

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 11967 - L2 Version 3
Chandra X-Ray Center

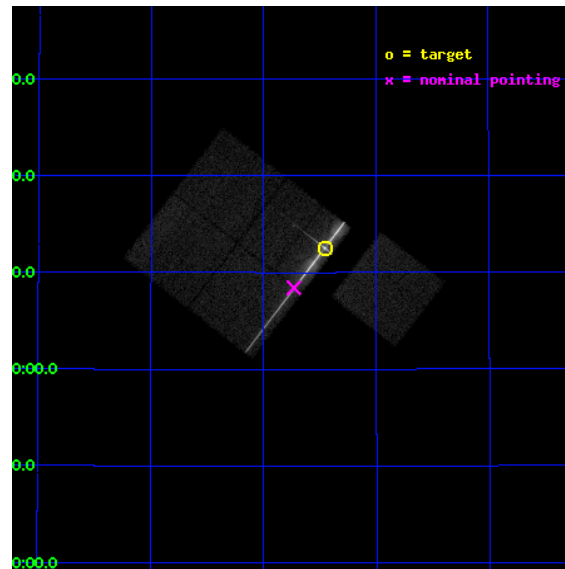
L2 Processing Date : Jul 20 2012

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1 Front

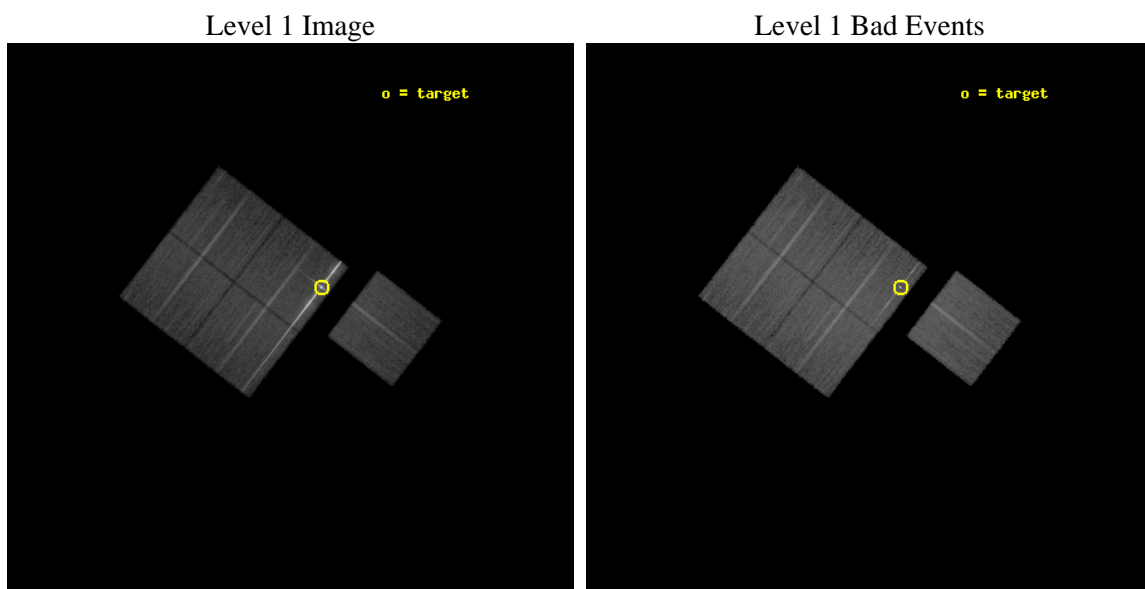
seq_num	790216	Sequence number
obs_id	11967	Observation id
title	AO-11 Calibration Observations of Mkn421	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	MKN421	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	166.113333	Observer's specified target RA [deg]
dec_targ	38.208806	Observer's specified target Dec [deg]
ra_nom	166.18289141888	Nominal RA [deg]
dec_nom	38.14041567903	Nominal Dec [deg]
roll_nom	127.71700192032	Nominal Roll [deg]
revision	3	Processing version of data
ontime	19777.917648315	Sum of GTIs [s]
livetime	19519.504593949	Livetime [s]
ontime0	19777.835568309	Sum of GTIs [s]
ontime1	19777.876618266	Sum of GTIs [s]
ontime2	19777.917648315	Sum of GTIs [s]
ontime3	19777.958698273	Sum of GTIs [s]
ontime6	19777.79453826	Sum of GTIs [s]
l2events	326539	Number of level 2 events



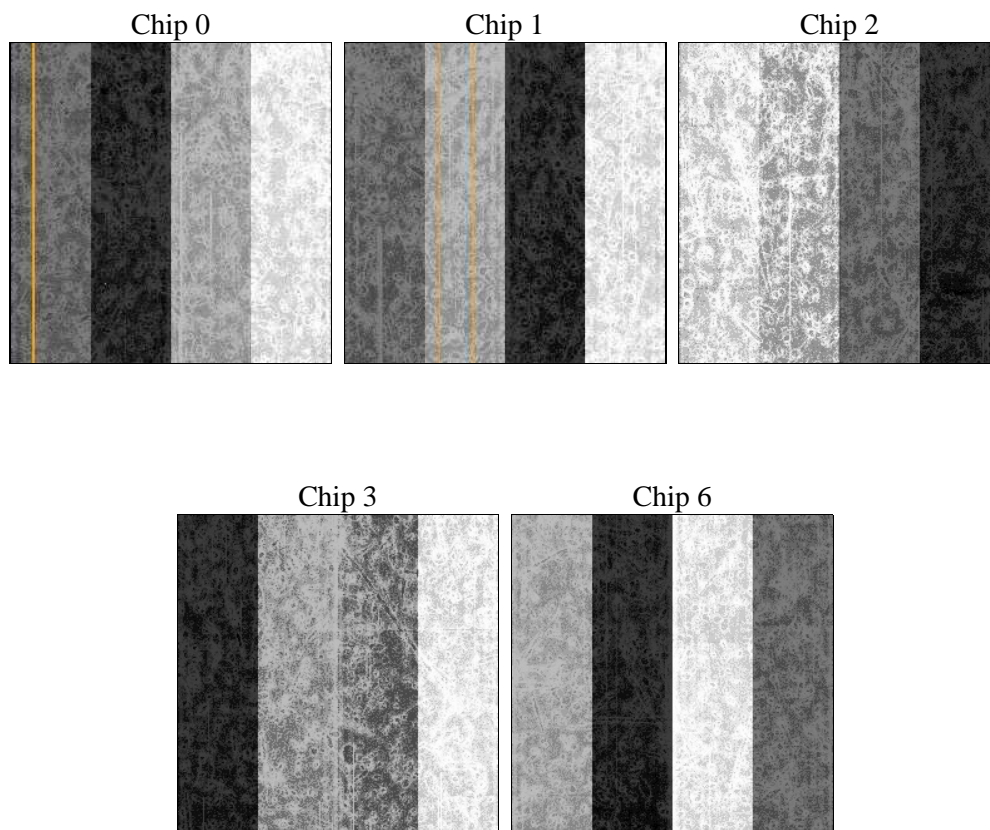
2 OBI

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	19777.917648315	Sum of GTIs [s]
caldbver	4.4.10	 	ontime0	19777.835568309	Sum of GTIs [s]
date	2012-06-21T00:44:13	Date and time of file creation	ontime1	19777.876618266	Sum of GTIs [s]
revision	2	Processing version of data	ontime2	19777.917648315	Sum of GTIs [s]
			ontime3	19777.958698273	Sum of GTIs [s]
			ontime6	19777.79453826	Sum of GTIs [s]
			l1events	1109618	Number of level 1 events

