

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 13203 - L2 Version 3  
Chandra X-Ray Center

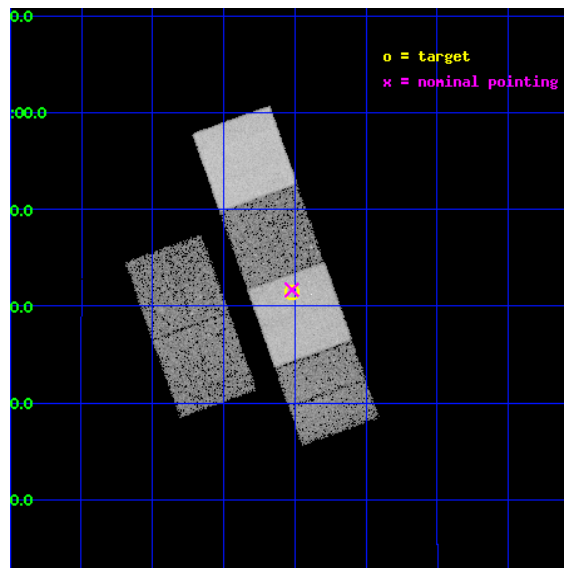
L2 Processing Date : Feb 3 2012

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# 1 Front

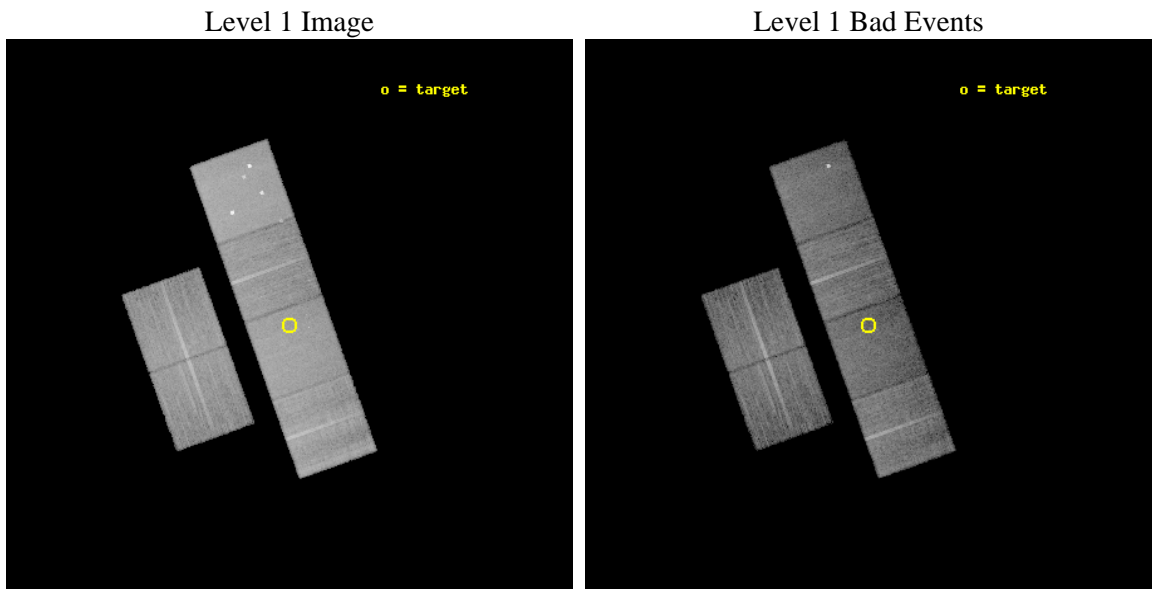
seq_num	702511	Sequence number
obs_id	13203	Observation id
title	The bolometric luminosity of the z=7.08 QSO ULAS J1120+0641	Propos
observer	Dr Chris Simpson	Principal investigator
object	ULAS J1120+0641	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	170.00625	Observer's specified target RA [deg]
dec_targ	6.690111	Observer's specified target Dec [deg]
ra_nom	170.00522272622	Nominal RA [deg]
dec_nom	6.6948645331327	Nominal Dec [deg]
roll_nom	70.336725542448	Nominal Roll [deg]
revision	3	Processing version of data
ontime	16046.587054312	Sum of GTIs [s]
livetime	15843.395506936	Livetime [s]
ontime2	16046.628094316	Sum of GTIs [s]
ontime3	16046.463934302	Sum of GTIs [s]
ontime5	16046.546014309	Sum of GTIs [s]
ontime6	16046.504974306	Sum of GTIs [s]
ontime7	16046.587054312	Sum of GTIs [s]
ontime8	16046.422894299	Sum of GTIs [s]
l2events	183310	Number of level 2 events



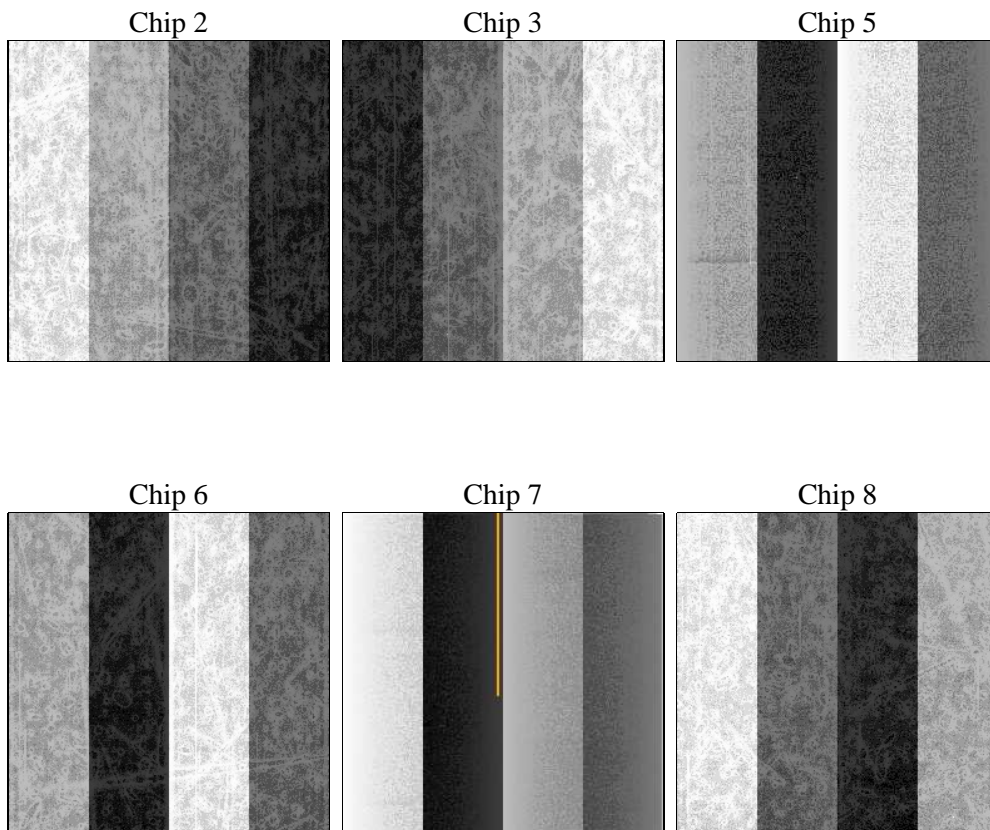
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	16000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	16046.587054312	Sum of GTIs [s]
caldbver	4.4.7	&#160	ontime2	16046.628094316	Sum of GTIs [s]
date	2012-02-03T18:56:36	Date and time of file creation	ontime3	16046.463934302	Sum of GTIs [s]
revision	3	Processing version of data	ontime5	16046.546014309	Sum of GTIs [s]
			ontime6	16046.504974306	Sum of GTIs [s]
			ontime7	16046.587054312	Sum of GTIs [s]
			ontime8	16046.422894299	Sum of GTIs [s]
			l1events	800114	Number of level 1 events

