

V&V Reference Report

L2 ASCDS Version : 8.5

Observation 5363 - L2 Version 3
Chandra X-Ray Center

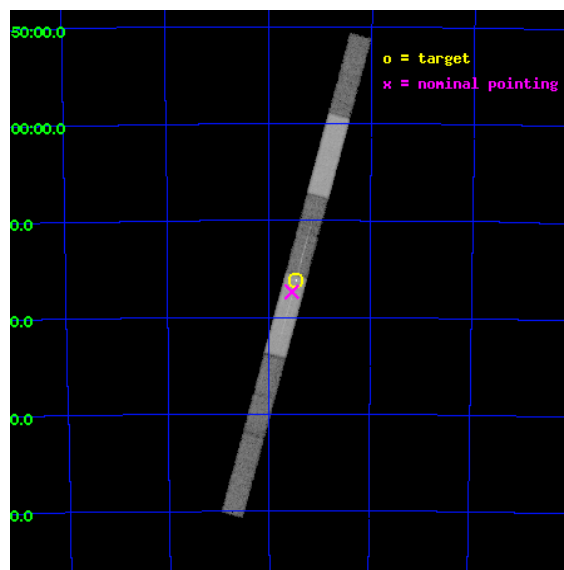
L2 Processing Date : Dec 8 2012

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1 Front

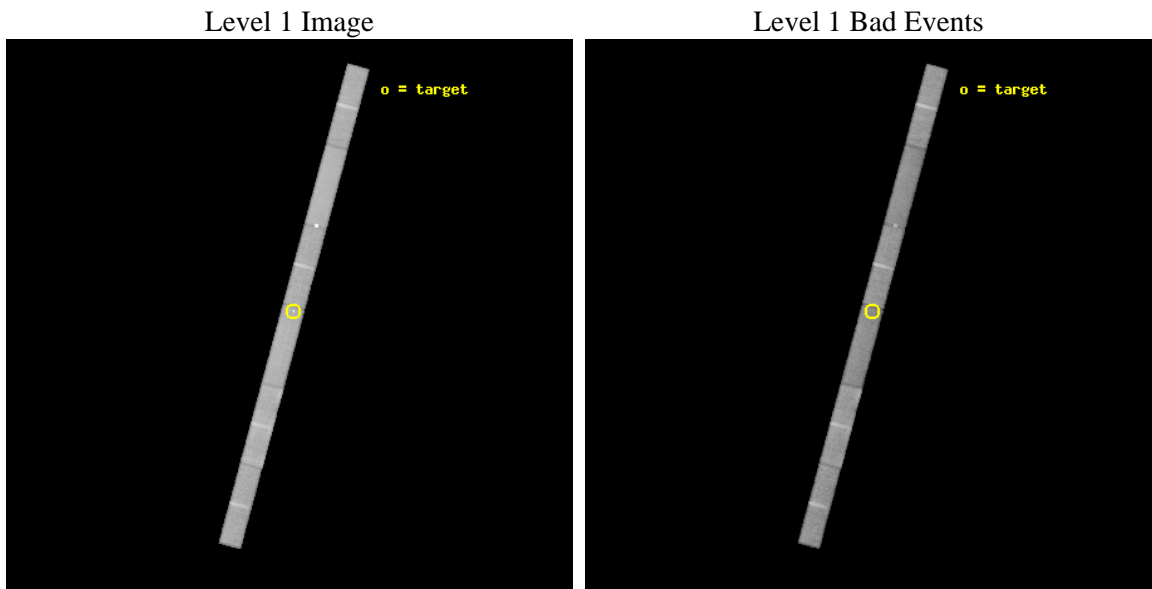
seq_num	500460	Sequence number
obs_id	5363	Observation id
title	Spatially resolved grating spectrometry of the newborn supernova remnant SNR1987A	Proposal title
observer	Dr. Richard McCray	Principal investigator
object	SNR1987A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.886565705467	Nominal RA [deg]
dec_nom	-69.289559376999	Nominal Dec [deg]
roll_nom	105.17524603261	Nominal Roll [deg]
revision	3	Processing version of data
ontime	45236.0	Sum of GTIs [s]
livetime	43452.701145009	Livetime [s]
ontime4	45236.0	Sum of GTIs [s]
ontime5	45236.0	Sum of GTIs [s]
ontime6	45236.0	Sum of GTIs [s]
ontime7	45236.0	Sum of GTIs [s]
ontime8	45236.0	Sum of GTIs [s]
ontime9	45236.0	Sum of GTIs [s]
l2events	154843	Number of level 2 events



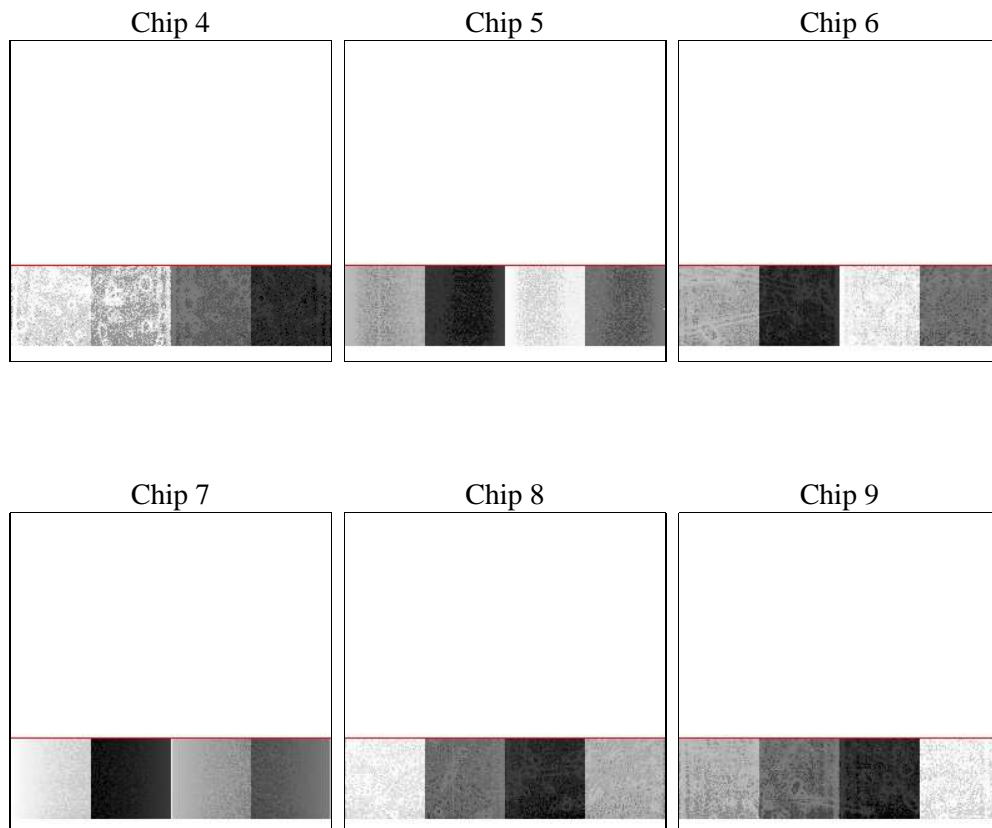
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	45098.000000	[s] Scheduled observation exposure time
ascdsver	8.5	Processing system revision	ontime	45236.0	Sum of GTIs [s]
caldsver	4.5.4	 	ontime4	45236.0	Sum of GTIs [s]
date	2012-12-08T11:19:15	Date and time of file creation	ontime5	45236.0	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	45236.0	Sum of GTIs [s]
			ontime7	45236.0	Sum of GTIs [s]
			ontime8	45236.0	Sum of GTIs [s]
			ontime9	45236.0	Sum of GTIs [s]
			l1events	727424	Number of level 1 events

