

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 9590 - L2 Version 2  
Chandra X-Ray Center

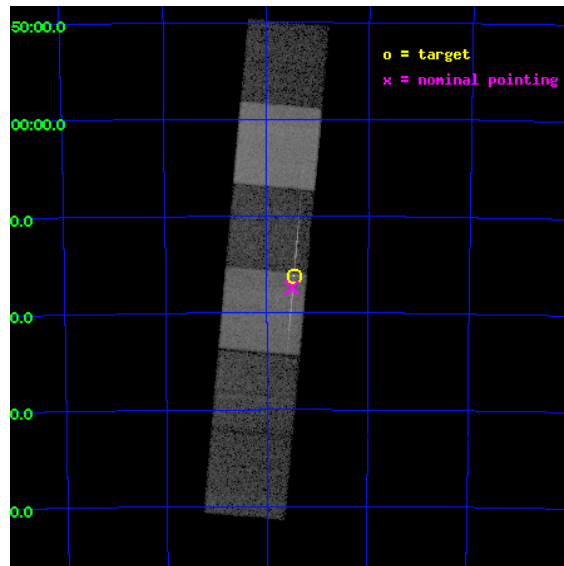
L2 Processing Date : May 1 2012

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# 1 Front

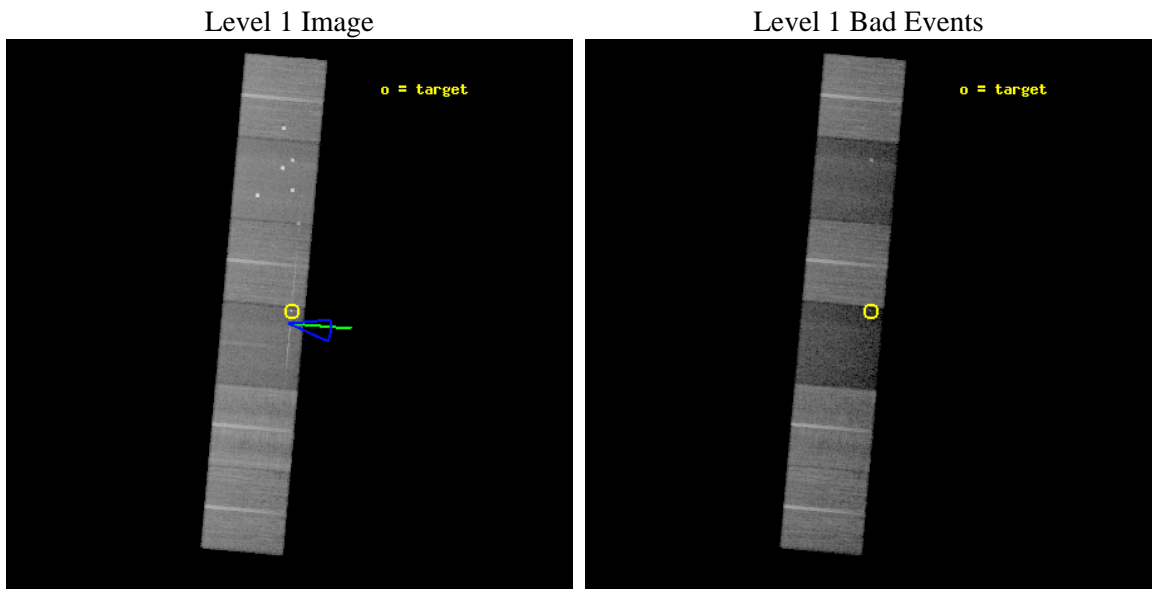
seq_num	500750	Sequence number
obs_id	9590	Observation id
title	SPATIALLY RESOLVED LETG SPECTROMETRY OF SNR1987A	Proposal title
observer	Dr. Richard McCray	Principal investigator
object	SNR1987A	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.876403723903	Nominal RA [deg]
dec_nom	-69.290407141919	Nominal Dec [deg]
