

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 12377 - L2 Version 2  
Chandra X-Ray Center

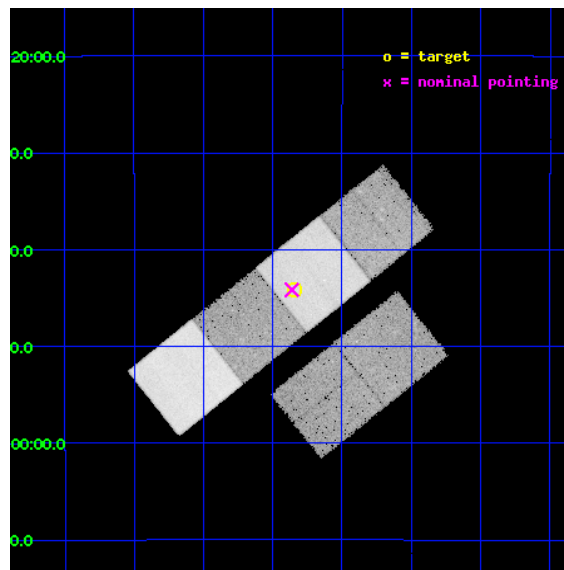
L2 Processing Date : Feb 3 2012

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# 1 Front

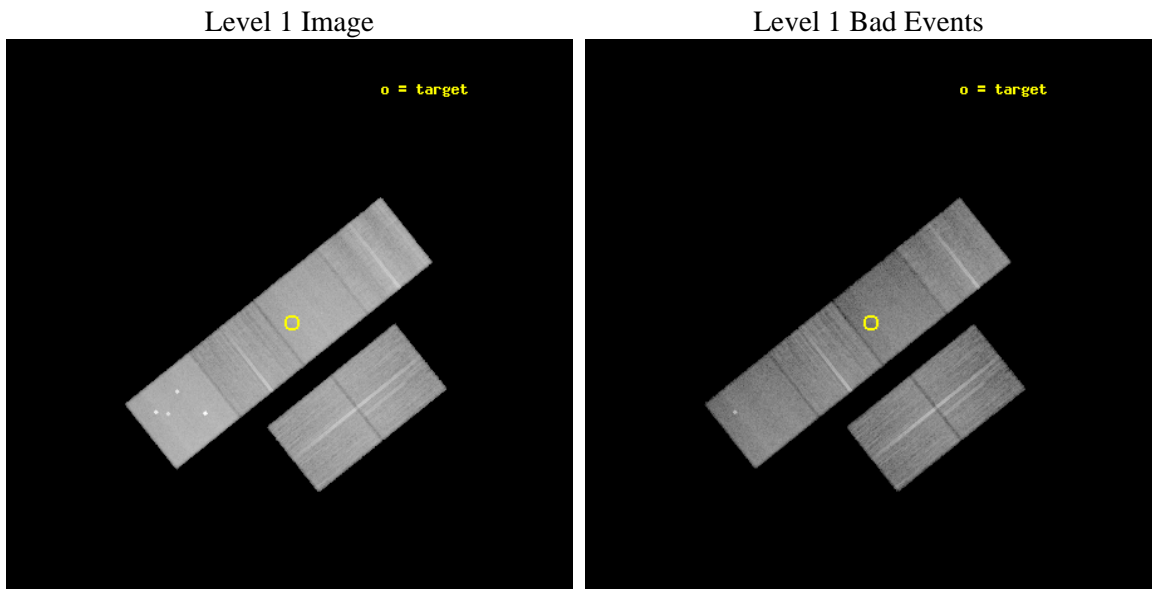
seq_num	200711	Sequence number
obs_id	12377	Observation id
title	X-rays from Planetary Nebulae: Unveiling Binarity, Magnetic Fields, and Wind Collisions	Proposal title
observer	Dr. Joel Kastner	Principal investigator
object	NGC 2438	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	115.460417	Observer's specified target RA [deg]
dec_targ	-14.735472	Observer's specified target Dec [deg]
ra_nom	115.46539816039	Nominal RA [deg]
dec_nom	-14.73606701364	Nominal Dec [deg]
roll_nom	321.33329845467	Nominal Roll [deg]
revision	2	Processing version of data
ontime	30051.19988811	Sum of GTIs [s]
livetime	29670.673500467	Livetime [s]
ontime2	30047.958847761	Sum of GTIs [s]
ontime3	30047.958867371	Sum of GTIs [s]
ontime5	30051.19988811	Sum of GTIs [s]
ontime6	30047.958847761	Sum of GTIs [s]
ontime7	30051.19988811	Sum of GTIs [s]
ontime8	30051.19988811	Sum of GTIs [s]
l2events	349461	Number of level 2 events



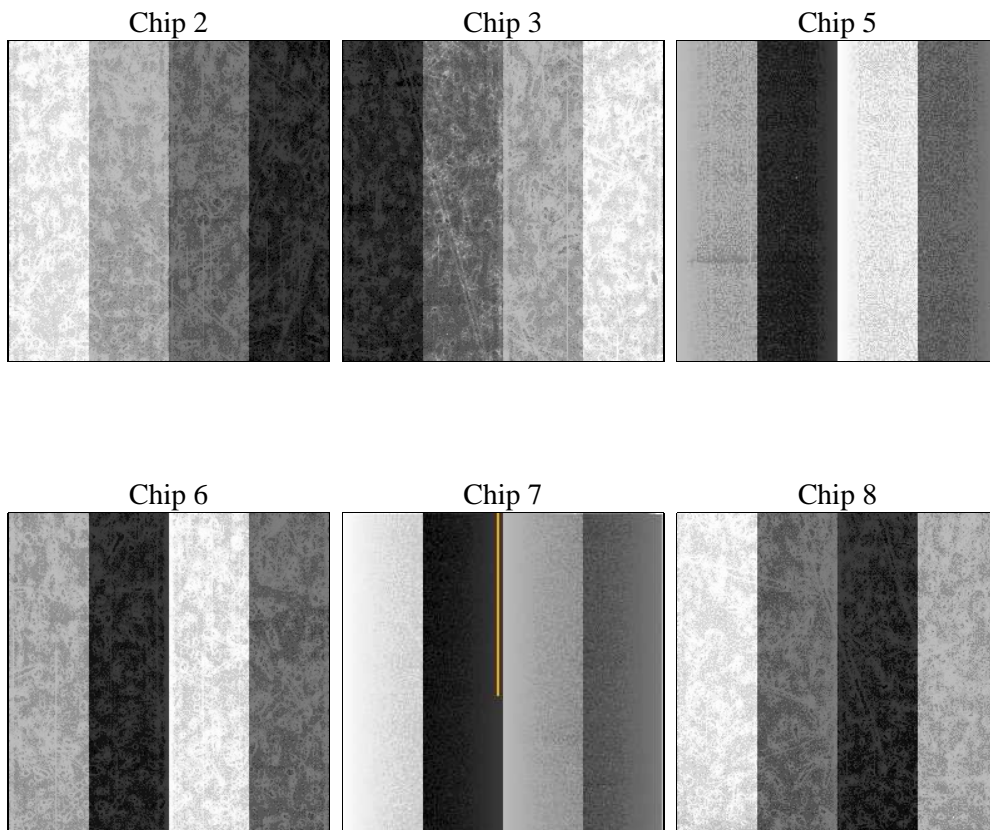
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	30000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.3	Processing system revision	ontime	30051.19988811	Sum of GTIs [s]
caldbver	4.4.7	&#160	ontime2	30047.958847761	Sum of GTIs [s]
date	2012-02-03T15:29:40	Date and time of file creation	ontime3	30047.958867371	Sum of GTIs [s]
revision	2	Processing version of data	ontime5	30051.19988811	Sum of GTIs [s]
			ontime6	30047.958847761	Sum of GTIs [s]
			ontime7	30051.19988811	Sum of GTIs [s]
			ontime8	30051.19988811	Sum of GTIs [s]
			l1events	1501743	Number of level 1 events

