

# V&V Reference Report

## L2 ASCDS Version : 10.2.2

Observation 14488 - L2 Version 2  
Chandra X-Ray Center

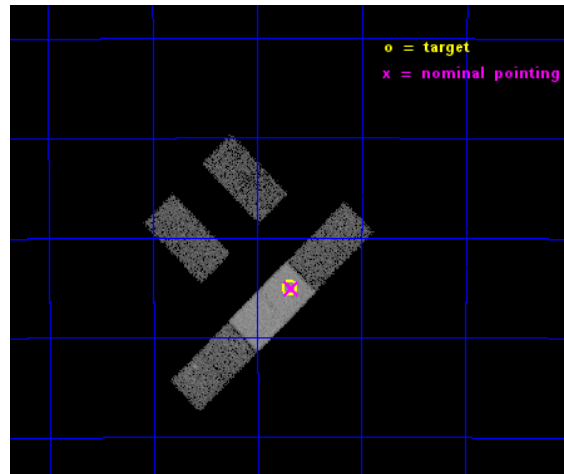
L2 Processing Date : Dec 11 2014

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# 1 Front

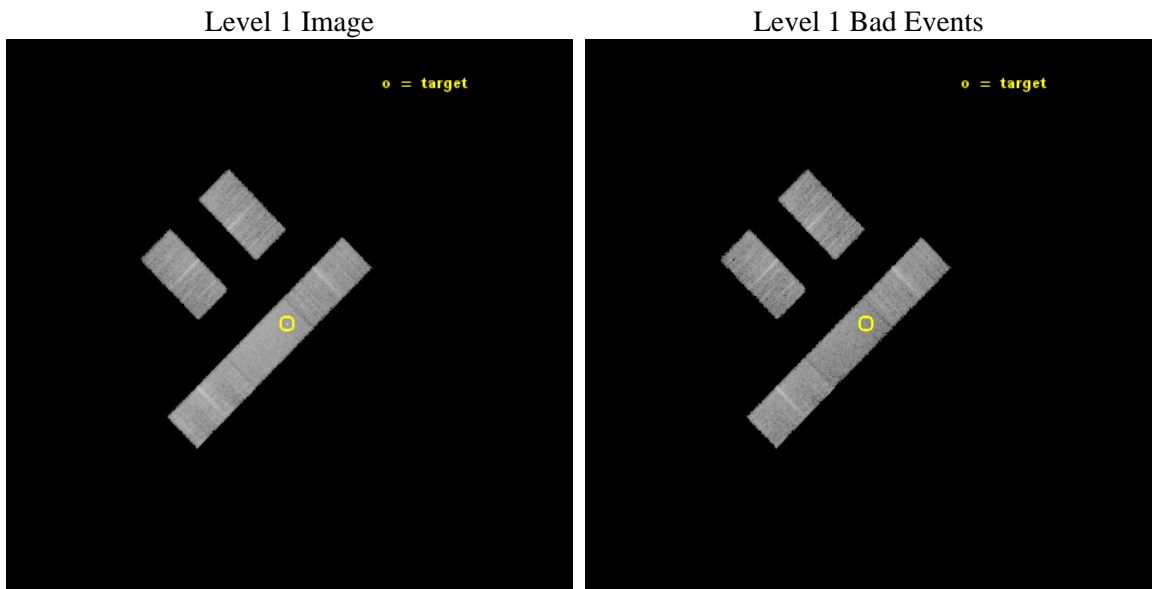
seq_num	702725	Sequence number
obs_id	14488	Observation id
title	ENERGY DEPENDENT X-RAY MICROLENSING AND THE STRUCTURE OF QUASARS	P
observer	Prof. Christopher Kochanek	Principal investigator
object	QJ0158-4325	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	29.6725	Observer's specified target RA [deg]
dec_targ	-43.417833	Observer's specified target Dec [deg]
ra_nom	29.668449741312	Nominal RA [deg]
dec_nom	-43.418525723185	Nominal Dec [deg]
roll_nom	135.27968614055	Nominal Roll [deg]
revision	2	Processing version of data
ontime	19064.790755153	Sum of GTIs [s]
livetime	18615.393261361	Livetime [s]
ontime2	19064.62659514	Sum of GTIs [s]
ontime3	19062.967655063	Sum of GTIs [s]
ontime6	19064.749715149	Sum of GTIs [s]
ontime7	19064.790755153	Sum of GTIs [s]
ontime8	19064.667635143	Sum of GTIs [s]
l2events	50608	Number of level 2 events



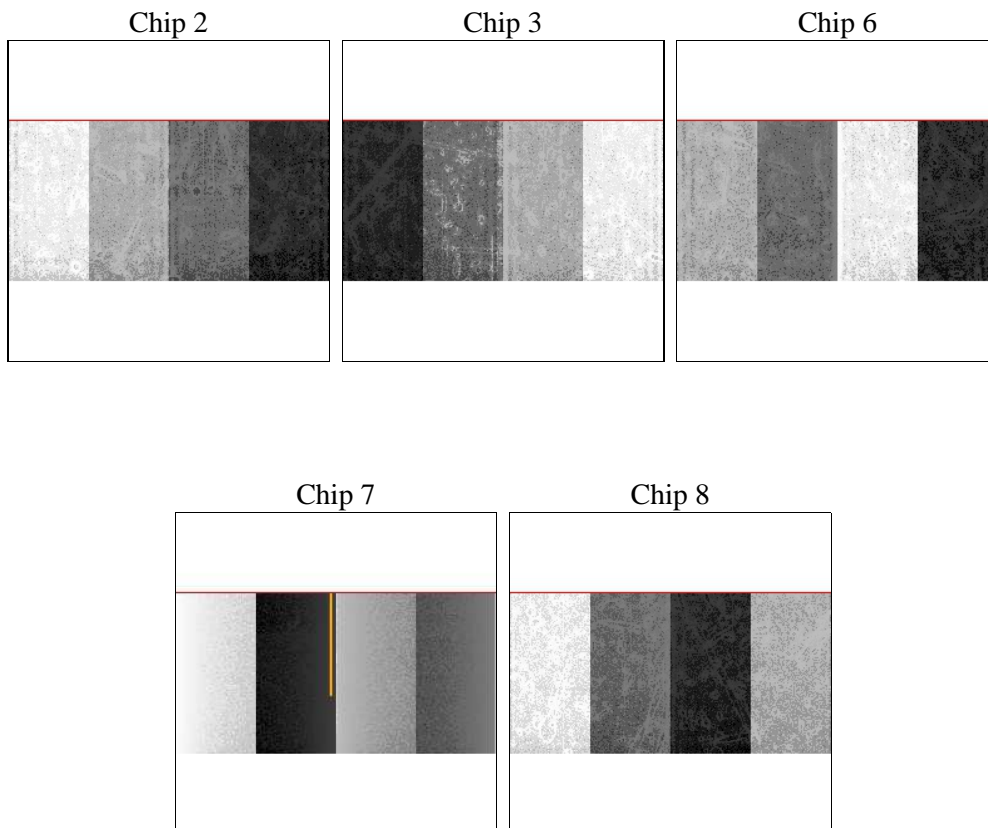
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	19000.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	19064.790755153	Sum of GTIs [s]
caldbver	4.6.4	&#160	ontime2	19064.62659514	Sum of GTIs [s]
date	2014-12-12T02:49:35	Date and time of file creation	ontime3	19062.967655063	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	19064.749715149	Sum of GTIs [s]
			ontime7	19064.790755153	Sum of GTIs [s]
			ontime8	19064.667635143	Sum of GTIs [s]
			l1events	284031	Number of level 1 events