2.1.4 Events

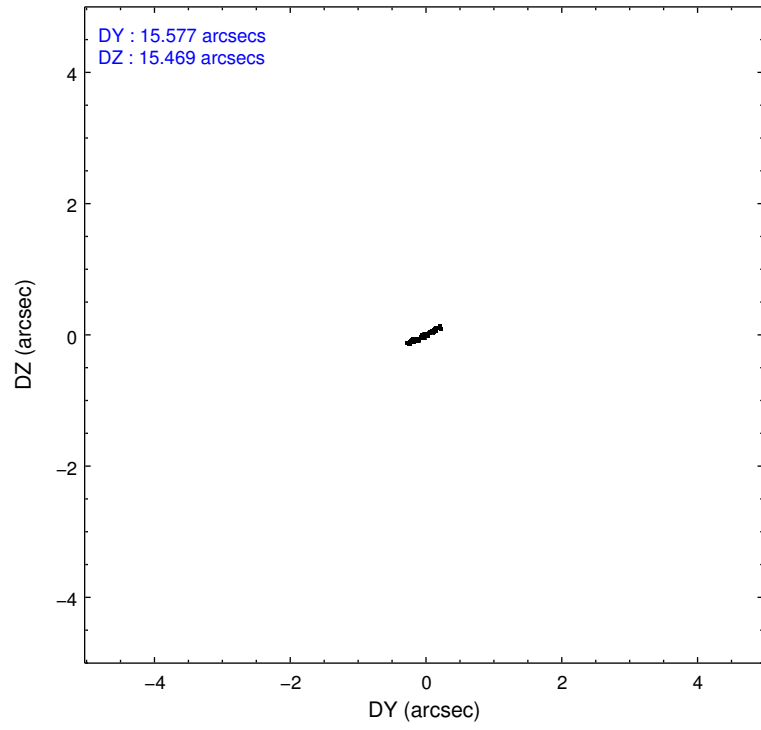
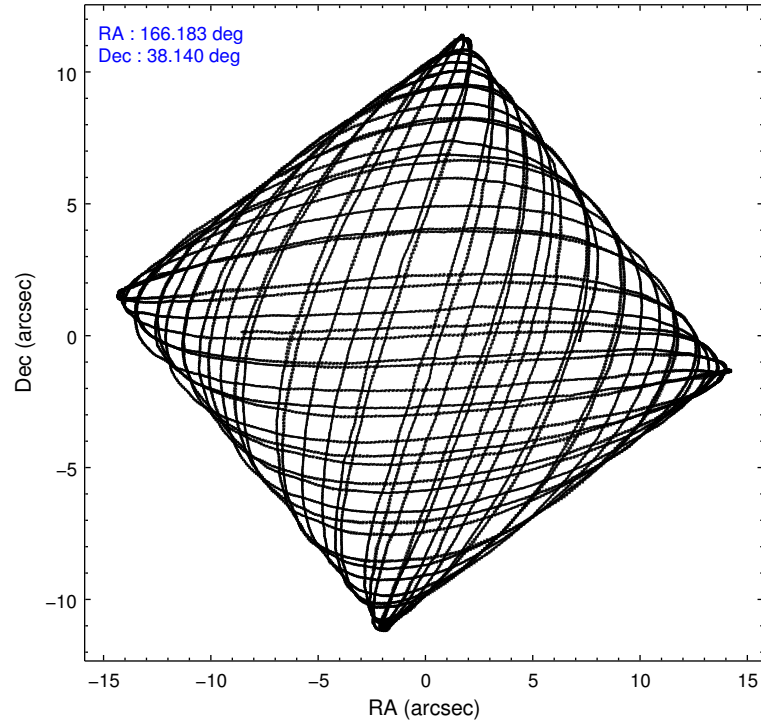
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
level 1 events	153766	158543	445146	185239	166924
rejected events	136429	139464	173253	149337	148138
rejected %	88%	87%	38%	80%	88%

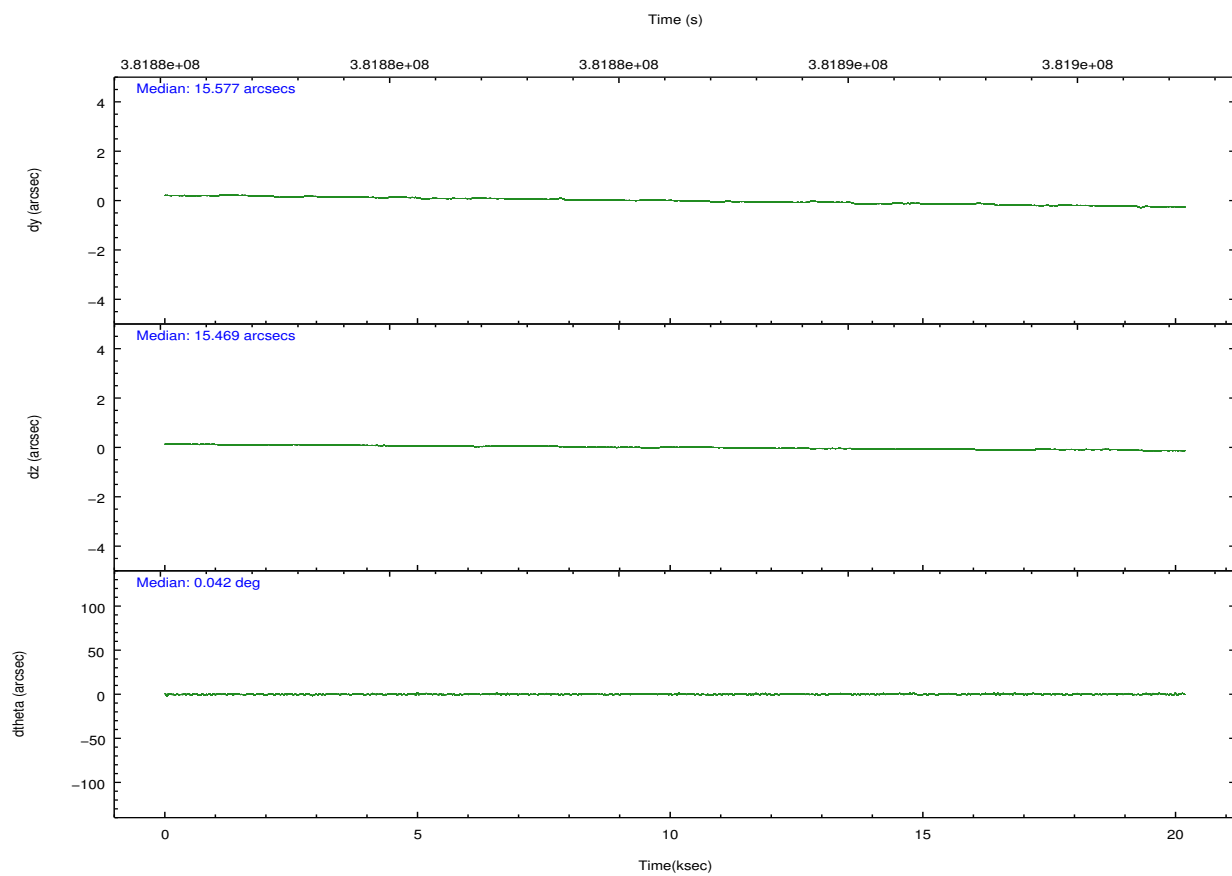
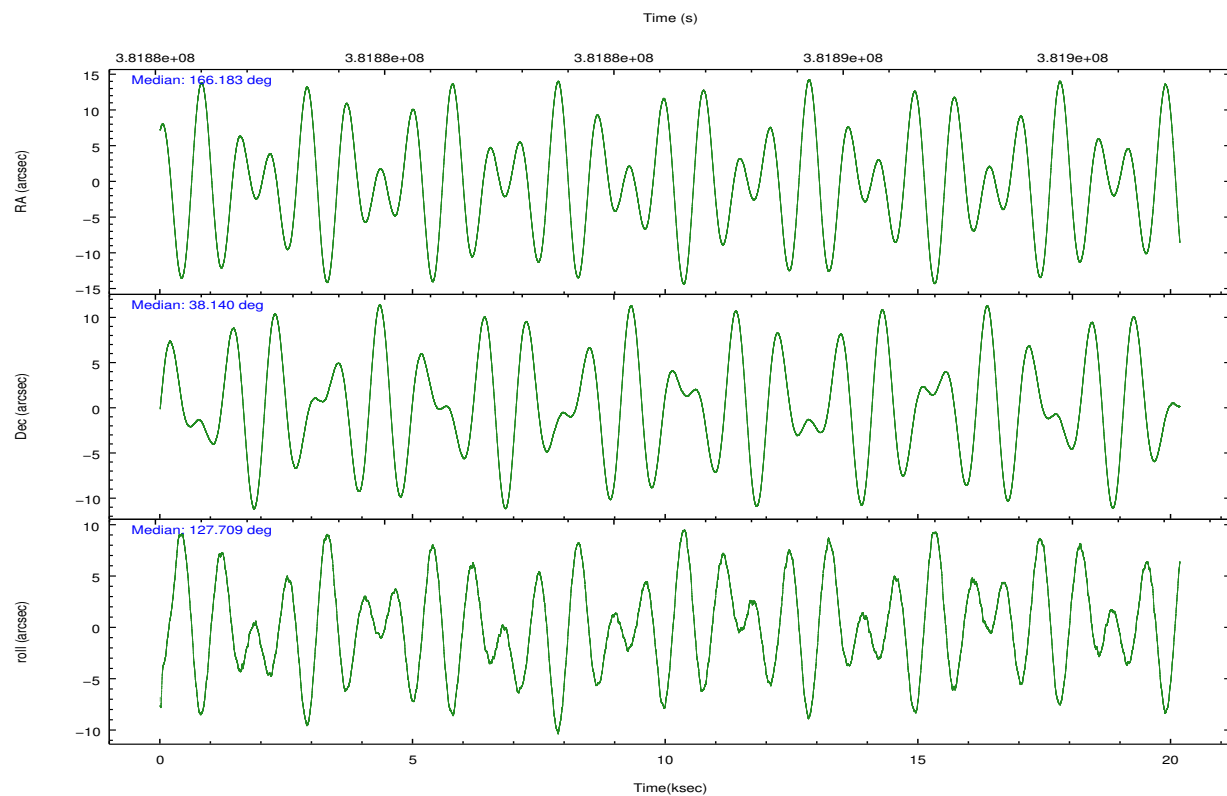
	ccd 0	ccd 1	ccd 2	ccd 3	ccd 6
grade 0 events	5983	6650	200088	22162	6846
	3%	4%	44%	11%	4%
grade 1 events	95	95	8072	222	86
	0%	0%	1%	0%	0%
grade 2 events	4257	4554	33889	5372	4119
	2%	2%	7%	2%	2%
grade 3 events	1913	1883	12018	2357	2020
	1%	1%	2%	1%	1%
grade 4 events	1819	1960	12110	2331	1957
	1%	1%	2%	1%	1%
grade 5 events	6446	6755	12573	7357	7005
	4%	4%	2%	3%	4%
grade 6 events	3365	4033	13832	3683	3847
	2%	2%	3%	1%	2%
grade 7 events	129888	132613	152564	141755	141044
	84%	83%	34%	76%	84%