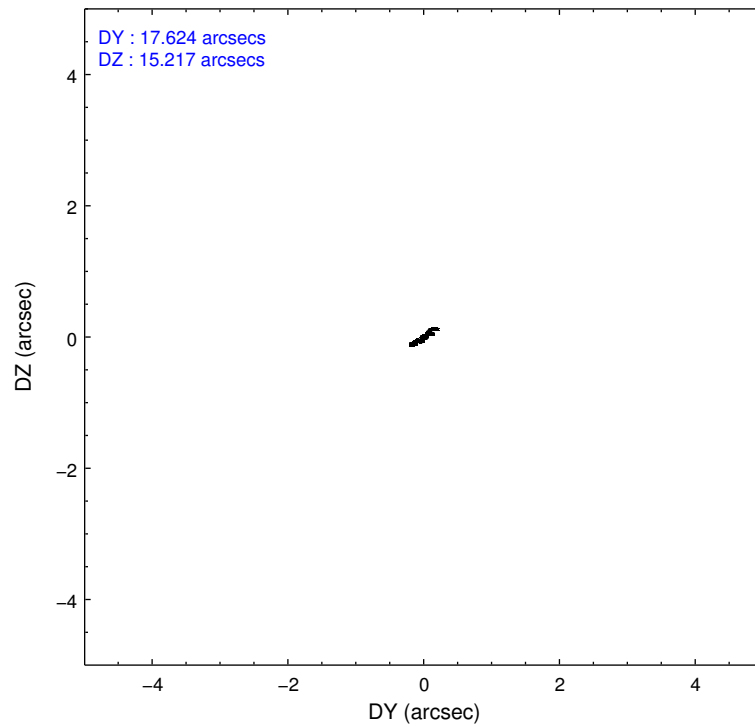
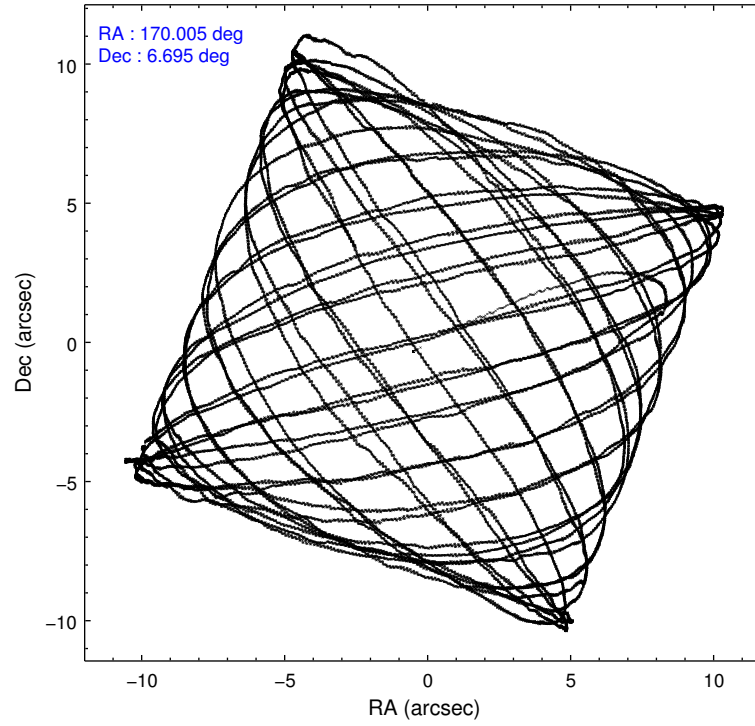
### 2.1.4 Events

