

V&V Reference Report

L2 ASCDS Version : 8.5

Observation 5362 - L2 Version 3
Chandra X-Ray Center

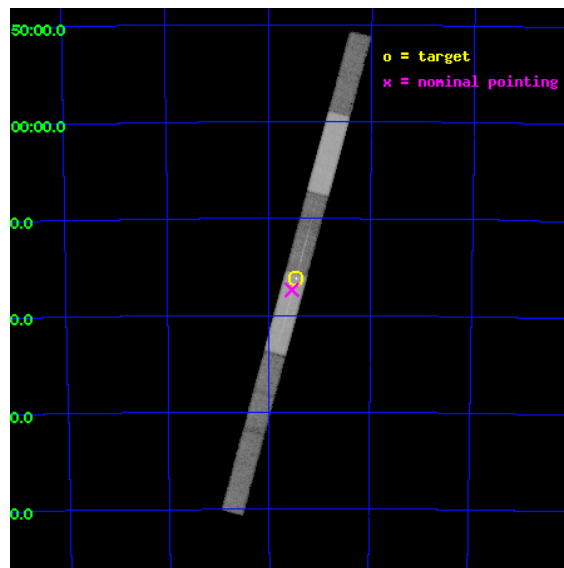
L2 Processing Date : Dec 8 2012

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1 Front

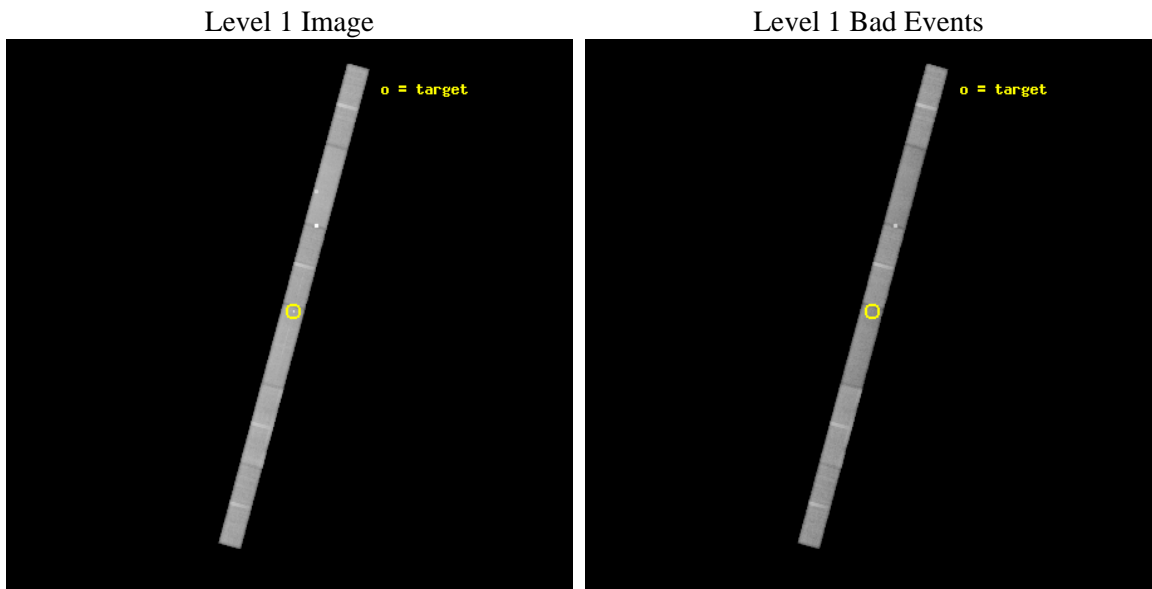
seq_num	500460	Sequence number
obs_id	5362	Observation id
title	Spatially resolved grating spectrometry of the newborn supernova remnant SNR1987A	Proposal title
observer	Dr. Richard McCray	Principal investigator
object	SNR1987A	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.886564027968	Nominal RA [deg]
dec_nom	-69.289564923821	Nominal Dec [deg]
roll_nom	105.17523605573	Nominal Roll [deg]
revision	3	Processing version of data
ontime	70182.0	Sum of GTIs [s]
liveltime	67415.277030662	Livetime [s]
ontime4	70182.0	Sum of GTIs [s]
ontime5	70182.0	Sum of GTIs [s]
ontime6	70182.0	Sum of GTIs [s]
ontime7	70182.0	Sum of GTIs [s]
ontime8	70182.0	Sum of GTIs [s]
ontime9	70182.0	Sum of GTIs [s]
l2events	241143	Number of level 2 events



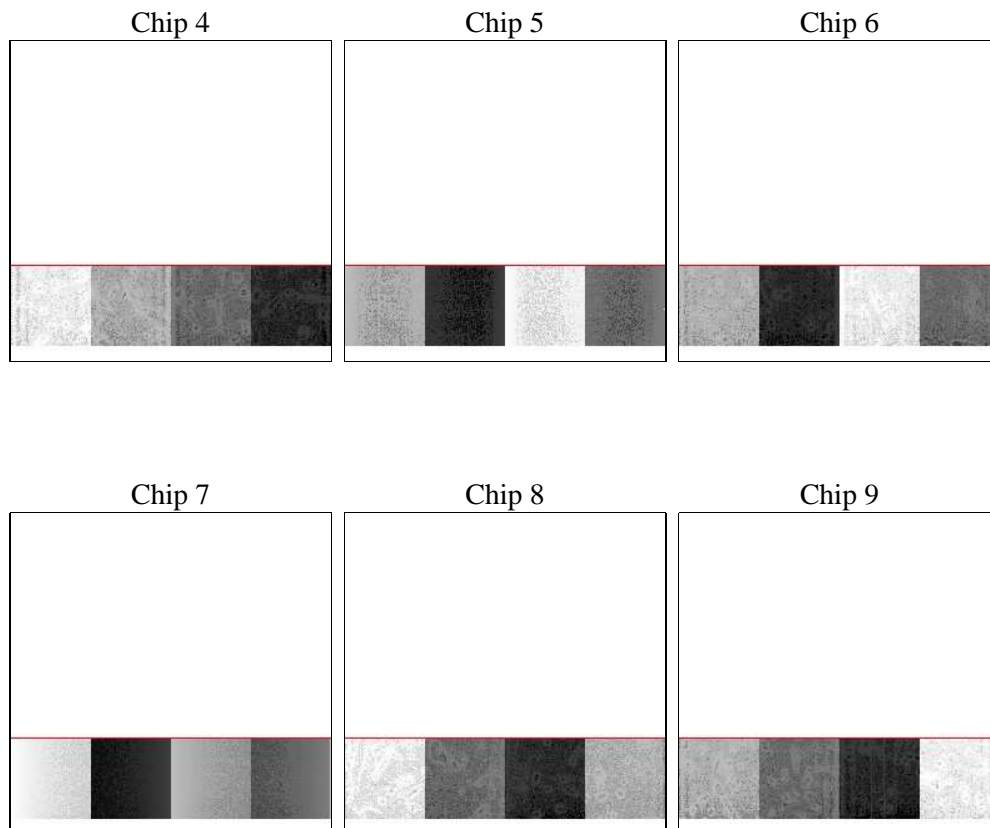
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	70000.000000	[s] Scheduled observation exposure time
ascdsver	8.5	Processing system revision	ontime	70182.0	Sum of GTIs [s]
caldsver	4.5.4	 	ontime4	70182.0	Sum of GTIs [s]
date	2012-12-08T10:07:45	Date and time of file creation	ontime5	70182.0	Sum of GTIs [s]
revision	3	Processing version of data	ontime6	70182.0	Sum of GTIs [s]
			ontime7	70182.0	Sum of GTIs [s]
			ontime8	70182.0	Sum of GTIs [s]
			ontime9	70182.0	Sum of GTIs [s]
			l1events	1156629	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	183297	240060	166517	195740	213791	157224	grade 0 events	7752	18618	8442	9784	12398	6992
rejected events	162943	118616	145954	108703	171198	138499		4%	7%	5%	4%	5%	4%
rejected %	88%	49%	87%	55%	80%	88%	grade 1 events	62	1250	53	202	89	48
								0%	0%	0%	0%	0%	0%
							grade 2 events	4184	27264	3547	18415	8918	3383
								2%	11%	2%	9%	4%	2%
							grade 3 events	2882	11879	2749	9369	5054	2664
								1%	4%	1%	4%	2%	1%
							grade 4 events	2702	12069	2714	9244	5001	2562
								1%	5%	1%	4%	2%	1%
							grade 5 events	5524	22064	6011	17512	7861	6167
								3%	9%	3%	8%	3%	3%
							grade 6 events	3181	53897	3424	41578	12088	3401
								1%	22%	2%	21%	5%	2%
							grade 7 events	157010	93019	139577	89636	162382	132007
								85%	38%	83%	45%	75%	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	83.88656402796786	Subarray requested	CUSTOM	1/4
[deg] Pointing Dec	-69.308481	-69.28956492382147	Subarray start row	49	49
[deg] Pointing Roll	105.070441	105.1752360557319	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	-182.1344861297048			
[mm] SIM translation stage offset	-8	-7.998036453302973			
[s] Observation start time (MET)	210010940.184000	210009580.76037			
Observation start date	2004-08-27T16:21:16	2004-08-27T15:59:40			
[s] Observation end time (MET)	210080940.184000	210081839.16359			
Observation end date	2004-08-28T11:47:56	2004-08-28T12:03:59			
Read mode	TIMED	TIMED			