2.1.4 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	117411	141483	107675	125033	136965	98857	grade 0 events	4881	12048	5379	6123	7804	4558
rejected events	104449	72567	94454	69581	109922	86666		4%	8%	4%	4%	5%	4%
rejected %	88%	51%	87%	55%	80%	87%	grade 1 events	53	1065	33	114	62	29
								0%	0%	0%	0%	0%	0%
							grade 2 events	2756	17801	2302	11627	5550	2172
								2%	12%	2%	9%	4%	2%
							grade 3 events	1712	4655	1751	6045	3290	1743
								1%	3%	1%	4%	2%	1%
							grade 4 events	1701	4234	1743	5736	3111	1644
								1%	2%	1%	4%	2%	1%
							grade 5 events	3555	11347	3874	10962	4990	3839
								3%	8%	3%	8%	3%	3%
							grade 6 events	2052	30966	2157	26347	7422	2198
								1%	21%	2%	21%	5%	2%
							grade 7 events	100701	59367	90436	58079	104736	82674
								85%	41%	83%	46%	76%	83%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-456789	ACIS-456789	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	83.941966	83.88656570546738	Subarray requested	CUSTOM	1/4
[deg] Pointing Dec	-69.308481	-69.28955937699926	Subarray start row	49	49
[deg] Pointing Roll	105.070441	105.1752460326149	Subarray row count	256	256
[deg] Roll angle	100.000000	100.000000	Alternating exposures requested	N	N
[deg] Roll tolerance	10.000000	10.000000	[s] Primary exposure time	0.000000	1
Roll constraint allows 180D rotation	N	N			
[mm] SIM focus pos	-0.684267	-0.6828225247311905			
[mm] SIM defocus	0	0.001444936568705701			
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
[s] Observation start time (MET)	210732106.184000	210730907.11751			
Observation start date	2004-09-05T00:40:42	2004-09-05T00:21:47			
[s] Observation end time (MET)	210777204.184000	210778512.73213			
Observation end date	2004-09-05T13:12:20	2004-09-05T13:35:12			
Read mode	TIMED	TIMED			

