

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 11960 - L2 Version 4
Chandra X-Ray Center

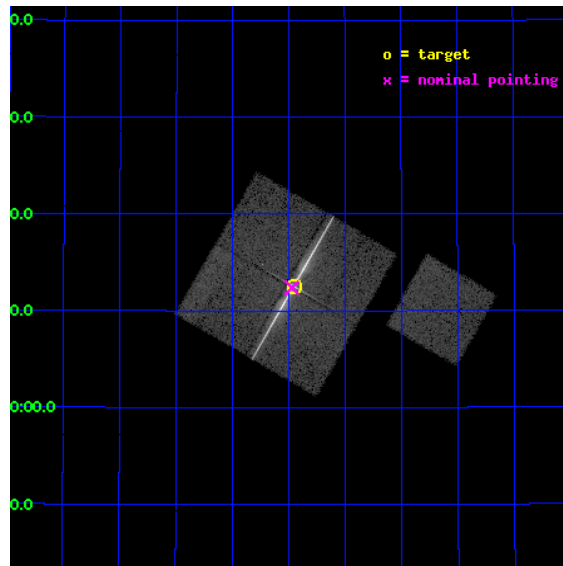
L2 Processing Date : Jul 23 2012

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1 Front

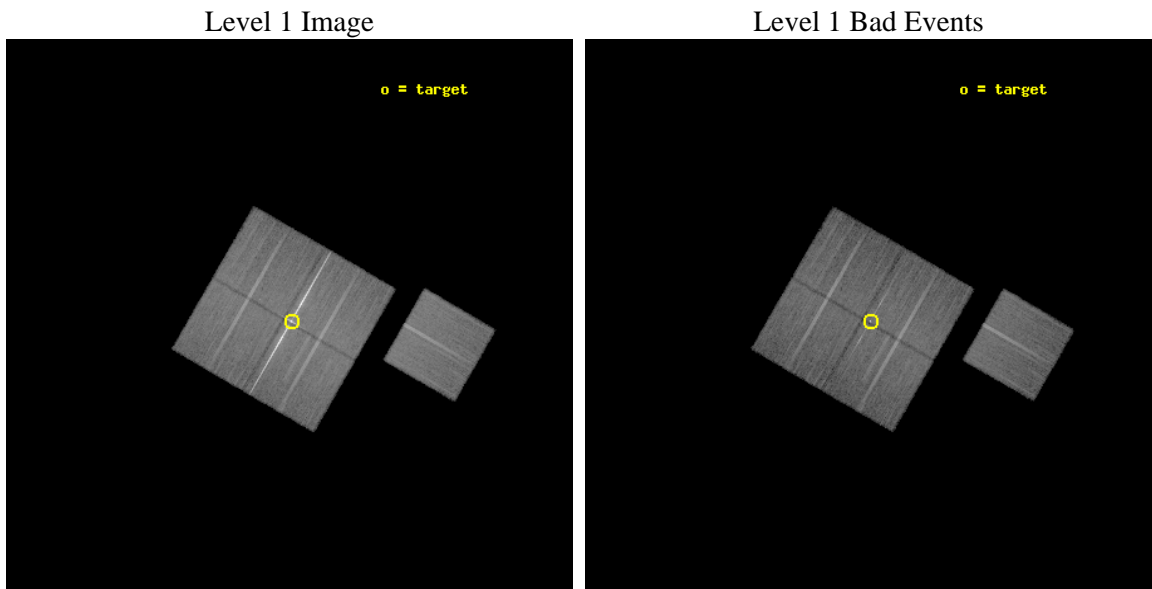
seq_num	790209	Sequence number
obs_id	11960	Observation id
title	AO-11 Calibration Observations of MKN 421	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	MKN421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.11771898361	Nominal RA [deg]
dec_nom	38.206238830239	Nominal Dec [deg]
roll_nom	120.07006908058	Nominal Roll [deg]
revision	4	Processing version of data
ontime	20125.159164488	Sum of GTIs [s]
livetime	19862.209144078	Livetime [s]
ontime0	20128.300154805	Sum of GTIs [s]
ontime1	20128.300154805	Sum of GTIs [s]
ontime2	20125.159144461	Sum of GTIs [s]
ontime3	20125.159164488	Sum of GTIs [s]
ontime6	20128.300154805	Sum of GTIs [s]
l2events	231787	Number of level 2 events



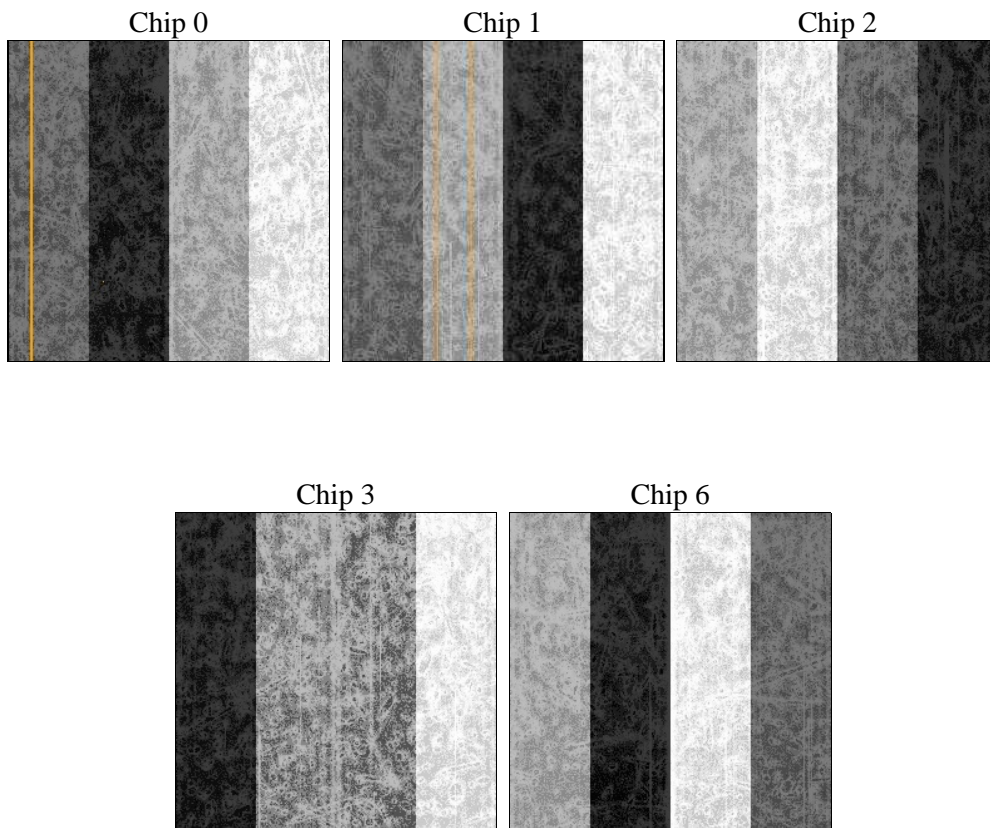
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	20000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	20125.159164488	Sum of GTIs [s]
caldbver	4.4.10	 	ontime0	20128.300154805	Sum of GTIs [s]
date	2012-06-20T13:51:11	Date and time of file creation	ontime1	20128.300154805	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	20125.159144461	Sum of GTIs [s]
			ontime3	20125.159164488	Sum of GTIs [s]
			ontime6	20128.300154805	Sum of GTIs [s]
			l1events	994349	Number of level 1 events

2.1.4 Events

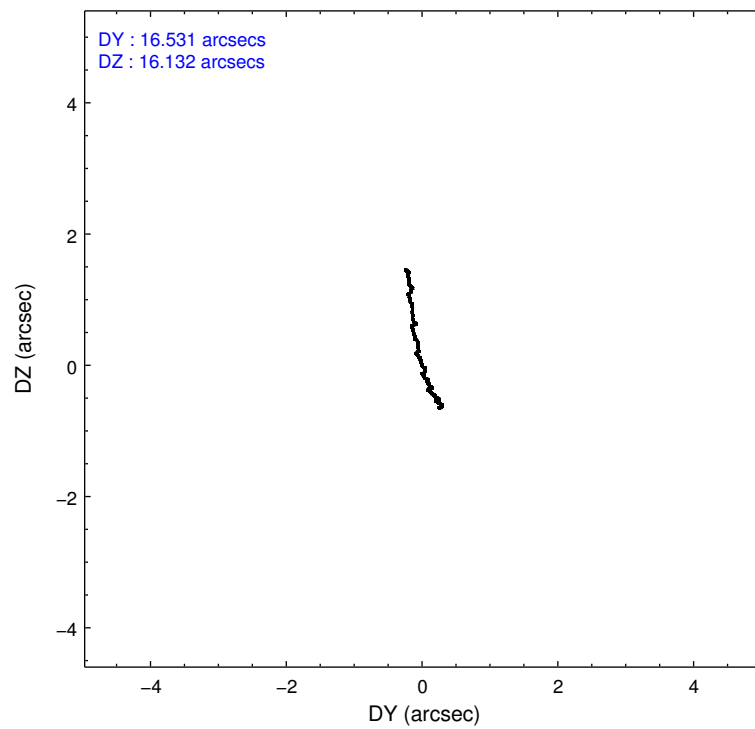
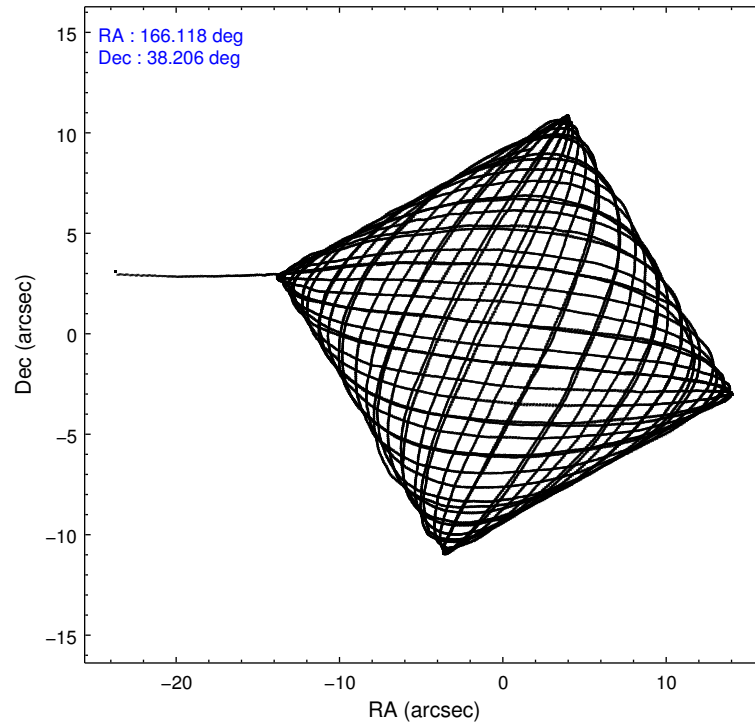
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	159338	163096	262922	239640	169353
rejected events	139884	142302	161949	150987	151540
rejected %	87%	87%	61%	63%	89%