2.3 Aspect

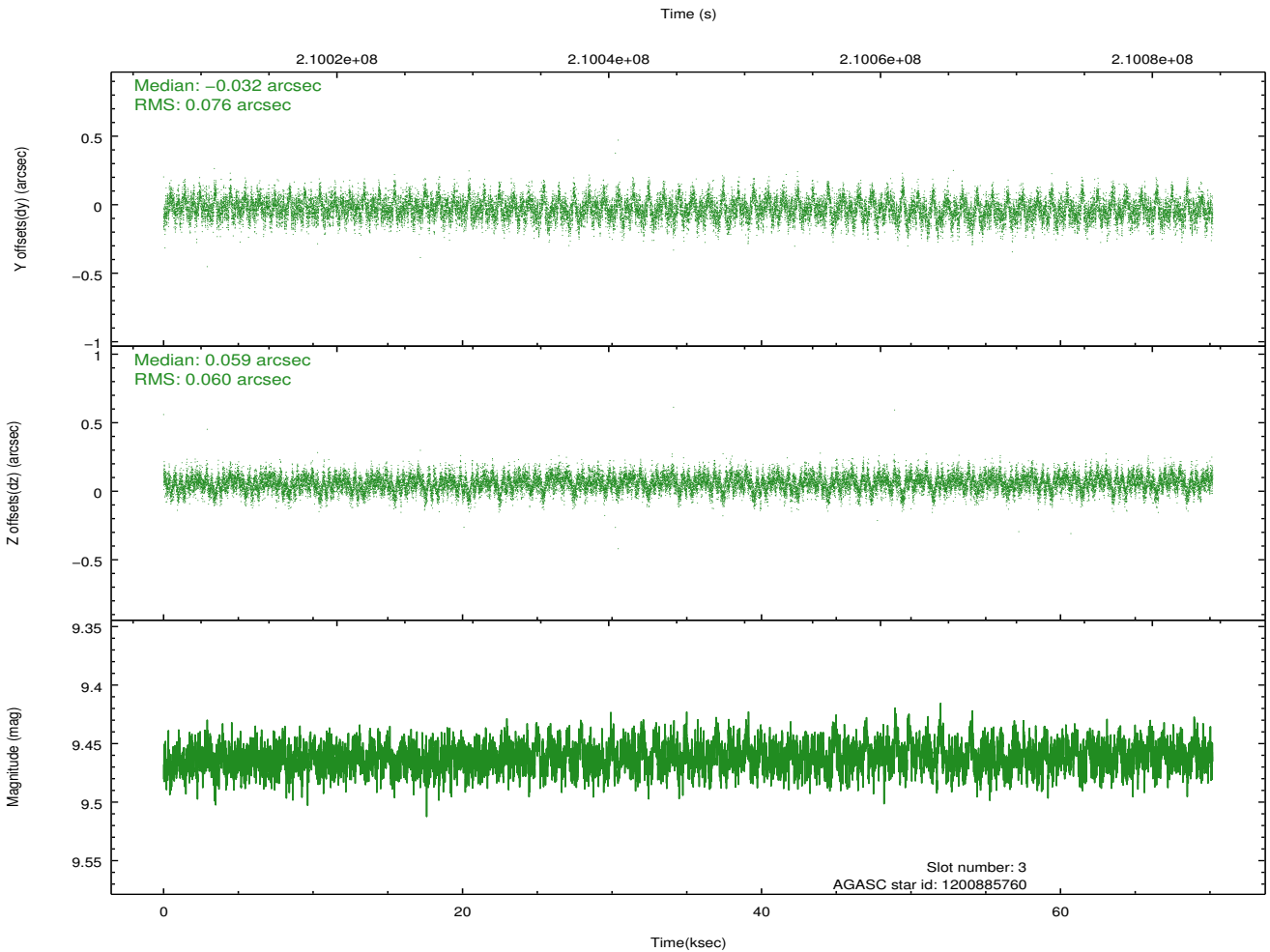
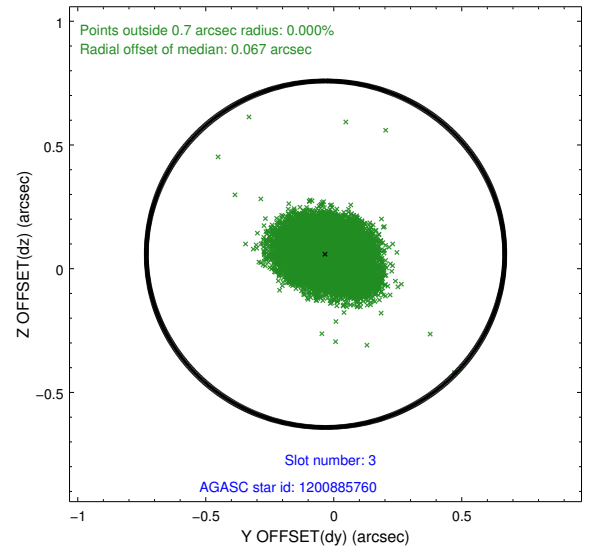
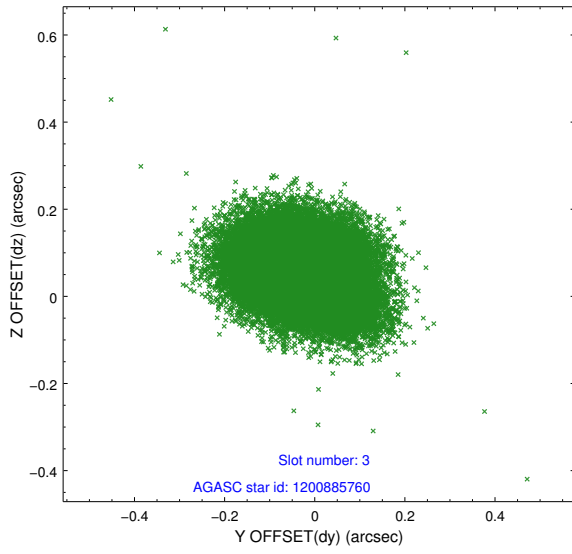
Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.18	17119	0.096	0.050	0.016	0.038	0.000000	0.000000	937.98	-1891.49
1	FID	ACIS-S-2	7.09	17118	-0.109	-0.122	0.012	0.023	0.000000	0.000000	-758.15	-1896.23
2	FID	ACIS-S-5	7.22	17118	-0.009	0.078	0.013	0.025	0.000000	0.000000	-1811.31	6.03
3	GUIDE	1200885760	9.46	34205	-0.032	0.059	0.102	0.171	83.723637	-68.777667	1918.90	-221.54
4	GUIDE	1201019200	9.46	34209	0.032	-0.040	0.132	0.205	84.213591	-68.777384	1753.89	-838.38
5	GUIDE	1201406184	7.94	34237	-0.057	-0.058	0.066	0.109	82.503234	-69.975517	-1877.86	2342.04
6	GUIDE	1201410616	9.35	34212	0.112	-0.172	0.128	0.202	82.516808	-69.784406	-1213.42	2162.52
7	GUIDE	1201017424	10.20	34199	-0.069	0.219	0.177	0.295	85.854985	-69.248506	-462.17	-2401.68