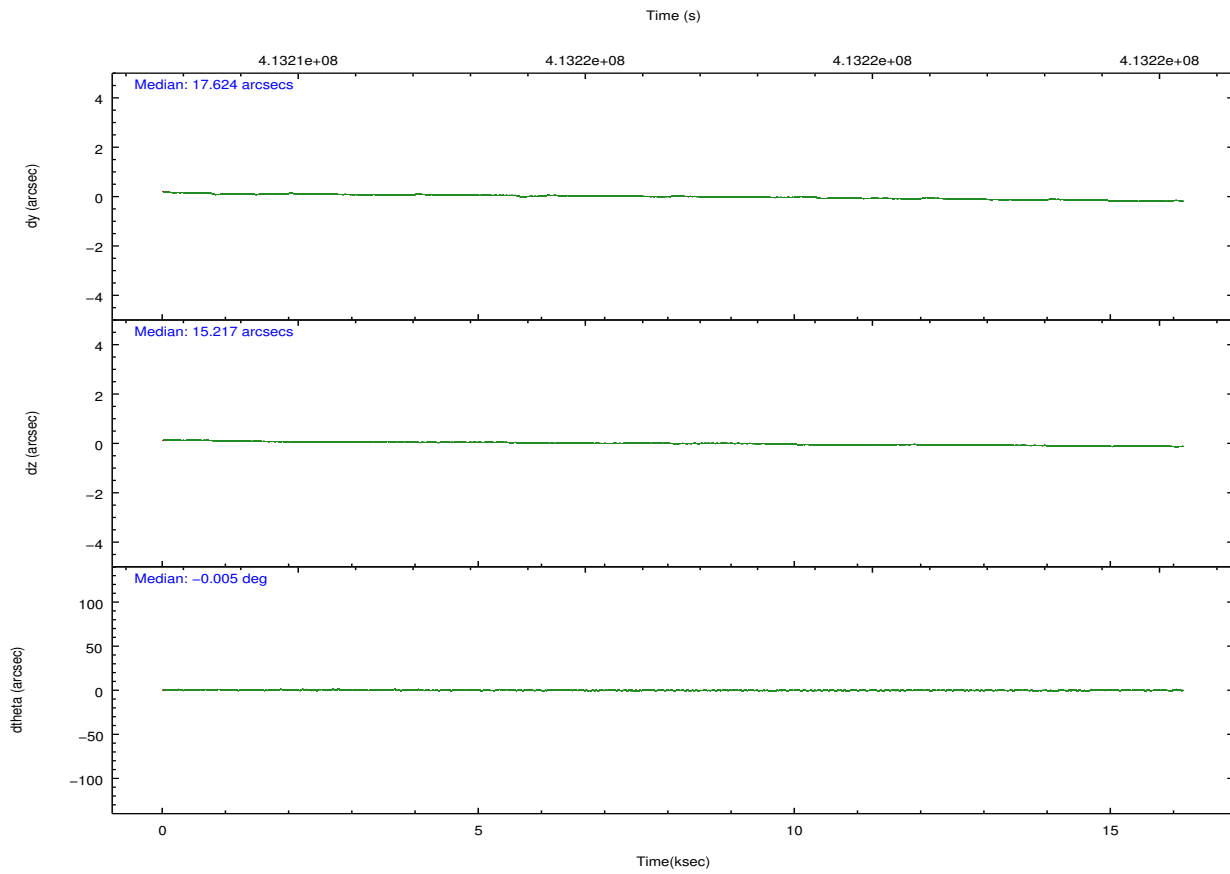
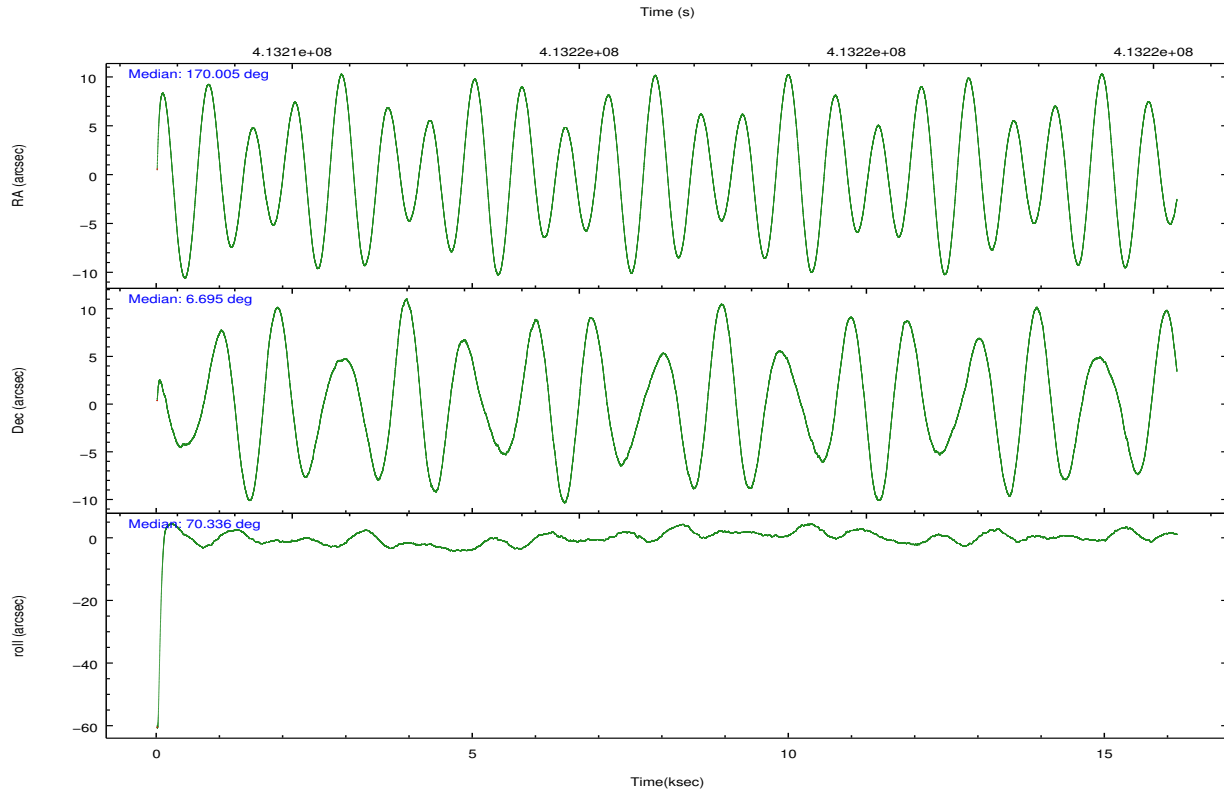
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	114609	106253	182413	112649	139716	144474	grade 0 events	4257	4002	13747	4322	5473	10264
rejected events	102715	94918	89785	99986	77498	107480		3%	3%	7%	3%	3%	7%
rejected %	89%	89%	49%	88%	55%	74%	grade 1 events	61	58	543	70	179	119
								0%	0%	0%	0%	0%	0%
							grade 2 events	2892	2425	27763	2854	12705	8923
								2%	2%	15%	2%	9%	6%
							grade 3 events	1216	1269	3115	1417	5414	3921
								1%	1%	1%	1%	3%	2%
							grade 4 events	1234	1244	2906	1257	5363	3676
								1%	1%	1%	1%	3%	2%
							grade 5 events	4435	5185	13027	5137	14558	7404
								3%	4%	7%	4%	10%	5%
							grade 6 events	2299	2400	45133	2819	33293	10218
								2%	2%	24%	2%	23%	7%
							grade 7 events	98215	89670	76179	94773	62731	99949
								85%	84%	41%	84%	44%	69%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-235678	ACIS-235678	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	170.010541	170.0052227262197	CCD I2 on	O1	Y
[deg] Pointing Dec	6.668024	6.694864533132725	CCD I3 on	O2	Y
[deg] Pointing Roll	70.179531	70.33672554244752	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	Y	Y
[s] Observation start time (MET)	413208597.184000	413207406.63915	CCD S5 on	N	N
Observation start date	2011-02-04T12:08:51	2011-02-04T11:50:06	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	413224597.184000	413225238.56508	On-chip summing requested	N	N
Observation end date	2011-02-04T16:35:31	2011-02-04T16:47:18	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



