

# V&V Reference Report

## L2 ASCDS Version : 8.4.3

Observation 13250 - L2 Version 2  
Chandra X-Ray Center

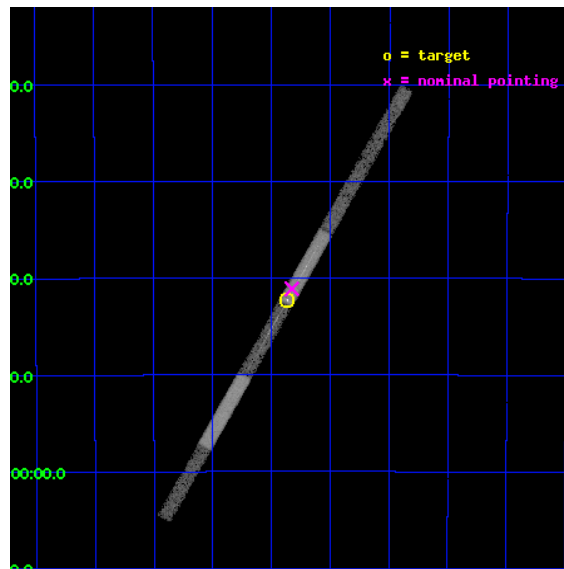
L2 Processing Date : Feb 8 2012

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# 1 Front

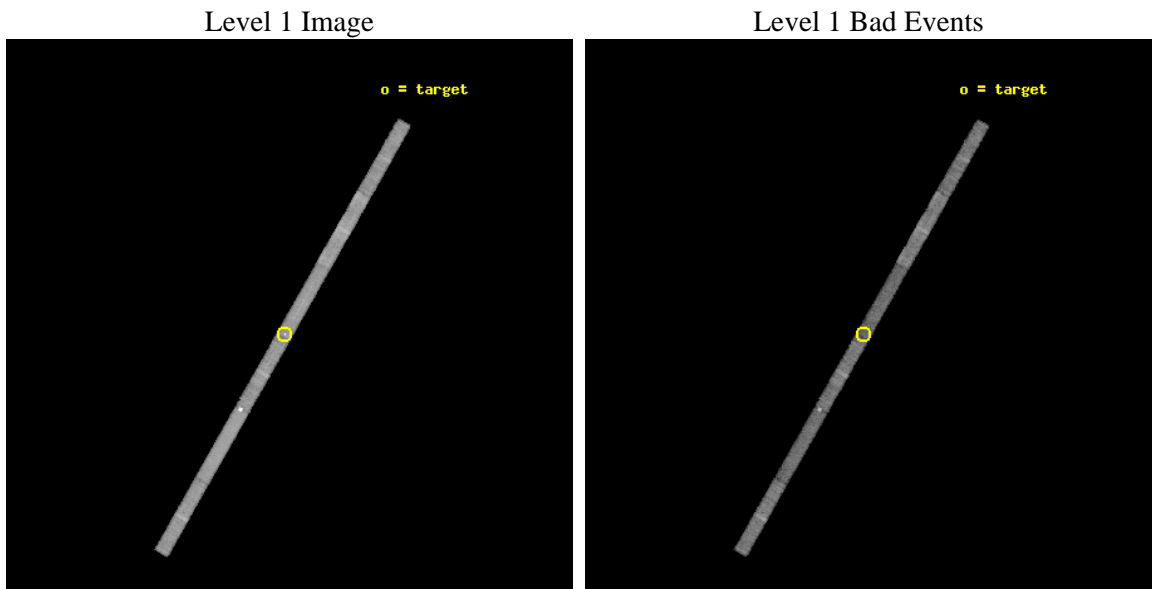
seq_num	200735	Sequence number
obs_id	13250	Observation id
title	Hot wind and accretion in TW Hya	Proposal title
observer	Dr. Hans Guenther	Principal investigator
object	TW Hya	Source name
dtcycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	165.46625	Observer's specified target RA [deg]
dec_targ	-34.704722	Observer's specified target Dec [deg]
ra_nom	165.45645491215	Nominal RA [deg]
dec_nom	-34.685291117041	Nominal Dec [deg]
roll_nom	299.70096517315	Nominal Roll [deg]
revision	2	Processing version of data
ontime	20075.29965806	Sum of GTIs [s]
livetime	18963.496924109	Livetime [s]
ontime4	20075.29965806	Sum of GTIs [s]
ontime5	20075.275457919	Sum of GTIs [s]
ontime6	20075.234417915	Sum of GTIs [s]
ontime7	20075.29965806	Sum of GTIs [s]
ontime8	20075.193377912	Sum of GTIs [s]
ontime9	20075.152337909	Sum of GTIs [s]
l2events	41847	Number of level 2 events



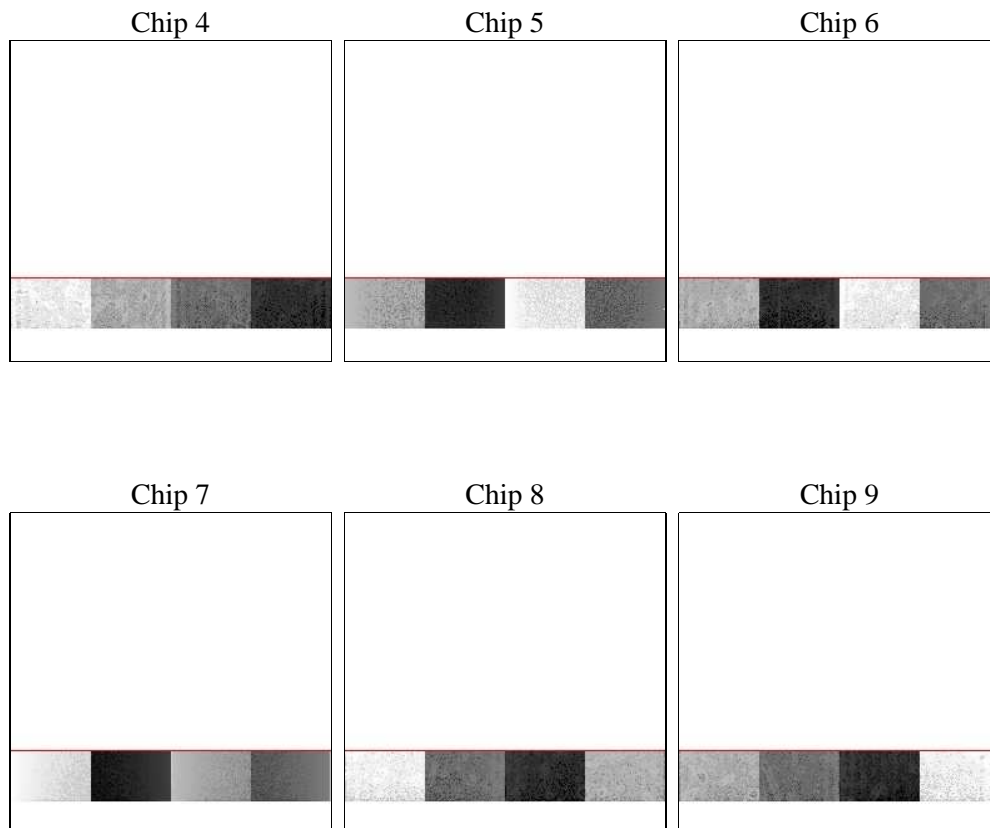
## 2 OBI

### 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	8.4.3	Processing system revision	ontime	20075.29965806	Sum of GTIs [s]
caldbver	4.4.7	&#160	ontime4	20075.29965806	Sum of GTIs [s]
date	2012-02-08T03:39:00	Date and time of file creation	ontime5	20075.275457919	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	20075.234417915	Sum of GTIs [s]
			ontime7	20075.29965806	Sum of GTIs [s]
			ontime8	20075.193377912	Sum of GTIs [s]
			ontime9	20075.152337909	Sum of GTIs [s]
			l1events	185792	Number of level 1 events

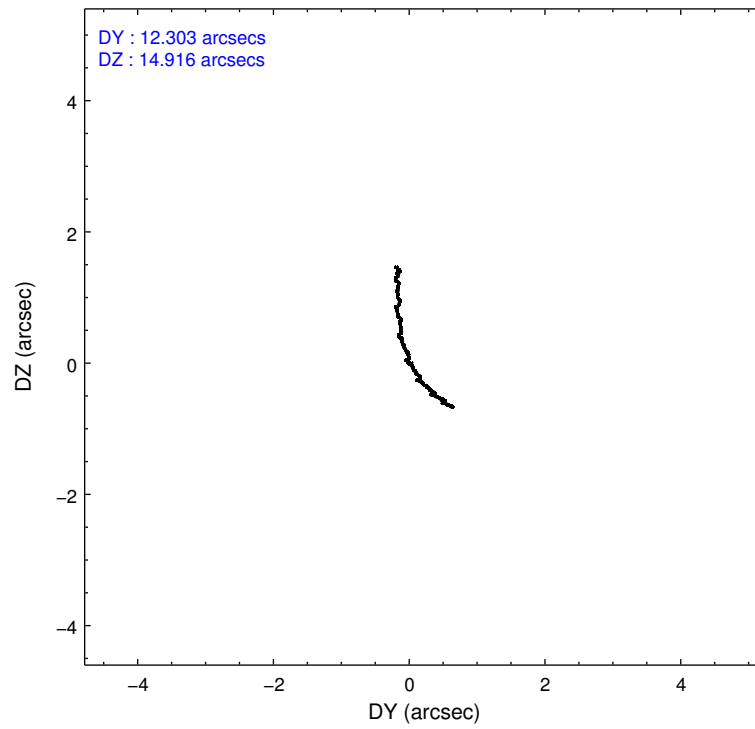
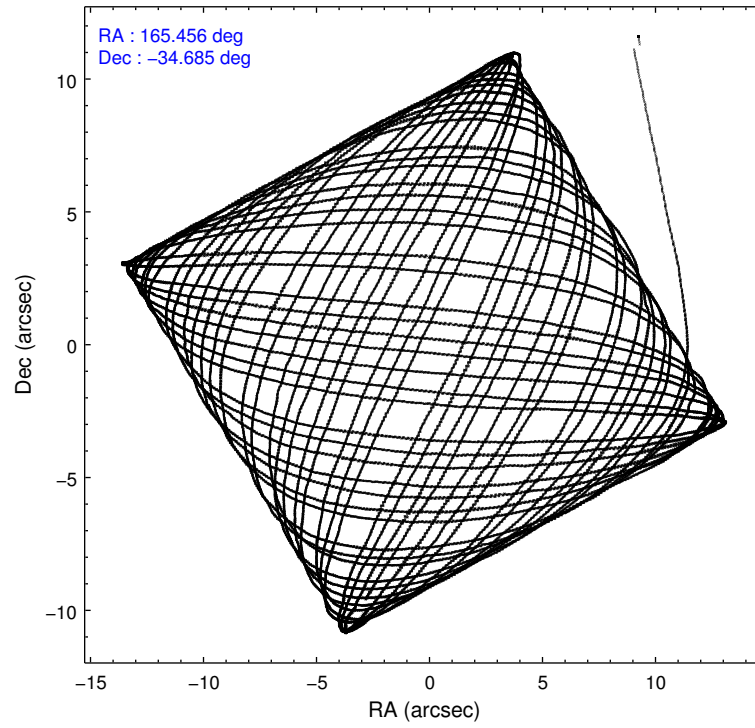
### 2.1.4 Events