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	166.215213	166.1828914188785	Subarray requested	NONE	NONE
[deg] Pointing Dec	38.130378	38.14041567902952	Alternating exposures requested	N	N
[deg] Pointing Roll	127.540413	127.7170019203207	[s] Primary exposure time	0.000000	3.1
[mm] SIM focus pos	-0.782348	-0.7809083437167272			
[mm] SIM defocus	0	0.001439871863259334			
[mm] SIM translation stage pos	-213.592463	-213.5961134981251			
[mm] SIM translation stage offset	-20	-19.99633950480455			
[s] Observation start time (MET)	381876314.184000	381875938.42289			
Observation start date	2010-02-06T20:44:08	2010-02-06T20:38:58			
[s] Observation end time (MET)	381896314.184000	381897122.09896			
Observation end date	2010-02-07T02:17:28	2010-02-07T02:32:02			
Read mode	TIMED	TIMED			

2.3 Aspect



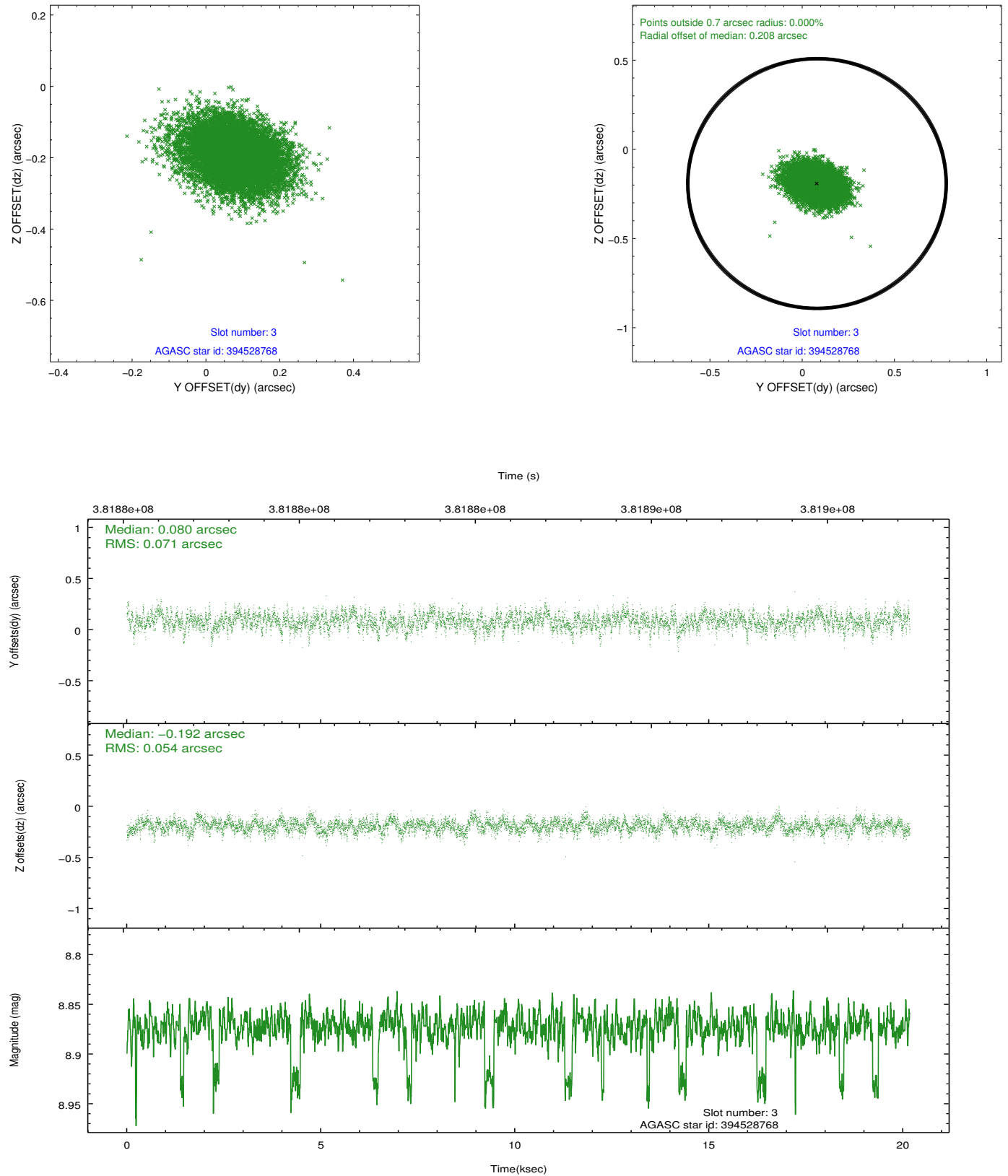


Slot Statistics

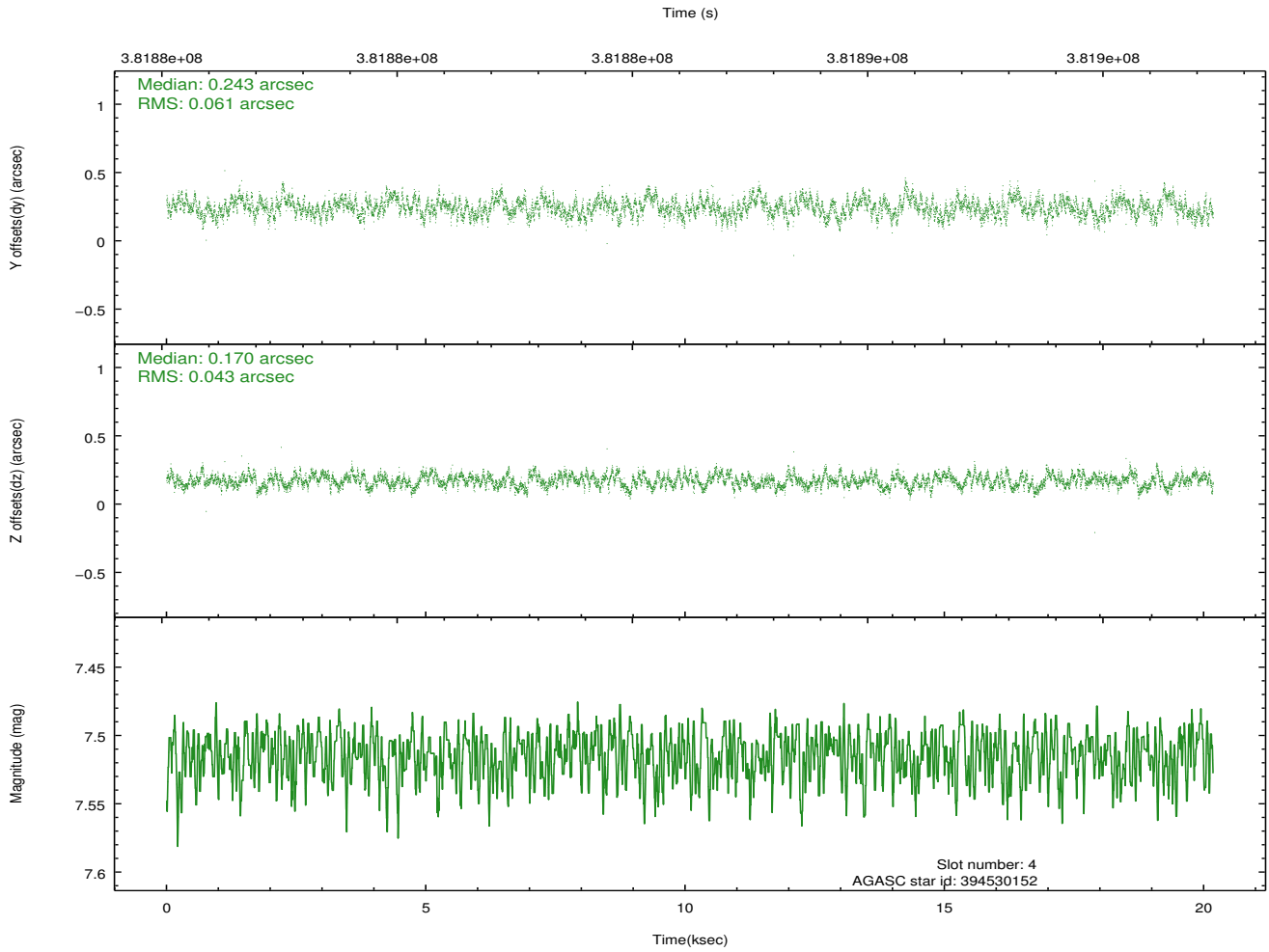
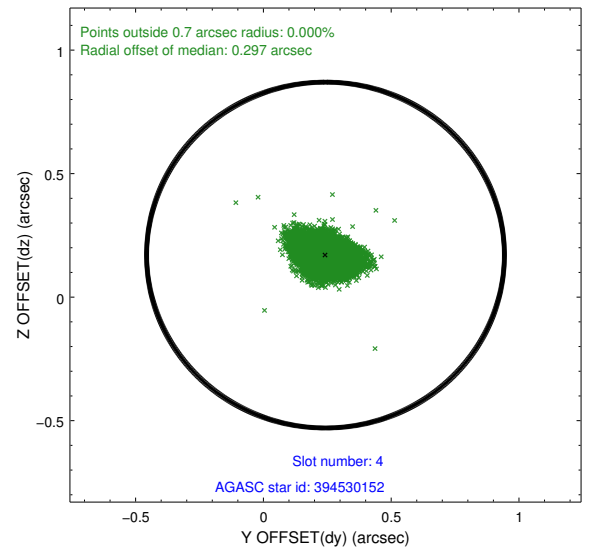
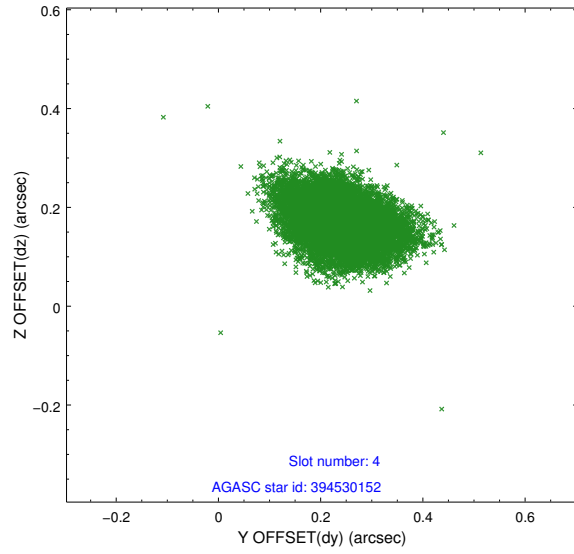
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-I-1	7.04	4922	0.312	-0.251	0.007	0.011	0.000000	0.000000	925.45	-1249.23
1	FID	ACIS-I-5	7.05	4921	-0.459	0.178	0.012	0.019	0.000000	0.000000	-1823.28	648.57
2	FID	ACIS-I-6	7.10	4921	0.126	0.086	0.012	0.021	0.000000	0.000000	390.66	1293.15
3	GUIDE	394528768	8.87	9829	0.080	-0.192	0.093	0.155	166.180365	38.952248	2406.05	-1725.11
4	GUIDE	394530152	7.51	9844	0.243	0.170	0.079	0.129	166.075805	38.868252	2345.51	-1308.53
5	GUIDE	394533744	8.89	9837	-0.300	-0.070	0.090	0.139	167.094985	37.988717	-1915.62	-1676.12
6	GUIDE	394533848	8.73	9833	0.027	0.075	0.086	0.136	166.382906	38.276007	129.96	-693.15
7	GUIDE	394546712	6.61	9843	-0.052	0.018	0.064	0.102	166.451462	38.394357	348.69	-1107.30