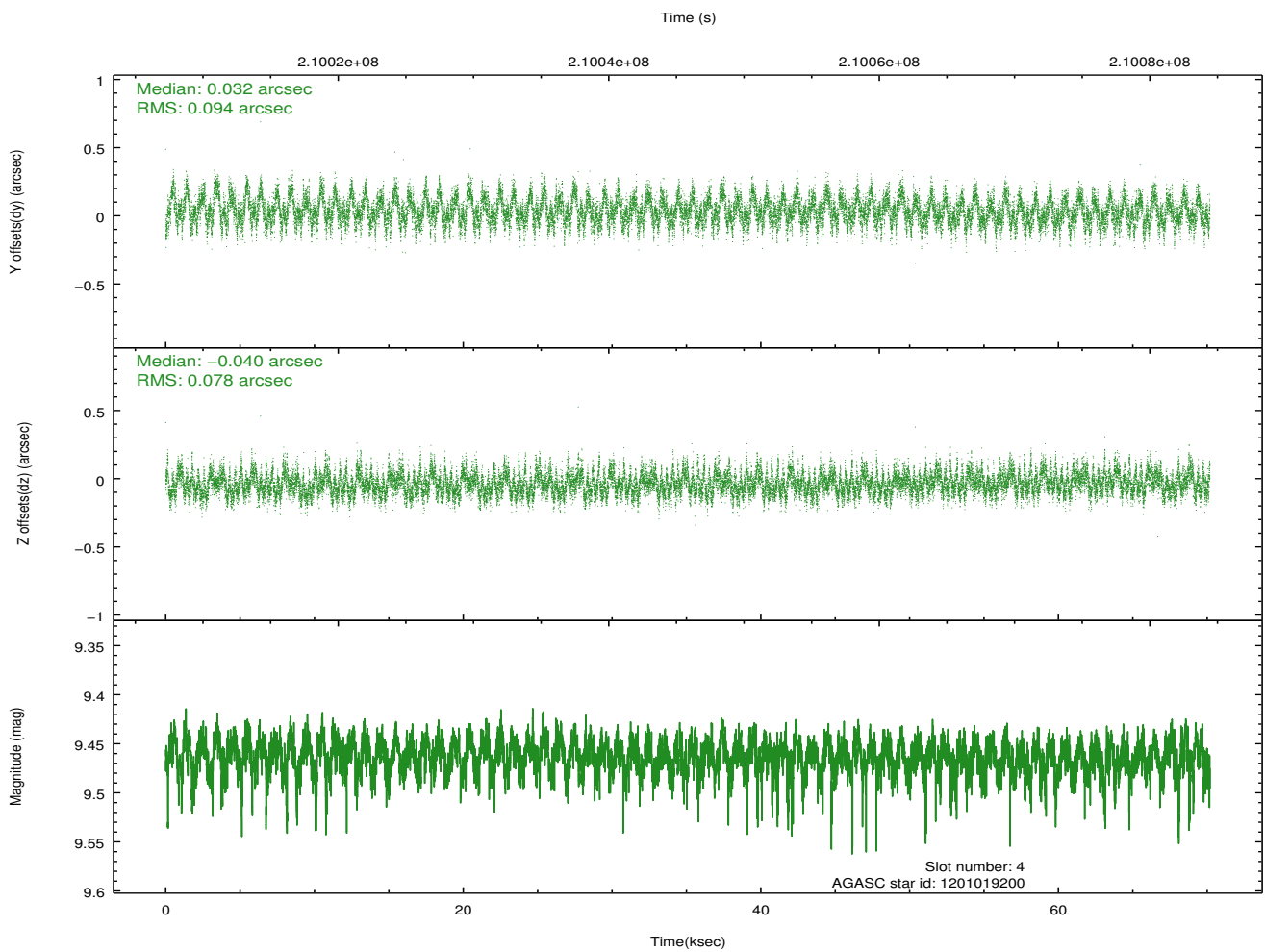
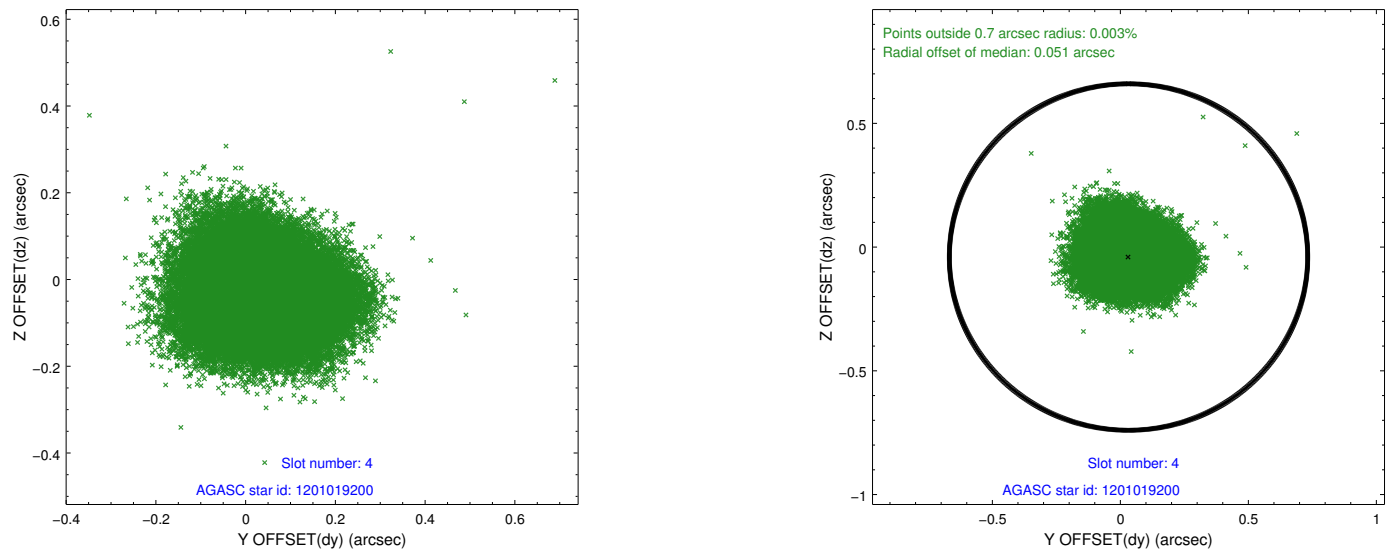
∞