roll_nom	95.165735305398	Nominal Roll [deg]
revision	2	Processing version of data
ontime	24969.599907041	Sum of GTIs [s]
livetime	24653.41979813	Livetime [s]
ontime4	24966.358956695	Sum of GTIs [s]
ontime5	24969.599907041	Sum of GTIs [s]
ontime6	24963.117936552	Sum of GTIs [s]
ontime7	24969.599907041	Sum of GTIs [s]
ontime8	24966.358996451	Sum of GTIs [s]
ontime9	24969.599907041	Sum of GTIs [s]
l2events	204281	Number of level 2 events



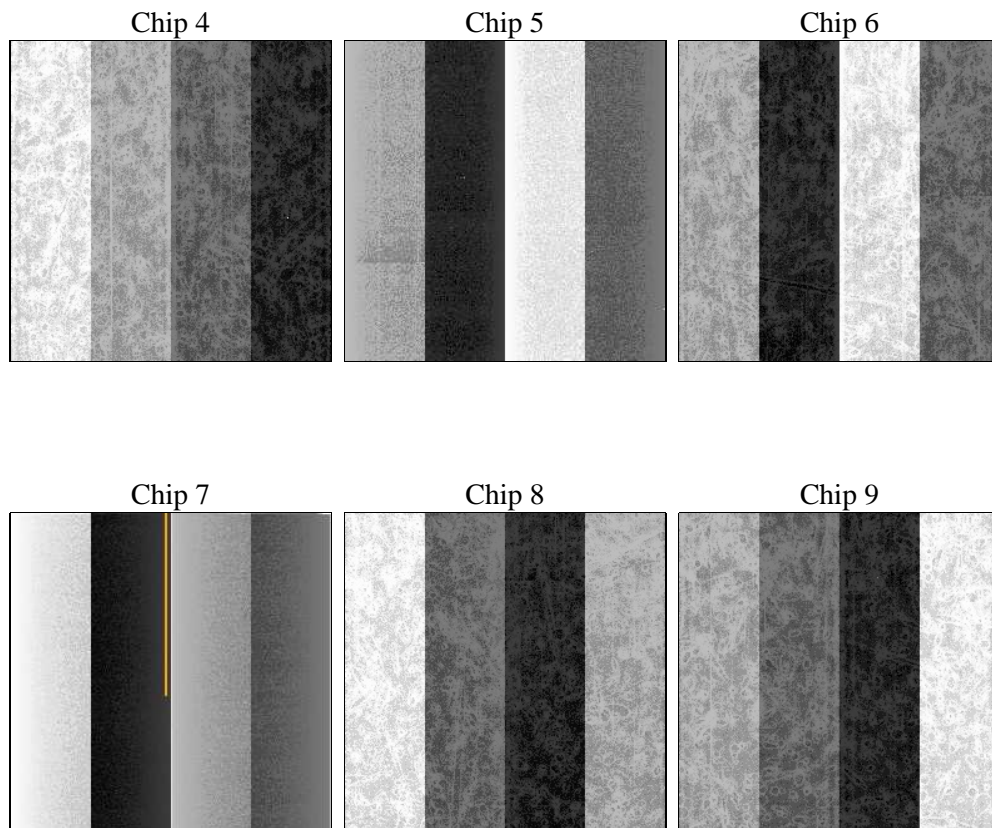
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	25000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	24969.599907041	Sum of GTIs [s]