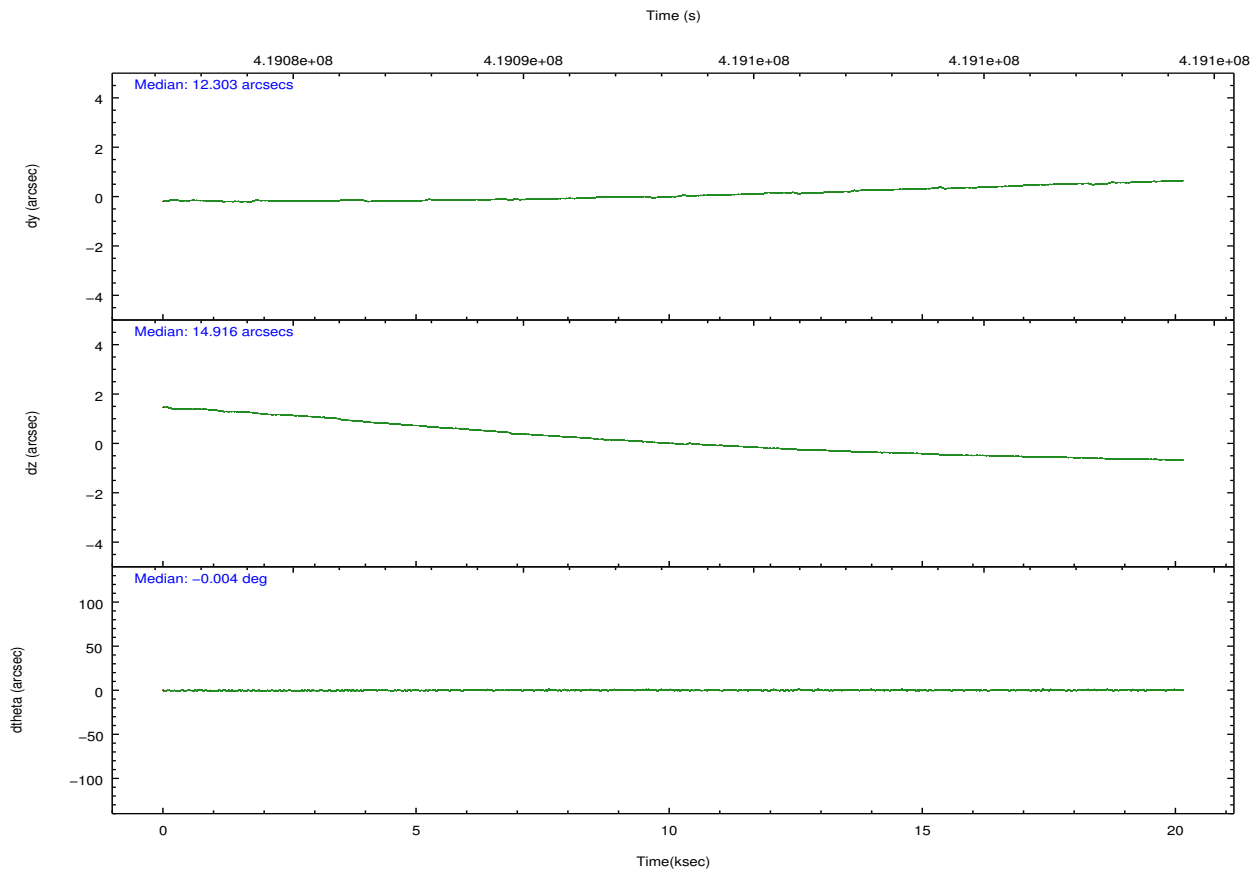
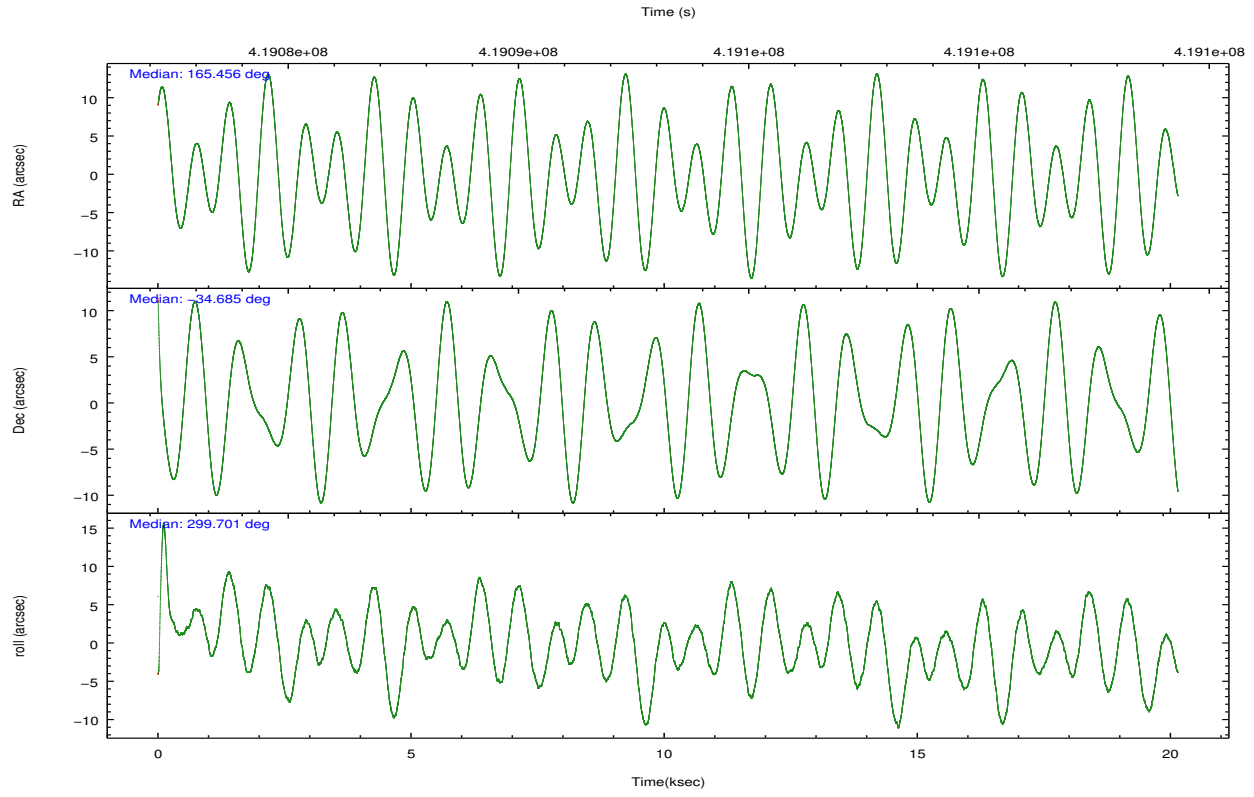
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	27600	39814	26312	30267	38057	23742	grade 0 events	933	6676	1500	2150	2105	918
rejected events	24468	17505	22642	14482	29411	20716		3%	16%	5%	7%	5%	3%
rejected %	88%	43%	86%	47%	77%	87%	grade 1 events	9	1252	5	37	15	12
								0%	3%	0%	0%	0%	0%
							grade 2 events	735	4613	591	3583	1791	593
								2%	11%	2%	11%	4%	2%
							grade 3 events	478	1707	499	1829	1000	511
								1%	4%	1%	6%	2%	2%
							grade 4 events	452	1384	524	1747	921	474
								1%	3%	1%	5%	2%	1%
							grade 5 events	892	3113	933	2713	1342	1020
								3%	7%	3%	8%	3%	4%
							grade 6 events	534	7930	556	6477	2829	531
								1%	19%	2%	21%	7%	2%
							grade 7 events	23567	13139	21704	11731	28054	19683
								85%	33%	82%	38%	73%	82%

## 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	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	165.427501	165.4564549121484	CCD I2 on	N	N
[deg] Pointing Dec	-34.671826	-34.68529111704088	CCD I3 on	N	N
[deg] Pointing Roll	299.527873	299.7009651731464	CCD S0 on	O1	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S1 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S2 on	Y	Y
[mm] SIM translation stage pos	-182.132523	-182.139514760308	CCD S3 on	Y	Y
[mm] SIM translation stage offset	-8	-7.993007822699838	CCD S4 on	Y	Y
[s] Observation start time (MET)	419083316.184000	419082165.74345	CCD S5 on	O2	Y
Observation start date	2011-04-13T12:00:50	2011-04-13T11:42:45	Number of optional ACIS chips dropped	0	0
[s] Observation end time (MET)	419103316.184000	419104224.76959	On-chip summing requested	N	N
Observation end date	2011-04-13T17:34:10	2011-04-13T17:50:24	Subarray requested	CUSTOM	CUSTOM
Read mode	TIMED	TIMED	Subarray start row	107	107
			Subarray row count	161	161
			Alternating exposures requested	N	N
			[s] Primary exposure time	0.000000	0.7

