

# V&V Reference Report

## L2 ASCDS Version : 10.2.1

Observation 16224 - L2 Version 2  
Chandra X-Ray Center

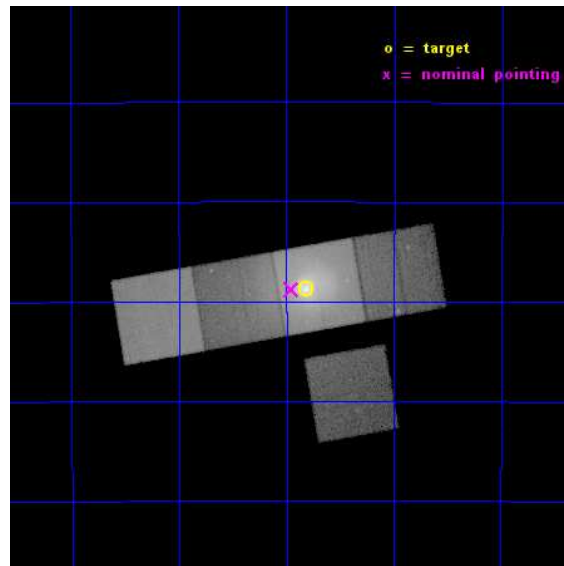
L2 Processing Date : Dec 11 2014

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# 1 Front

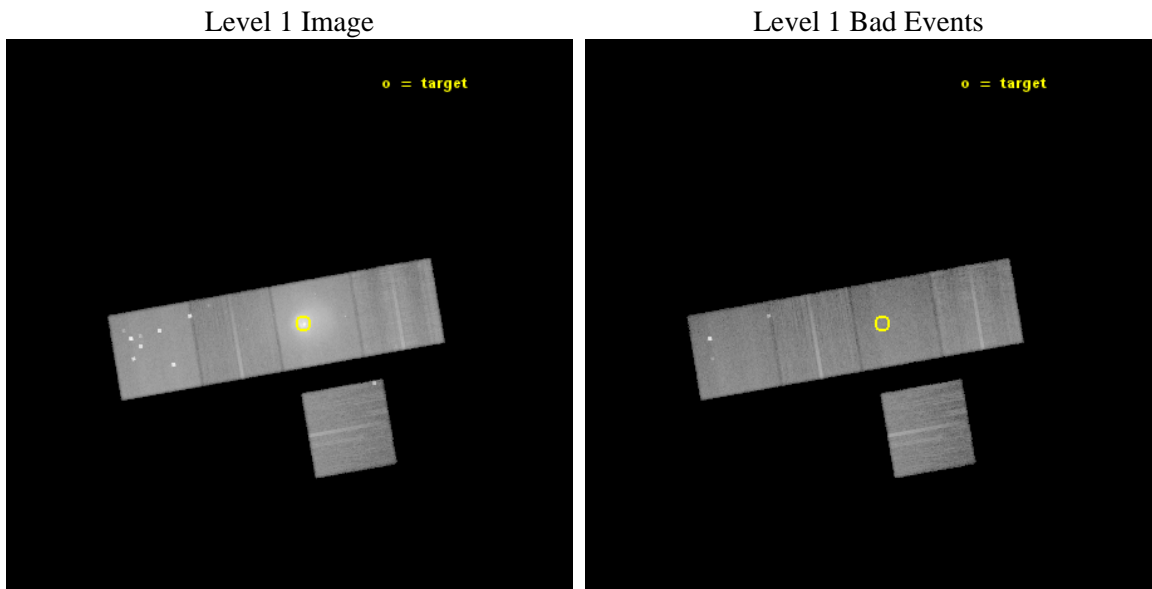
seq_num	801409	Sequence number
obs_id	16224	Observation id
title	Deep imaging and spectroscopy of the Centaurus cluster: metals and filaments	Proposal title
observer	Dr Jeremy Sanders	Principal investigator
object	Centaurus cluster	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	192.20375	Observer's specified target RA [deg]
dec_targ	-41.312167	Observer's specified target Dec [deg]
ra_nom	192.23835723332	Nominal RA [deg]
dec_nom	-41.313305261433	Nominal Dec [deg]
roll_nom	350.17947762058	Nominal Roll [deg]
revision	2	Processing version of data
ontime	42851.300329566	Sum of GTIs [s]
livetime	42291.416544092	Livetime [s]
ontime3	42851.300329566	Sum of GTIs [s]
ontime5	42851.300329566	Sum of GTIs [s]
ontime6	42851.300329566	Sum of GTIs [s]
ontime7	42851.300329566	Sum of GTIs [s]
ontime8	42851.300329566	Sum of GTIs [s]
l2events	903785	Number of level 2 events



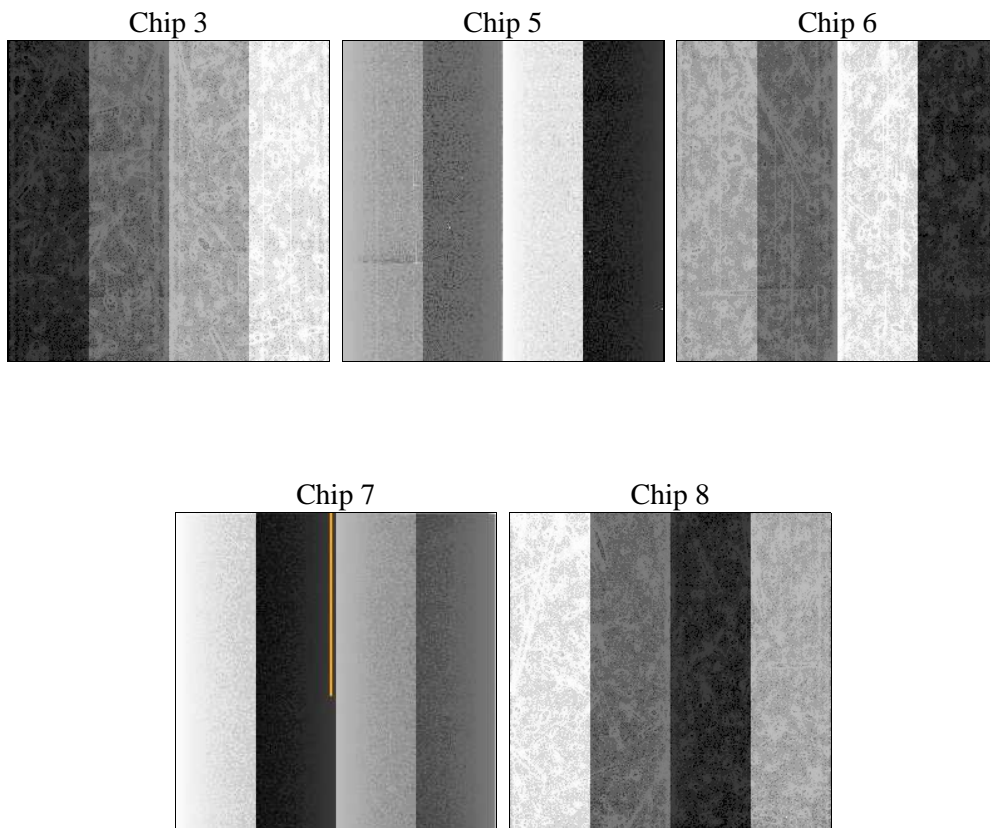
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	42786.000000	[s] Scheduled observation exposure time
ascdsver	10.3.1	Processing system revision	ontime	42851.300329566	Sum of GTIs [s]
caldsver	4.6.4	&#160	ontime3	42851.300329566	Sum of GTIs [s]
date	2014-12-11T05:45:36	Date and time of file creation	ontime5	42851.300329566	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	42851.300329566	Sum of GTIs [s]
			ontime7	42851.300329566	Sum of GTIs [s]
			ontime8	42851.300329566	Sum of GTIs [s]
			l1events	1916909	Number of level 1 events