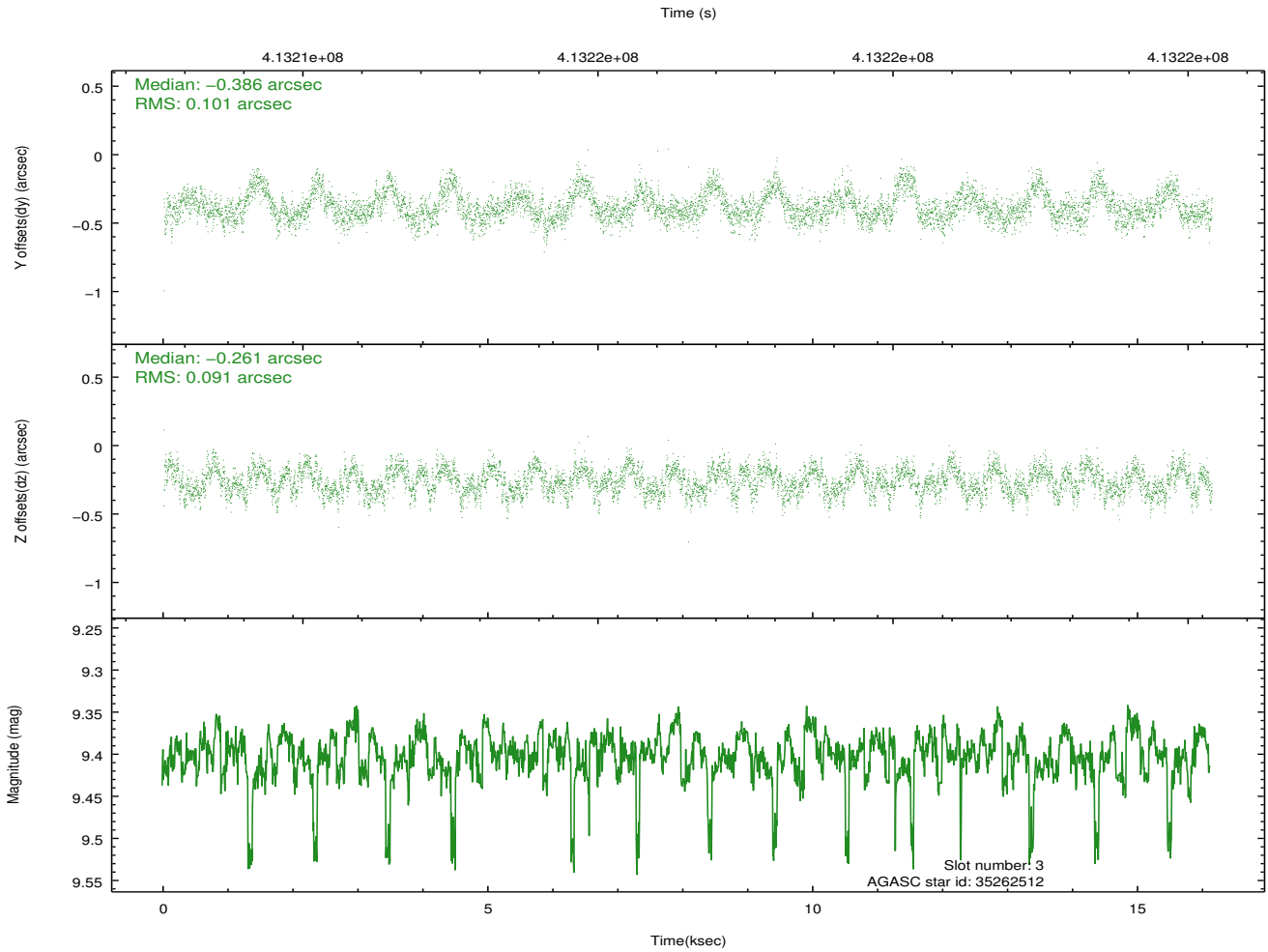
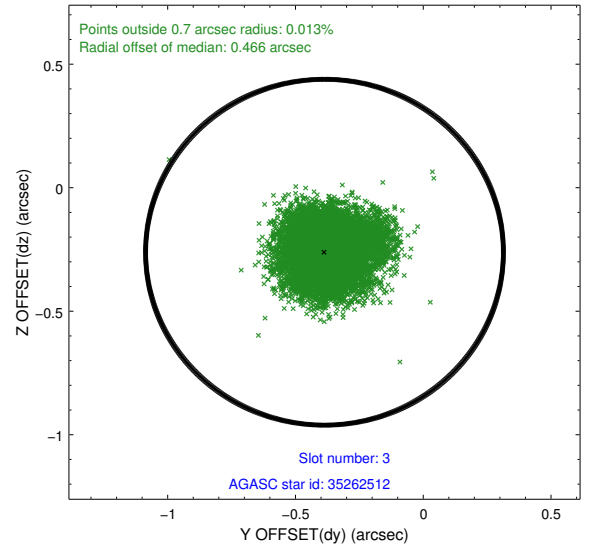
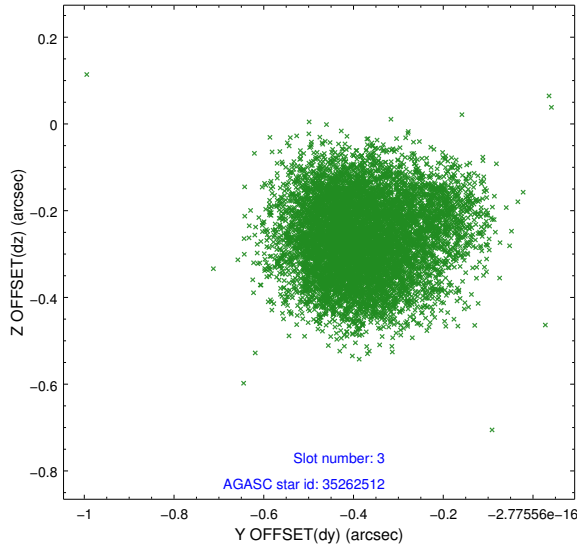


### Slot Statistics

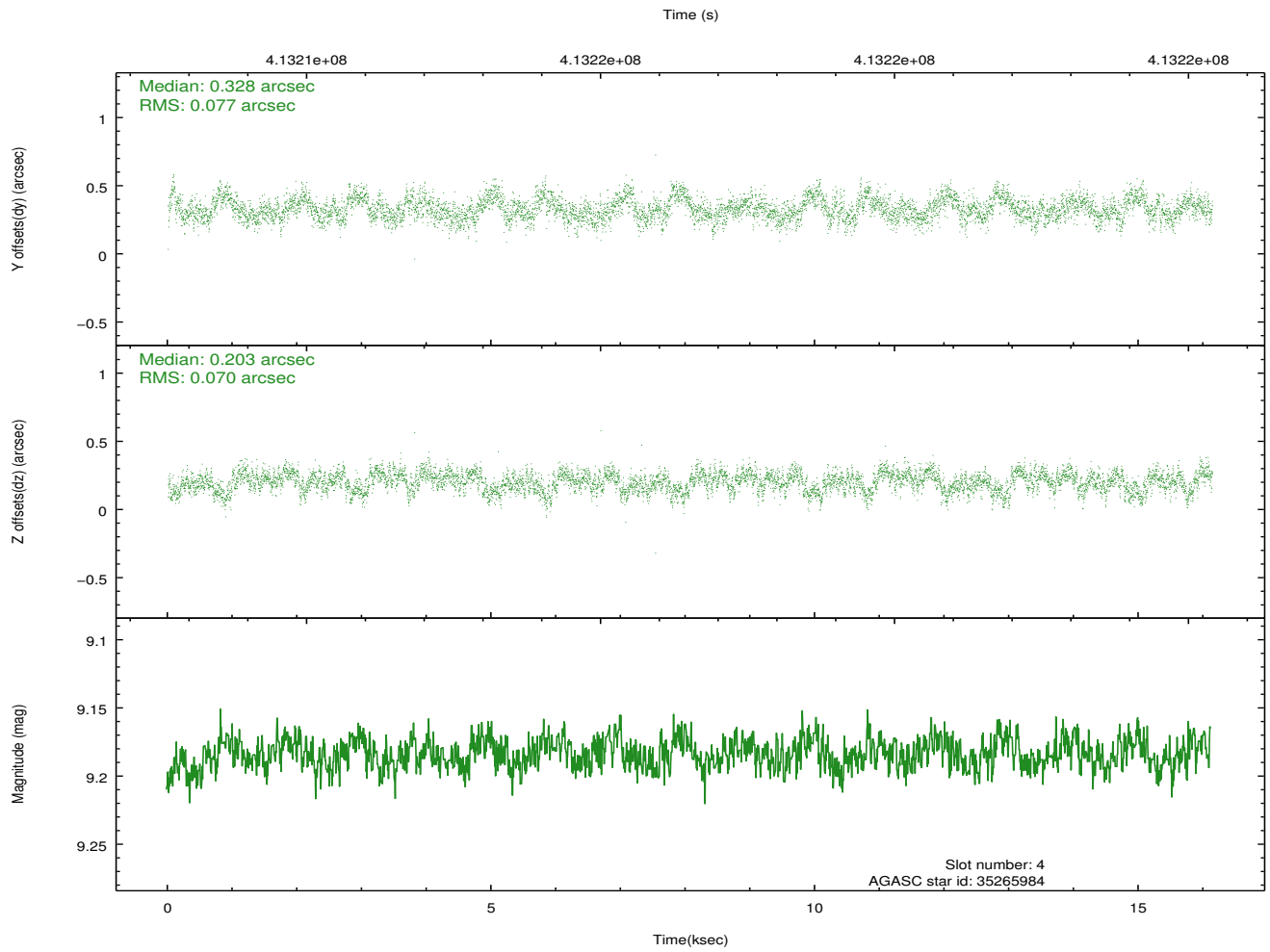
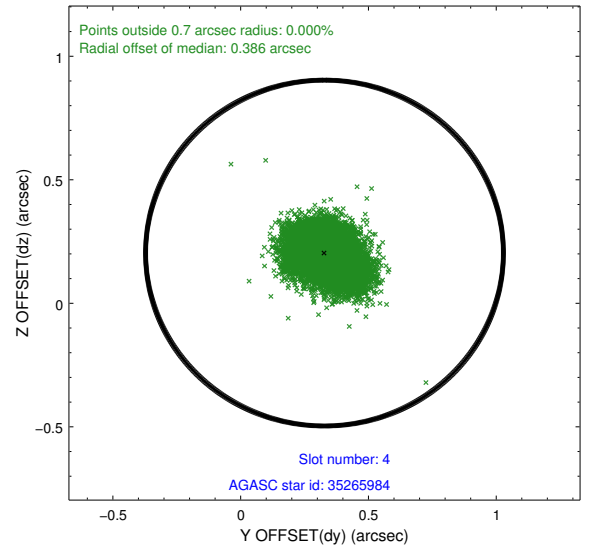
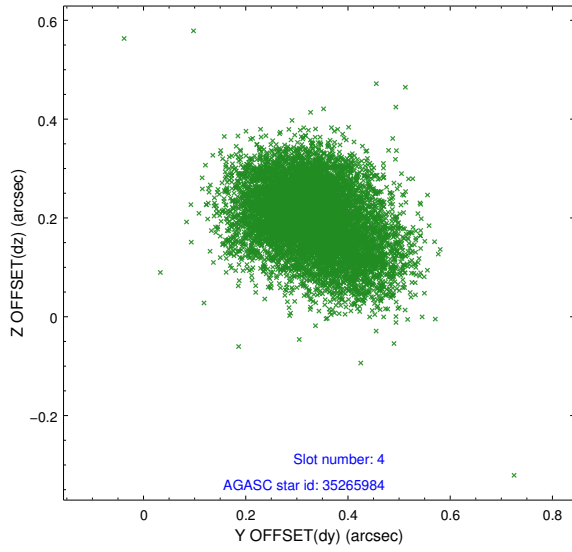
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.01	3934	-0.091	-0.022	0.007	0.011	0.000000	0.000000	-770.72	-1736.63
1	FID	ACIS-S-4	7.09	3936	0.209	0.050	0.008	0.015	0.000000	0.000000	2142.71	171.69
2	FID	ACIS-S-5	7.12	3936	-0.149	-0.019	0.010	0.016	0.000000	0.000000	-1823.30	165.54
3	GUIDE	35262512	9.40	7825	-0.386	-0.261	0.146	0.228	169.912813	6.863684	543.03	566.42
4	GUIDE	35265984	9.18	7860	0.328	0.203	0.111	0.179	169.935310	6.190254	-1710.40	-331.54
5	GUIDE	35390904	9.47	7864	0.181	-0.017	0.131	0.217	170.165945	6.758630	495.14	-412.38
6	OMITTED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
7	GUIDE	35390080	7.42	7867	-0.136	0.079	0.078	0.133	170.415034	7.222937	2369.52	-680.50