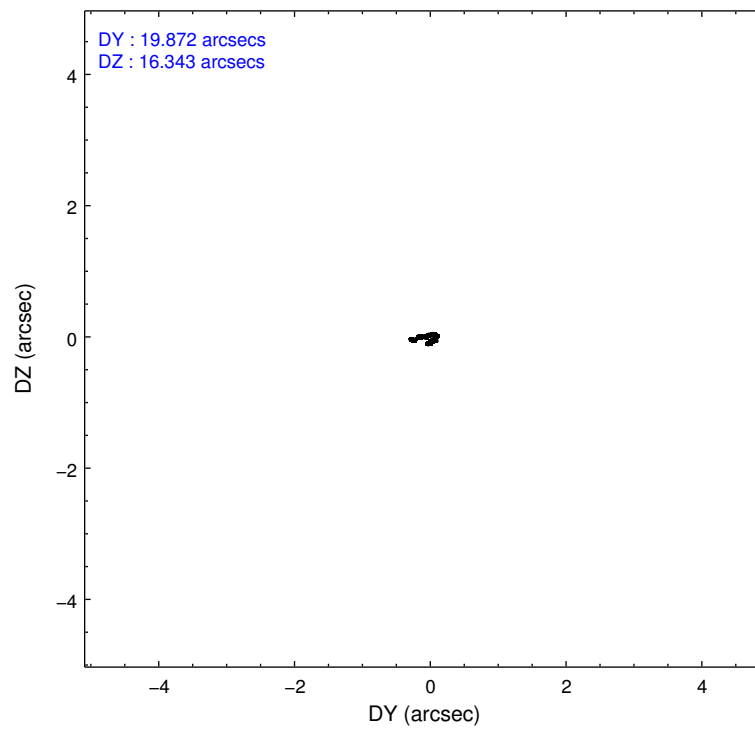
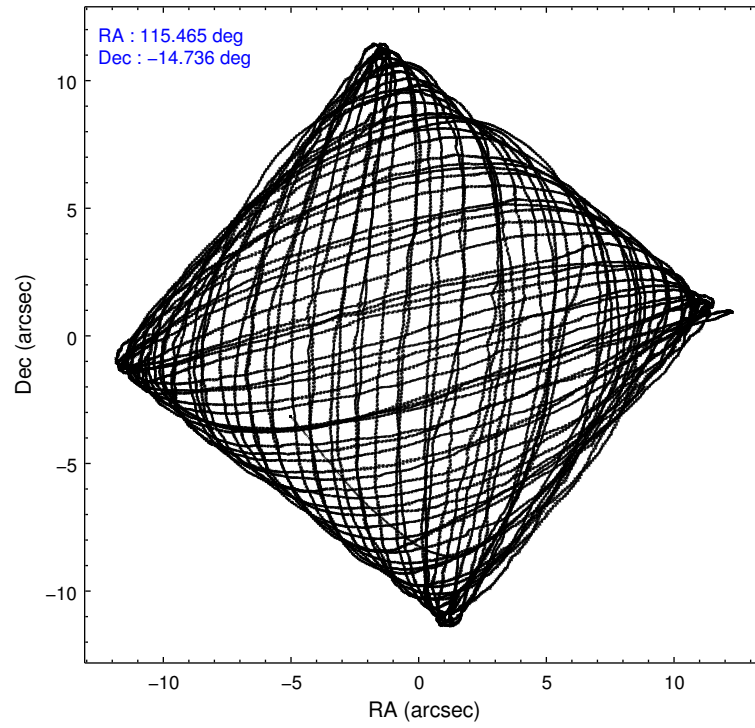
### 2.1.4 Events

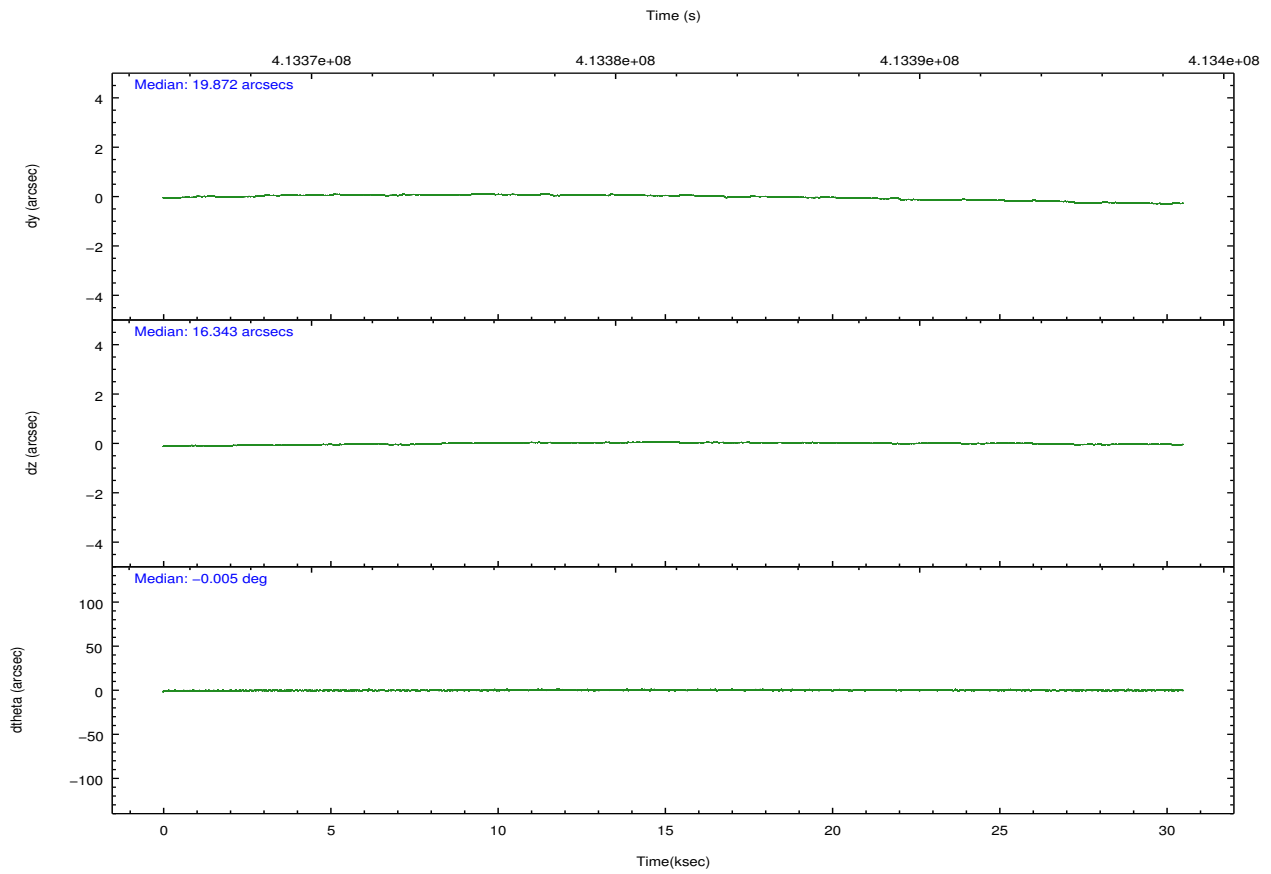
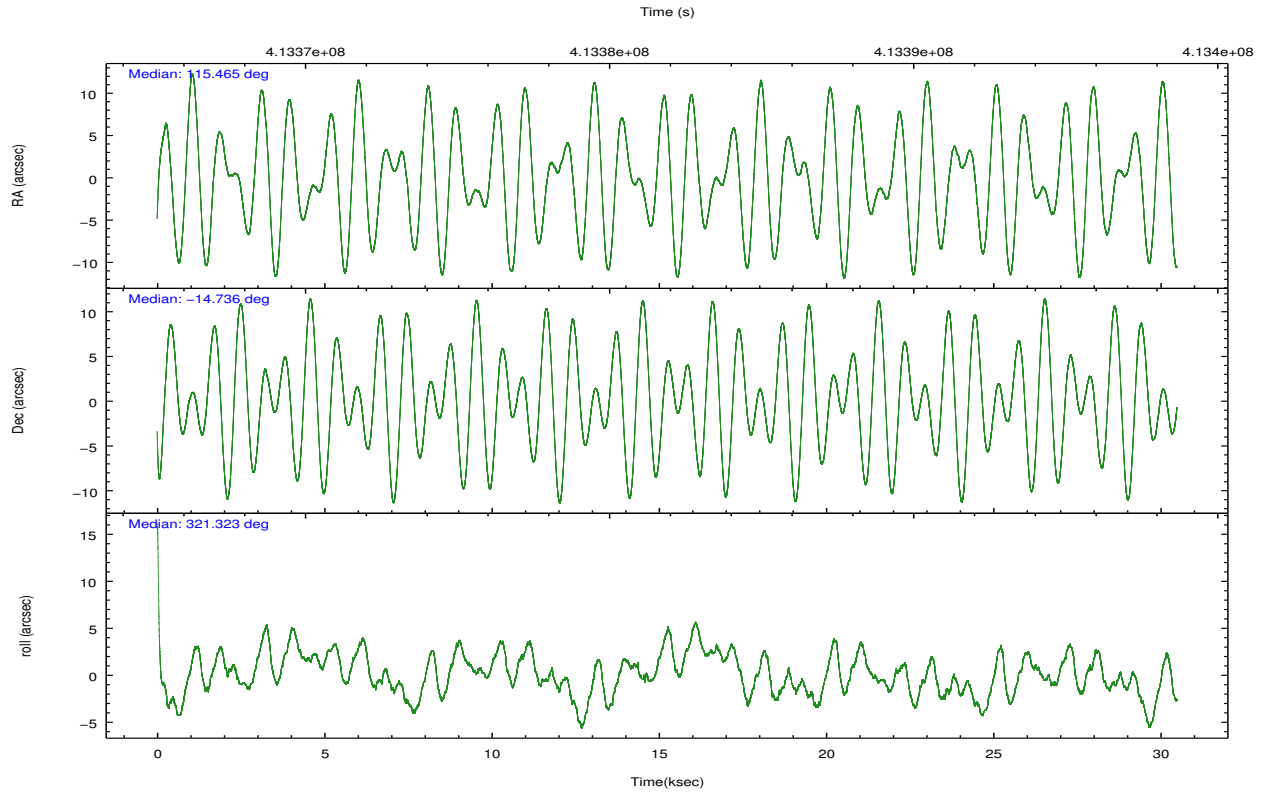
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8		ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	214106	201068	337672	213139	263859	271899	grade 0 events	8278	7931	24765	8609	10638	20729
rejected events	190870	179120	166246	188687	146135	200484		3%	3%	7%	4%	4%	7%
rejected %	89%	89%	49%	88%	55%	73%	grade 1 events	129	123	563	135	379	216
								0%	0%	0%	0%	0%	0%
							grade 2 events	5579	4890	50284	5453	24293	16780
								2%	2%	14%	2%	9%	6%
							grade 3 events	2339	2365	5985	2613	10235	7538
								1%	1%	1%	1%	3%	2%
							grade 4 events	2405	2432	5721	2558	10106	7047
								1%	1%	1%	1%	3%	2%
							grade 5 events	8657	9508	24982	9985	27314	14506
								4%	4%	7%	4%	10%	5%
							grade 6 events	4644	4336	84715	5224	62473	19348
								2%	2%	25%	2%	23%	7%
							grade 7 events	182075	169483	140657	178562	118421	185735
								85%	84%	41%	83%	44%	68%