### 2.1.4 Events

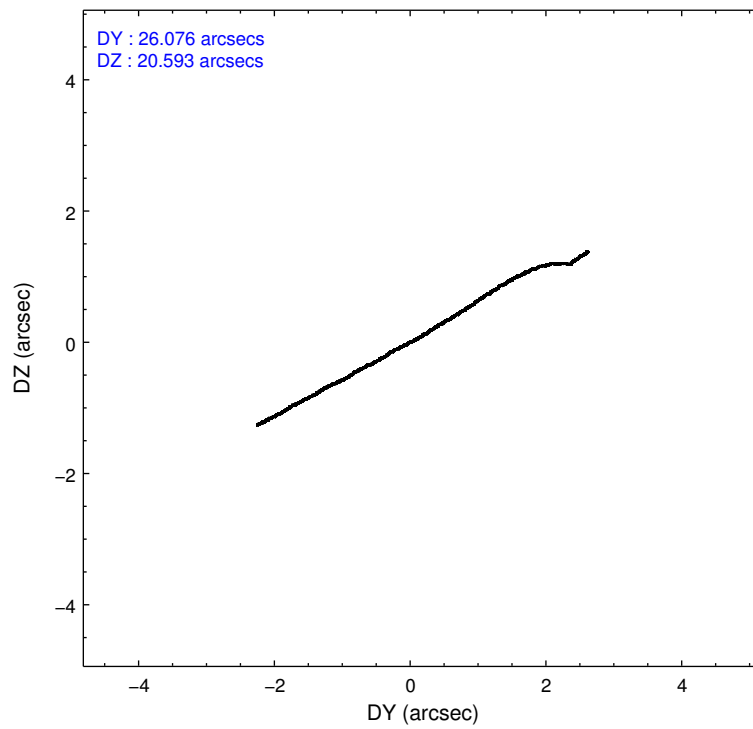
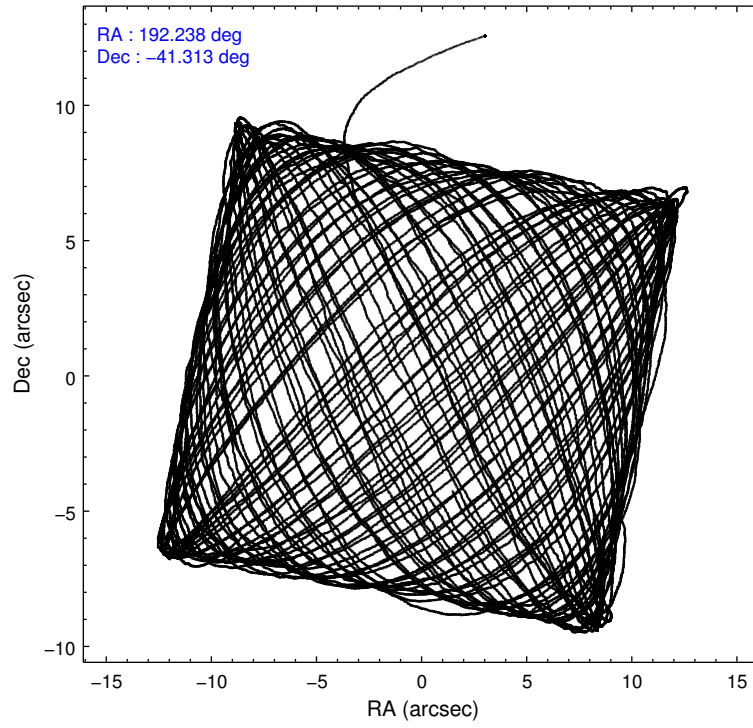
	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	207728	421089	290524	690239	307329
rejected events	164644	186459	177135	161663	193654
rejected %	79%	44%	60%	23%	63%

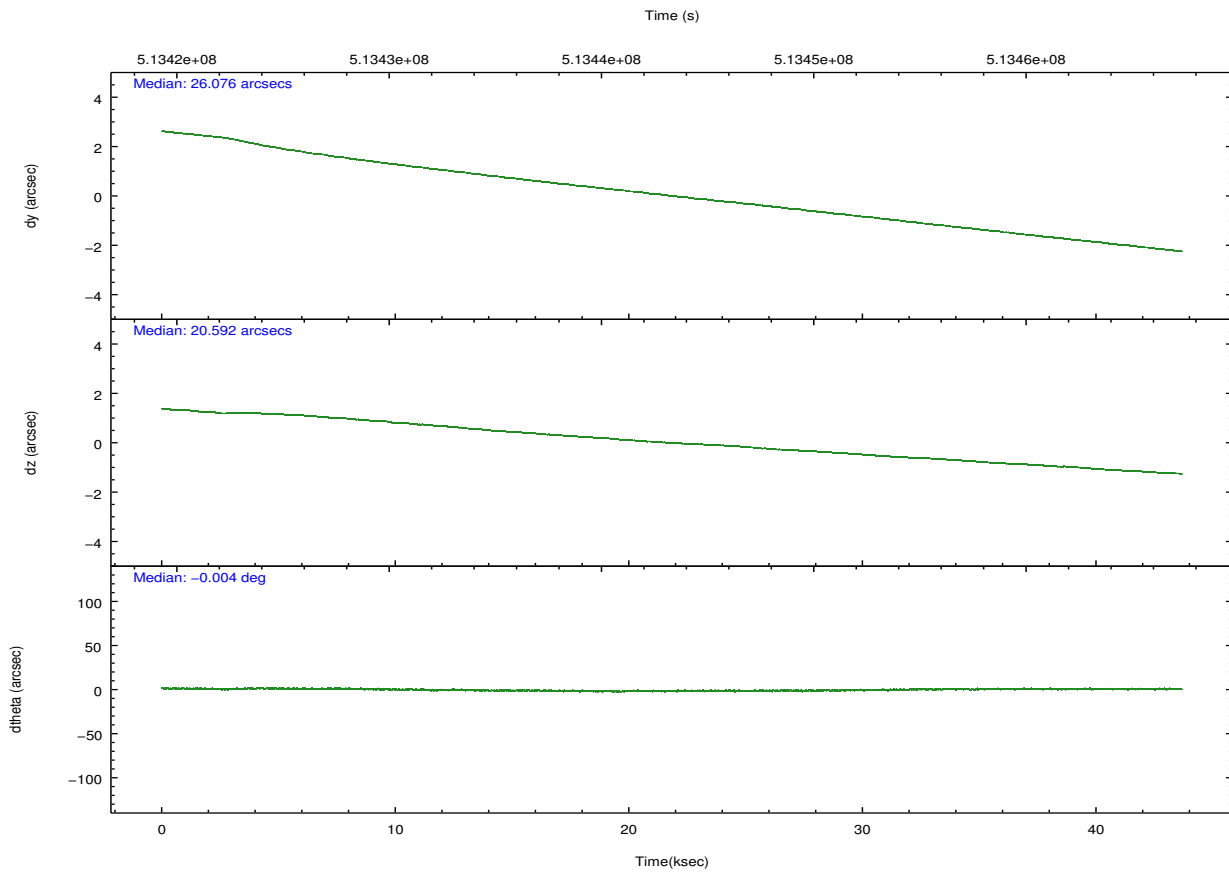
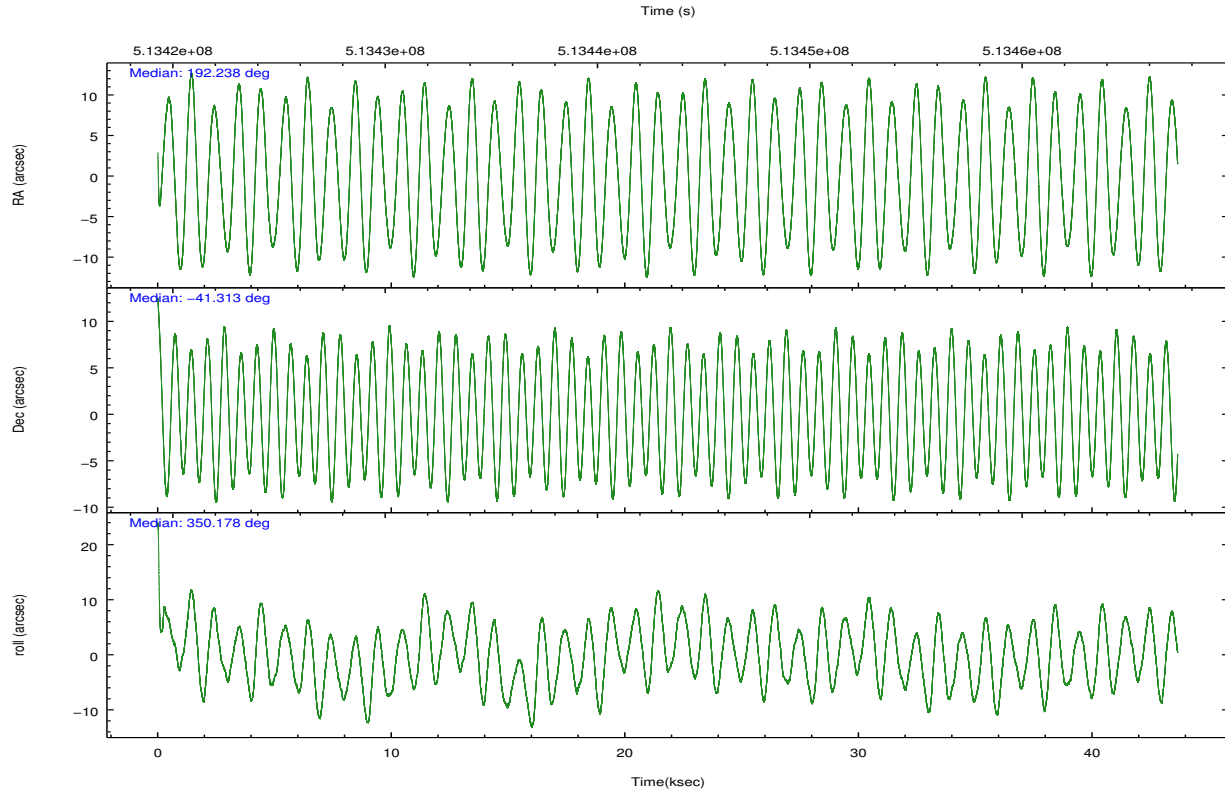
	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	25185	55201	79857	126871	52958
	12%	13%	27%	18%	17%
grade 1 events	183	694	314	471	267
	0%	0%	0%	0%	0%
grade 2 events	6746	65843	15103	135673	20936
	3%	15%	5%	19%	6%
grade 3 events	3025	9647	5246	57406	10000
	1%	2%	1%	8%	3%
grade 4 events	2902	8553	5120	56151	9498
	1%	2%	1%	8%	3%
grade 5 events	10391	26349	10776	30197	15423
	5%	6%	3%	4%	5%
grade 6 events	5229	95402	8069	152529	20297
	2%	22%	2%	22%	6%
grade 7 events	154067	159400	166039	130941	177950
	74%	37%	57%	18%	57%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-35678	ACIS-35678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	192.204346	192.2383572333176	CCD I2 on	N	N
[deg] Pointing Dec	-41.323075	-41.31330526143256	CCD I3 on	O1	Y
[deg] Pointing Roll	350.000388	350.1794776205779	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[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	O2	Y
[s] Observation start time (MET)	513422355.184000	513420876.77436	CCD S5 on	N	N
Observation start date	2014-04-09T09:18:08	2014-04-09T08:54:36	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	513465141.184000	513466667.11439	On-chip summing requested	N	N
Observation end date	2014-04-09T21:11:14	2014-04-09T21:37:47	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.1