2.4 Star Slots

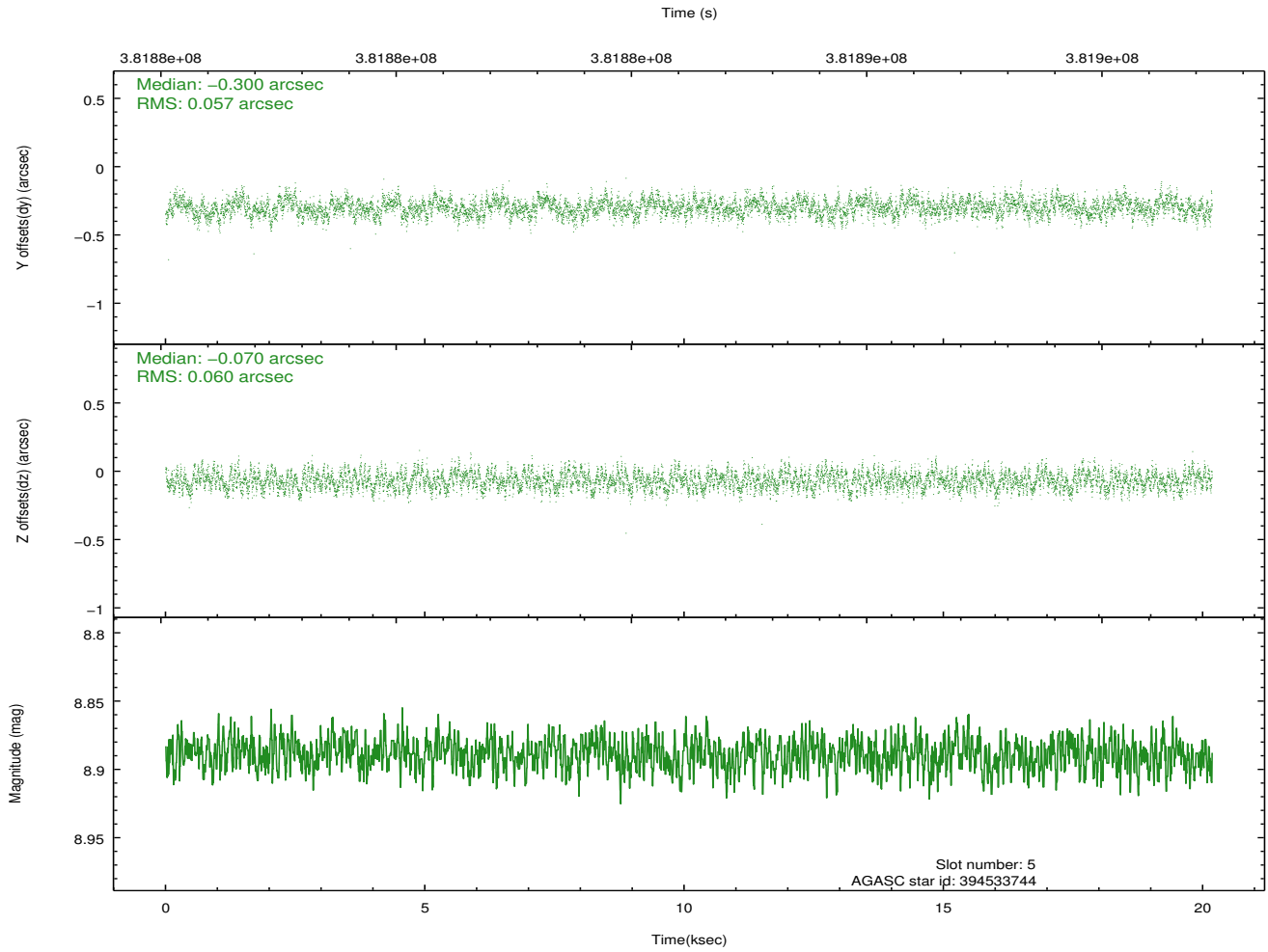
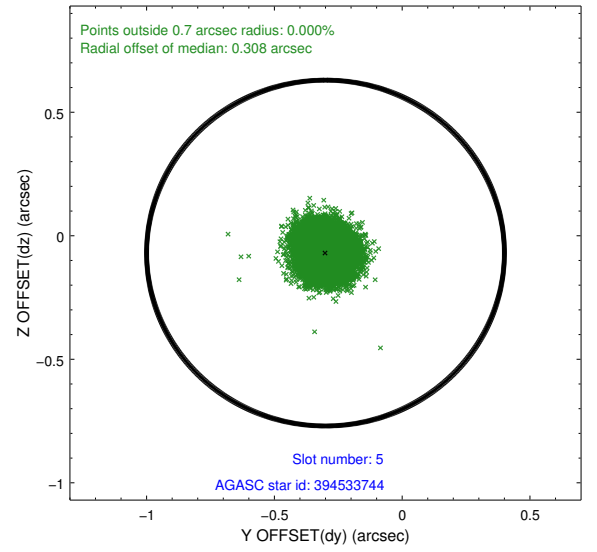
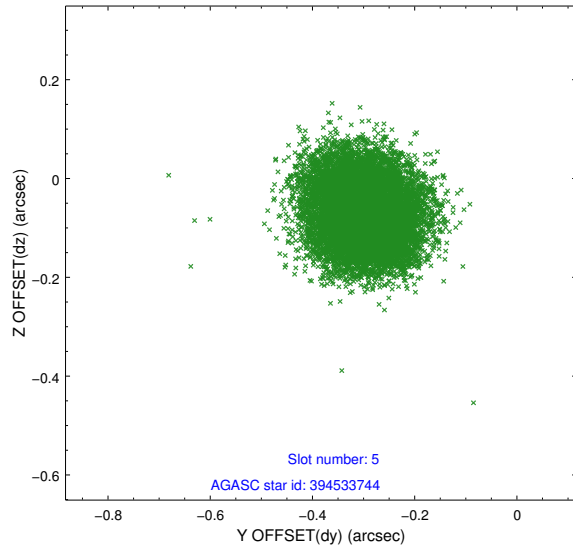
2.4.1 Slot 3