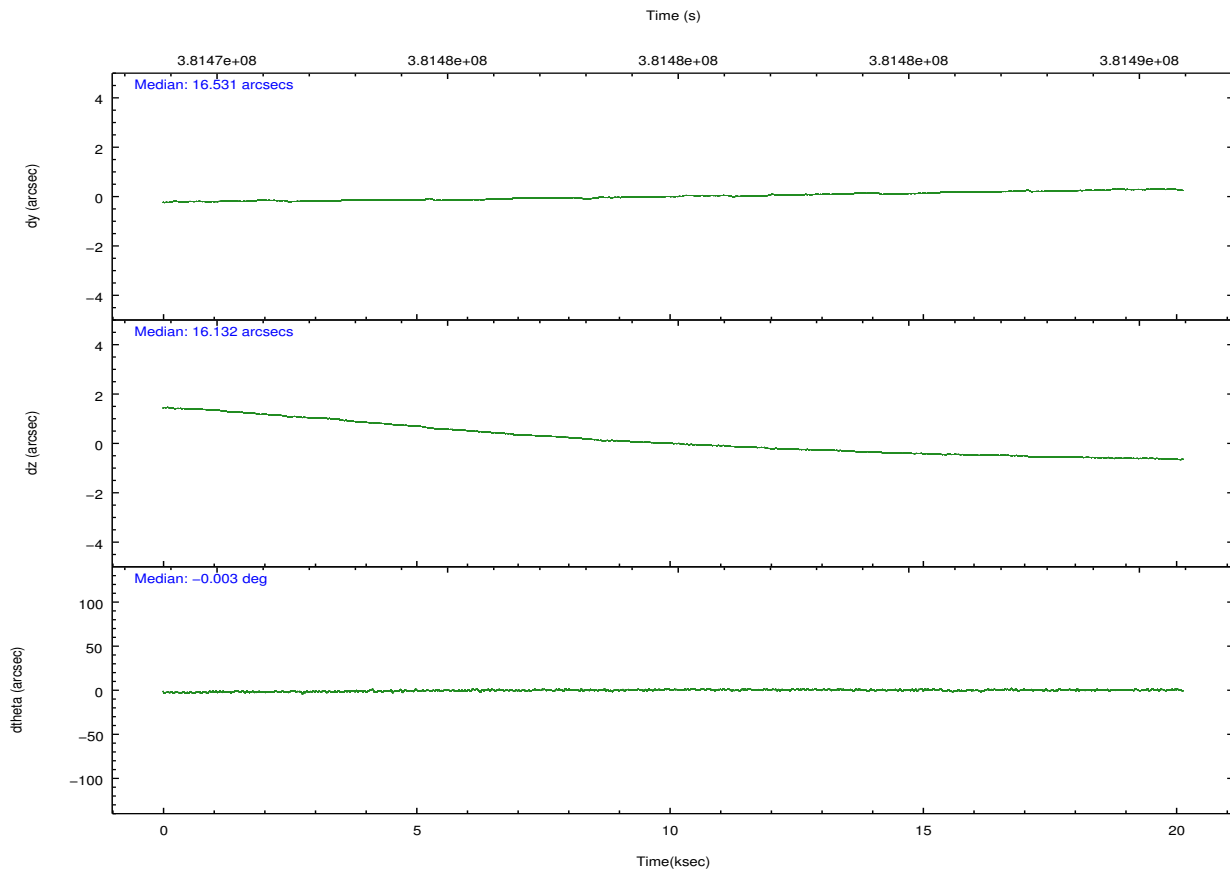
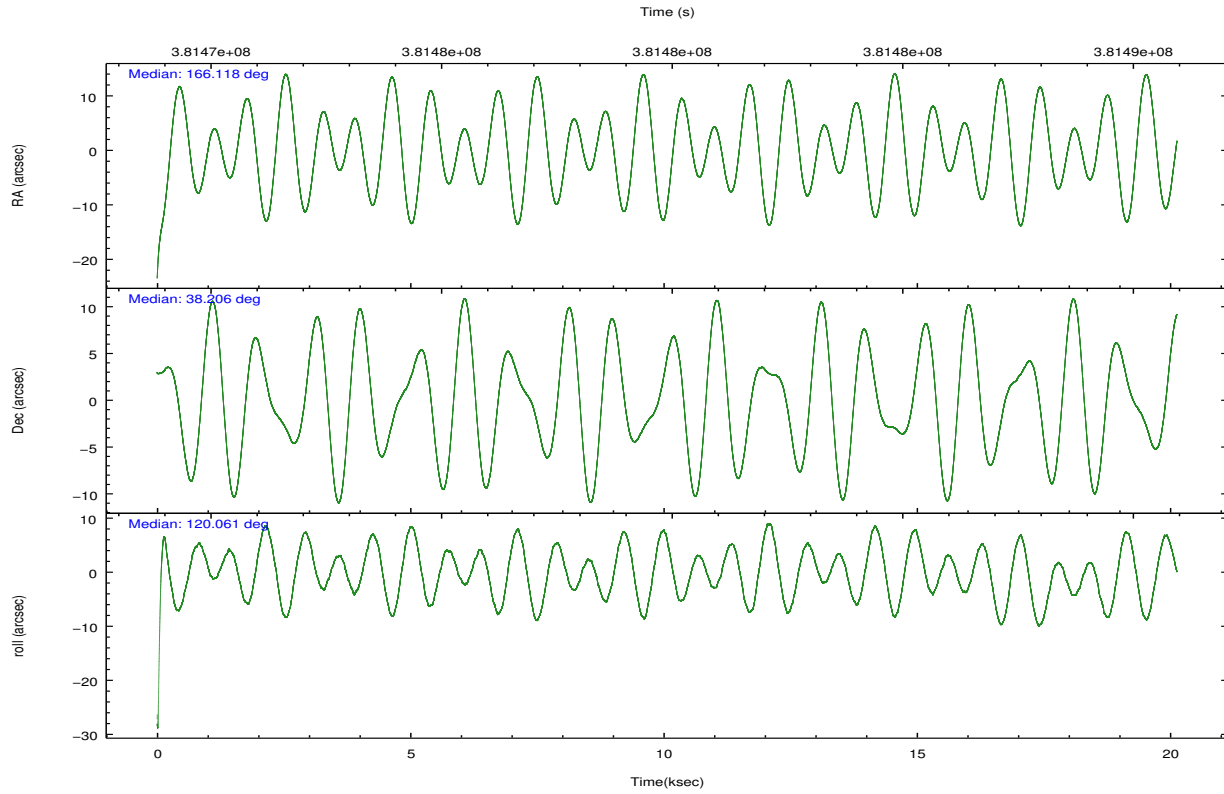
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	7467	7970	74665	65618	6150
	4%	4%	28%	27%	3%
grade 1 events	109	88	1570	986	100
	0%	0%	0%	0%	0%
grade 2 events	4607	4881	12694	10977	4054
	2%	2%	4%	4%	2%
grade 3 events	2075	2123	4526	4078	1919
	1%	1%	1%	1%	1%
grade 4 events	1921	2108	4483	4127	1927
	1%	1%	1%	1%	1%
grade 5 events	6607	7139	7501	8026	7309
	4%	4%	2%	3%	4%
grade 6 events	3590	3942	5552	5120	3929
	2%	2%	2%	2%	2%
grade 7 events	132962	134845	151931	140708	143965
	83%	82%	57%	58%	85%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-01236	ACIS-01236	Obspar file type	PREDICTED	ACTUAL
Grating	LETG	LETG	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
[deg] Pointing RA	166.148149	166.1177189836136	Subarray requested	NONE	NONE
[deg] Pointing Dec	38.192604	38.20623883023924	Alternating exposures requested	N	N
[deg] Pointing Roll	119.842592	120.0700690805836	[s] Primary exposure time	0.000000	3.1
[s] Window start time (MET)	378691266.184000	378691266.184000			
[s] Window stop time (MET)	383702466.184000	383702466.184000			
[mm] SIM focus pos	-0.782348	-0.7809083437167272			
[mm] SIM defocus	0	0.001439871863259334			
[mm] SIM translation stage pos	-233.592463	-233.5874344608287			
[mm] SIM translation stage offset	0	-0.005018542100998502			
[s] Observation start time (MET)	381469949.184000	381468736.13976			
Observation start date	2010-02-02T03:51:23	2010-02-02T03:32:16			
[s] Observation end time (MET)	381489949.184000	381490920.72839			
Observation end date	2010-02-02T09:24:43	2010-02-02T09:42:00			
Read mode	TIMED	TIMED			

