

V&V Reference Report

L2 ASCDS Version : 8.3.4

Observation 400 - L2 Version 7
Chandra X-Ray Center

L2 Processing Date : Jul 7 2011

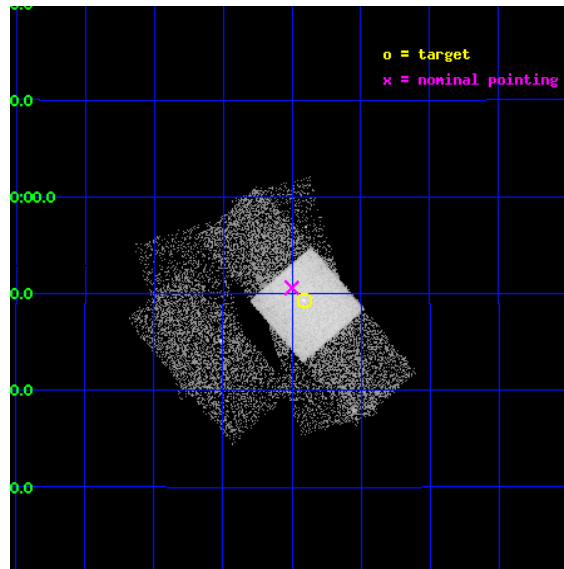
Contents

1	Front	3
2	OBI	4
2.1	OBI	4
2.1.1	Images	4
2.1.2	Bias	4
2.1.3	Parameters	5
2.1.4	Events	5
2.2	Compared Parameters	6
2.3	Aspect	7
2.4	Star Slots	10
2.4.1	Slot 3	10
2.4.2	Slot 4	11
2.4.3	Slot 5	12
2.4.4	Slot 6	13
2.4.5	Slot 7	14
2.5	FID Slots	15
2.5.1	Slot 0	15
2.5.2	Slot 1	16
2.5.3	Slot 2	17
3	OBI	18
3.1	OBI	18
3.1.1	Images	18
3.1.2	Bias	18
3.1.3	Parameters	19
3.1.4	Events	19
3.2	Compared Parameters	20
3.3	Aspect	21
3.4	Star Slots	24
3.4.1	Slot 3	24
3.4.2	Slot 4	25
3.4.3	Slot 5	26
3.4.4	Slot 6	27

3.5	FID Slots	28
3.5.1	Slot 0	28
3.5.2	Slot 1	29
3.5.3	Slot 2	30
A	Summary	31
A.1	Status	31
A.2	Comments	31

1 Front

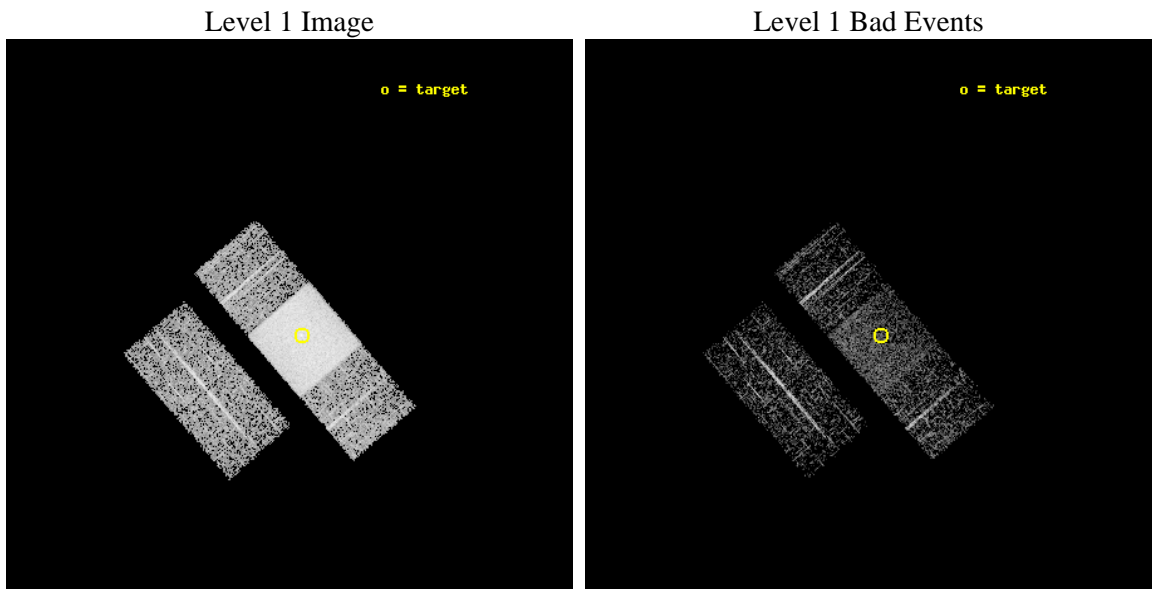
seq_num	700072	Sequence number
obs_id	400	Observation id
title	LOW-LUMINOSITY ACTIVE GALACTIC NUCLEI IN NEARBY GALAXIES	Proposal
observer	Prof Gordon Garmire	Principal investigator
object	NGC 4321	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	185.728333	Observer's specified target RA
dec_targ	15.822222	Observer's specified target Dec
ra_nom	185.75010435296	Nominal RA
dec_nom	15.843362878831	Nominal Dec
roll_nom	49.270327560318	Nominal Roll
revision	7	Processing version of data
ontime	2529.5920813233	Sum of GTIs [s]
livetime	2497.5608632521	Livetime [s]
ontime2	2529.5100013167	Sum of GTIs [s]
ontime3	2529.3458413184	Sum of GTIs [s]
ontime6	2529.427921325	Sum of GTIs [s]
ontime7	2529.5920813233	Sum of GTIs [s]
ontime8	2529.2637613267	Sum of GTIs [s]
l2events	70528	Number of level 2 events



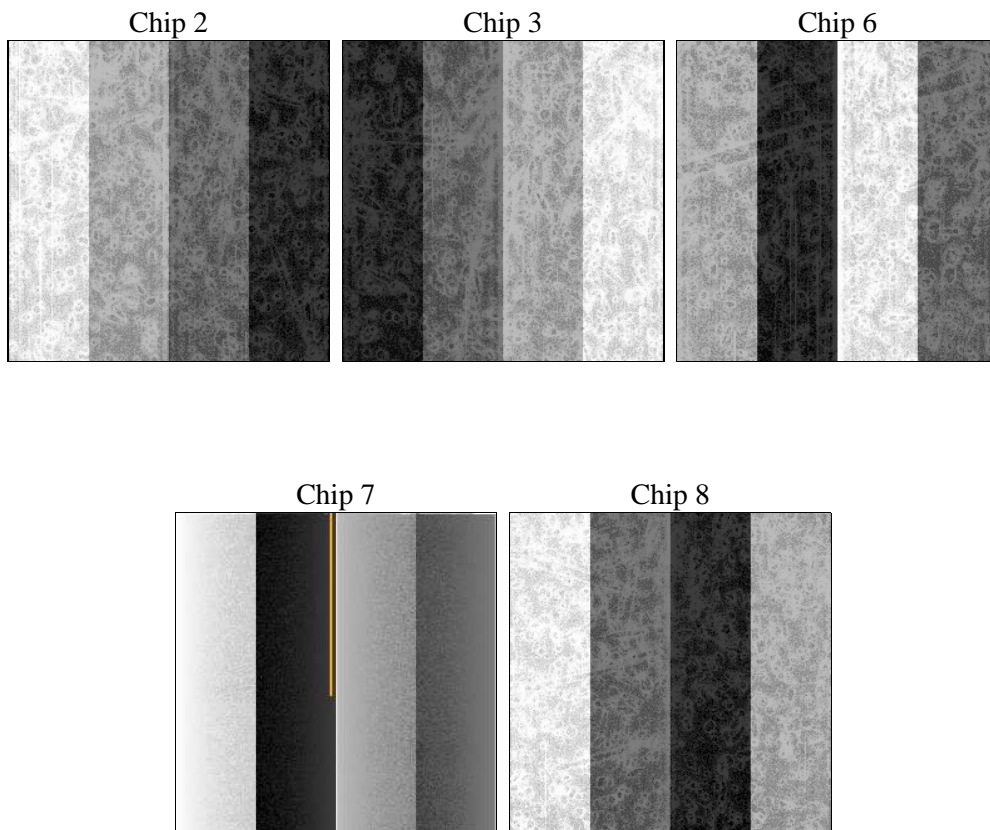
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	2000.000000	Scheduled observation exposure time
ascdsver	8.4	ASCDS version number	ontime	1164.3067782596	Sum of GTIs [s]
caldsver	4.4.4	 	ontime2	1164.2657382563	Sum of GTIs [s]
date	2011-07-07T21:06:41	Date and time of file creation	ontime3	1164.1836582571	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	1164.2246982604	Sum of GTIs [s]
			ontime7	1164.3067782596	Sum of GTIs [s]
			ontime8	1164.1426182613	Sum of GTIs [s]
			l1events	116277	Number of level 1 events

2.1.4 Events

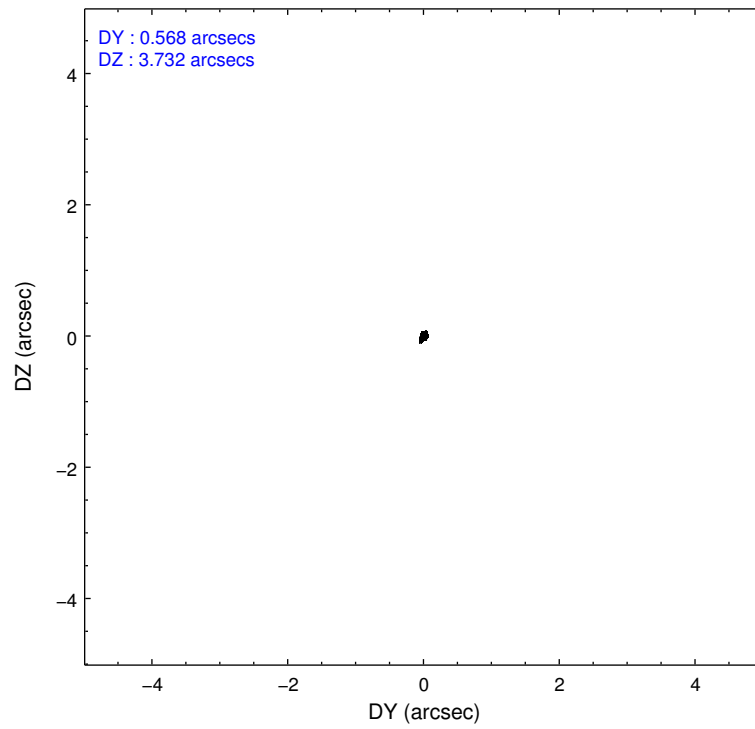
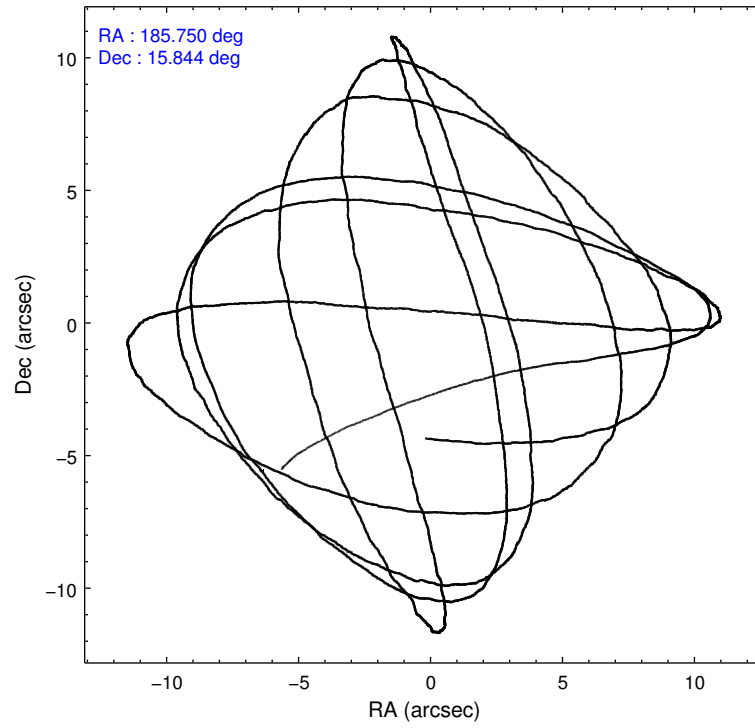
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	12082	11174	12519	66492	14010
rejected events	10380	9530	10061	12744	10820
rejected %	85%	85%	80%	19%	77%