## 2.3 Aspect



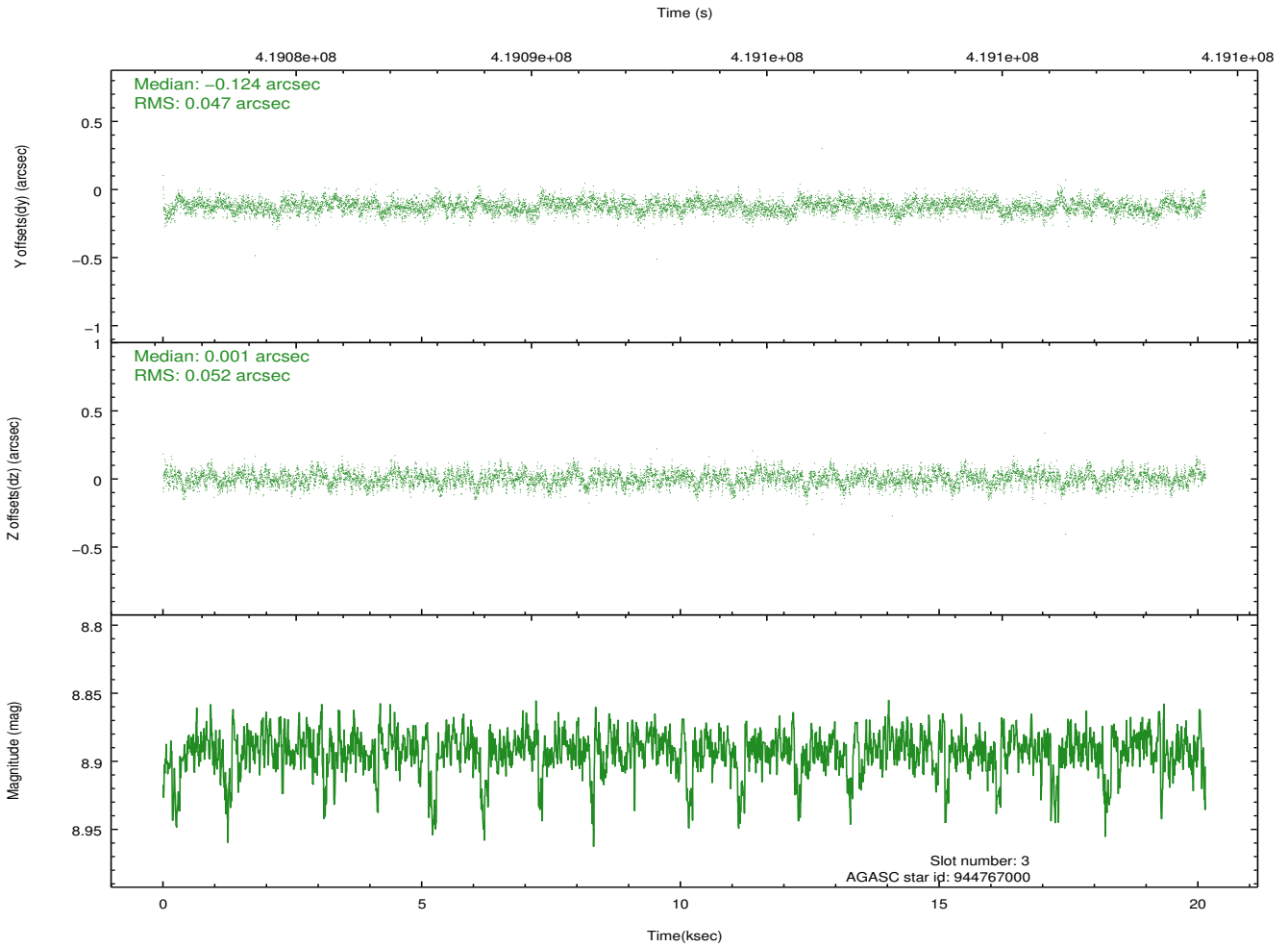
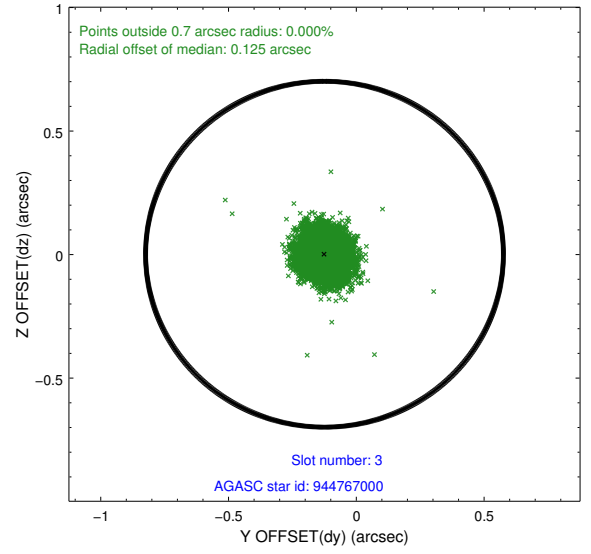
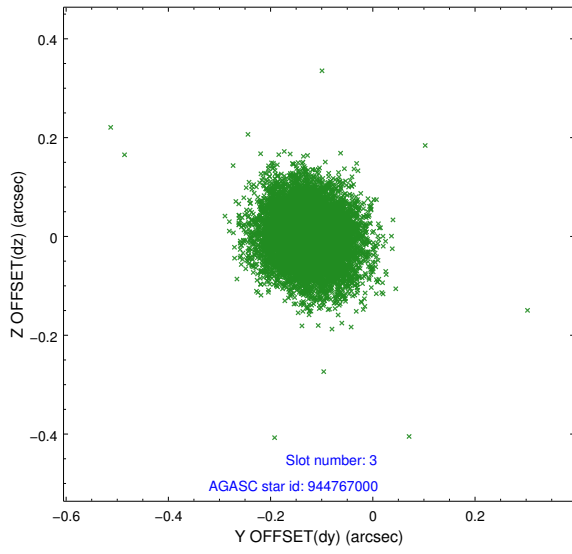