2.3 Aspect



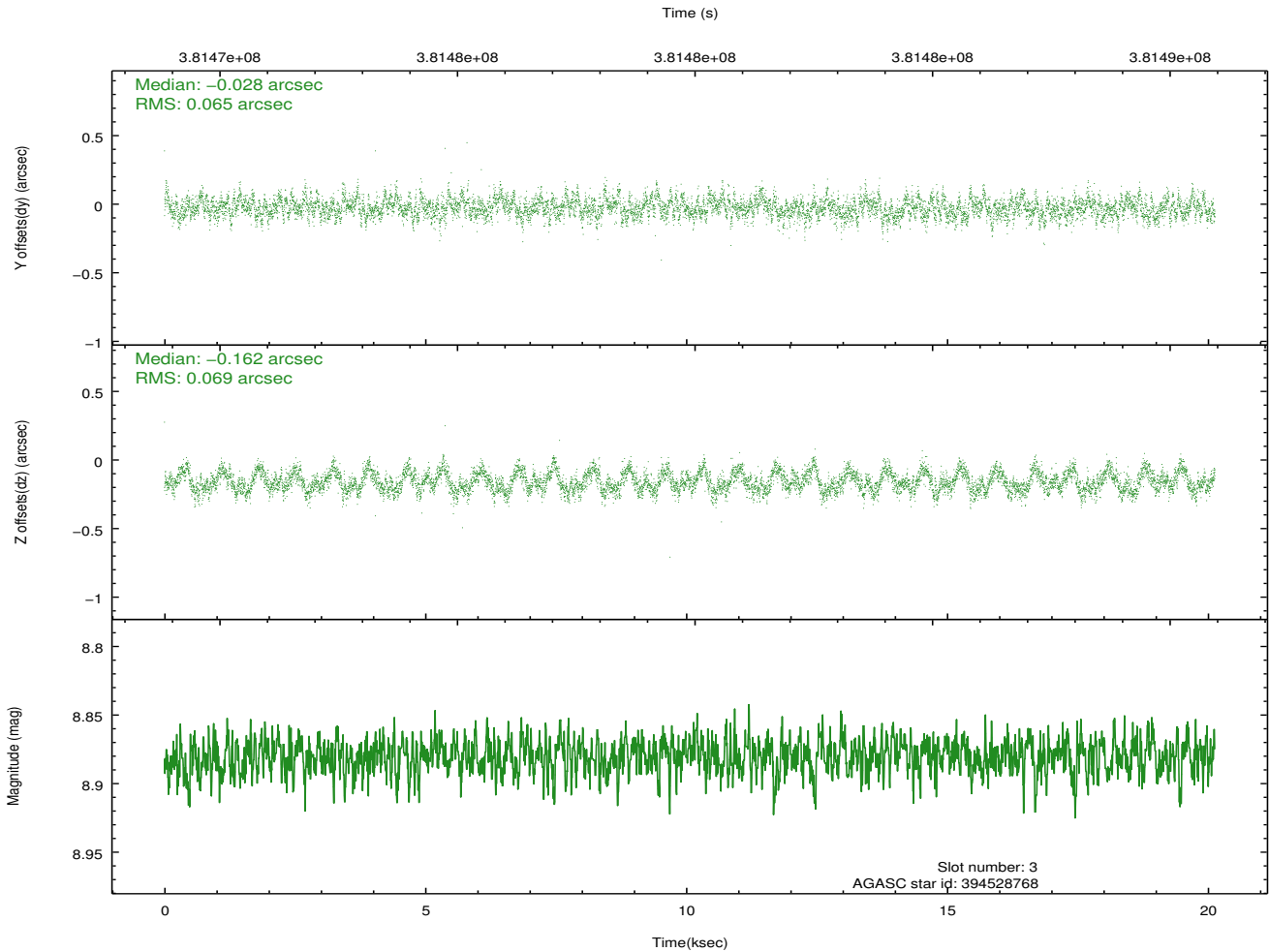
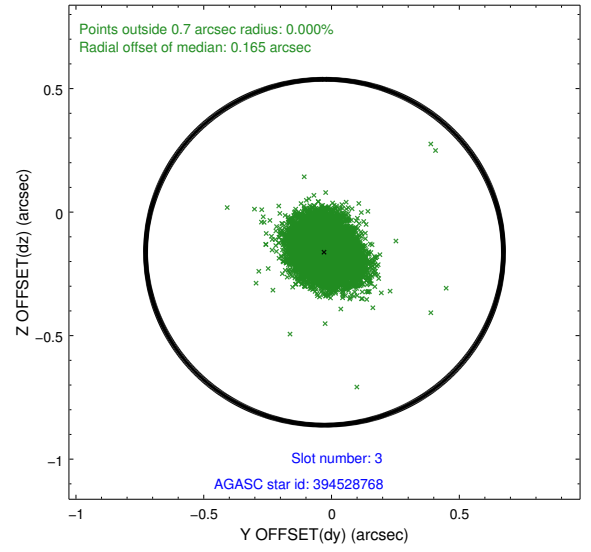
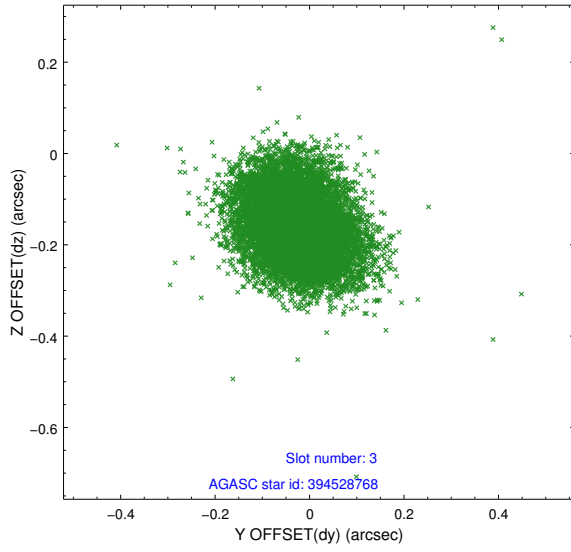


Slot Statistics

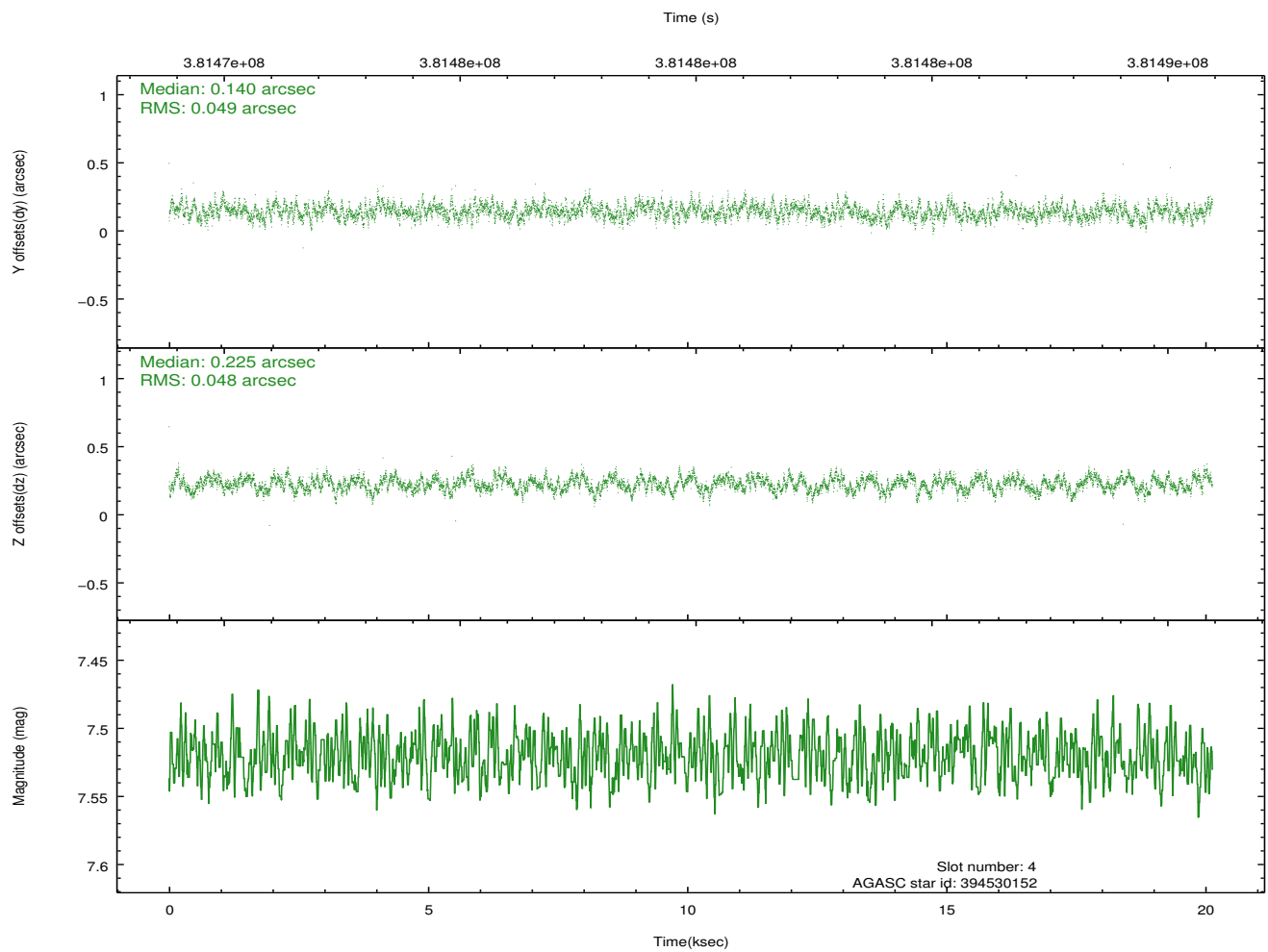
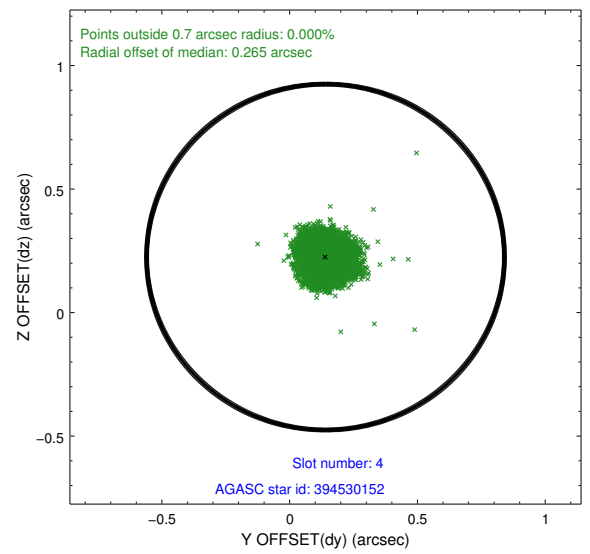
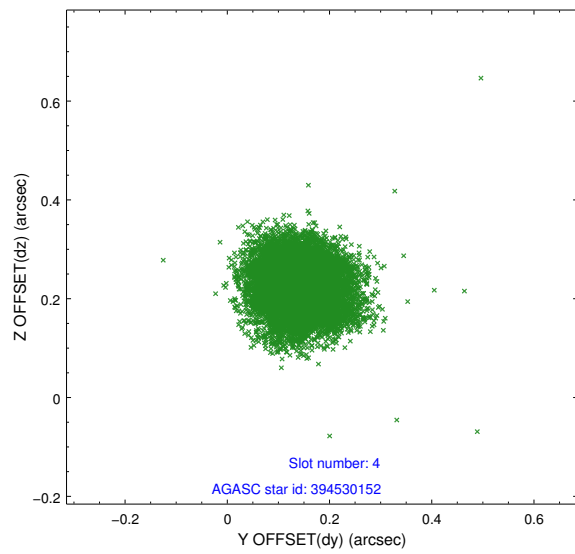
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-2	6.94	4911	-0.080	-0.084	0.024	0.036	0.000000	0.000000	-771.36	-846.38
1	FID	ACIS-I-4	6.95	4911	0.180	0.072	0.012	0.018	0.000000	0.000000	2142.83	1059.91
2	FID	ACIS-I-5	7.01	4910	-0.199	0.081	0.018	0.026	0.000000	0.000000	-1825.11	1057.90
3	GUIDE	394528768	8.88	9815	-0.028	-0.162	0.101	0.162	166.180365	38.952248	2327.54	-1438.89
4	GUIDE	394530152	7.52	9813	0.140	0.225	0.074	0.115	166.075805	38.868252	2211.48	-1034.25
5	GUIDE	394533744	8.89	9816	-0.252	-0.101	0.093	0.151	167.094985	37.988717	-1961.19	-1972.42
6	GUIDE	394533848	8.74	9817	0.184	0.041	0.075	0.122	166.382906	38.276007	-66.50	-722.95
7	GUIDE	394546712	6.60	9821	-0.045	-0.013	0.061	0.095	166.451462	38.394357	205.87	-1103.86