### 2.1.4 Events

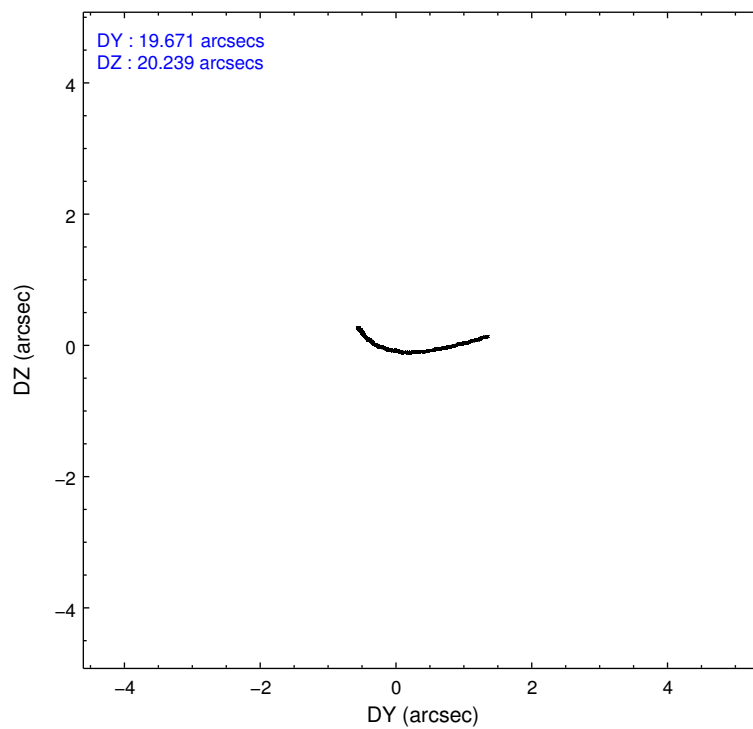
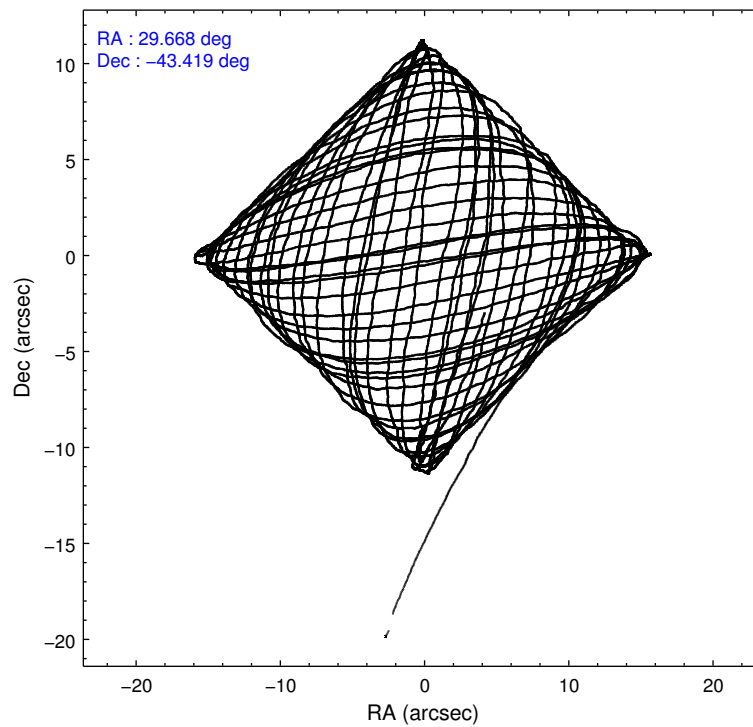
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	49696	47136	51595	67243	68361
rejected events	44159	41719	45391	36515	49470
rejected %	88%	88%	87%	54%	72%

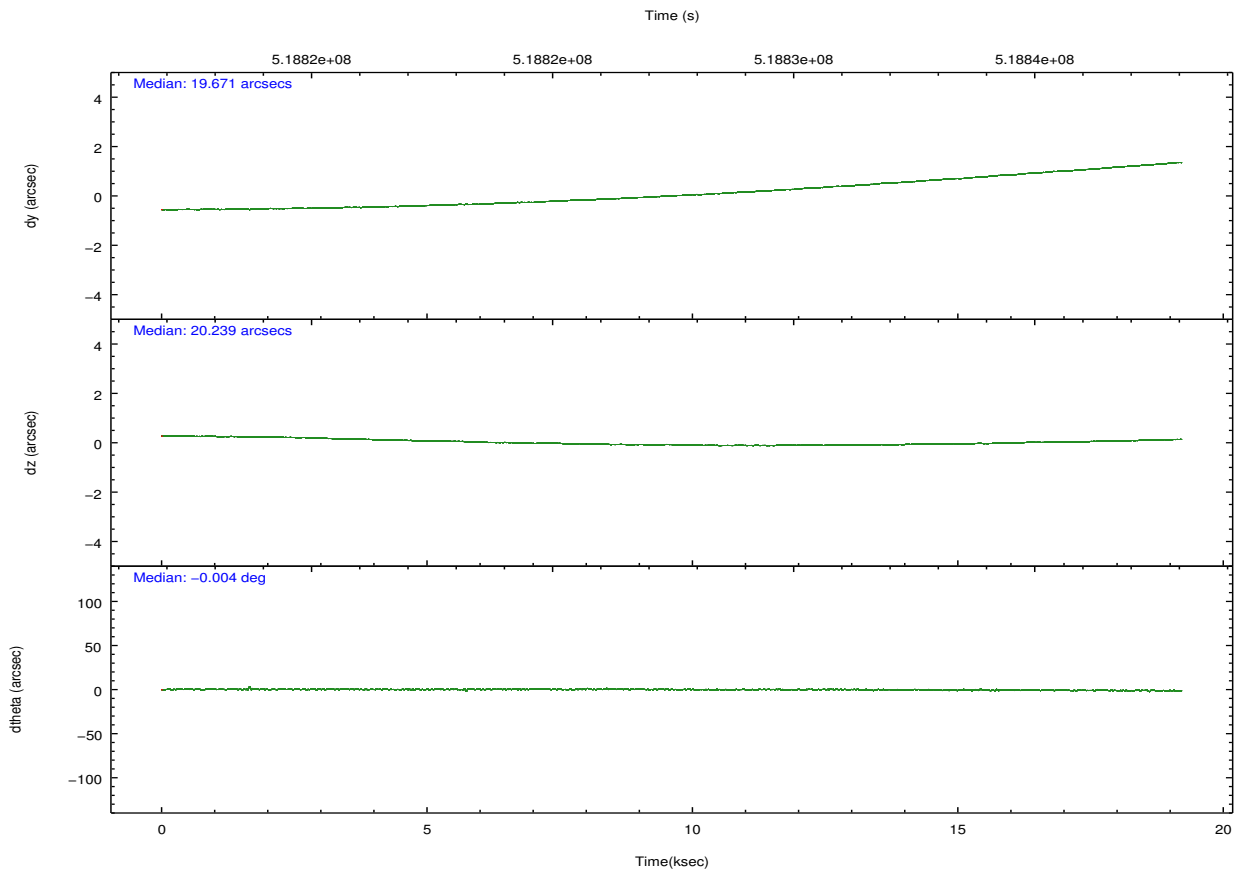
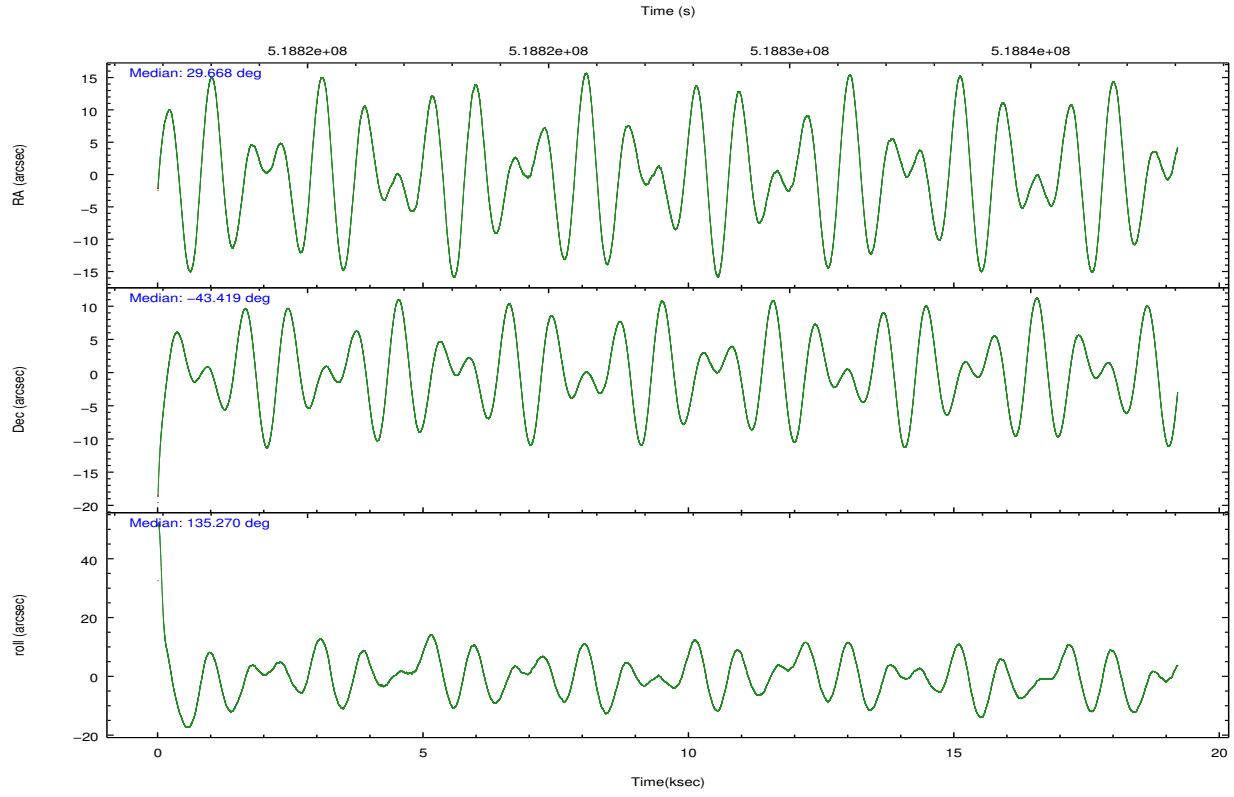
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	1817	1743	2009	3165	5563
	3%	3%	3%	4%	8%
grade 1 events	30	26	18	98	41
	0%	0%	0%	0%	0%
grade 2 events	1336	1161	1402	6391	4203
	2%	2%	2%	9%	6%
grade 3 events	673	728	715	2955	2043
	1%	1%	1%	4%	2%
grade 4 events	704	670	716	2902	1985
	1%	1%	1%	4%	2%
grade 5 events	1924	2608	2573	7002	3643
	3%	5%	4%	10%	5%
grade 6 events	1009	1115	1362	15320	5098
	2%	2%	2%	22%	7%
grade 7 events	42203	39085	42800	29410	45785
	84%	82%	82%	43%	66%

