

V&V Reference Report

L2 ASCDS Version : 8.4.5

Observation 3416 - L2 Version 3
Chandra X-Ray Center

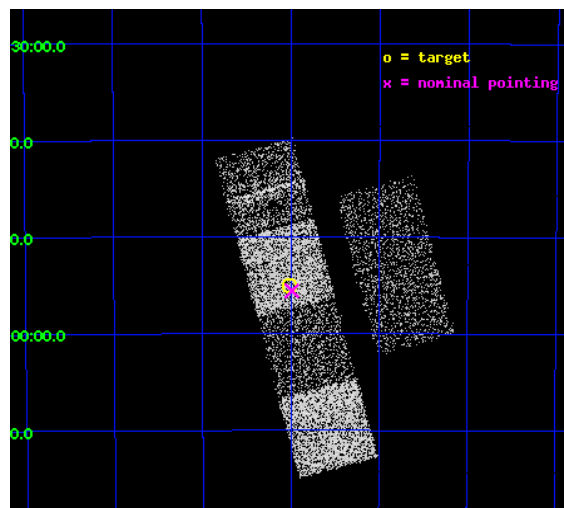
L2 Processing Date : Sep 29 2012

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Bias	3
2.1.3	Parameters	4
2.1.4	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	LETG Arm	17
A	Summary	19
A.1	Status	19
A.2	Comments	19

1 Front

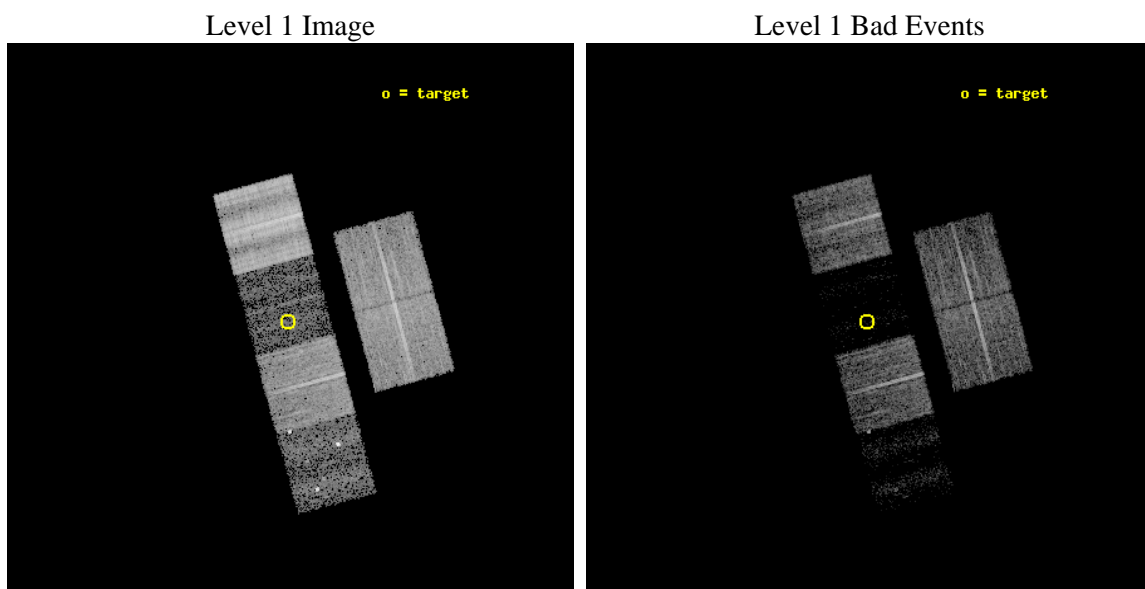
seq_num	100030	Sequence number
obs_id	3416	Observation id
title	ACIS-S LOW ENERGY SPECTROSCOPY AND PHOTOMETRIC IMAGING OF CHARGE EXCHANGE X-RAY EMISSION FROM COMET C/LINEAR WM1 (2000)	Proposal titl
observer	Dr. Carey Lisse	Principal investigator
object	C/LINEAR WM1 (2000)	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	333.25379	Observer's specified target RA [deg]
dec_targ	-51.91754	Observer's specified target Dec [deg]
ra_nom	333.24709480802	Nominal RA [deg]
dec_nom	-51.926351681538	Nominal Dec [deg]
roll_nom	254.92231212114	Nominal Roll [deg]
revision	3	Processing version of data
ontime	8508.8000079095	Sum of GTIs [s]
livetime	8401.0564588251	Livetime [s]
ontime2	8508.8000079095	Sum of GTIs [s]
ontime3	8508.8000079095	Sum of GTIs [s]
ontime5	8508.8000079095	Sum of GTIs [s]
ontime6	8508.8000079095	Sum of GTIs [s]
ontime7	8508.8000079095	Sum of GTIs [s]
ontime8	8502.318067506	Sum of GTIs [s]
l2events	16215	Number of level 2 events



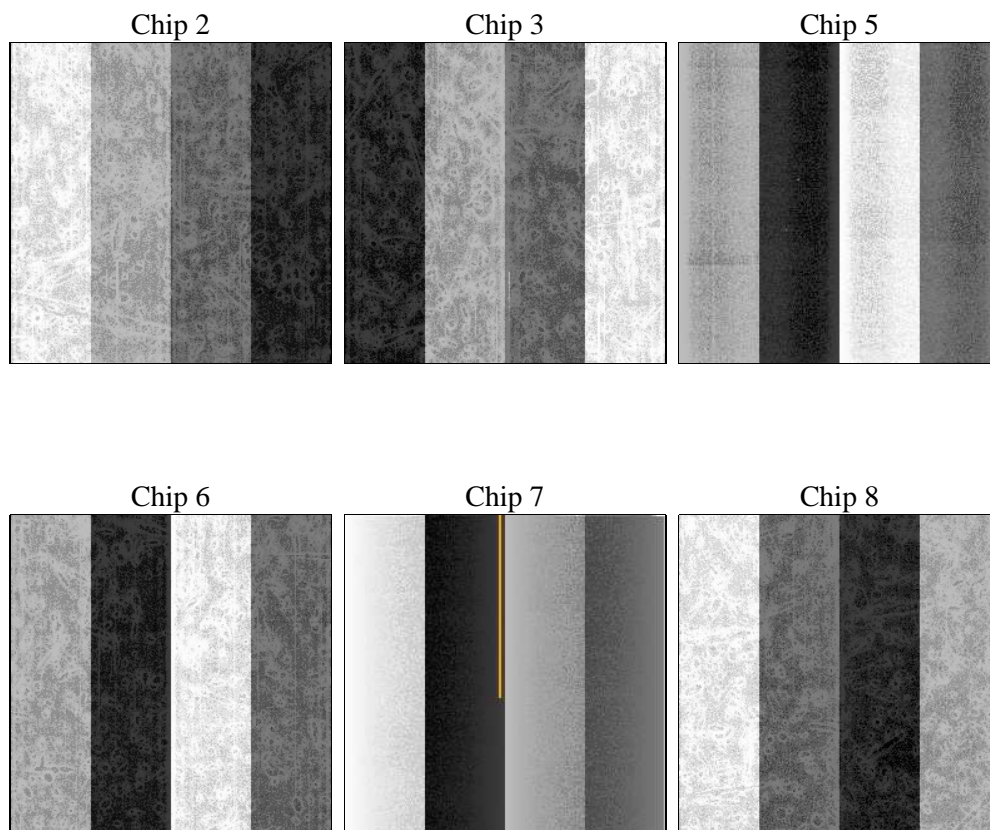
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	8750.000000	[s] Scheduled observation exposure time
ascdsver	8.4.5	Processing system revision	ontime	8508.8000079095	Sum of GTIs [s]
caldsver	4.5.2	 	ontime2	8508.8000079095	Sum of GTIs [s]
date	2012-09-29T15:42:34	Date and time of file creation	ontime3	8508.8000079095	Sum of GTIs [s]
revision	3	Processing version of data	ontime5	8508.8000079095	Sum of GTIs [s]
			ontime6	8508.8000079095	Sum of GTIs [s]
			ontime7	8508.8000079095	Sum of GTIs [s]
			ontime8	8502.318067506	Sum of GTIs [s]
			l1events	223016	Number of level 1 events