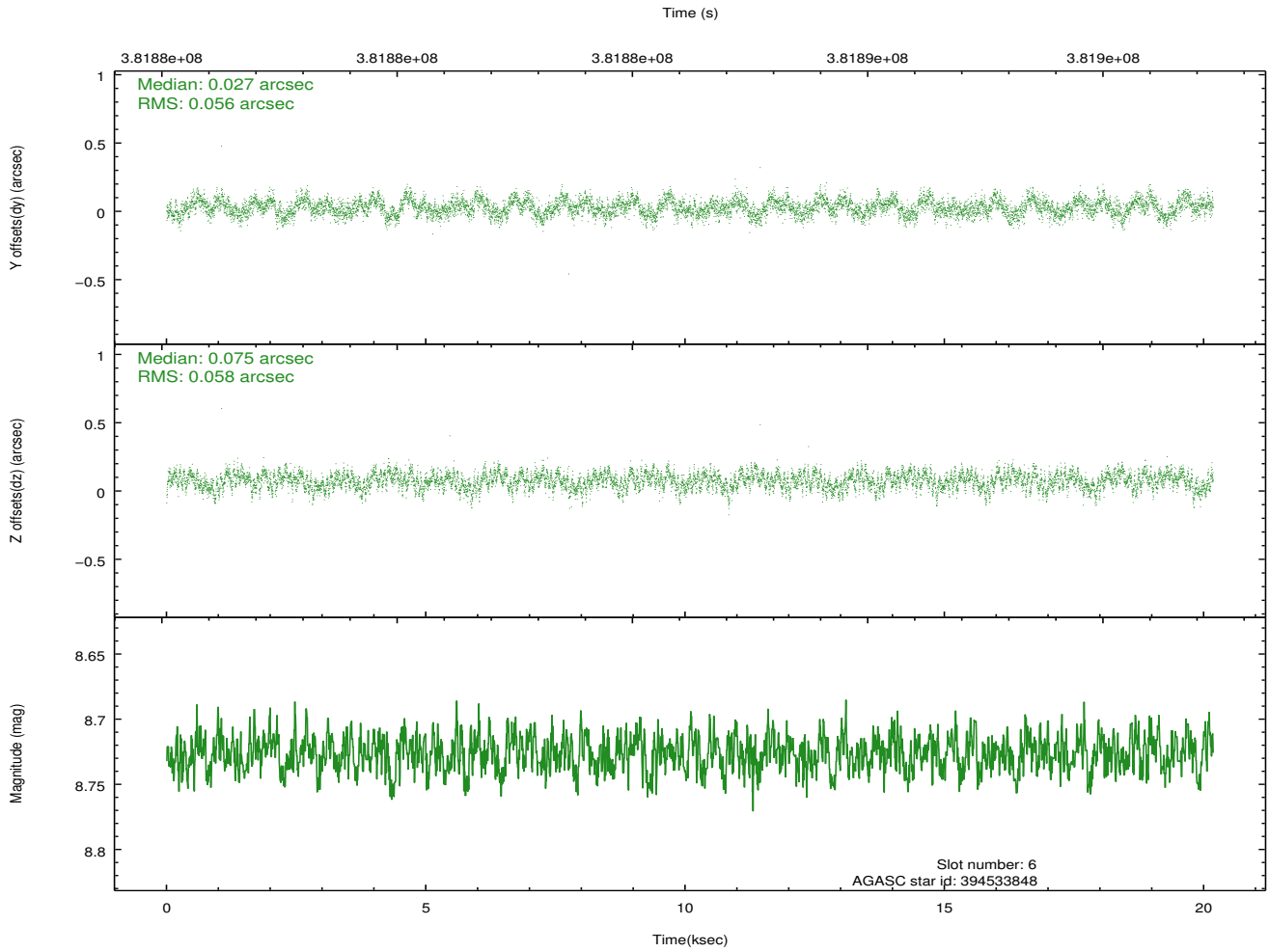
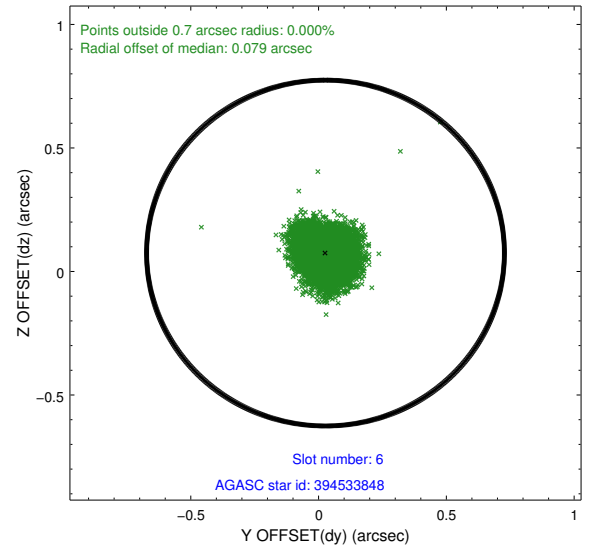
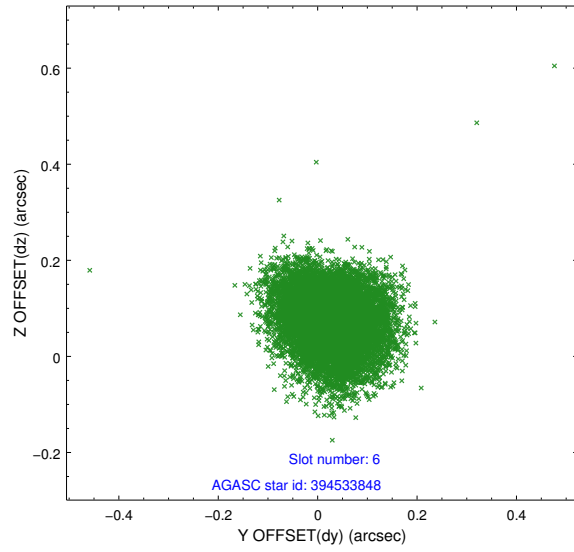
2.4.2 Slot 4