## 2.4 Star Slots

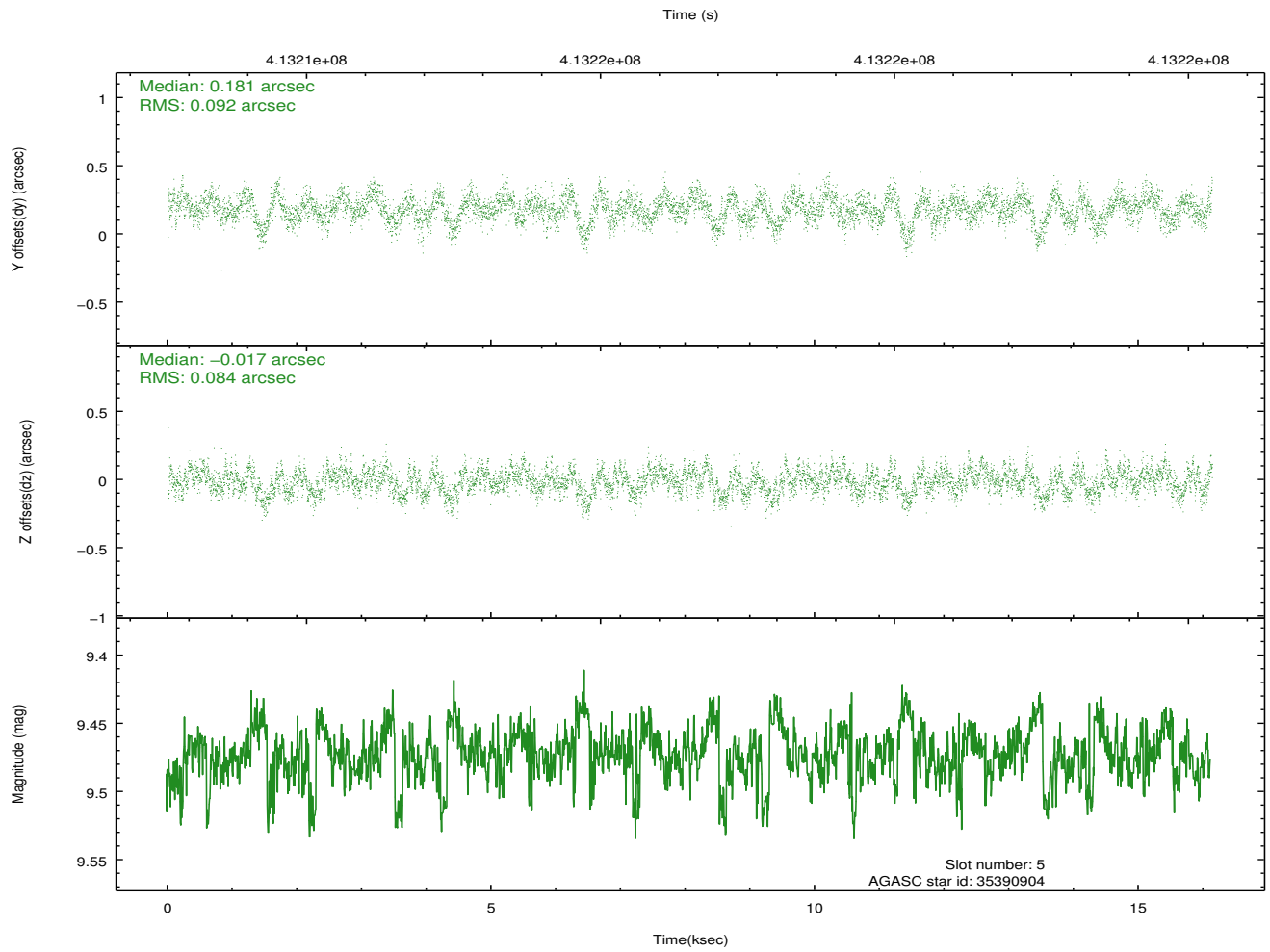
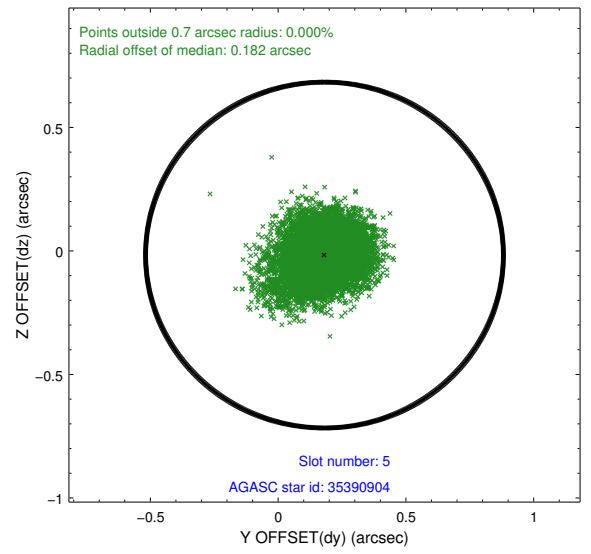
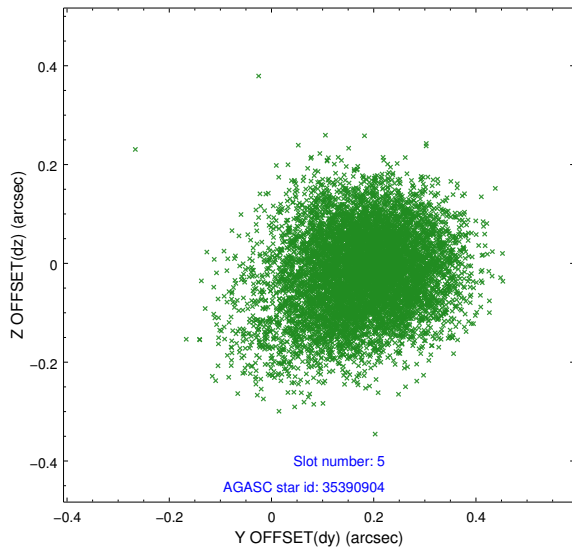
### 2.4.1 Slot 3