## 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	29.704971	29.66844974131167	CCD I2 on	O4	Y
[deg] Pointing Dec	-43.425084	-43.41852572318469	CCD I3 on	O3	Y
[deg] Pointing Roll	135.148136	135.2796861405495	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	O1	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	O2	Y
[s] Observation start time (MET)	518818074.184000	518817304.75983	CCD S5 on	N	N
Observation start date	2014-06-10T20:06:47	2014-06-10T19:55:04	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	518837074.184000	518838392.08599	On-chip summing requested	N	N
Observation end date	2014-06-11T01:23:27	2014-06-11T01:46:32	Subarray requested	CUSTOM	1/2
Read mode	TIMED	TIMED	Subarray start row	257	257
			Subarray row count	512	512
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	1.7

## 2.3 Aspect



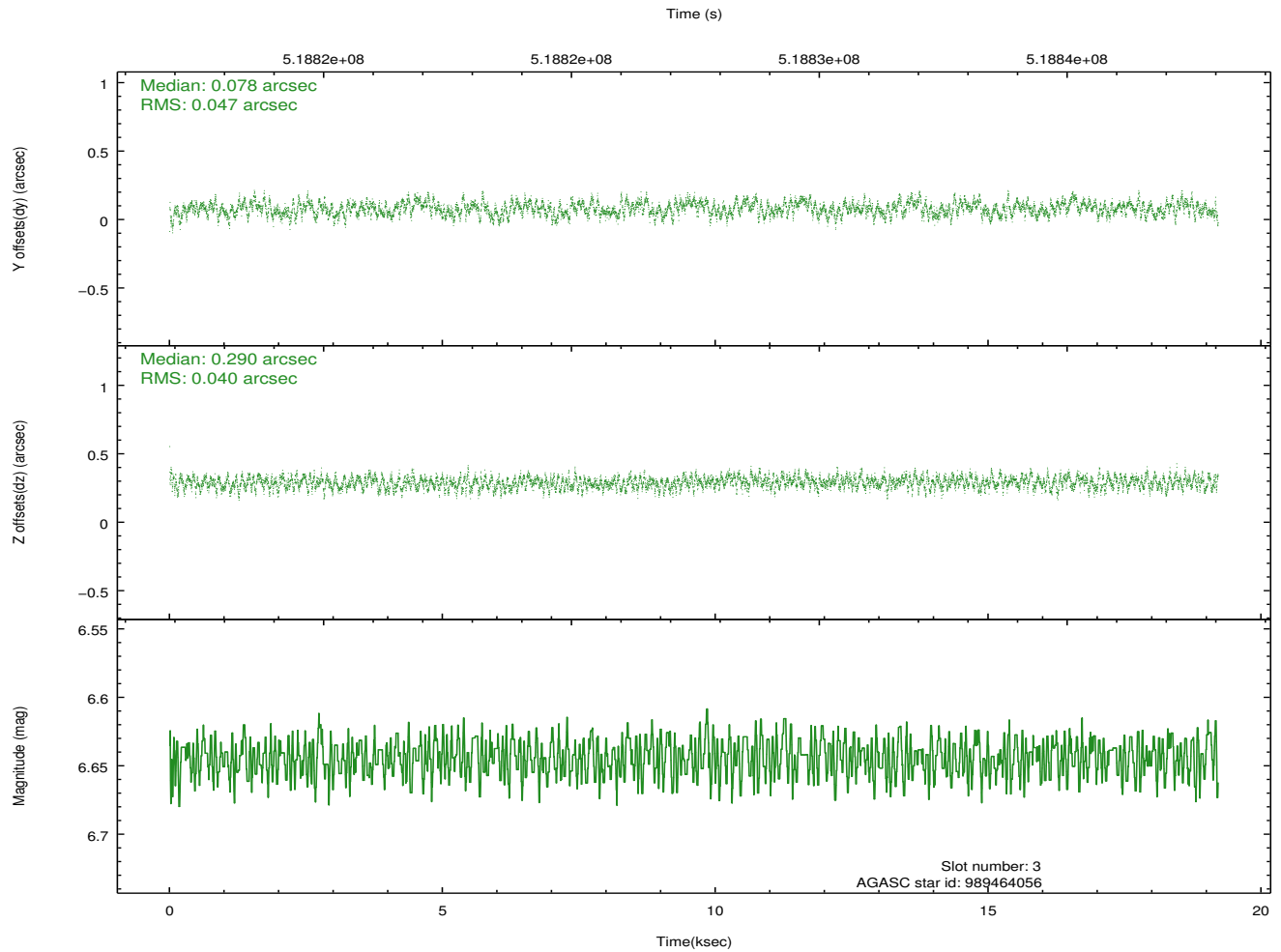
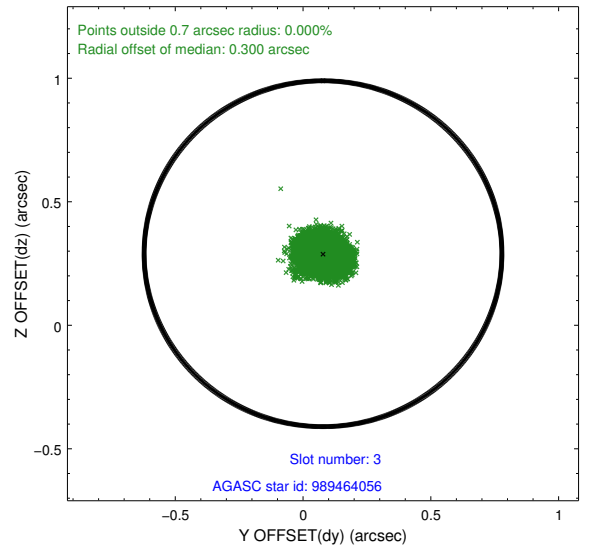
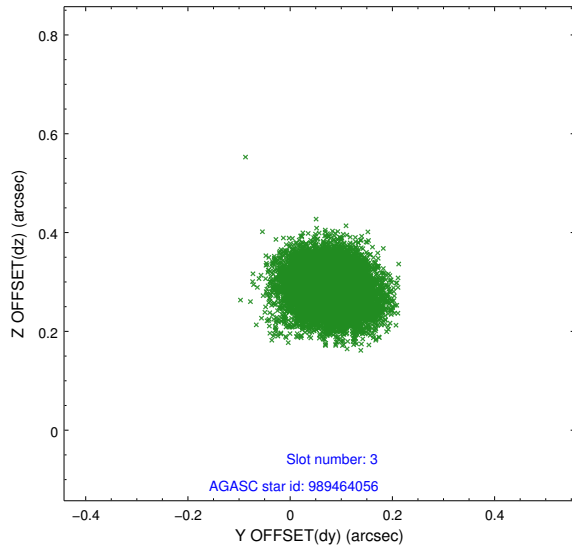