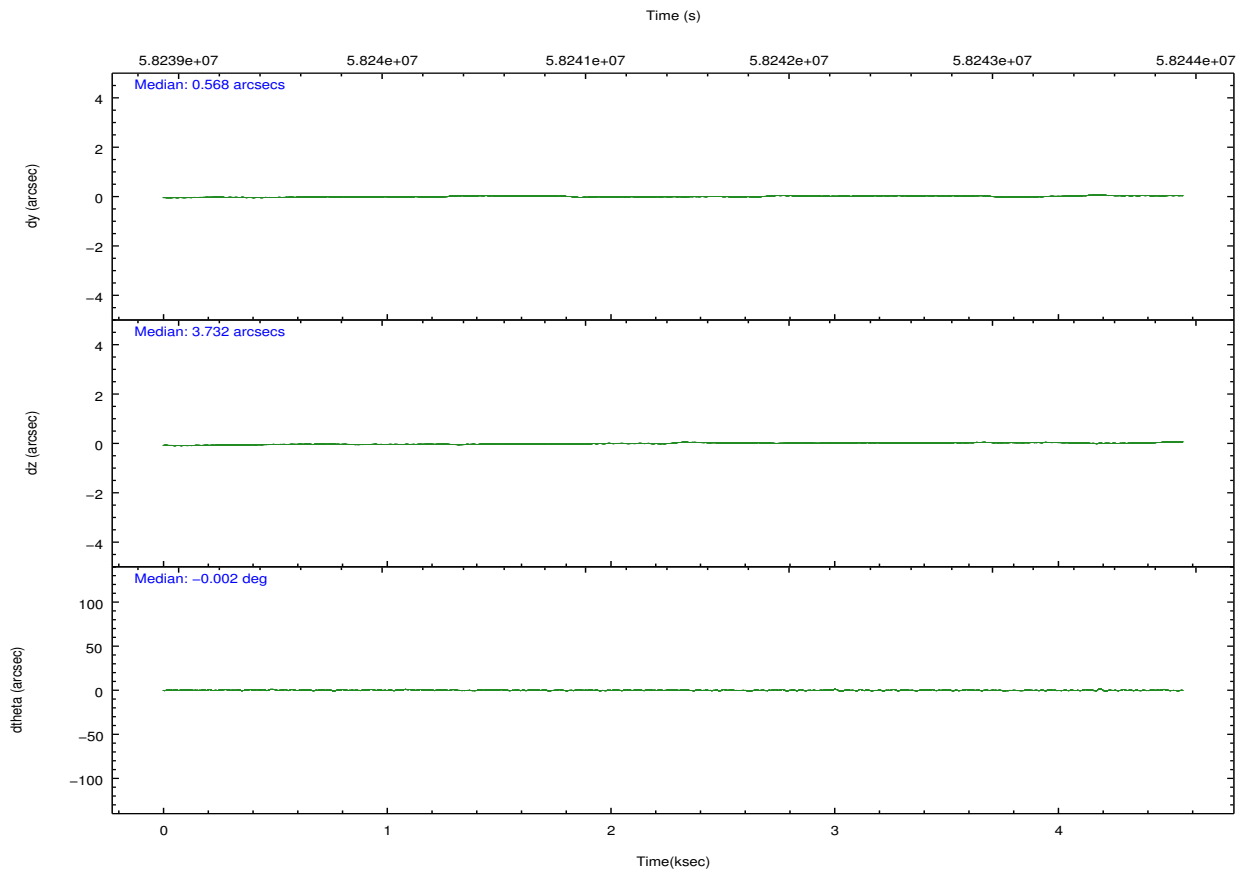
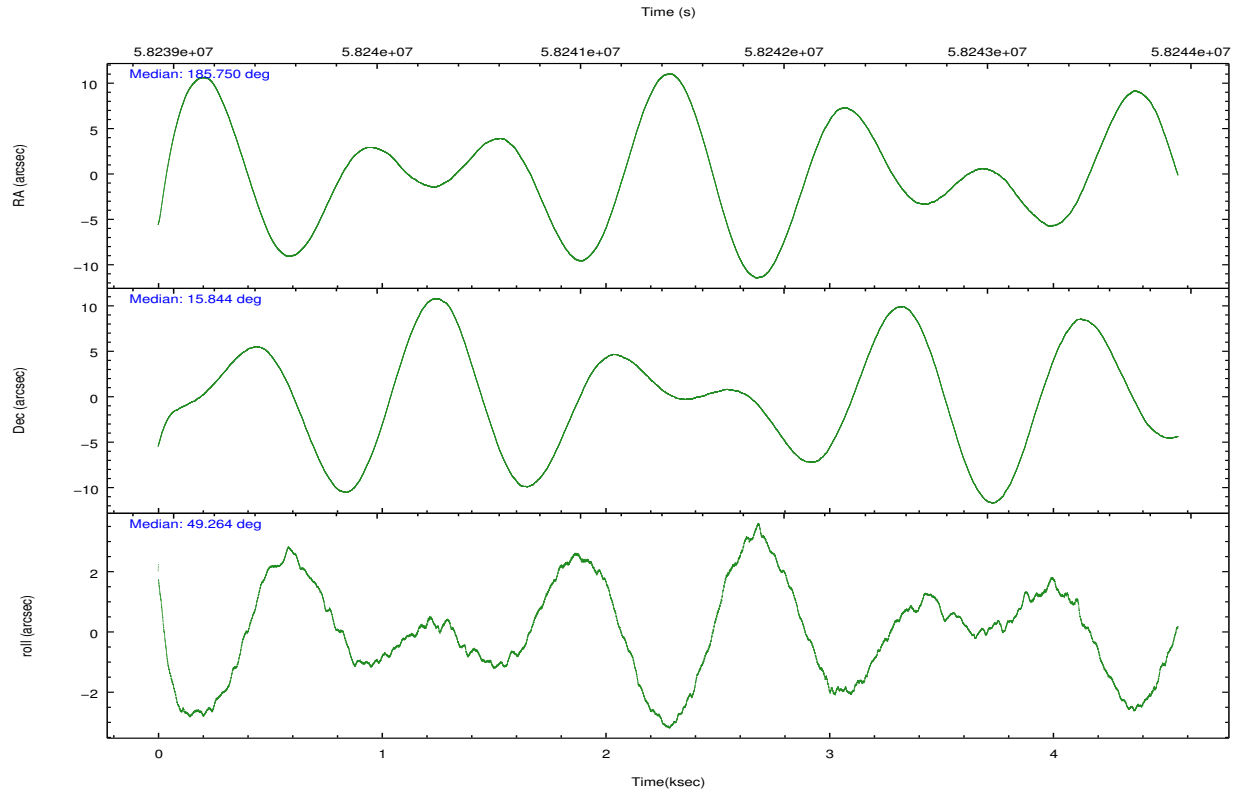
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	519	471	800	7064	1021
	4%	4%	6%	10%	7%
grade 1 events	4	0	1	12	8
	0%	0%	0%	0%	0%
grade 2 events	774	748	1153	10559	1179
	6%	6%	9%	15%	8%
grade 3 events	75	75	100	3805	202
	0%	0%	0%	5%	1%
grade 4 events	66	65	82	3705	194
	0%	0%	0%	5%	1%
grade 5 events	211	205	206	1089	289
	1%	1%	1%	1%	2%
grade 6 events	276	292	333	28741	617
	2%	2%	2%	43%	4%
grade 7 events	10157	9318	9844	11517	10500
	84%	83%	78%	17%	74%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
Detector	ACIS-23678	ACIS-23678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	185.744495	185.7501043529566	Subarray requested	NONE	NONE
Pointing Dec	15.816257	15.84336287883085	Alternating exposures requested	N	N
Pointing Roll	49.115241	49.27032756031842	Primary exposure time	0.000000	3.2
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-190.132523	-190.1425803651734			
SIM translation stage offset (mm)	0	0.01005778216563158			
Observation start time	58239633.184000	58237813.29802			
Observation start date	1999-11-06T01:39:29	1999-11-06T01:10:13			
Observation end time	58241633.184000	58244353.310756			
Observation end date	1999-11-06T02:12:49	1999-11-06T02:59:13			
Read mode	TIMED	TIMED			

2.3 Aspect



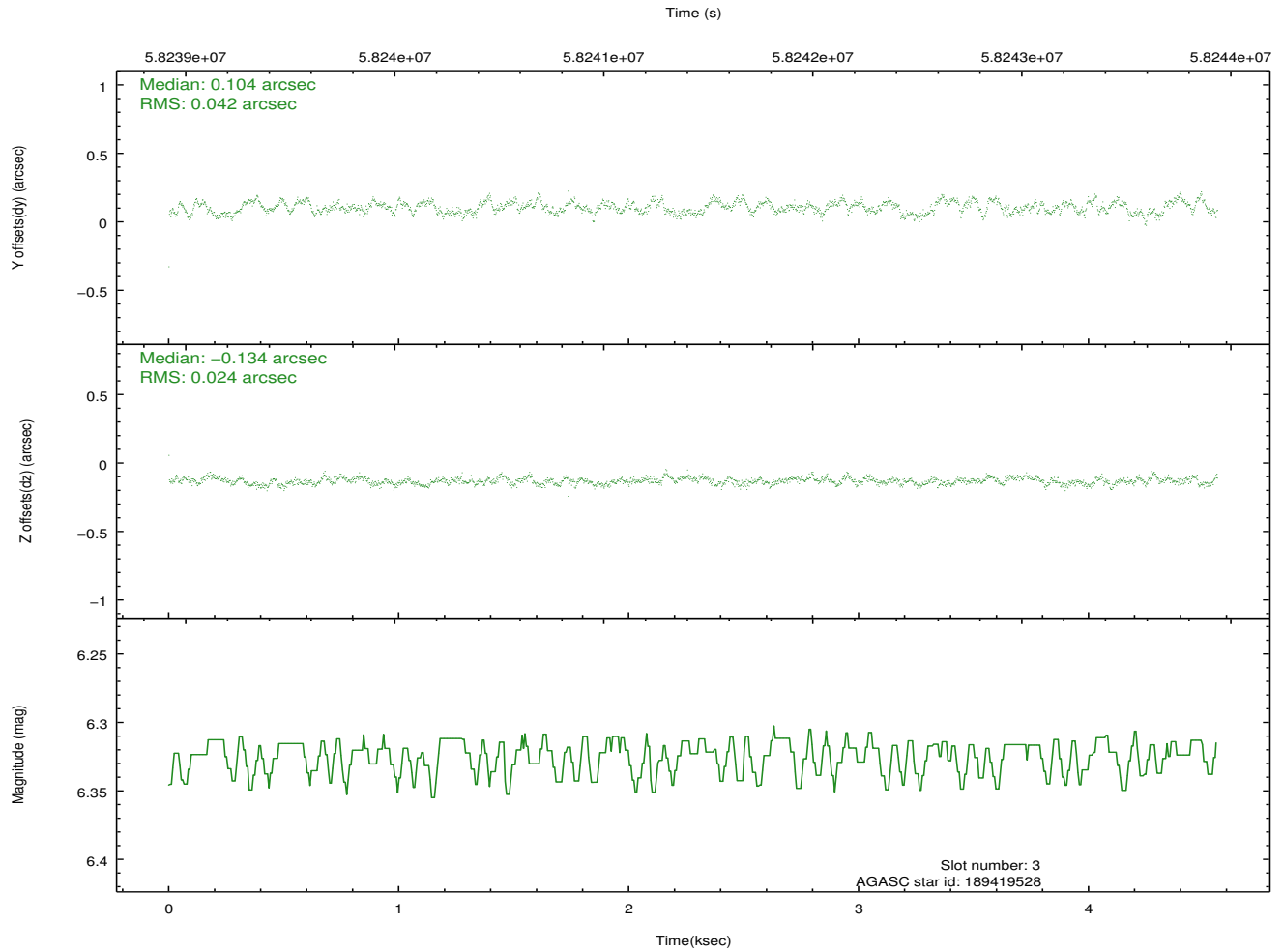
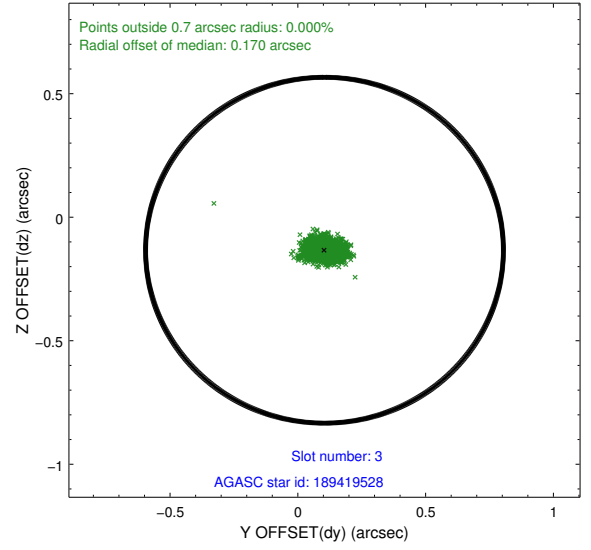
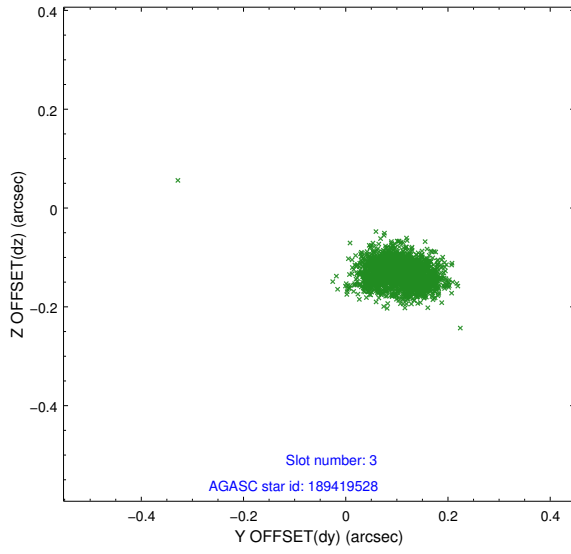


Slot Statistics

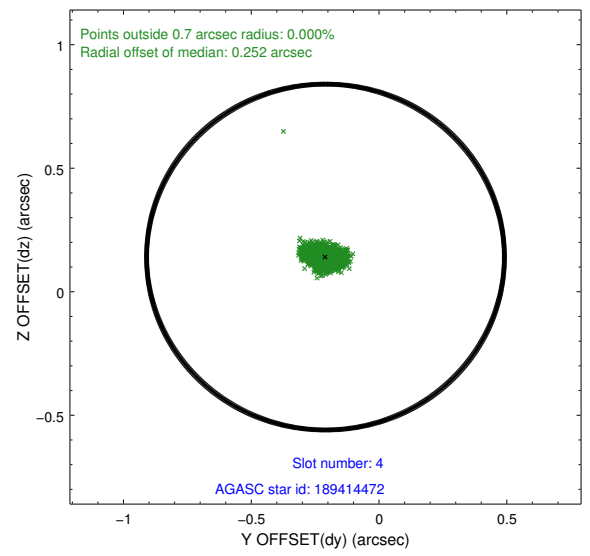
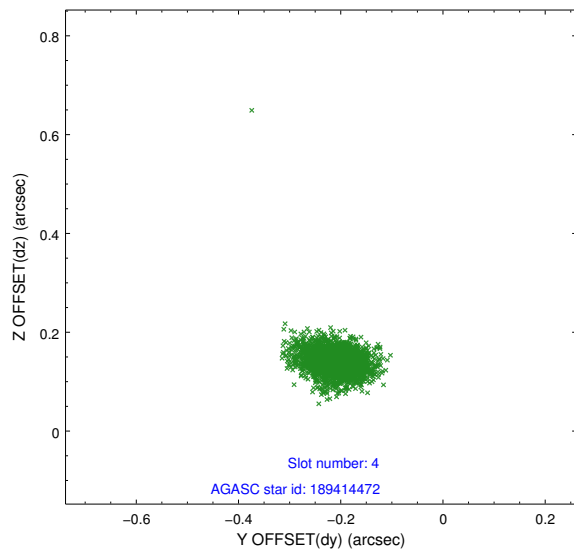
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	2225	-0.001	-0.020	0.007	0.011	0.000000	0.000000	-753.21	-1724.74
1	FID	ACIS-S-4	7.21	2225	0.038	0.006	0.005	0.010	0.000000	0.000000	2159.90	183.05
2	FID	ACIS-S-5	7.24	2224	-0.068	0.023	0.007	0.011	0.000000	0.000000	-1805.28	177.56
3	GUIDE	189419528	6.32	2225	0.104	-0.134	0.050	0.079	185.202988	15.540976	-1978.45	773.58
4	GUIDE	189414472	6.60	2225	-0.210	0.140	0.045	0.077	186.513657	15.863941	1874.29	-1896.44
5	GUIDE	189413016	8.15	2224	-0.208	0.097	0.057	0.094	186.364497	16.171398	2371.15	-781.26
6	GUIDE	189400120	8.19	2225	0.225	-0.143	0.065	0.111	185.025387	15.714800	-1904.69	1648.14
7	GUIDE	189419264	9.74	2223	0.093	0.040	0.087	0.140	185.669302	15.669954	-571.23	-145.87

