

# V&V Reference Report

## L2 ASCDS Version : 8.5.1.1

Observation 6091 - L2 Version 4  
Chandra X-Ray Center

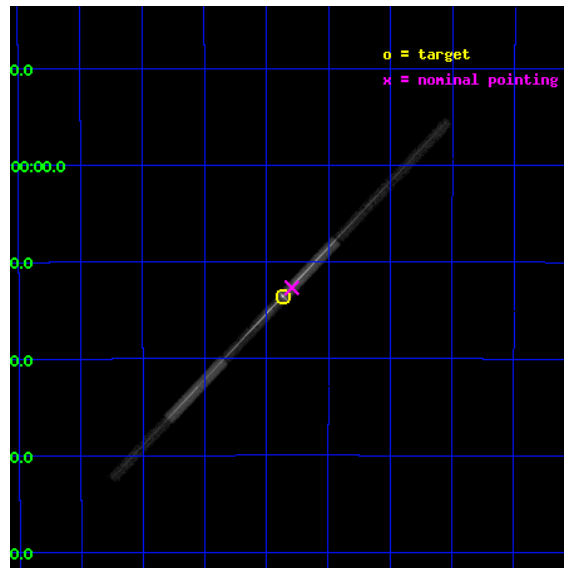
L2 Processing Date : Mar 7 2013

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# 1 Front

seq_num	790100	Sequence number
obs_id	6091	Observation id
title	AO6 Calibration Observations of PKS2155-304	Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	PKS2155-304	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	329.716667	Observer's specified target RA [deg]
dec_targ	-30.225556	Observer's specified target Dec [deg]
ra_nom	329.69860890811	Nominal RA [deg]
dec_nom	-30.211456306417	Nominal Dec [deg]
roll_nom	313.53931250876	Nominal Roll [deg]
revision	4	Processing version of data
ontime	30956.26827243	Sum of GTIs [s]
livetime	29241.859806084	Livetime [s]
ontime4	30956.26827243	Sum of GTIs [s]
ontime5	30956.26827243	Sum of GTIs [s]
ontime6	30956.26827243	Sum of GTIs [s]
ontime7	30956.26827243	Sum of GTIs [s]
ontime8	30956.26827243	Sum of GTIs [s]
ontime9	30956.26827243	Sum of GTIs [s]
l2events	188511	Number of level 2 events

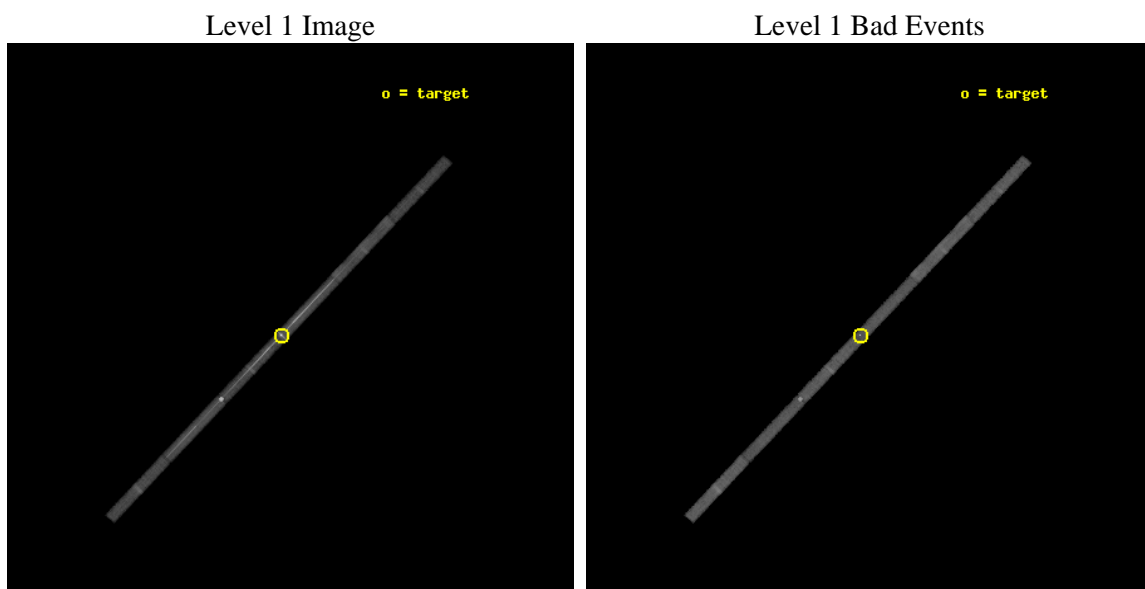




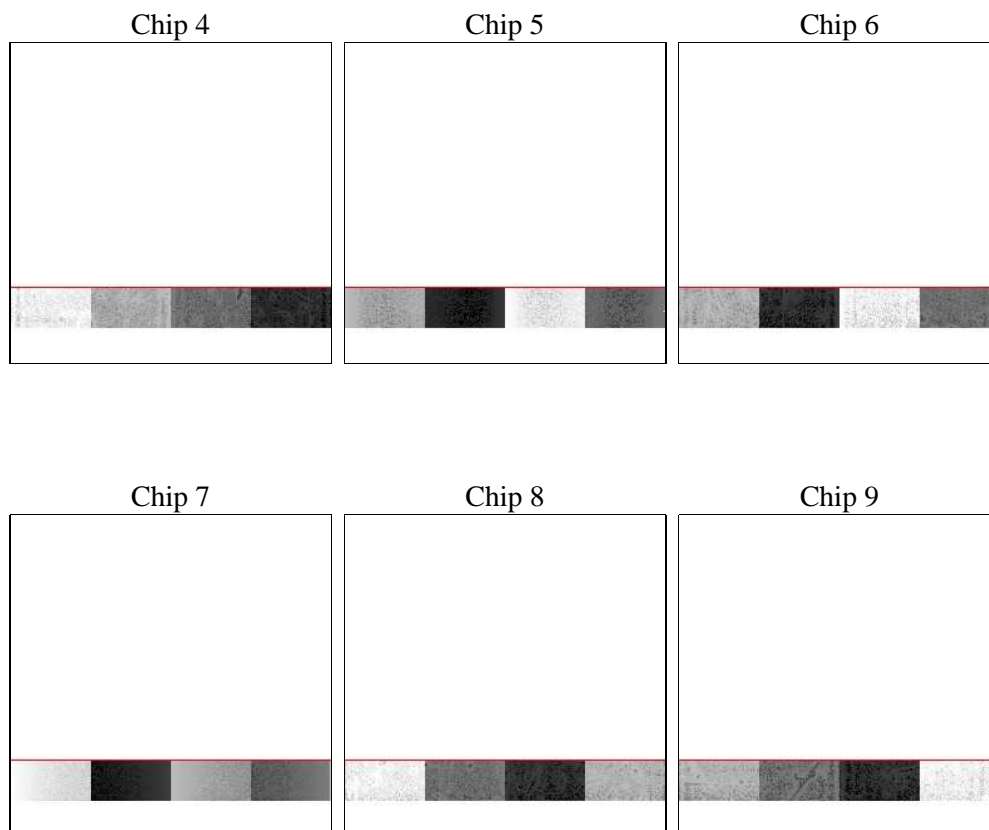
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	1	Obi number	sched_exp_time	30800.000000	[s] Scheduled observation exposure time
ascdsver	8.5.1.1	Processing system revision	ontime	30956.26827243	Sum of GTIs [s]
caldsver	4.5.6	&#160	ontime4	30956.26827243	Sum of GTIs [s]
date	2013-03-07T19:08:38	Date and time of file creation	ontime5	30956.26827243	Sum of GTIs [s]
revision	4	Processing version of data	ontime6	30956.26827243	Sum of GTIs [s]
			ontime7	30956.26827243	Sum of GTIs [s]
			ontime8	30956.26827243	Sum of GTIs [s]
			ontime9	30956.26827243	Sum of GTIs [s]
			l1events	406729	Number of level 1 events