2.1.4 Events

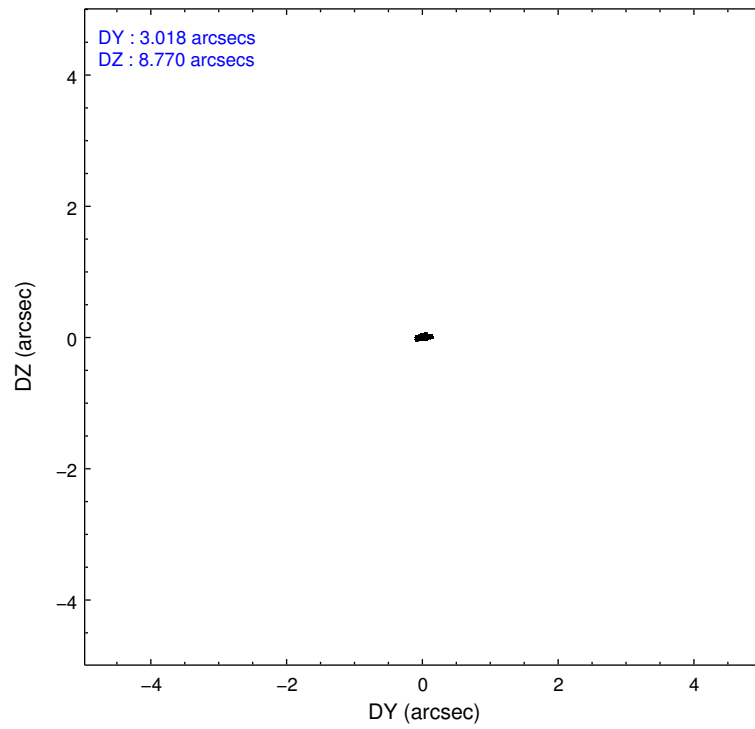
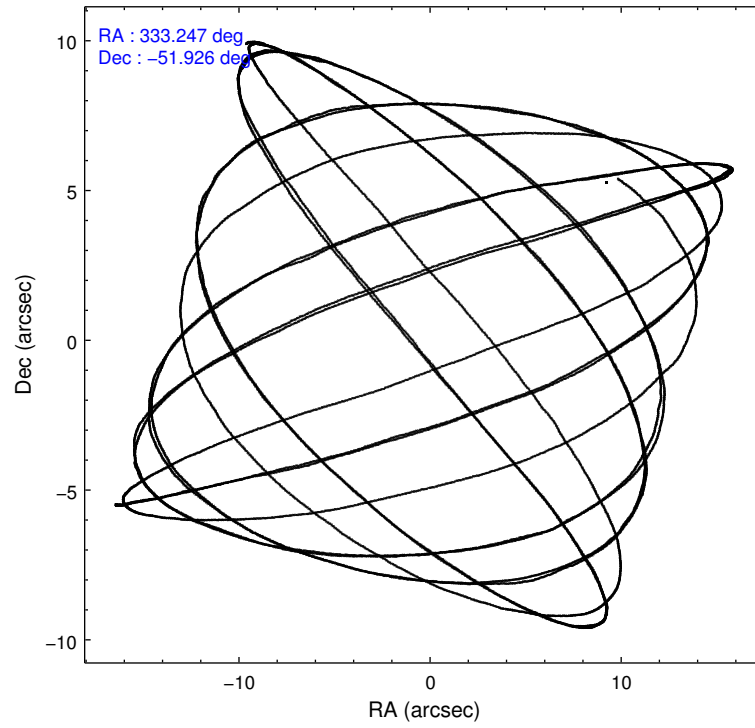
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	42463	38186	13558	37911	6822	84076
rejected events	39321	36815	3862	35269	1292	41107
rejected %	92%	96%	28%	93%	18%	48%

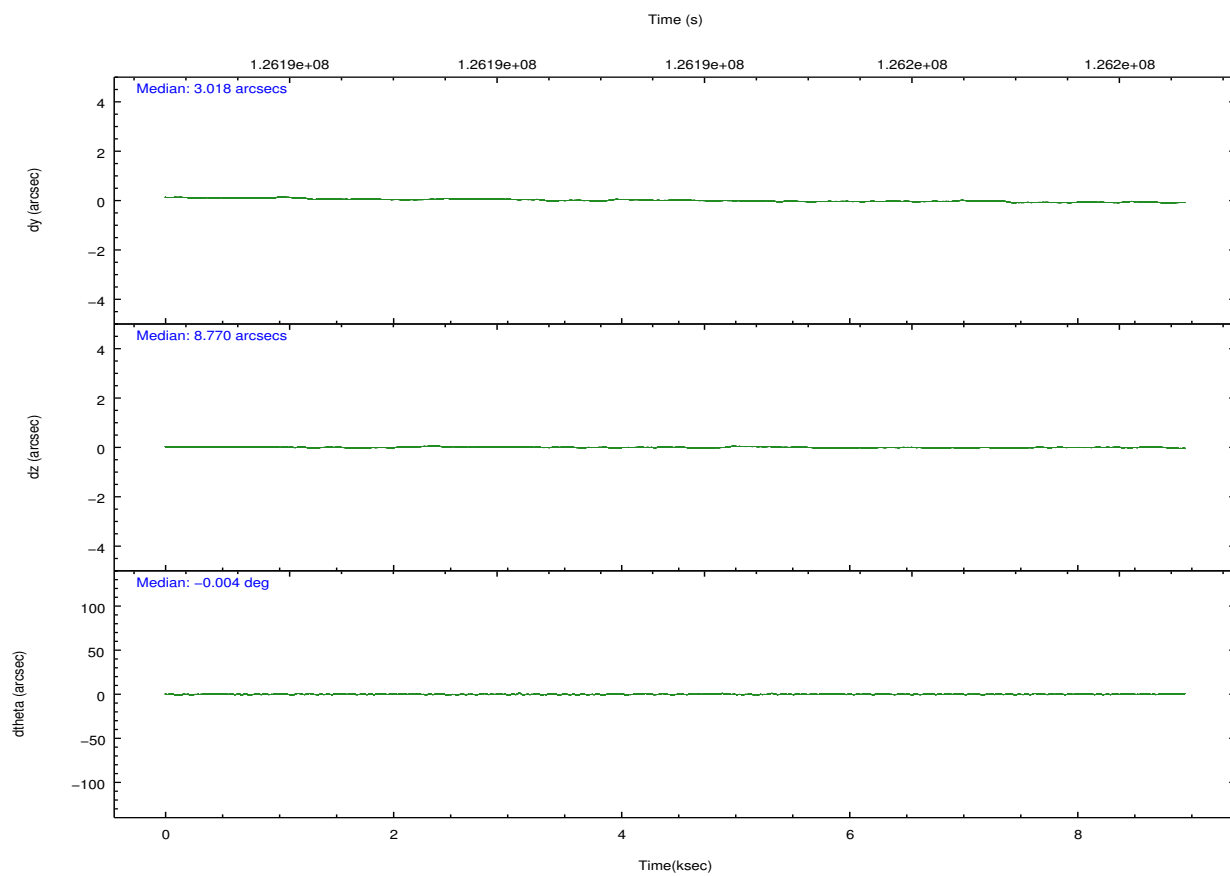
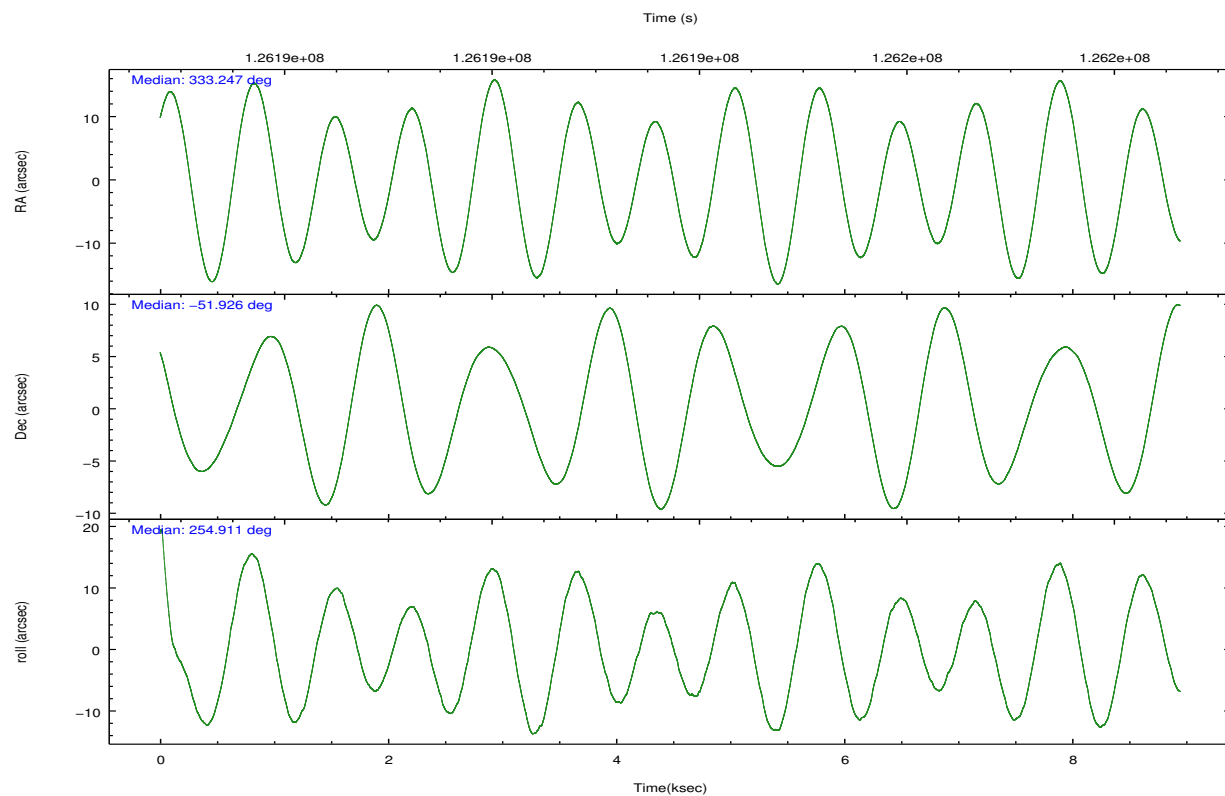
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	1529	624	4362	1481	1459	13057
	3%	1%	32%	3%	21%	15%
grade 1 events	19	9	225	21	25	116
	0%	0%	1%	0%	0%	0%
grade 2 events	892	251	2665	660	1879	5818
	2%	0%	19%	1%	27%	6%
grade 3 events	215	216	901	194	754	7785
	0%	0%	6%	0%	11%	9%
grade 4 events	328	167	883	199	774	6950
	0%	0%	6%	0%	11%	8%
grade 5 events	61	31	626	27	218	654
	0%	0%	4%	0%	3%	0%
grade 6 events	178	114	887	108	667	9383
	0%	0%	6%	0%	9%	11%
grade 7 events	39241	36774	3009	35221	1046	40313
	92%	96%	22%	92%	15%	47%