2.4 Star Slots

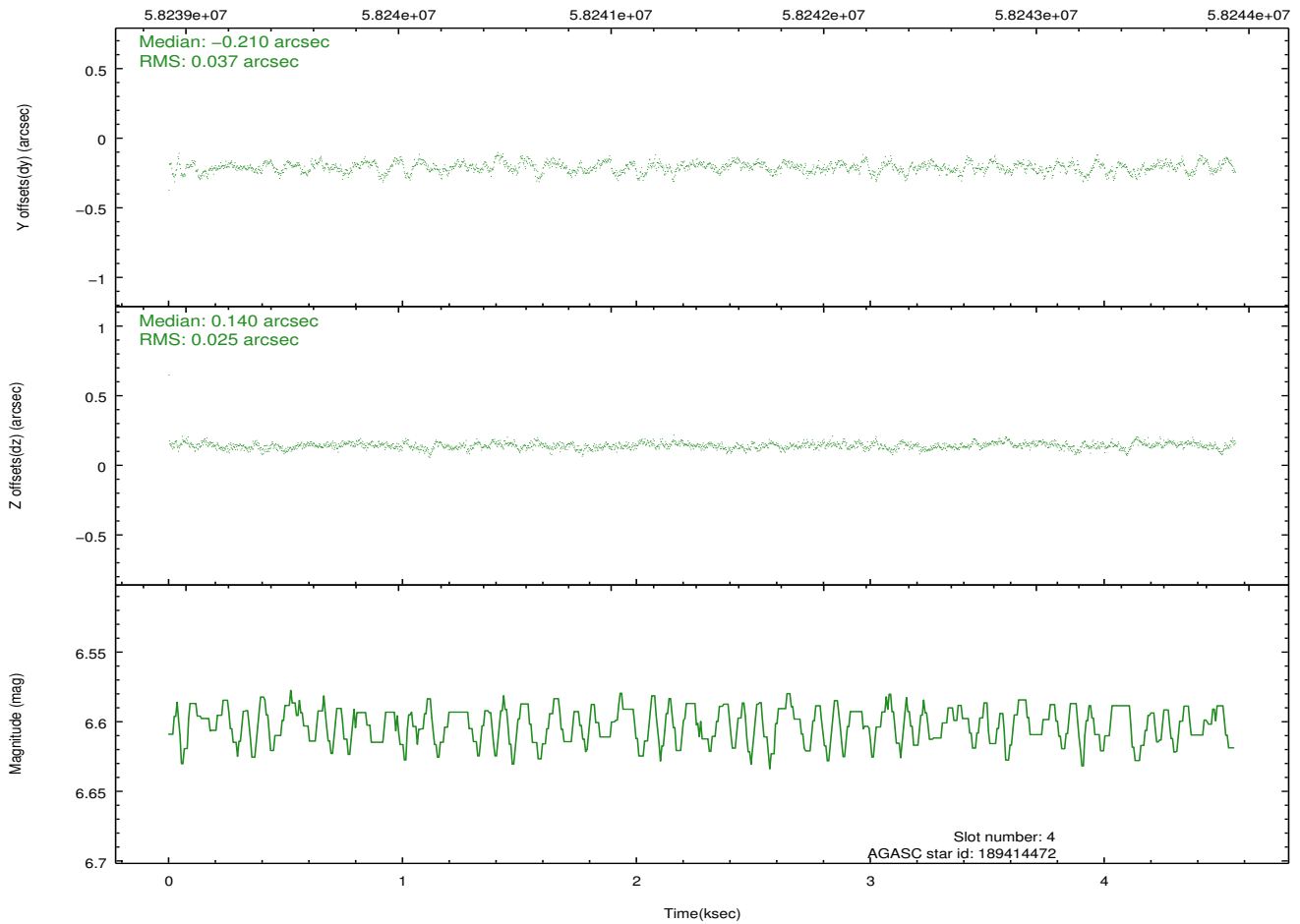
2.4.1 Slot 3



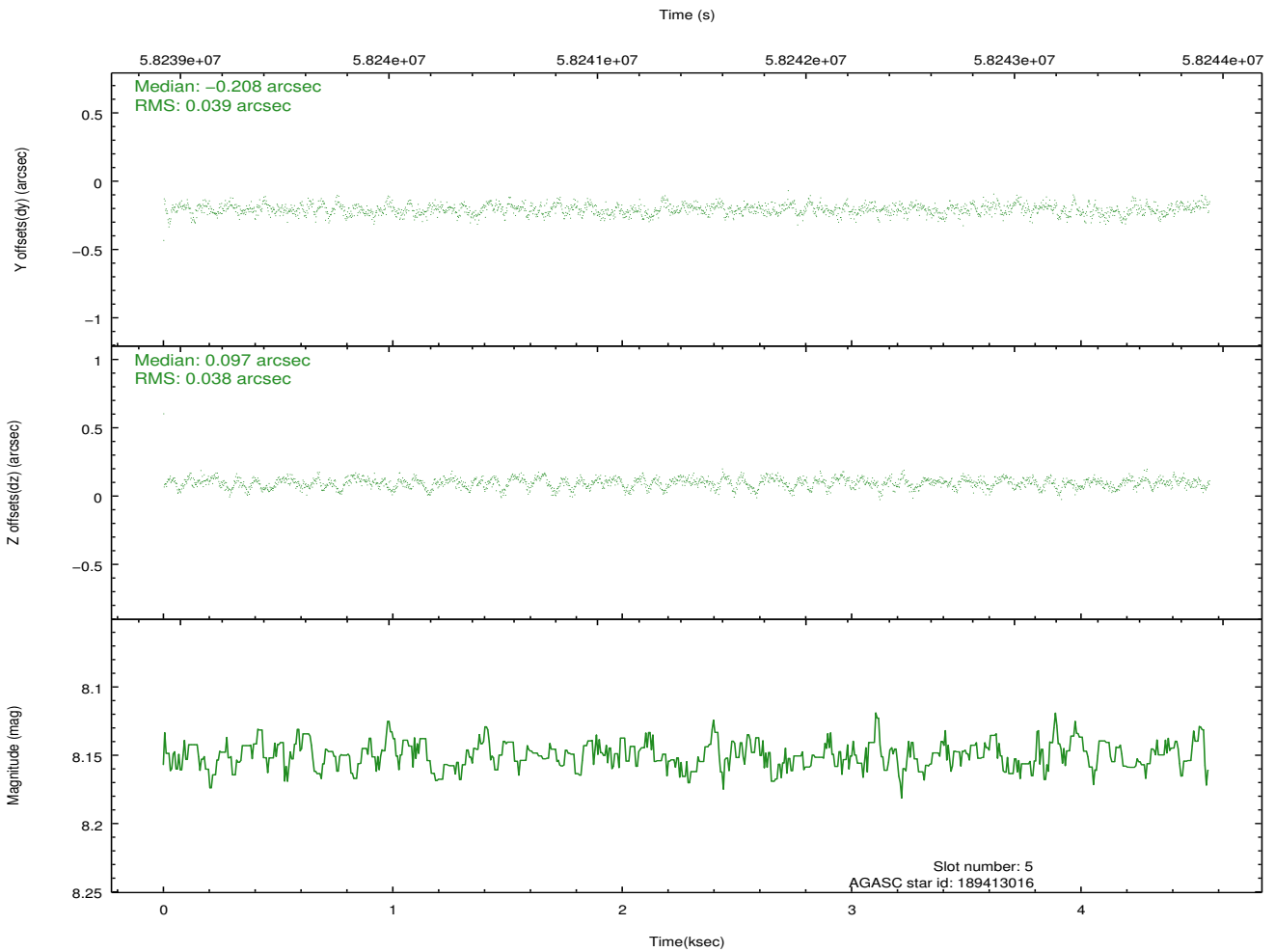
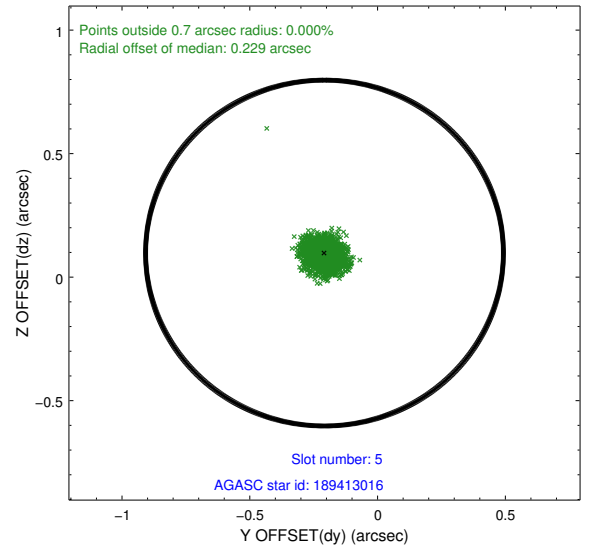
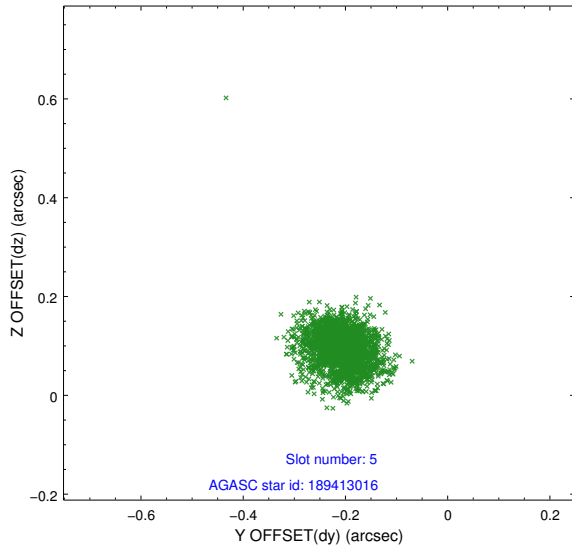
2.4.2 Slot 4



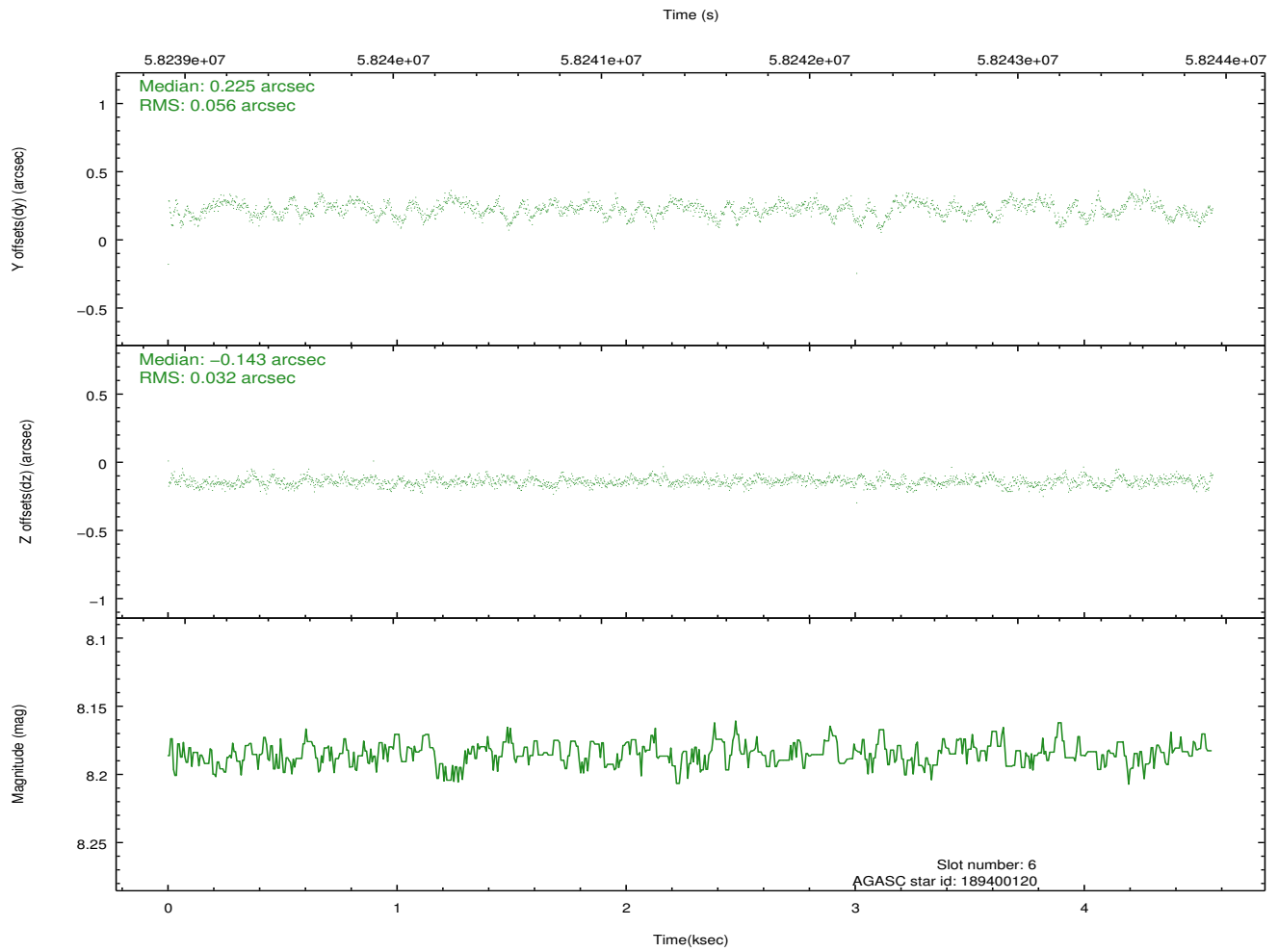
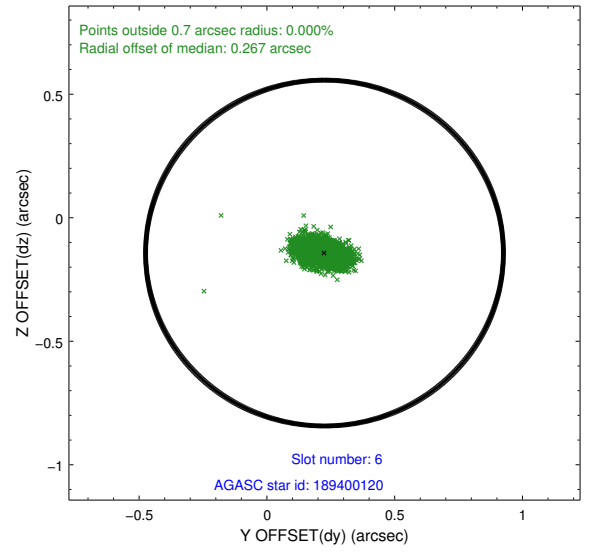
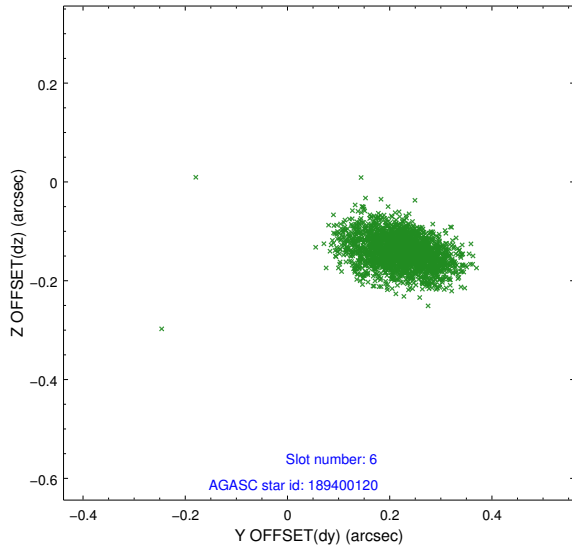
Time (s)