## 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	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	115.437388	115.465398160388	CCD I2 on	O4	Y
[deg] Pointing Dec	-14.732307	-14.73606701364044	CCD I3 on	O5	Y
[deg] Pointing Roll	321.169543	321.3332984546693	CCD S0 on	N	N
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	O3	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	O1	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)	413367130.184000	413365966.97236	CCD S5 on	N	N
Observation start date	2011-02-06T08:11:04	2011-02-06T07:52:46	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	413397130.184000	413397829.61151	On-chip summing requested	N	N
Observation end date	2011-02-06T16:31:04	2011-02-06T16:43:49	Subarray requested	NONE	NONE
Read mode	TIMED	TIMED	Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	3.2

## 2.3 Aspect



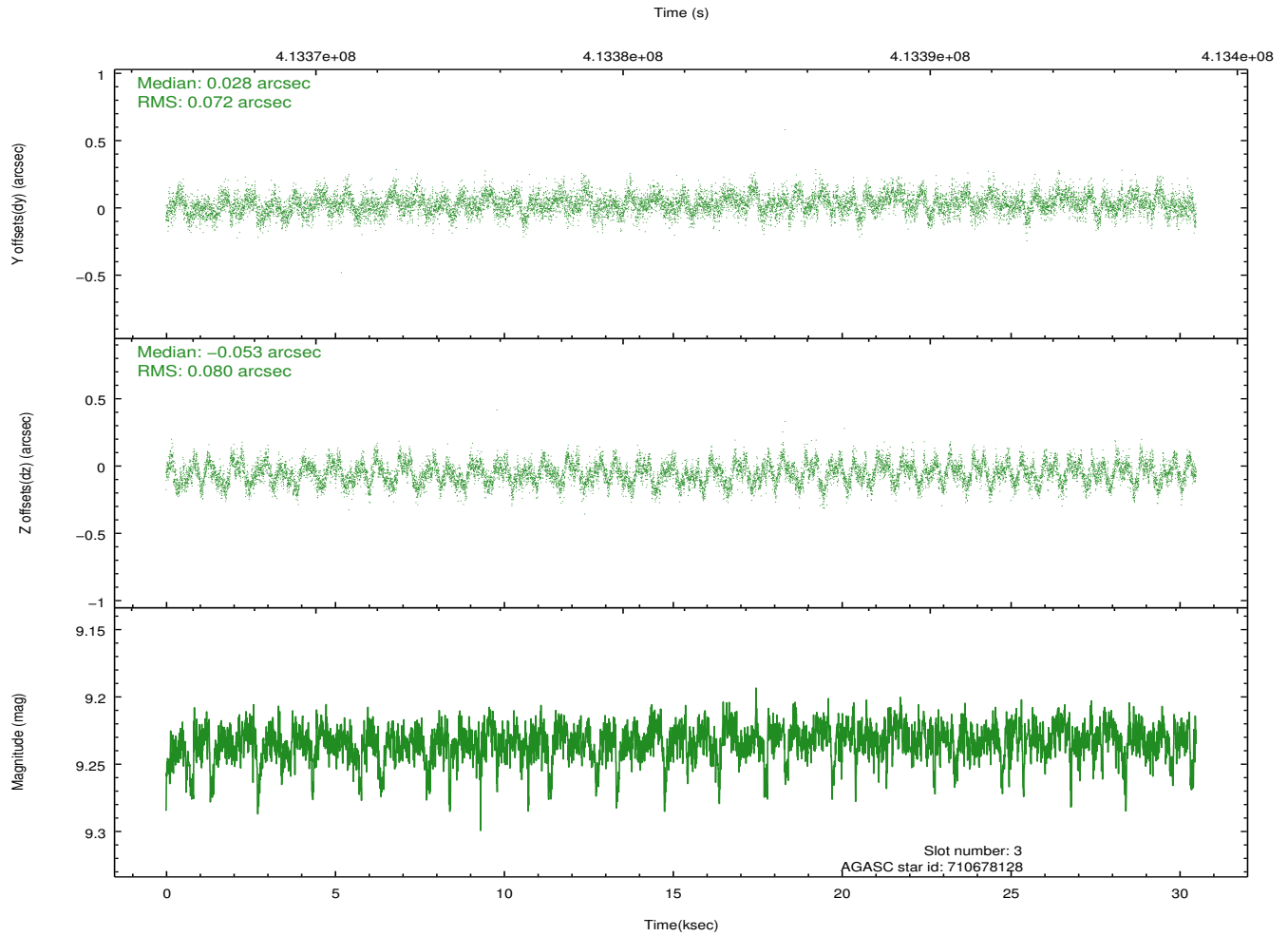
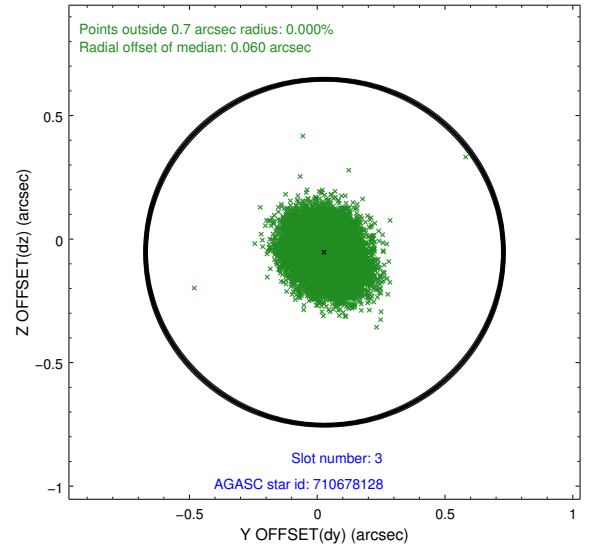
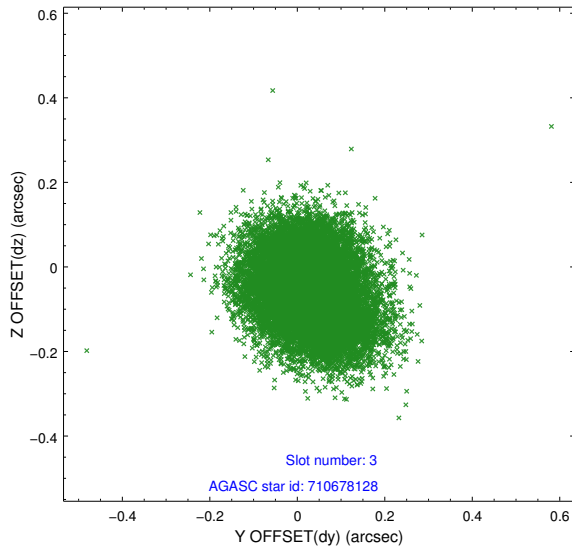