### Slot Statistics

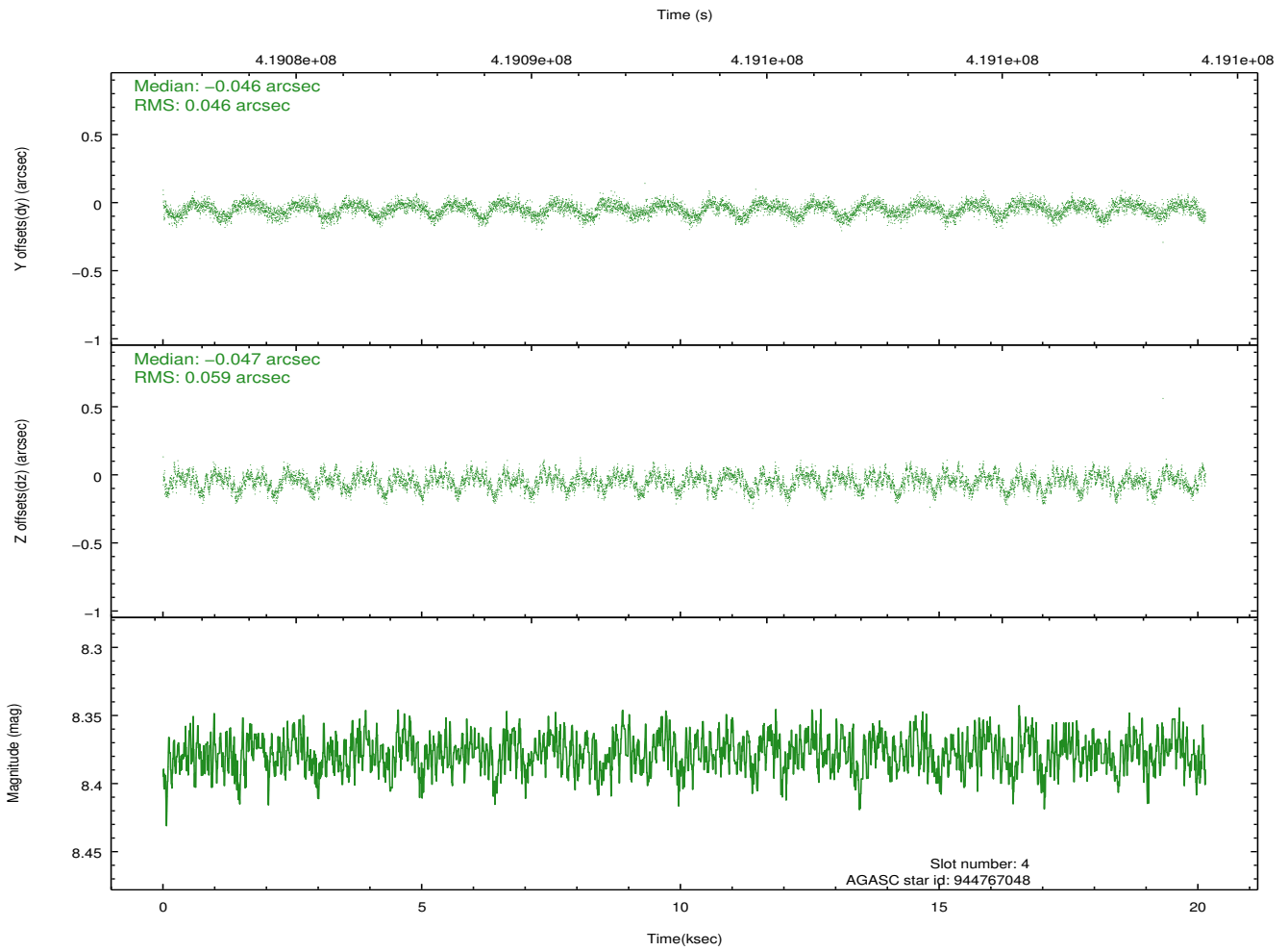
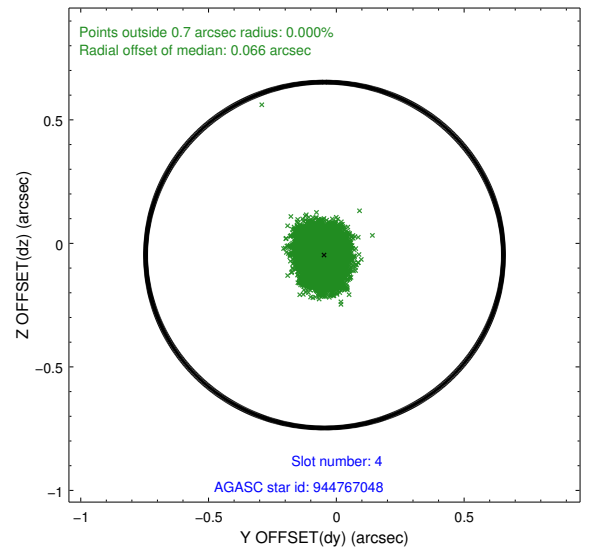
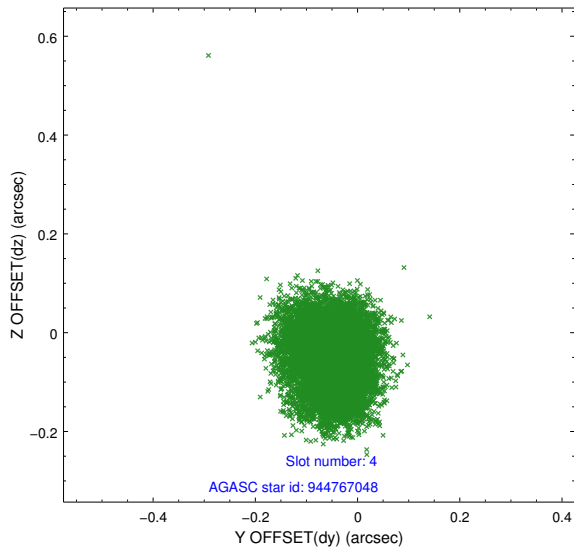
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	6.89	4914	-0.111	-0.071	0.014	0.036	0.000000	0.000000	-764.84	-1901.20
1	FID	ACIS-S-4	6.95	4914	0.114	0.059	0.007	0.012	0.000000	0.000000	2148.58	7.17
2	FID	ACIS-S-6	7.18	4914	-0.030	0.017	0.015	0.044	0.000000	0.000000	397.47	644.75
3	GUIDE	944767000	8.89	9808	-0.124	0.001	0.074	0.120	165.237583	-34.800690	127.65	-717.43
4	GUIDE	944767048	8.38	9820	-0.046	-0.047	0.082	0.127	165.200360	-34.833238	175.60	-871.05
5	GUIDE	944777288	8.70	9825	0.104	0.041	0.075	0.119	165.660339	-35.064275	1568.80	-99.68
6	GUIDE	944781240	8.39	9819	0.062	-0.069	0.070	0.117	164.753784	-34.626061	-1120.65	-1658.73
7	GUIDE	944782344	9.15	9821	0.008	0.086	0.098	0.156	164.738510	-34.490002	-1570.63	-1459.73

## 2.4 Star Slots

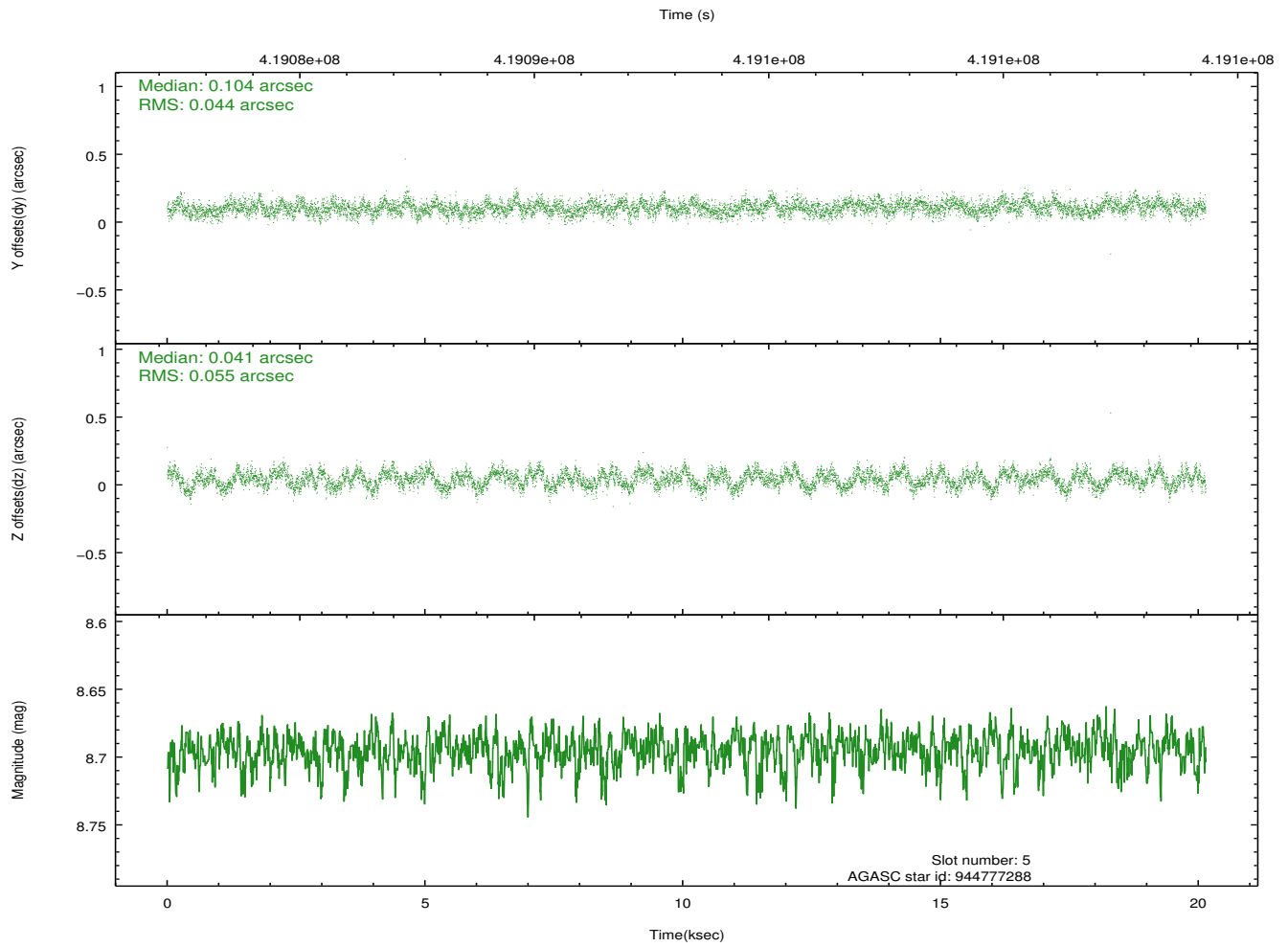
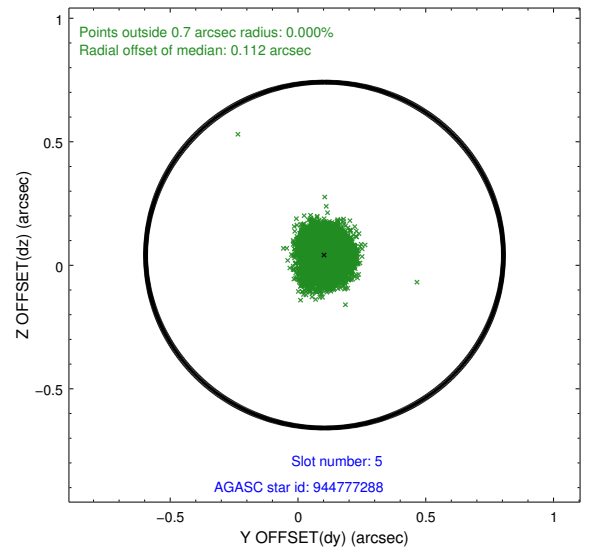
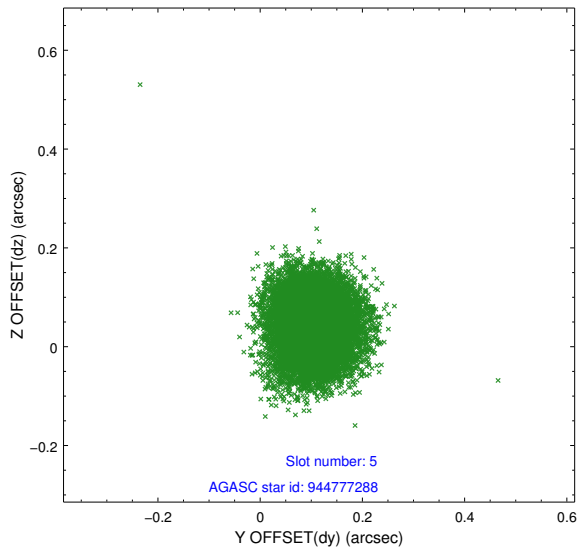
### 2.4.1 Slot 3