2.4 Star Slots

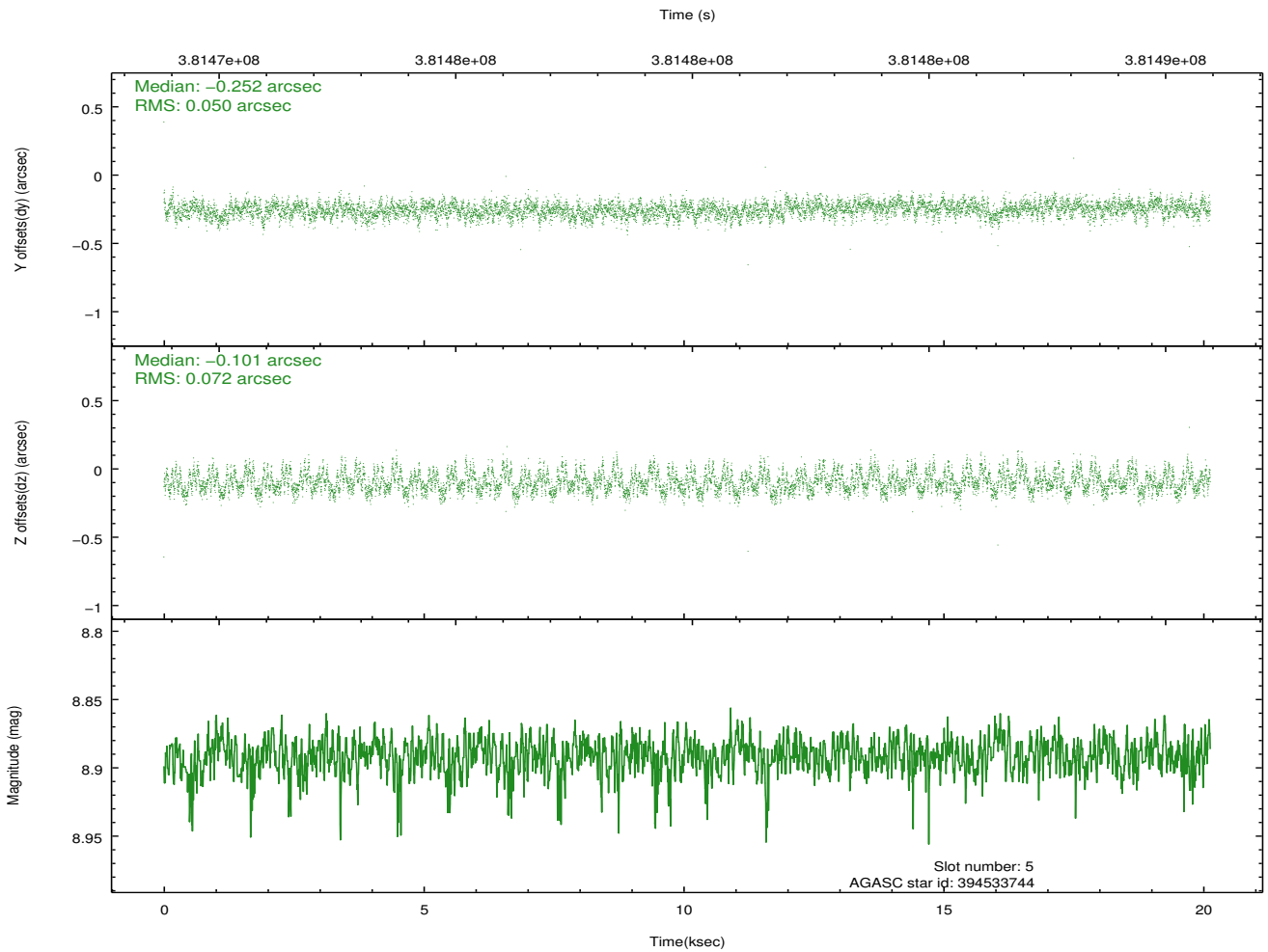
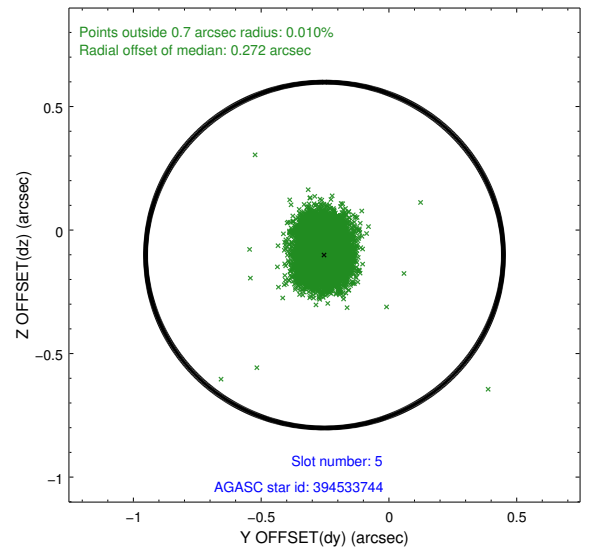
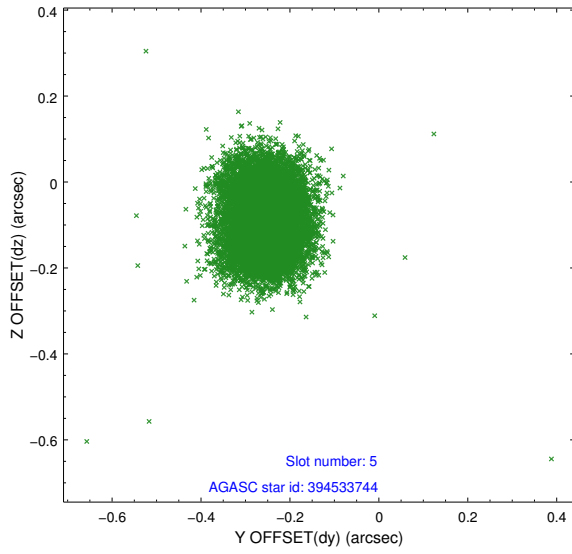
2.4.1 Slot 3