### Slot Statistics

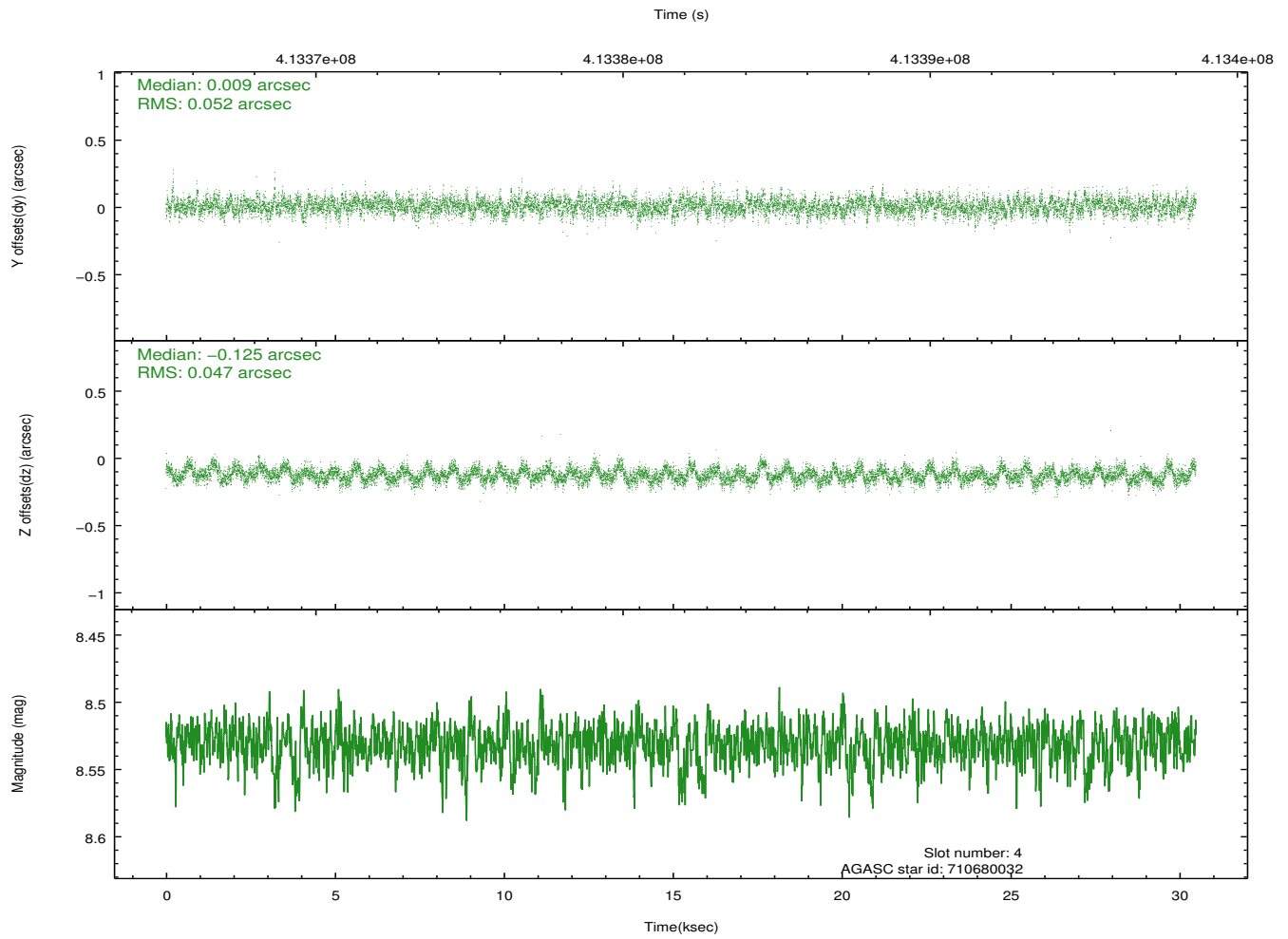
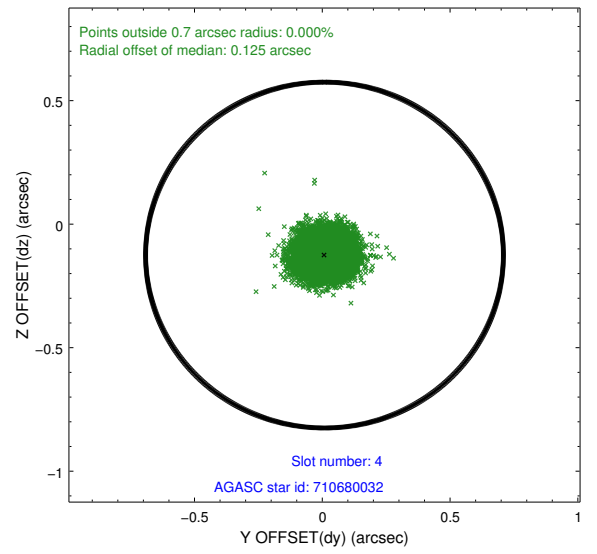
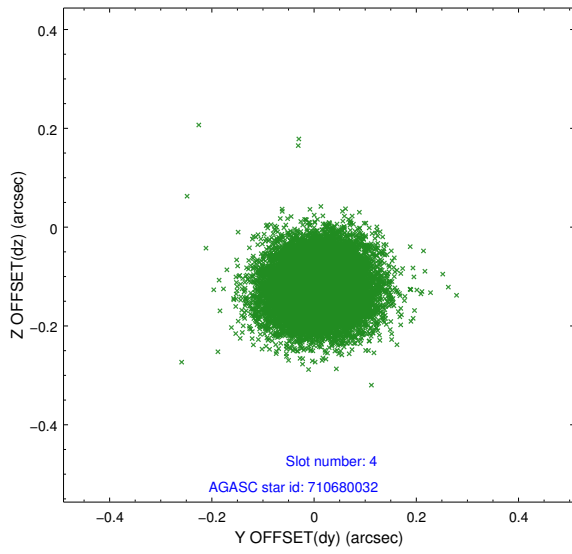
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	6.99	7437	0.026	-0.060	0.008	0.014	0.000000	0.000000	923.11	-1733.44
1	FID	ACIS-S-4	7.02	7437	0.168	0.034	0.007	0.016	0.000000	0.000000	2140.70	170.74
2	FID	ACIS-S-5	7.04	7436	-0.220	0.039	0.007	0.022	0.000000	0.000000	-1825.92	164.42
3	GUIDE	710678128	9.23	14861	0.028	-0.053	0.116	0.183	115.159664	-14.142340	-2086.72	1046.10
4	GUIDE	710680032	8.53	14869	0.009	-0.125	0.074	0.120	115.560980	-14.143953	-991.52	1920.37
5	GUIDE	710692072	8.55	14861	0.082	-0.108	0.076	0.124	115.673976	-14.351856	-216.02	1584.27
6	GUIDE	783817400	8.06	14871	-0.093	0.265	0.066	0.106	115.171198	-15.280507	518.12	-2116.89
7	GUIDE	783831456	9.24	14854	-0.025	0.028	0.124	0.200	115.363797	-15.311854	1109.74	-1785.18