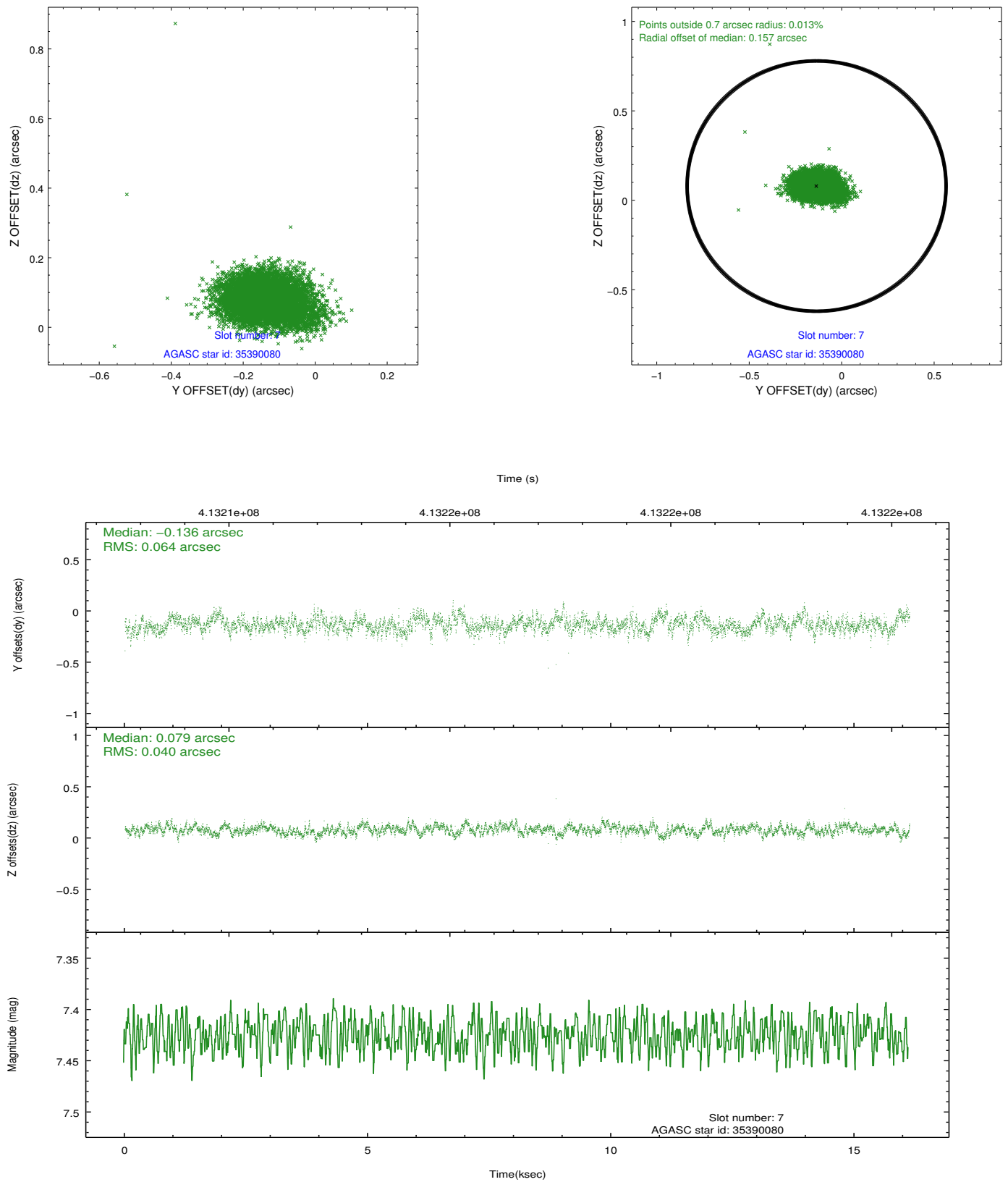
## 2.4.2 Slot 4



### 2.4.3 Slot 5

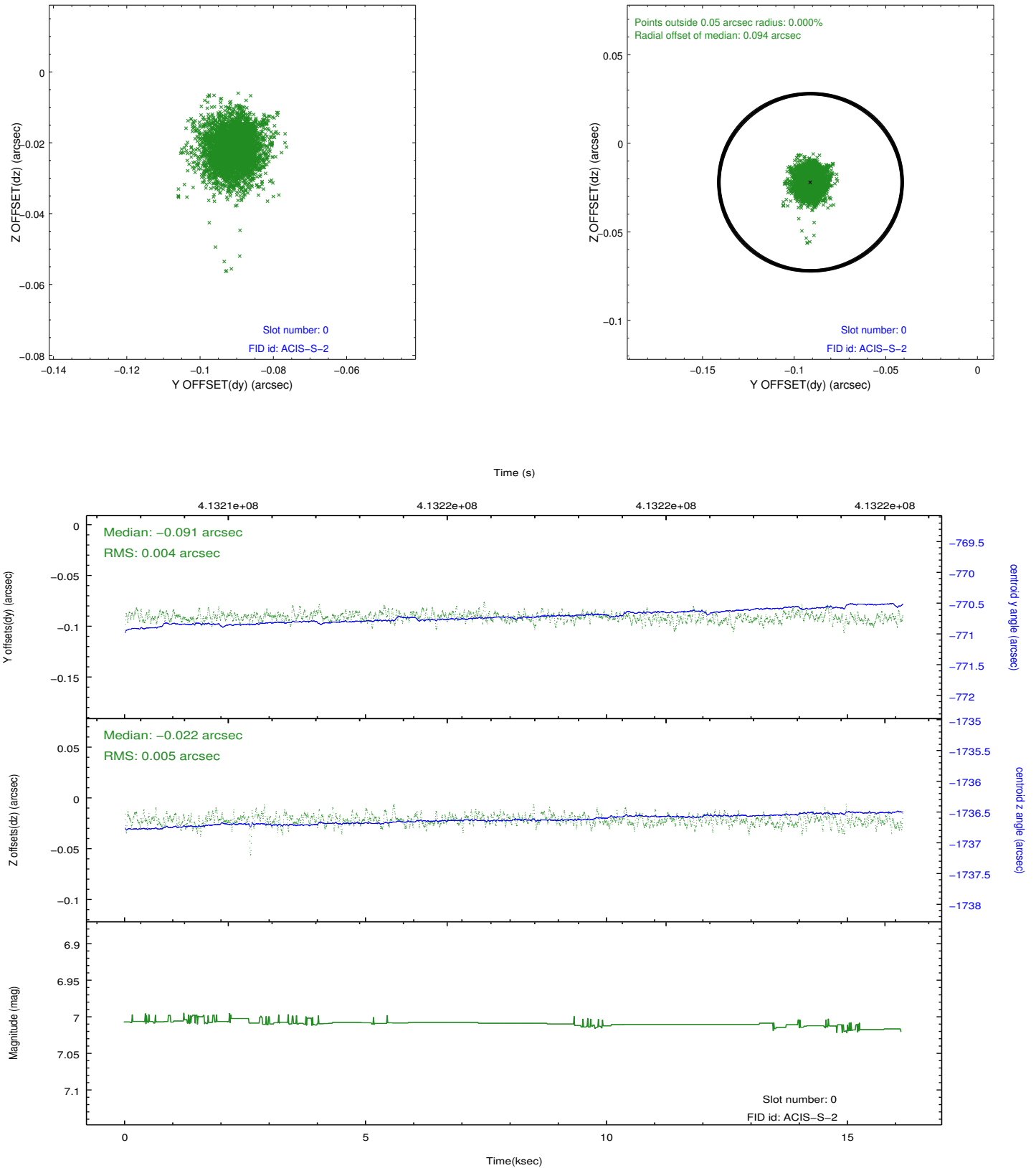