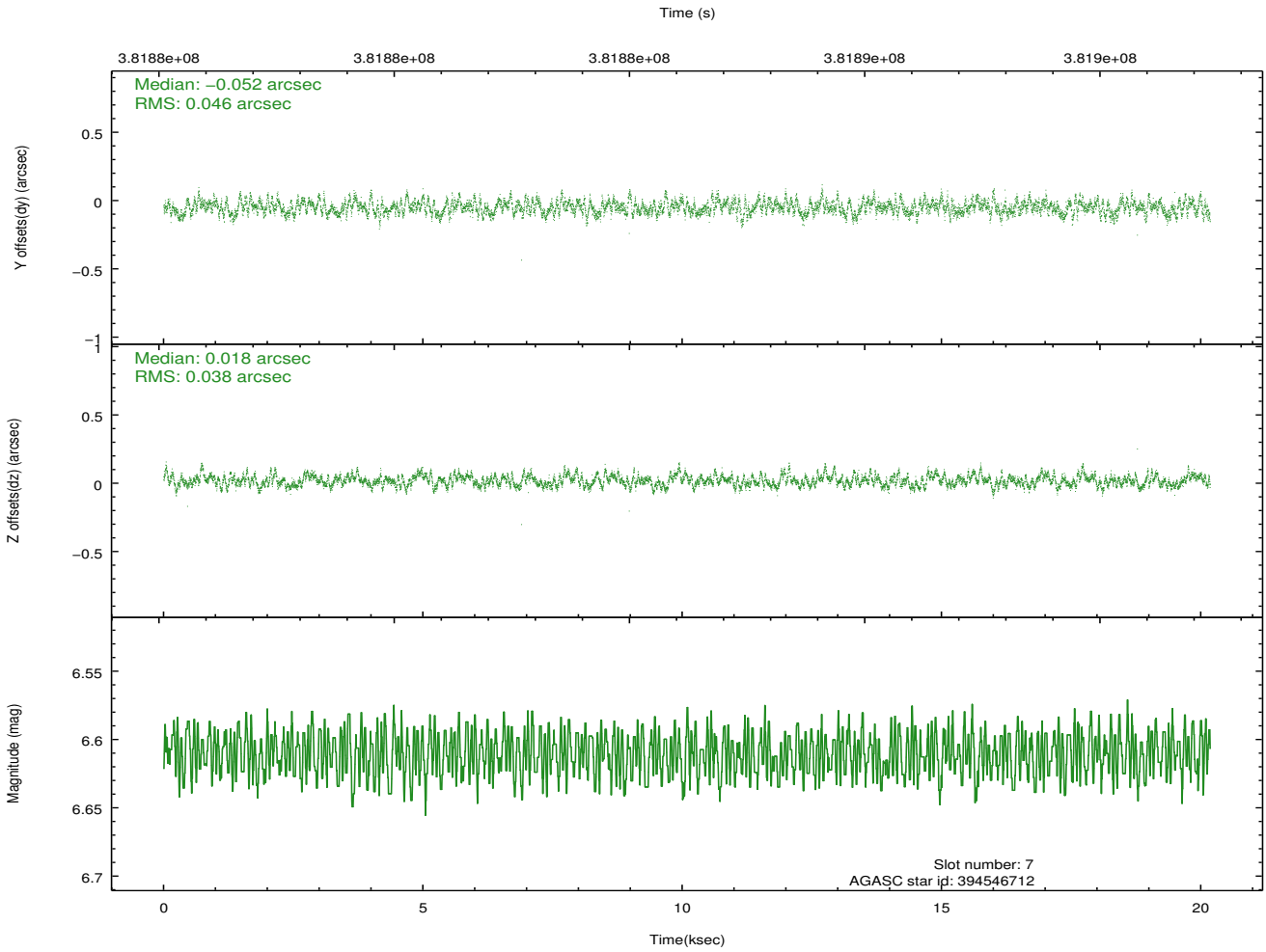
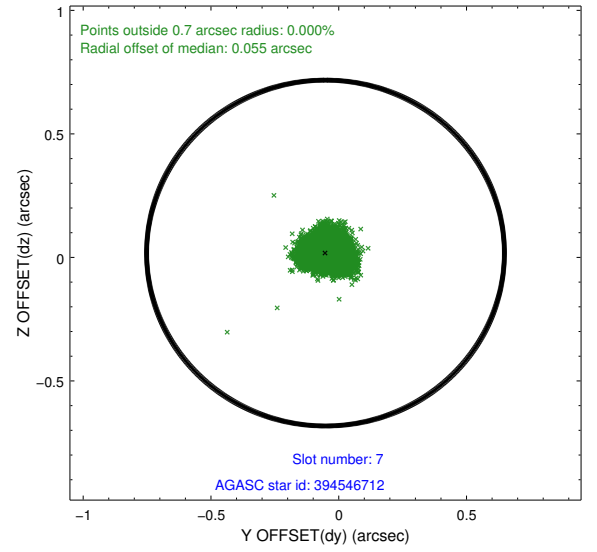
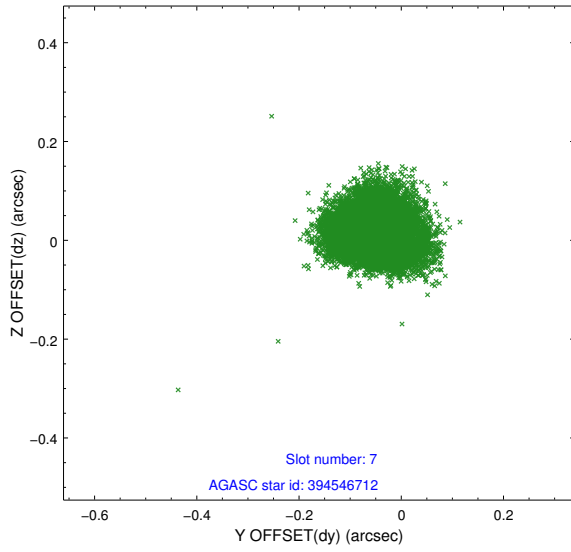
2.4.3 Slot 5