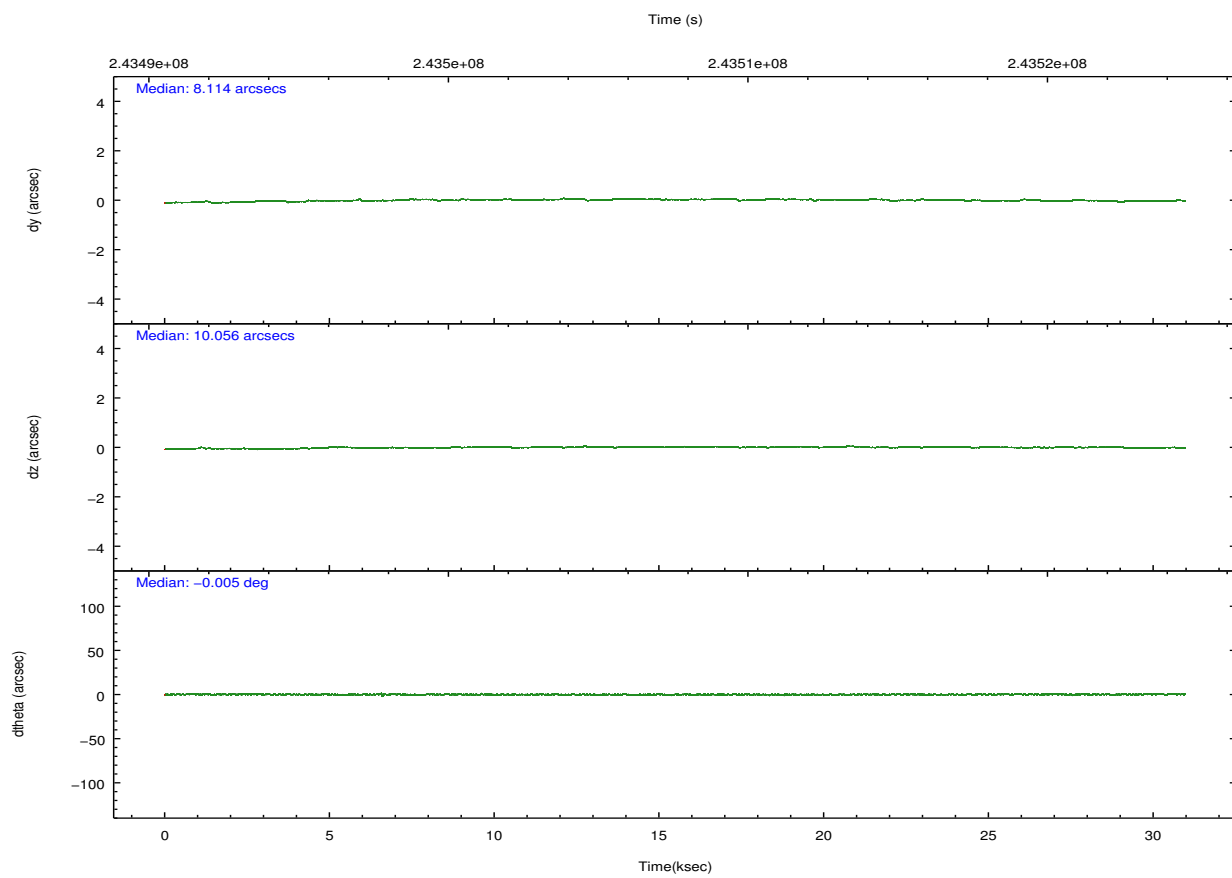
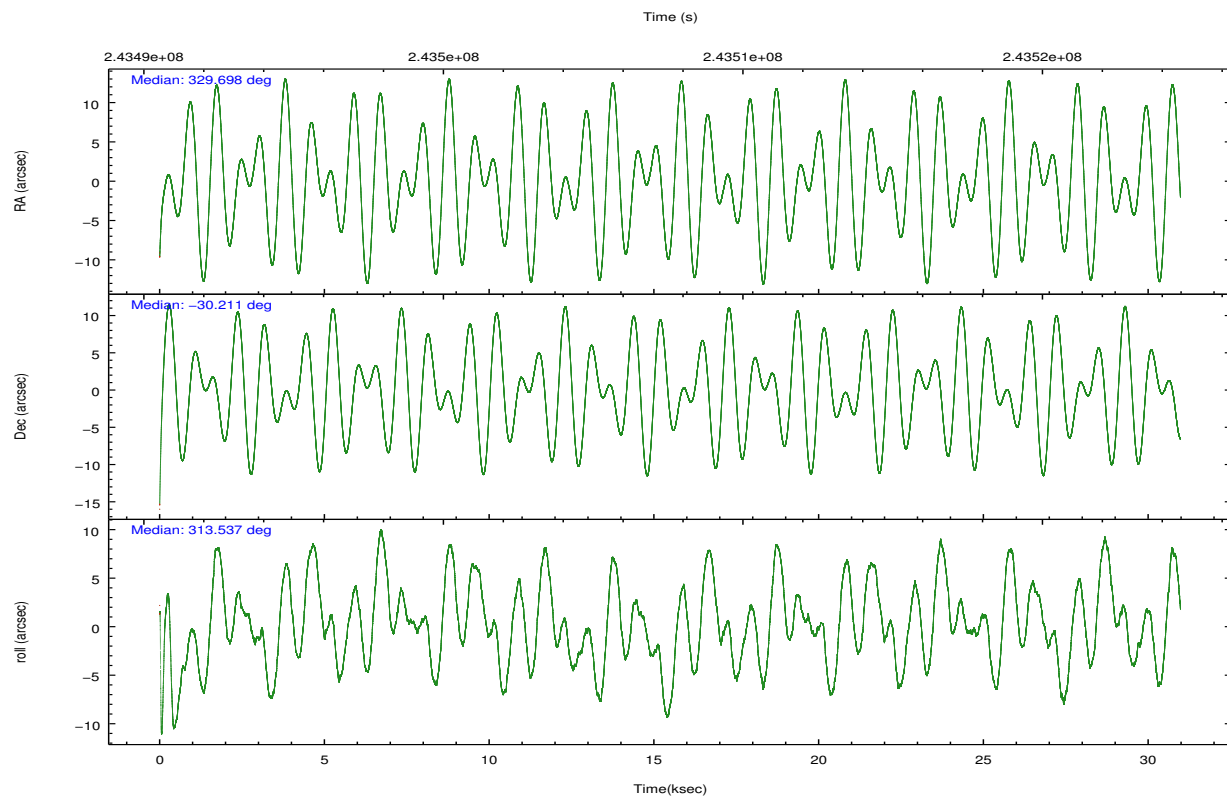
### 2.1.4 Events

	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	37381	80067	65219	144487	48358	31217	grade 0 events	2660	21092	28820	28625	5338	2570
rejected events	31904	26276	28602	36728	35843	25914		7%	26%	44%	19%	11%	8%
rejected %	85%	32%	43%	25%	74%	83%	grade 1 events	16	2418	63	1525	14	15
								0%	3%	0%	1%	0%	0%
							grade 2 events	961	9531	3653	25776	2201	764
								2%	11%	5%	17%	4%	2%
							grade 3 events	689	6719	1564	12098	1134	660
								1%	8%	2%	8%	2%	2%
							grade 4 events	566	5297	1460	11850	1128	625
								1%	6%	2%	8%	2%	2%
							grade 5 events	1089	5618	1177	8768	1467	1126
								2%	7%	1%	6%	3%	3%
							grade 6 events	662	11811	1309	29967	2840	746
								1%	14%	2%	20%	5%	2%
							grade 7 events	30738	17581	27173	25878	34236	24711
								82%	21%	41%	17%	70%	79%

## 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	329.668253	329.6986089081102	Subarray requested	CUSTOM	1/8
[deg] Pointing Dec	-30.204096	-30.21145630641701	Subarray start row	113	113
[deg] Pointing Roll	313.367402	313.5393125087592	Subarray row count	128	128
[s] Window start time (MET)	241920064.184000	241920064.184000	Alternating exposures requested	N	N
[s] Window stop time (MET)	252374464.184000	252374464.184000	[s] Primary exposure time	0.000000	0.7
[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)	243492262.184000	243491105.80203			
Observation start date	2005-09-19T04:43:18	2005-09-19T04:25:05			
[s] Observation end time (MET)	243523062.184000	243524395.75356			
Observation end date	2005-09-19T13:16:38	2005-09-19T13:39:55			
Read mode	TIMED	TIMED			