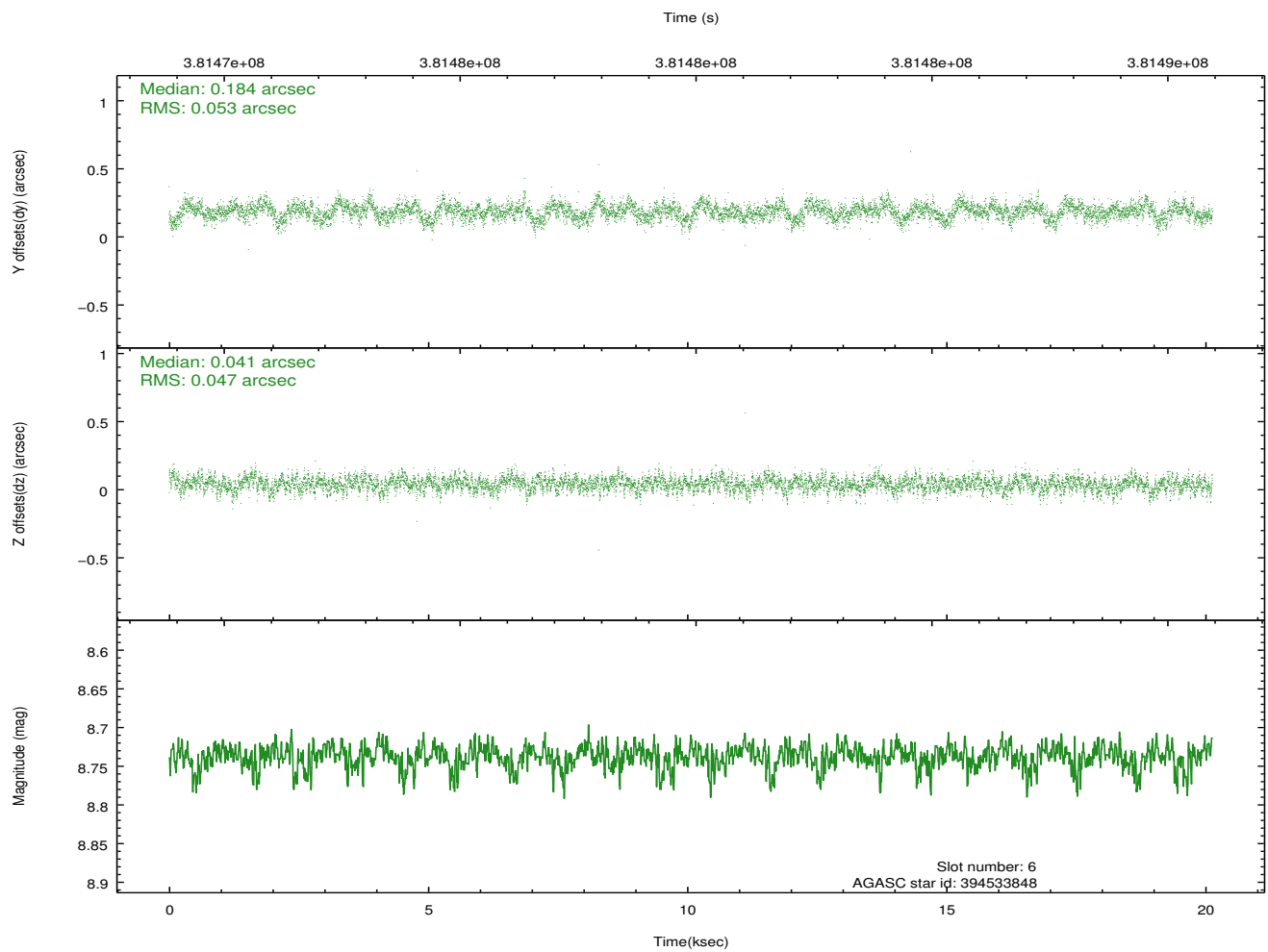
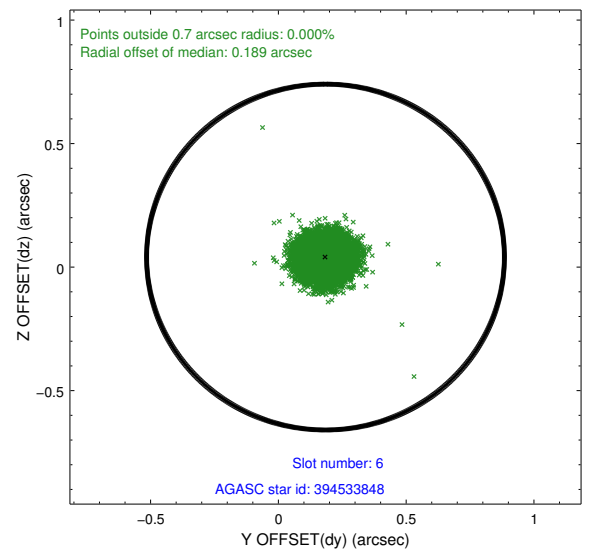
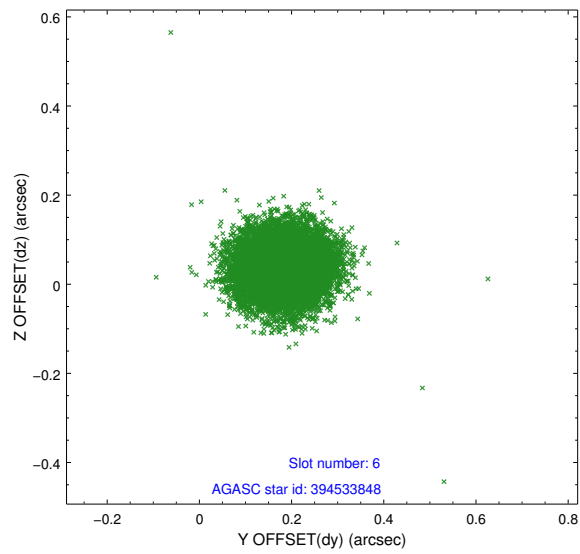
2.4.2 Slot 4



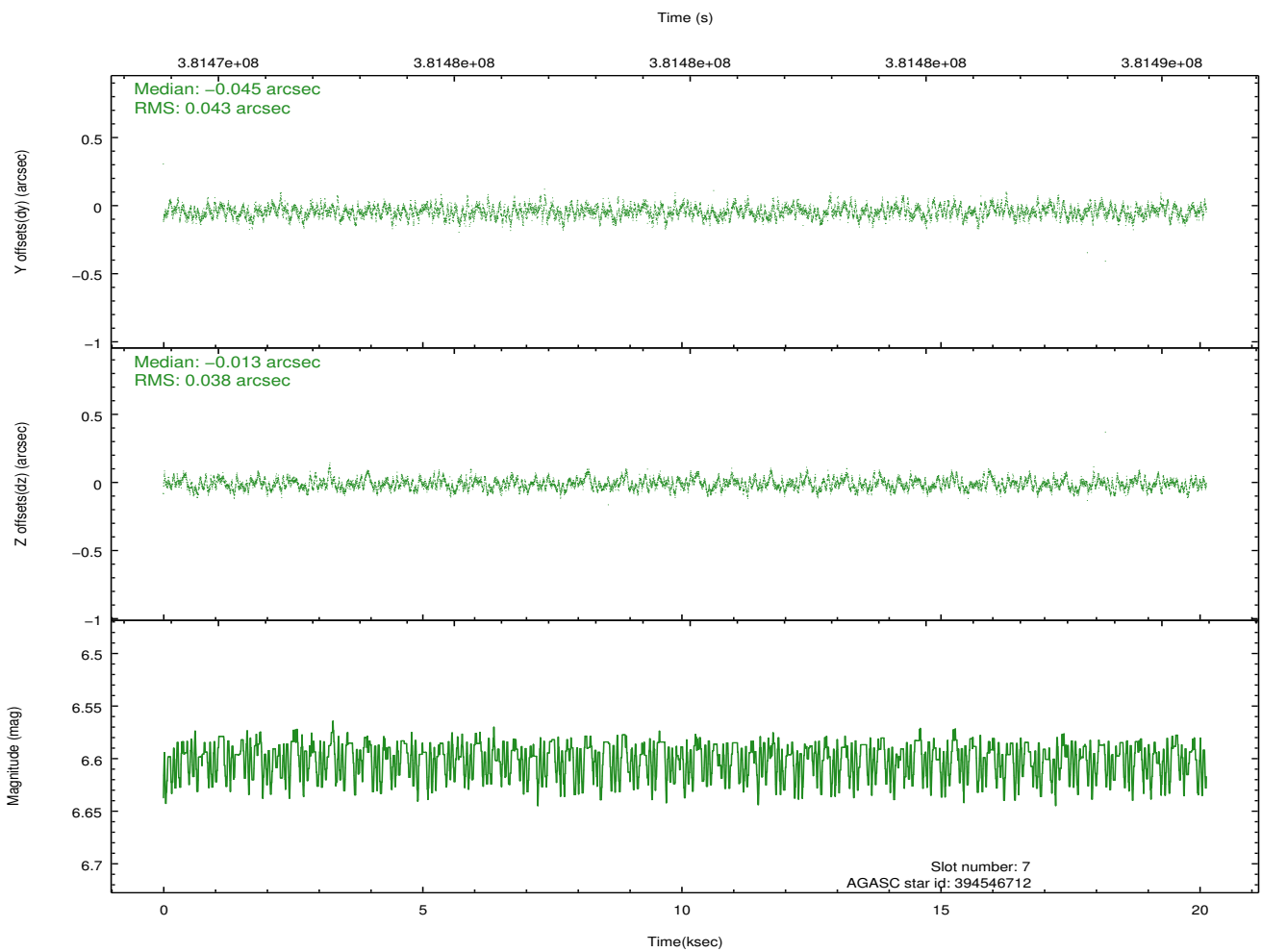
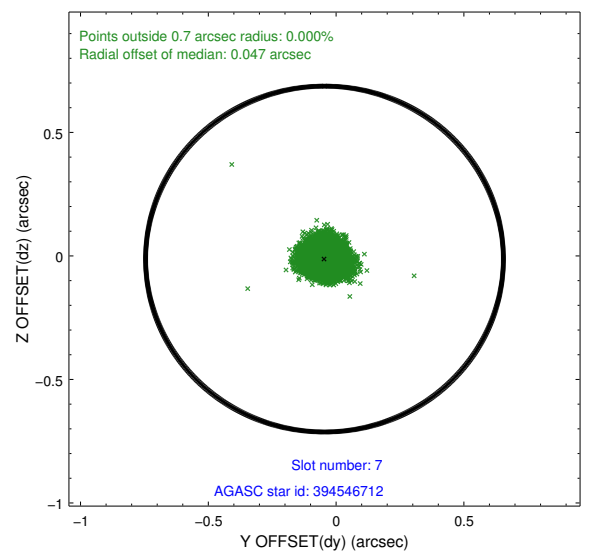
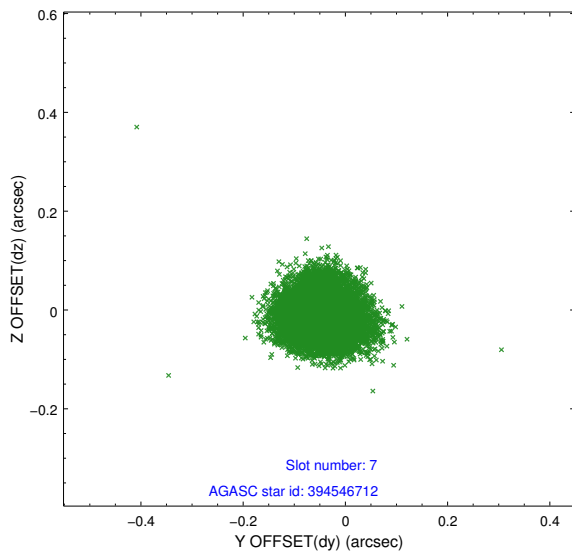
2.4.3 Slot 5