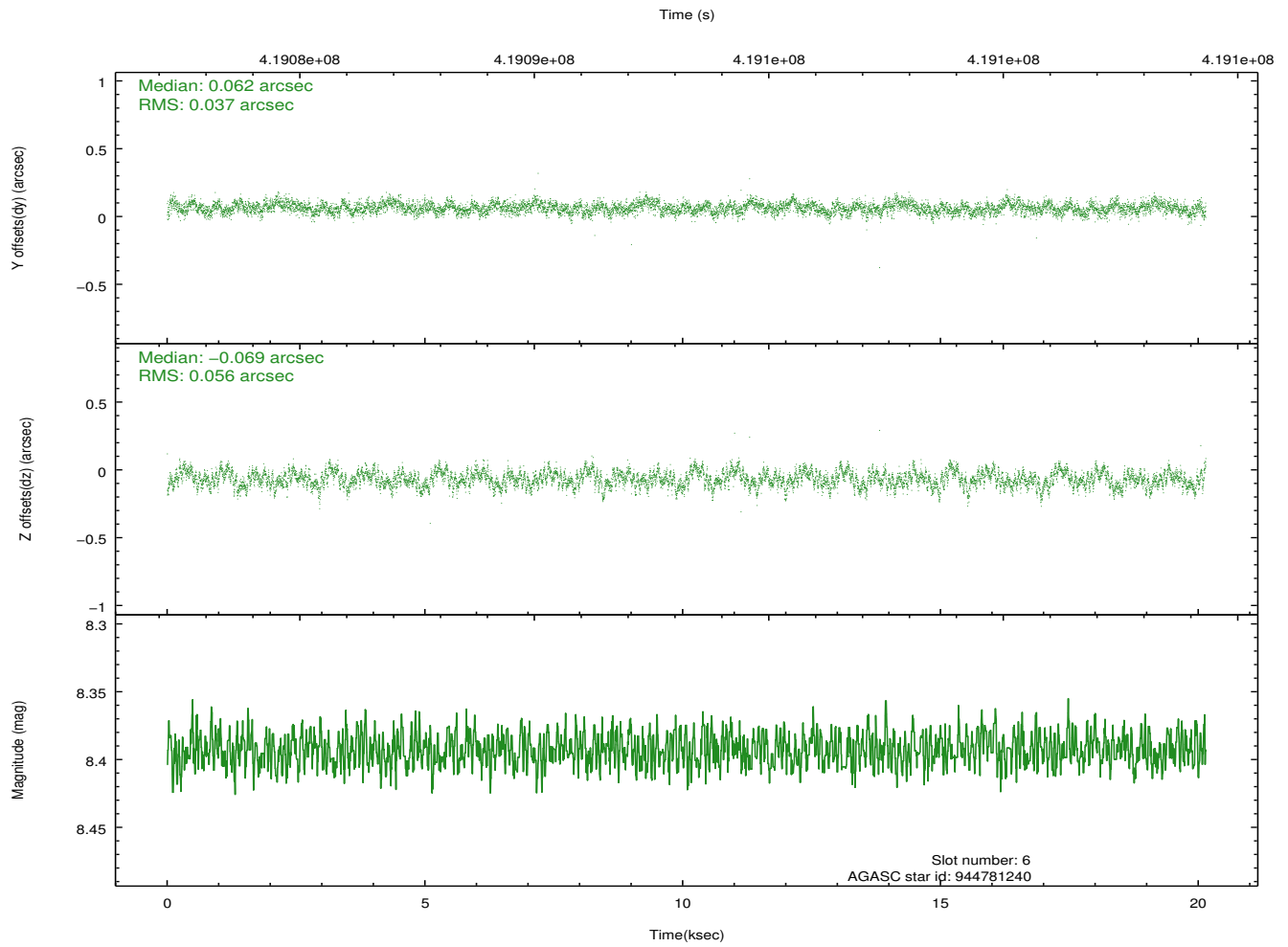
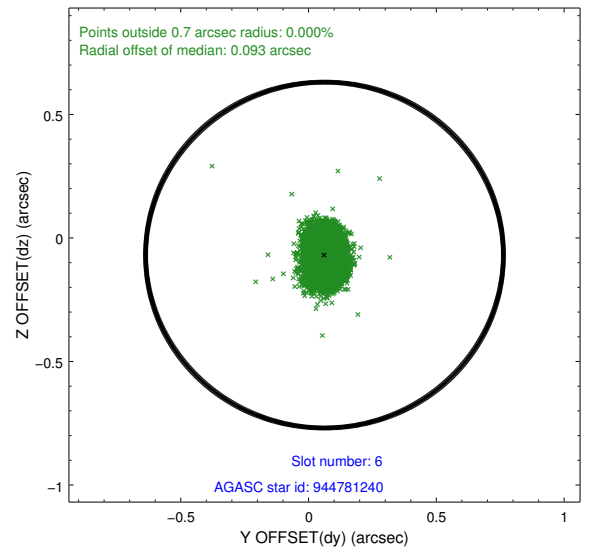
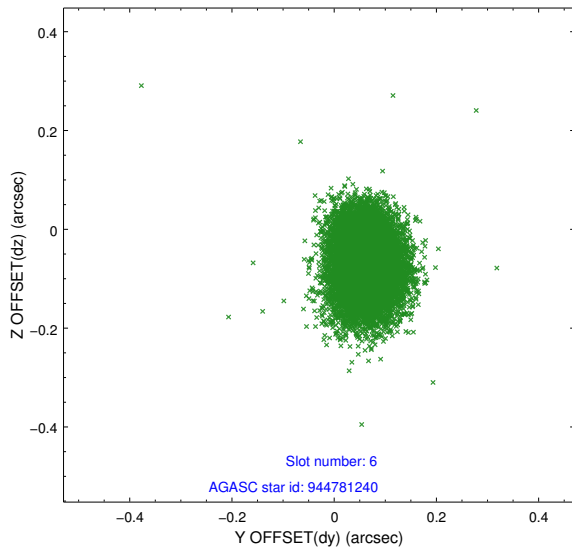
## 2.4.2 Slot 4



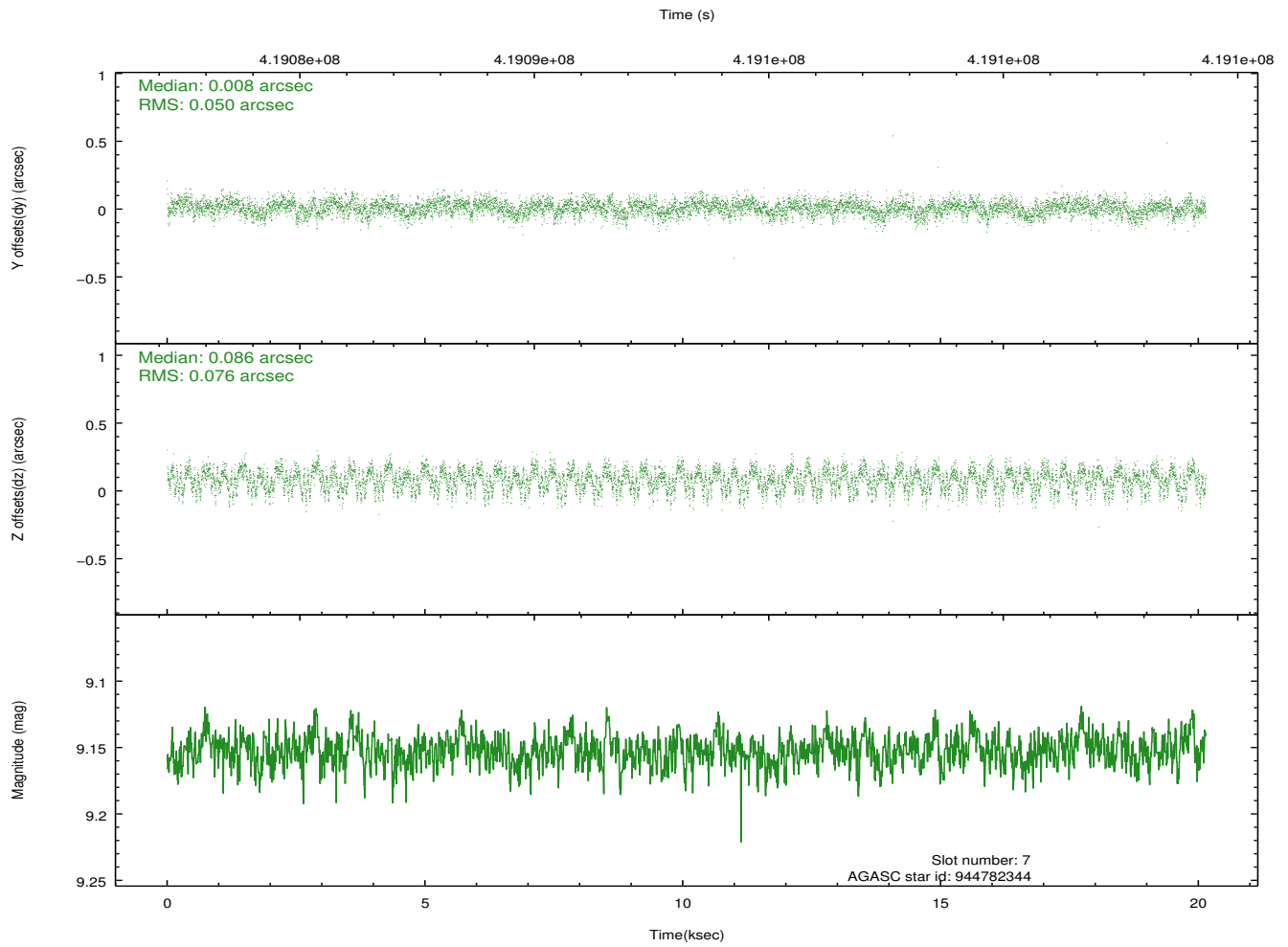
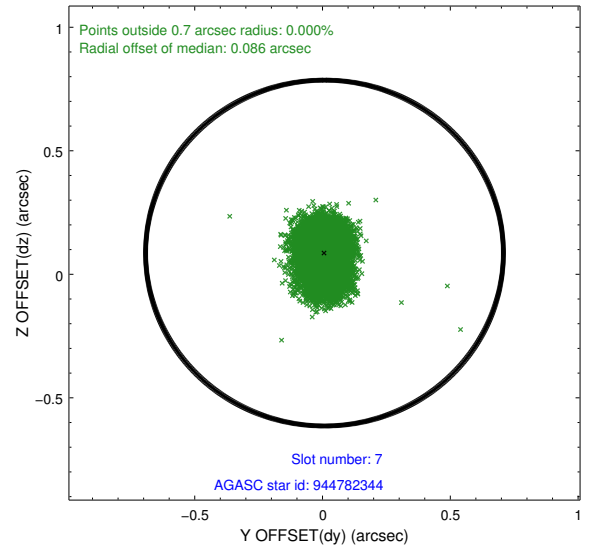
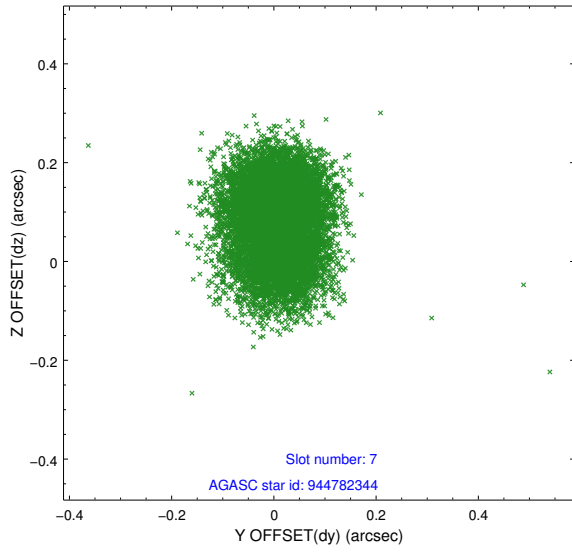
### 2.4.3 Slot 5