## 2.3 Aspect

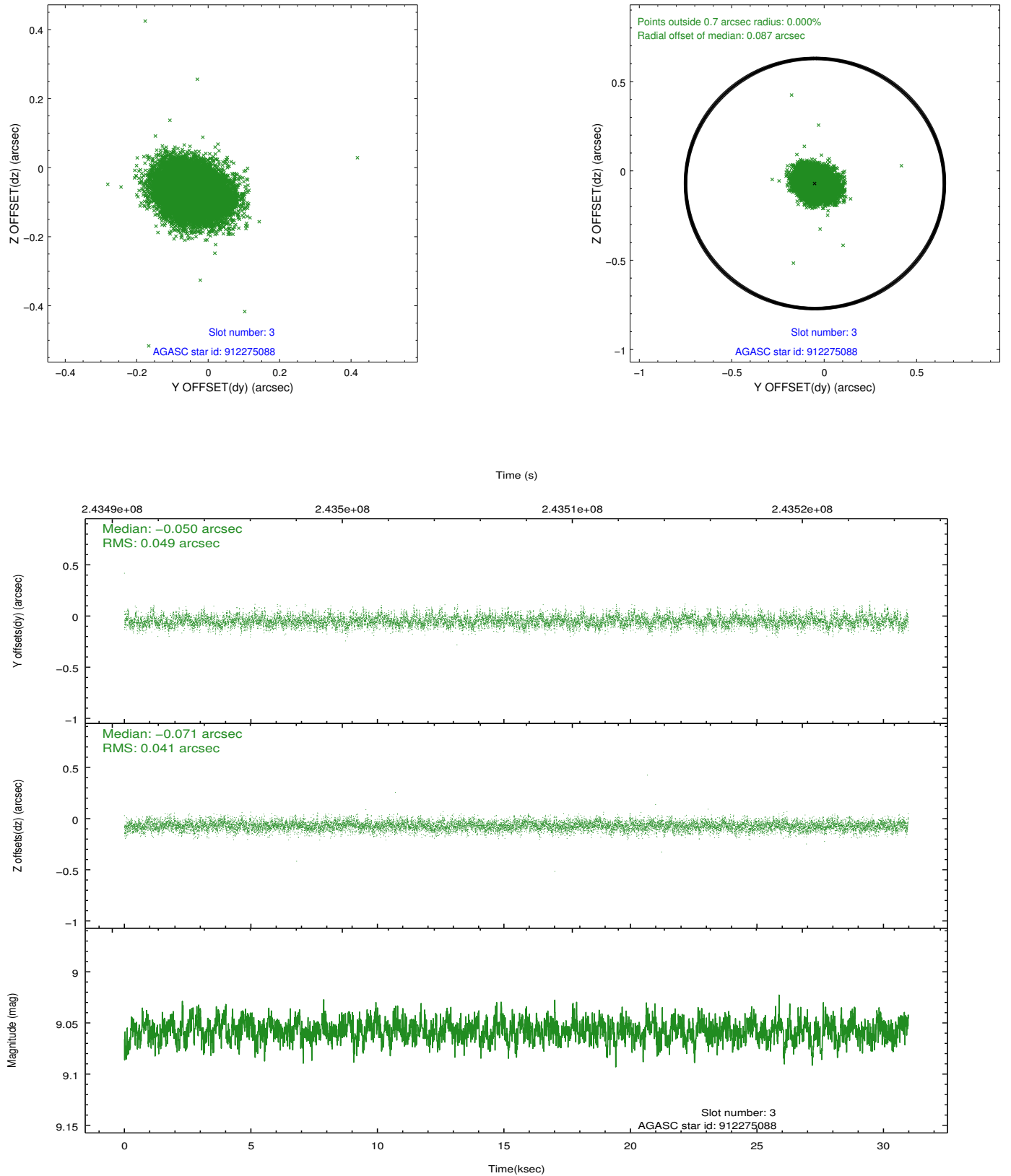


### Slot Statistics

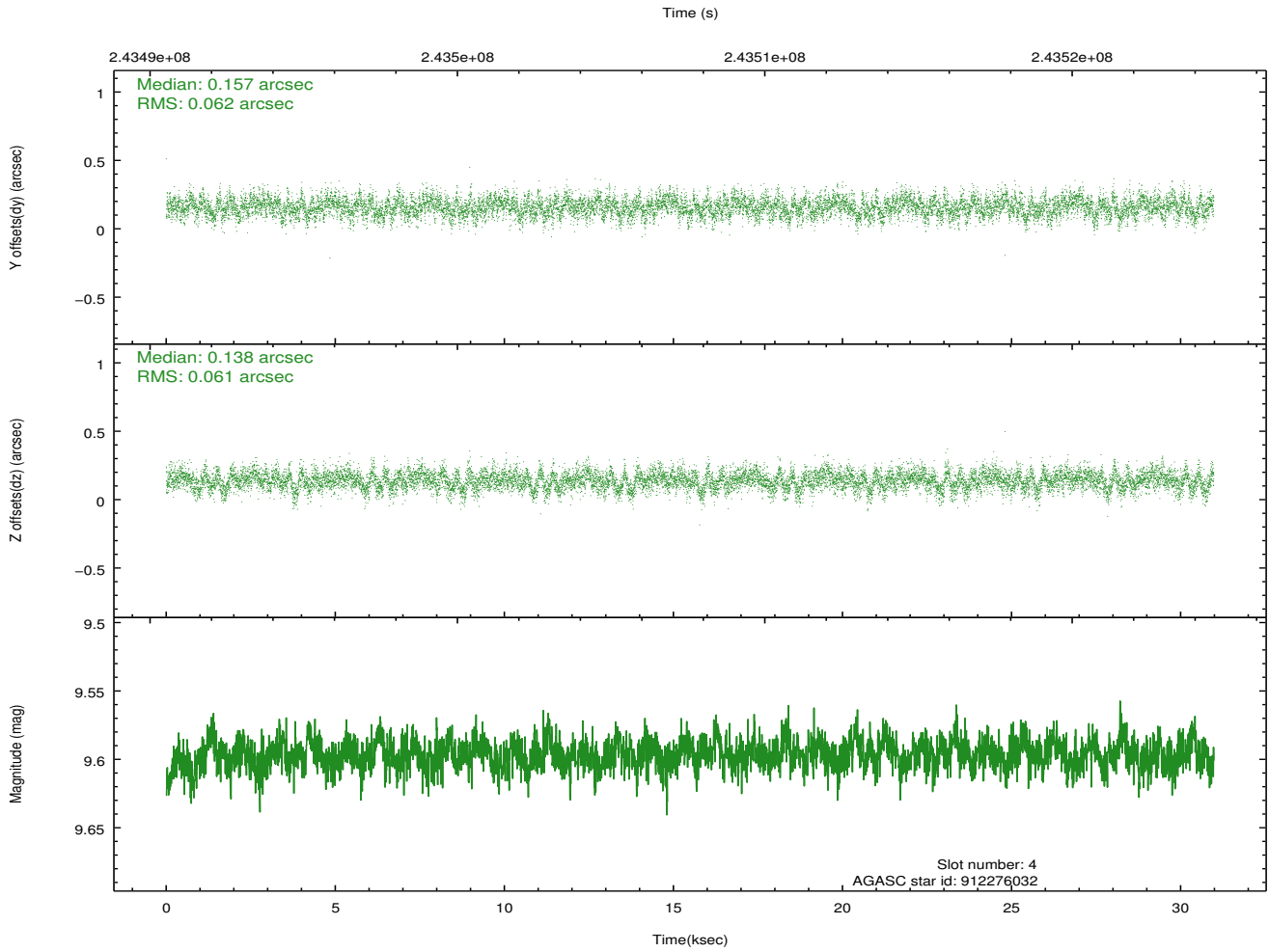
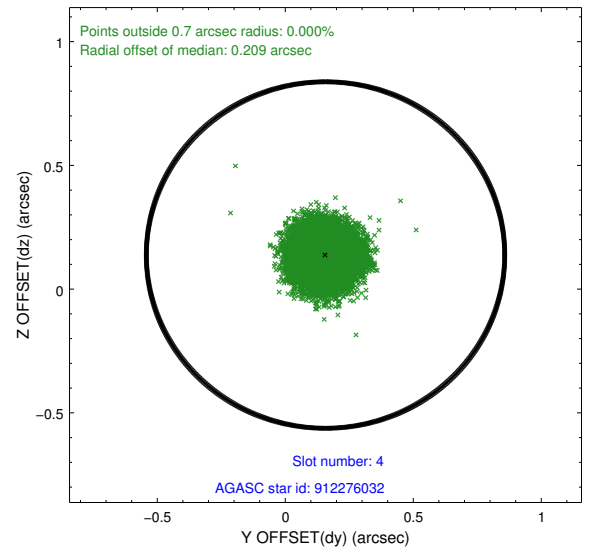
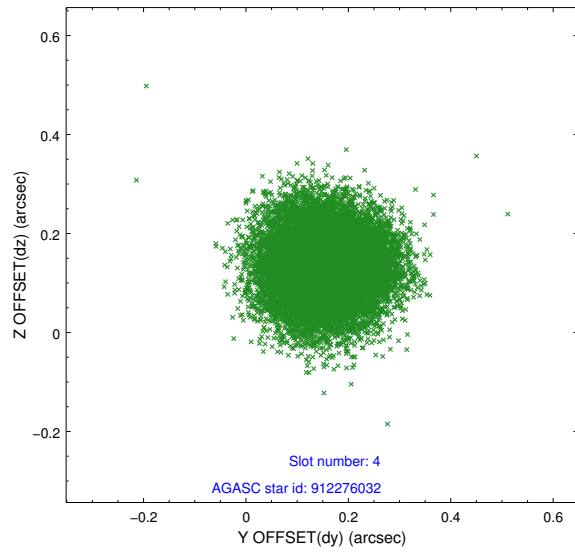
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	7551	-0.066	-0.097	0.007	0.011	0.000000	0.000000	-760.36	-1896.11
1	FID	ACIS-S-4	7.19	7551	0.128	0.058	0.006	0.011	0.000000	0.000000	2153.06	12.45
2	FID	ACIS-S-5	7.23	7550	-0.093	0.046	0.007	0.011	0.000000	0.000000	-1813.16	6.15
3	GUIDE	912275088	9.06	15089	-0.050	-0.071	0.067	0.112	329.619228	-29.738698	-1323.02	1039.12
4	GUIDE	912276032	9.60	15099	0.157	0.138	0.093	0.149	329.395967	-29.803466	-1631.50	371.66
5	GUIDE	981468016	9.00	15098	-0.101	-0.168	0.079	0.127	328.842457	-30.034984	-2202.93	-1459.40
6	GUIDE	981469488	9.59	15095	0.015	-0.012	0.115	0.196	329.261199	-30.045155	-1285.21	-530.78
7	GUIDE	981478152	9.41	15095	-0.020	0.117	0.108	0.172	329.415589	-30.057192	-924.27	-209.55