## 2.3 Aspect





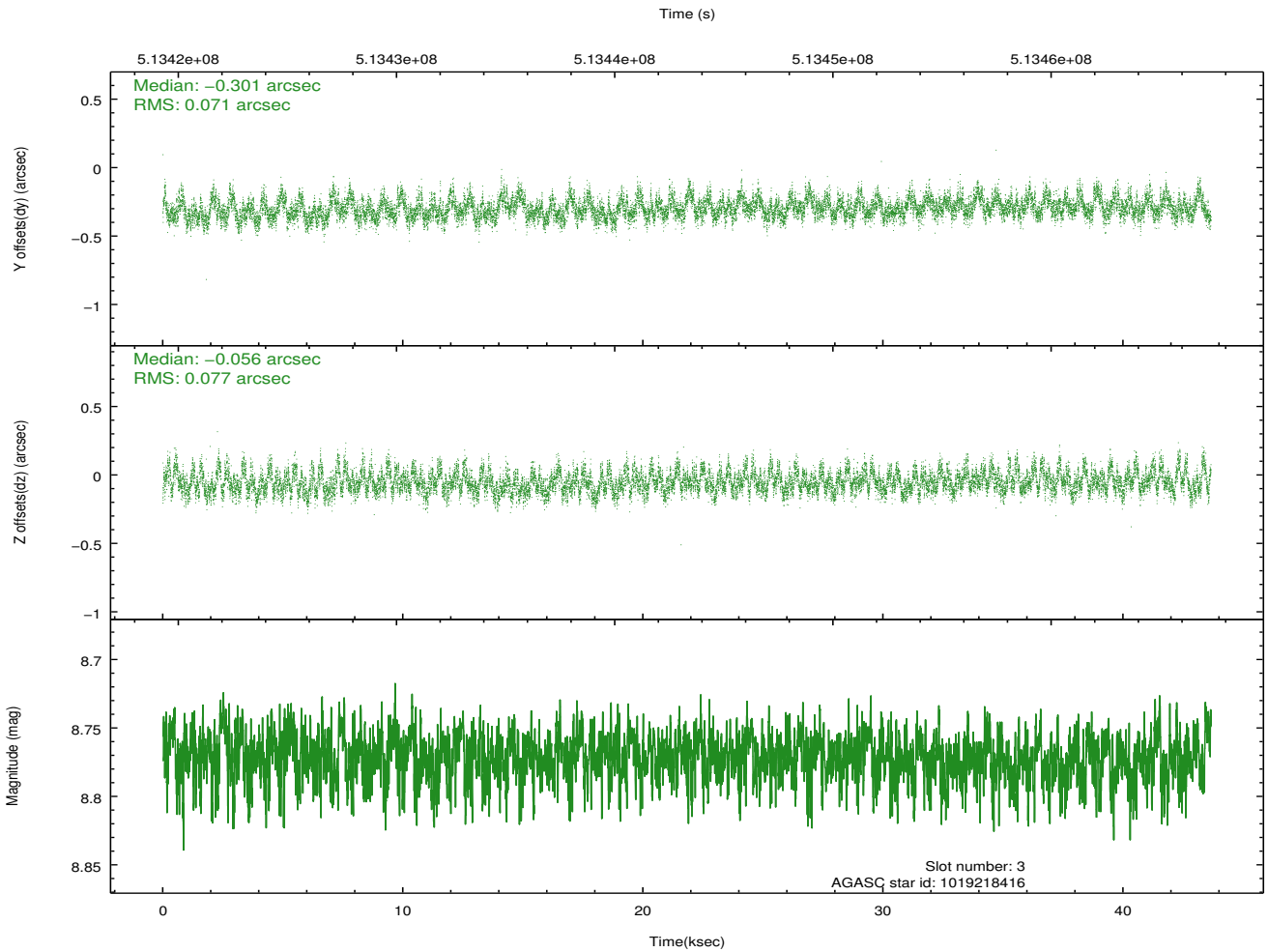
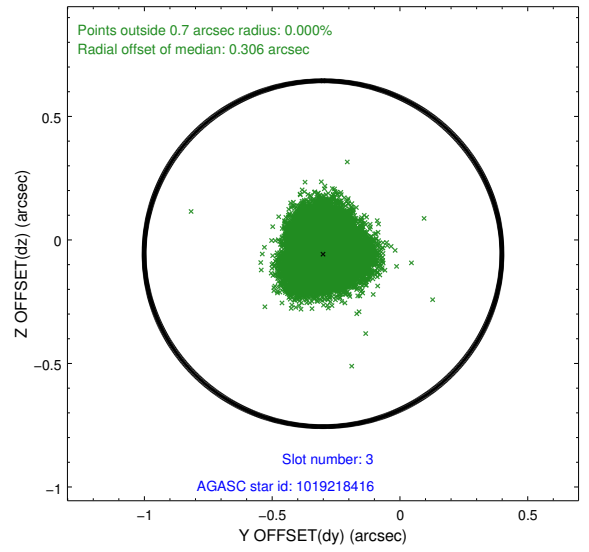
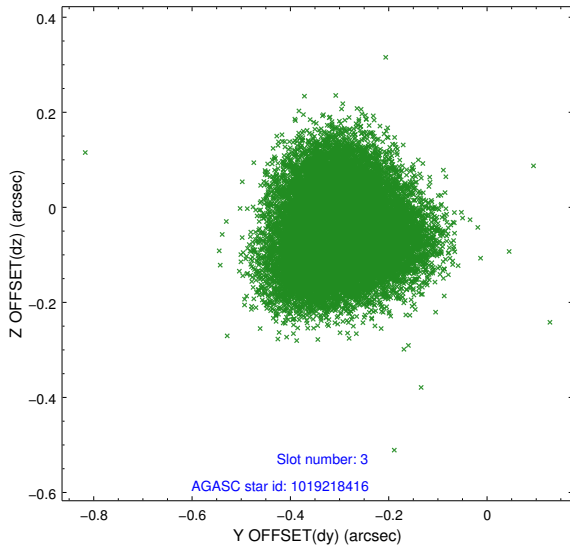
### Slot Statistics

slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.02	10648	-0.198	-0.021	0.022	0.037	0.000000	0.000000	-779.60	-1742.19
1	FID		ACIS-S-4	7.11	10649	0.386	0.100	0.018	0.070	0.000000	0.000000	2134.27	166.42
2	FID		ACIS-S-5	7.14	10649	-0.224	-0.070	0.031	0.052	0.000000	0.000000	-1832.48	159.91
3	GUIDE	used	1019218416	8.77	21289	-0.301	-0.056	0.113	0.176	193.142850	-40.941016	2276.86	1783.96
4	GUIDE	used	1019221952	9.56	21274	-0.176	-0.348	0.158	0.251	192.906873	-41.032646	1698.83	1353.19
5	GUIDE	used	1019615024	8.48	21285	0.337	0.254	0.102	0.159	191.349086	-41.365736	-2246.13	-563.45
6	GUIDE	used	1019740808	8.78	21289	0.004	-0.155	0.131	0.203	192.766173	-41.251253	1453.41	513.62
7	GUIDE	used	1019743536	8.65	21289	0.128	0.298	0.098	0.159	192.632057	-41.696442	1366.84	-1126.78