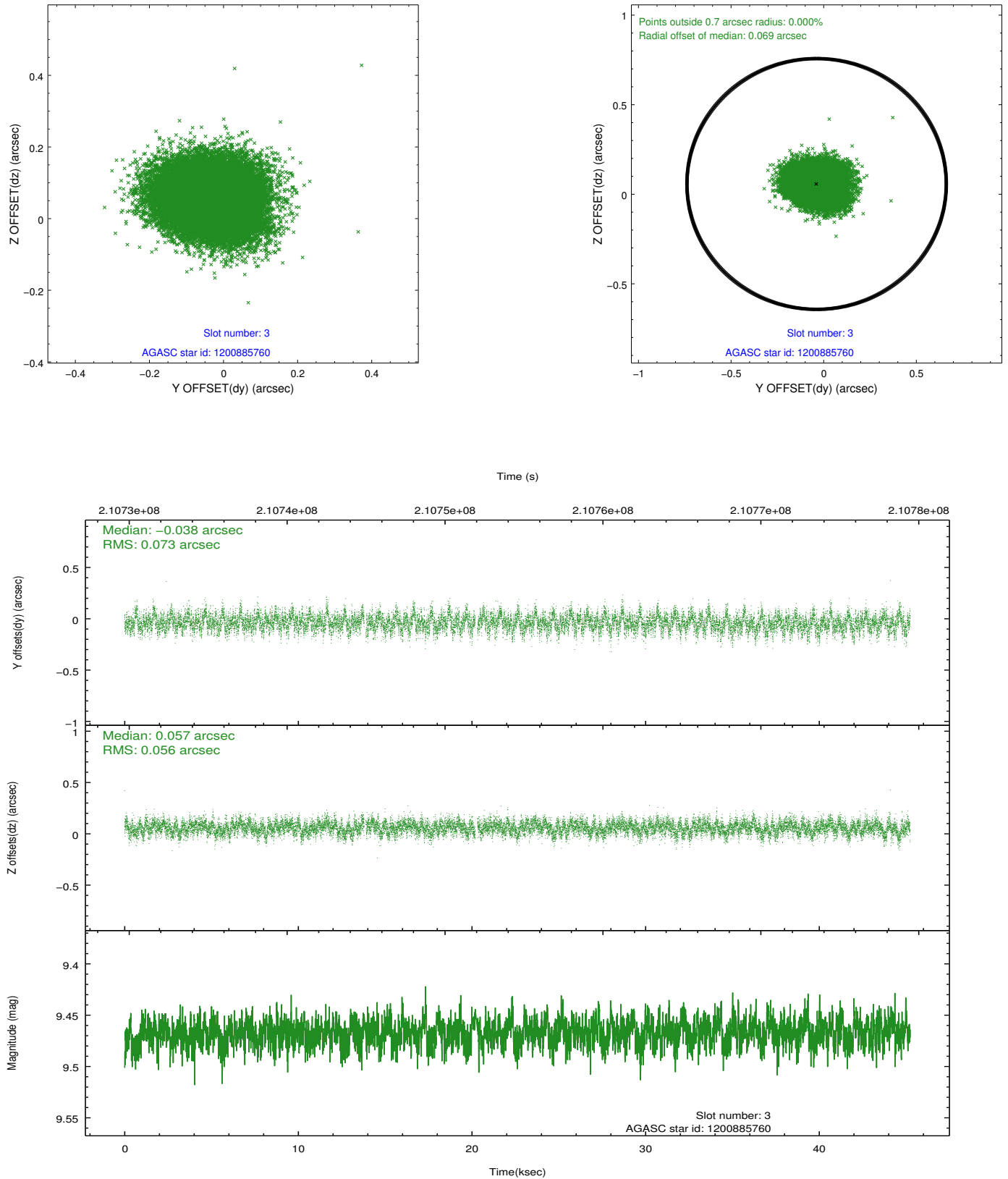
2.3 Aspect

Slot Statistics

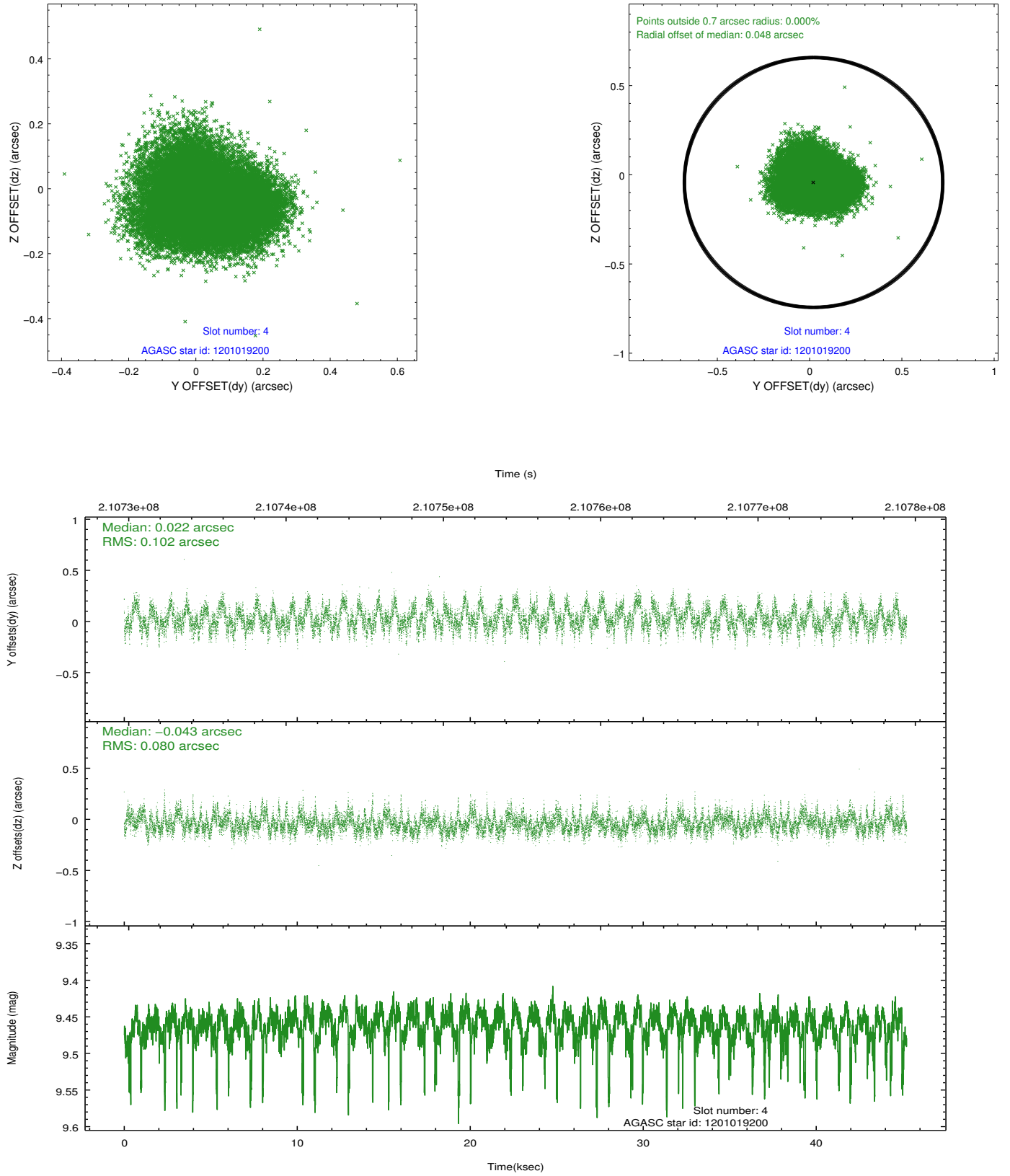
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.08	11034	-0.083	-0.092	0.010	0.020	0.000000	0.000000	-758.68	-1895.77
1	FID	ACIS-S-4	7.18	11034	0.144	0.065	0.018	0.048	0.000000	0.000000	2154.81	12.84
2	FID	ACIS-S-5	7.23	11032	-0.089	0.035	0.021	0.032	0.000000	0.000000	-1811.53	6.48
3	GUIDE	1200885760	9.47	21924	-0.038	0.057	0.097	0.158	83.723637	-68.777667	1918.89	-221.57