### 2.4.4 Slot 6

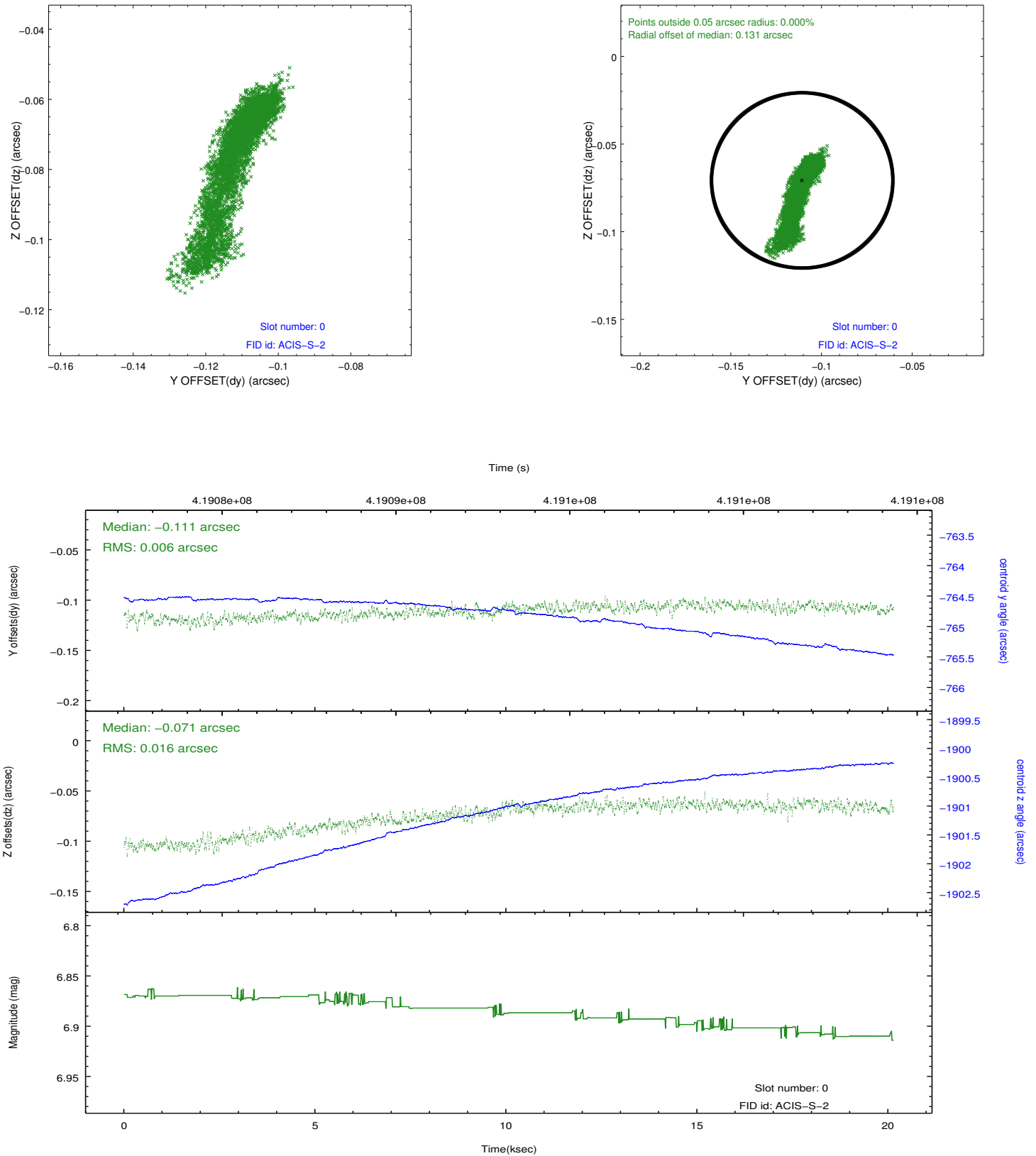


### 2.4.5 Slot 7

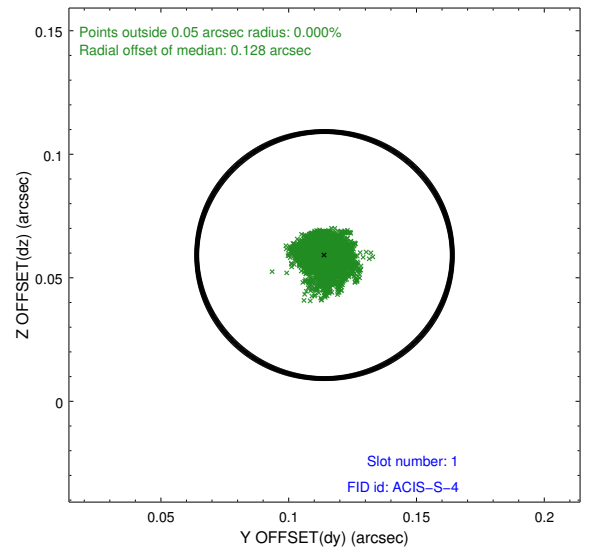
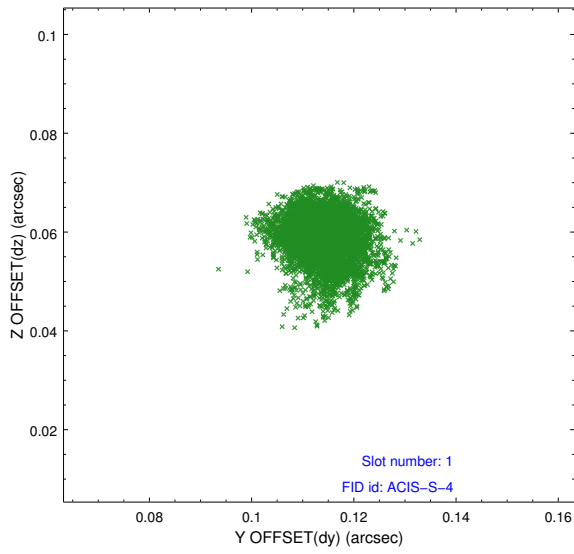