## 2.4 Star Slots

### 2.4.1 Slot 3

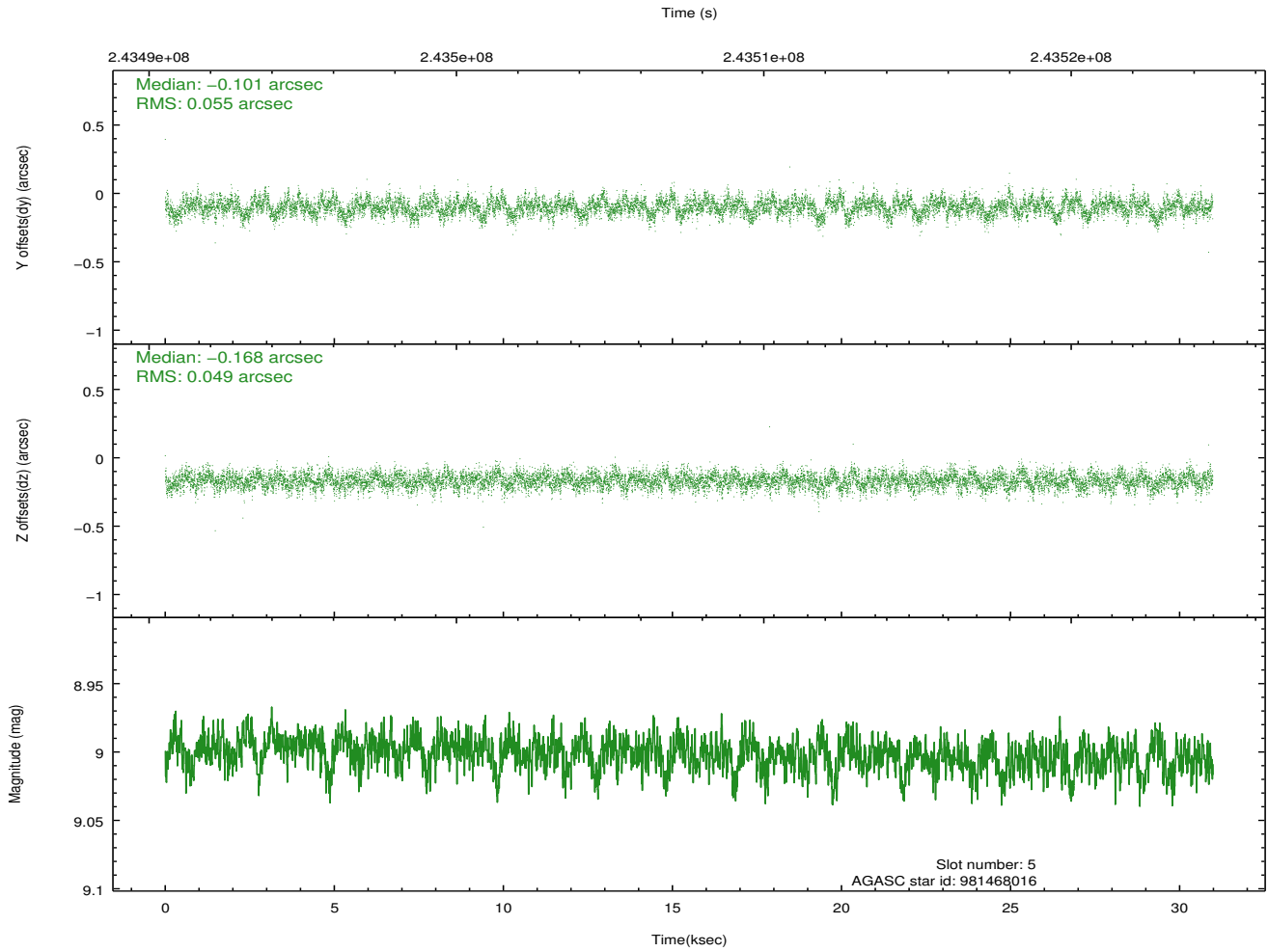
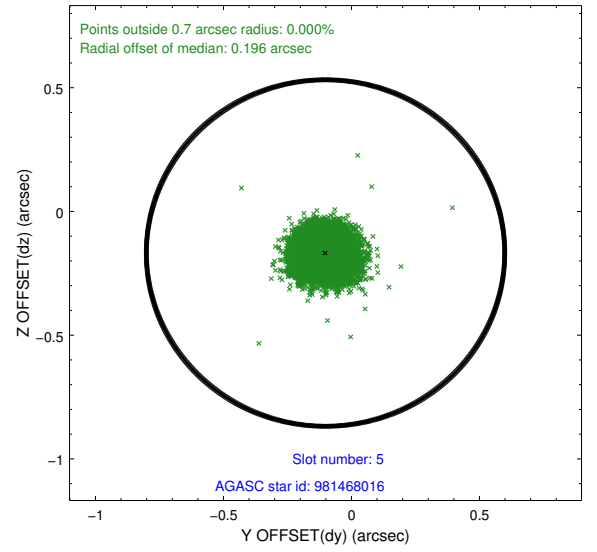
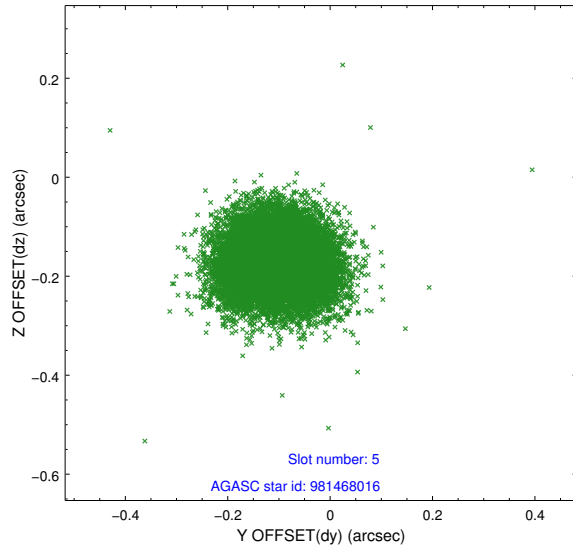