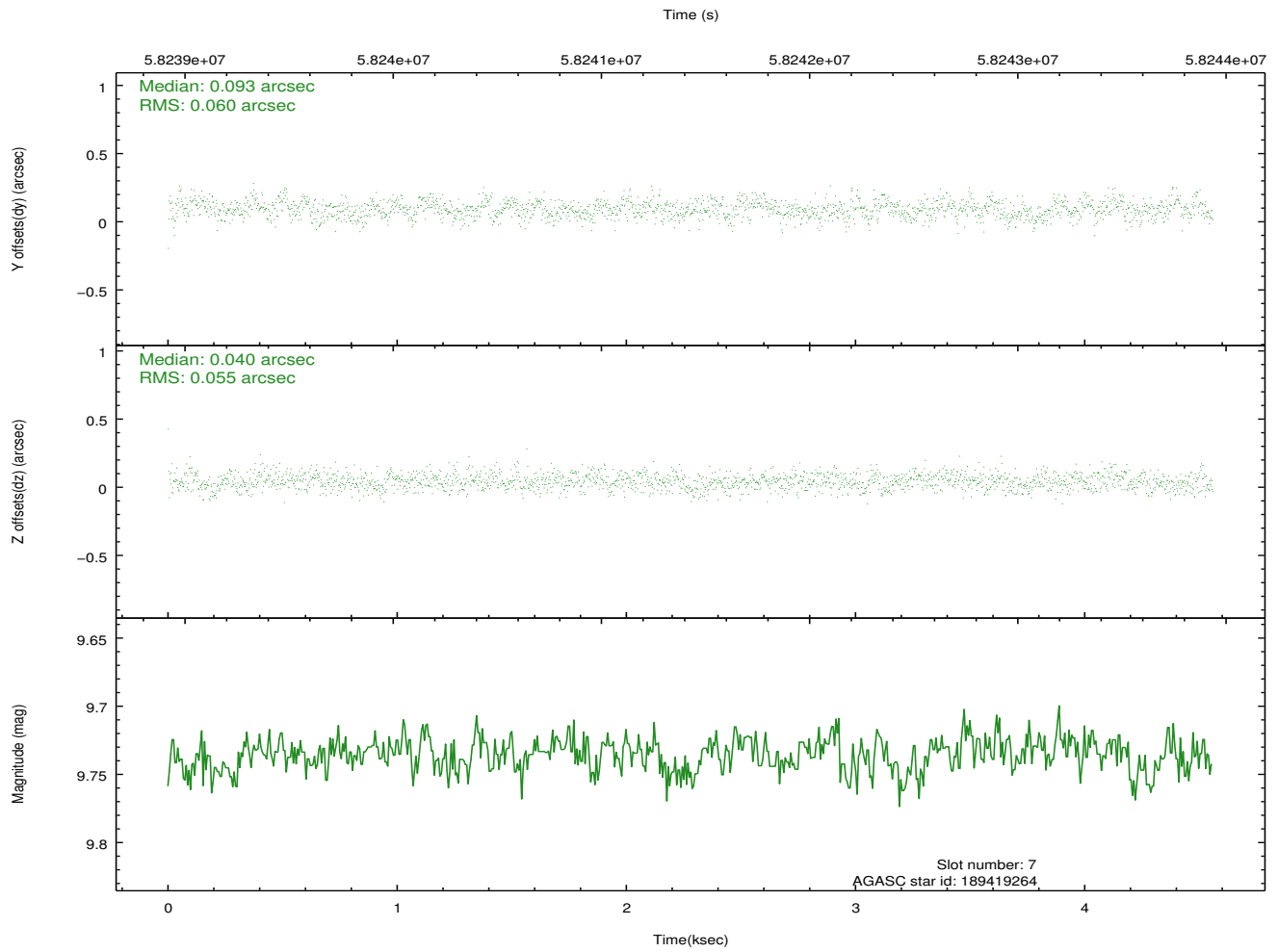
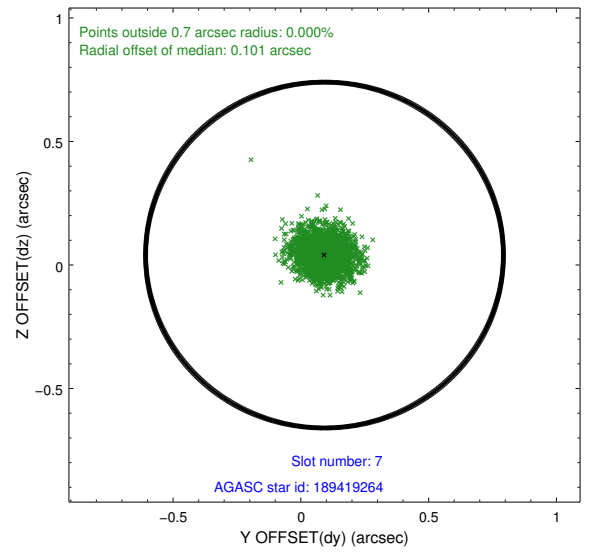
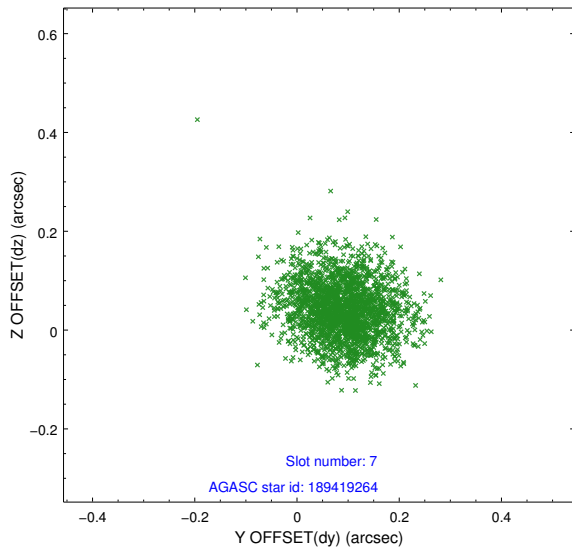
2.4.3 Slot 5



2.4.4 Slot 6

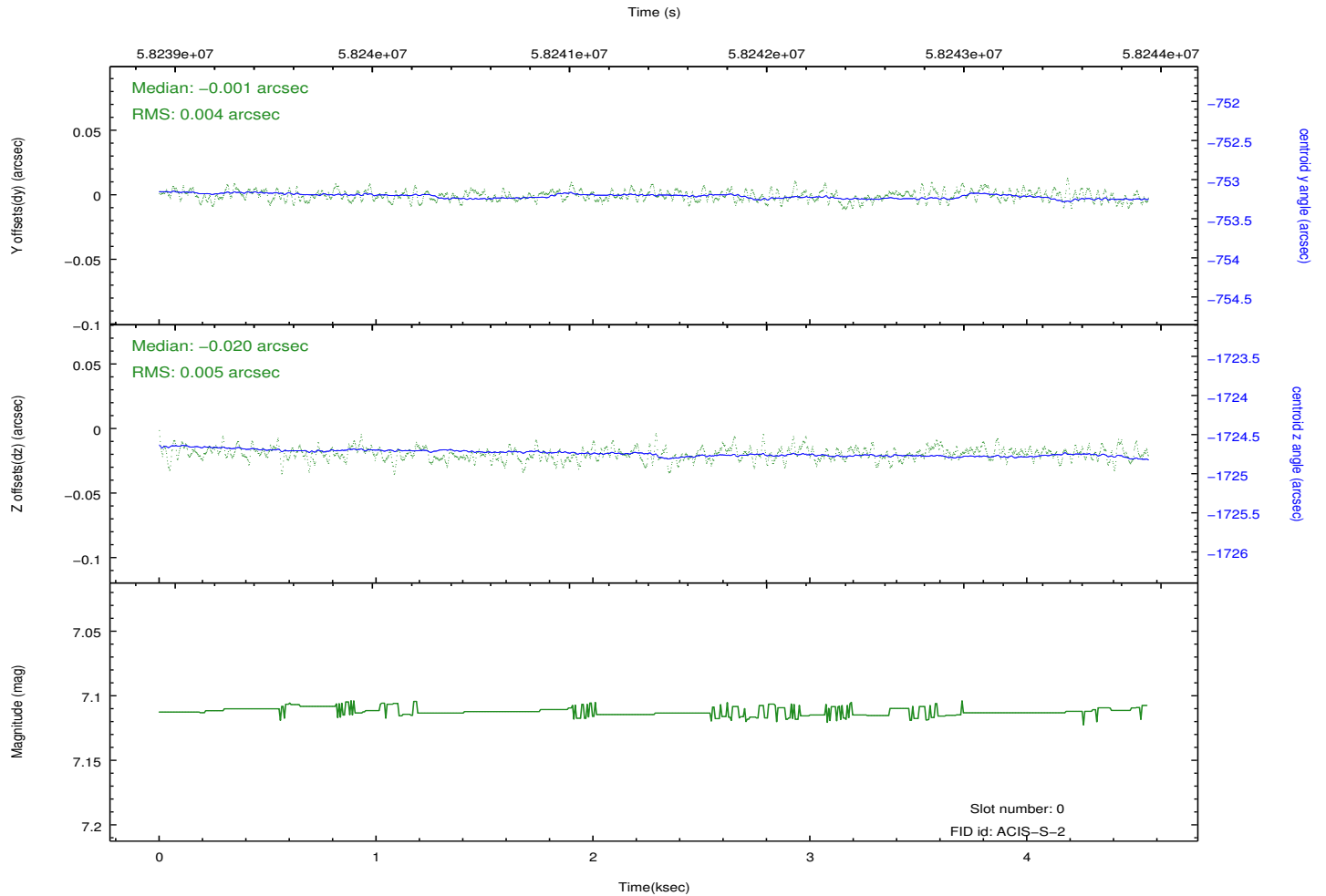
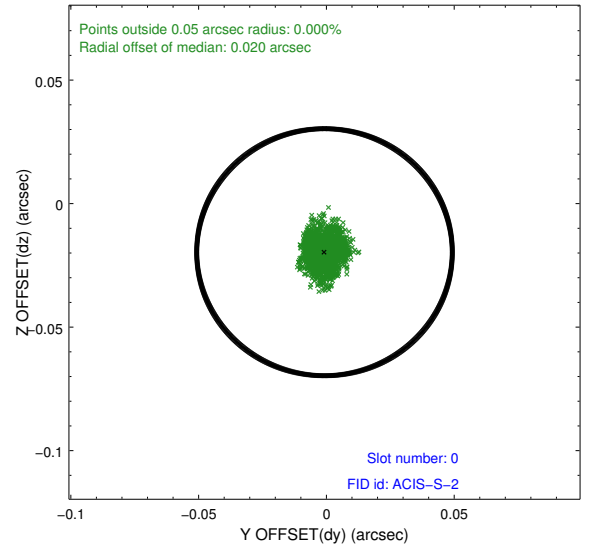
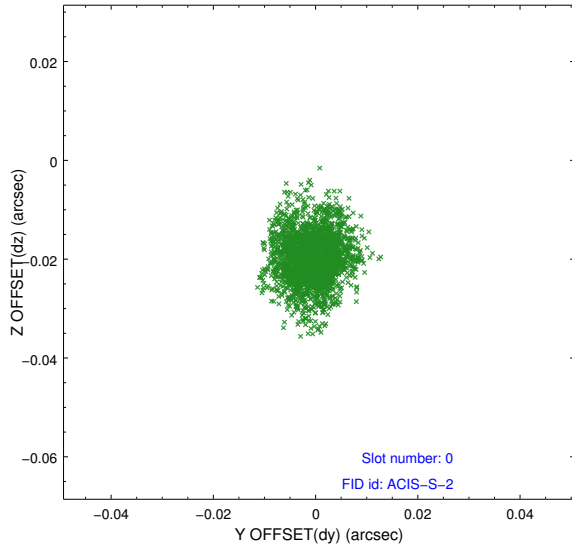


2.4.5 Slot 7

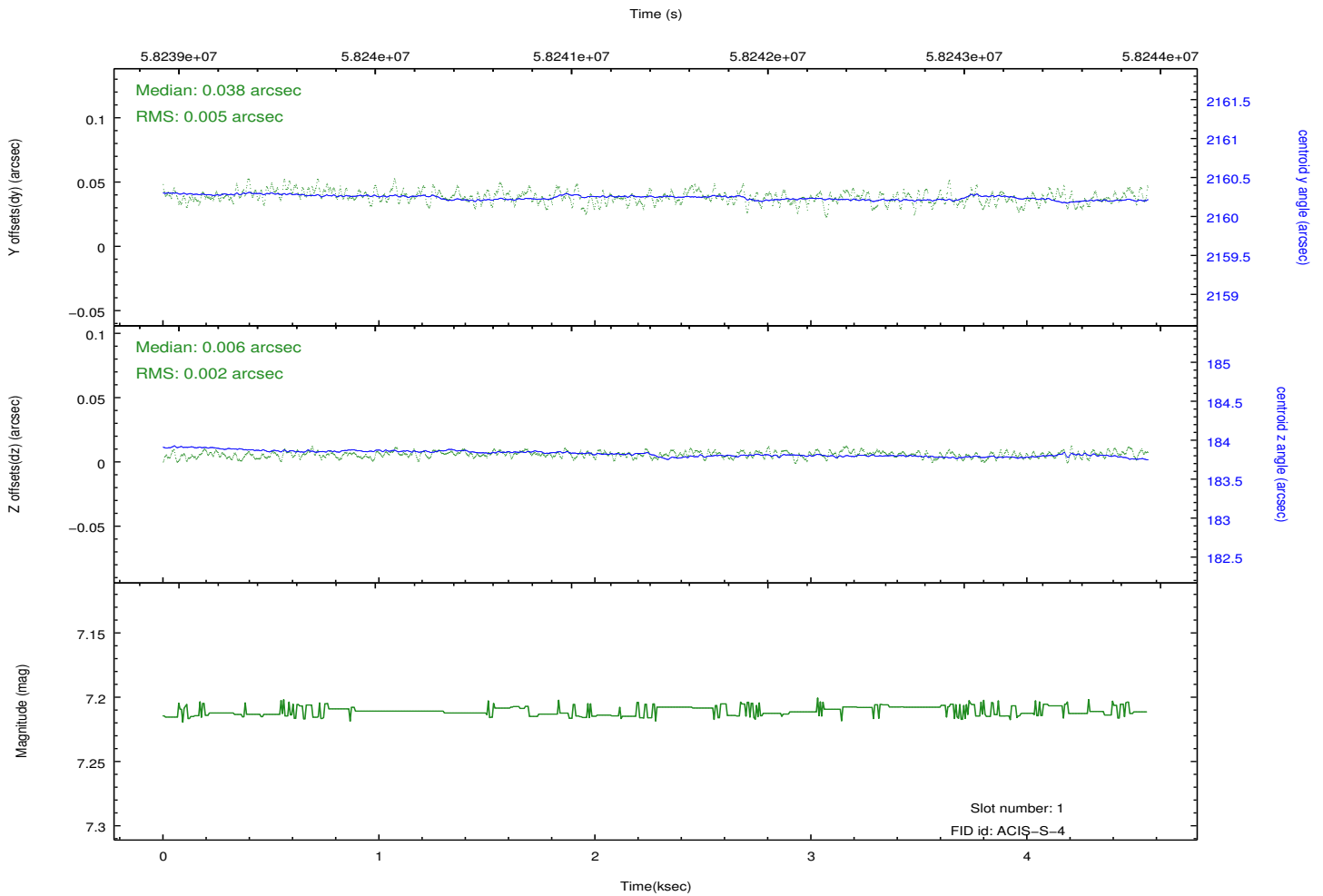
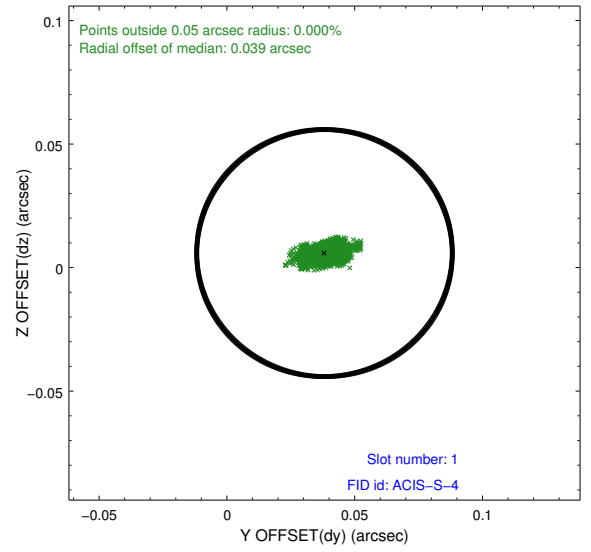
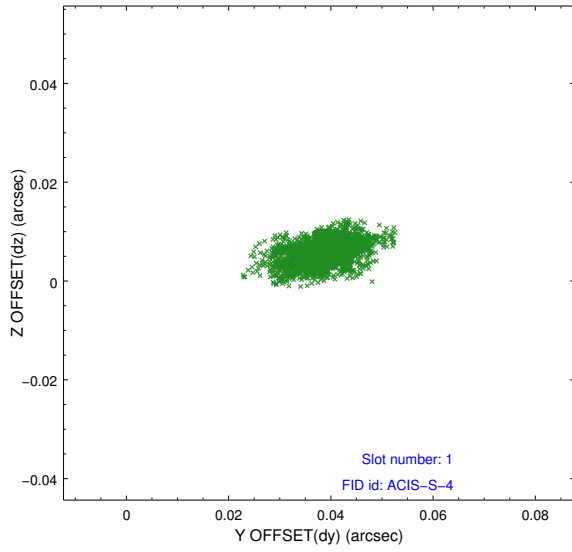