2.4 Star Slots

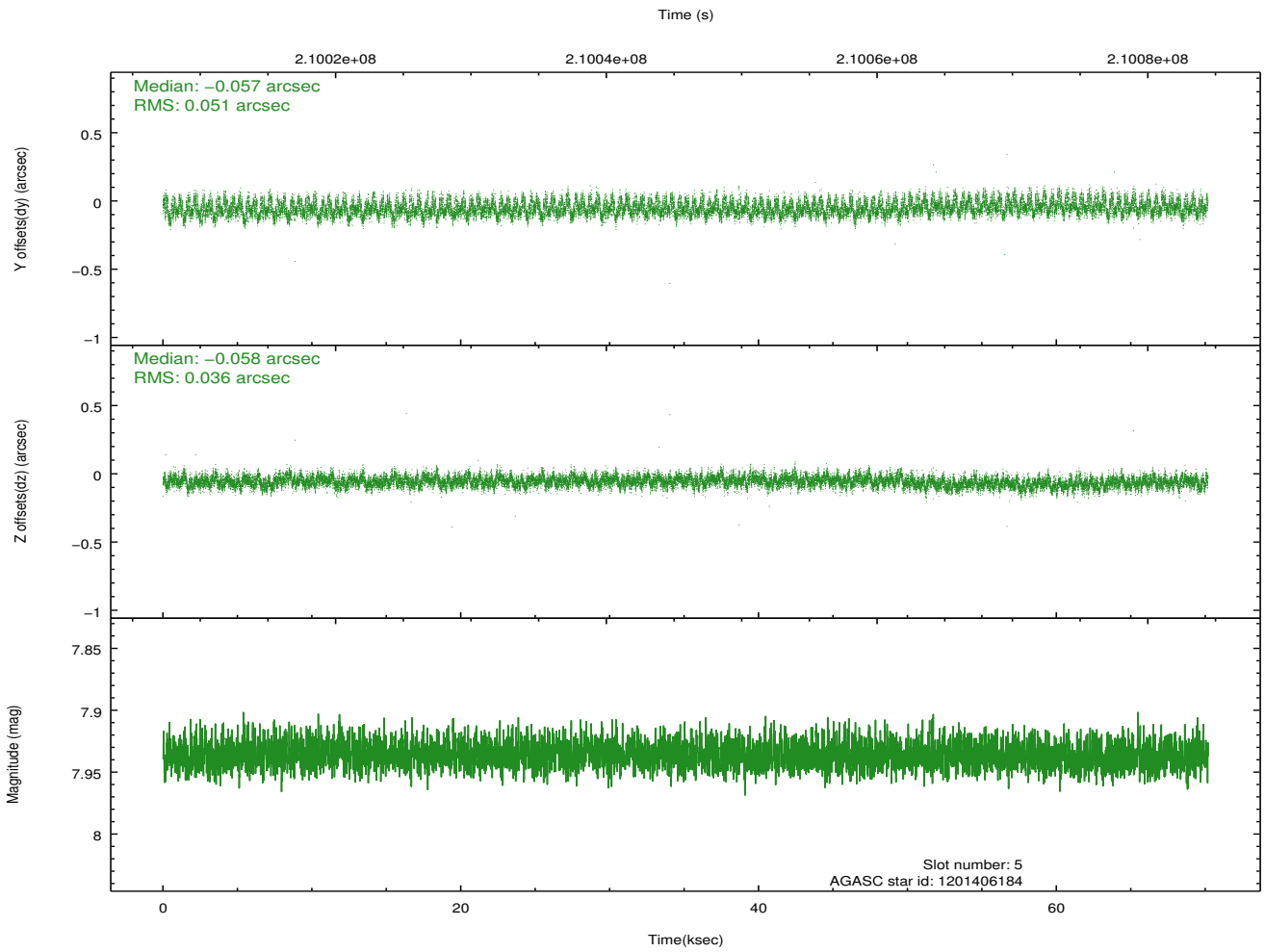
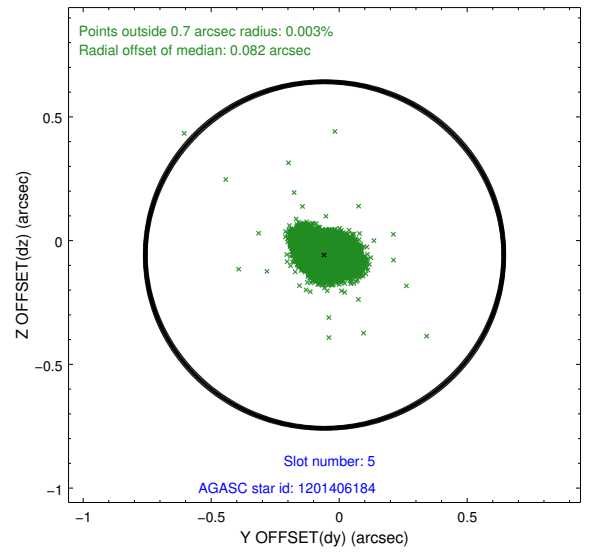
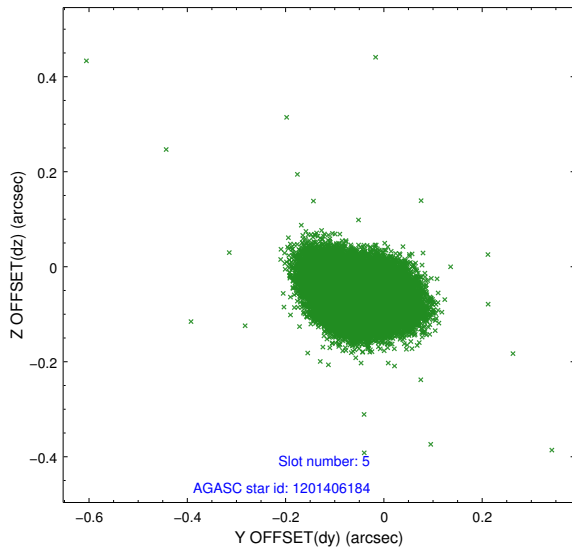
2.4.1 Slot 3



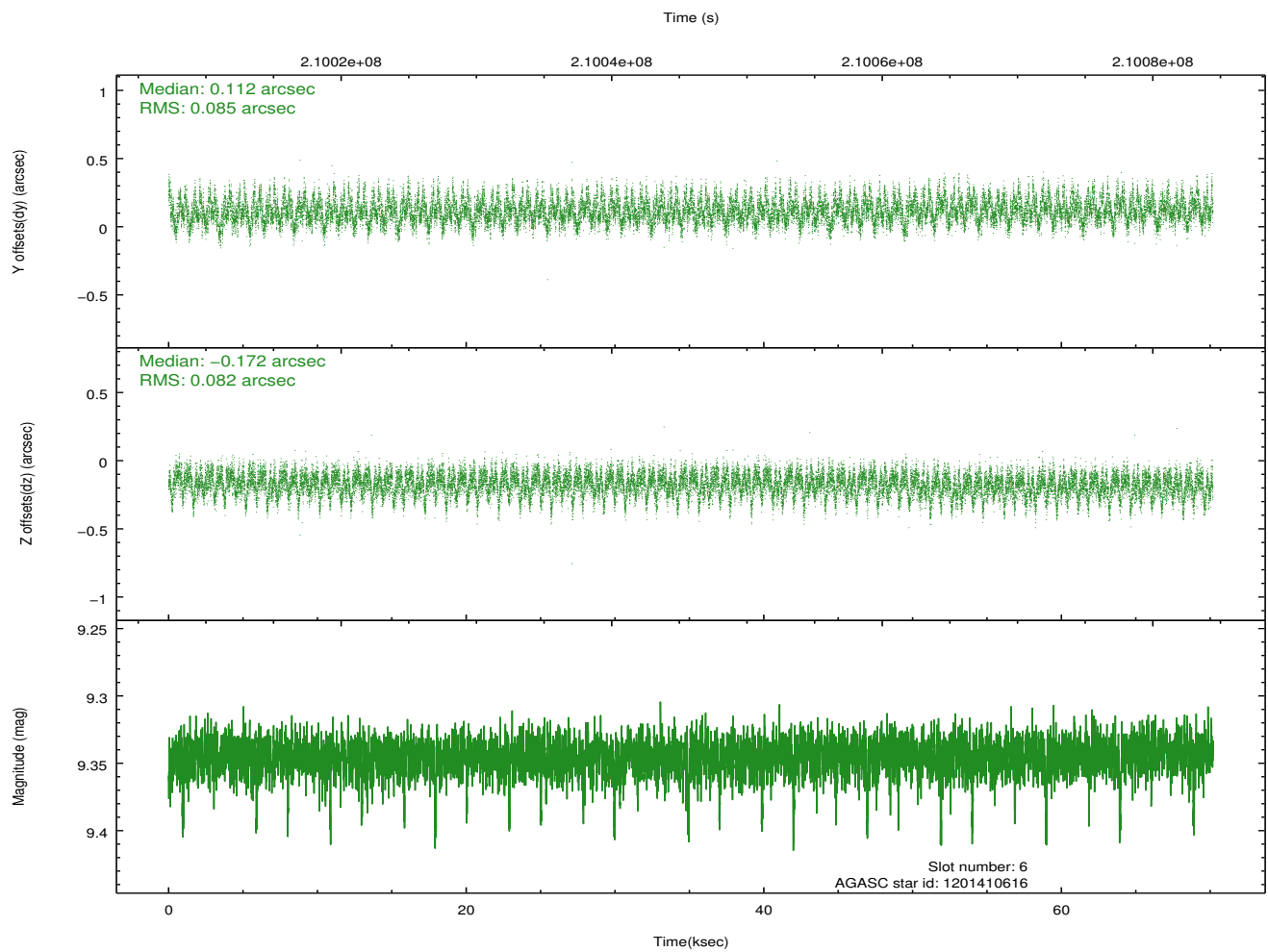
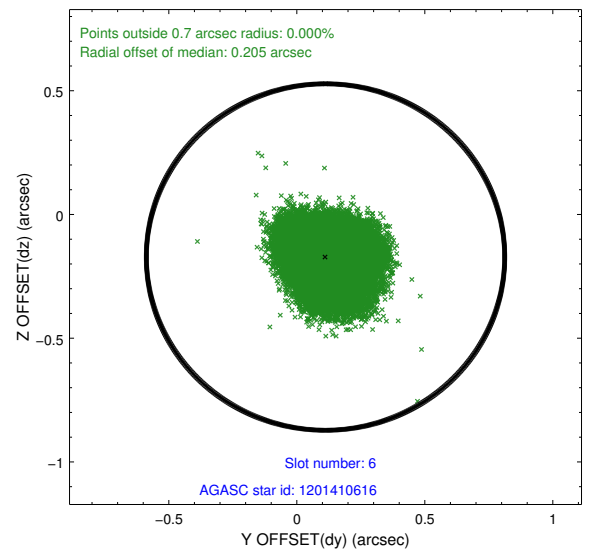
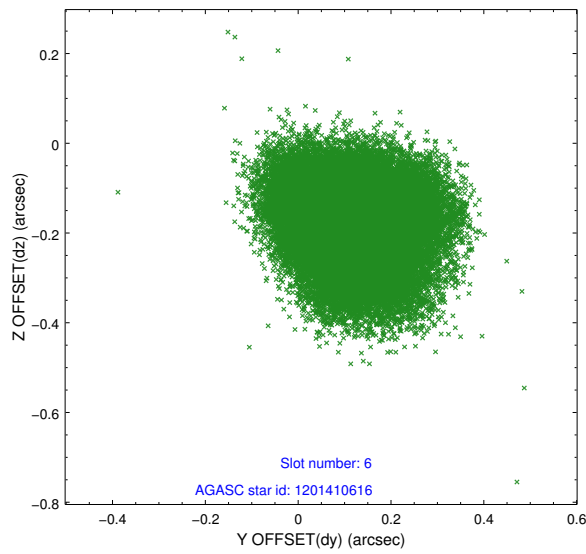
2.4.2 Slot 4