### Slot Statistics

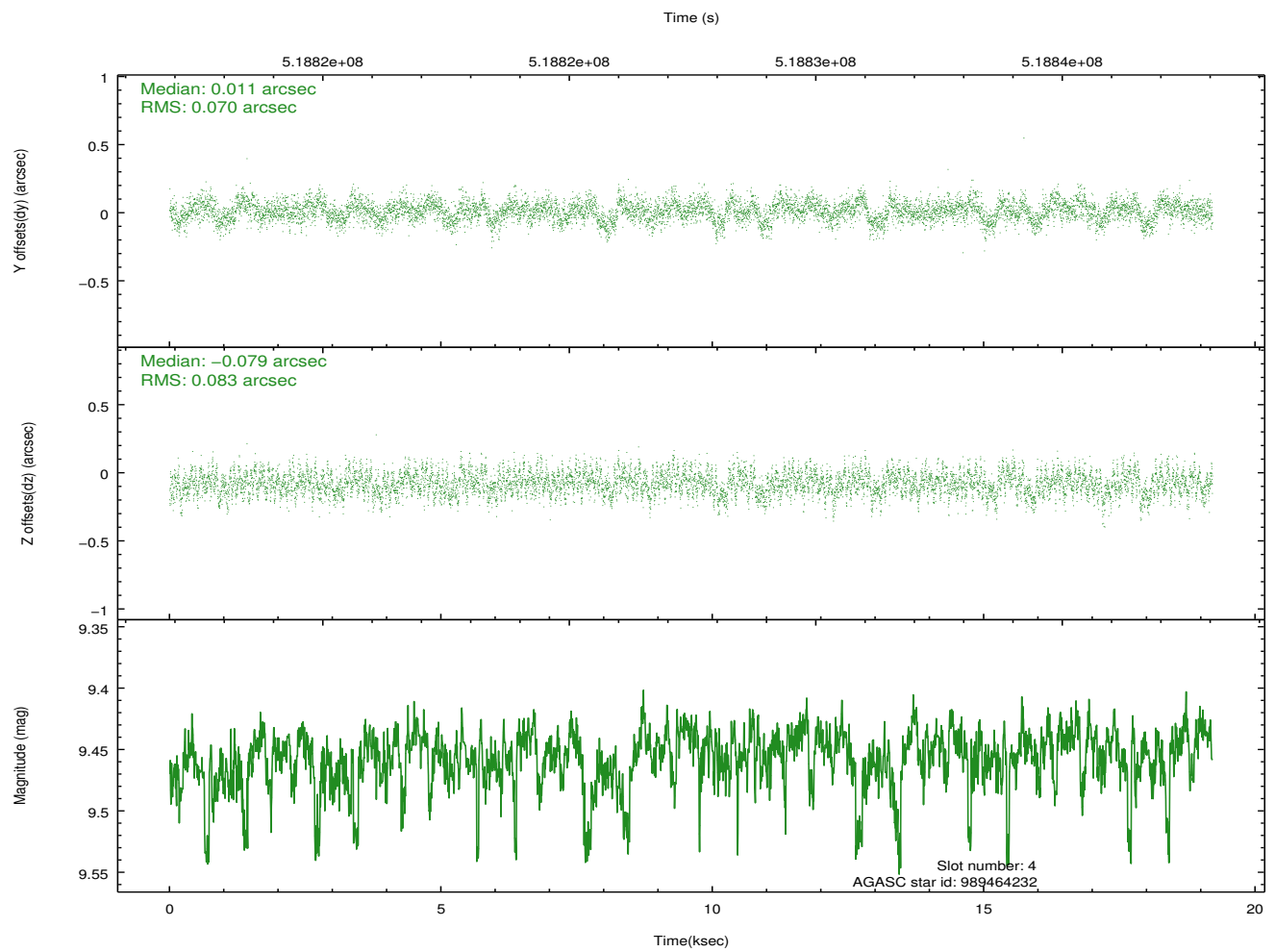
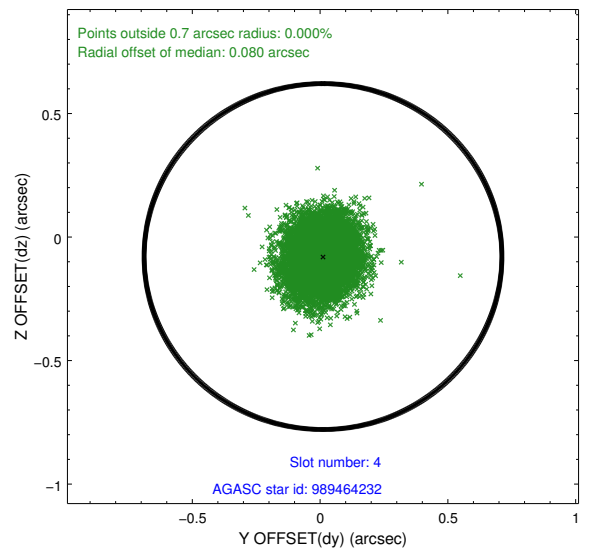
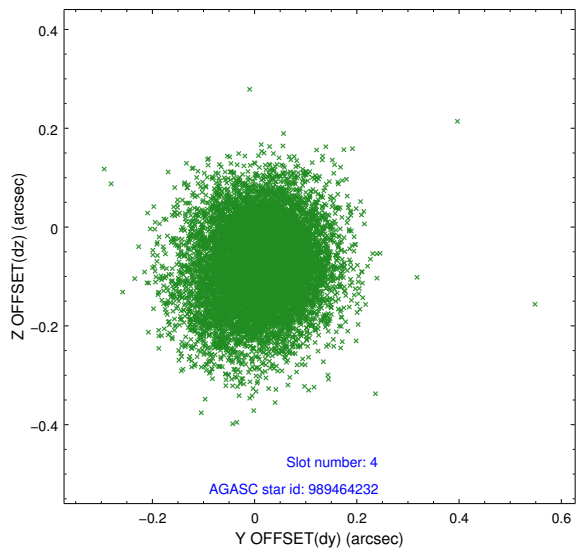
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	6.94	4684	-0.127	0.009	0.009	0.014	0.000000	0.000000	-773.04	-1741.72
1	FID		ACIS-S-4	7.03	4686	0.240	0.059	0.015	0.027	0.000000	0.000000	2140.51	166.58
2	FID		ACIS-S-5	7.05	4686	-0.141	-0.059	0.019	0.025	0.000000	0.000000	-1825.63	160.38
3	GUIDE	used	989464056	6.64	9372	0.078	0.290	0.067	0.104	29.735893	-42.949136	1151.30	-1271.58
4	GUIDE	used	989464232	9.46	9368	0.011	-0.079	0.116	0.188	29.286358	-43.452579	704.72	844.59
5	GUIDE	used	989464976	9.19	9362	-0.072	-0.045	0.141	0.219	28.960994	-43.047006	2341.89	422.07
6	GUIDE	used	989467528	8.18	9371	-0.015	-0.192	0.073	0.118	29.209436	-43.178151	1546.49	289.82
7	GUIDE	used	989470432	9.28	9365	-0.017	0.028	0.108	0.172	29.550844	-43.446971	230.18	340.32

## 2.4 Star Slots

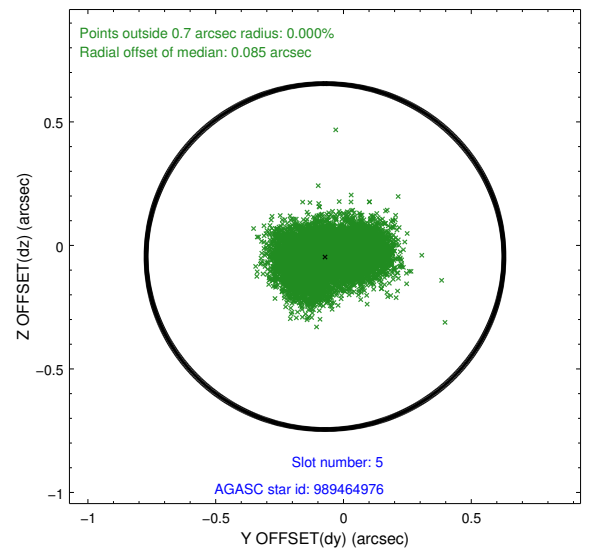
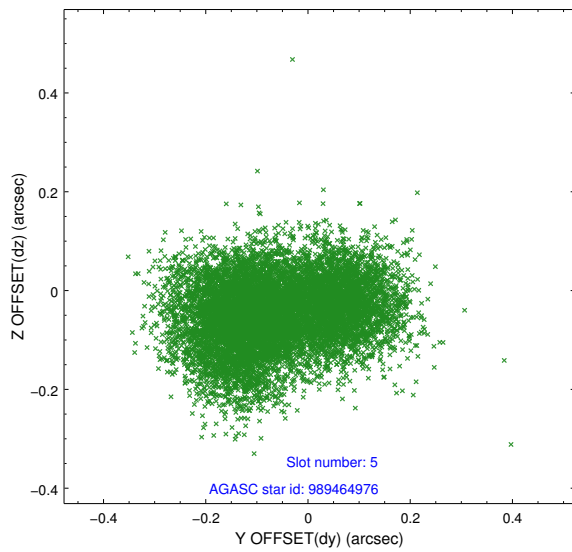
### 2.4.1 Slot 3