2.5 FID Slots

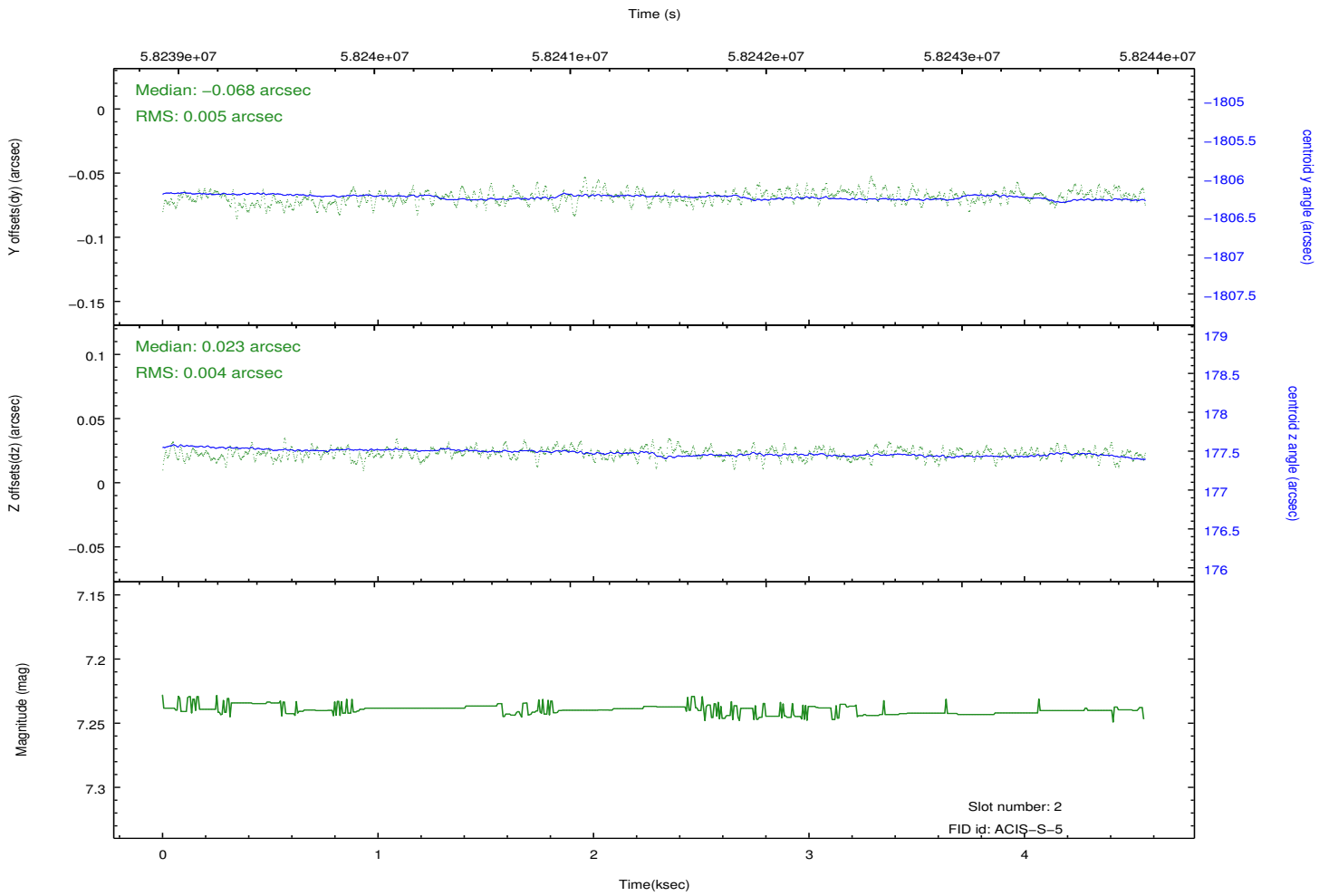
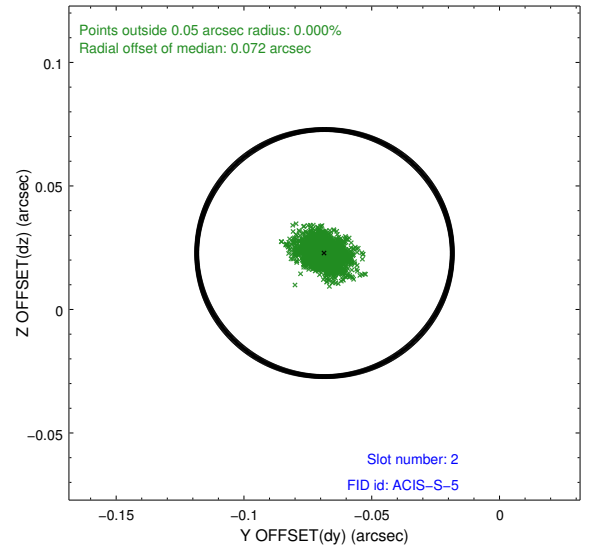
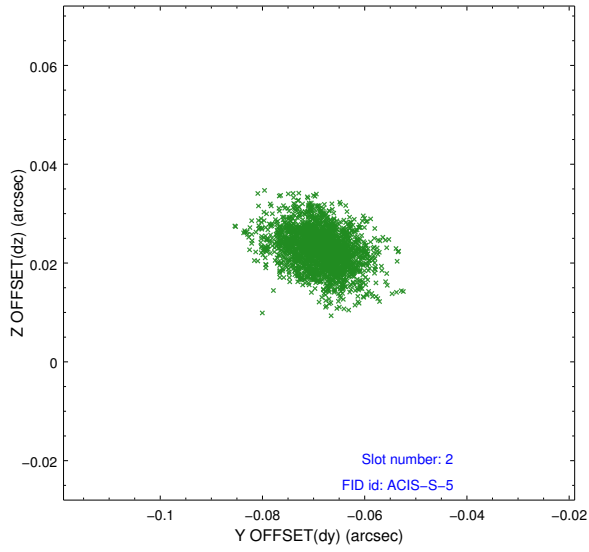
2.5.1 Slot 0



2.5.2 Slot 1



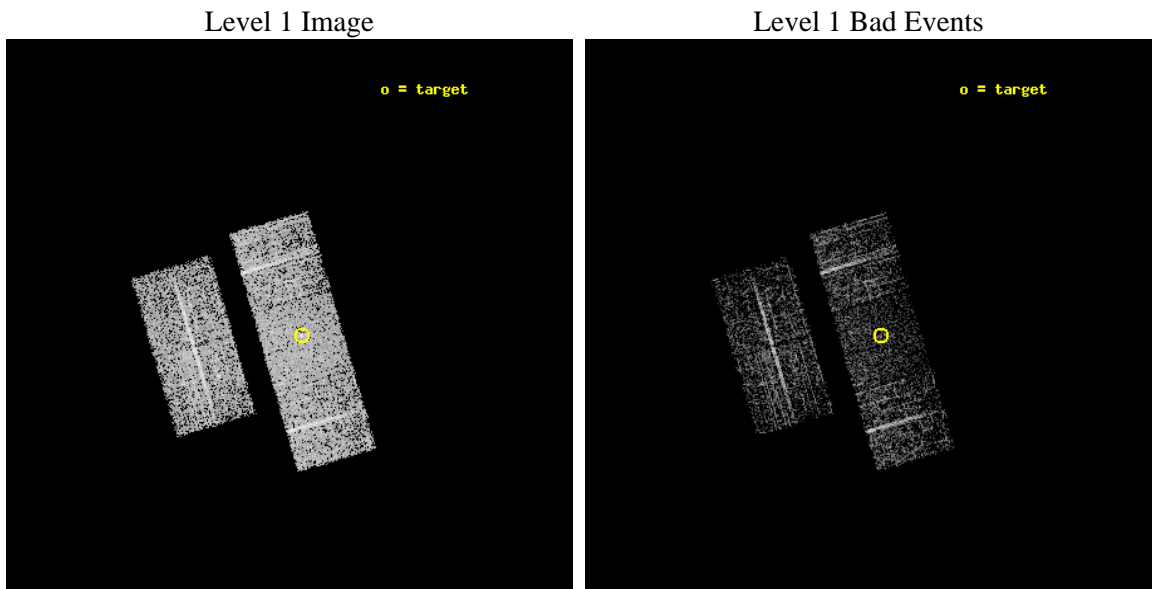
2.5.3 Slot 2



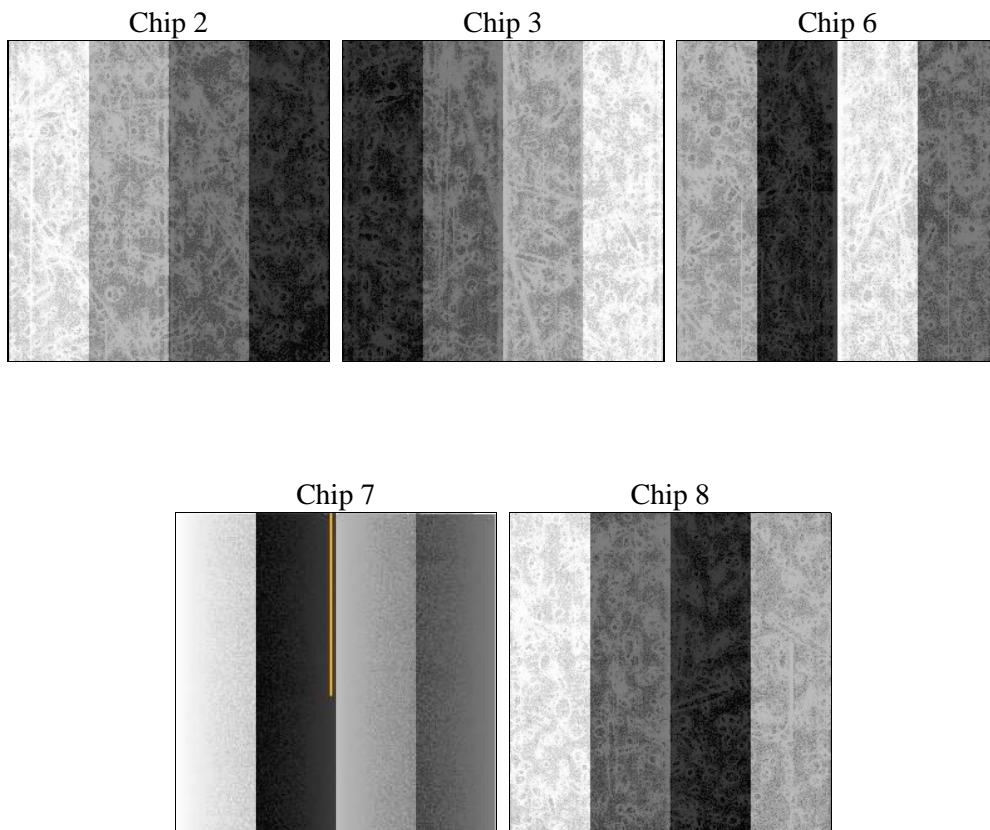
3 OBI

3.1 OBI

3.1.1 Images



3.1.2 Bias



3.1.3 Parameters

obi_num	2	Obi number	sched_exp_time	2200.000000	Scheduled observation exposure time
ascdsver	8.4	ASCDS version number	ontime	1365.2853030637	Sum of GTIs [s]
caldsver	4.4.4	 	ontime2	1365.2442630604	Sum of GTIs [s]
date	2011-07-07T21:07:08	Date and time of file creation	ontime3	1365.1621830612	Sum of GTIs [s]
revision	5	Processing version of data	ontime6	1365.2032230645	Sum of GTIs [s]
			ontime7	1365.2853030637	Sum of GTIs [s]
			ontime8	1365.1211430654	Sum of GTIs [s]
			l1events	61603	Number of level 1 events

3.1.4 Events

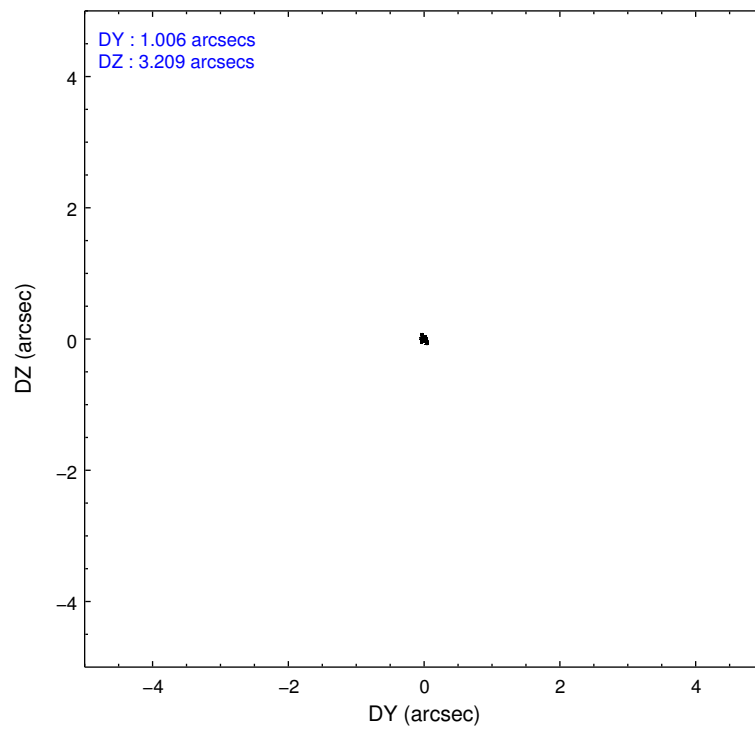
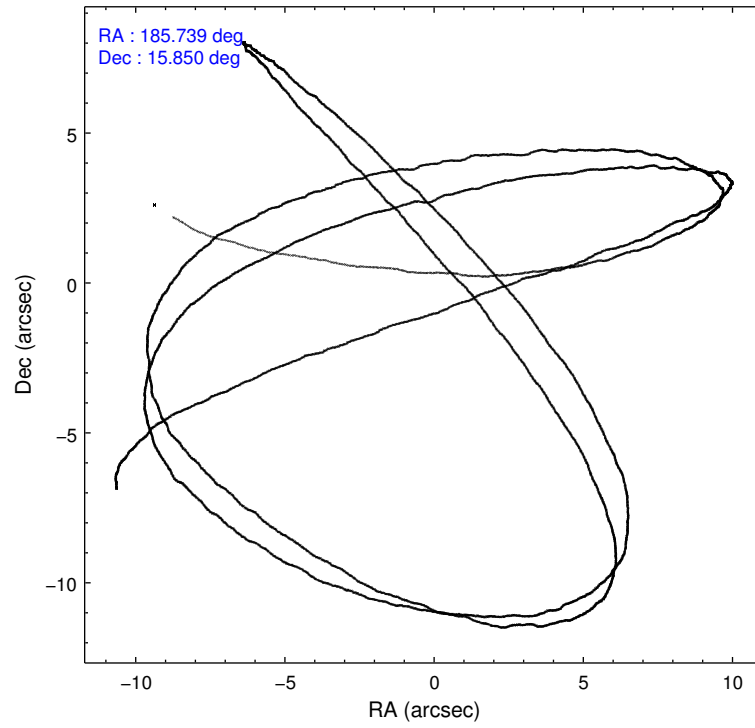
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
level 1 events	10551	12025	12437	12937	13653
rejected events	9533	10765	11289	7807	11427
rejected %	90%	89%	90%	60%	83%

