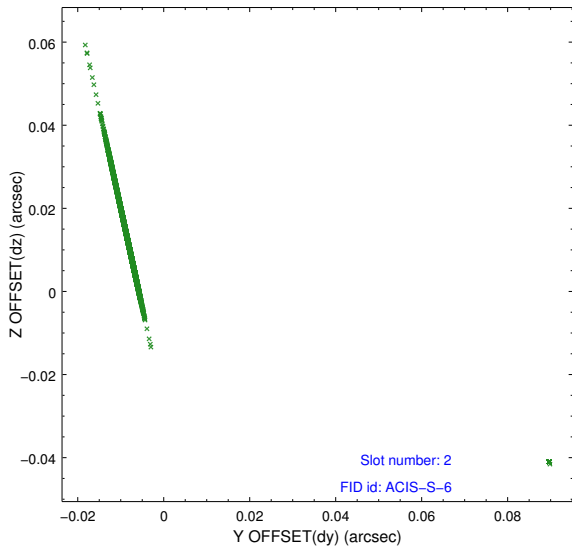
### 2.5.1 Slot 0



## 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)	2015.03.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	28.156377557278

## A.2 Comments

Two fid lights were dropped during the observation of obsid 16091, with the second drop occurring around 90% of the way through the observation. This processing, which uses 2 aspect intervals, has allowed the use of the slot 0 fid data for the first 25ks of the observation. The manual edits of dtheta and dtheta\_err look good. The radial offset of the unused fid in slot 1 is acceptable. From an Aspect perspective, these products are good to be released to the user.

A spatial region of the original bias map for CCD = 6 suffered from anomalously high data values. Pixels in the event data that were bias-corrected by one of the original affected bias pixels may have an apparent energy shift. While the change in energy is expected to be small ( $\sim 20$  eV), it depends on many parameters that have not yet been fully explored for this bias anomaly. The bias map for CCD = 6 has been reconstructed for this processing to remove this anomaly using scaled data from a comparable bias map from another observation. The pixels affected by the anomaly are bounded by sky coords: (251.10117, 57.64677), (251.09976, 57.64345), (251.22833, 57.62787), (251.23272, 57.63084).