## 2.4.4 Slot 7

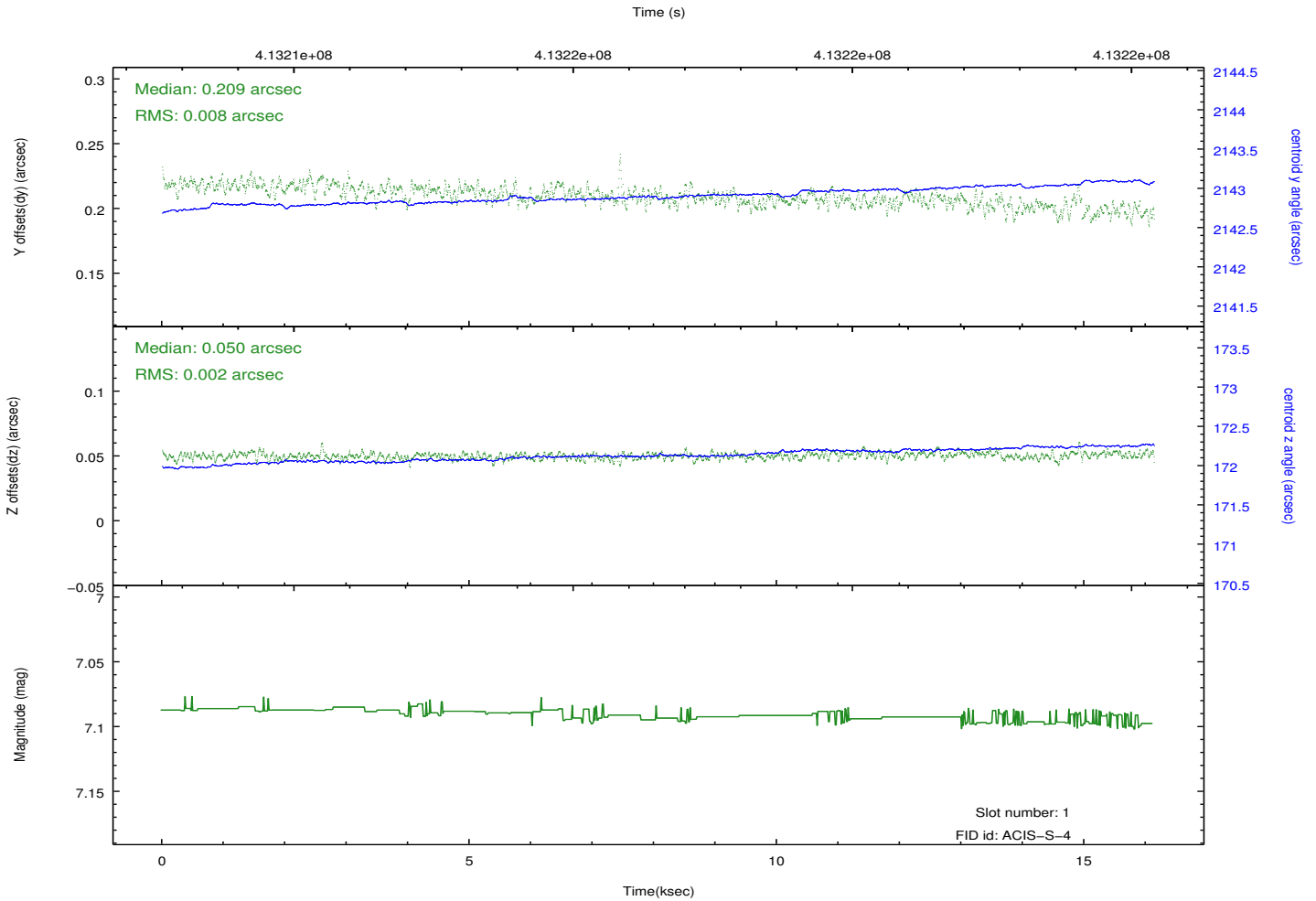
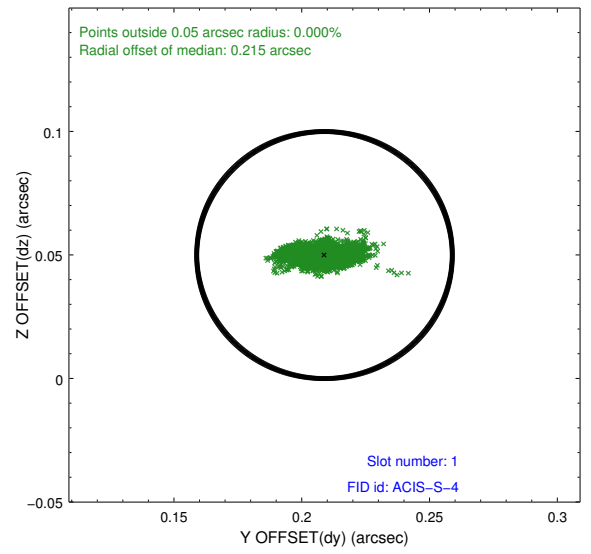
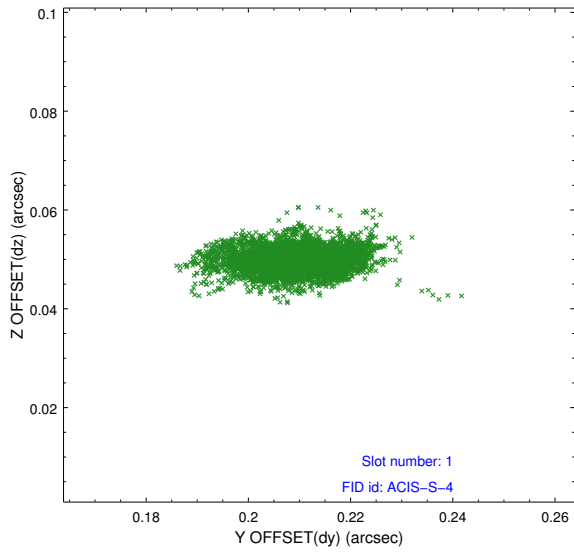