## 2.4 Star Slots

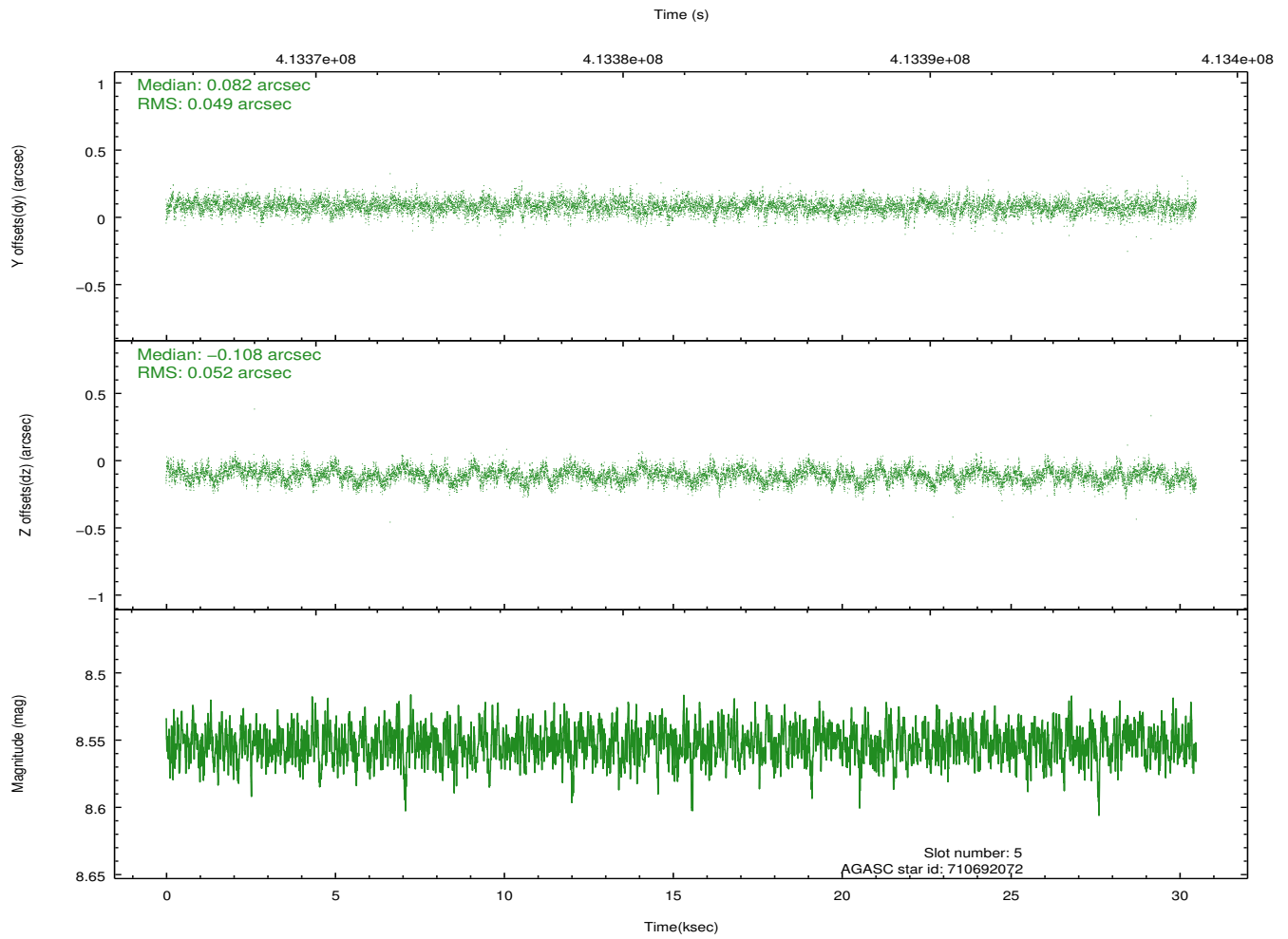
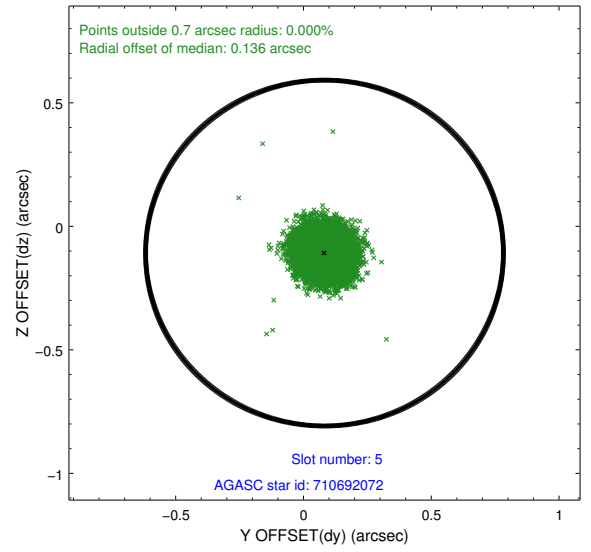
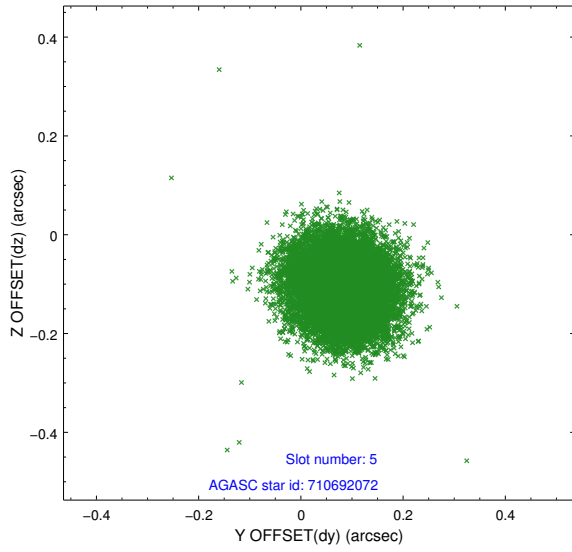
### 2.4.1 Slot 3



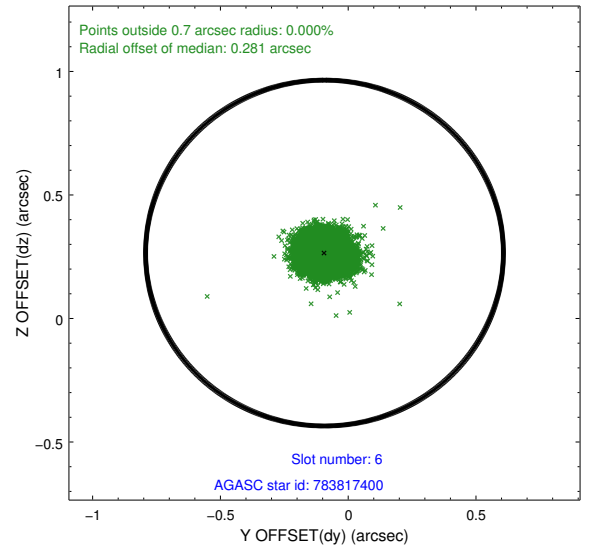
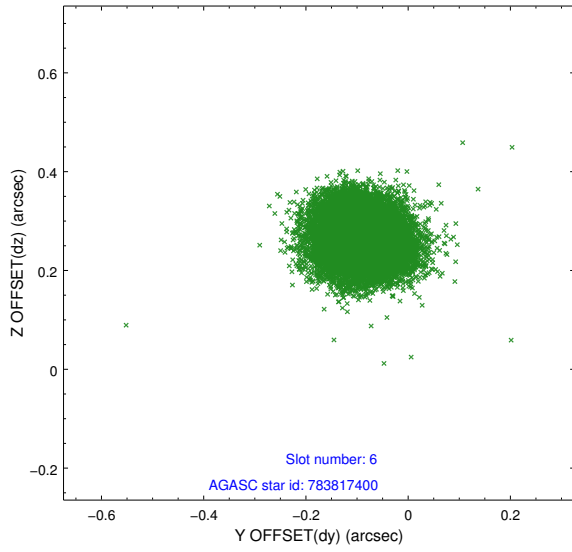
## 2.4.2 Slot 4