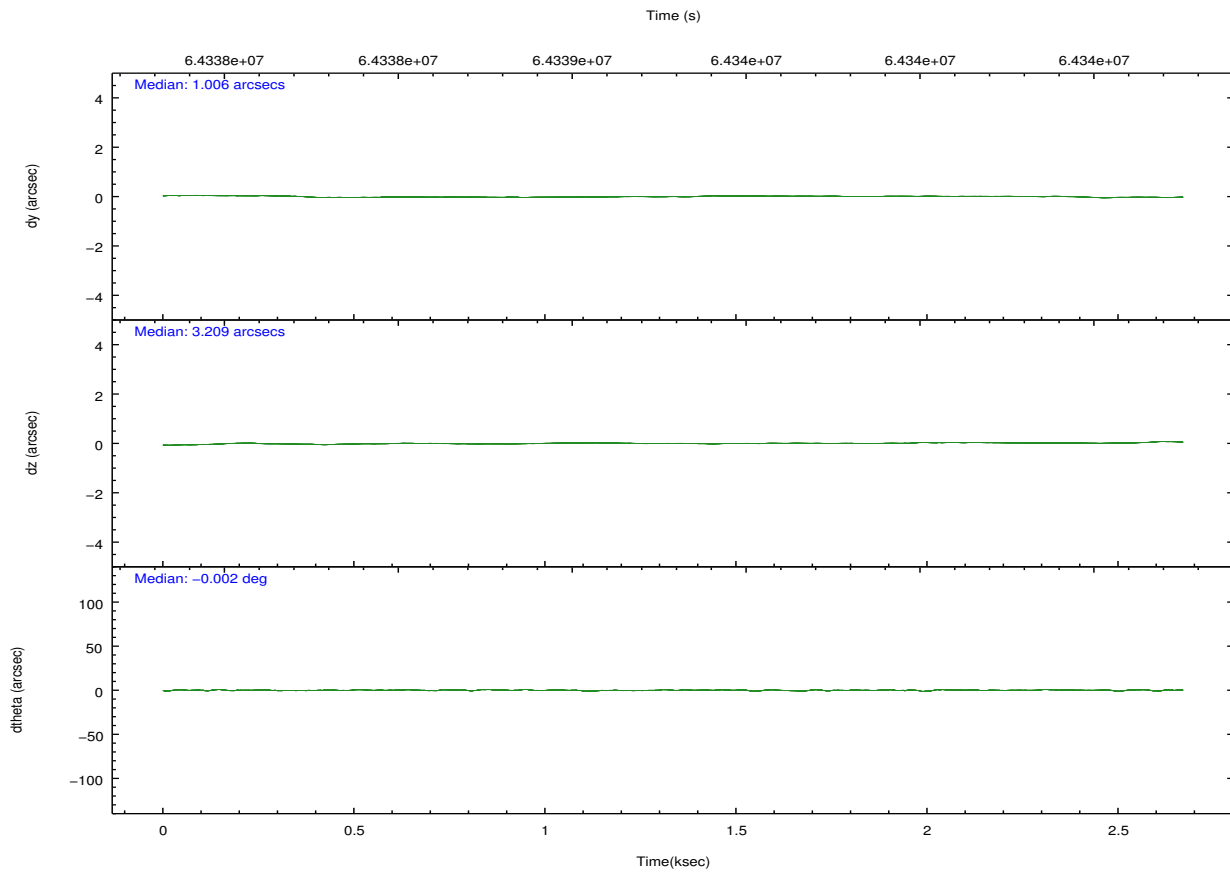
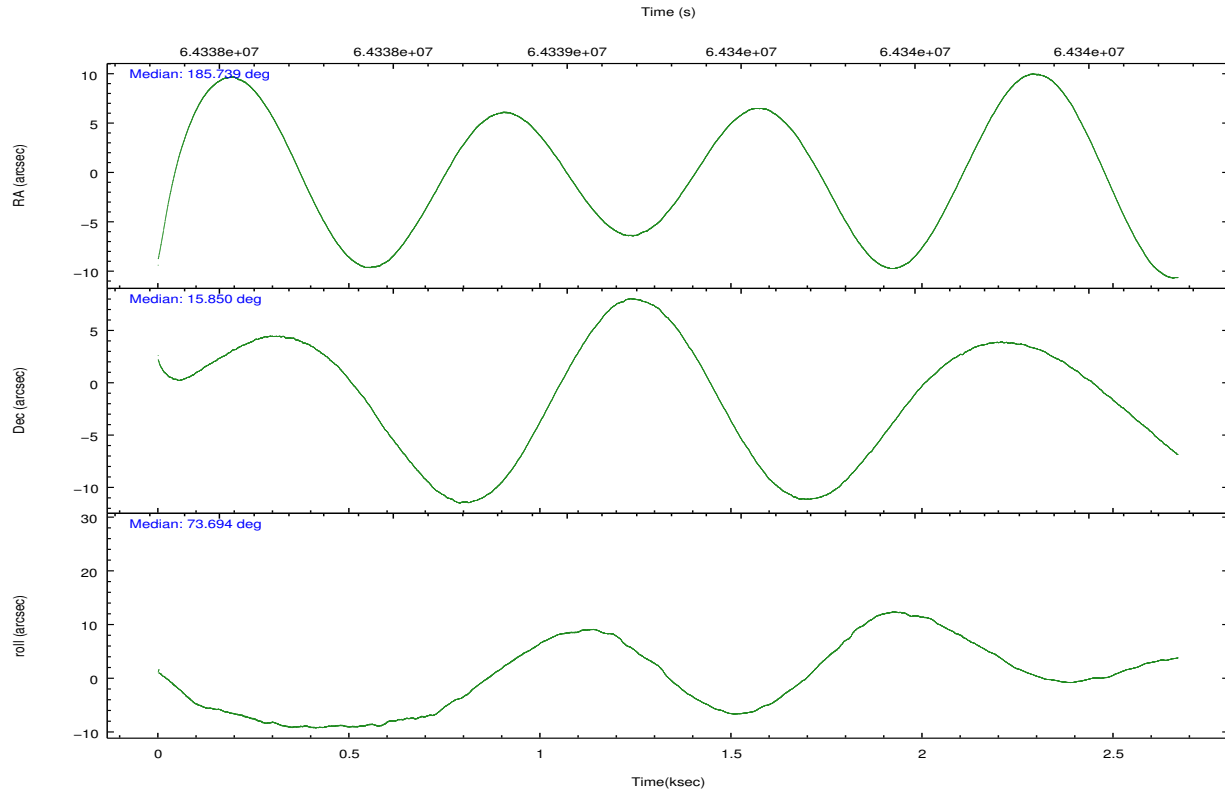
	ccd 2	ccd 3	ccd 6	ccd 7	ccd 8
grade 0 events	216	338	236	458	552
	2%	2%	1%	3%	4%
grade 1 events	4	1	3	7	3
	0%	0%	0%	0%	0%
grade 2 events	374	453	447	1165	729
	3%	3%	3%	9%	5%
grade 3 events	73	89	82	327	146
	0%	0%	0%	2%	1%
grade 4 events	74	76	77	293	157
	0%	0%	0%	2%	1%
grade 5 events	204	200	230	759	289
	1%	1%	1%	5%	2%
grade 6 events	284	310	316	2912	652
	2%	2%	2%	22%	4%
grade 7 events	9322	10558	11046	7016	11125
	88%	87%	88%	54%	81%

3.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
Detector	ACIS-23678	ACIS-23678	Obspar file type	PREDICTED	ACTUAL
Grating	NONE	NONE	Obspar update status	NONE	UPDATED
Data mode	FAINT	FAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
Pointing RA	185.745617	185.7389358803701	Subarray requested	NONE	NONE
Pointing Dec	15.823225	15.85015945790967	Alternating exposures requested	N	N
Pointing Roll	73.543124	73.70160565309732	Primary exposure time	0.000000	3.2
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-190.132523	-190.1400660498719			
SIM translation stage offset (mm)	0	0.00754346686406393			
Observation start time	64338427.184000	64337044.7563			
Observation start date	2000-01-15T15:46:03	2000-01-15T15:24:04			
Observation end time	64340627.184000	64341104.268947			
Observation end date	2000-01-15T16:22:43	2000-01-15T16:31:44			
Read mode	TIMED	TIMED			

3.3 Aspect



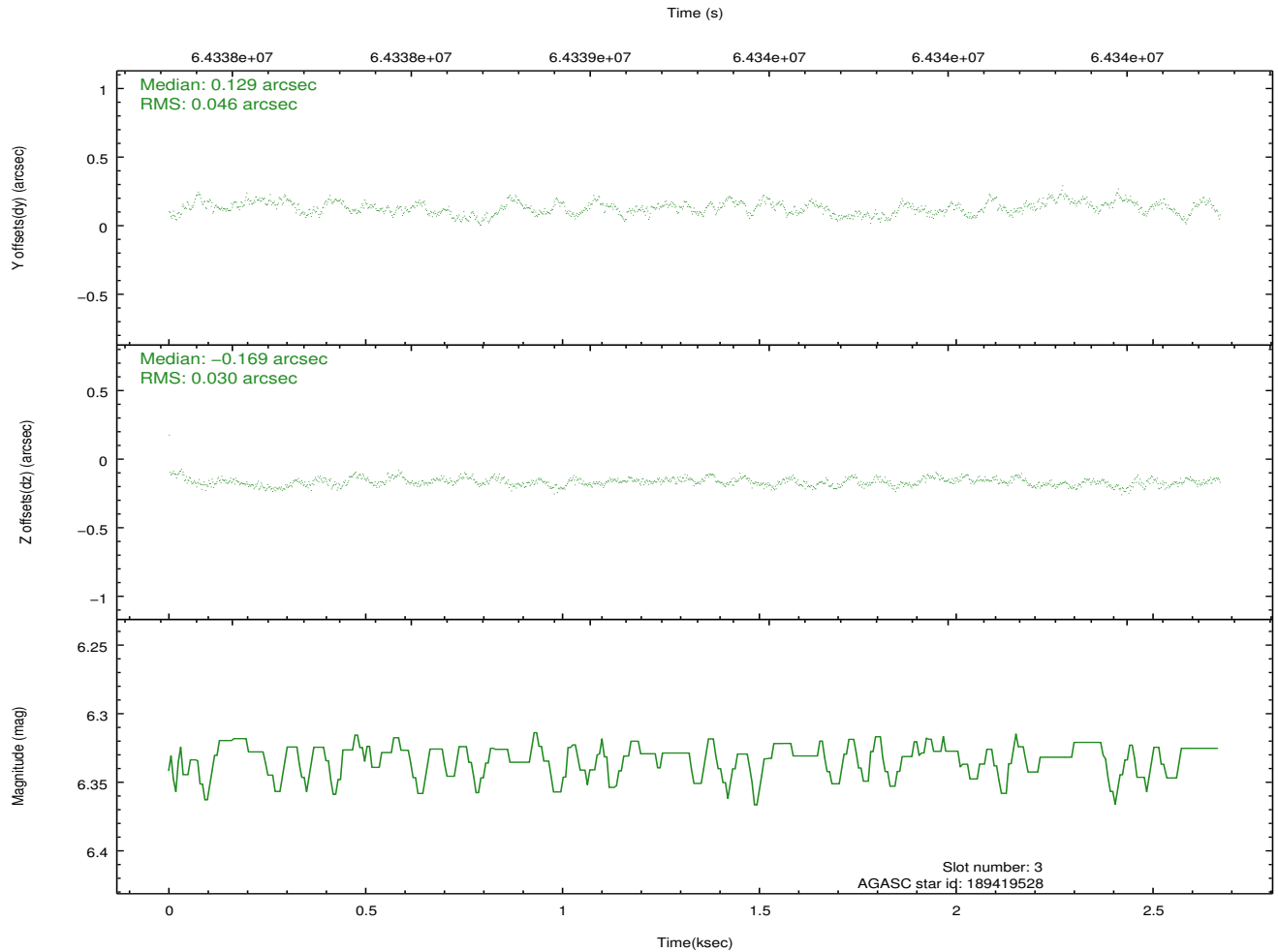
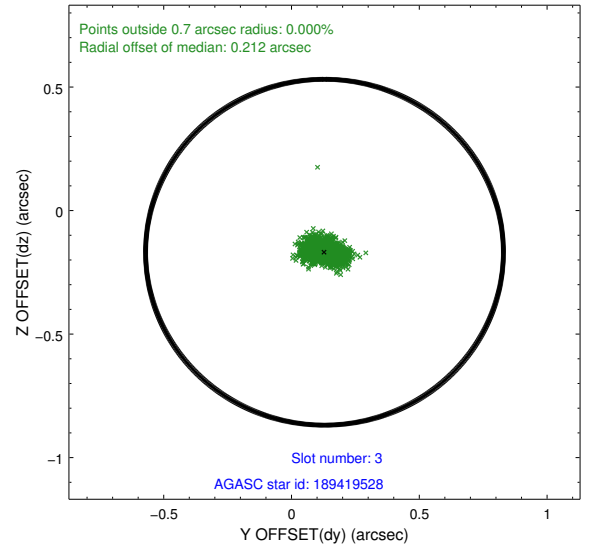
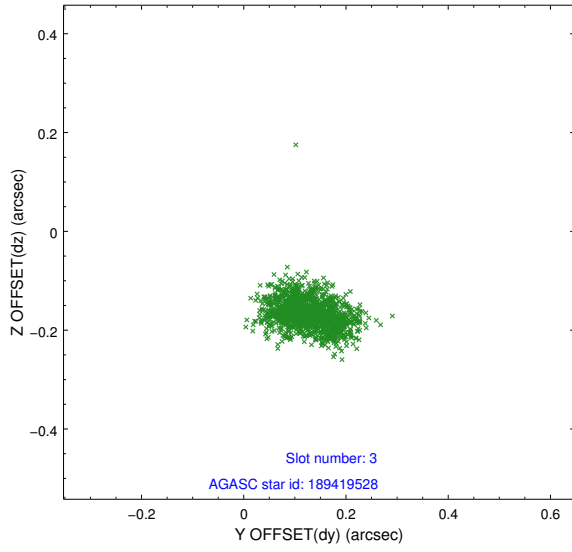