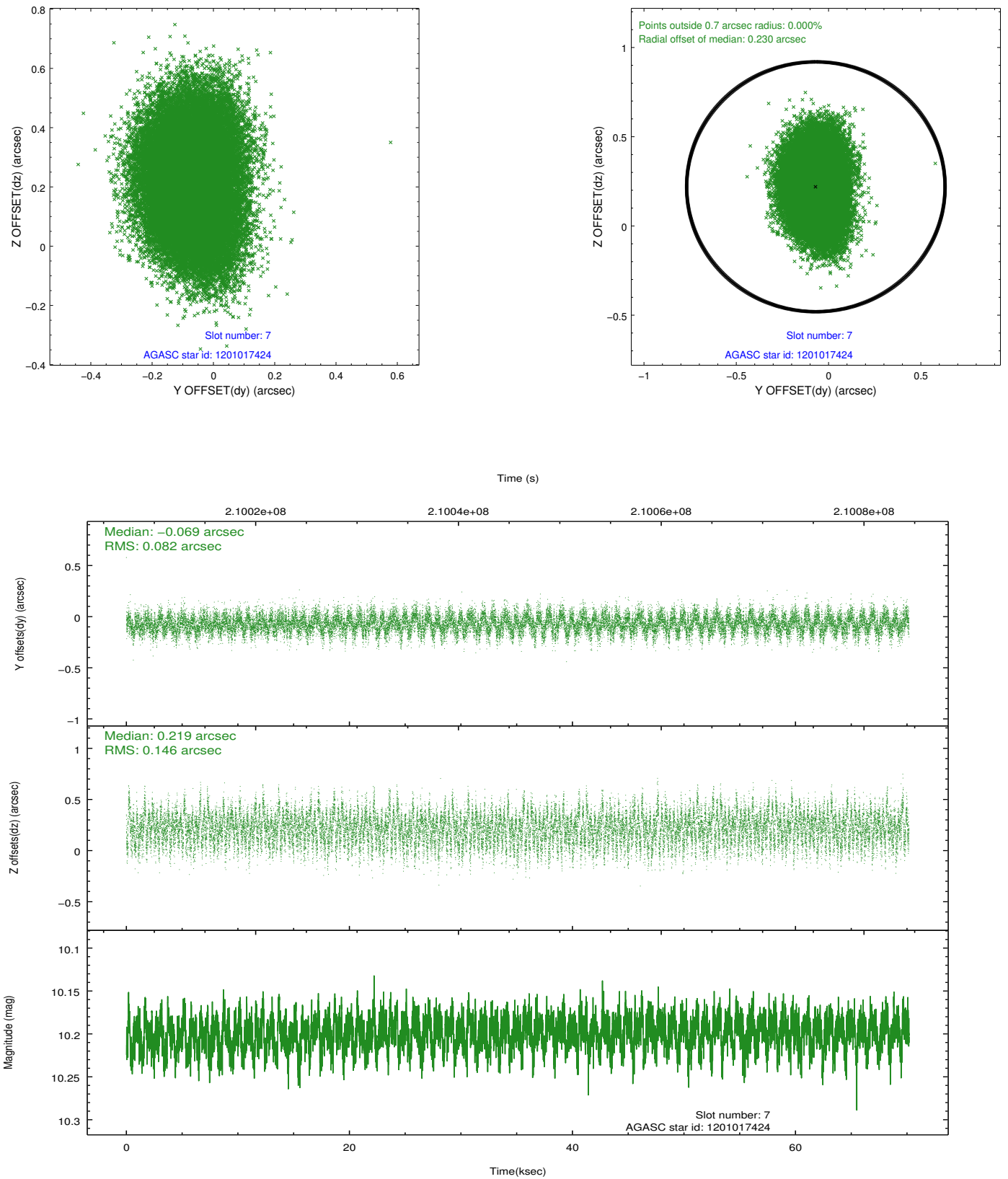
2.4.3 Slot 5



2.4.4 Slot 6

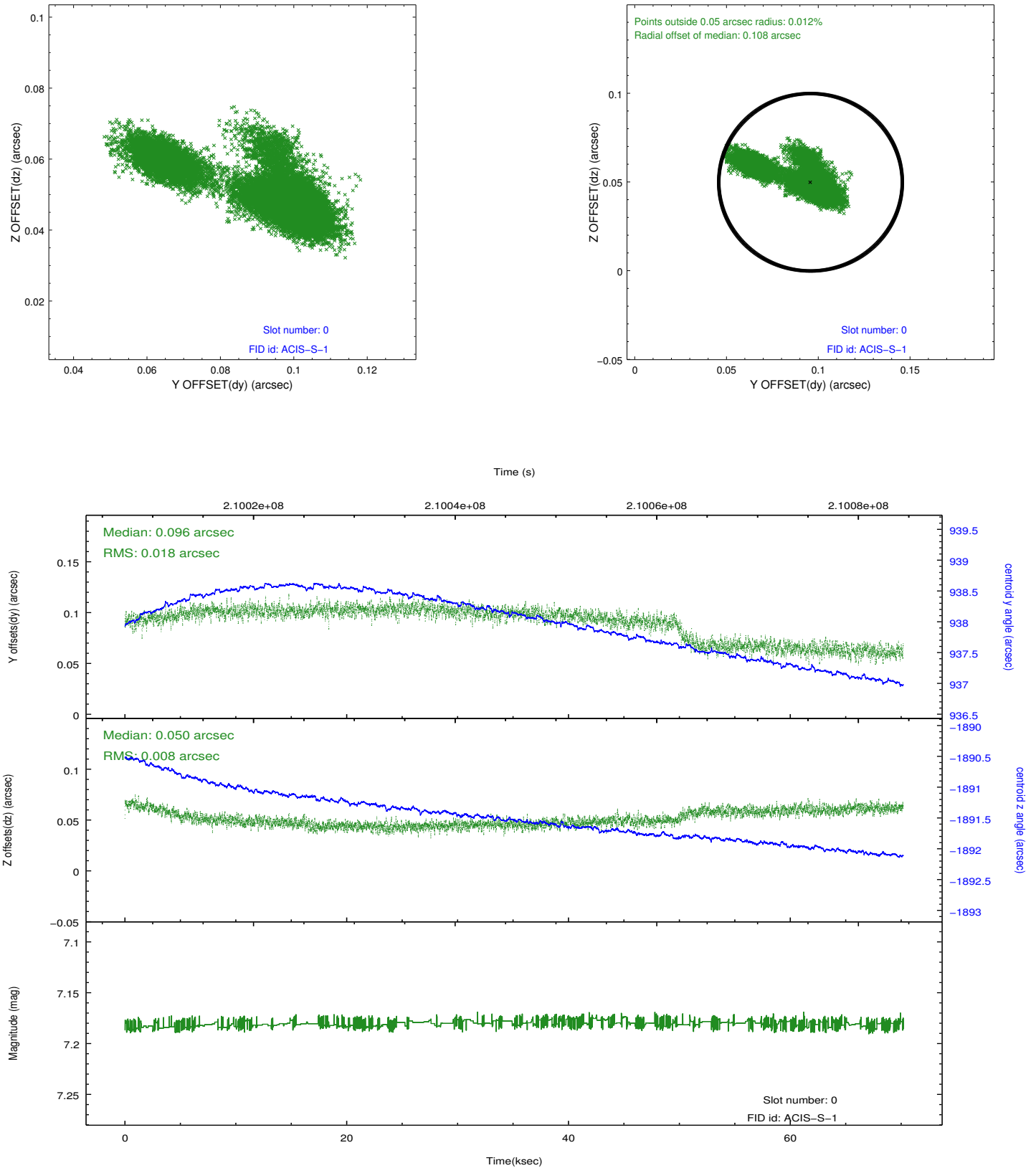


2.4.5 Slot 7