caldbver	4.4.9	&#160	ontime4	24966.358956695	Sum of GTIs [s]
date	2012-05-01T06:28:50	Date and time of file creation	ontime5	24969.599907041	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	24963.117936552	Sum of GTIs [s]
			ontime7	24969.599907041	Sum of GTIs [s]
			ontime8	24966.358996451	Sum of GTIs [s]
			ontime9	24969.599907041	Sum of GTIs [s]
			l1events	1036142	Number of level 1 events

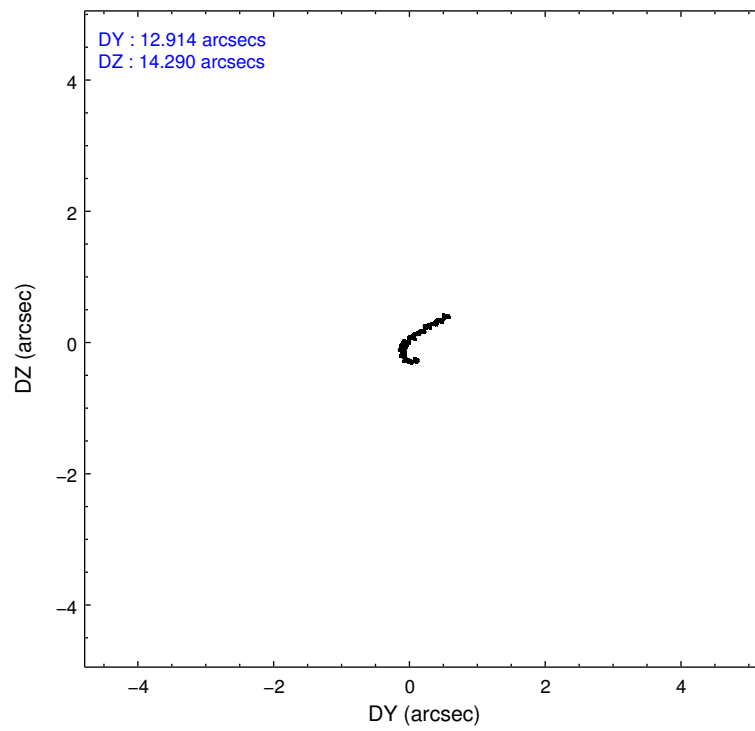
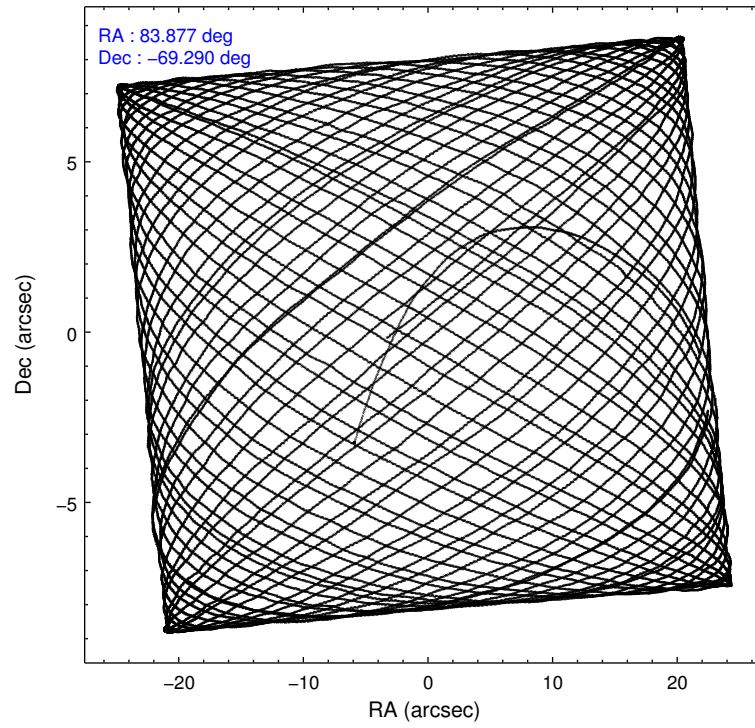