4	GUIDE	1201019200	9.46	21955	0.022	-0.043	0.141	0.219	84.213591	-68.777384	1753.90	-838.39
5	GUIDE	1201406184	7.93	21996	-0.054	-0.063	0.065	0.108	82.503234	-69.975517	-1877.85	2342.04
6	GUIDE	1201410616	9.35	22059	0.116	-0.176	0.126	0.200	82.516808	-69.784406	-1213.46	2162.56
7	GUIDE	1201017424	10.20	21977	-0.062	0.230	0.166	0.276	85.854985	-69.248506	-462.18	-2401.64

2.4 Star Slots

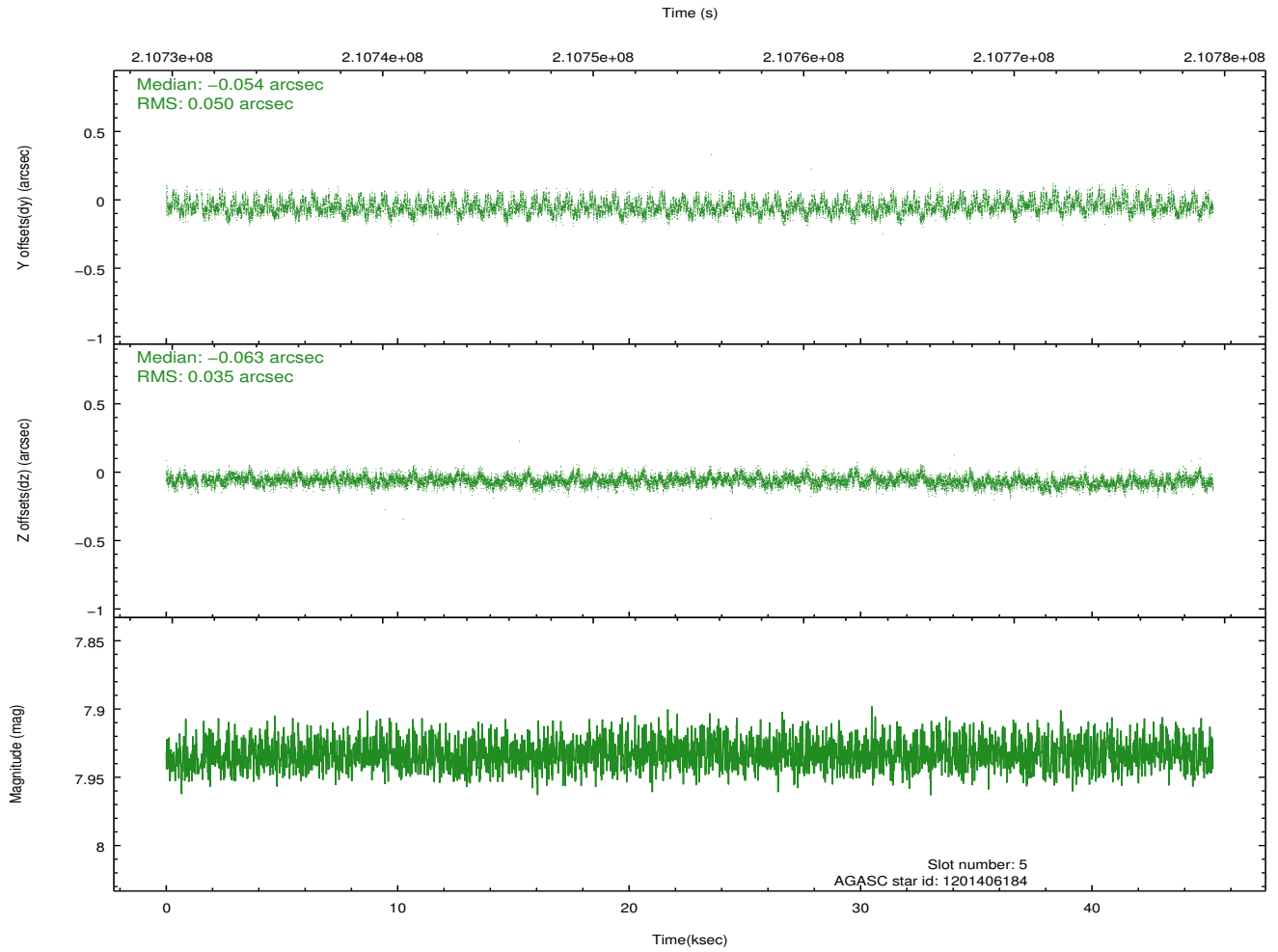
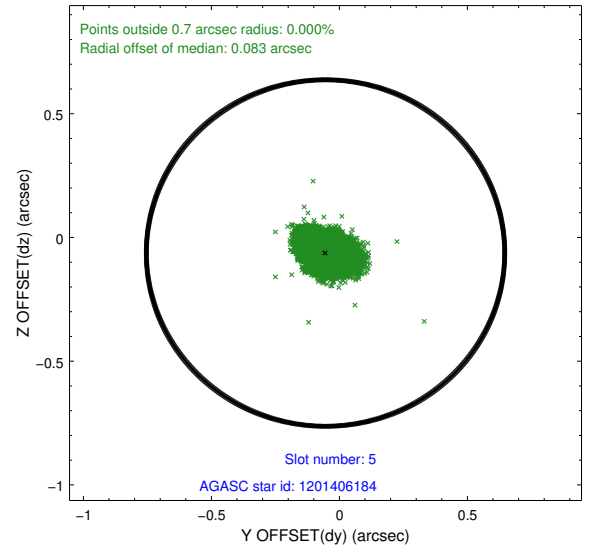
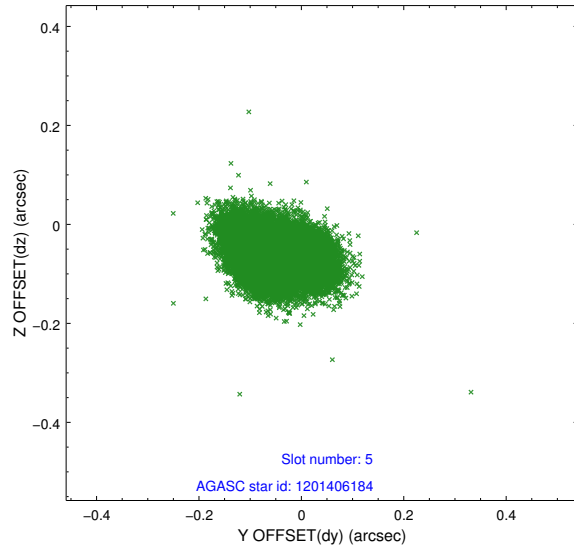
2.4.1 Slot 3