2.4.4 Slot 6

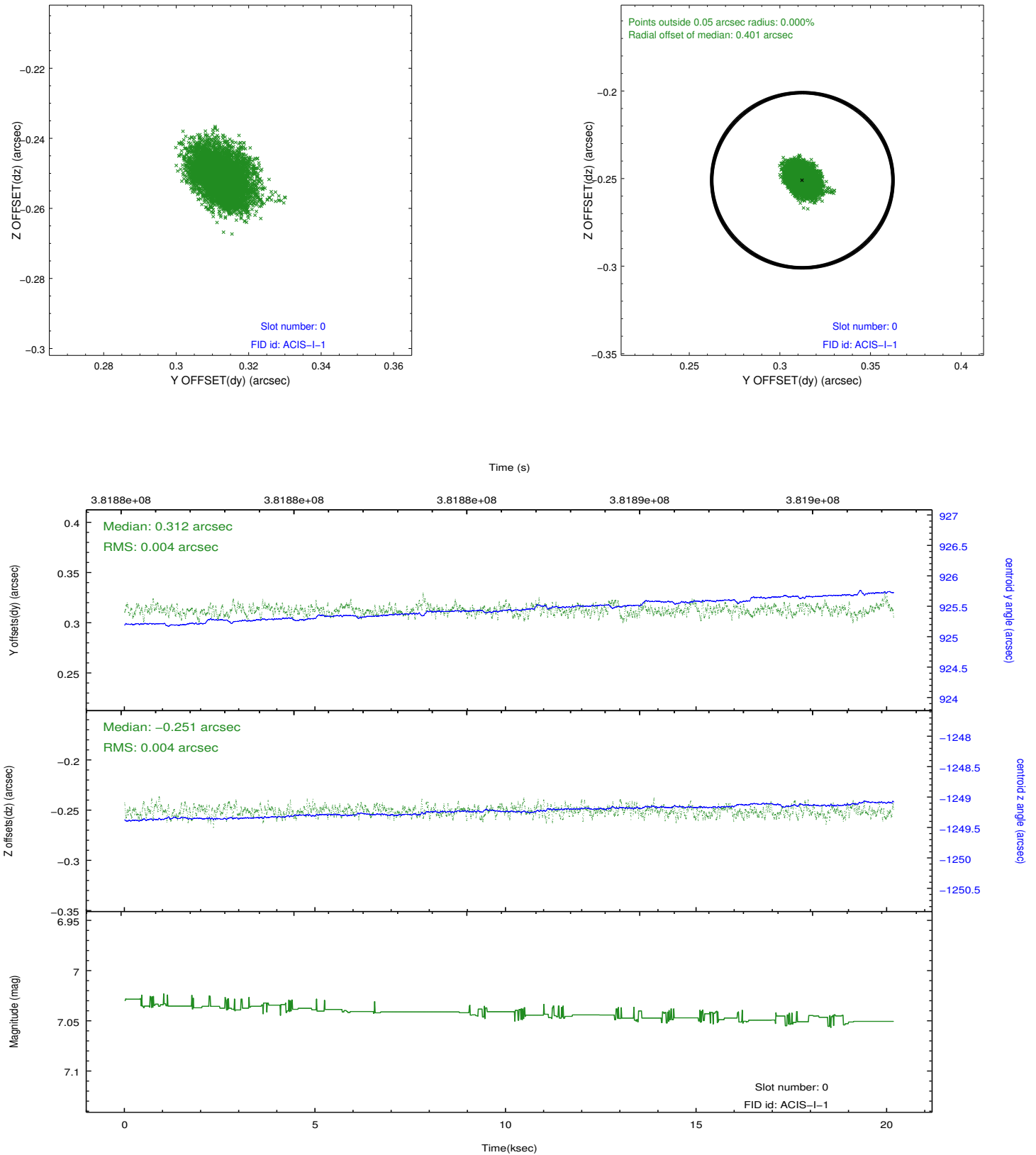


2.4.5 Slot 7

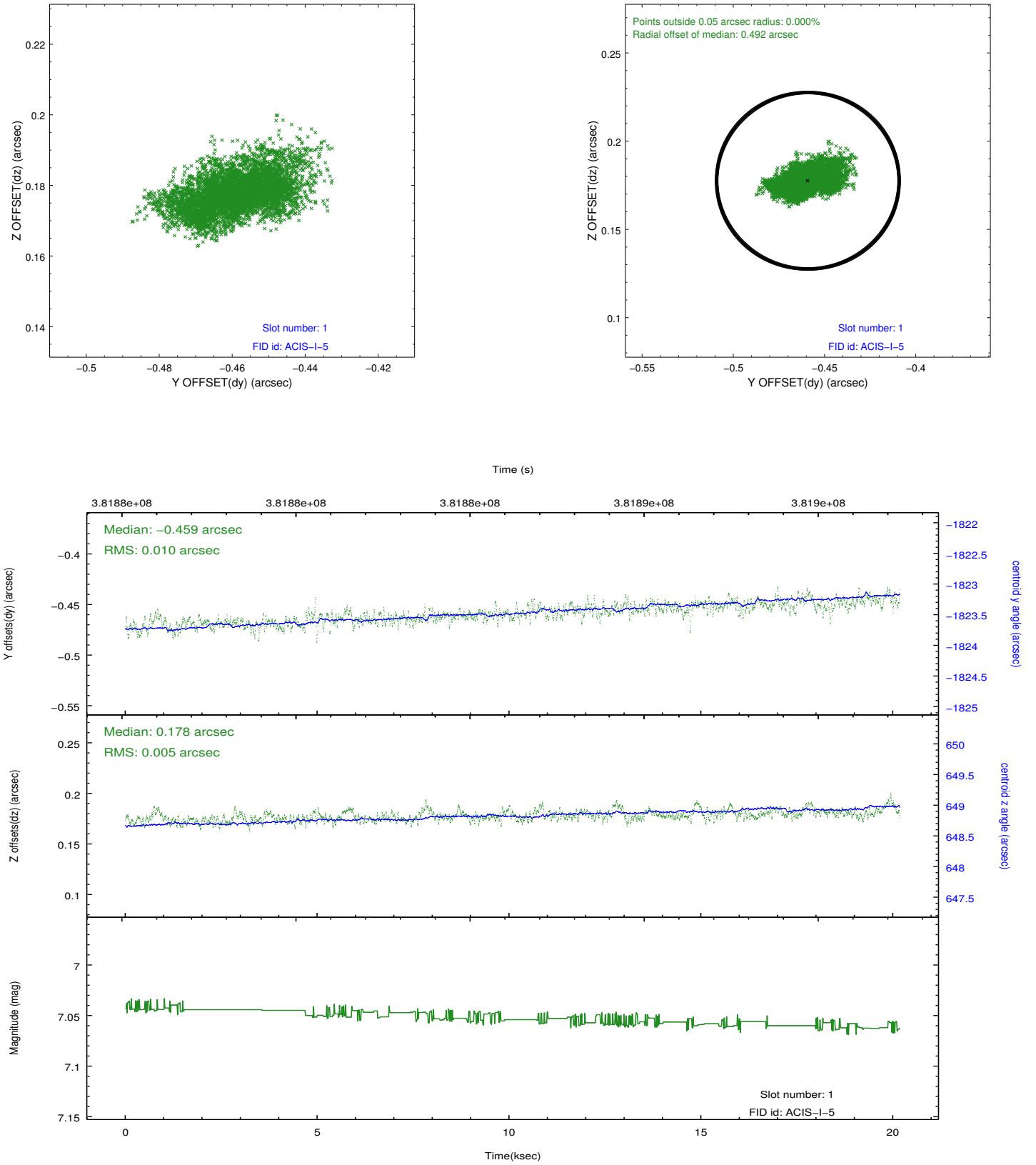


2.5 FID Slots

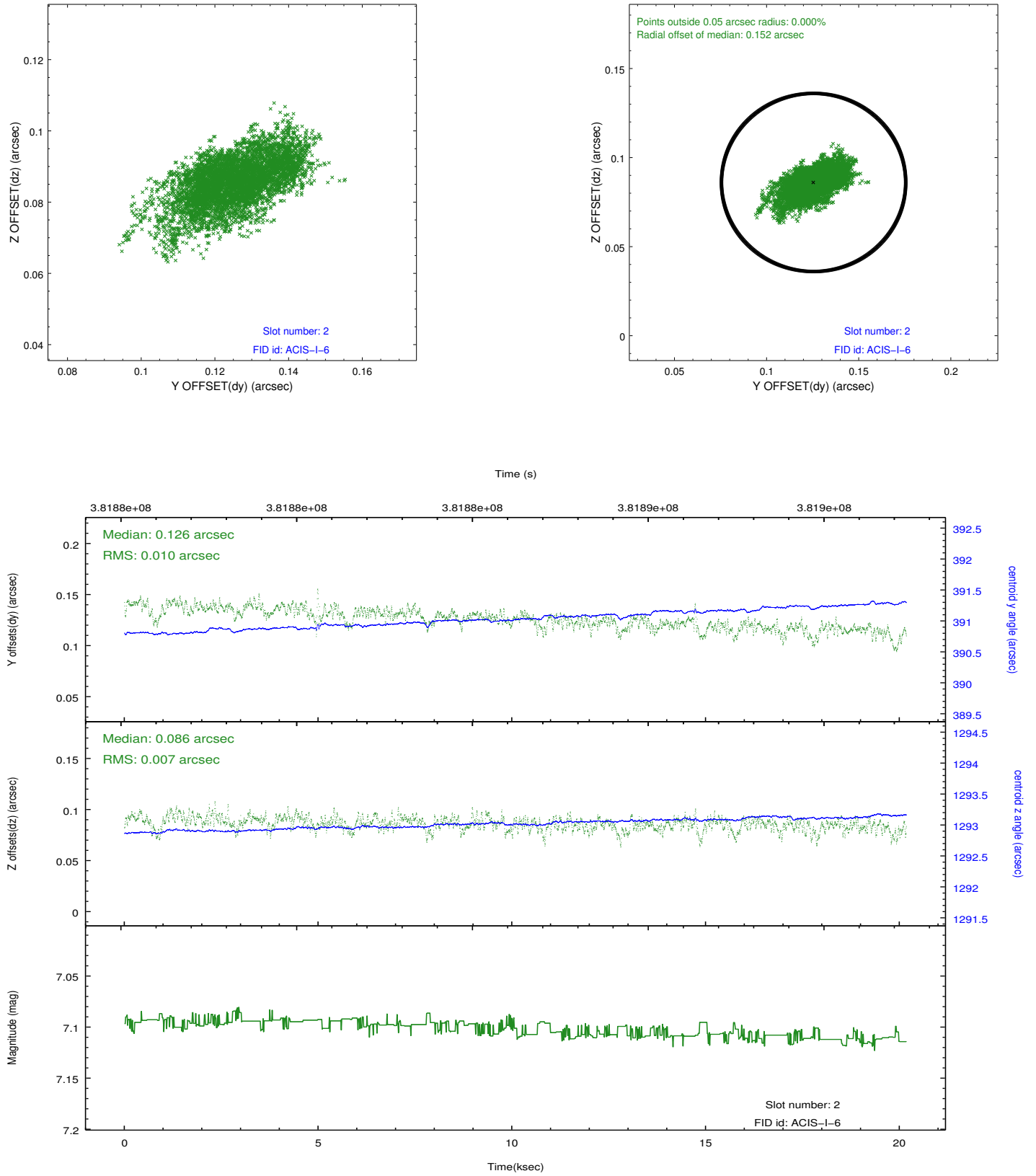
2.5.1 Slot 0



2.5.2 Slot 1

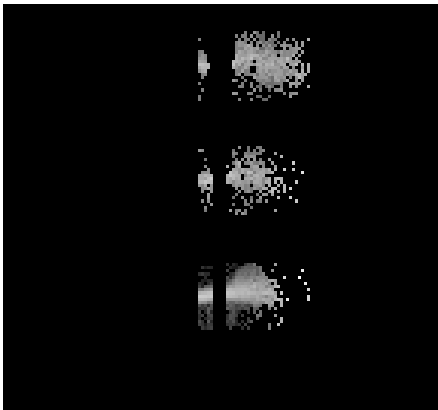


2.5.3 Slot 2

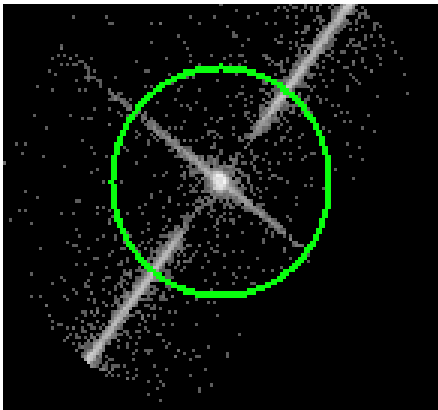


3 Gratings

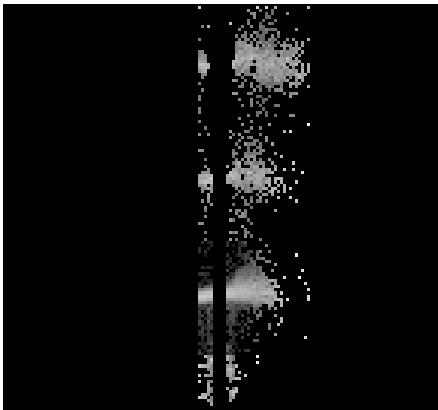
3.1 LETG Arm



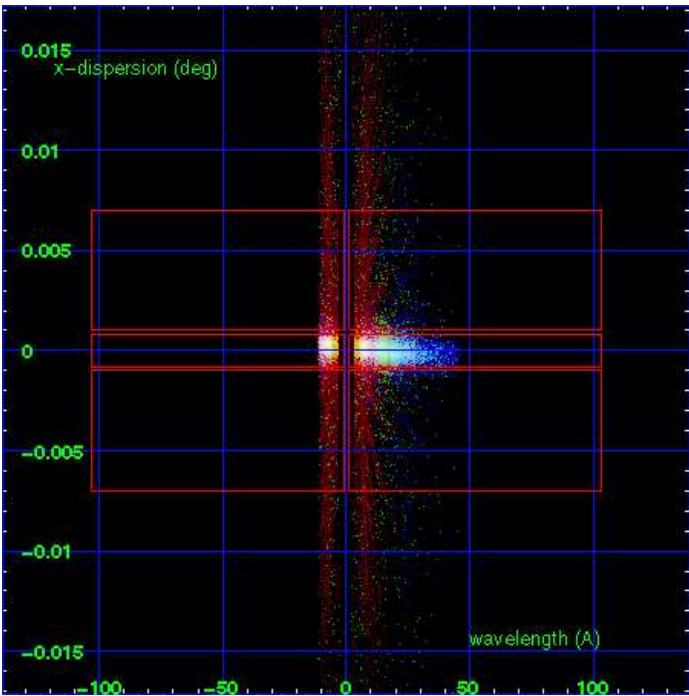
LETG Order Sort 123



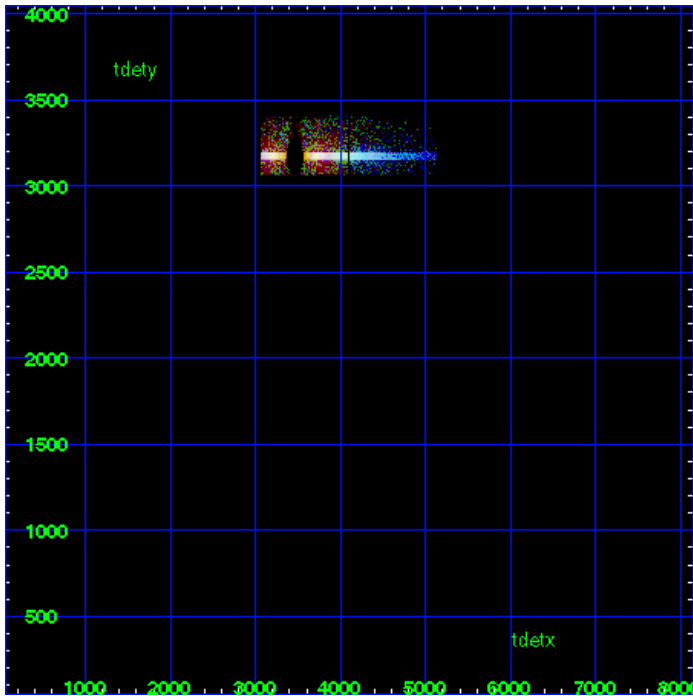
LETG Zero Order



LETG Order Sort ALL

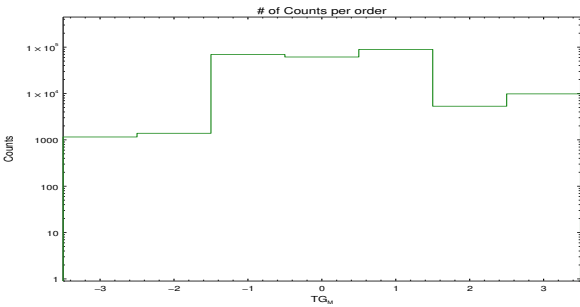


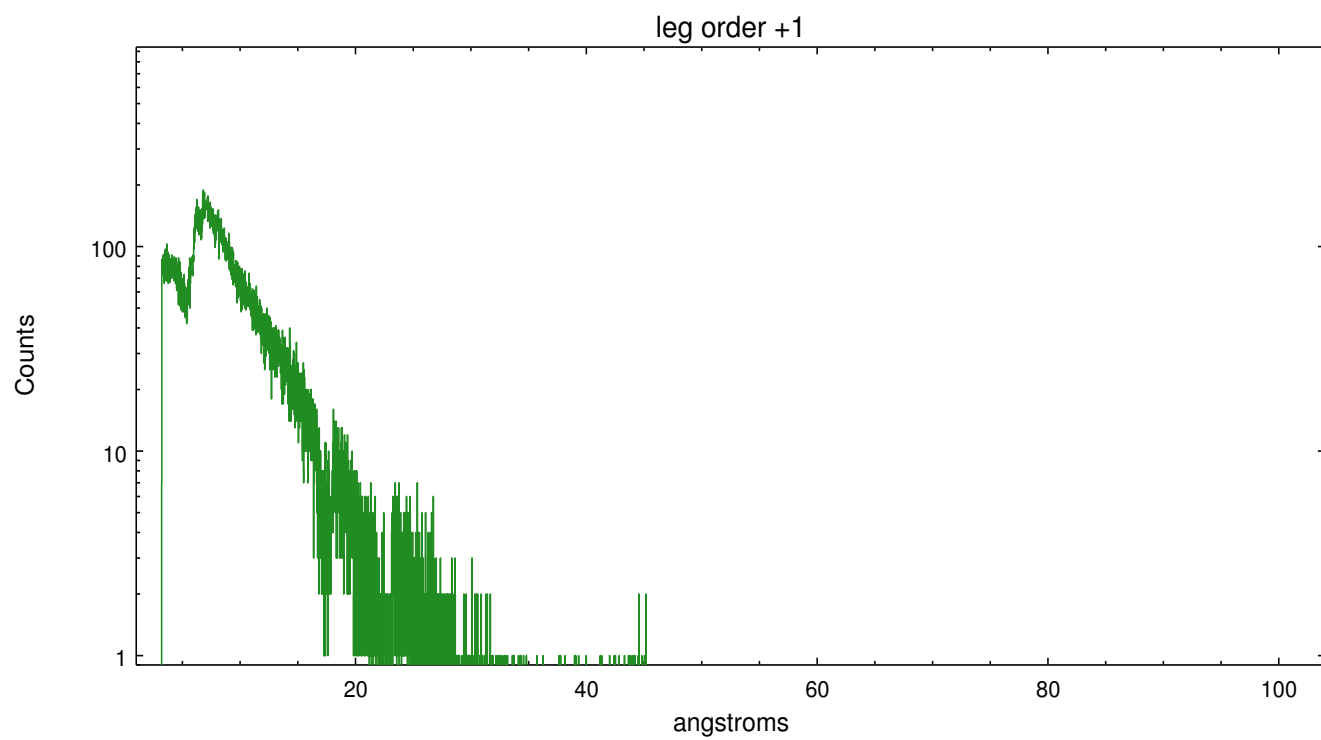
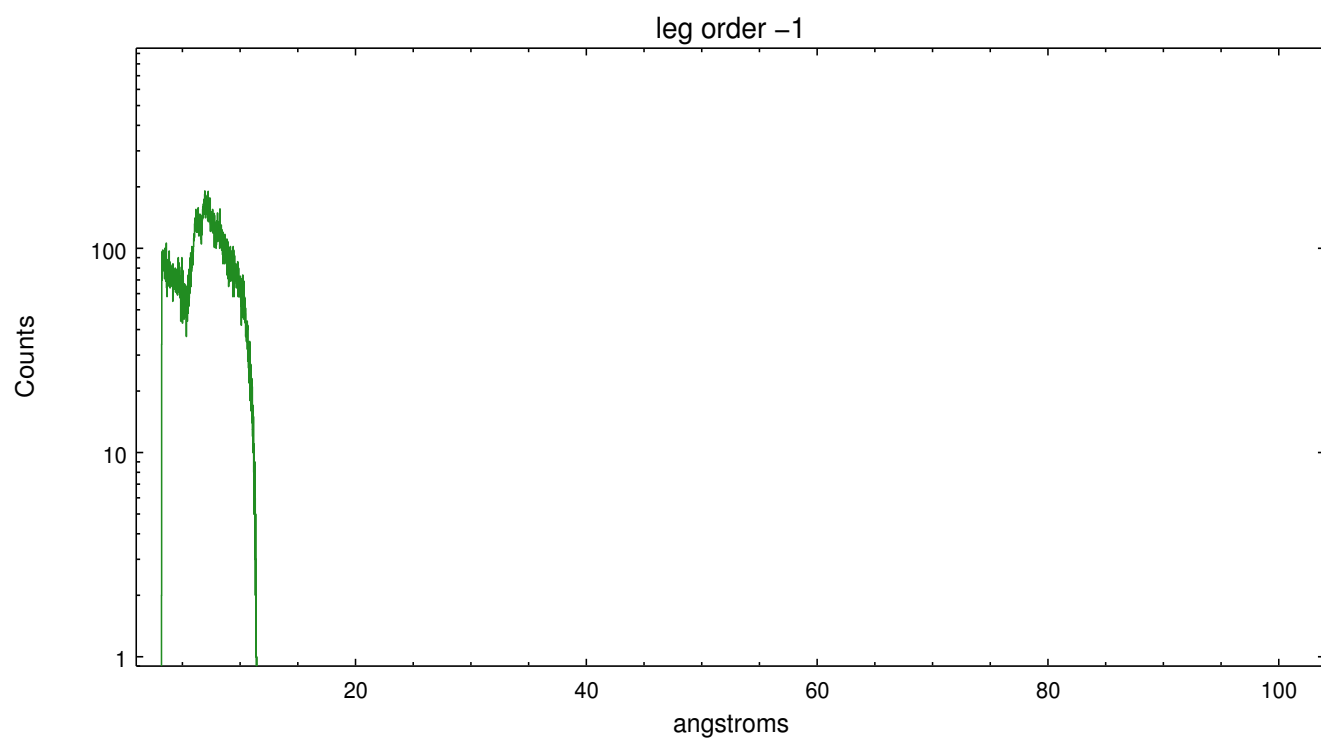
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1154	1385	69318	61303	89197	5313	9820





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.07.25
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.77791764468

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=4491.25, y=4597.25) into the *src1a.fits file table. These corrected coordinates were determined by eye because neither the pipeline tool tgdetect nor the findzero tool were successful in identifying the 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 *src1a.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.

===

Placement of the target on the chip is such that the negative dispersed spectrum is truncated at about 10-12 Å.

=====

The fid 0 radial median offset of 0.401 arcsec and the fid 1 radial median offset of 0.492 arcsec are acceptable for this ACIS CAL observation with a sim_z_offset of -19.99mm.