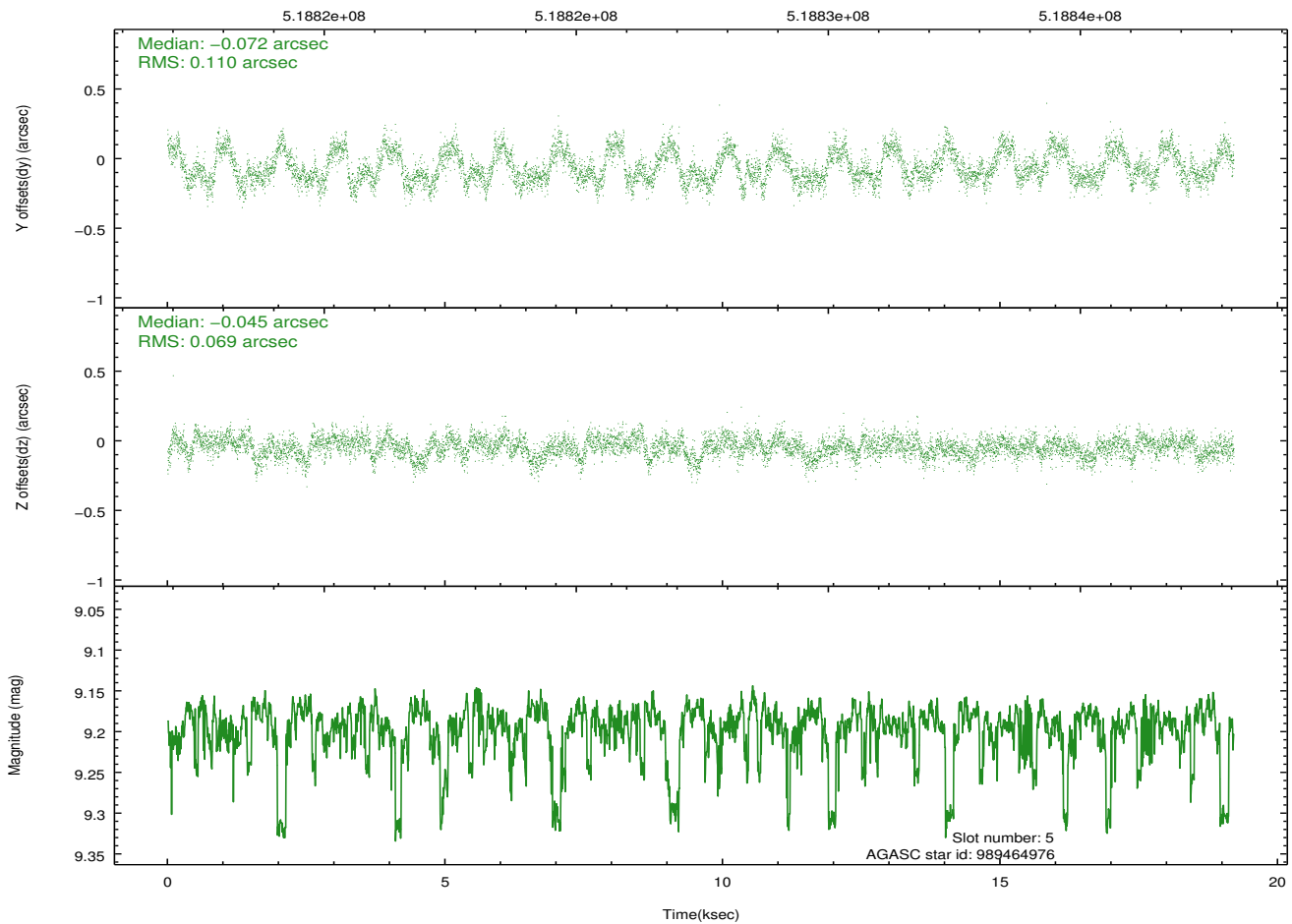
## 2.4.2 Slot 4



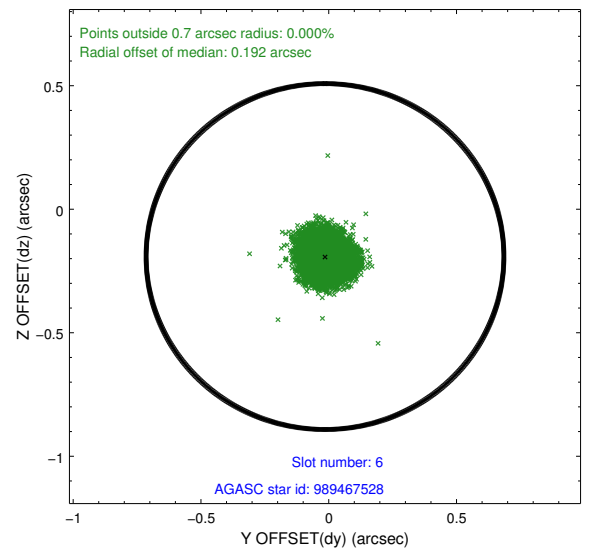
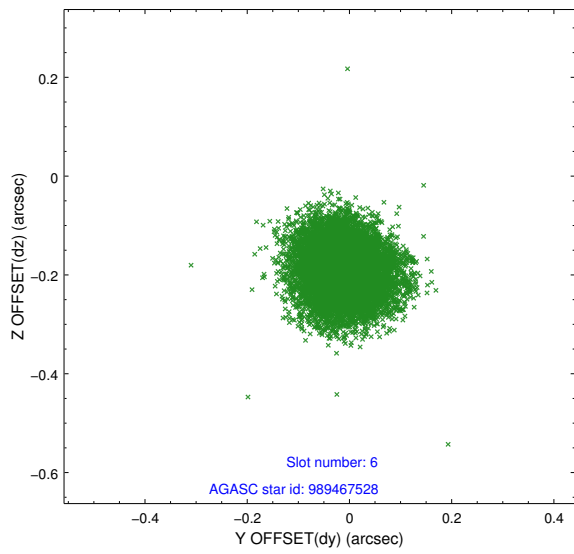
### 2.4.3 Slot 5



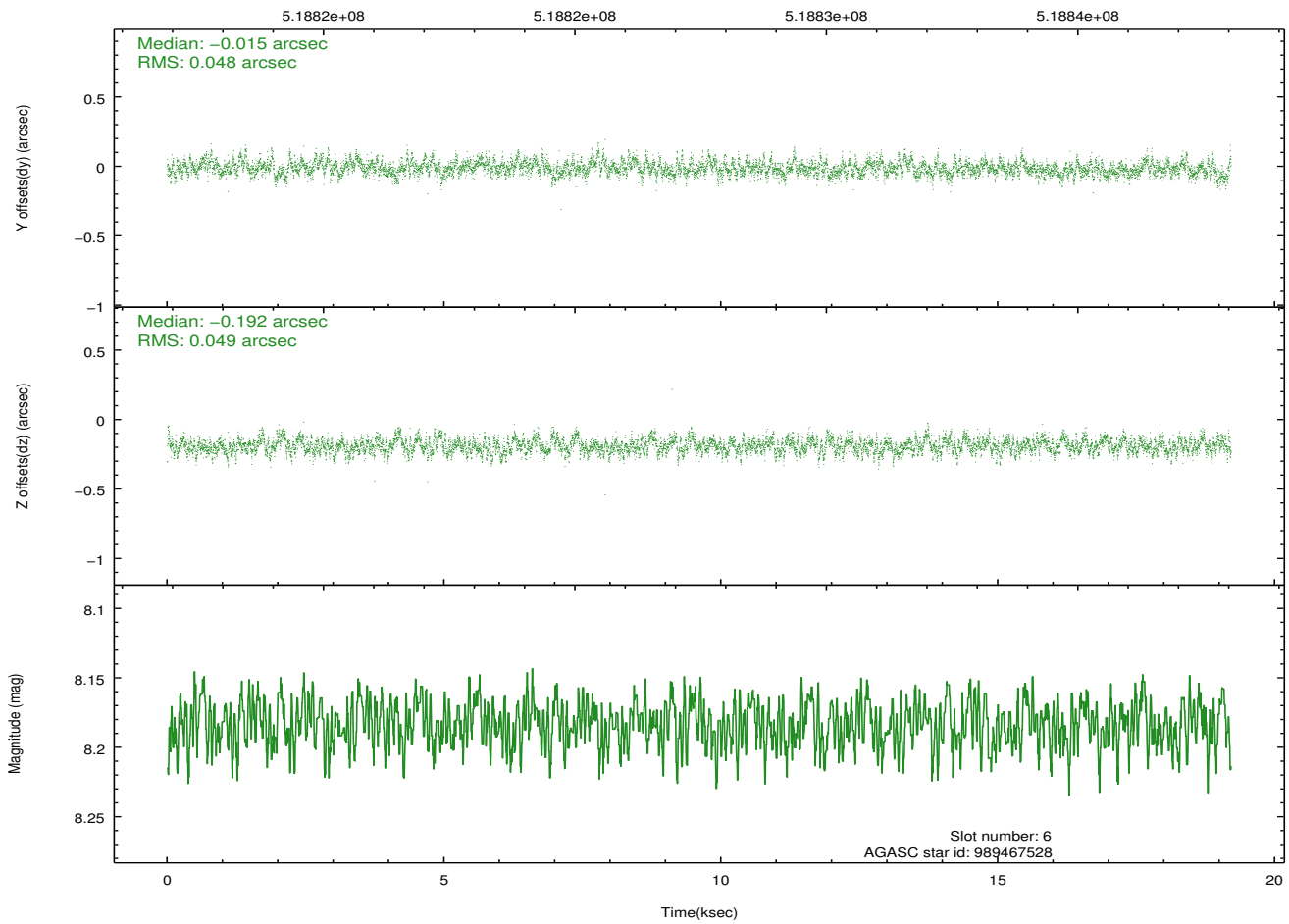
Time (s)