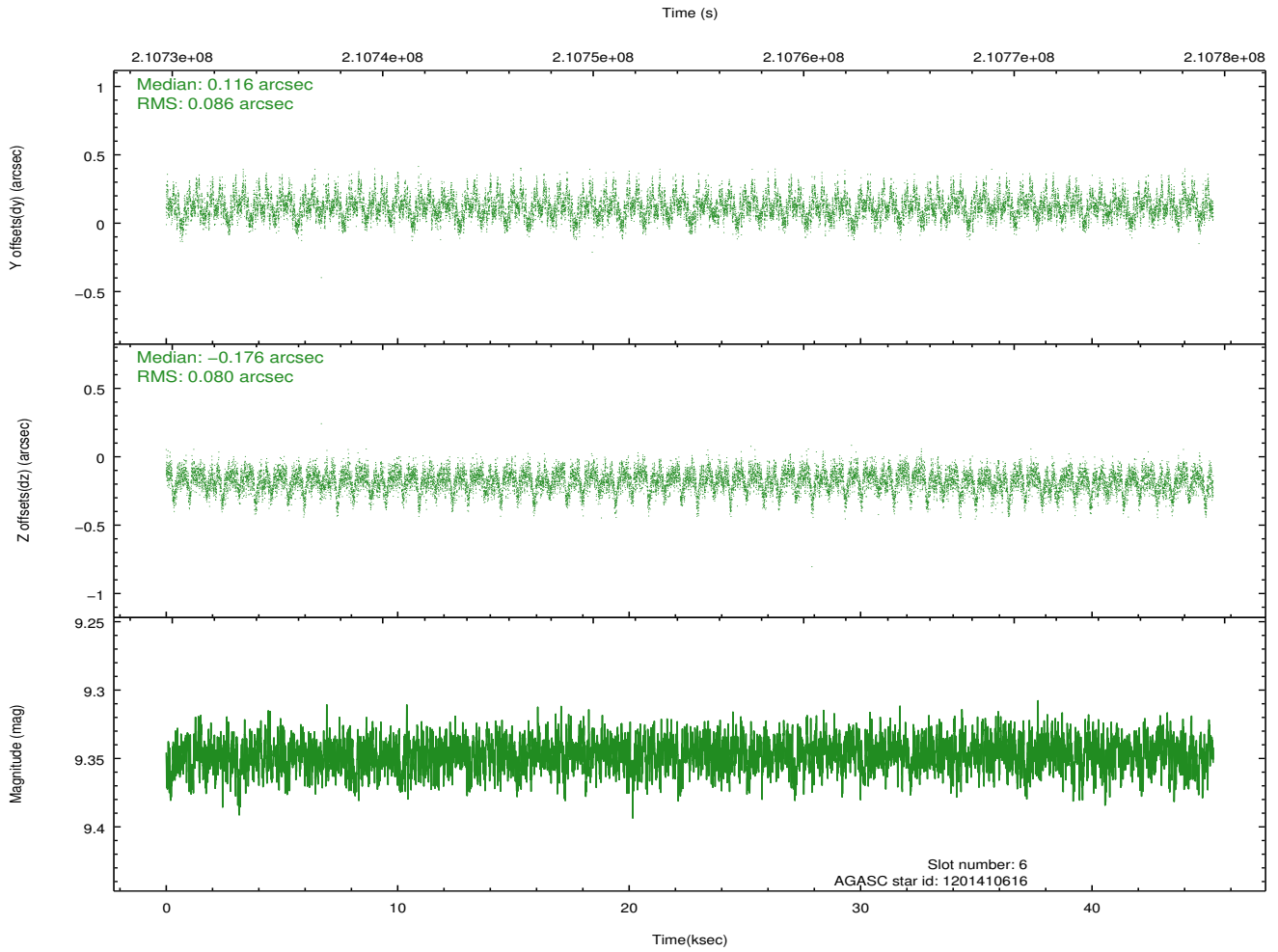
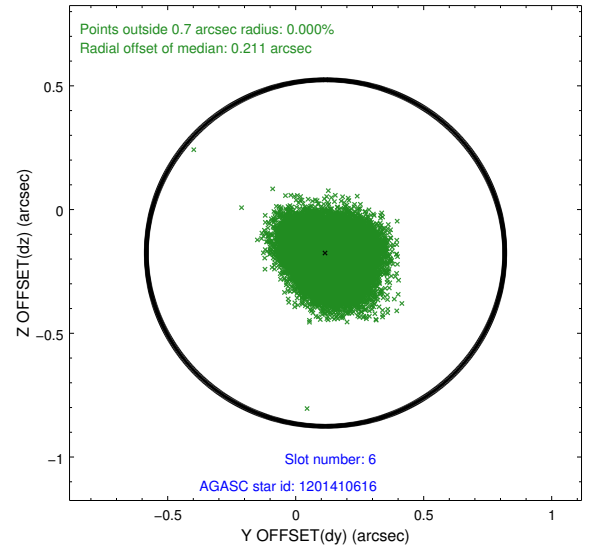
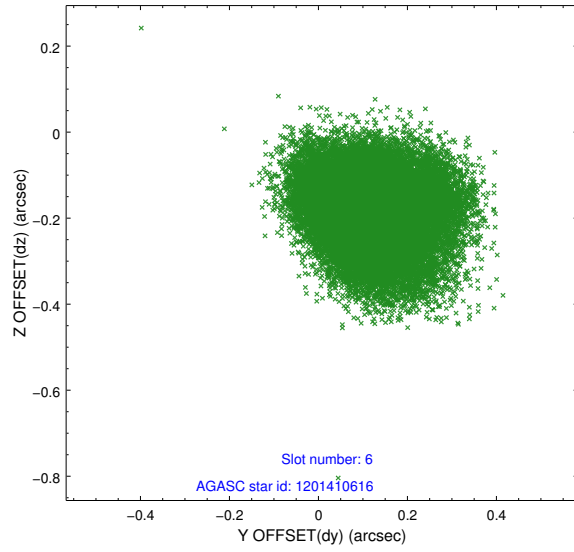
2.4.2 Slot 4