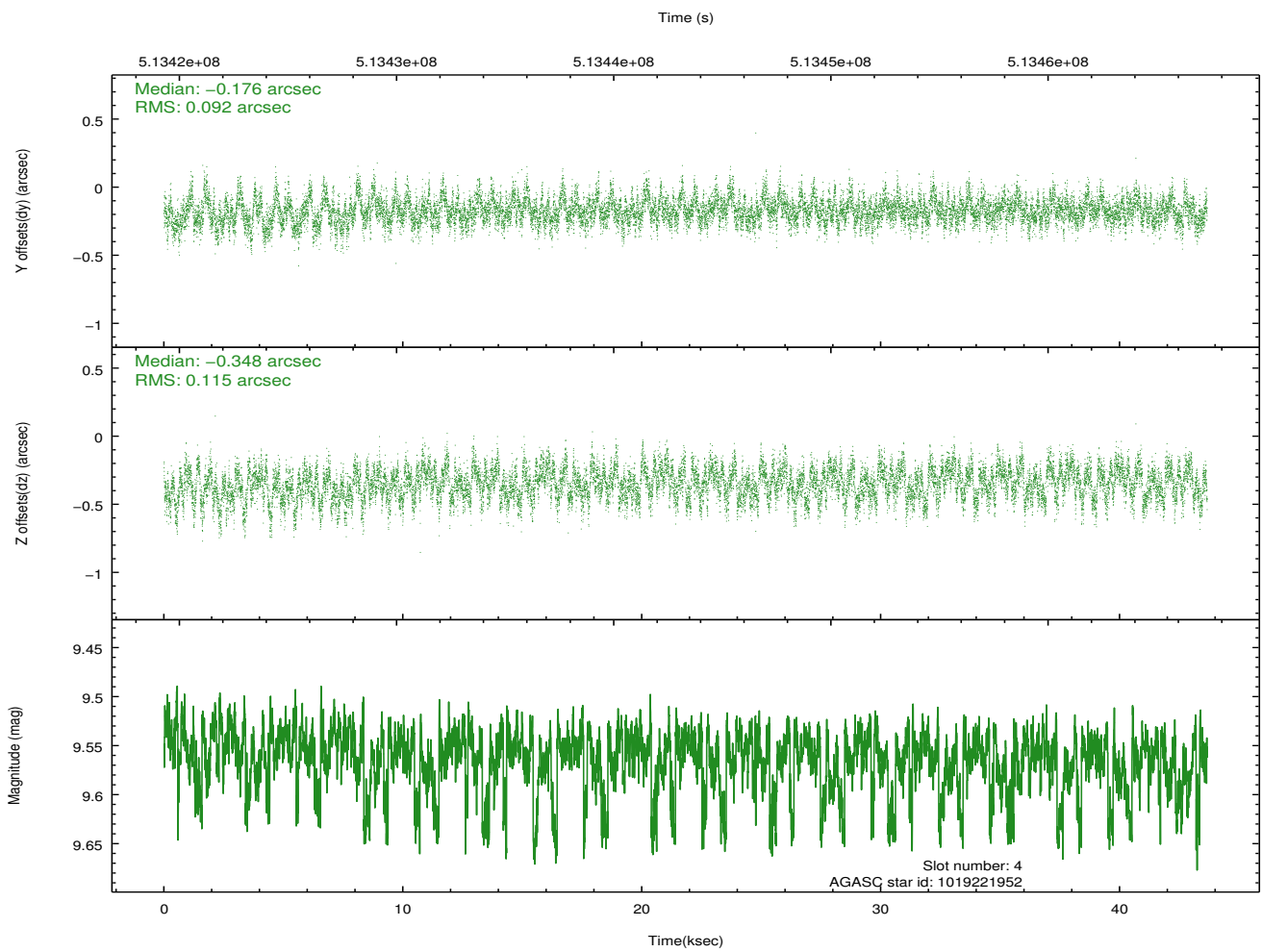
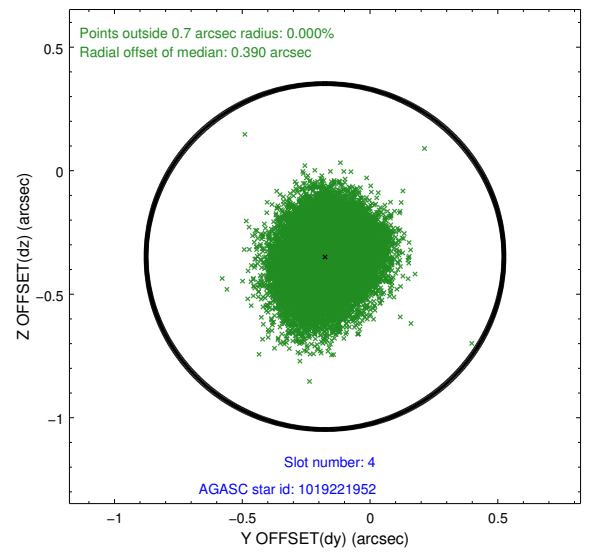
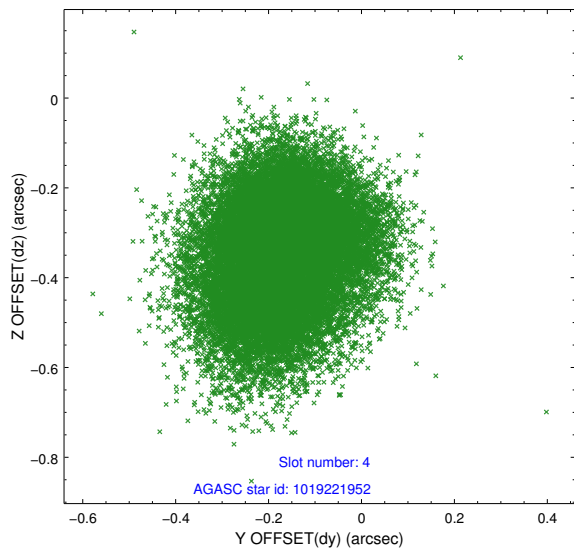
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## 2.4 Star Slots