## 2.4.2 Slot 4

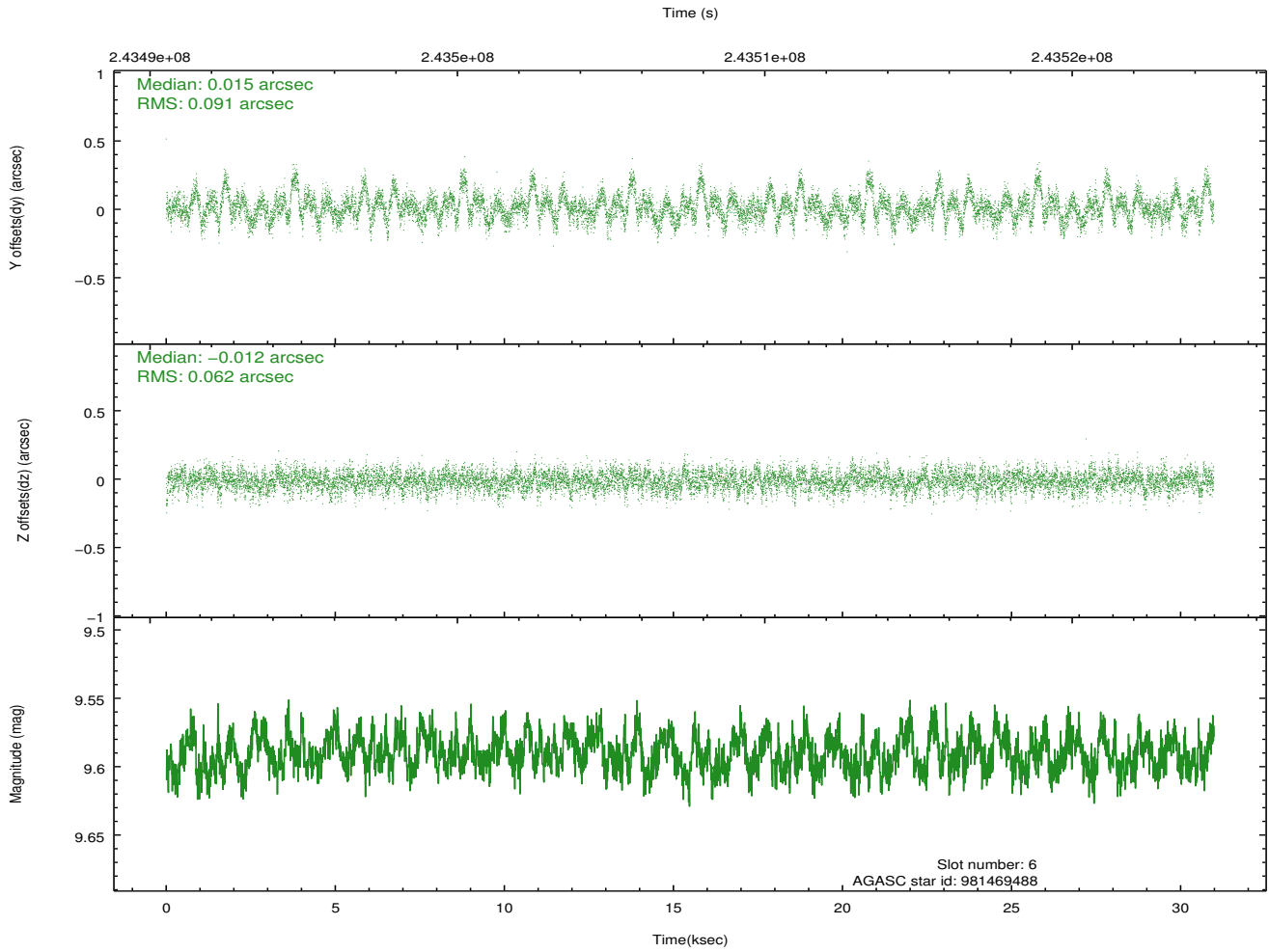
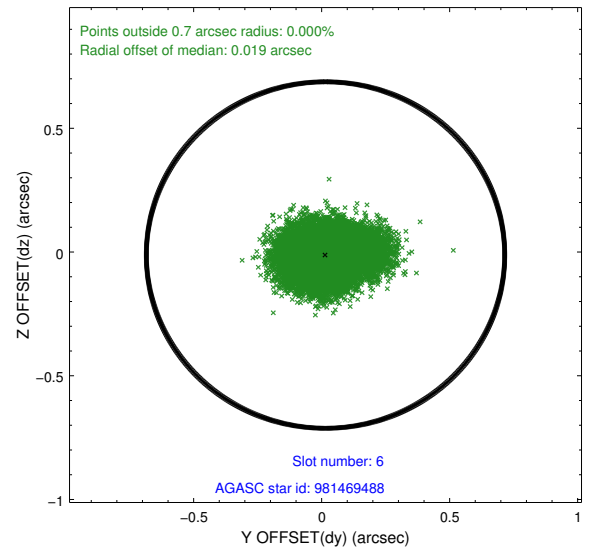
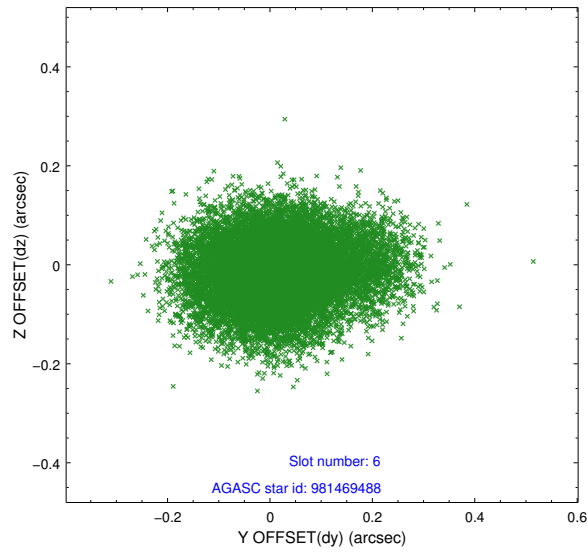