## 2.5 FID Slots

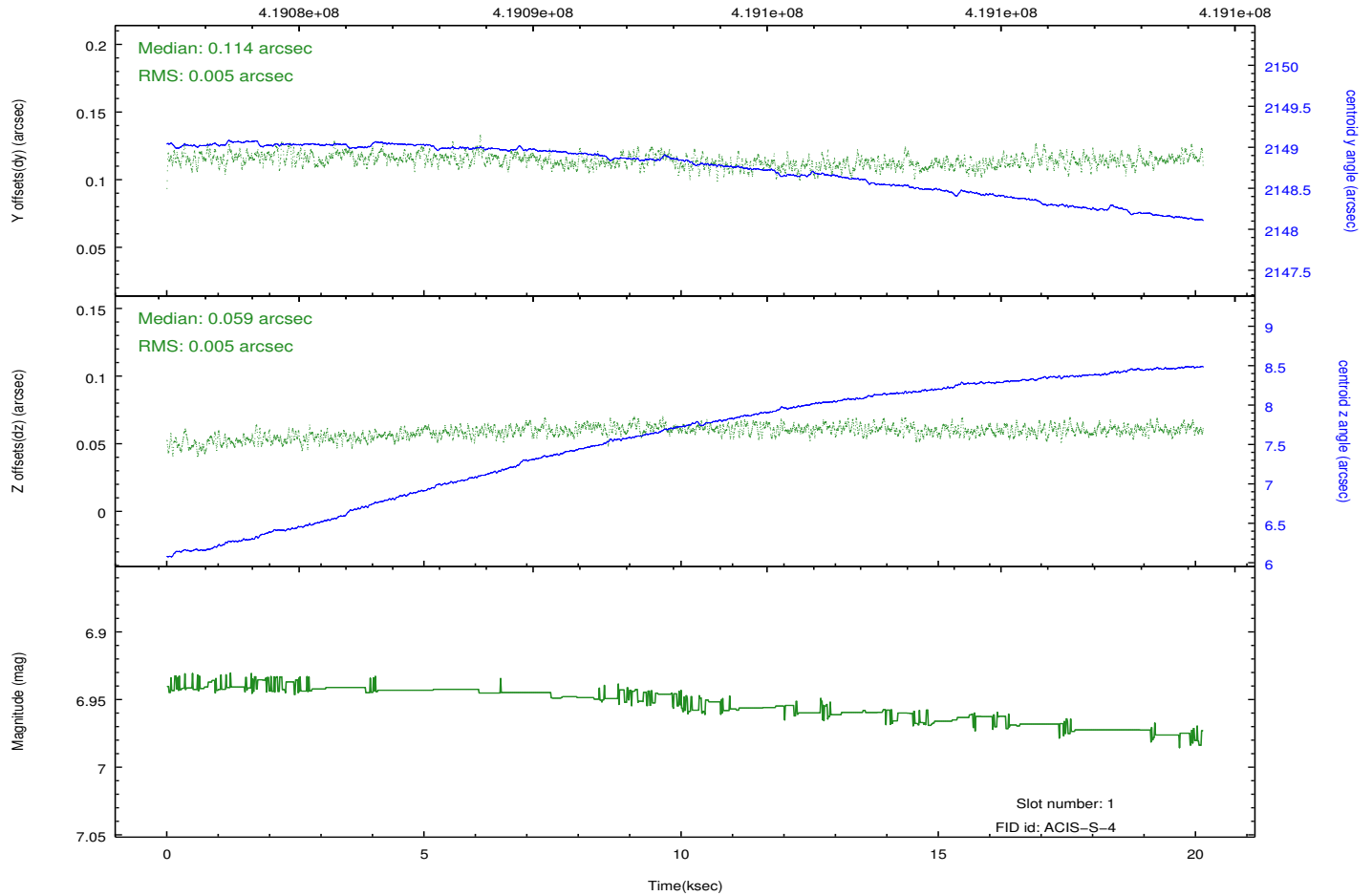
### 2.5.1 Slot 0



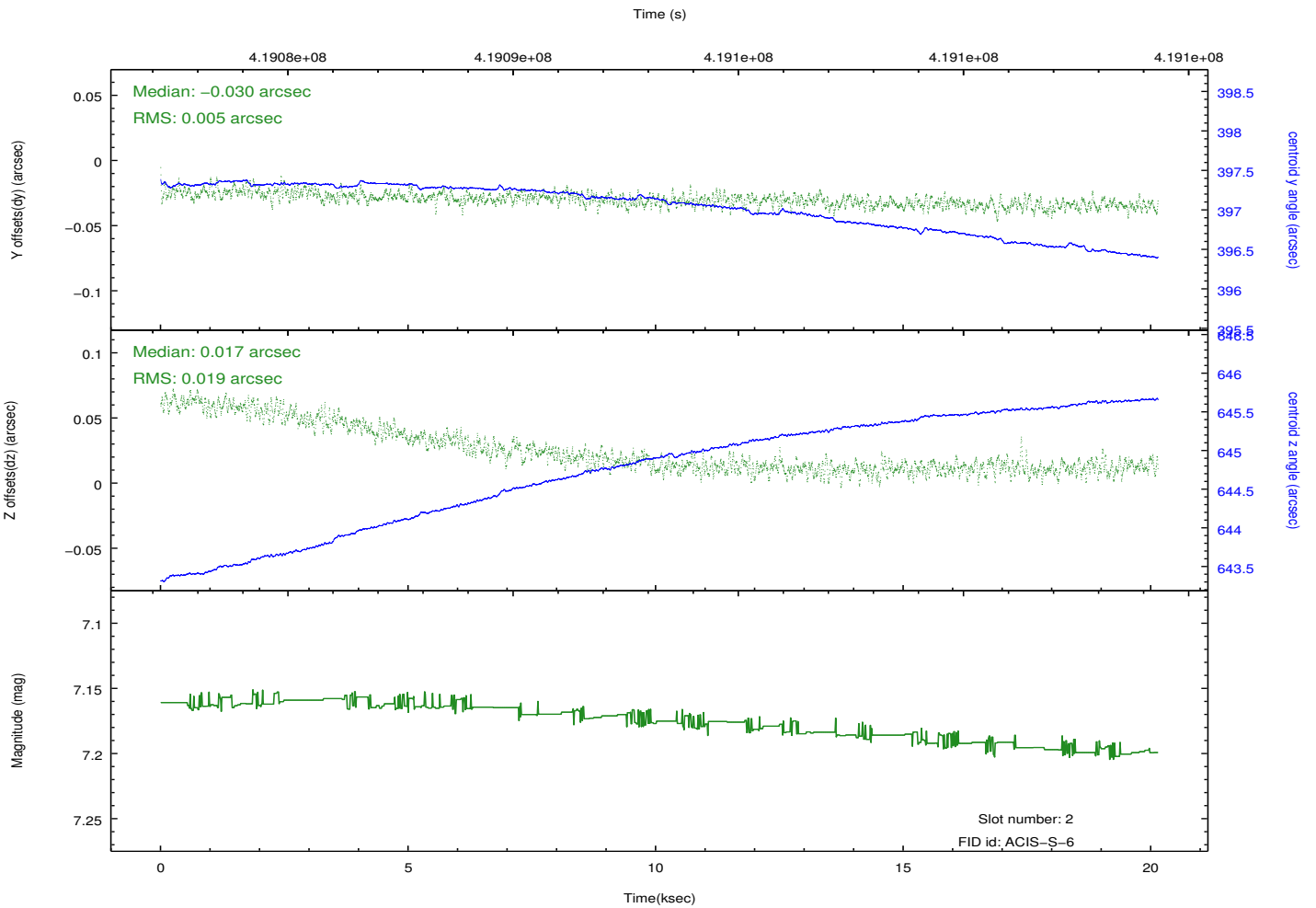
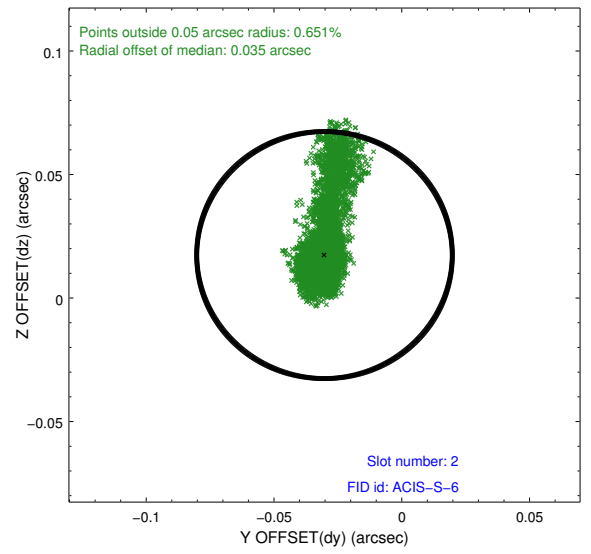
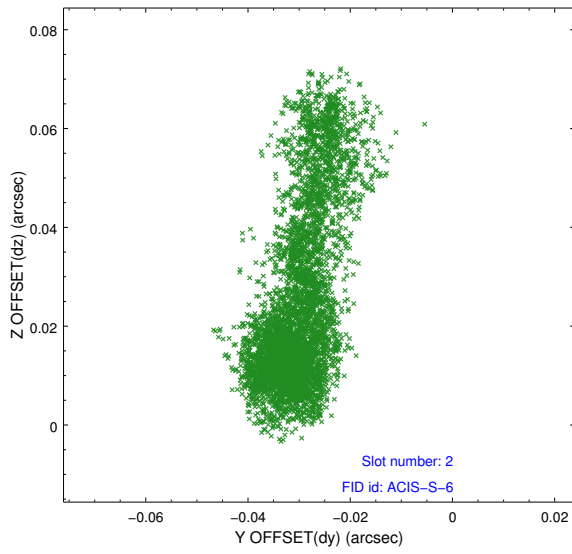
## 2.5.2 Slot 1



Time (s)