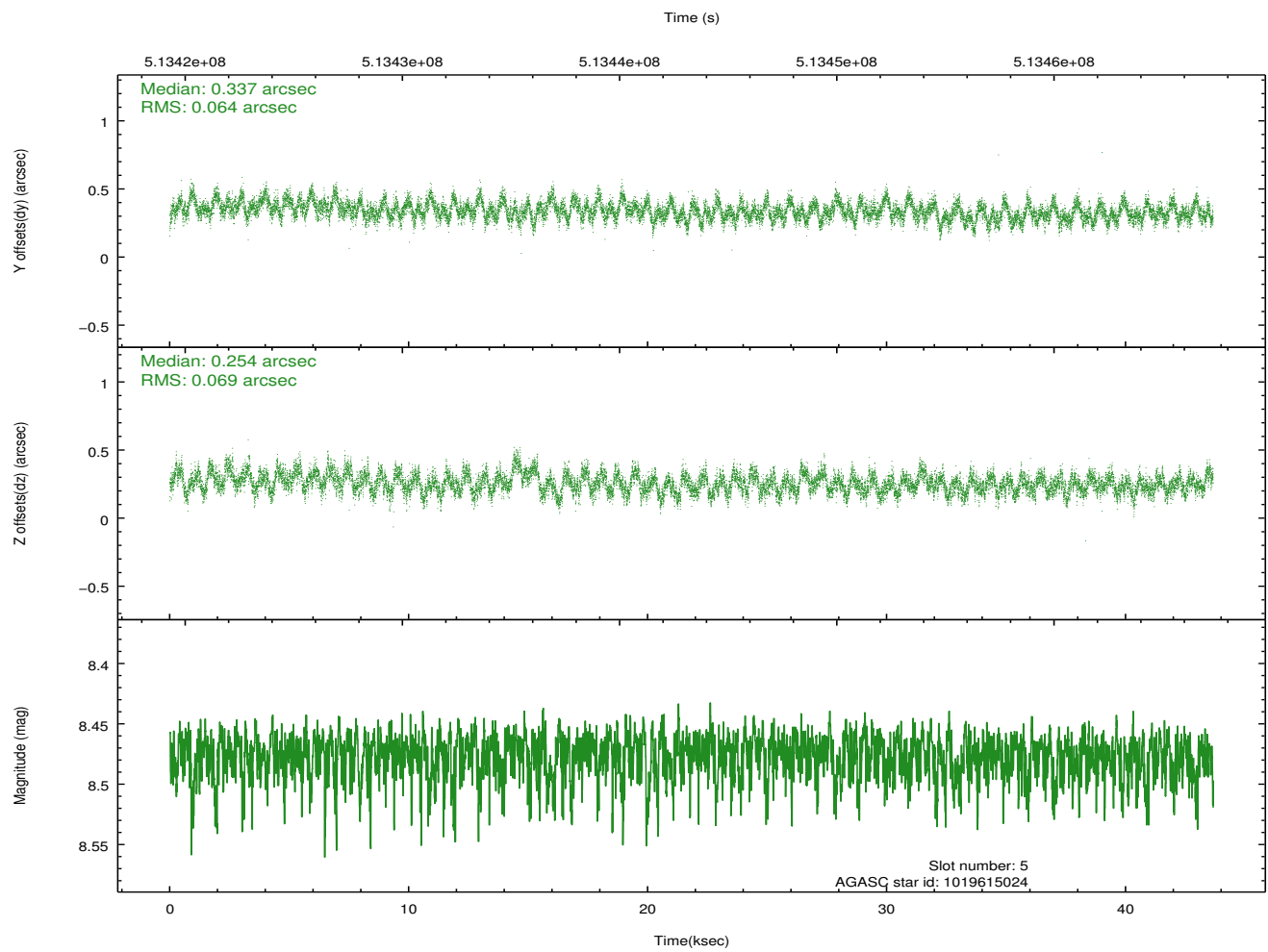
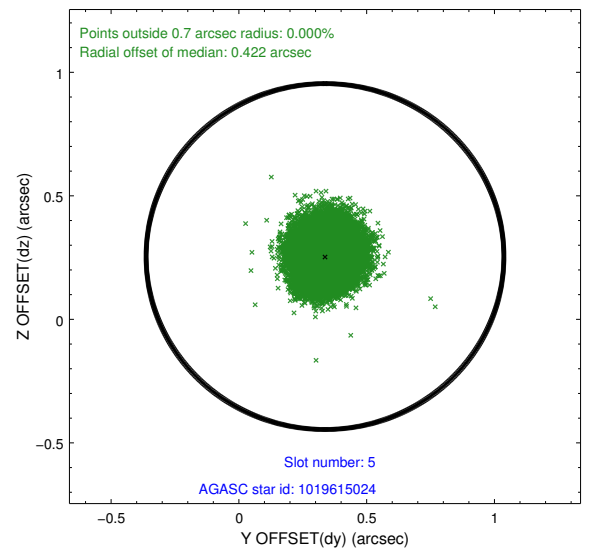
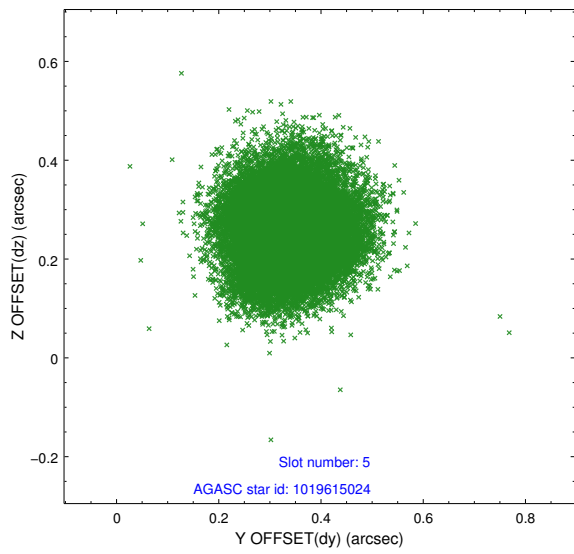
### 2.4.1 Slot 3



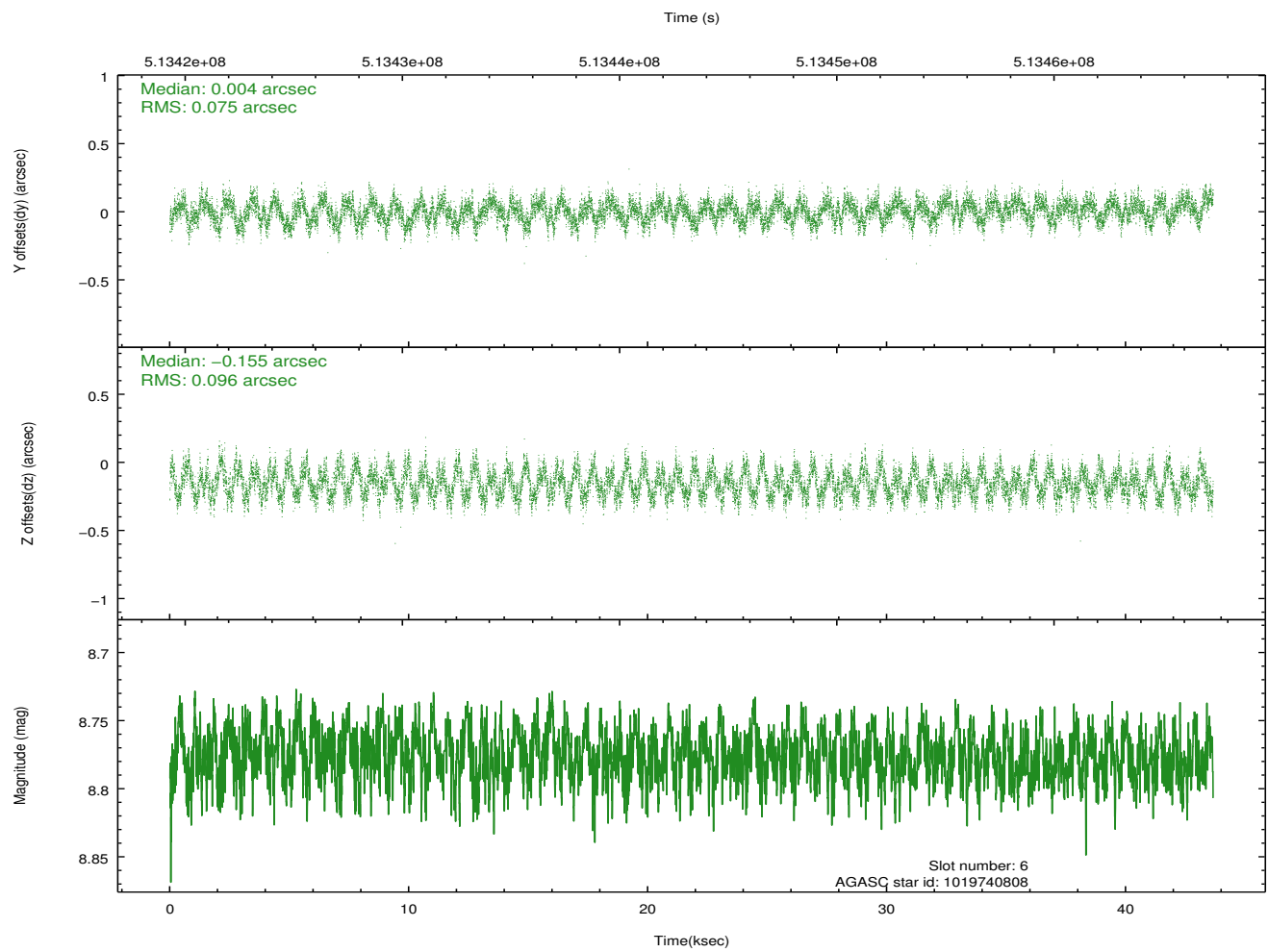
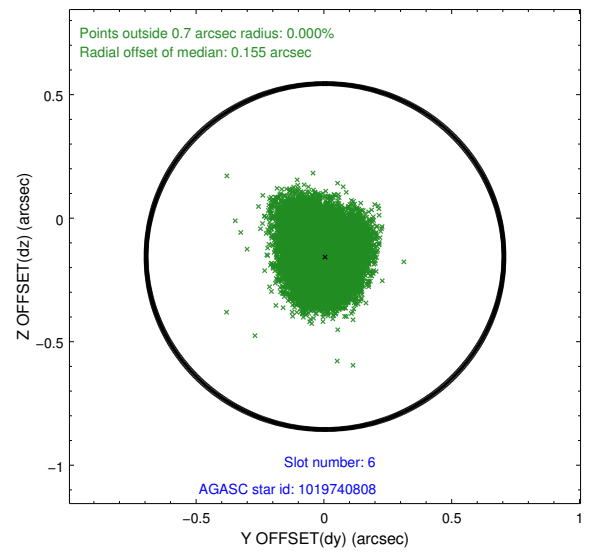
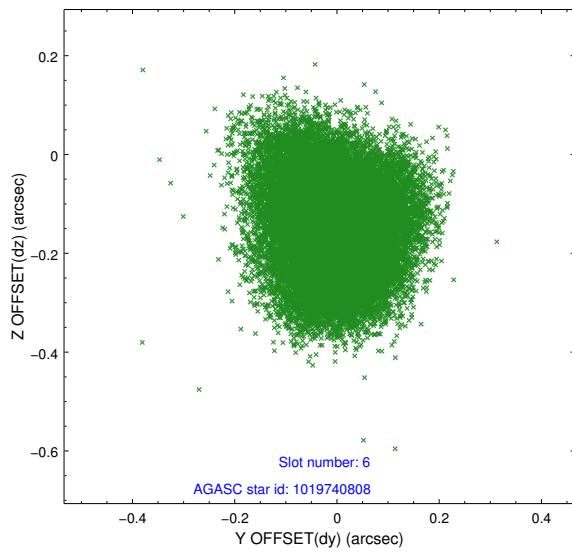
## 2.4.2 Slot 4