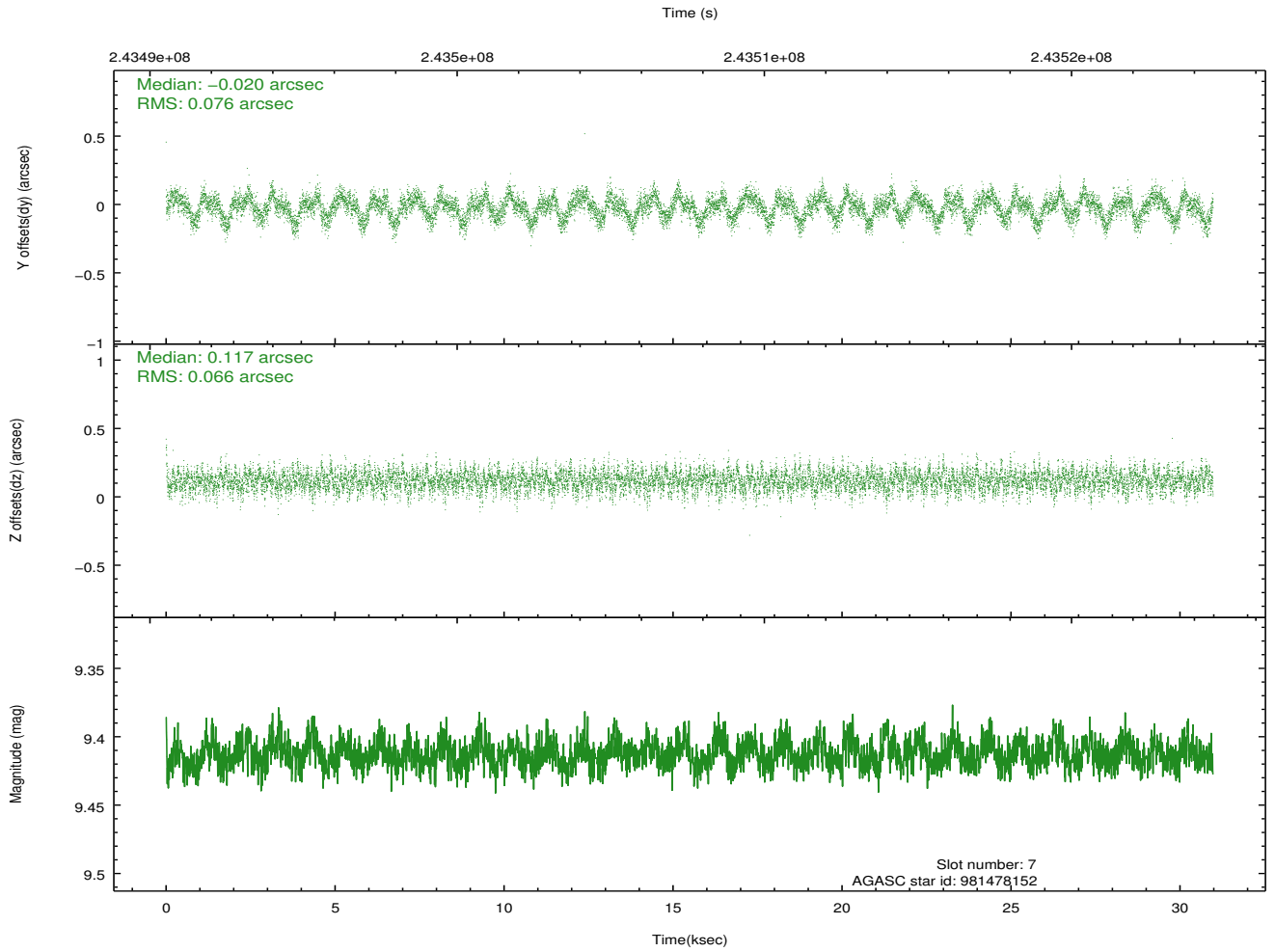
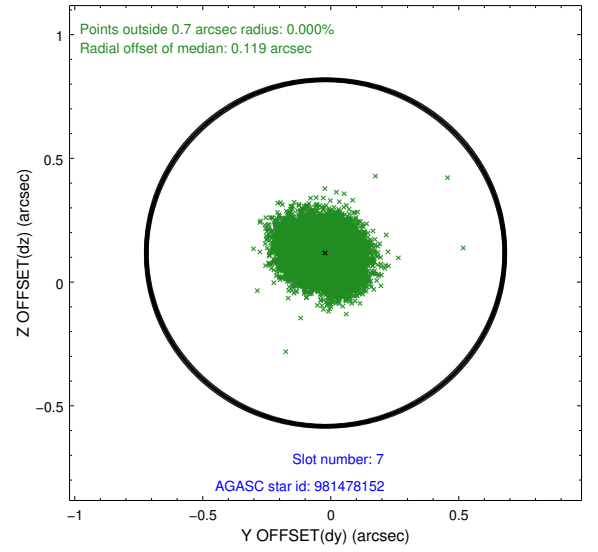
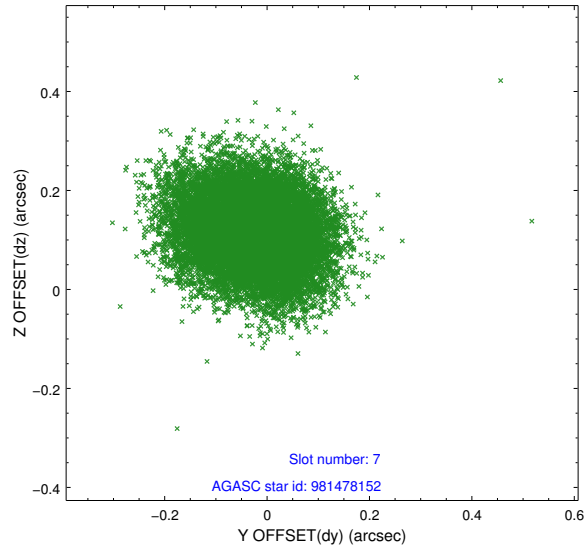
### 2.4.3 Slot 5