## 2.5 FID Slots

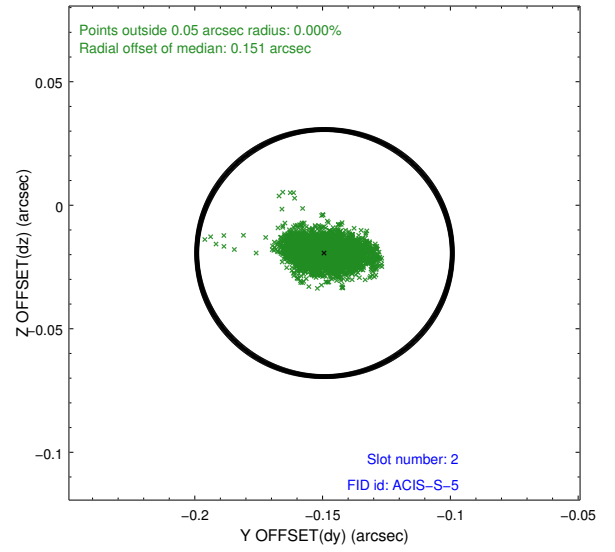
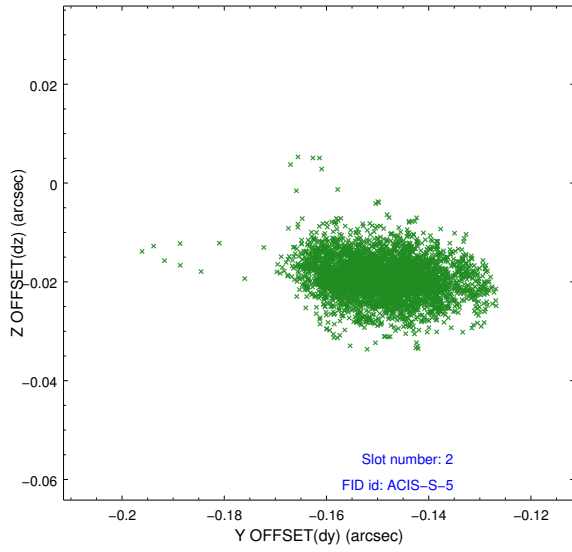
### 2.5.1 Slot 0



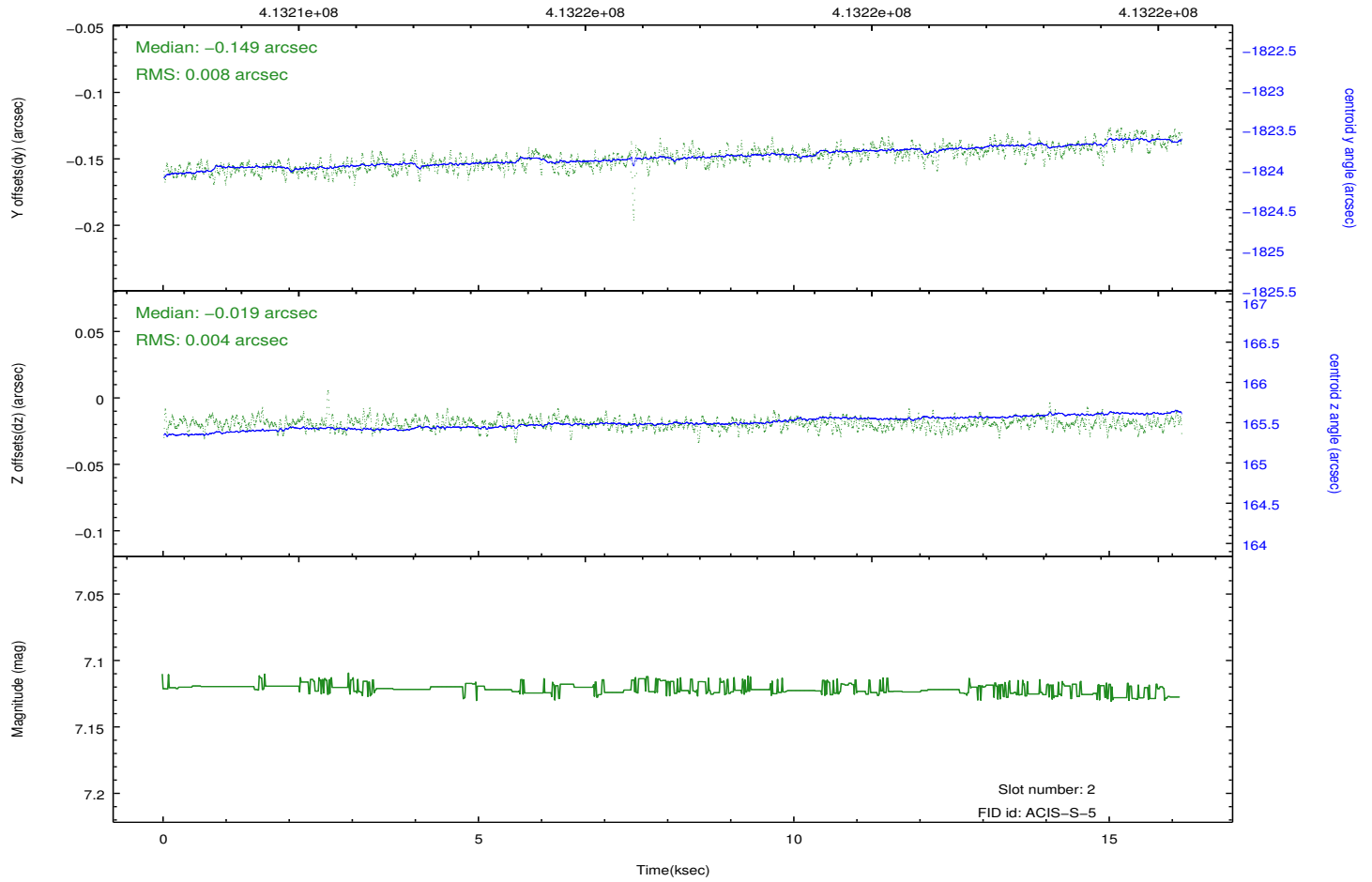
## 2.5.2 Slot 1



### 2.5.3 Slot 2



Time (s)



# A Summary

## A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2012.02.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	16.046587052524

## A.2 Comments

The data for this observation have been processed using the 'EDSER' sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610, 1204). Small-scale features should become sharper for sources near the aim point. The improvement will be less noticeable for off-axis sources where the size of the point-spread function is comparable to or larger than the size of an ACIS pixel. To take full advantage of the improvement, images should be binned on spatial scales smaller than the size of an ACIS pixel. Note that, at present, the point-spread function has not been calibrated for data to which the EDSER algorithm has been applied. If dither was disabled for the observation, then the algorithm can introduce artificial aliasing effects on spatial scales smaller than a pixel. If you would prefer to use no sub-pixel adjustment or to apply a coordinate randomization, then use `acis_process_events` to reprocess the data with the parameter `pix_adj=NONE` or `RANDOMIZE`, respectively.

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The guide star in slot 6 was removed from the aspect solution due to poor data quality. The aspect solution is not expected to be degraded by removing one fid light or guide star from the solution.