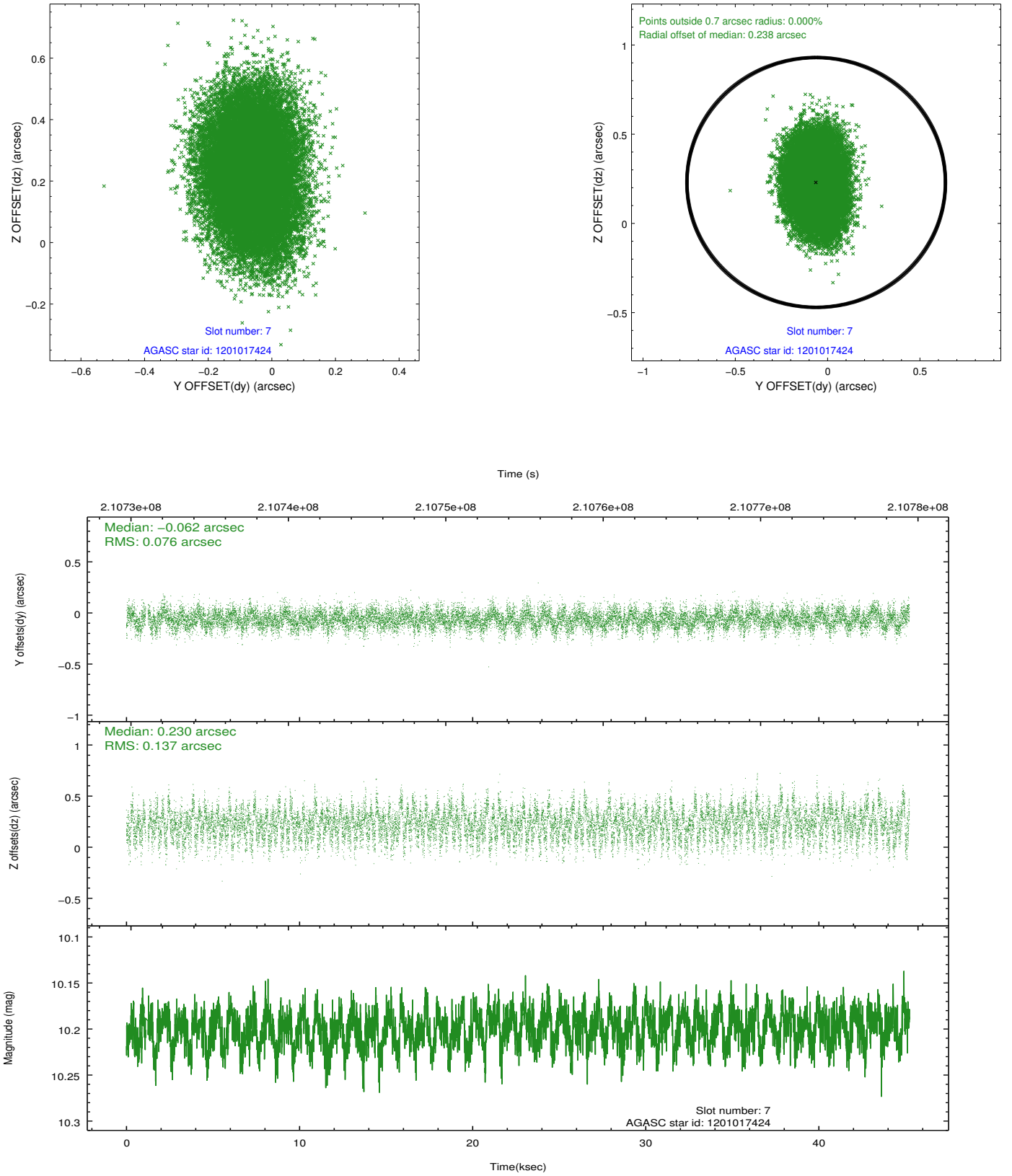
2.4.3 Slot 5



2.4.4 Slot 6

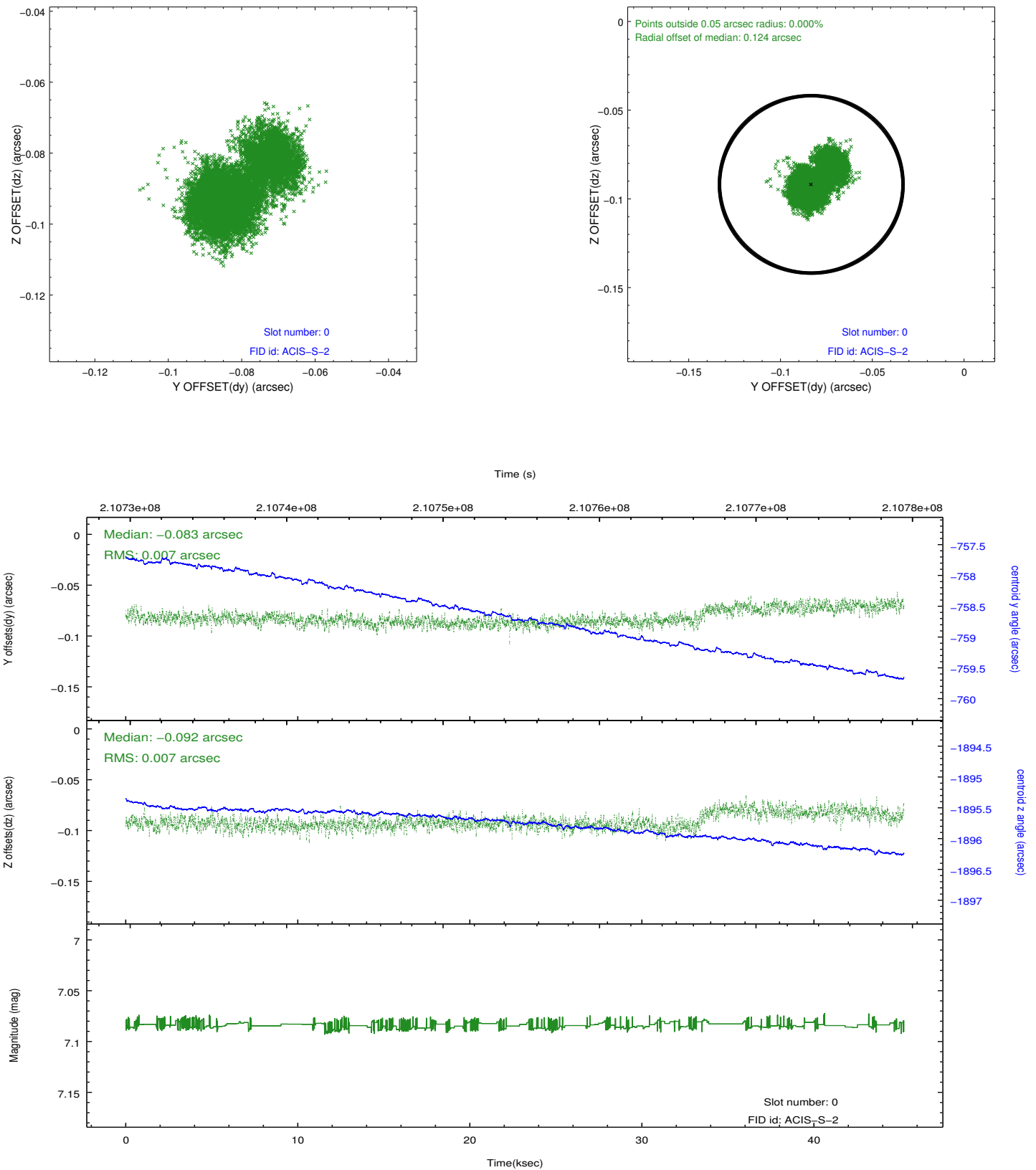


2.4.5 Slot 7