## 2.4.4 Slot 6

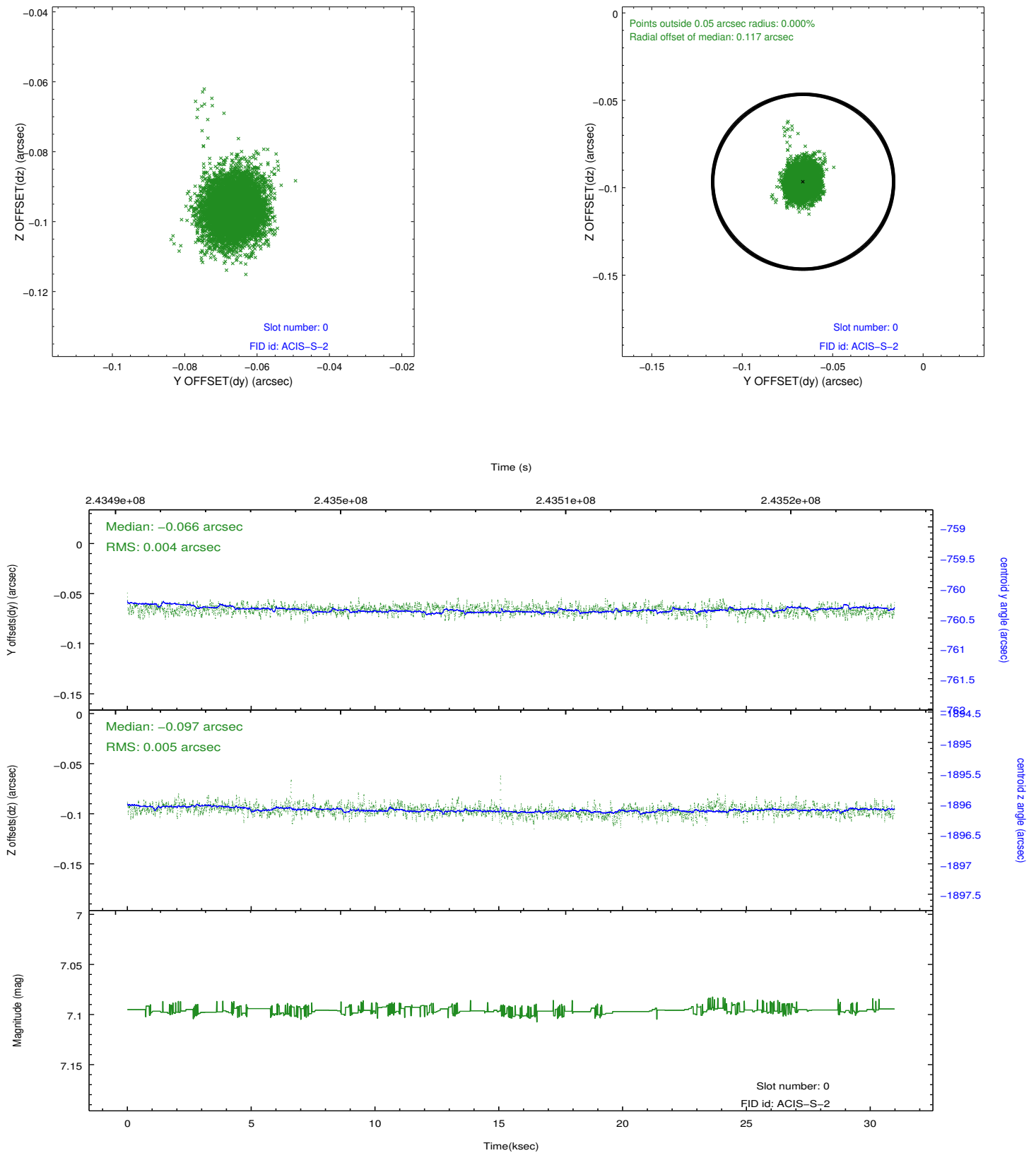


## 2.4.5 Slot 7

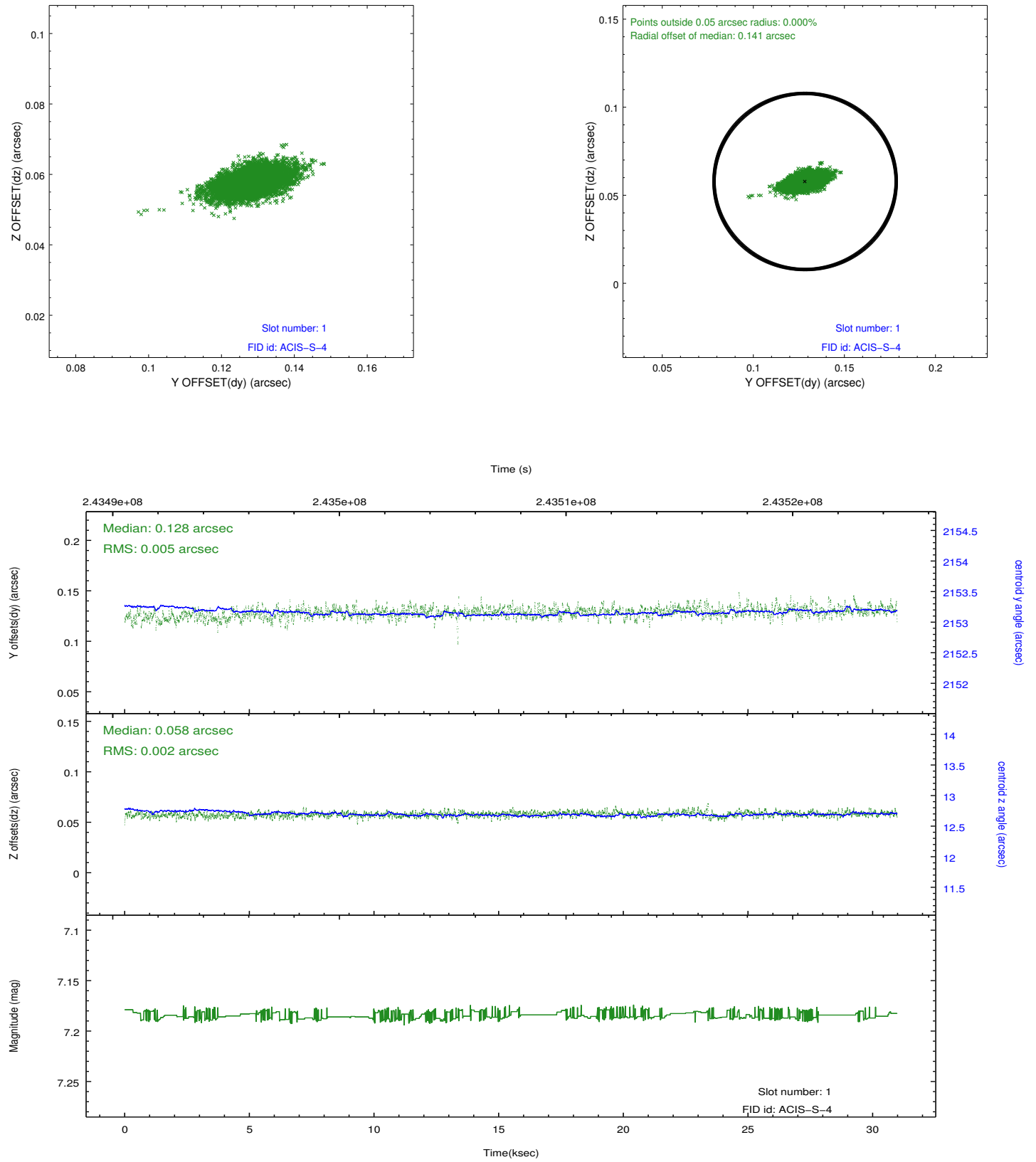


## 2.5 FID Slots

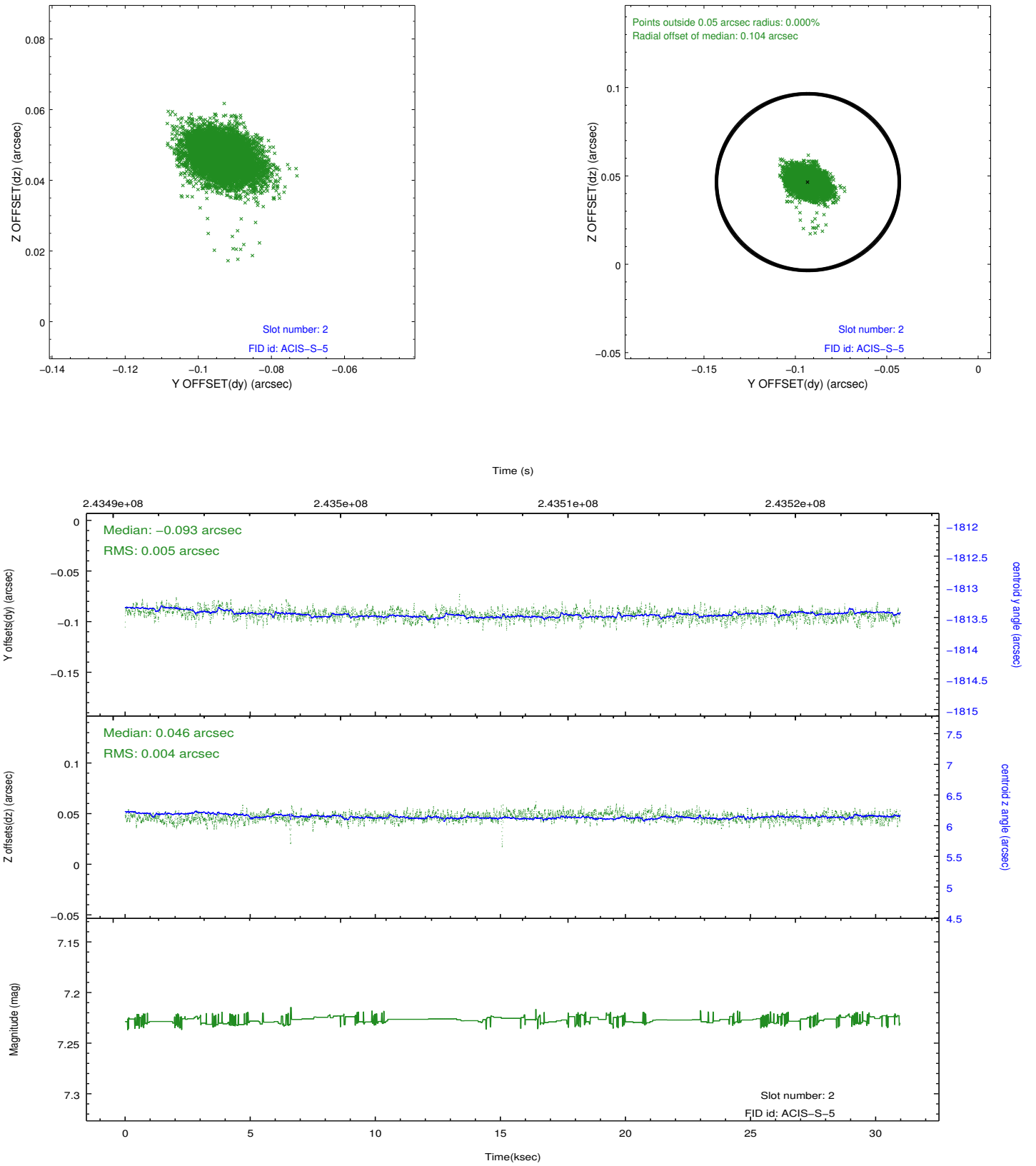
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