### 2.5.3 Slot 2

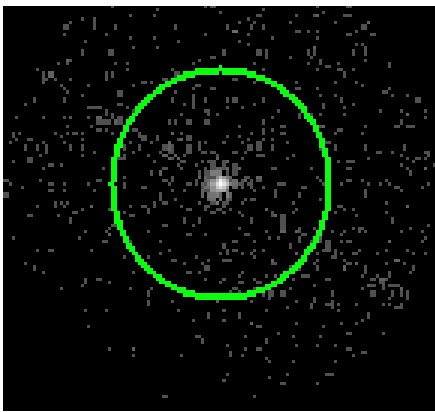


### 3 Gratings

#### 3.1 LETG Arm



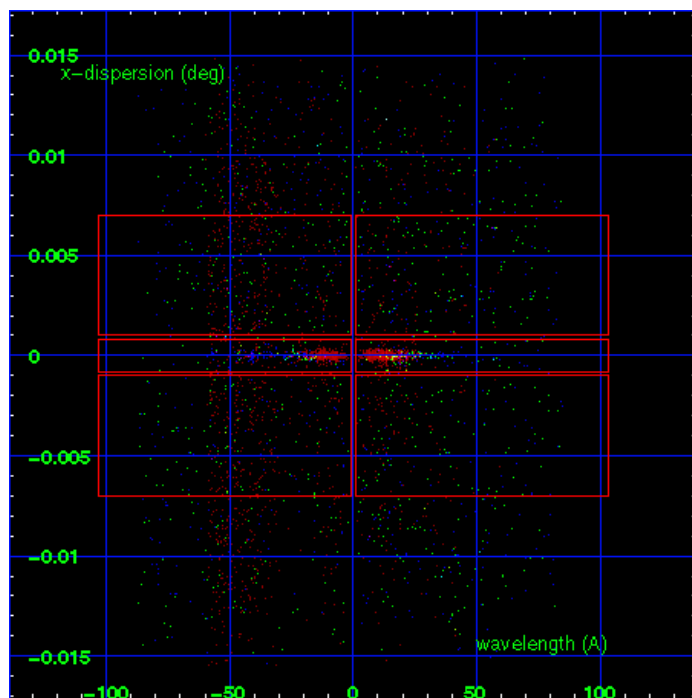
LETG Order Sort 123



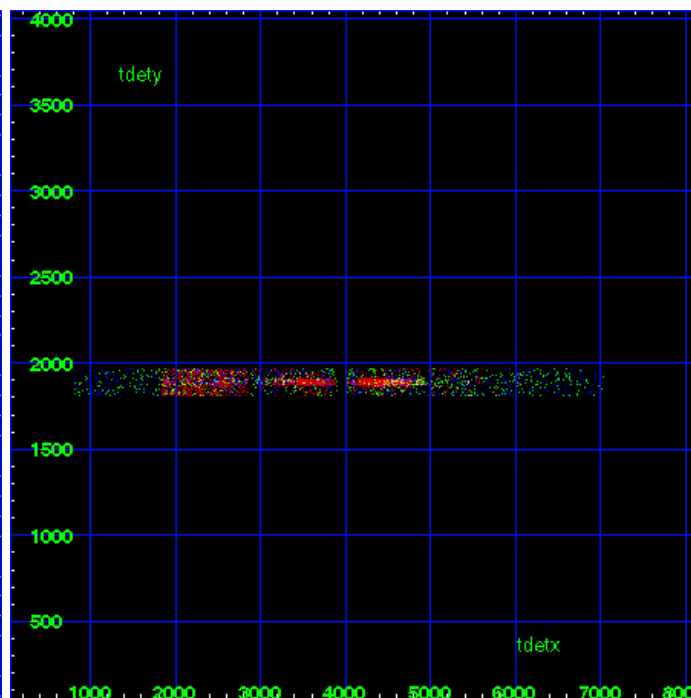
LETG Zero Order



LETG Order Sort ALL

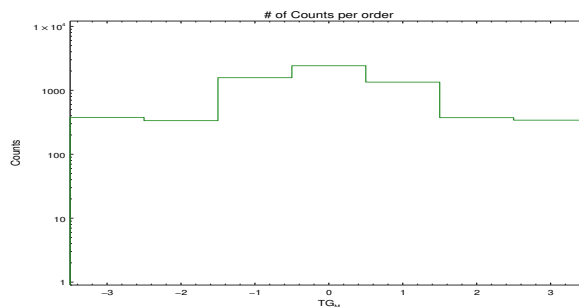


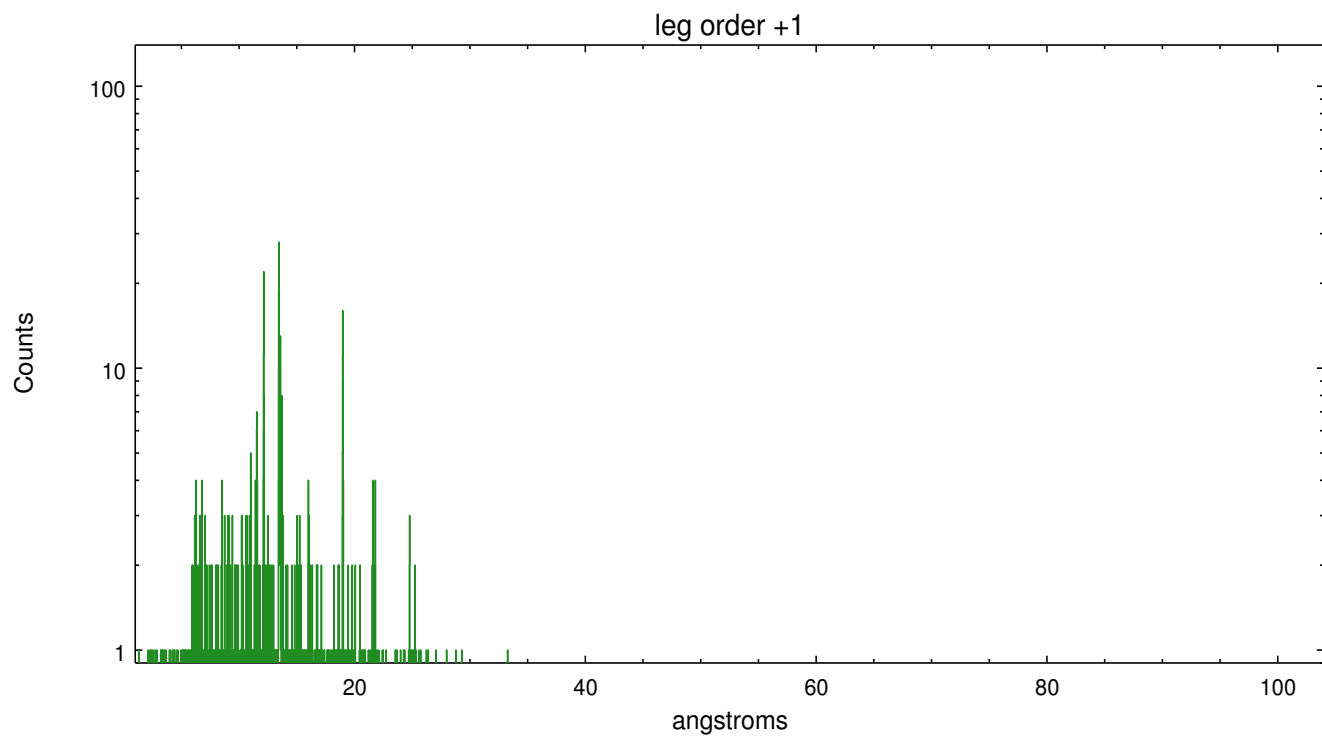
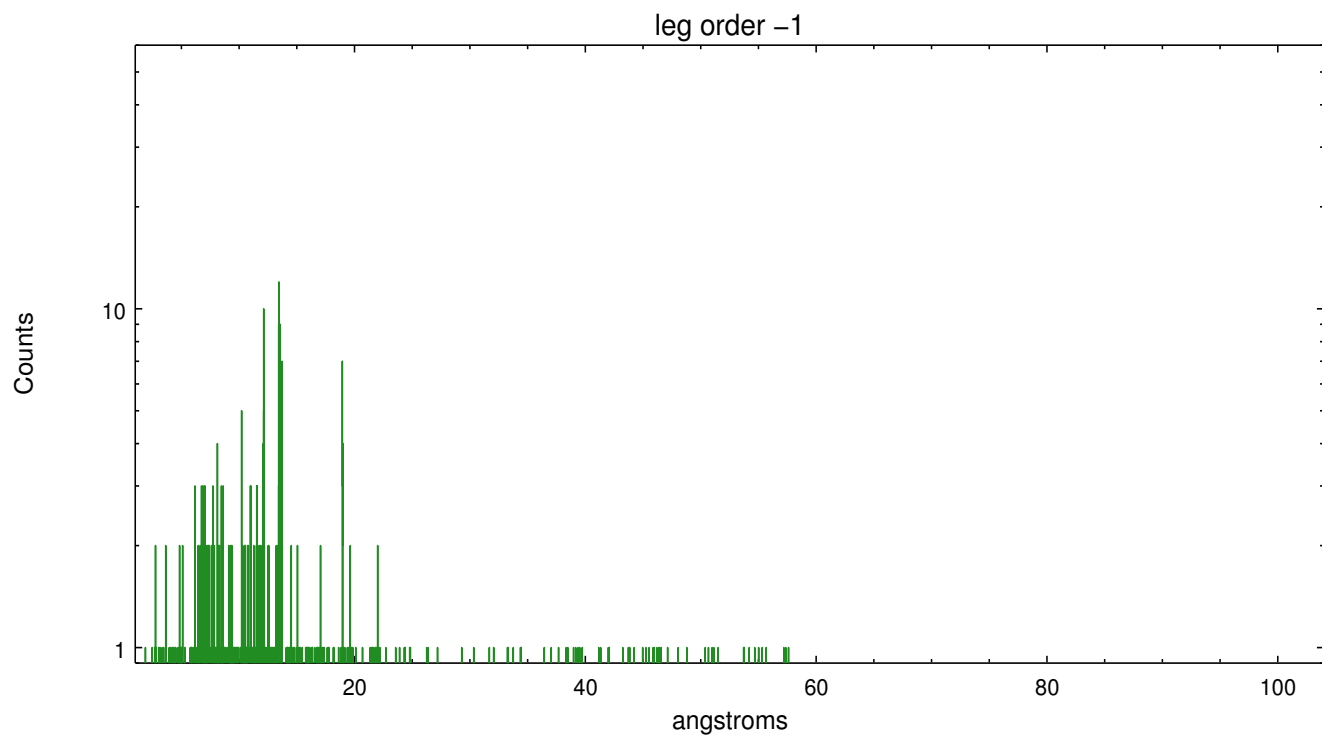
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	377	335	1573	2420	1342	373	341





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.02.10
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	20.07529965806

## 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.

===

The data for this observation have been processed using the 'EDSER' sub-pixel event-repositioning algorithm of Li et al. (2004, ApJ, 610, 1204). Small-scale features should become sharper for sources near the aim point. The improvement will be less noticeable for off-axis sources where the size of the point-spread function is comparable to or larger than the size of an ACIS pixel. To take full advantage of the improvement, images should be binned on spatial scales smaller than the size of an ACIS pixel. Note that, at present, the point-spread function has not been calibrated for data to which the EDSER algorithm has been applied. If dither was disabled for the observation, then the algorithm can introduce artificial aliasing effects on spatial scales smaller than a pixel. If you would prefer to use no sub-pixel adjustment or to apply a coordinate randomization, then use `acis_process_events` to reprocess the data with the parameter `pix_adj=NONE` or `RANDOMIZE`, respectively.