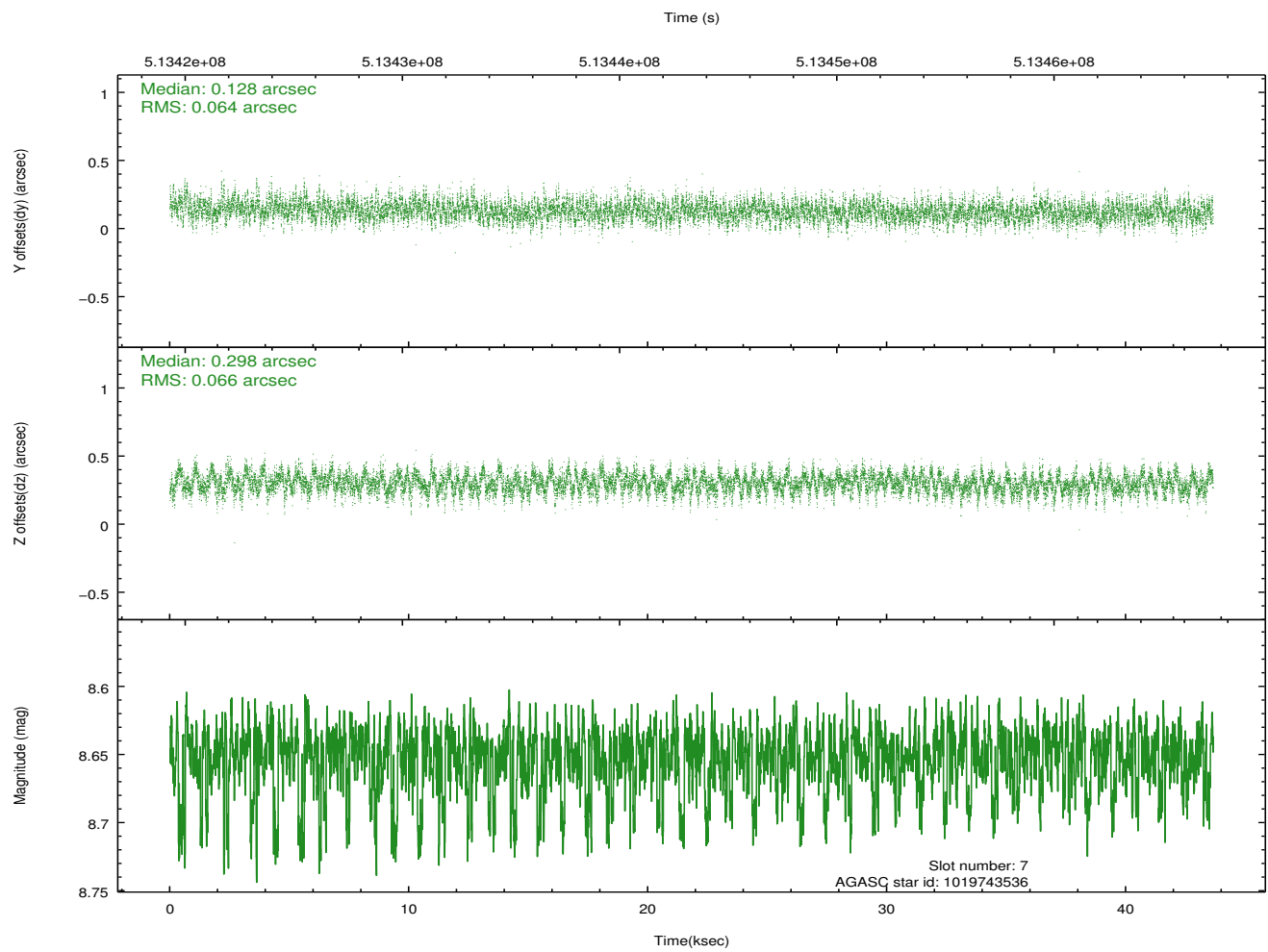
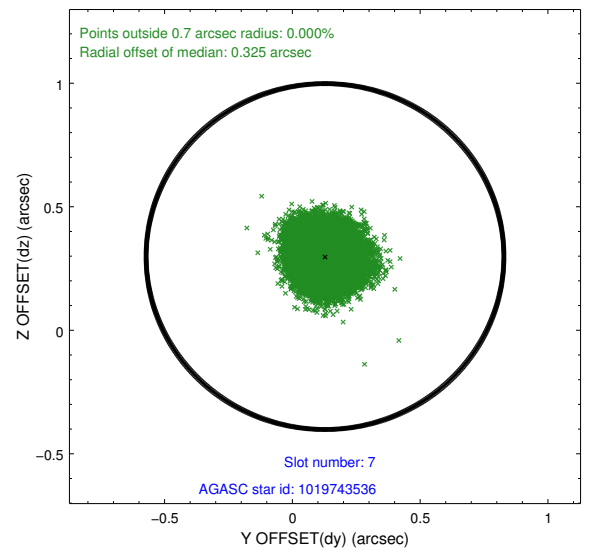
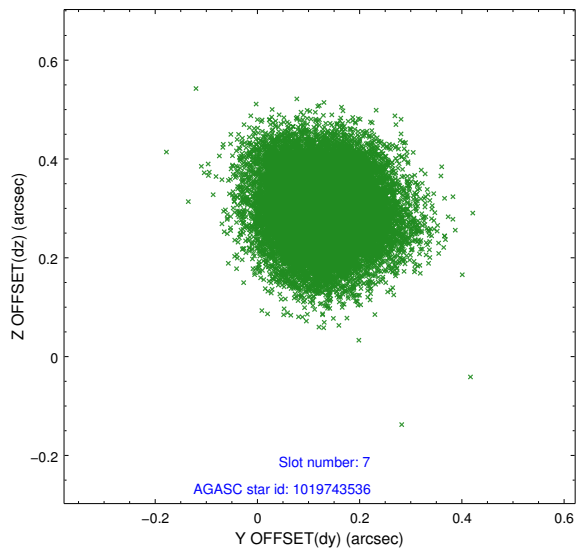
### 2.4.3 Slot 5