2.4.4 Slot 6

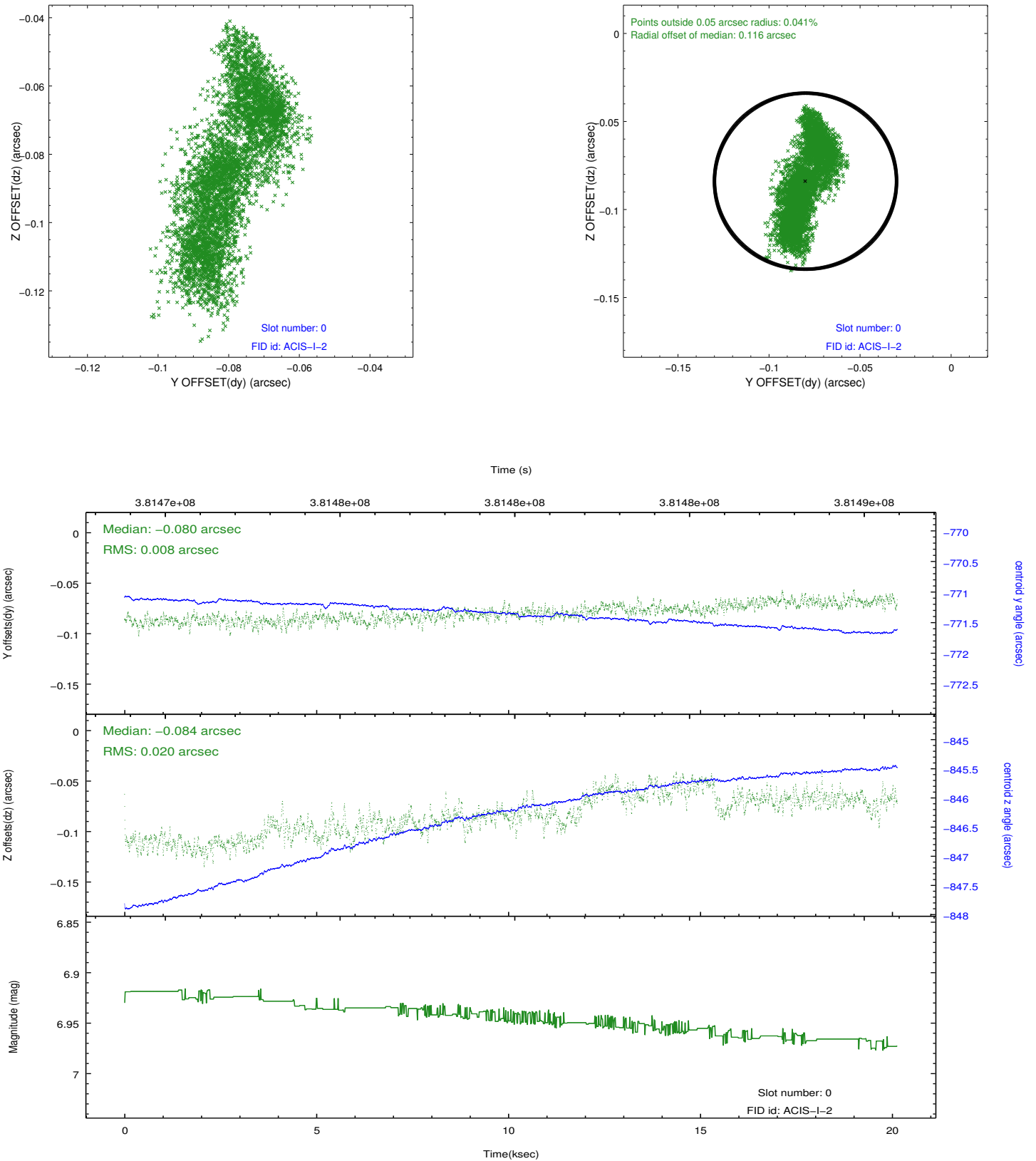


2.4.5 Slot 7

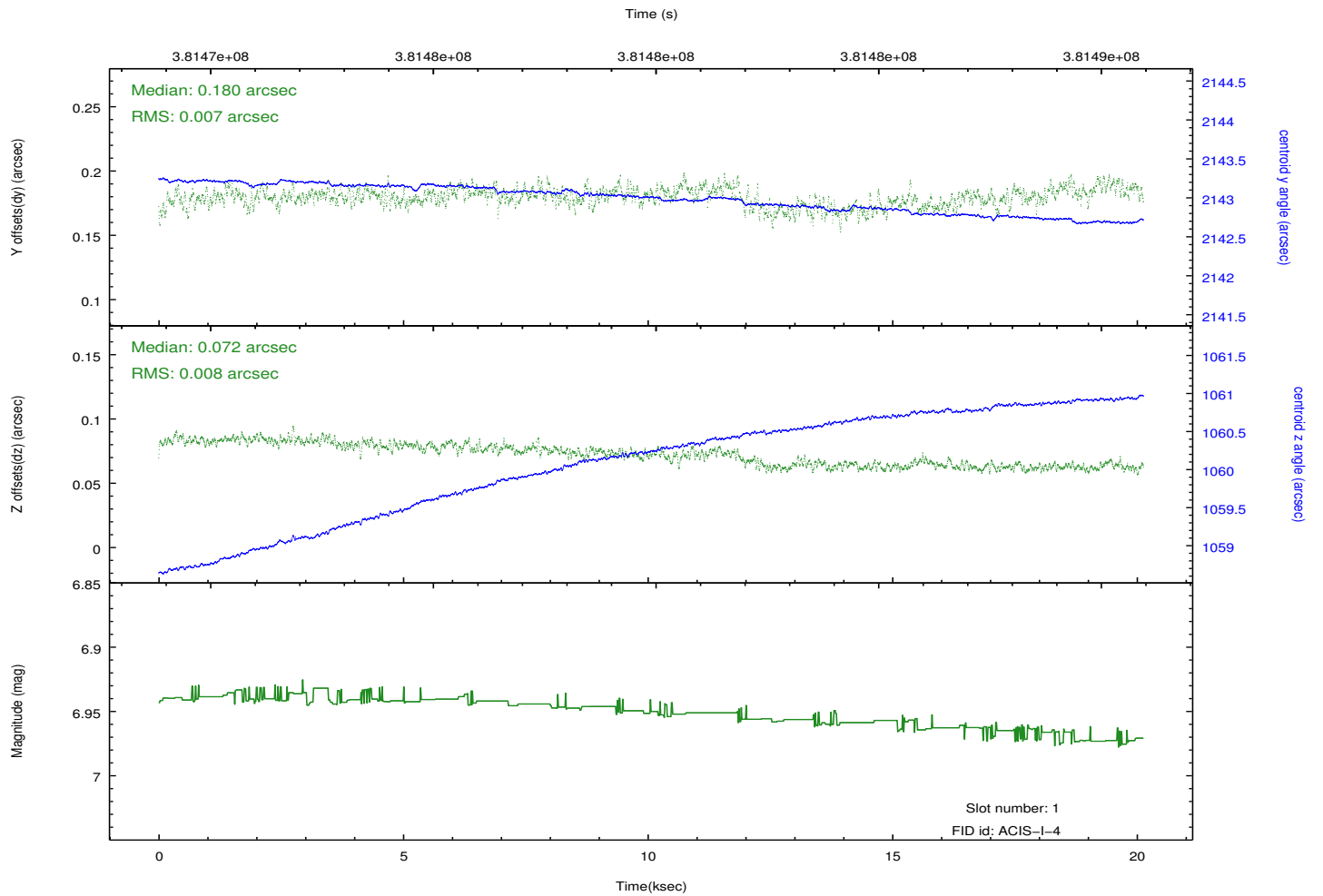
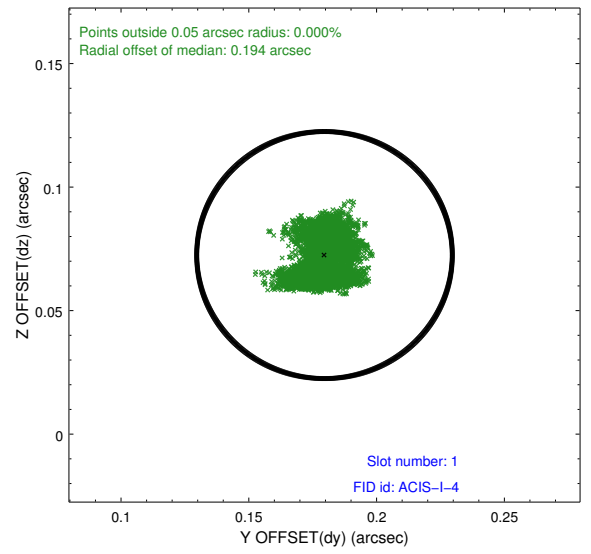
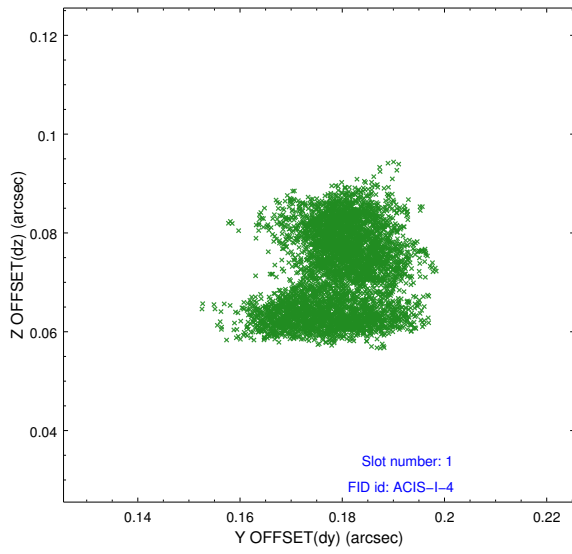