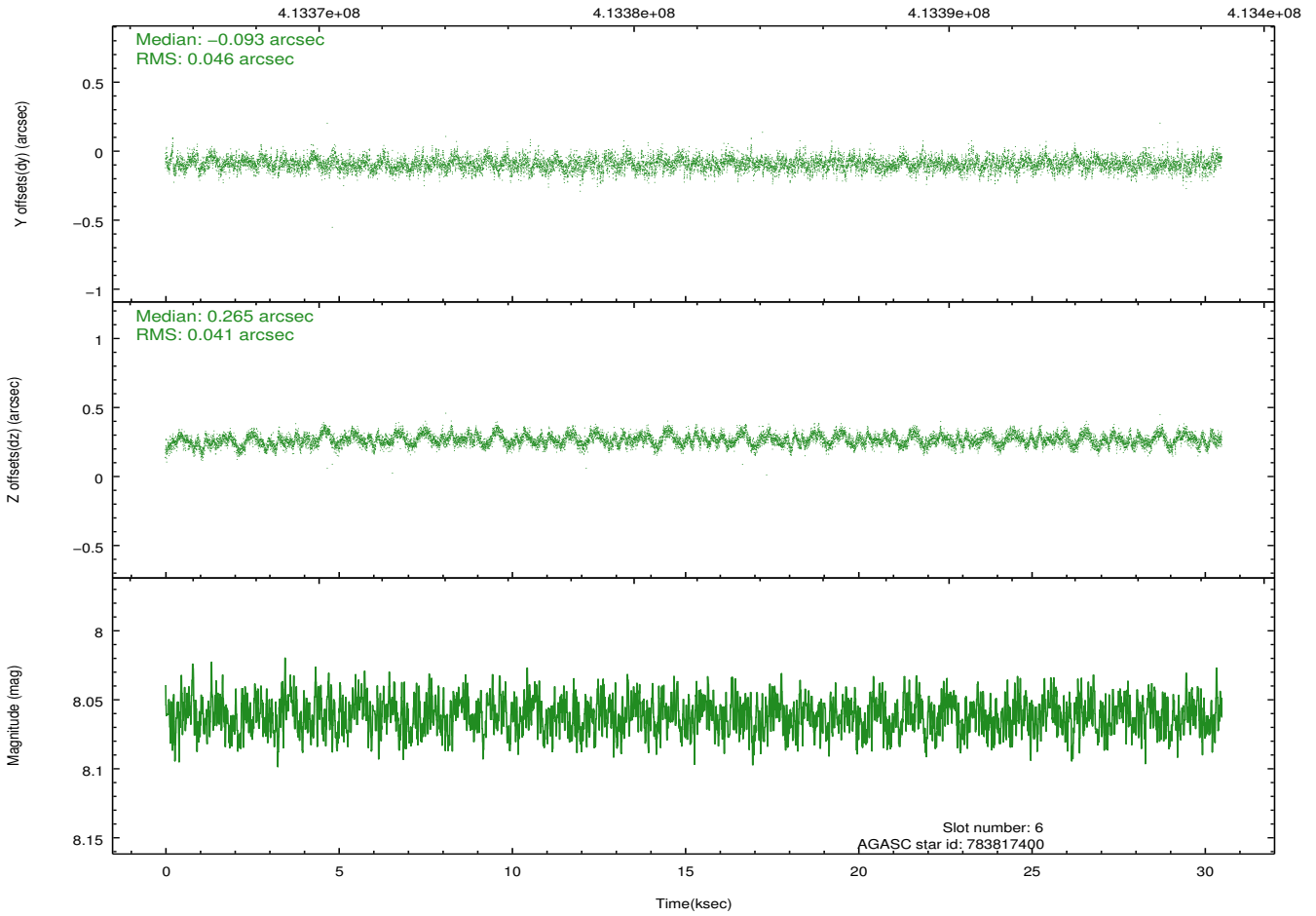
### 2.4.3 Slot 5



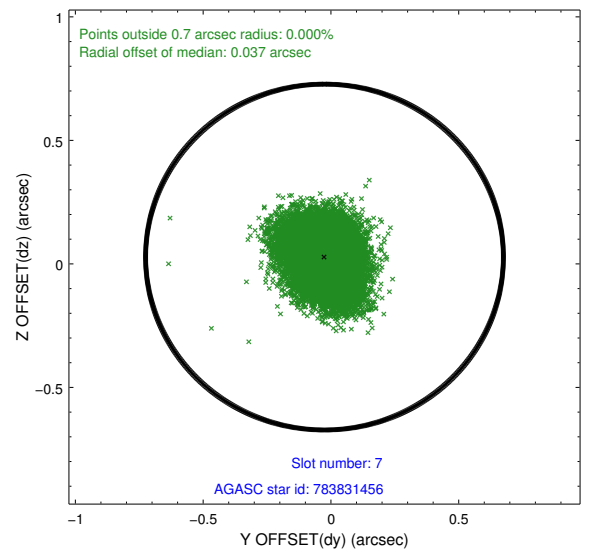
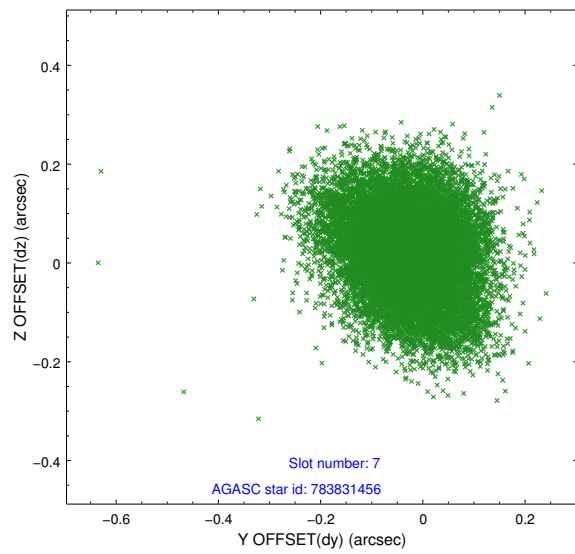
### 2.4.4 Slot 6



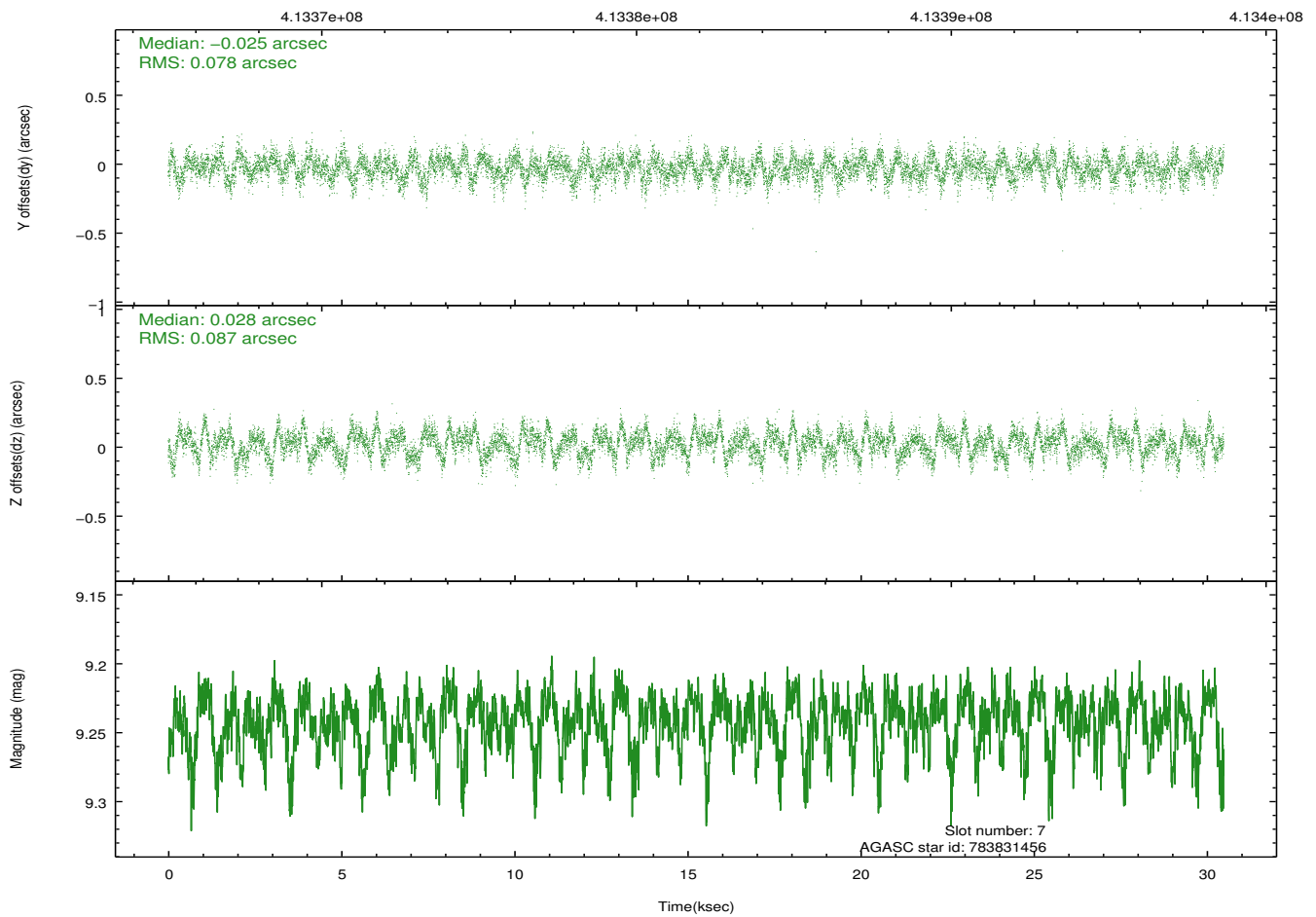
Time (s)