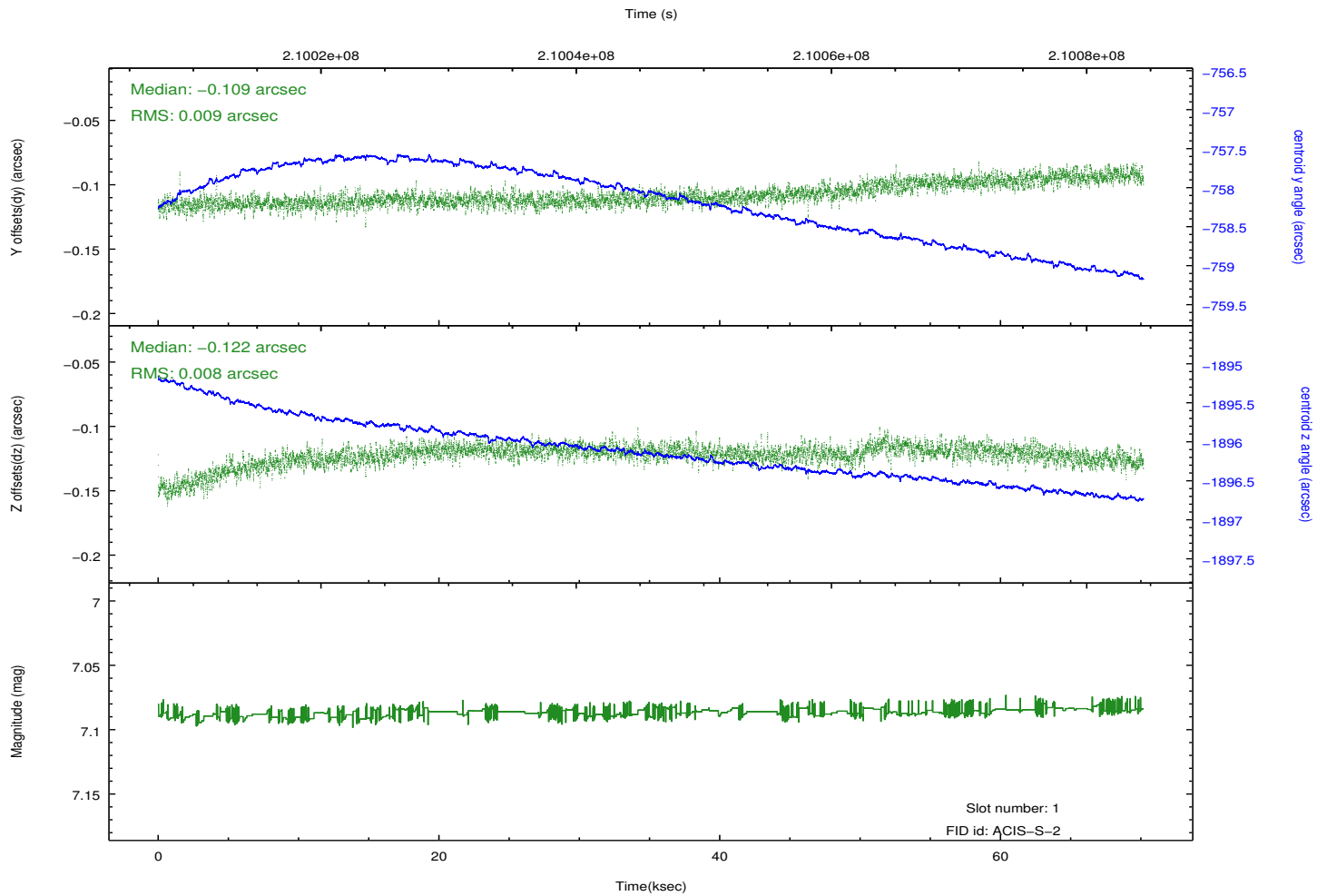
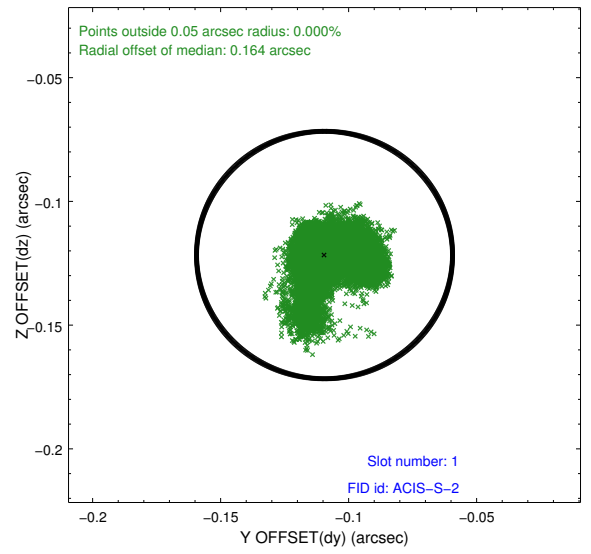
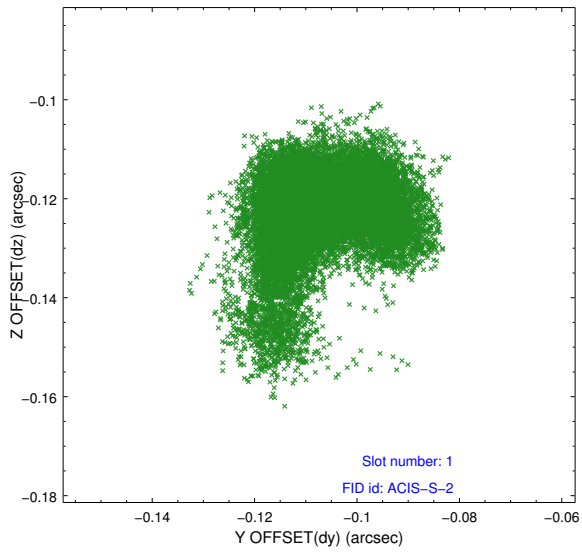