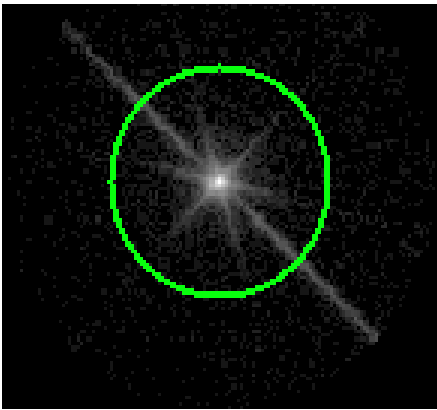


# 3 Gratings

## 3.1 LETG Arm



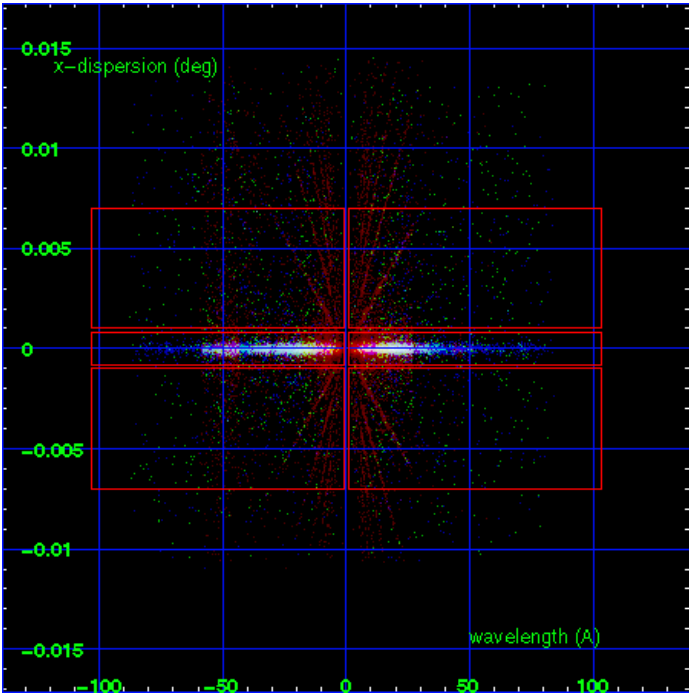
LETG Order Sort 123



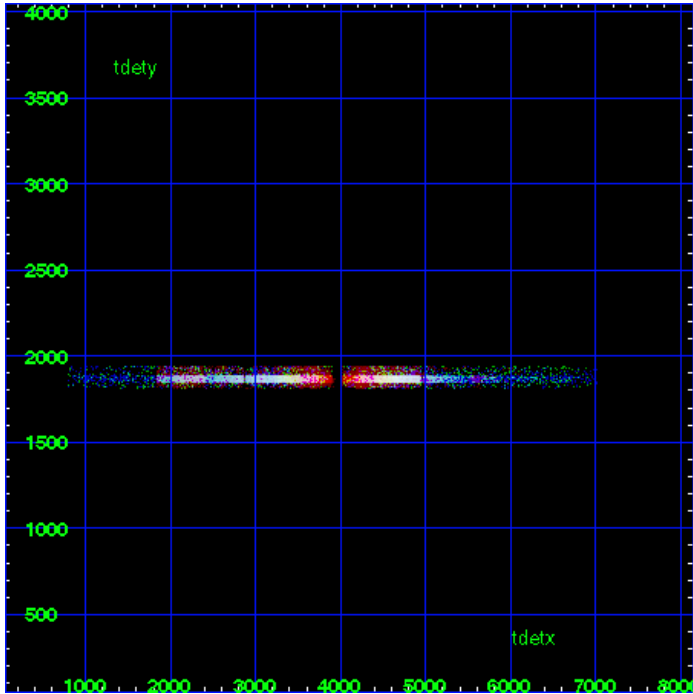
LETG Zero Order



LETG Order Sort ALL

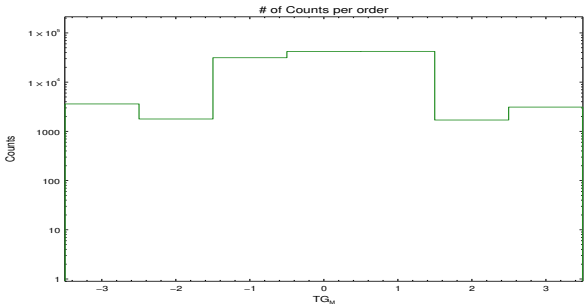


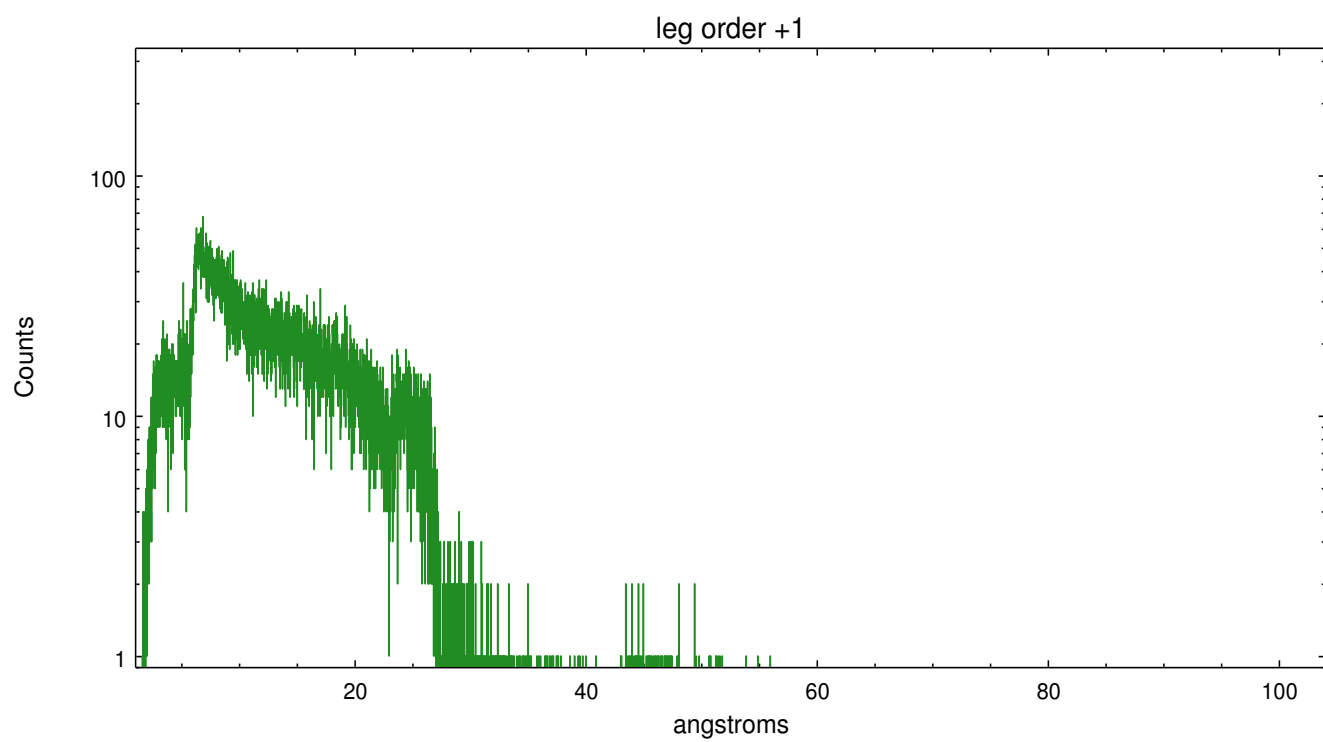
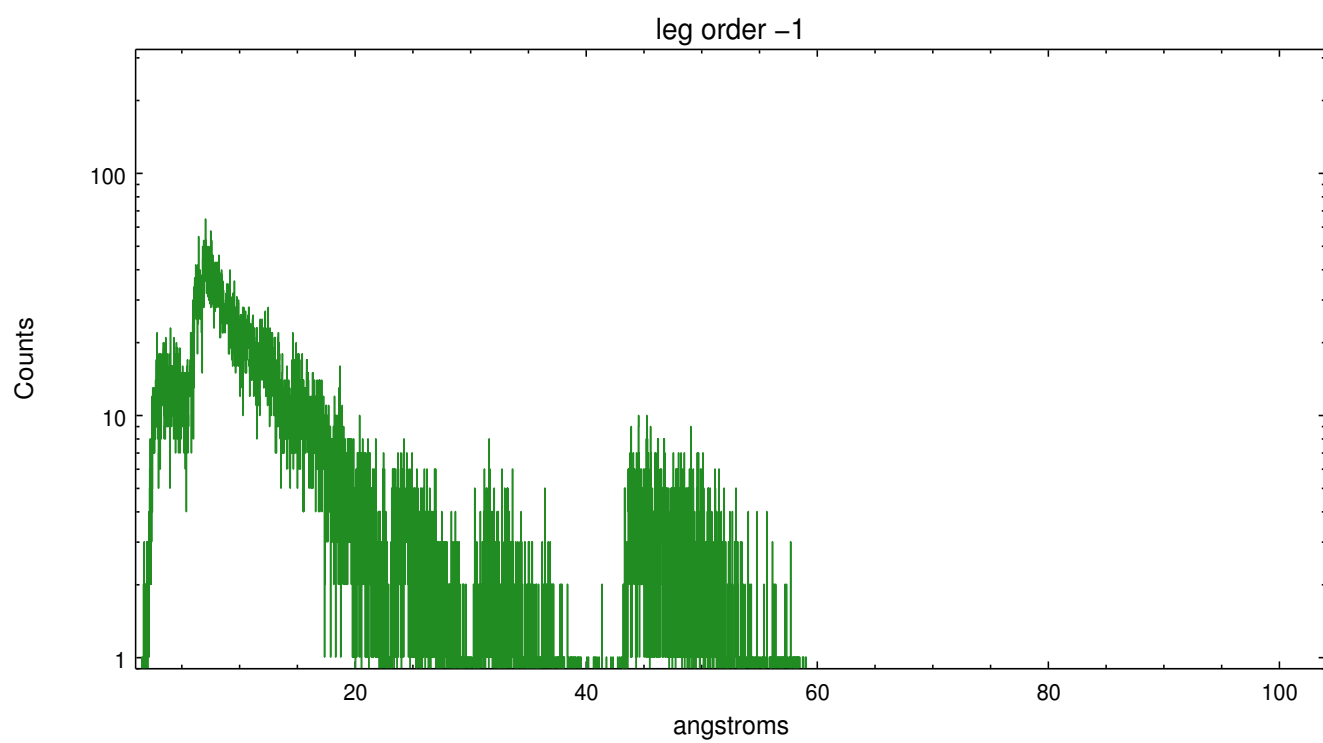
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	3622	1788	31590	42232	42498	1704	3123







# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.03.13
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	30.95416

## A.2 Comments

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.

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As a consequence of the DEA-A shutdown anomaly on Sep 15th (DOY258), the reported value of the ACIS FP temperature was ~1.3 degrees warmer than the actual temperature. The value for FP temperature reported in the headers of the Level 2 event file and the Mission Timeline files are incorrect by this amount for this processing. However, the temperature is corrected in the processing in order to obtain the correct temperature for the CTI correction. So the calibrated data are correct. If using the FP temp values in the headers of data files (some CIAO tools require this information), investigators should subtract 1.3 degrees from the reported temperature to determine the true temperature.