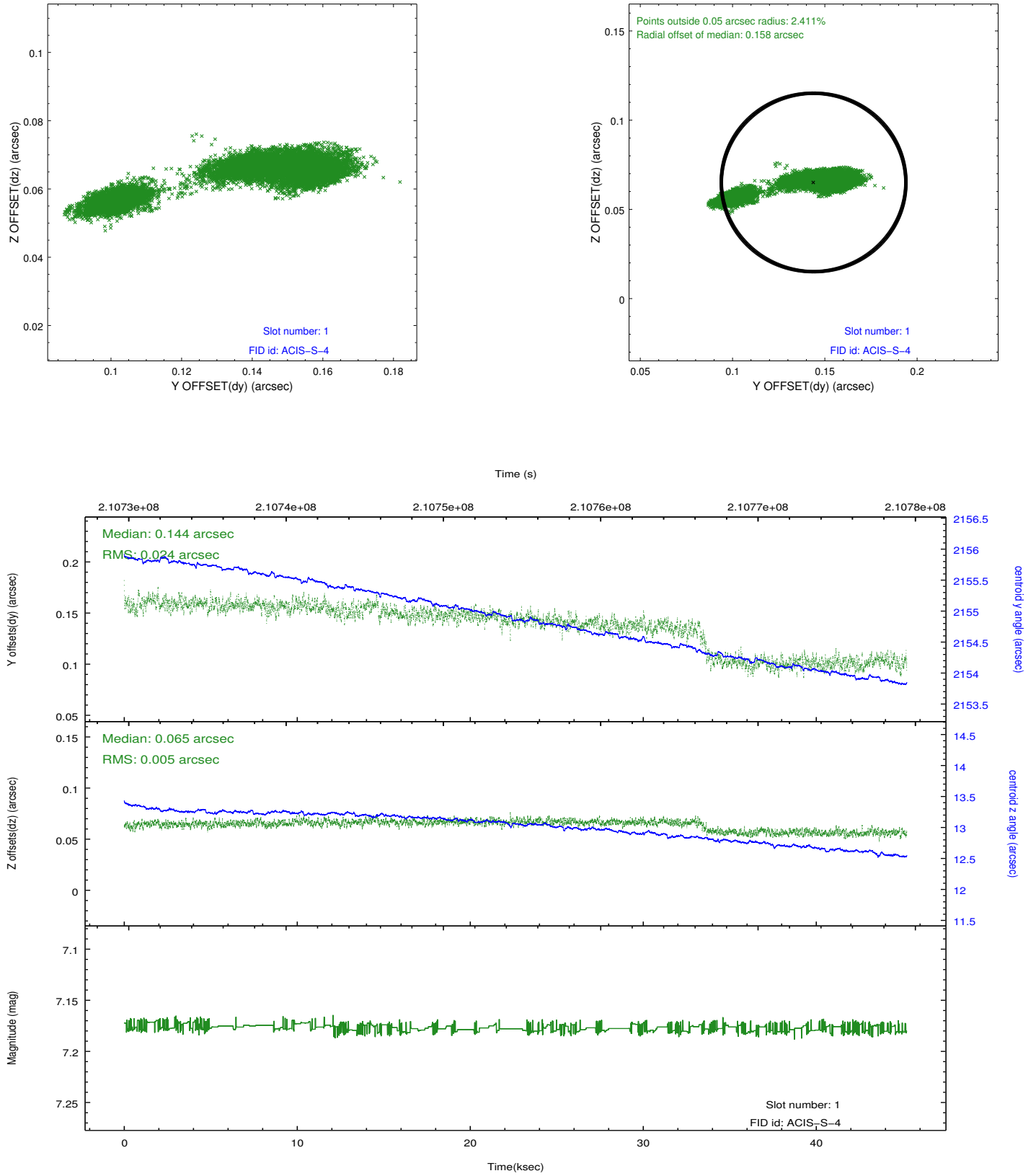


2.5 FID Slots

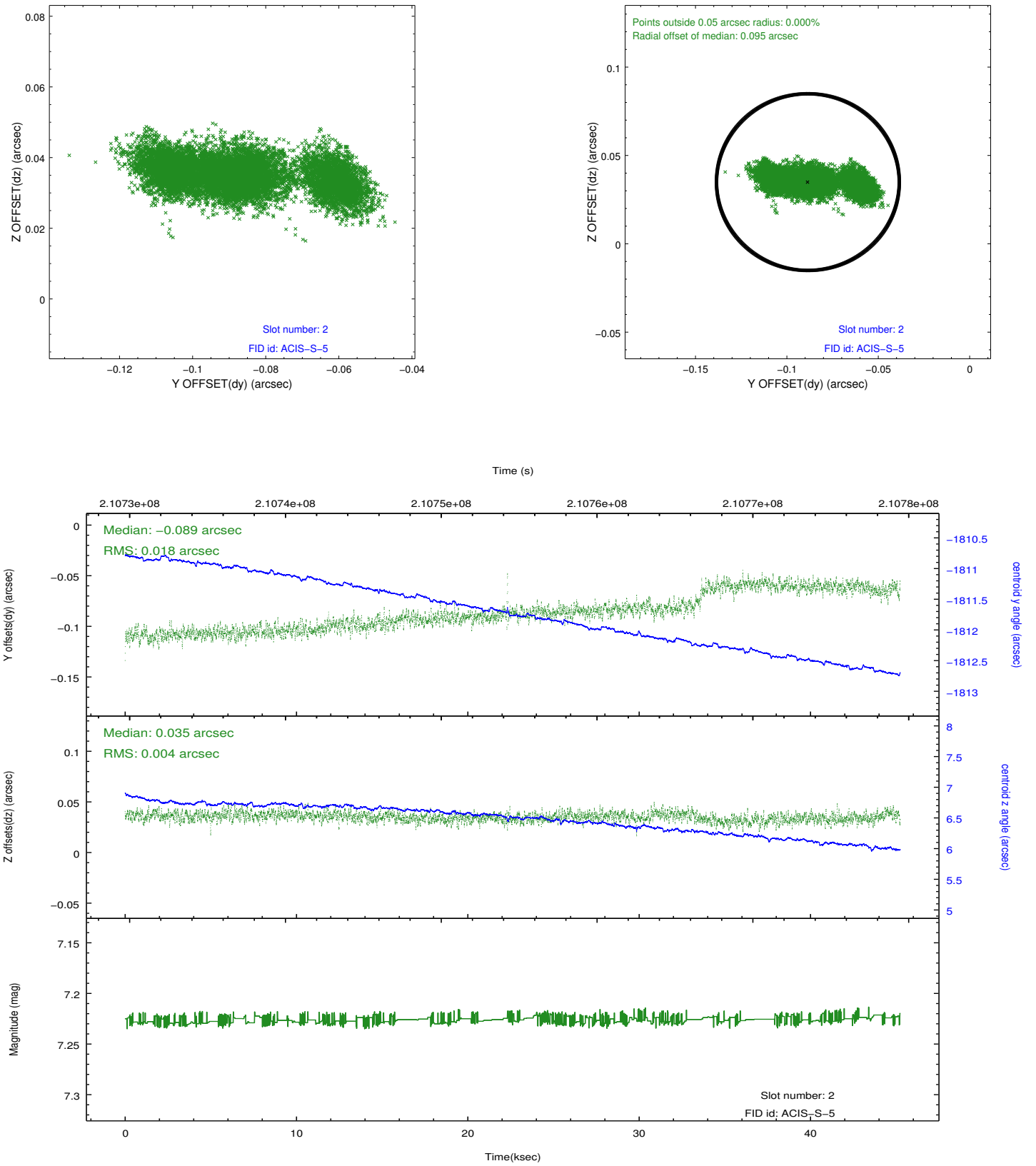
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