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	LETG	LETG	Obspar update status	NONE	UPDATED
Data mode	VFAINT	VFAINT	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	333.235173	333.2470948080179	Subarray requested	NONE	NONE
[deg] Pointing Dec	-51.900072	-51.92635168153809	Alternating exposures requested	N	N
[deg] Pointing Roll	254.756302	254.9223121211434	[s] Primary exposure time	0.000000	3.2
[s] Window start time (MET)	126144064.184000	126144064.184000			
[s] Window stop time (MET)	126230404.184000	126230404.184000			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-190.132523	-190.1400660498719			
[mm] SIM translation stage offset	0	0.00754346686406393			
[s] Observation start time (MET)	126189437.184000	126189060.87268			
Observation start date	2001-12-31T12:36:13	2001-12-31T12:31:00			
[s] Observation end time (MET)	126198187.184000	126199741.88561			
Observation end date	2001-12-31T15:02:03	2001-12-31T15:29:01			
Read mode	TIMED	TIMED			

2.3 Aspect



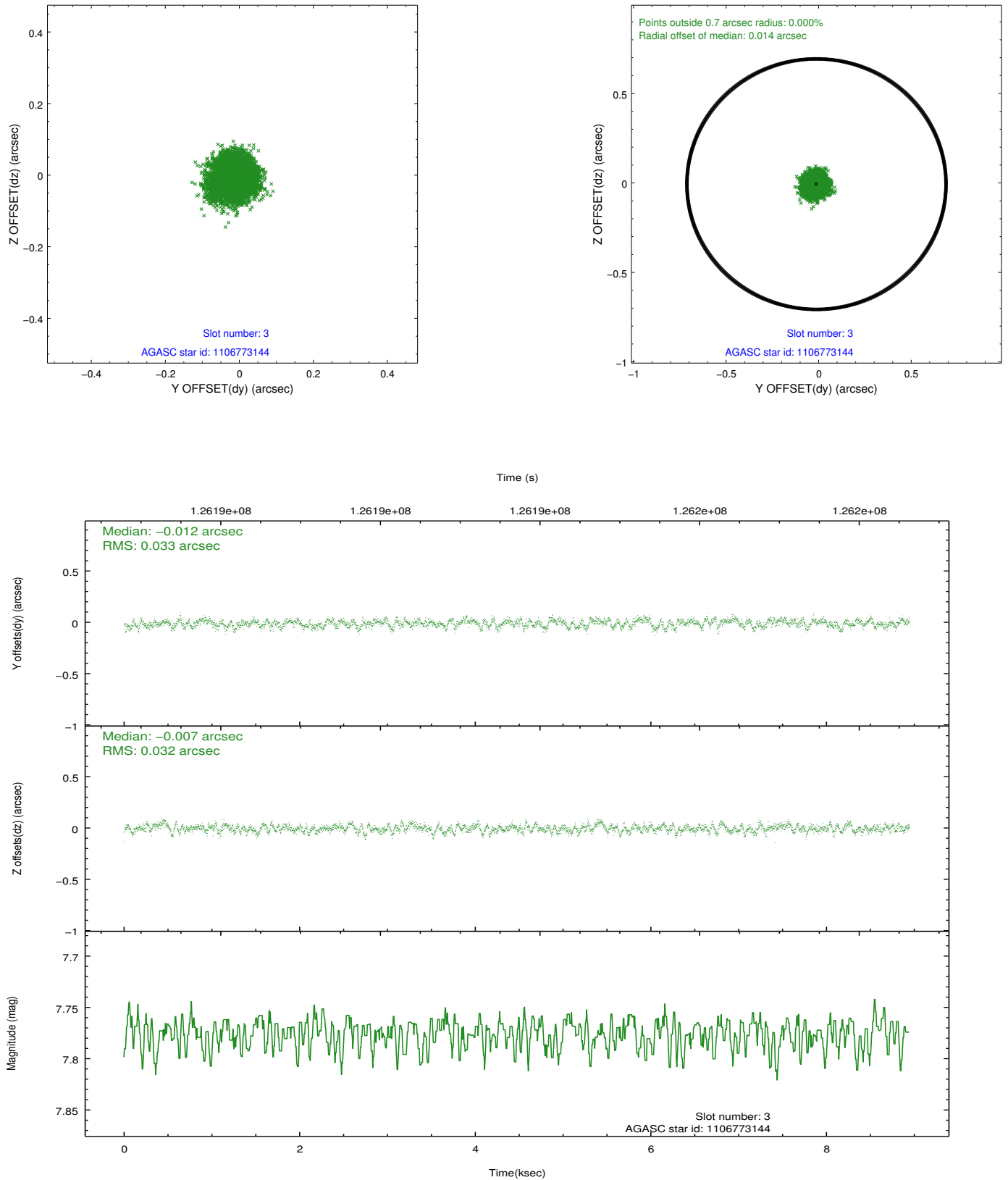


Slot Statistics

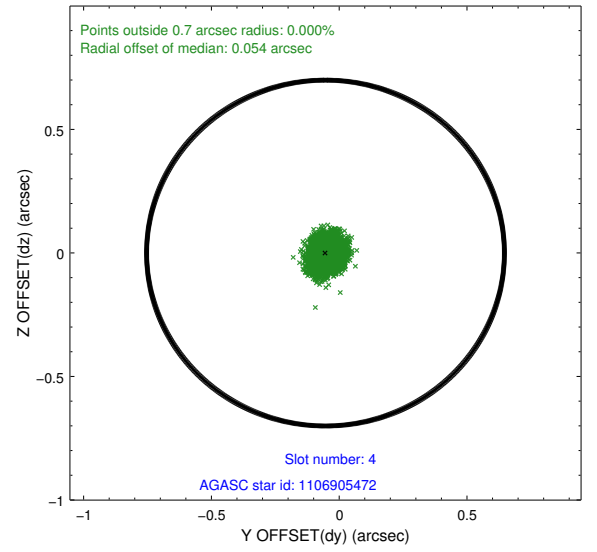
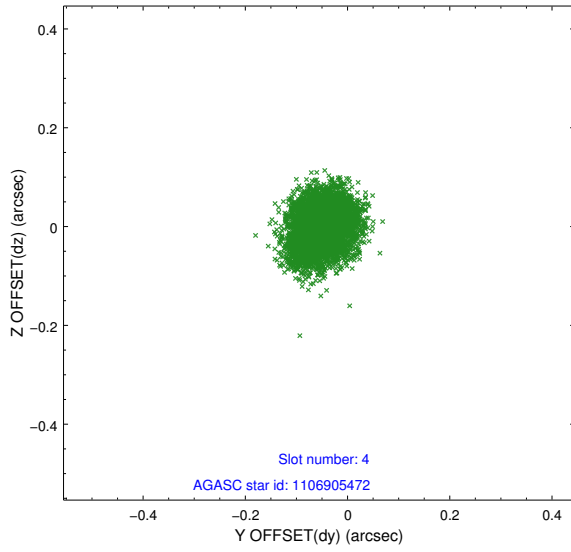
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	2182	-0.013	-0.004	0.006	0.010	0.000000	0.000000	-755.68	-1729.99
1	FID	ACIS-S-4	7.20	2182	-0.038	0.007	0.006	0.012	0.000000	0.000000	2157.29	177.88
2	FID	ACIS-S-5	7.24	2182	0.020	0.006	0.007	0.013	0.000000	0.000000	-1807.71	172.23
3	GUIDE	1106773144	7.78	4364	-0.012	-0.007	0.049	0.078	333.747596	-52.196523	735.80	1371.79
4	GUIDE	1106905472	7.91	4363	-0.054	-0.001	0.055	0.087	333.959376	-52.158506	484.42	1789.32
5	GUIDE	1106774680	7.77	4363	0.056	-0.122	0.056	0.089	332.589342	-51.960089	591.63	-1323.84
6	GUIDE	1156324016	7.93	4363	0.111	0.133	0.046	0.075	333.825181	-52.701240	2449.13	2001.01
7	GUIDE	1106775976	8.78	4362	-0.104	-0.004	0.073	0.116	332.311048	-51.807893	233.96	-2068.83