2.5 FID Slots

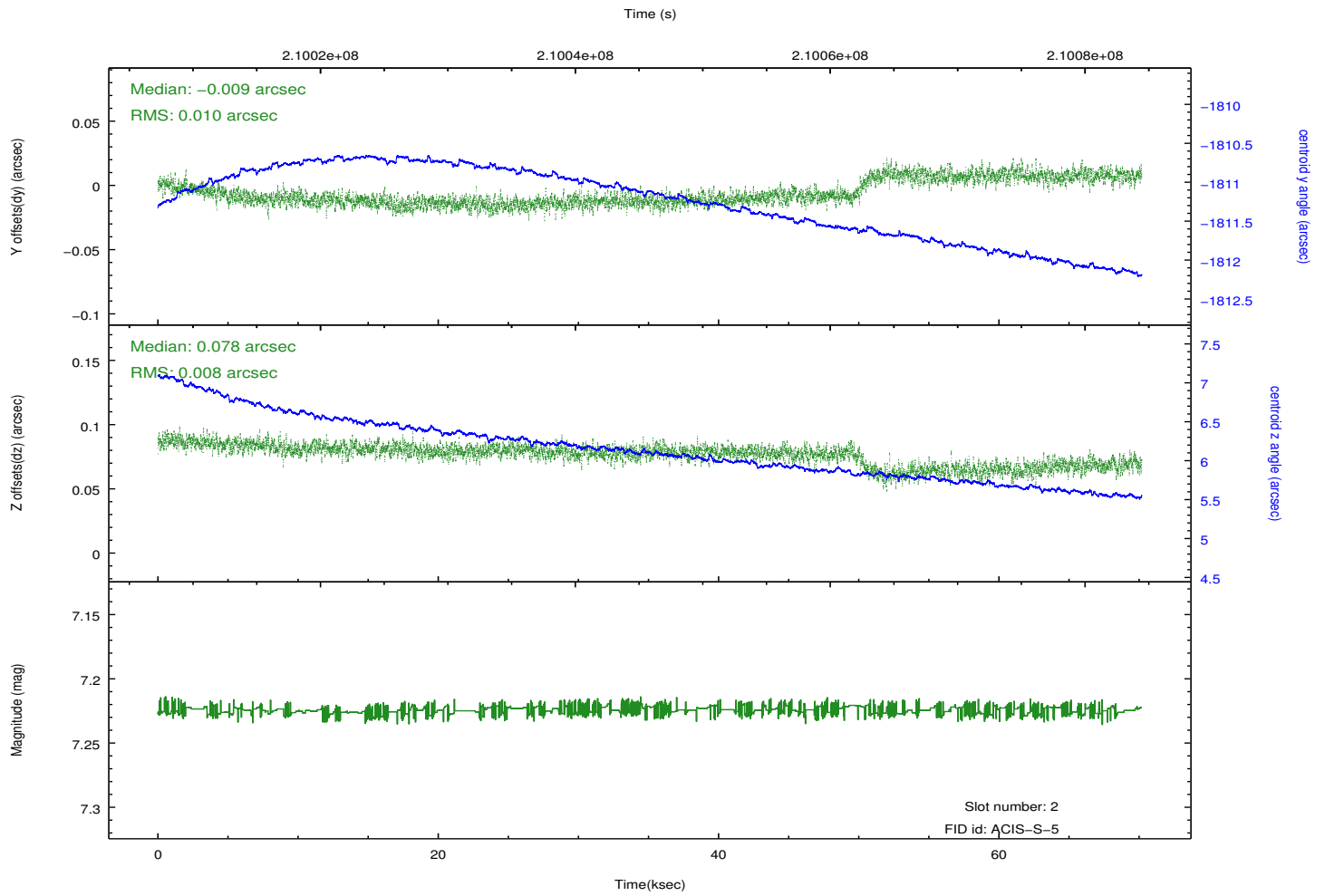
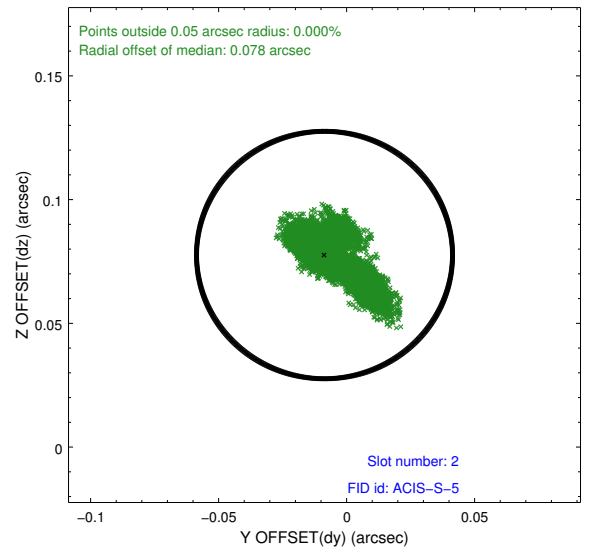
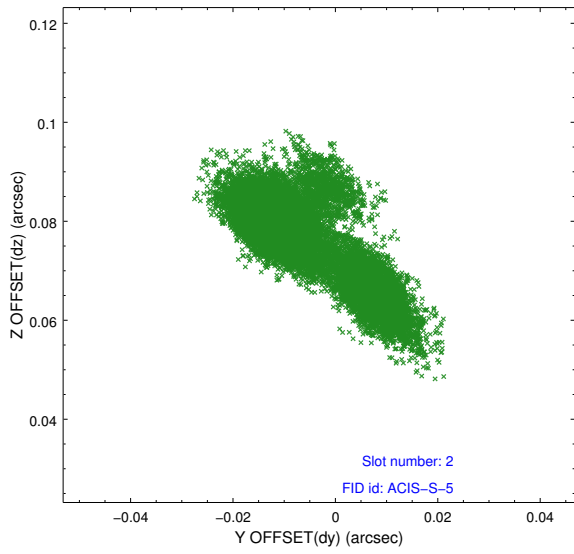
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