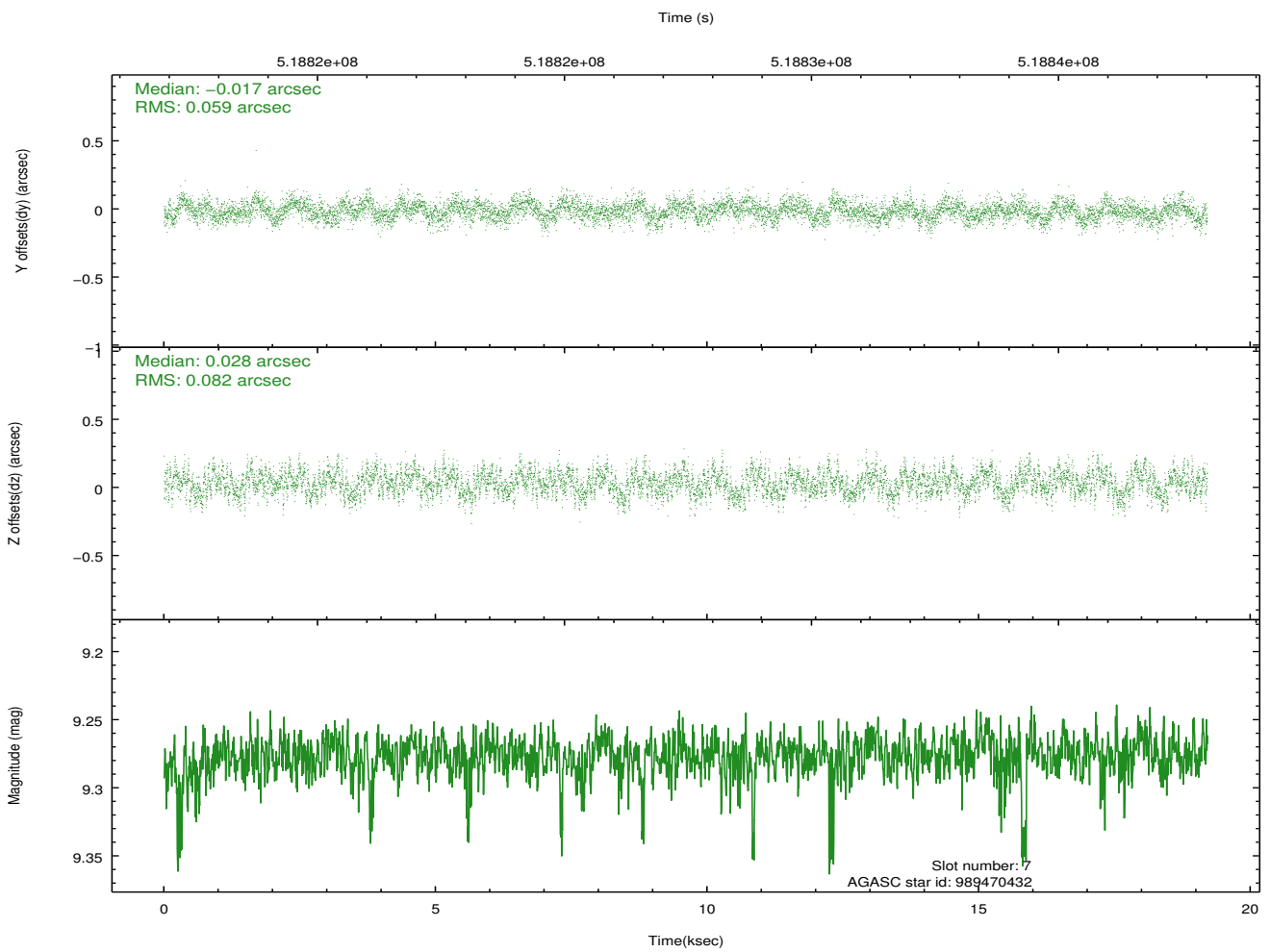
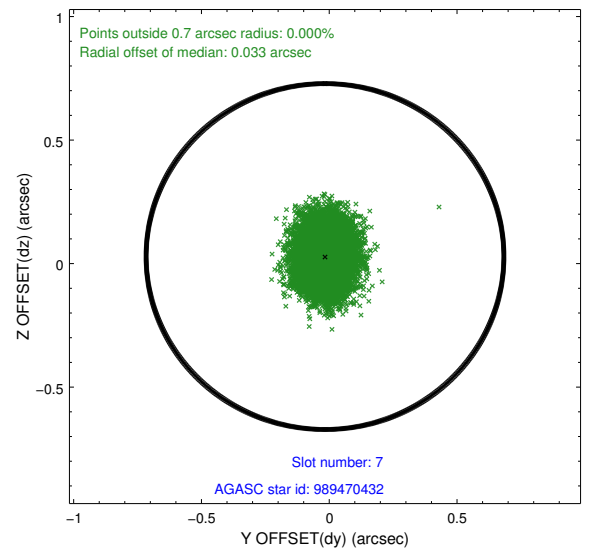
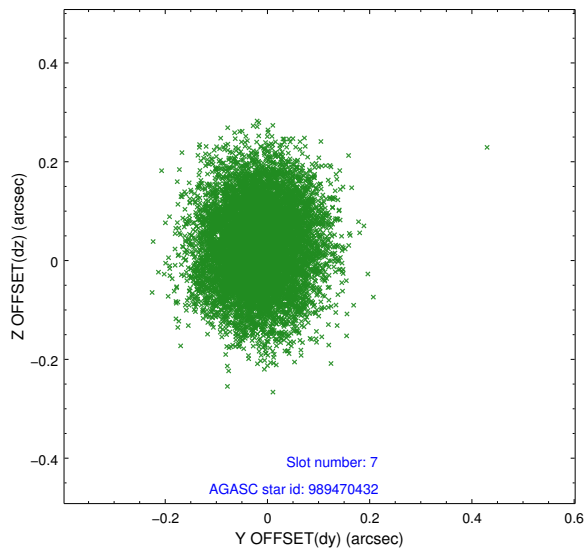
## 2.4.4 Slot 6



Time (s)