2.4 Star Slots

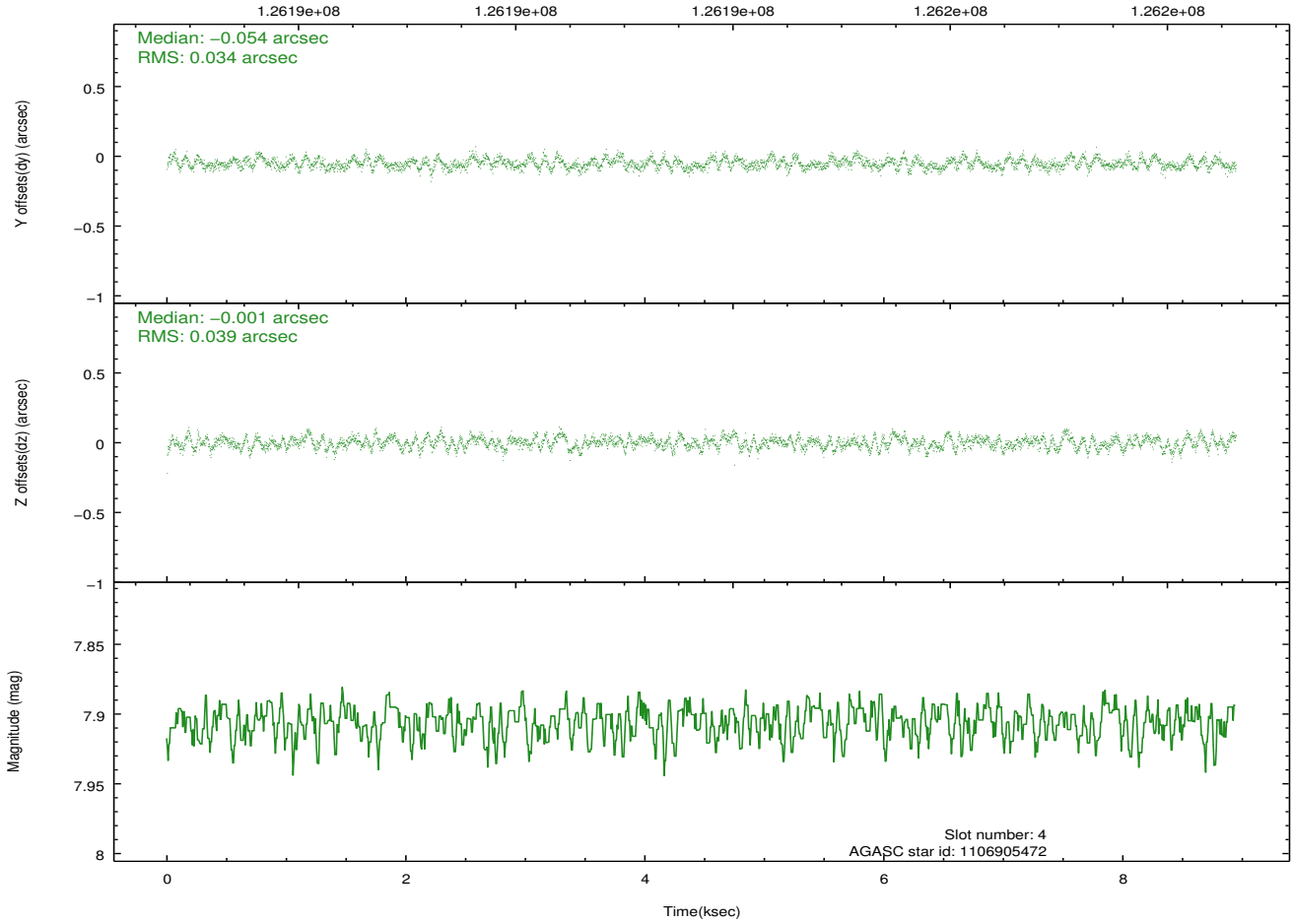
2.4.1 Slot 3



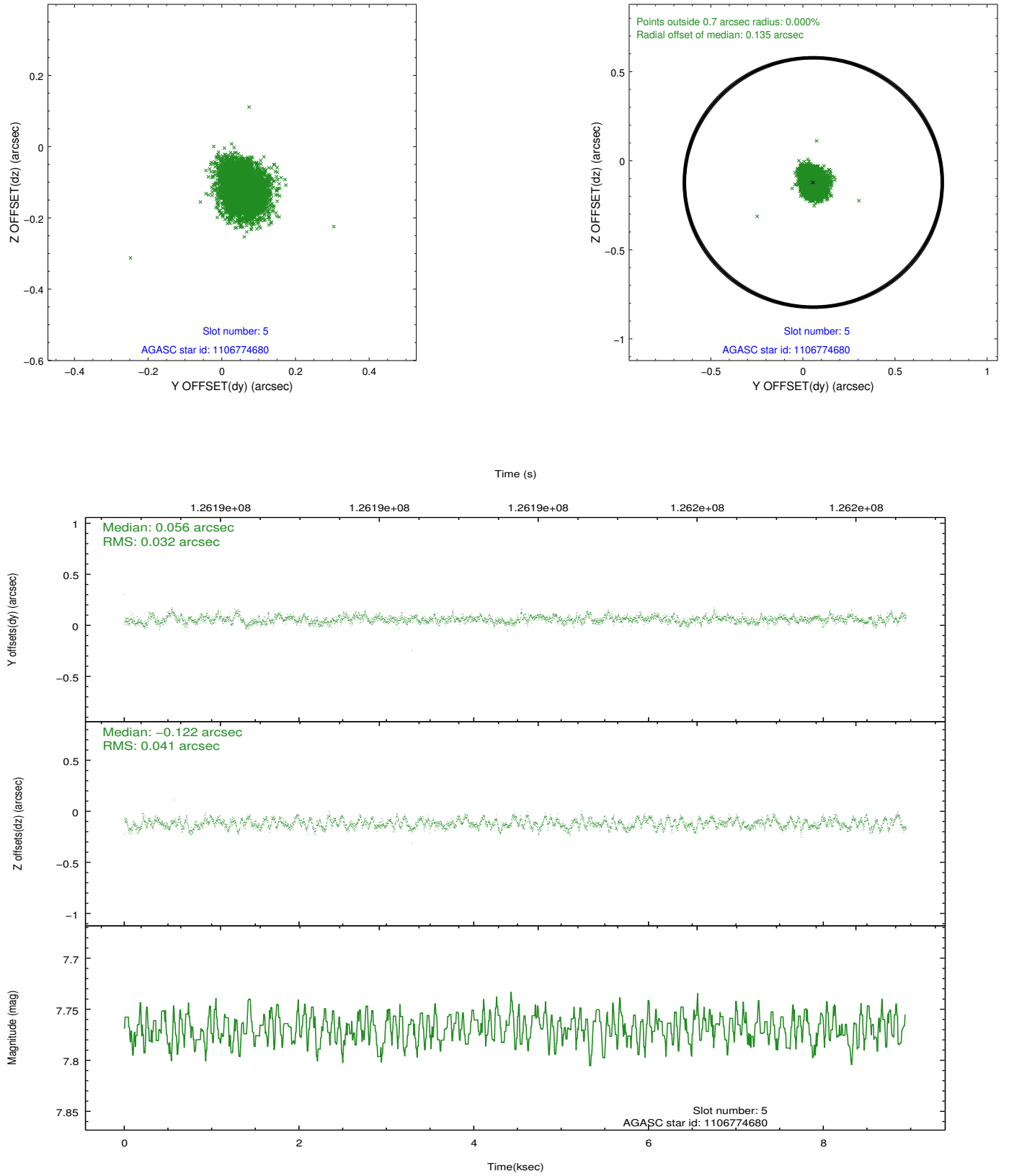
2.4.2 Slot 4



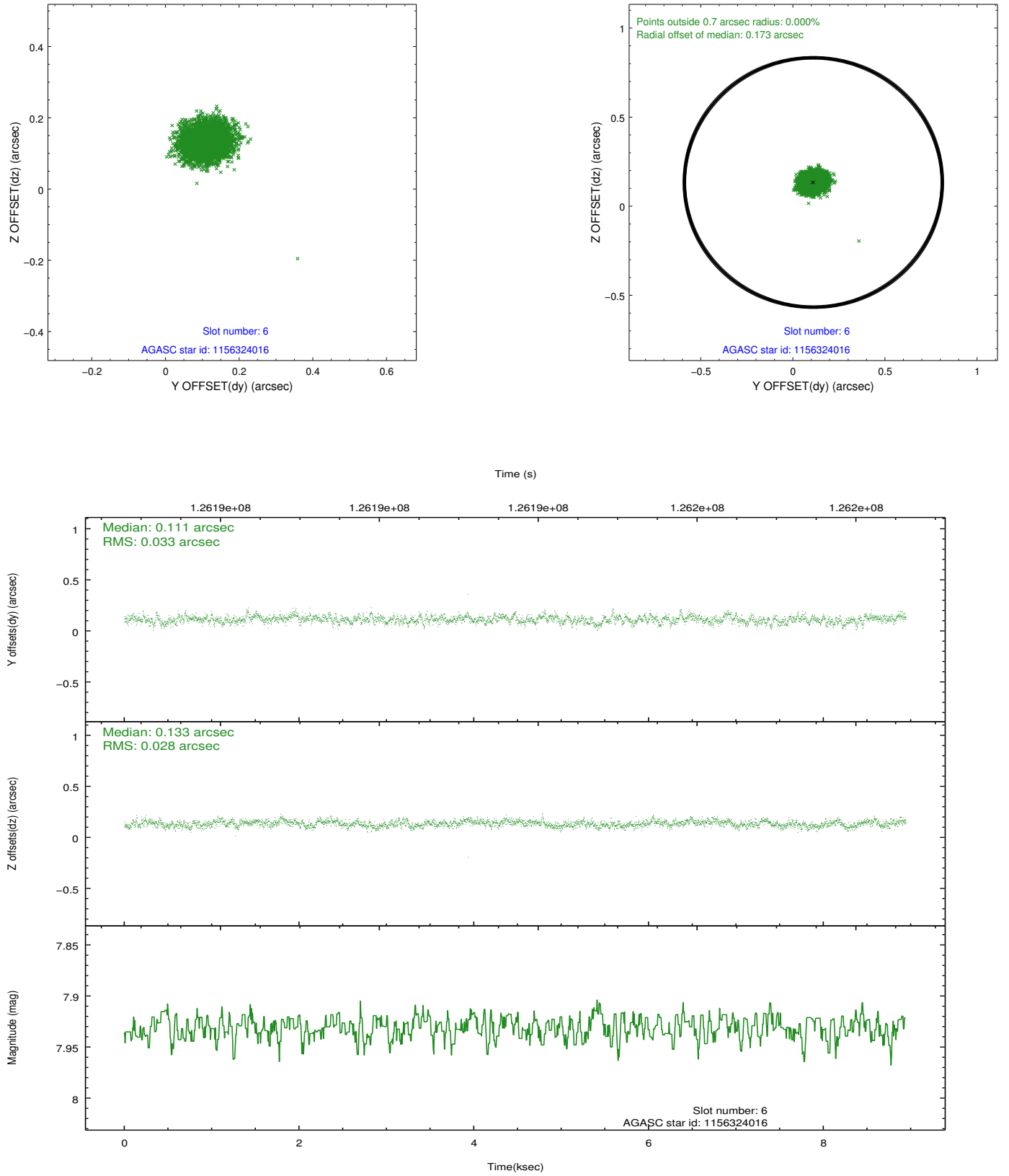