Slot Statistics

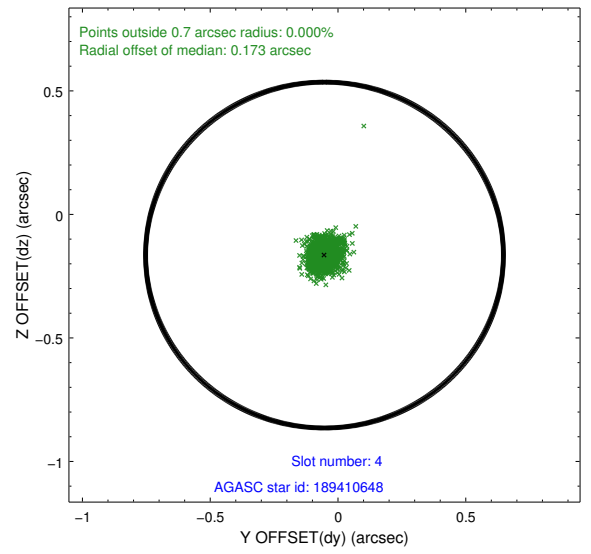
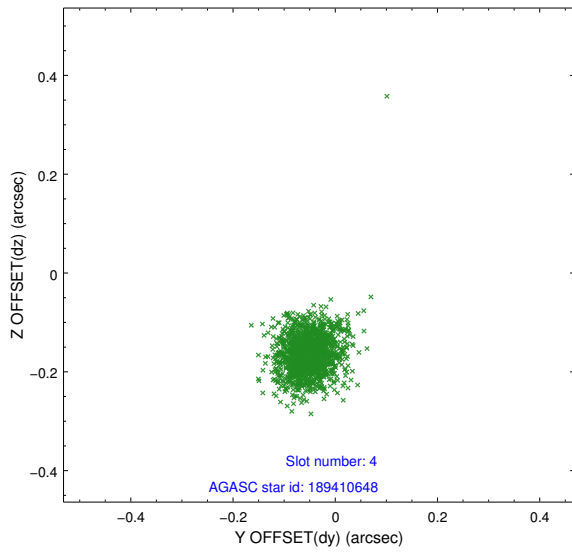
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	2225	-0.001	-0.020	0.007	0.011	0.000000	0.000000	-753.21	-1724.74
1	FID	ACIS-S-4	7.21	2225	0.038	0.006	0.005	0.010	0.000000	0.000000	2159.90	183.05
2	FID	ACIS-S-5	7.24	2224	-0.068	0.023	0.007	0.011	0.000000	0.000000	-1805.28	177.56
3	GUIDE	189419528	6.32	2225	0.104	-0.134	0.050	0.079	185.202988	15.540976	-1978.45	773.58
4	GUIDE	189414472	6.60	2225	-0.210	0.140	0.045	0.077	186.513657	15.863941	1874.29	-1896.44
5	GUIDE	189413016	8.15	2224	-0.208	0.097	0.057	0.094	186.364497	16.171398	2371.15	-781.26
6	GUIDE	189400120	8.19	2225	0.225	-0.143	0.065	0.111	185.025387	15.714800	-1904.69	1648.14
7	GUIDE	189419264	9.74	2223	0.093	0.040	0.087	0.140	185.669302	15.669954	-571.23	-145.87

3.4 Star Slots

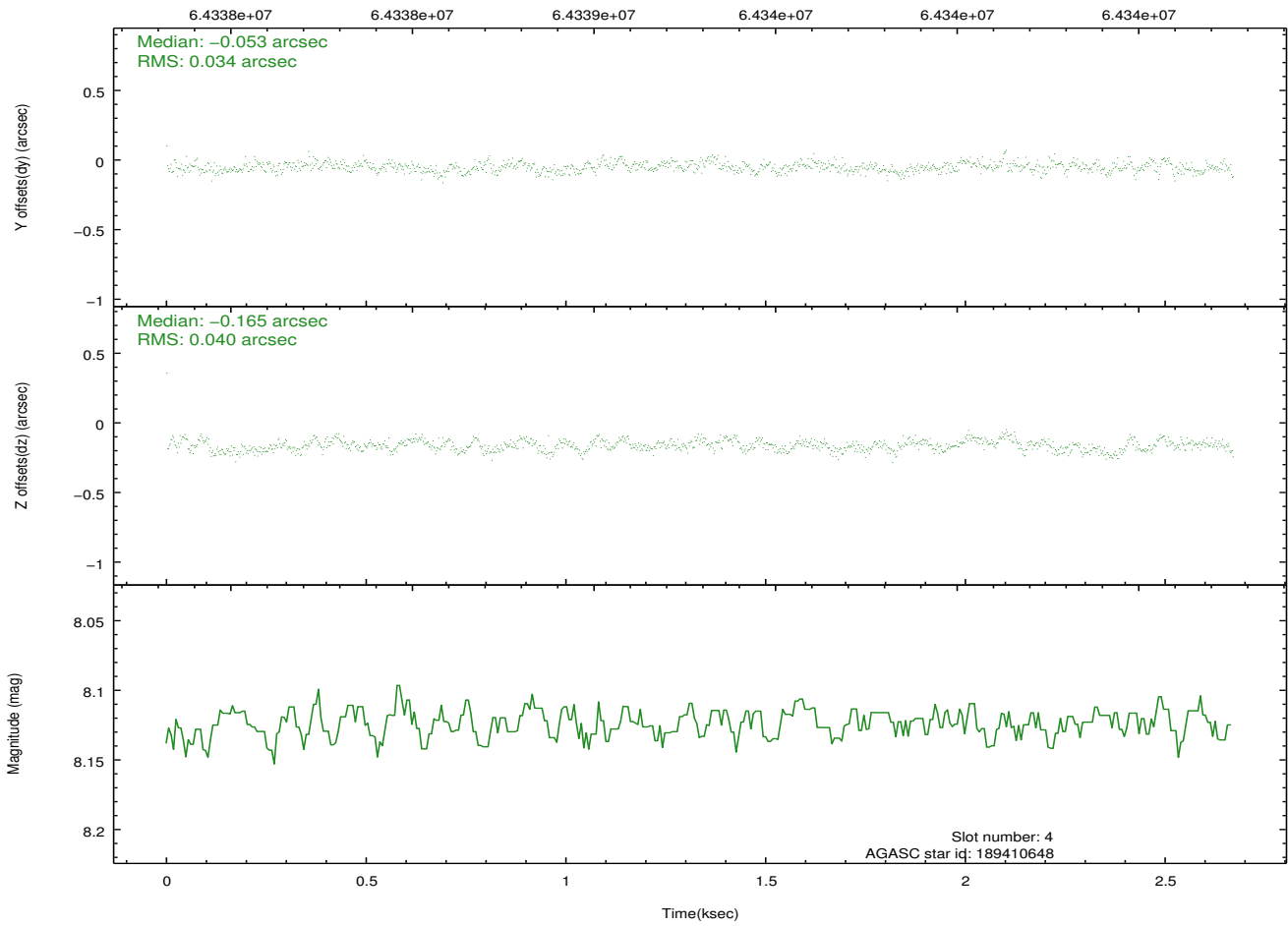
3.4.1 Slot 3



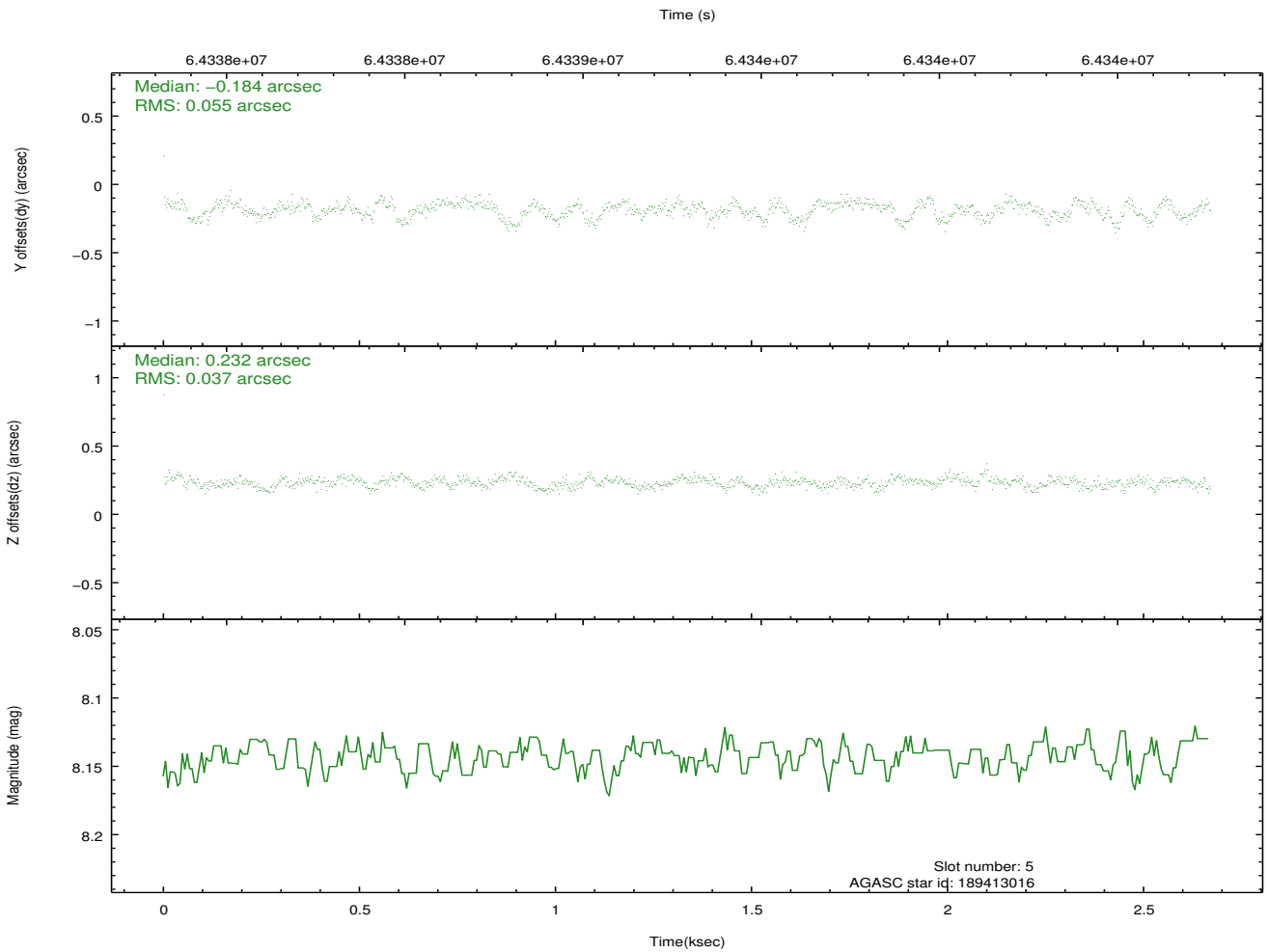
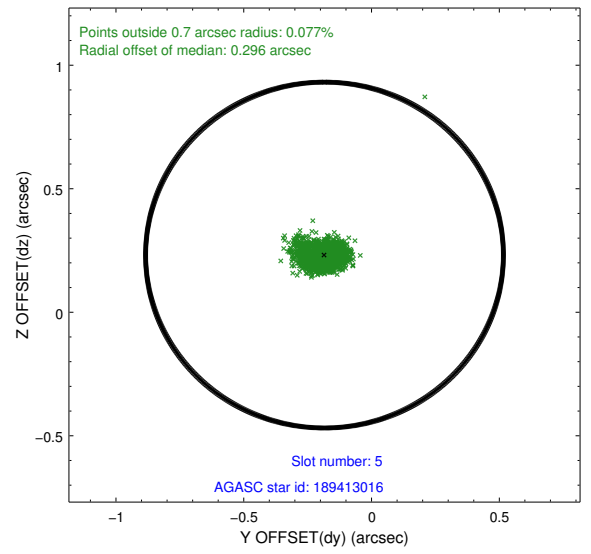
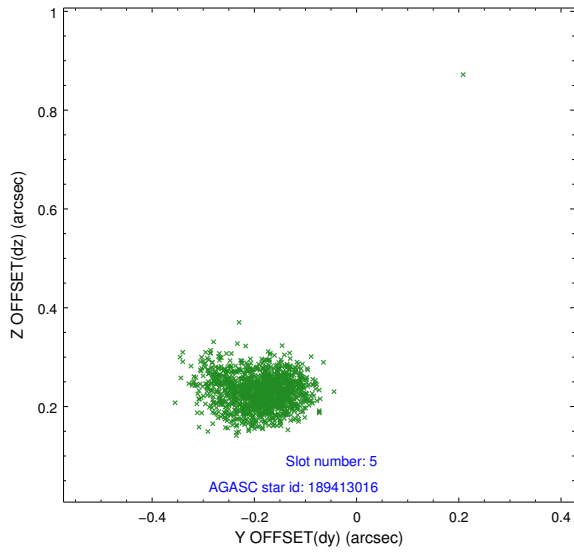
3.4.2 Slot 4



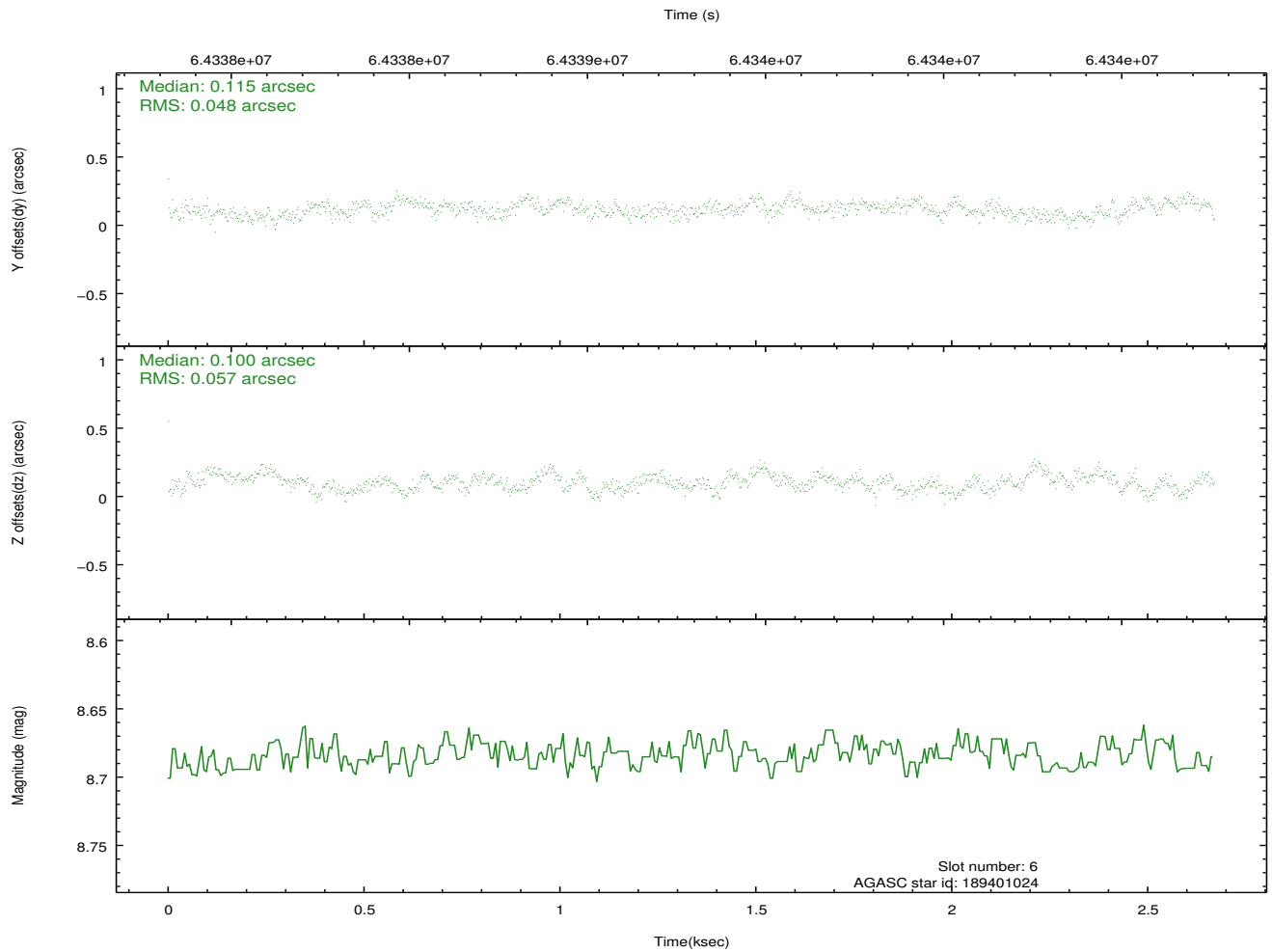
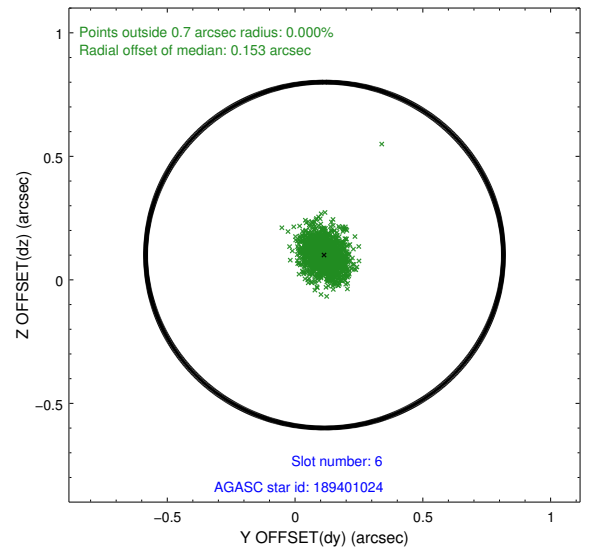
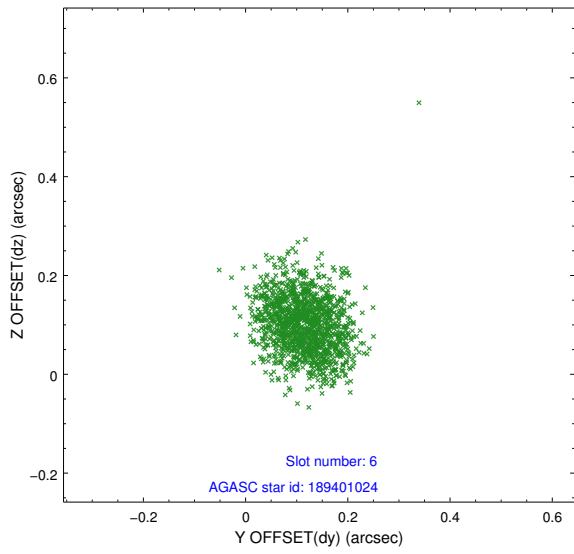
Time (s)