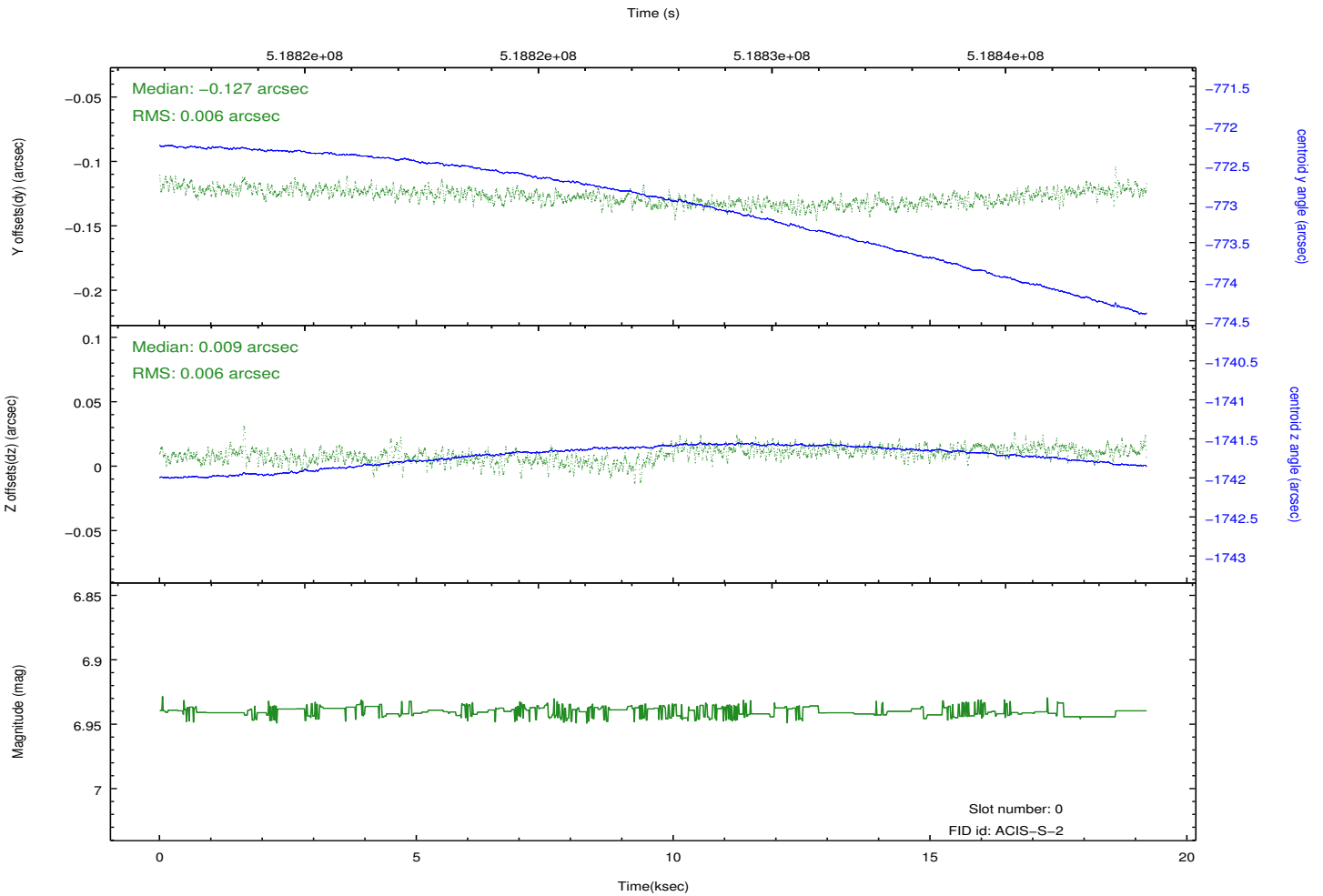
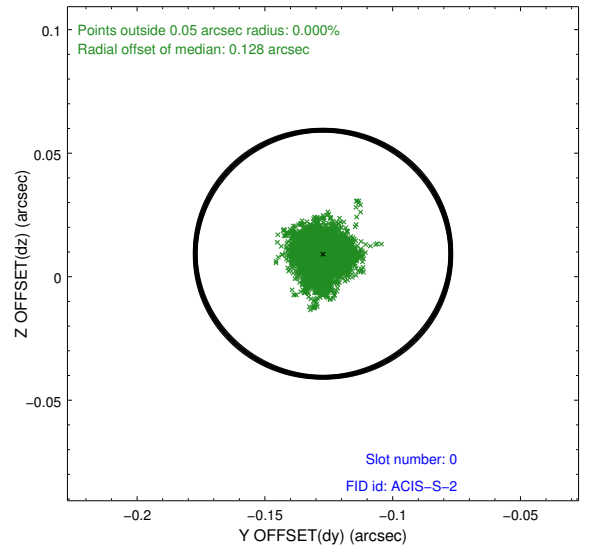
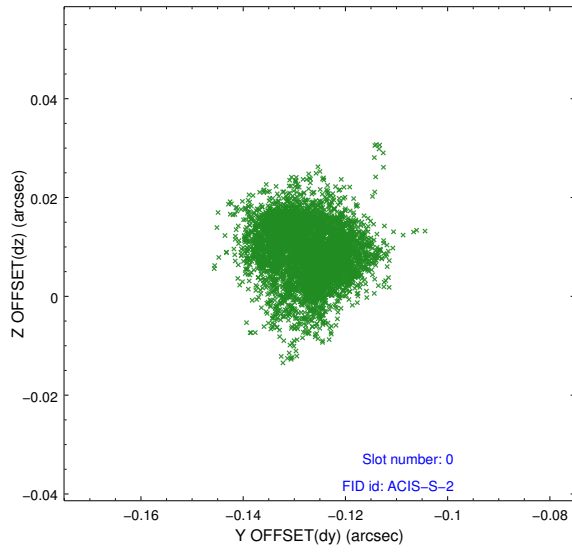


## 2.4.5 Slot 7

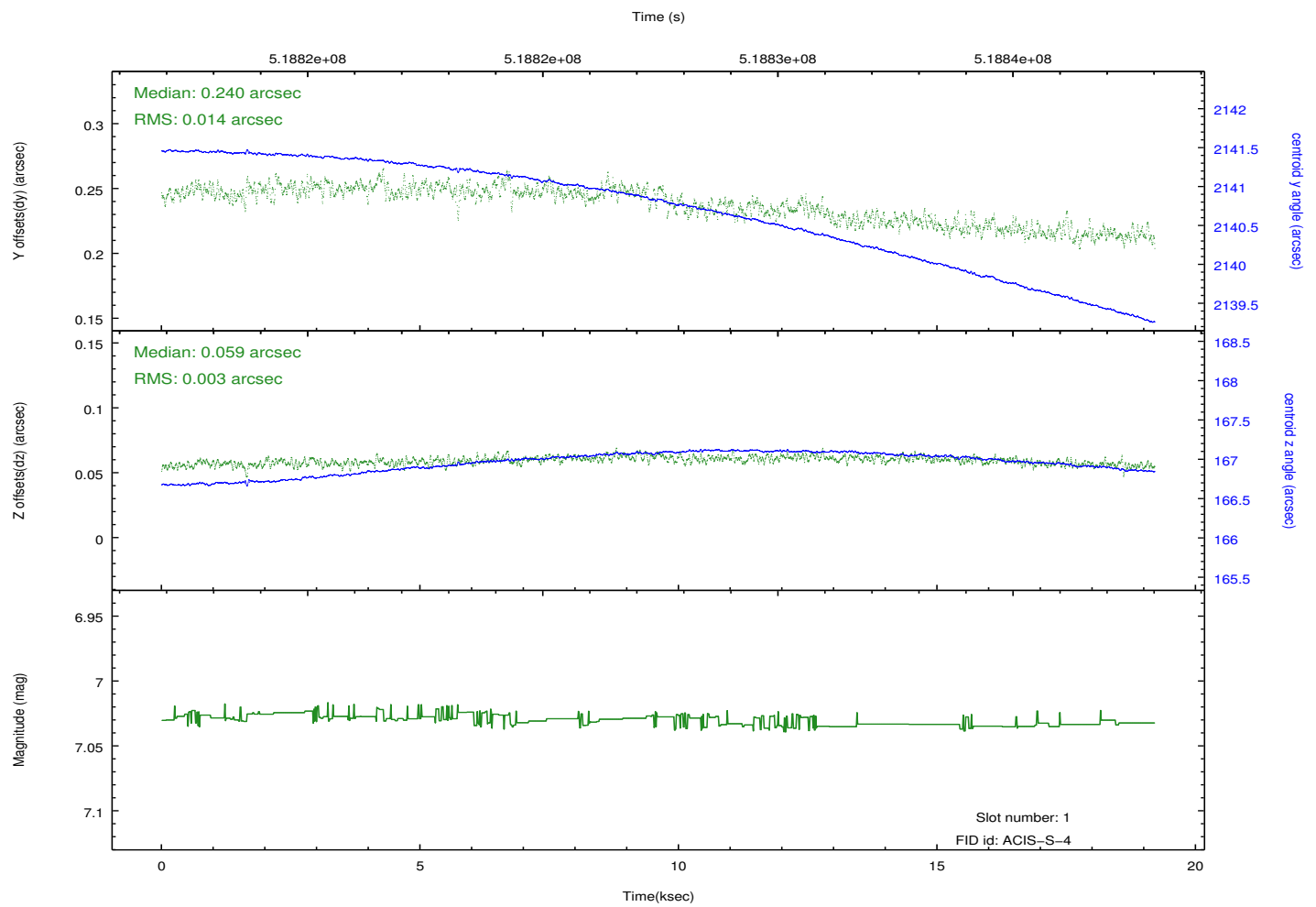
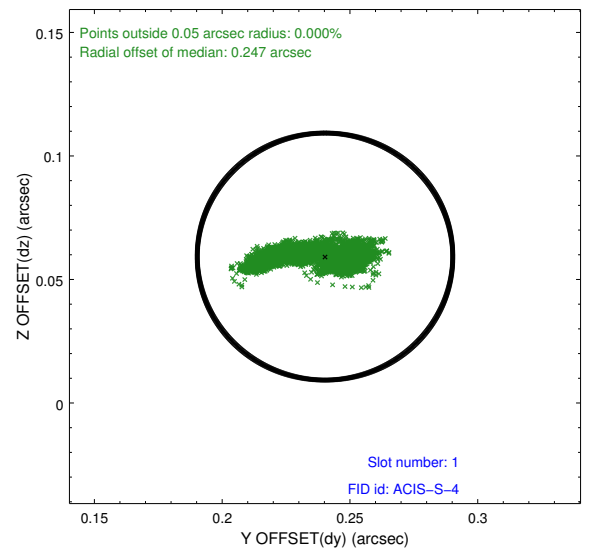
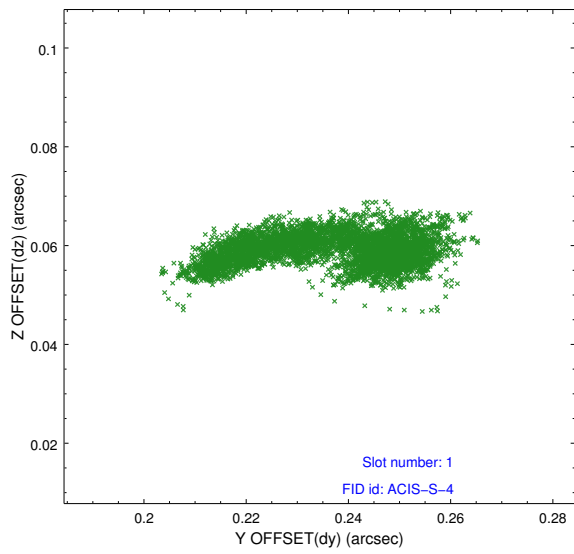