## 2.4.5 Slot 7

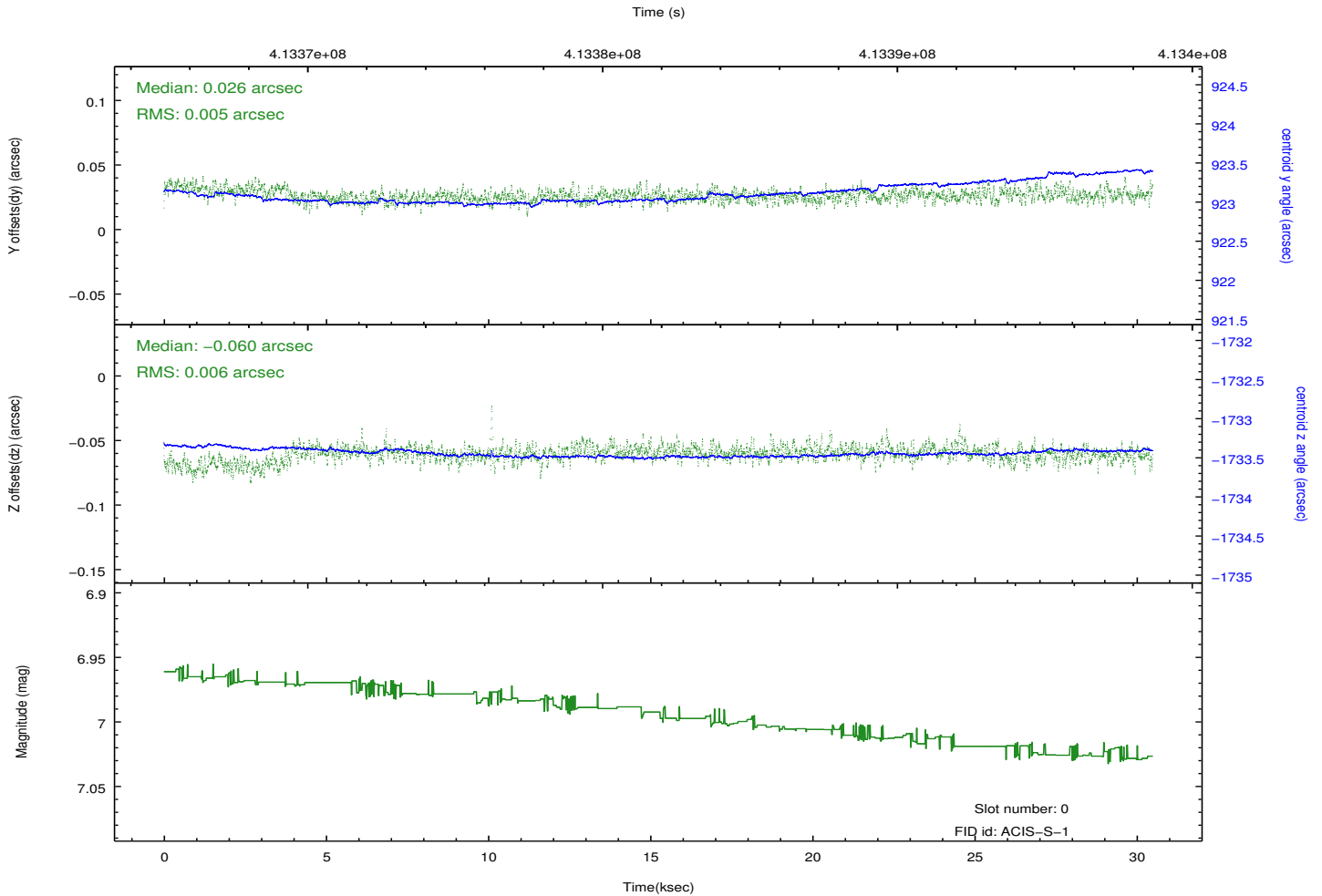
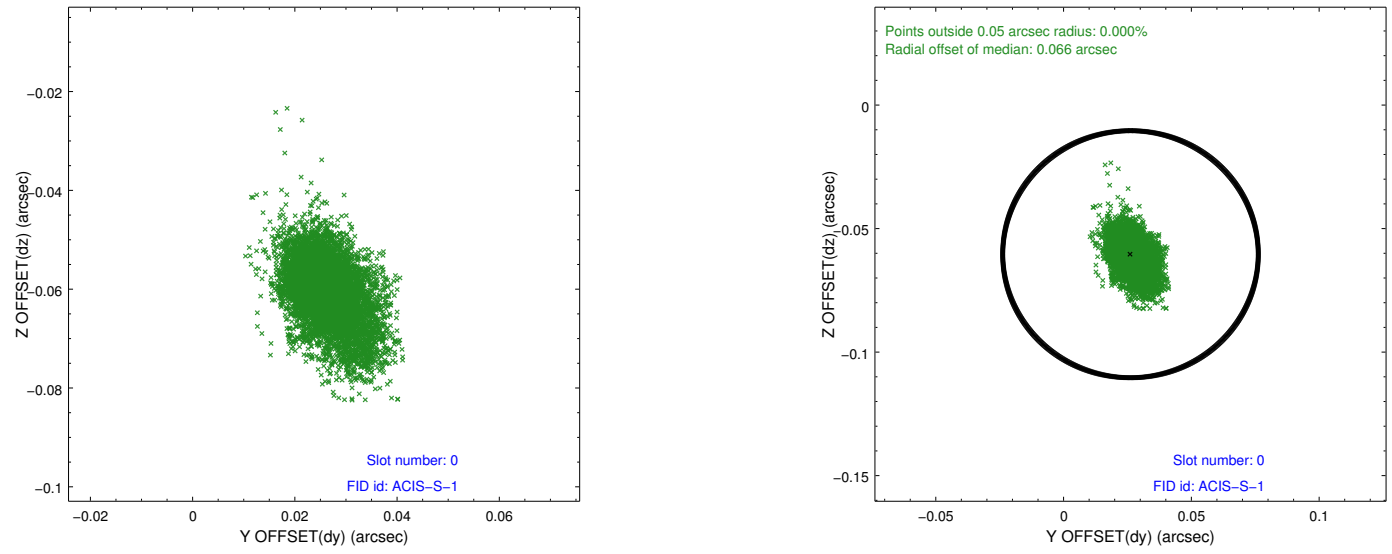


Time (s)

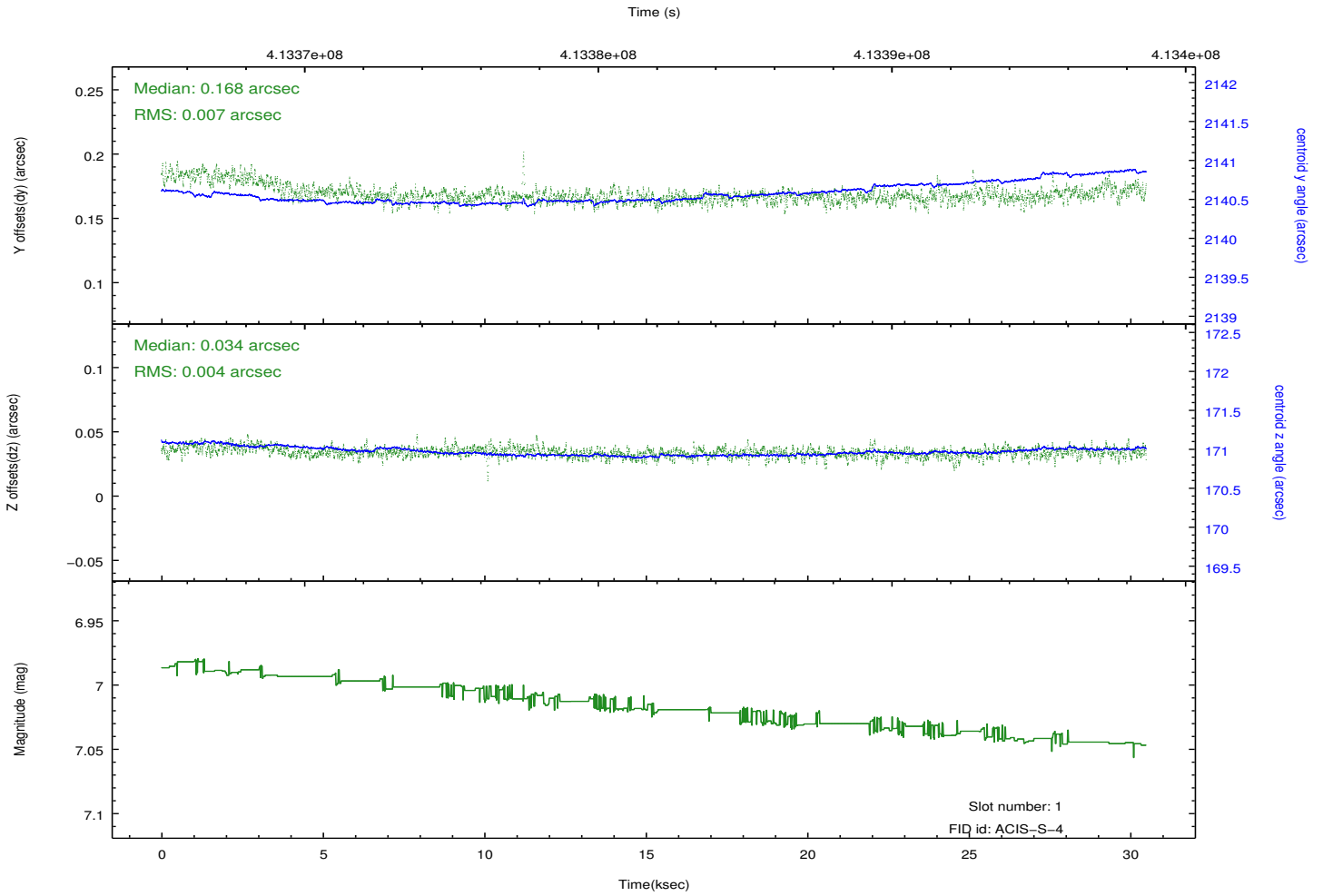
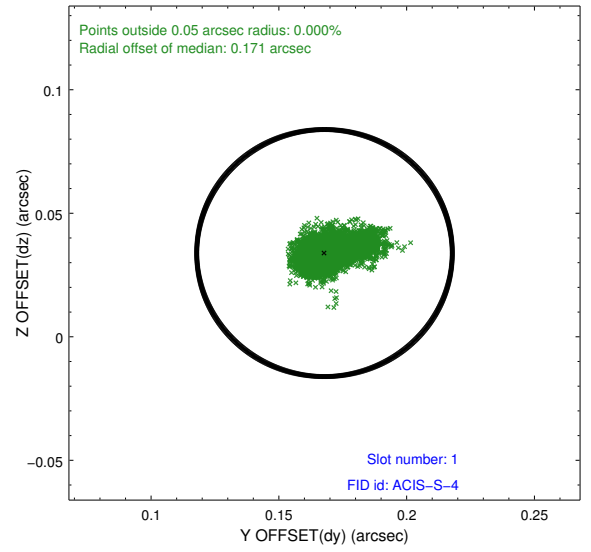
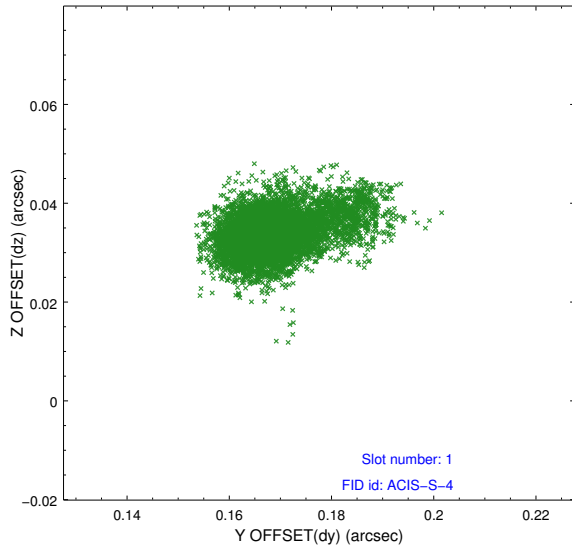