2.5 FID Slots

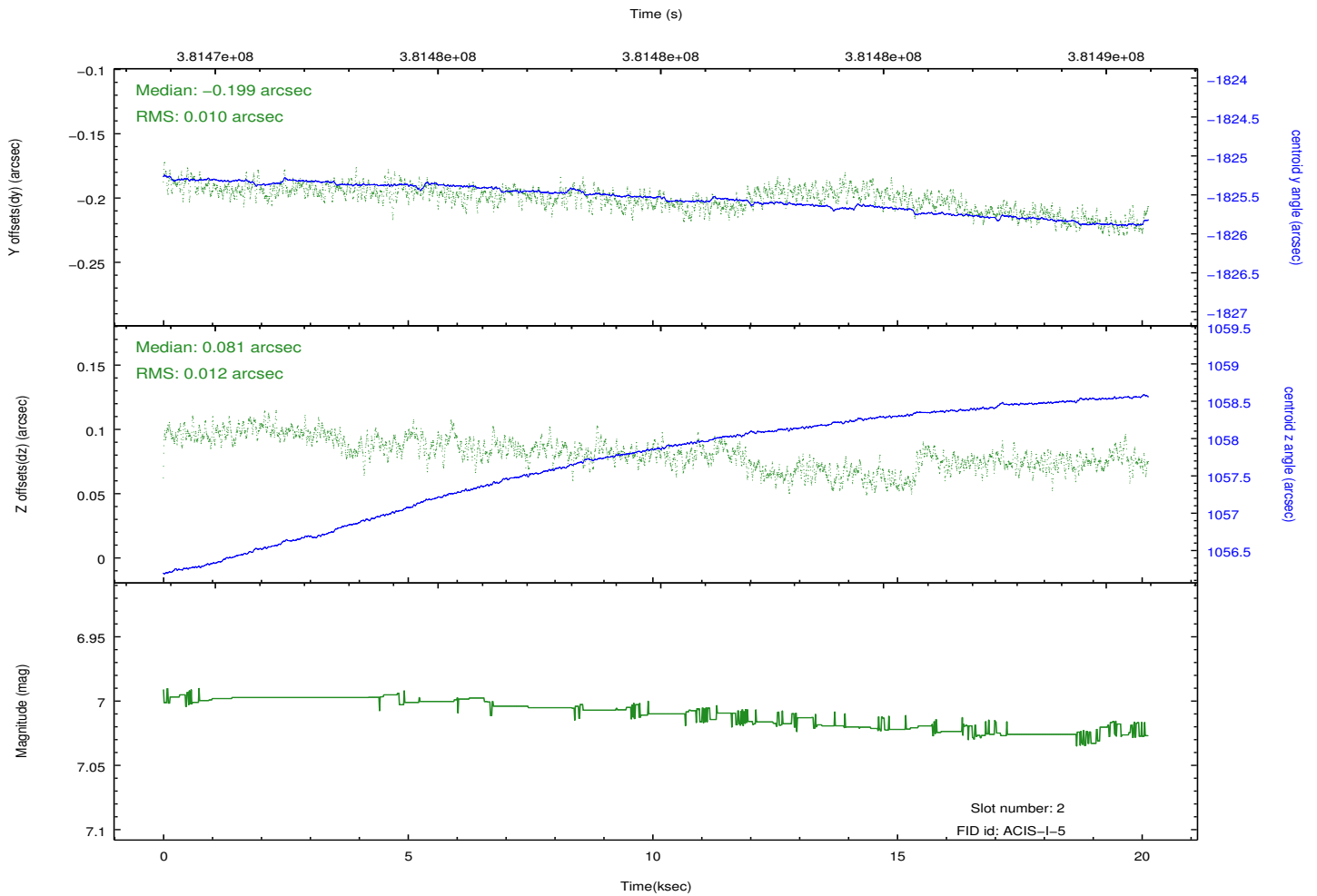
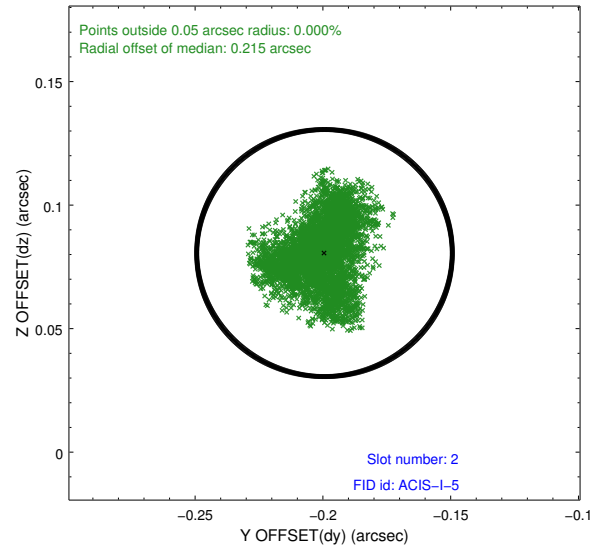
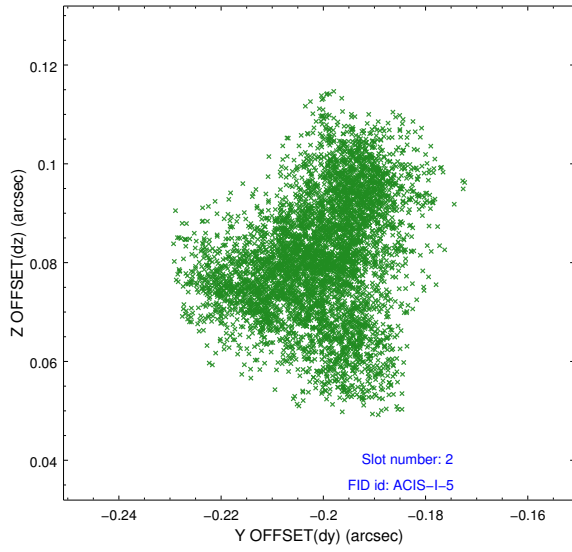
2.5.1 Slot 0