## 2.5 FID Slots

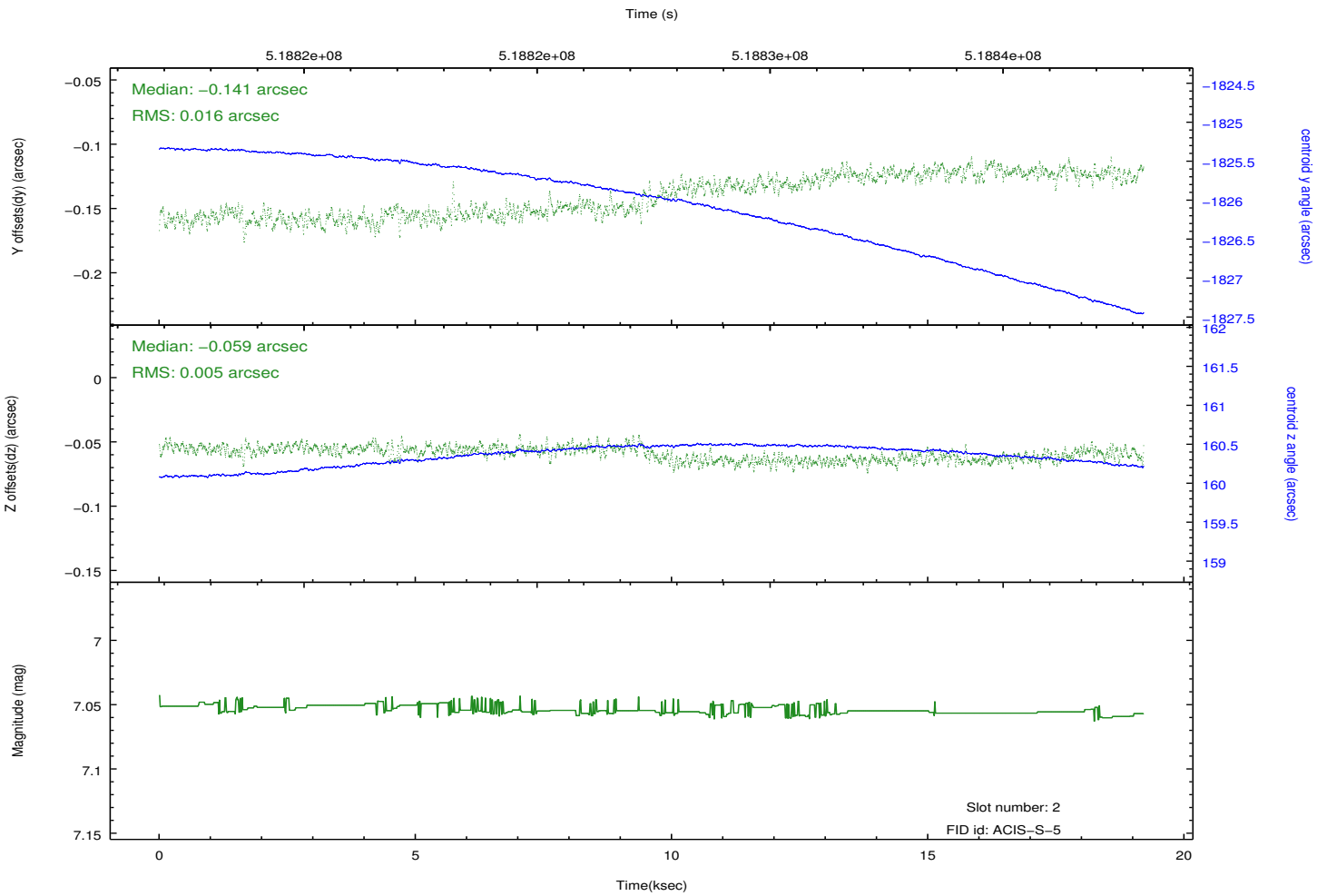
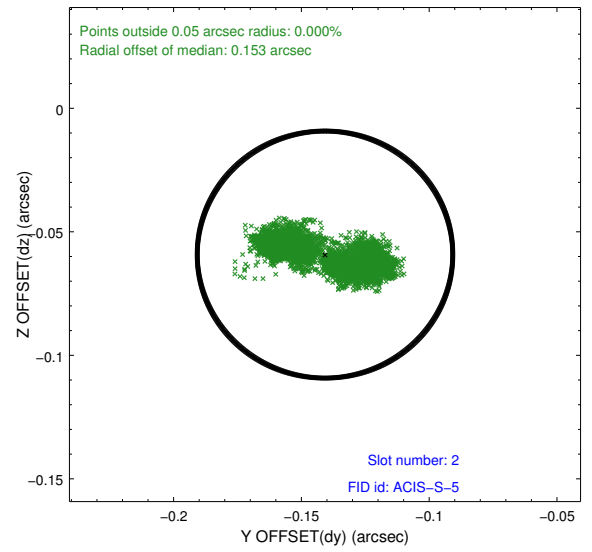
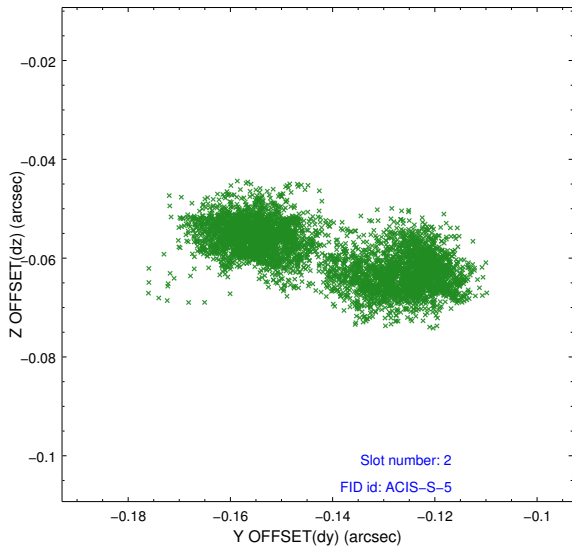
### 2.5.1 Slot 0



## 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)	2014.12.19
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.064790755153

## A.2 Comments

Joint proposal with HST.

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.