## 2.4.4 Slot 6

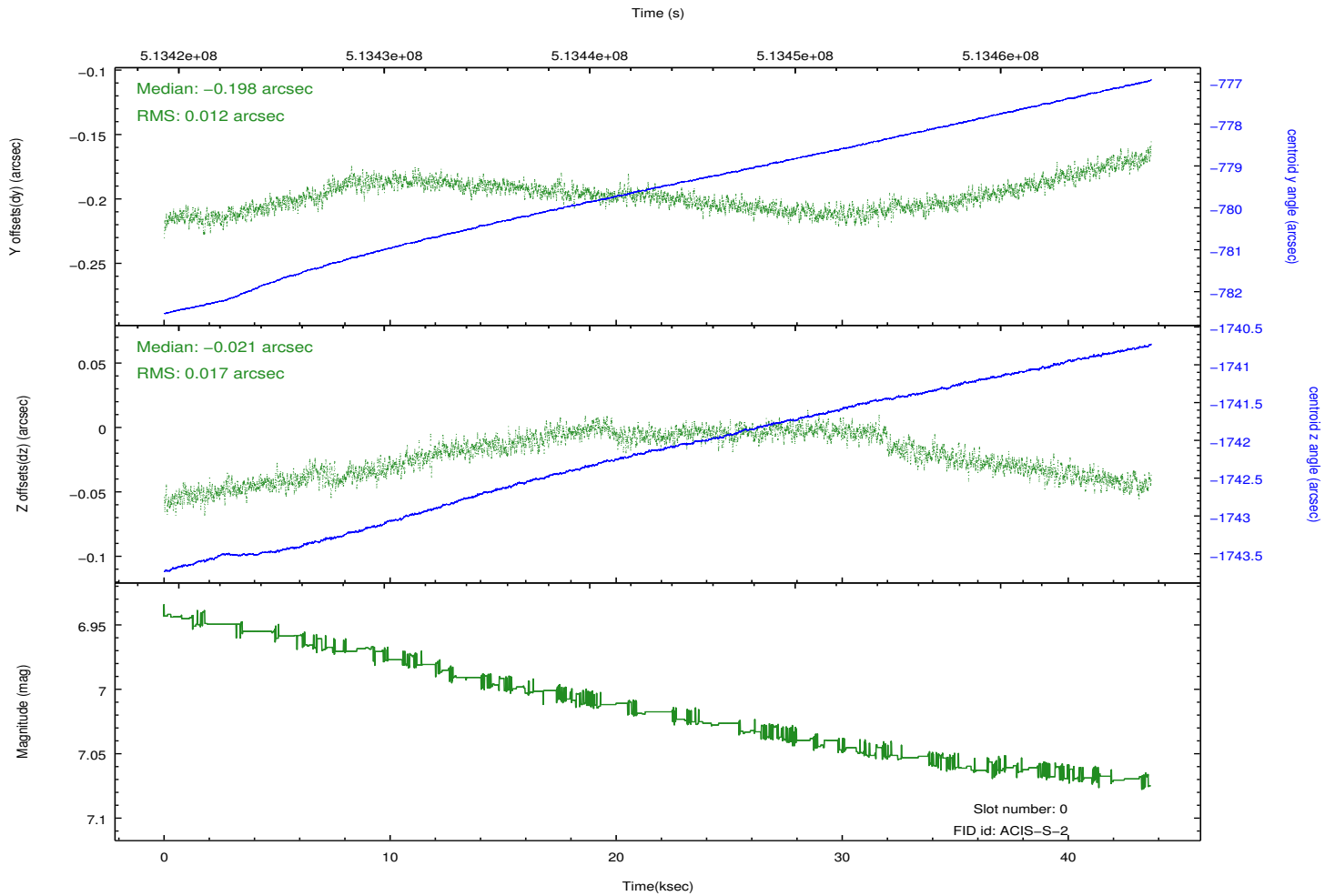
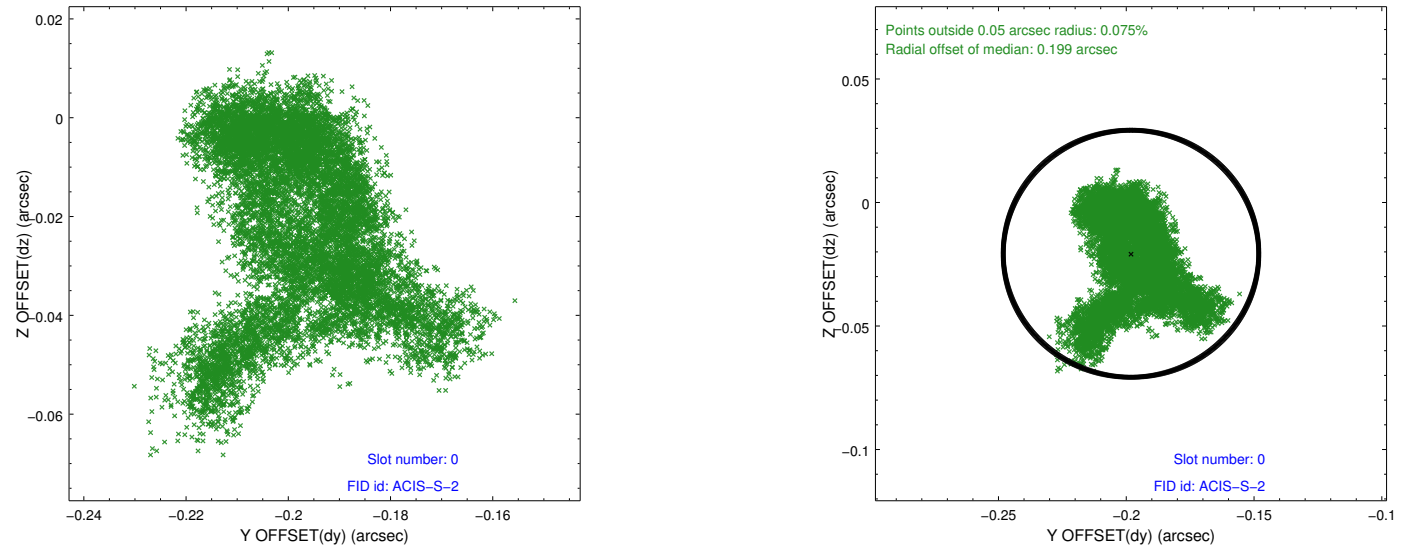


## 2.4.5 Slot 7

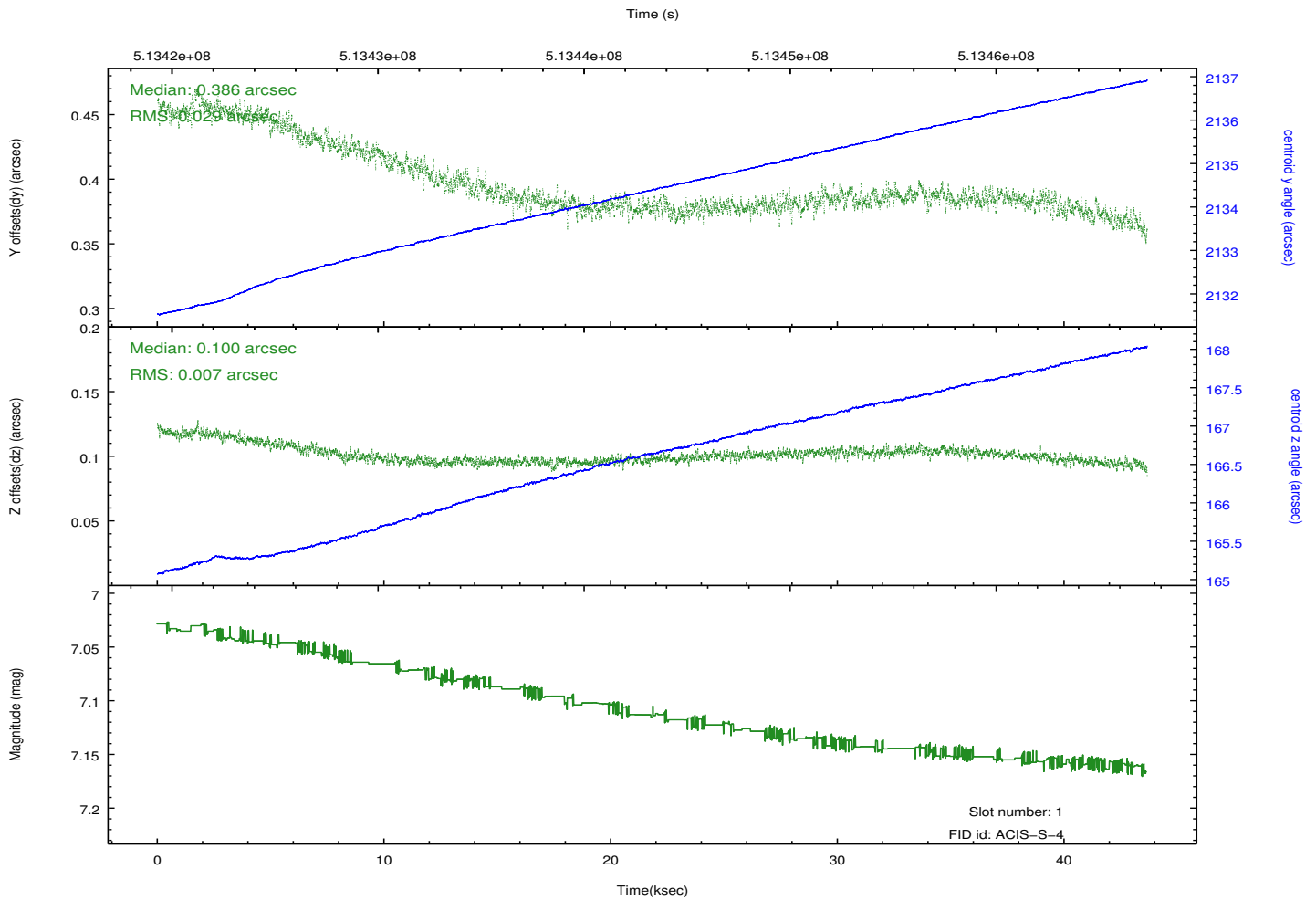
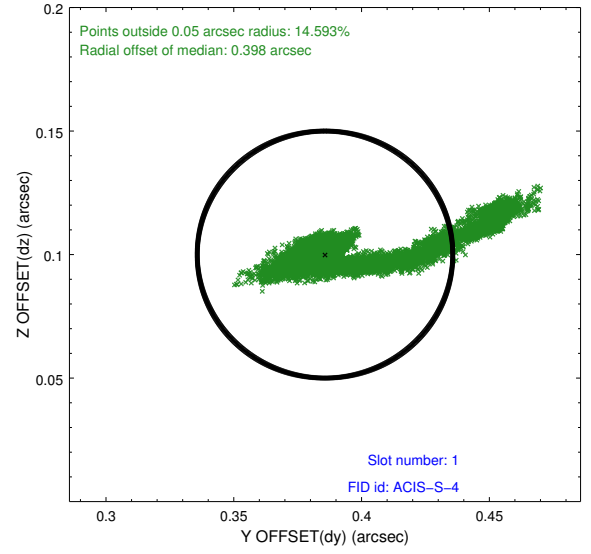
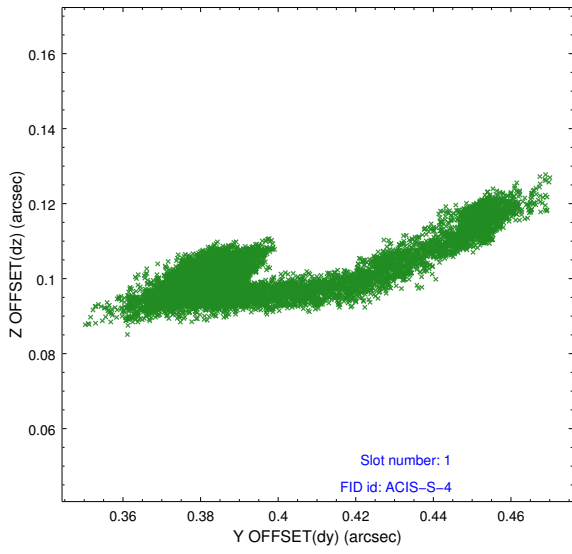