Time (s)



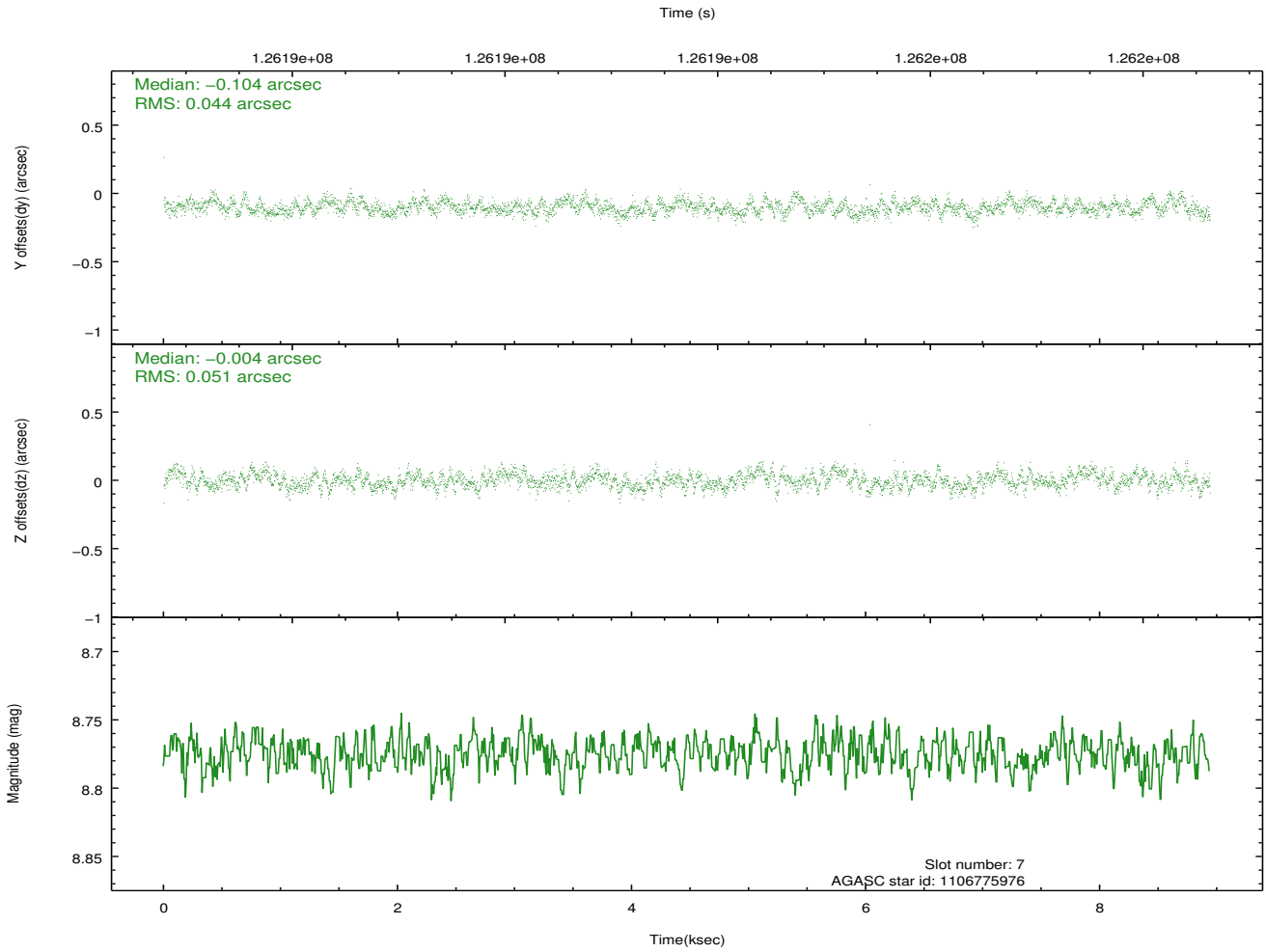
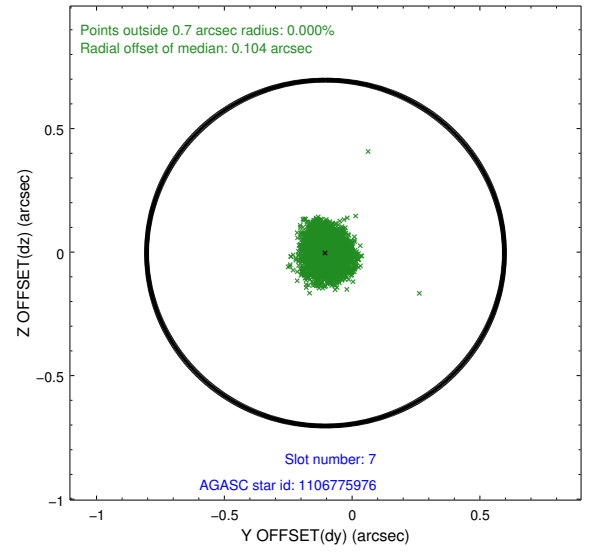
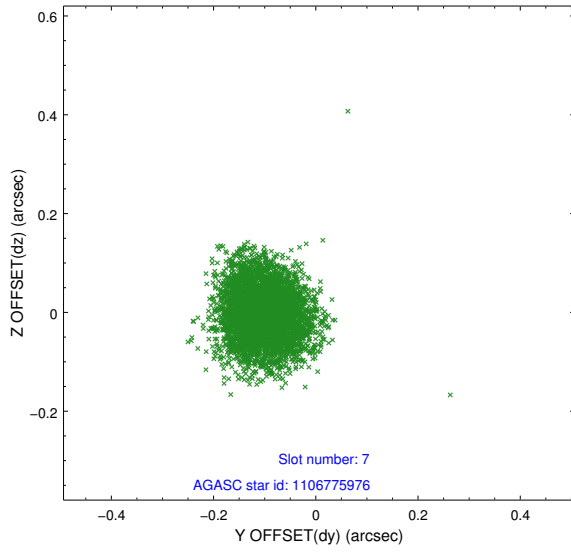
2.4.3 Slot 5