## 2.5 FID Slots

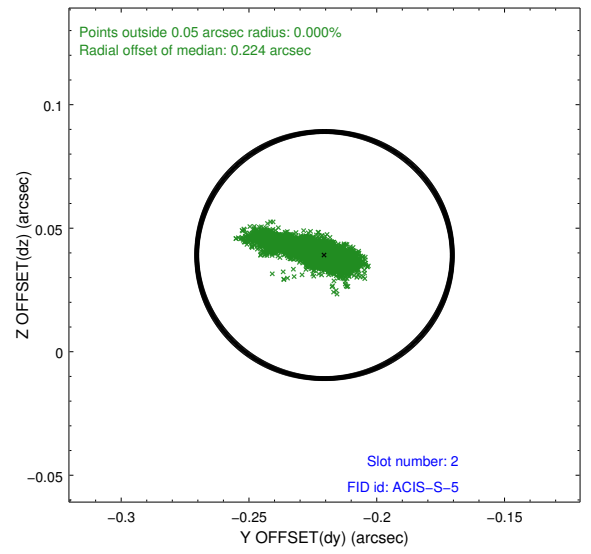
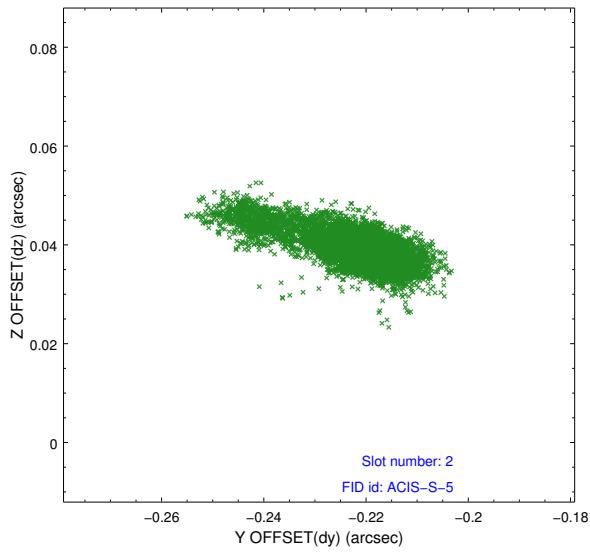
### 2.5.1 Slot 0



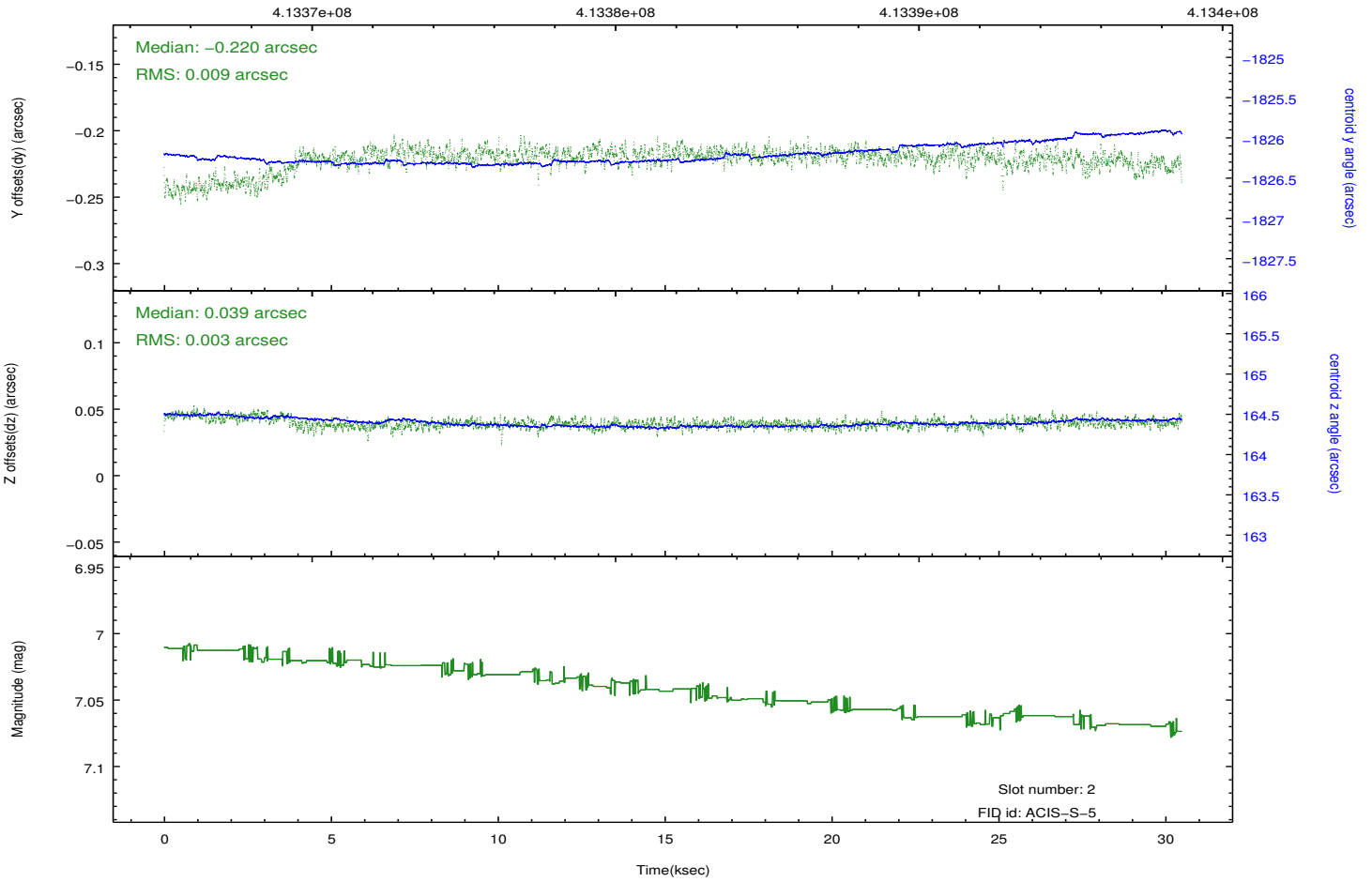
## 2.5.2 Slot 1



### 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	30.05119988811

## 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.