## 2.5 FID Slots

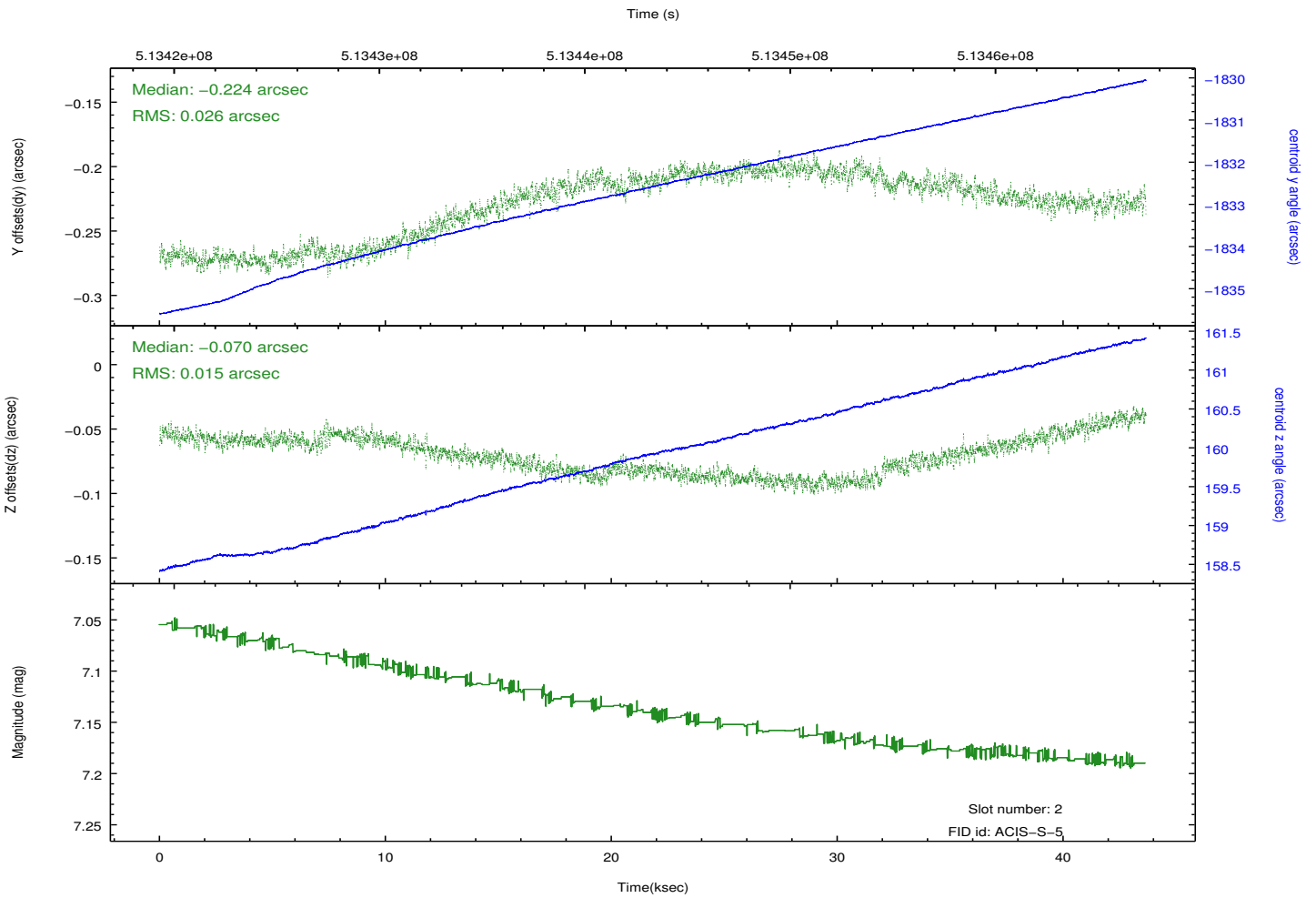
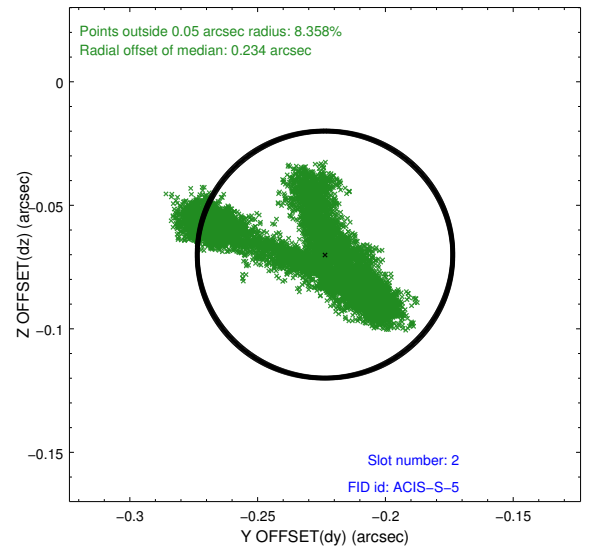
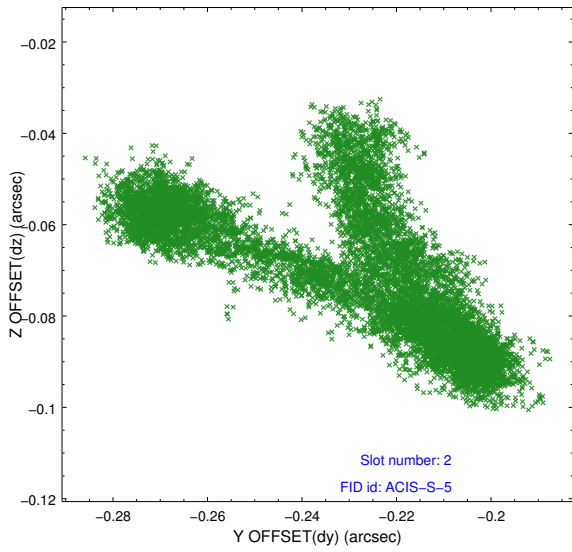
### 2.5.1 Slot 0



## 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)	2014.12.18
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	42.851300329566

## A.2 Comments

Joint proposal with NRAO.

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.