2.4.4 Slot 6

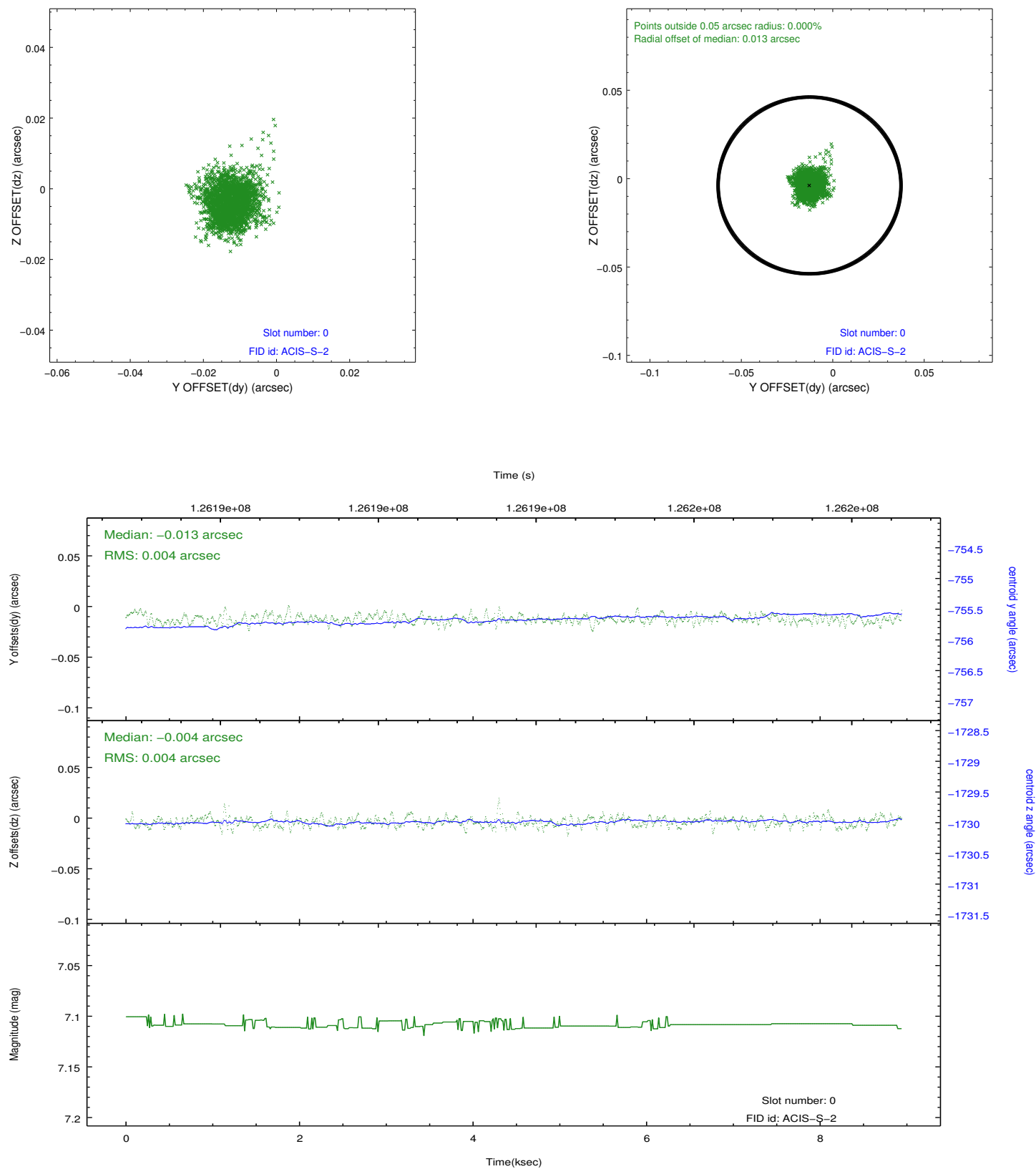


2.4.5 Slot 7

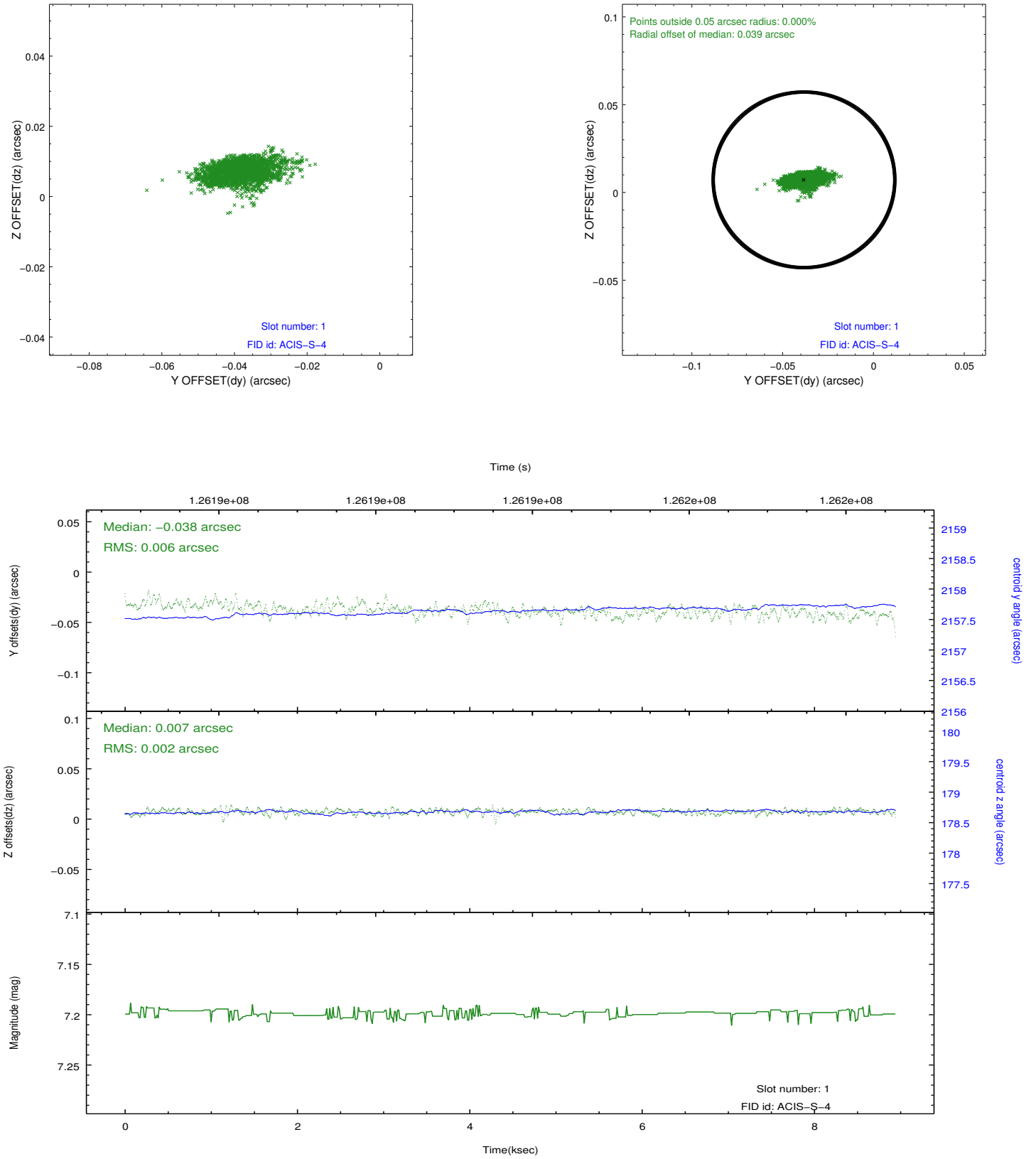


2.5 FID Slots

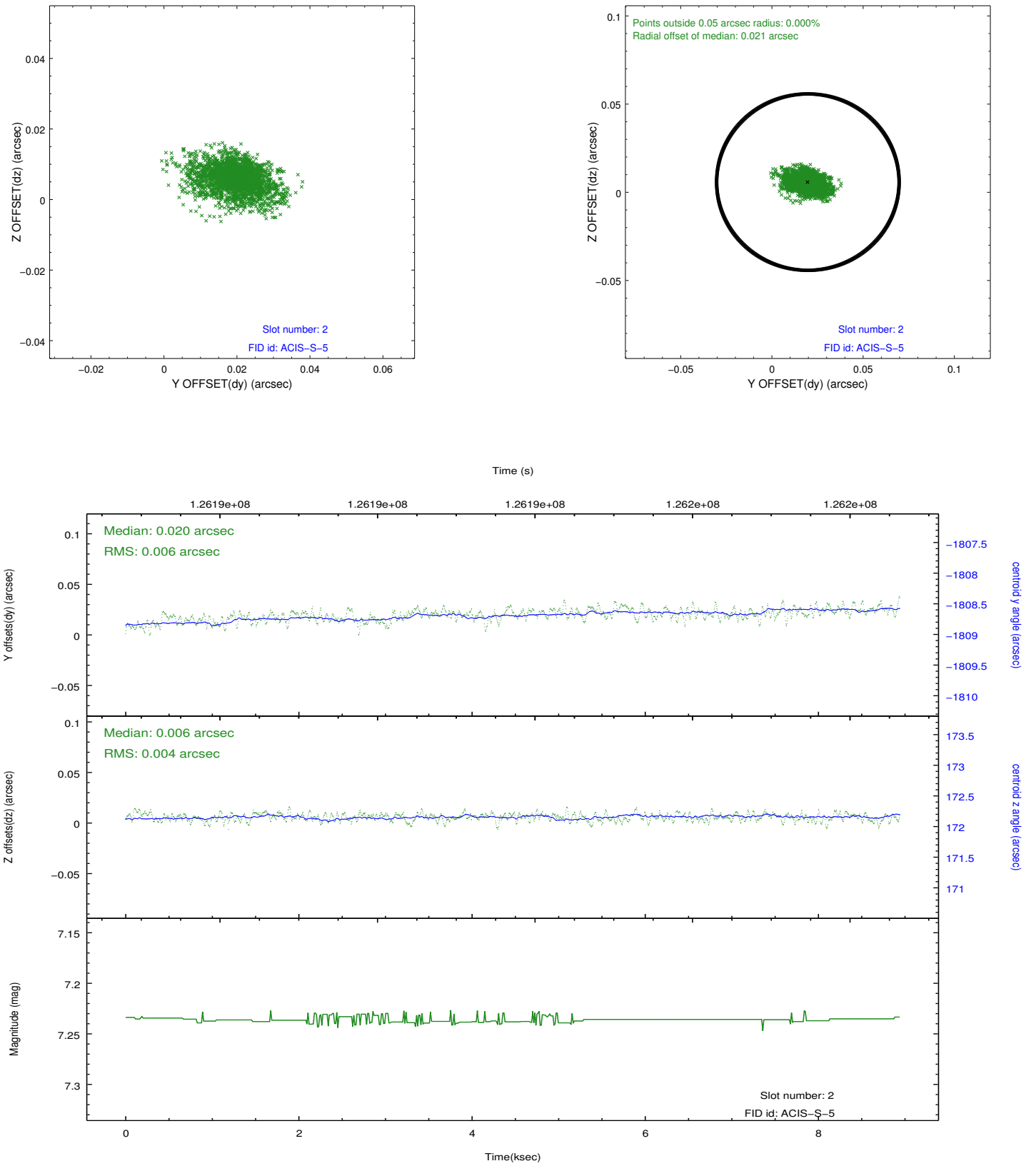
2.5.1 Slot 0



2.5.2 Slot 1

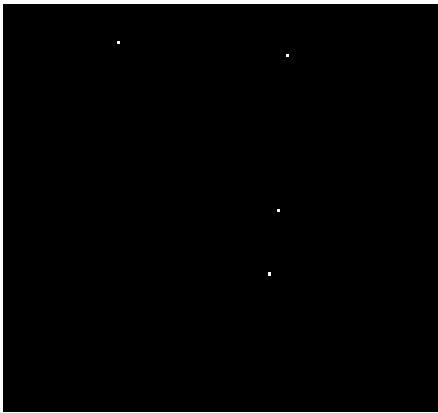


2.5.3 Slot 2

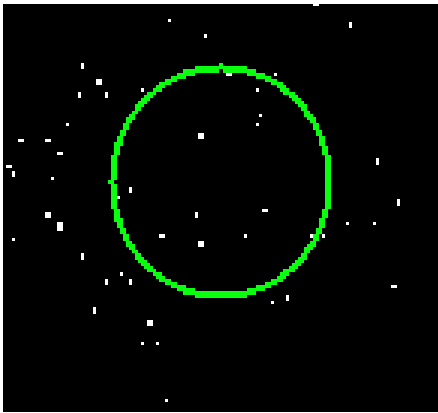


3 Gratings

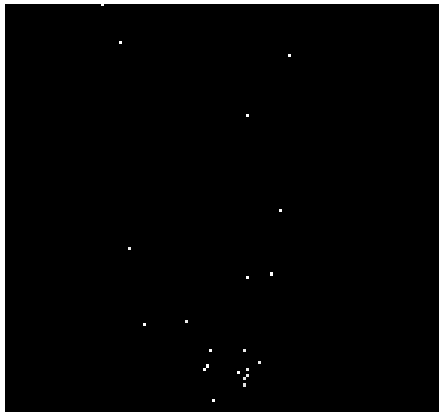
3.1 LETG Arm



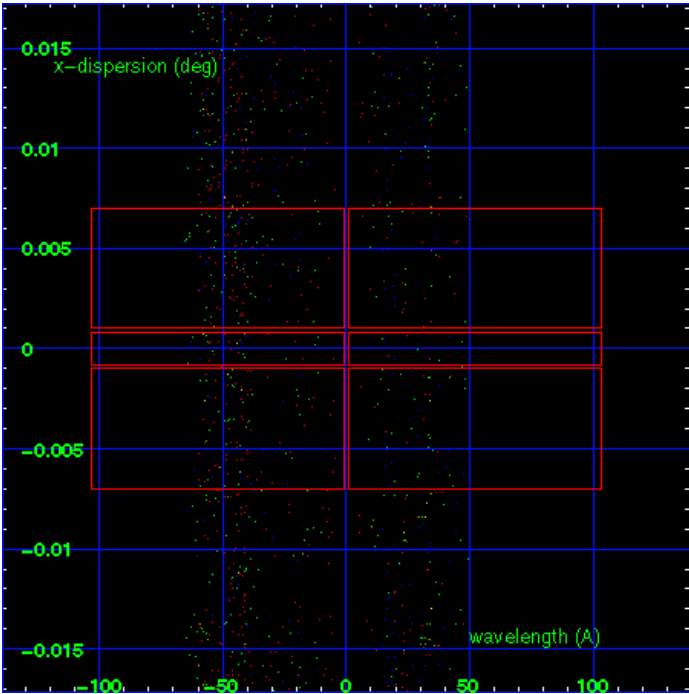
LETG Order Sort 123



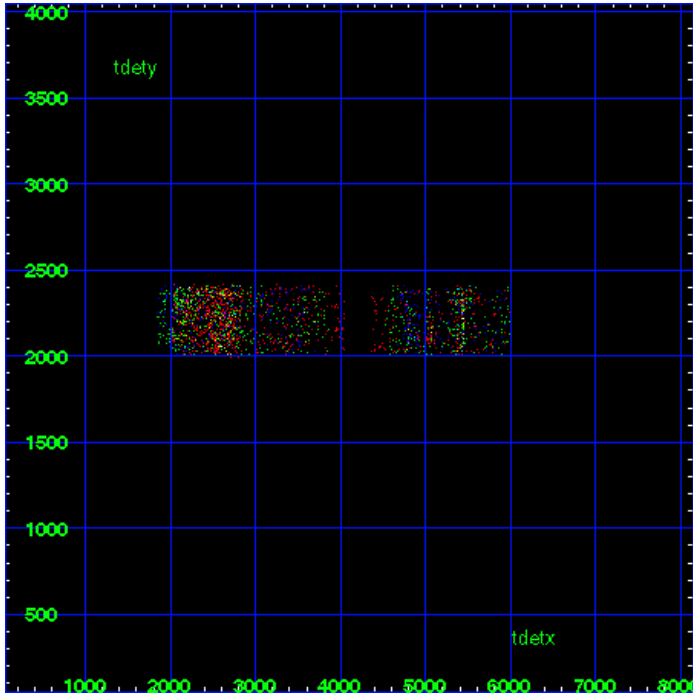
LETG Zero Order



LETG Order Sort ALL

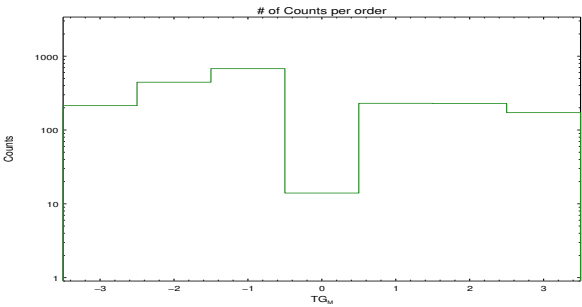


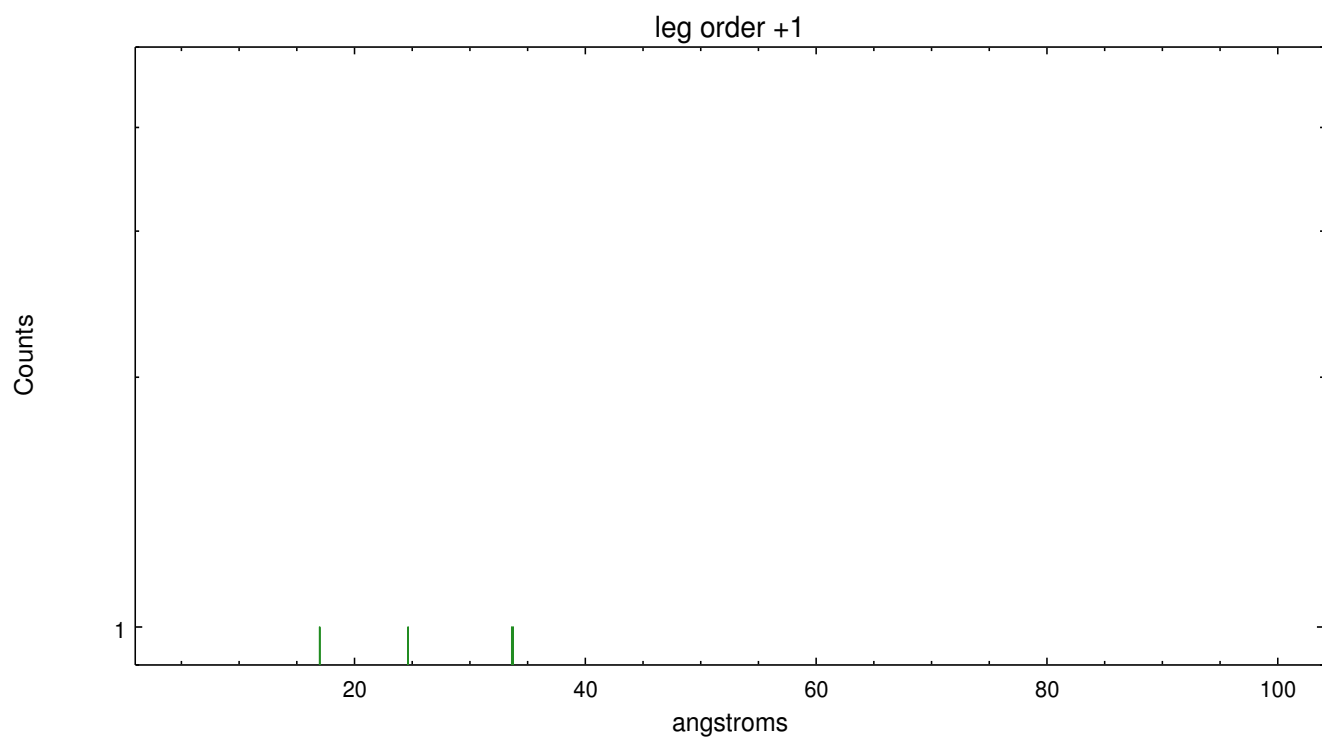
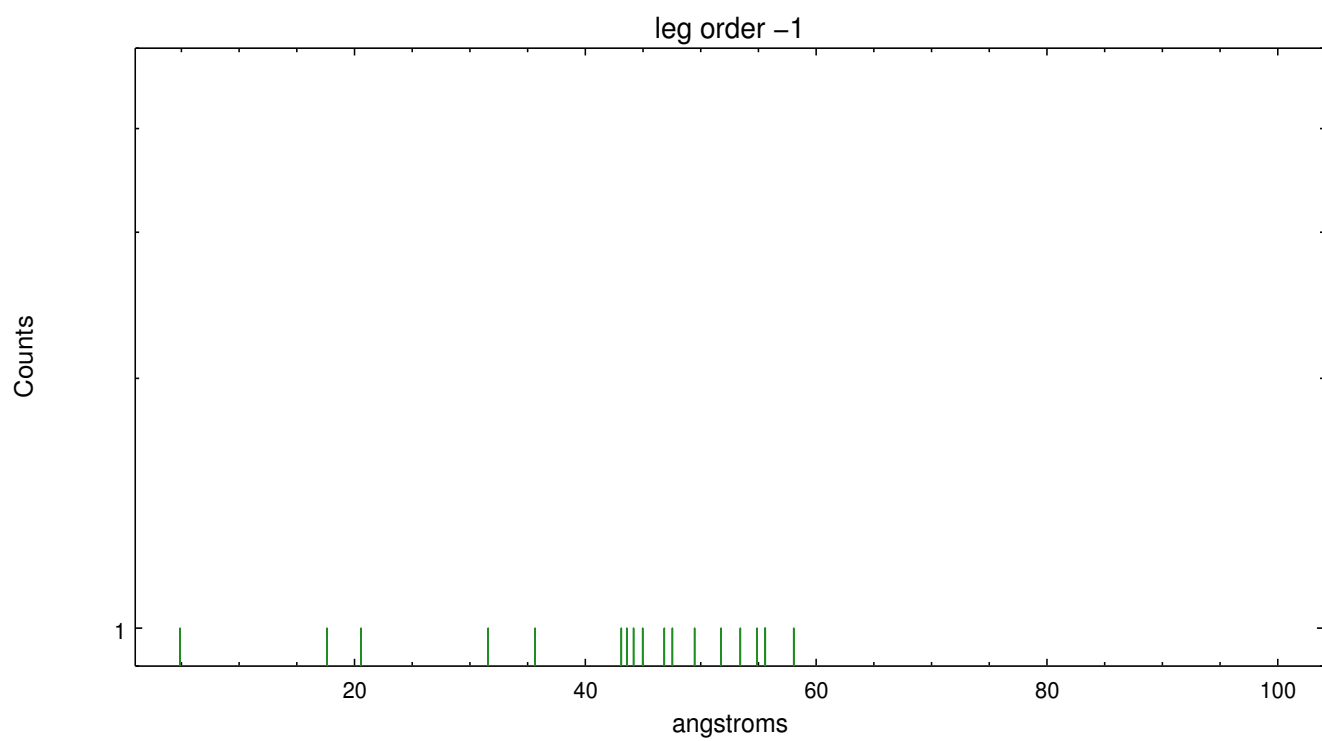
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	214	444	678	14	230	229	172





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.10.05
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	8.512

A.2 Comments

This is an observation of a moving target. Event positions are in the reference from of Chandra, not of the comet. Users should run a software tool such as `sso_freeze` to reposition the events in the reference from of the comet, then run normal data analysis tools such as `tgdetect` and spectral extraction. Streak on chip 8 is not fully removed with pipeline processing. Additional analysis procedures by the user may improve the uniformity of chip 8.

===

Energy filter allowed only events with energies 0.1 to 2.0 keV to be recorded.

===

Standard software processing technique using the tool `tgdetect` failed to determine an accurate position for the zeroth order for this observation. The target is moving through the field of view during the observation. The processing software defaulted to the coordinates supplied by the user for the position of the zeroth order for the grating spectral extraction. Spectra products from this processing, which does not include `sso_freeze`, are not useful.

===

Gain and CTI correction are not well calibrated on CCD_ID 5 (ACIS-S1). Default order sorting can clip some regions, particularly longward of 30A (first order). User-specified custom processing parameters may be required in `tg_resolve_events` (`osipfile=None`, `osort_lo`, `osort_hi ~0.5`) though this can allow more zeroth order background at short wavelengths.