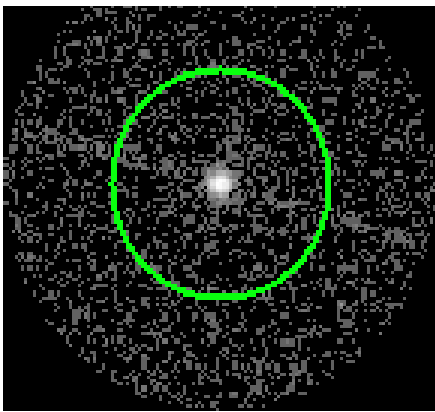


3 Gratings

3.1 LETG Arm



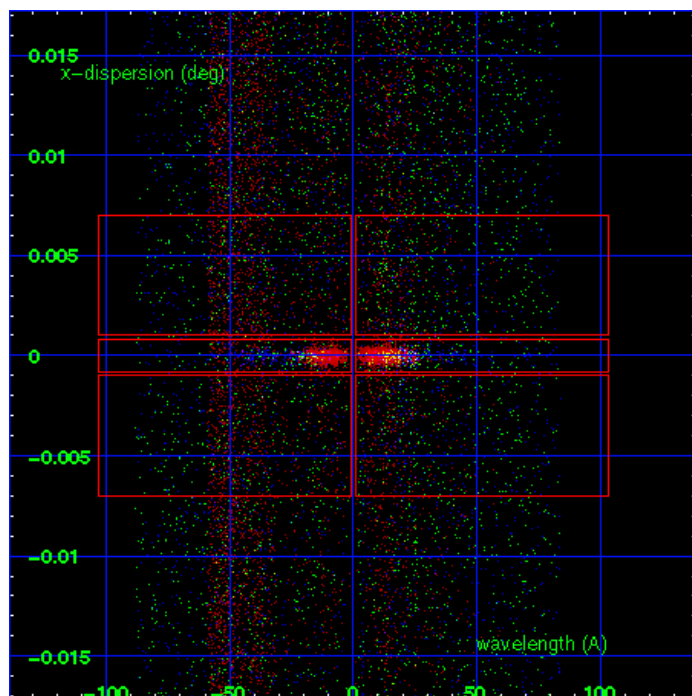
LETG Order Sort 123



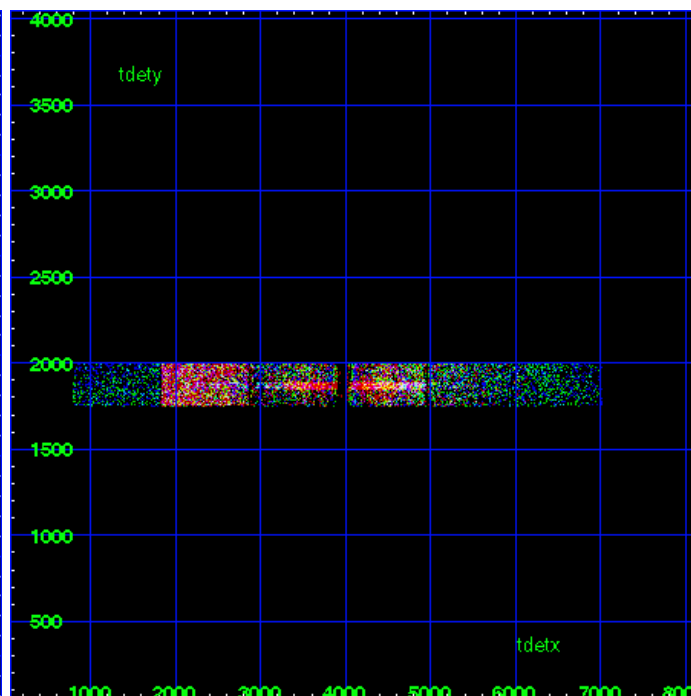
LETG Zero Order



LETG Order Sort ALL

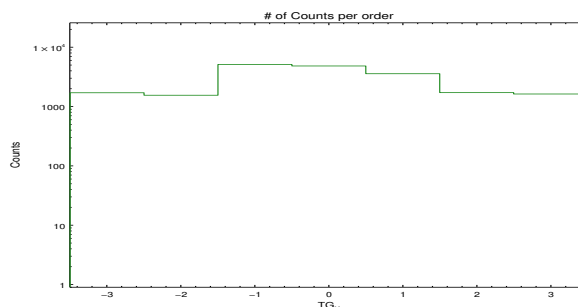


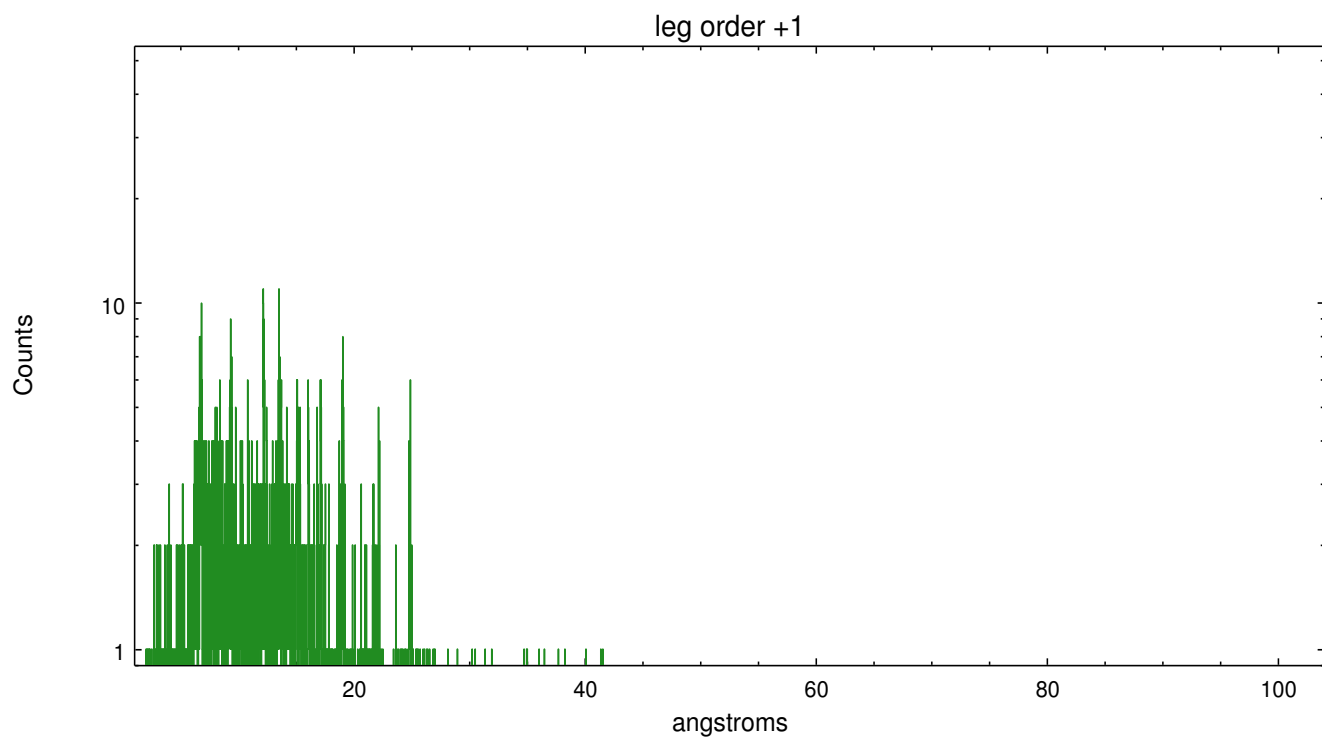
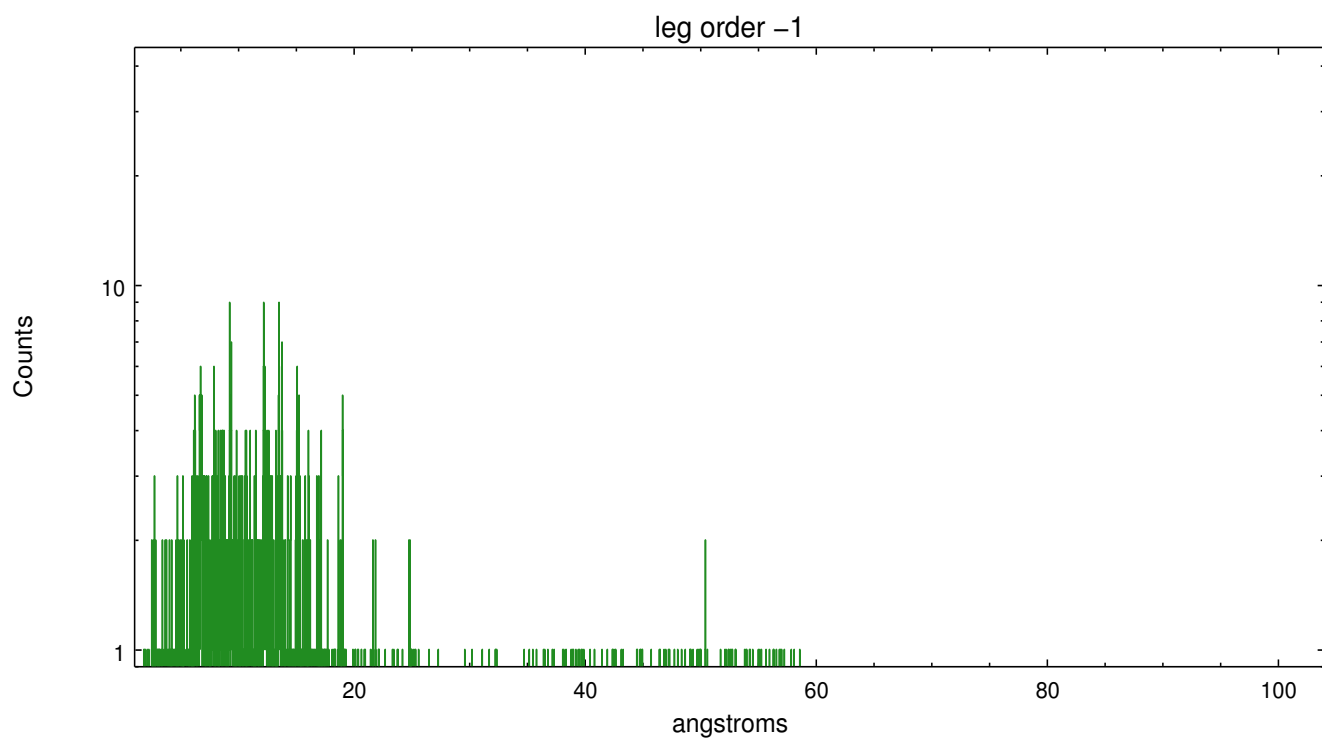
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1716	1557	5157	4861	3598	1725	1635





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	70.182

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 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.