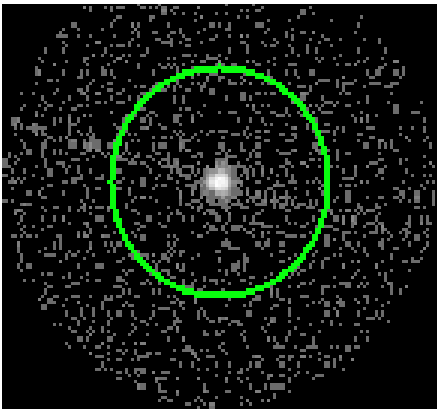


3 Gratings

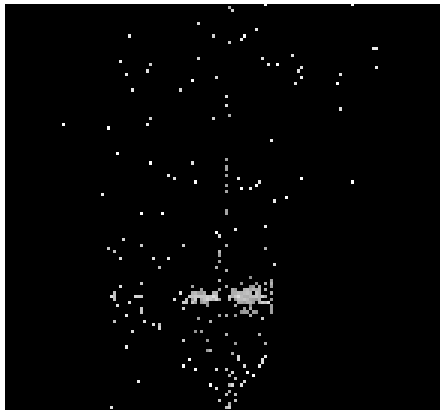
3.1 LETG Arm



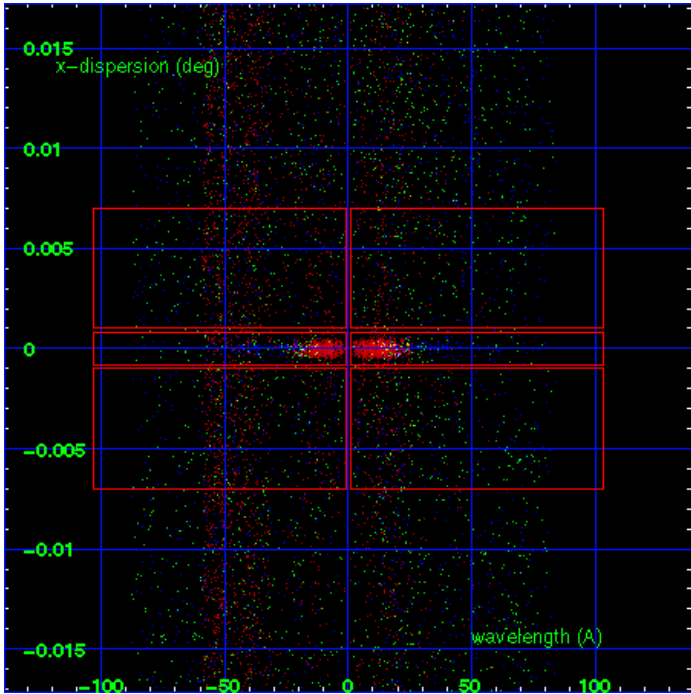
LETG Order Sort 123



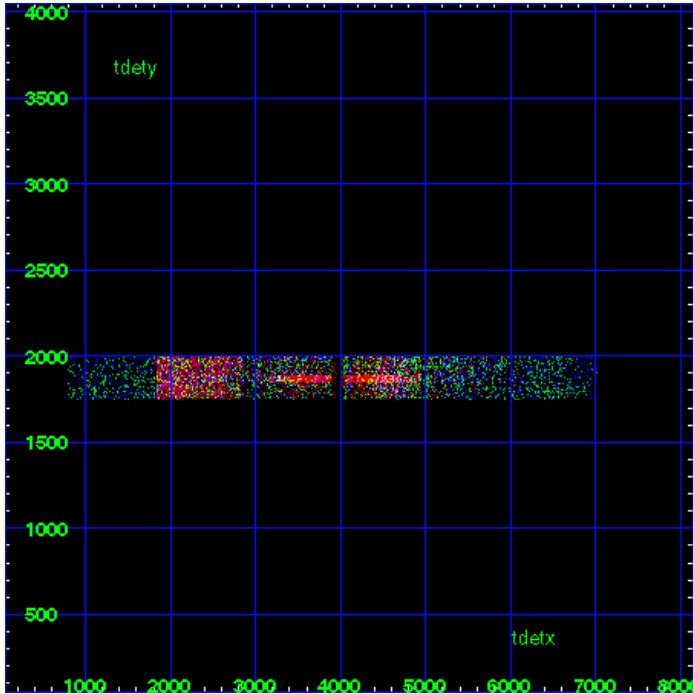
LETG Zero Order



LETG Order Sort ALL

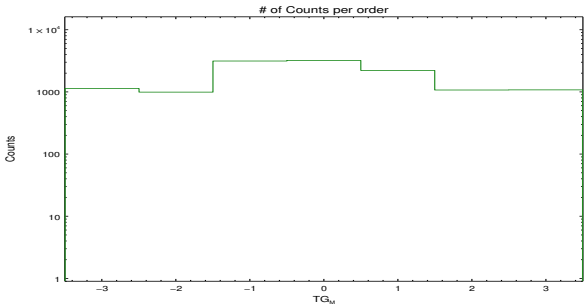


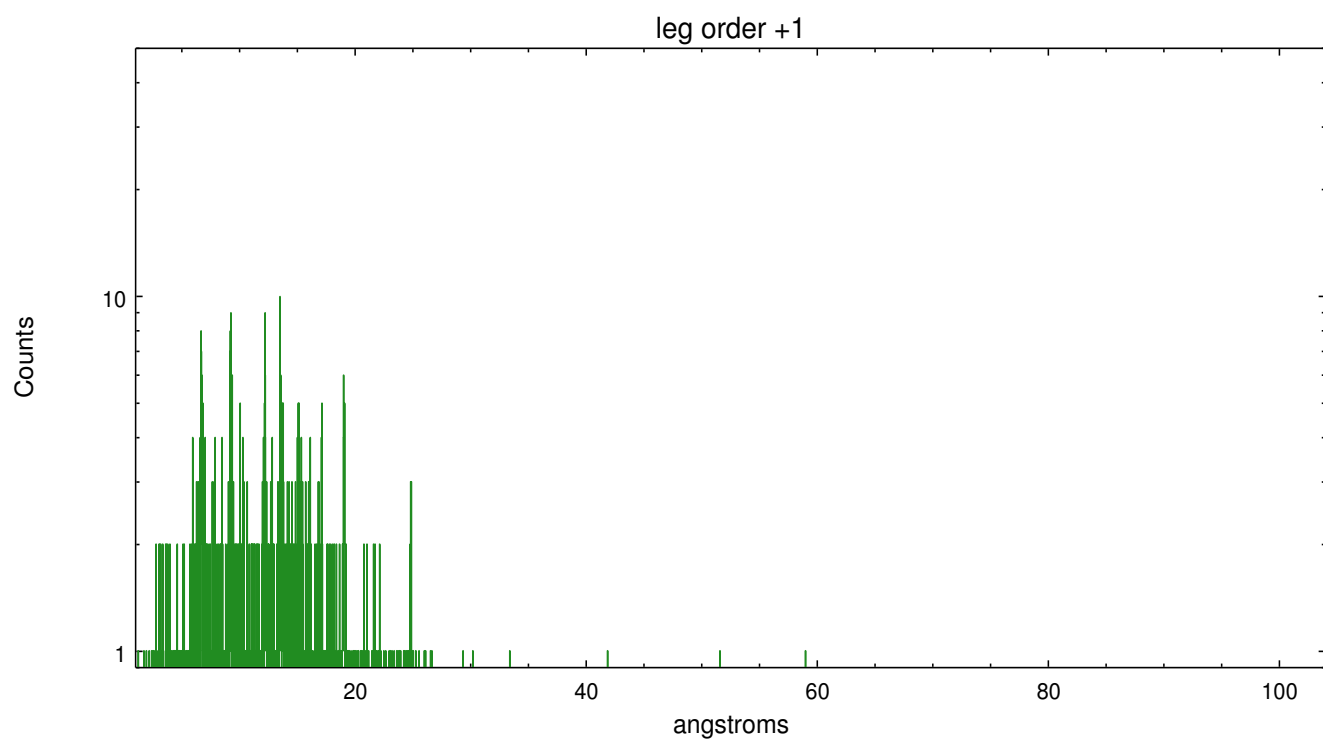
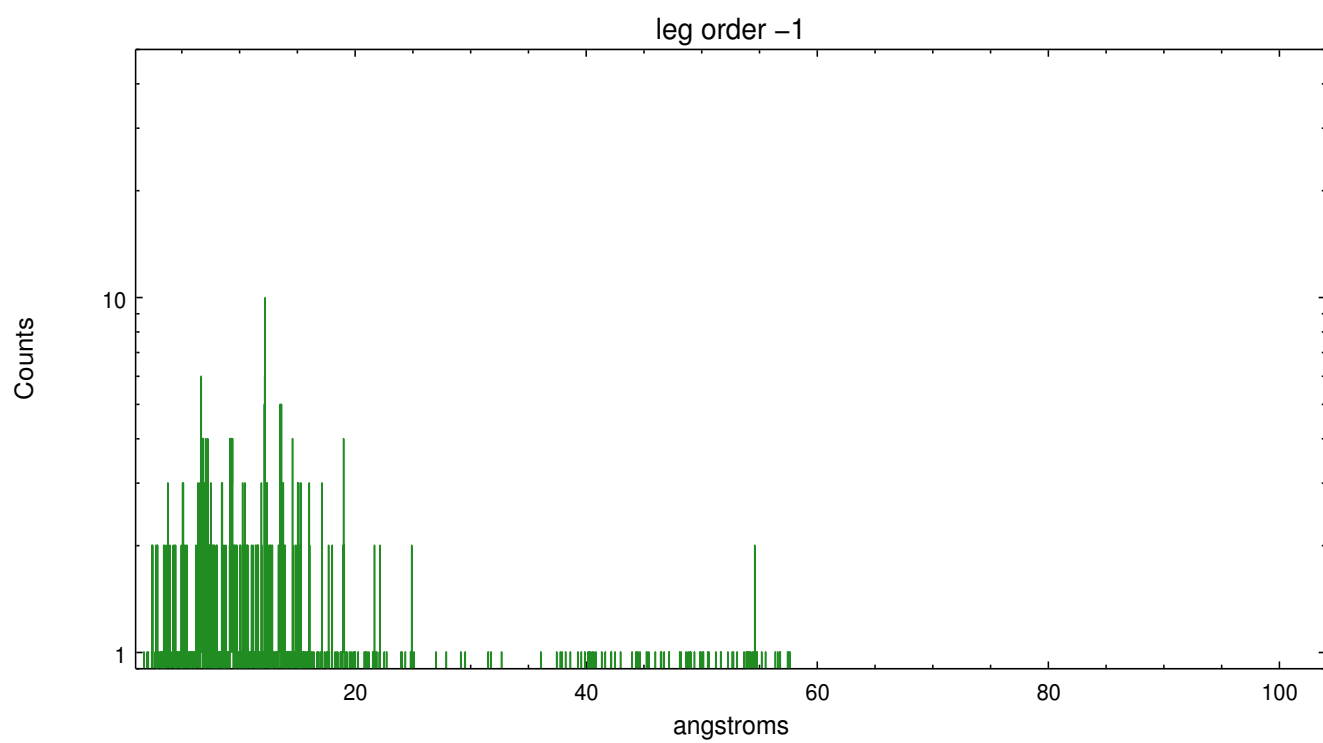
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1139	995	3157	3227	2228	1077	1083





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.11
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	45.236

A.2 Comments

The spatial flux distribution of the source is asymmetric and extended. The wavelength solution is pertinent only to the zeroth order position determined by the tool `tgdetect`. For extended sources, there is no unique mapping from position to wavelength.

===WARNING: there are no standard ciao tools for analysis of grating spectra from extended sources. The shape of an emission 'line' will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle. ===== WARNING::Zeroth order selected by pipeline tools is well-centered in the SNR but is not necessarily at the position of brightest emission. The user may want to select a region or source of interest, then use software tools such as CIAO to specify the coordinates of the zeroth order source of interest before running the tools to resolve the dispersed events.

===

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.