3.4.3 Slot 5

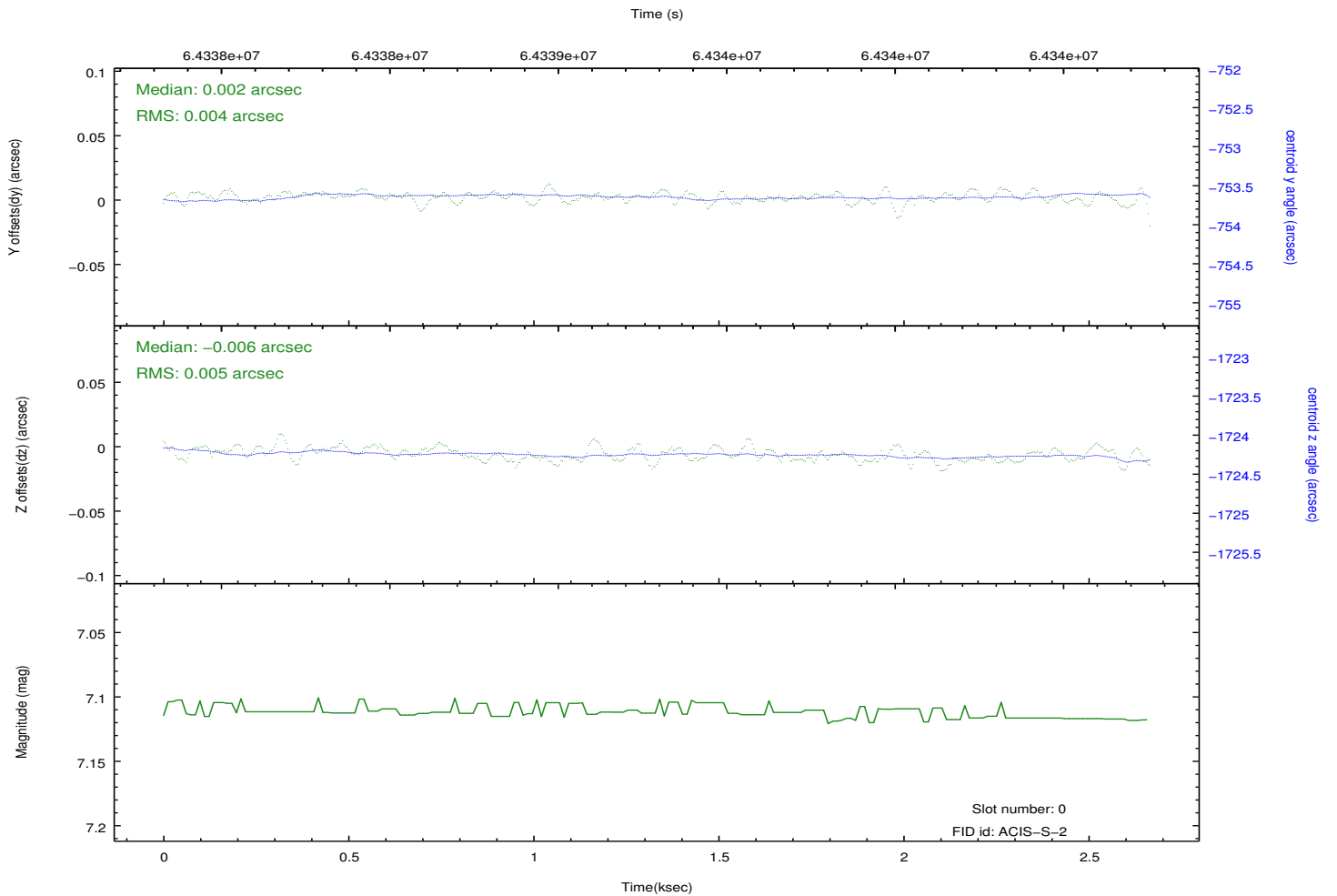
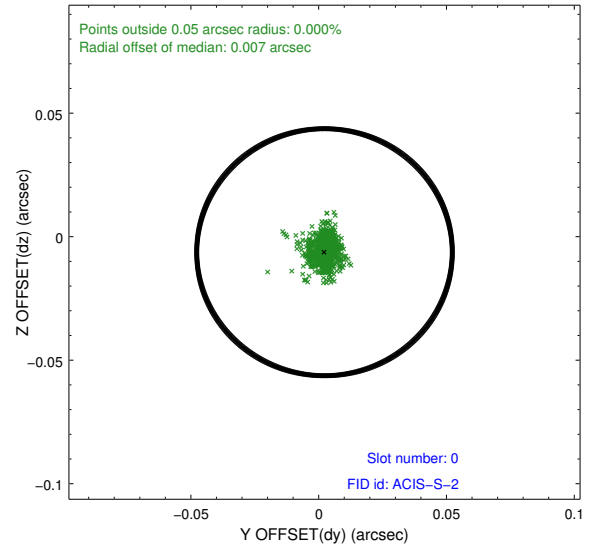
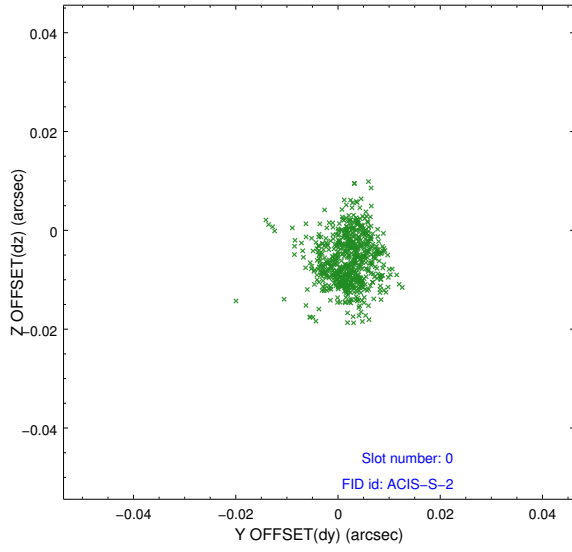


3.4.4 Slot 6

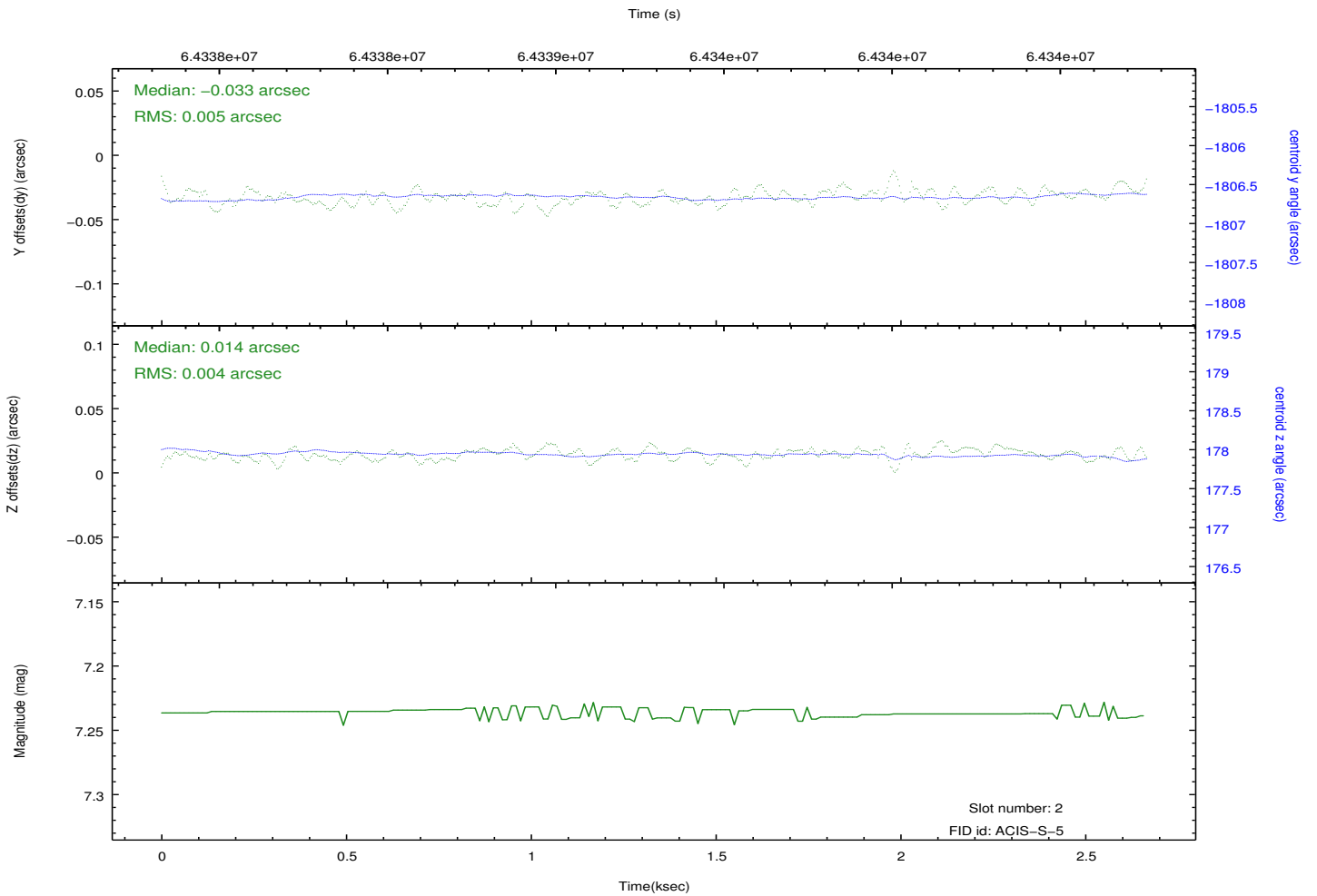
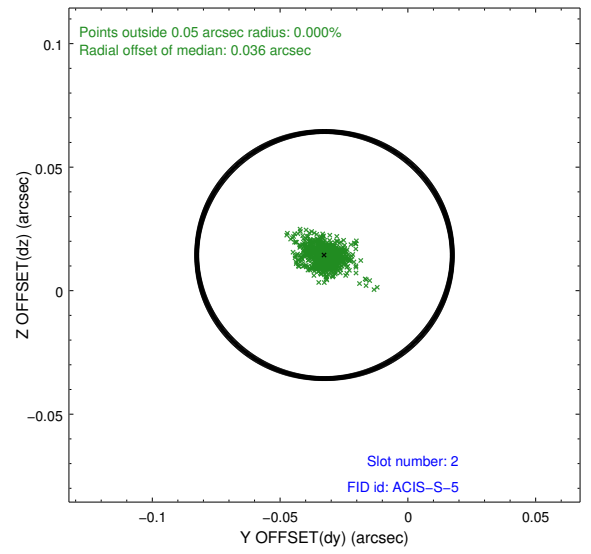
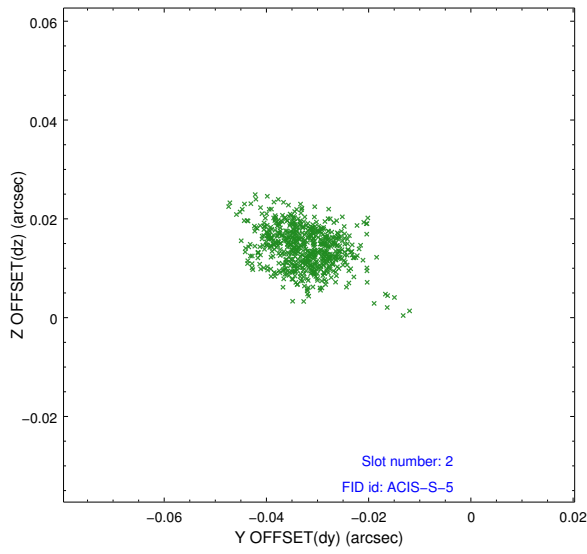


3.5 FID Slots

3.5.1 Slot 0



3.5.3 Slot 2



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2011.07.21
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	2.531

A.2 Comments

WARNING: Number of OBCENG gradient values is less than the smoothing window size.

Periscope correction gradient data will not be smoothed.===

The issue of not smoothing the OBC periscope gradient data for short observations is not critical and can be handled by the DS8.4.1 patch.

The

consequence of this will be that some short (< ~5 ksec) observations will

show a discrete 0.04 arcsec jump in the aspect solution DY / DZ values when the corresponding periscope gradient telemetry makes a one-bit shift.

There are very few types of observation where this could be detected in

X-ray data, perhaps an HRC observation of a very bright source.

Reprocessing post-8.4.1 would correct the issue.

===

The guide star in slot 7 for obi=2 was removed from the aspect solution due

to poor data quality. Different guide stars were used for obi=1 and obi=2.

Obi=1 uses all five guide stars in the aspect solution while obi=2 uses four stars.