2.5.2 Slot 1

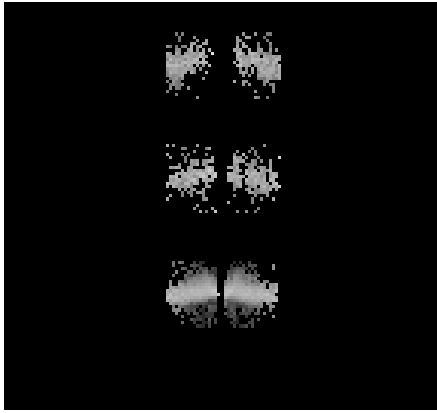


2.5.3 Slot 2

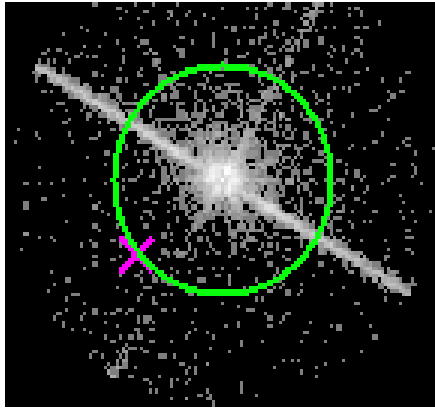


3 Gratings

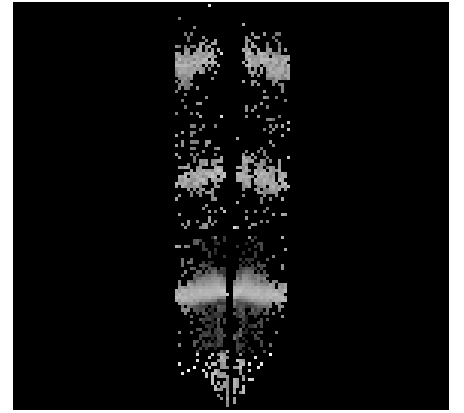
3.1 LETG Arm



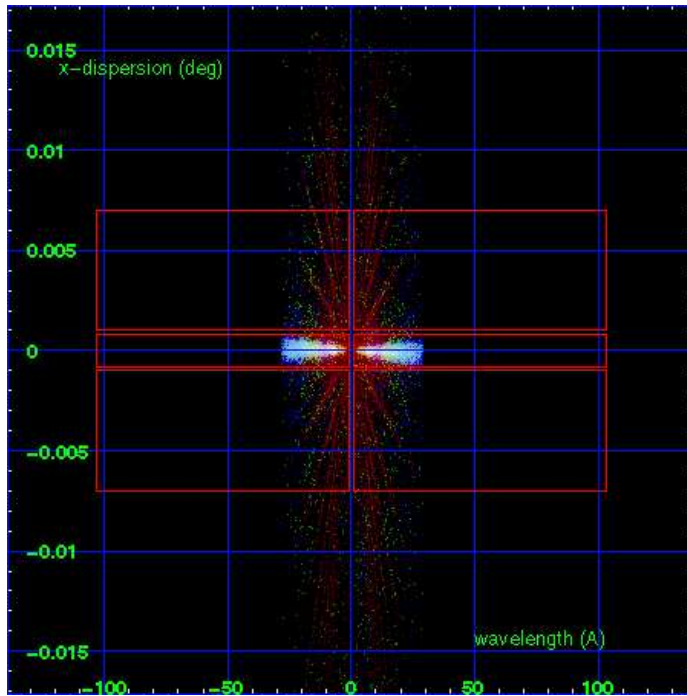
LETG Order Sort 123



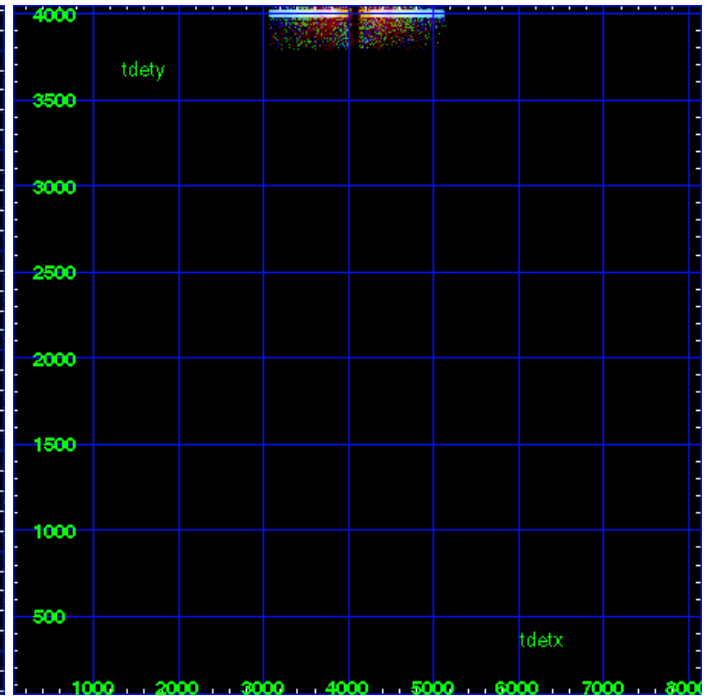
LETG Zero Order



LETG Order Sort ALL

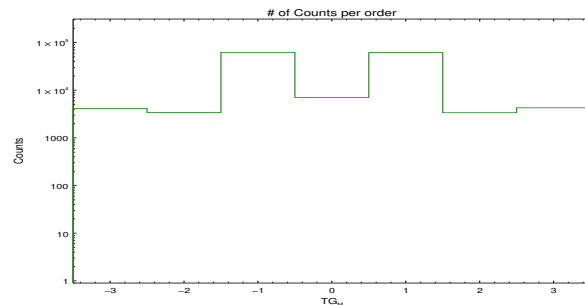


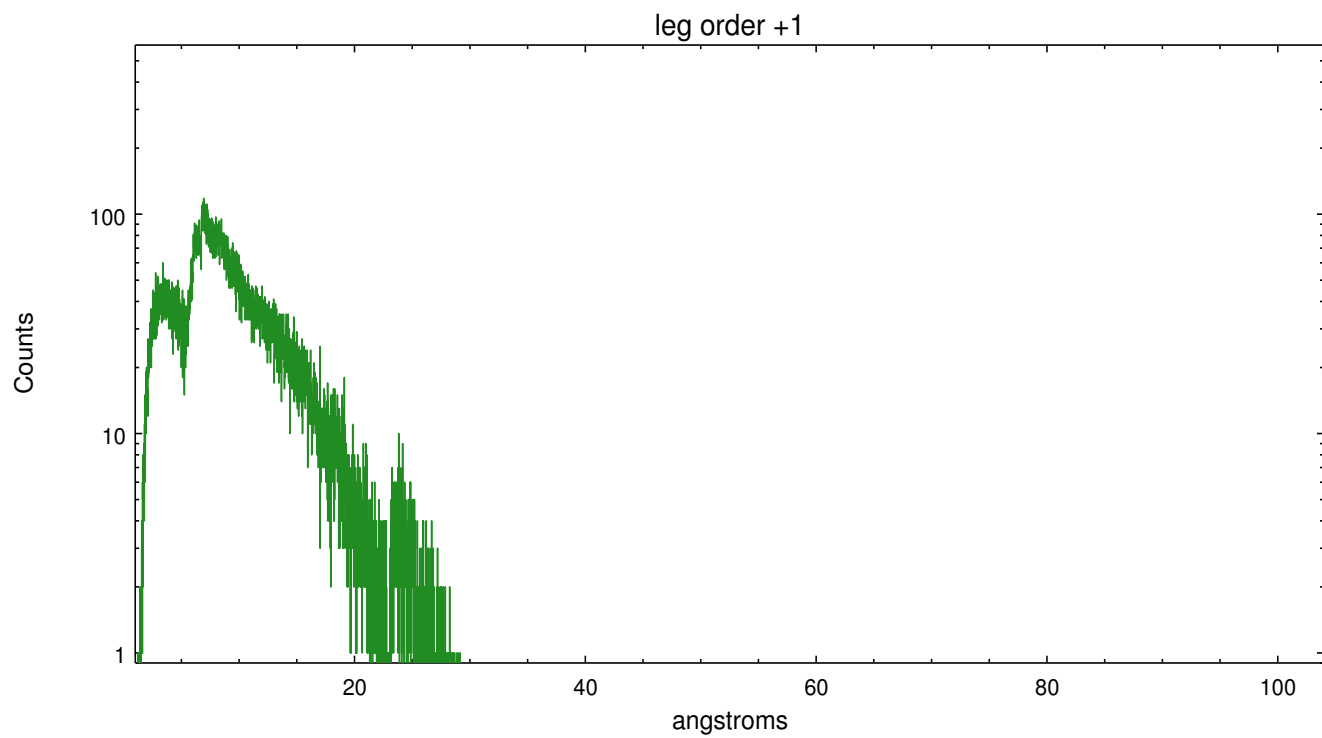
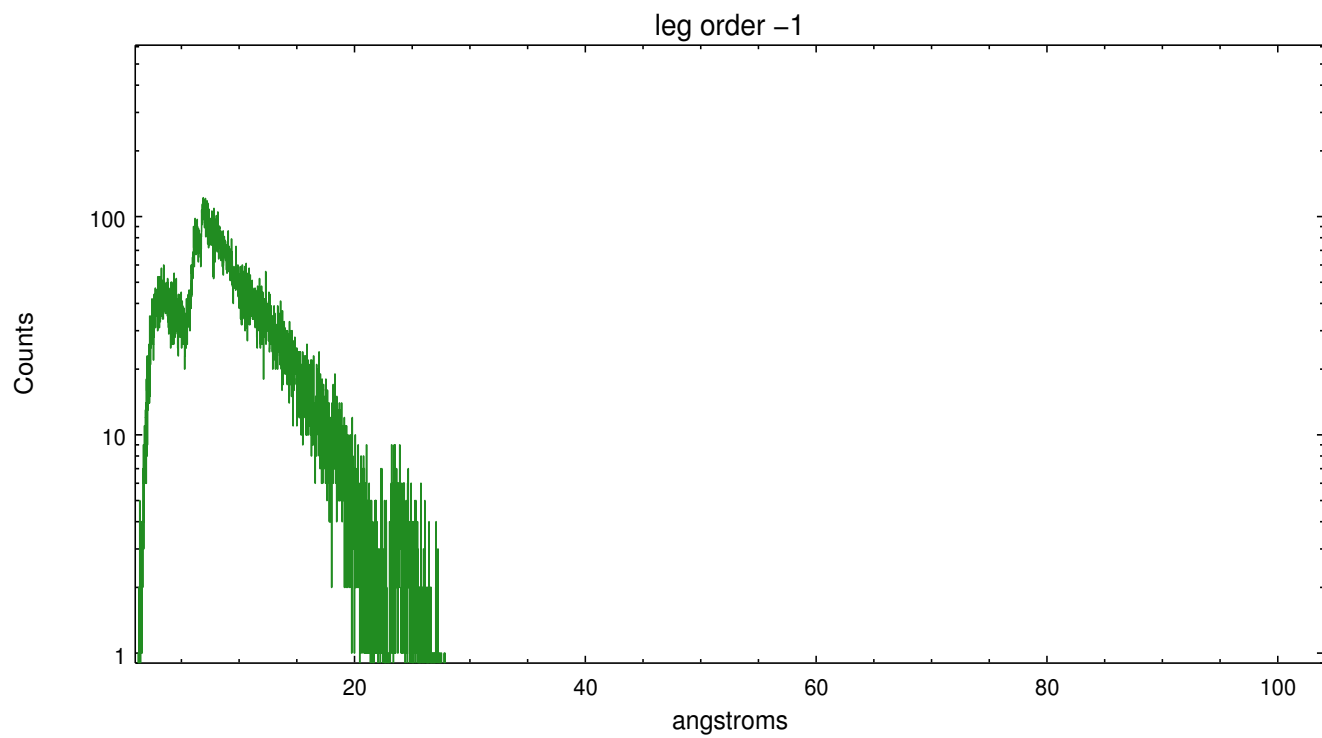
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	4149	3393	62283	7051	61619	3372	4278





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.07.24
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.125159164548

A.2 Comments

Used flat order-sorting in `tg_resolve_events`, since there is no 'osip' table for ACIS-I.

===

```
pset grt_lev15 osipfile=none===
```

```
pset grt_lev15 osort_lo=0.3===
```

```
pset grt_lev15 osort_hi=0.3===
```

===

Zeroth order piled up. Standard data processing software did not correctly locate the zeroth order due to pileup. Manual intervention was used to input the correct sky coordinates ($x=4119.125$, $y=4115.375$) into the `*srcla.fits` file table. These corrected coordinates were determined by eye because neither the pipeline tool `tgdetect` nor the `findzero` tool was successful in identifying the piled up zeroth order so close to a chip boundary. The determination of the position by eye is expected to be in error by up to 1-2 pixels. The newly determined zeroth order coordinates have been placed in the `*srcla.fits` file, replacing the coordinates determined by `tgdetect`. Note that these corrected coordinates of the zeroth order cannot be reproduced by running `tgdetect` on the data.