### 2.1.4 Events

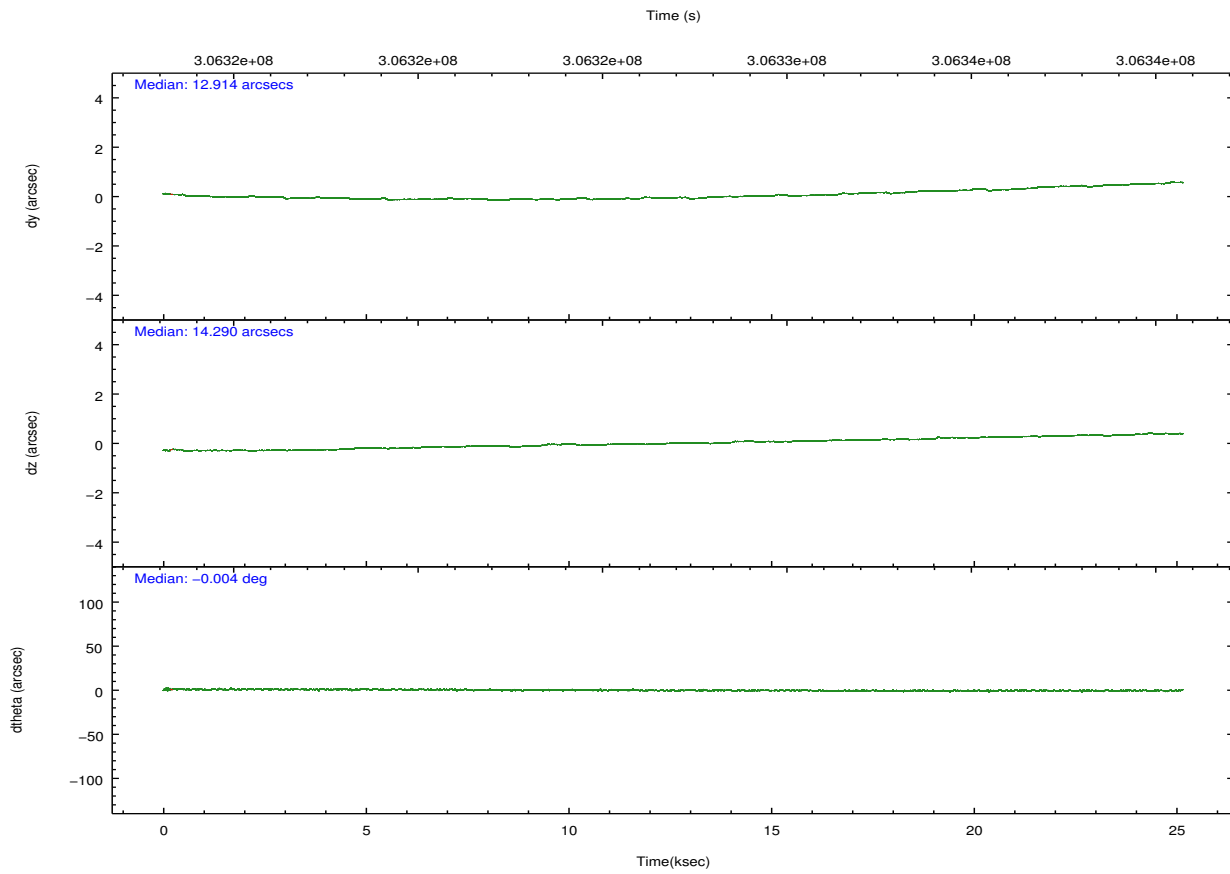
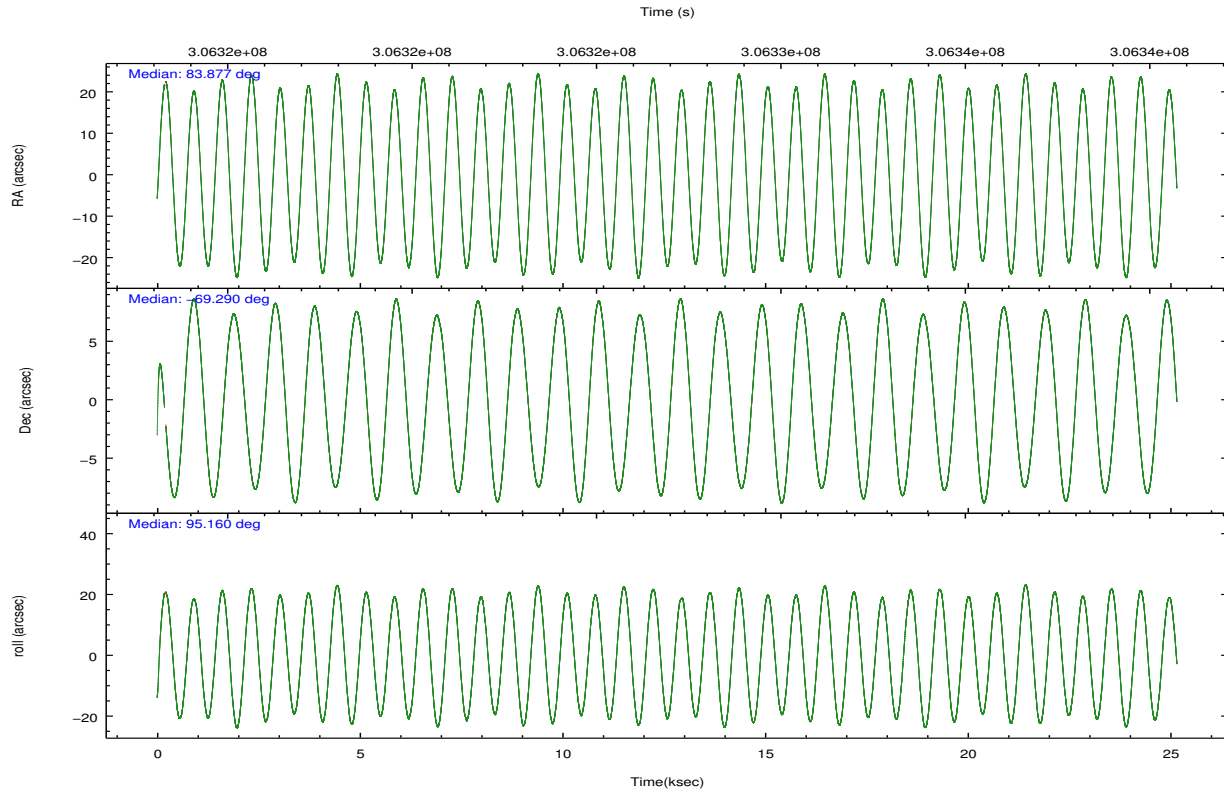
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	208532	168022	177515	108563	207986	165524	grade 0 events	10840	24599	9542	9995	15750	6017
rejected events	188013	62233	158161	42609	152914	150200		5%	14%	5%	9%	7%	3%
rejected %	90%	37%	89%	39%	73%	90%	grade 1 events	182	558	113	281	172	98
								0%	0%	0%	0%	0%	0%
							grade 2 events	4243	31330	3780	16204	13058	3333
								2%	18%	2%	14%	6%	2%
							grade 3 events	1736	5046	1791	7037	6037	1692
								0%	3%	1%	6%	2%	1%
							grade 4 events	1620	4614	1823	6797	5536	1667
								0%	2%	1%	6%	2%	1%
							grade 5 events	3486	12955	3484	10583	6019	3893
								1%	7%	1%	9%	2%	2%
							grade 6 events	2161	40501	2481	26151	14900	2670
								1%	24%	1%	24%	7%	1%
							grade 7 events	184264	48419	154501	31515	146514	146154
								88%	28%	87%	29%	70%	88%

## 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	VFAINT	VFAINT	CCD I0 on	N	N
Observation mode	POINTING	POINTING	CCD I1 on	N	N
[deg] Pointing RA	83.921796	83.876403723903	CCD I2 on	N	N
[deg] Pointing Dec	-69.312539	-69.29040714191866	CCD I3 on	N	N
[deg] Pointing Roll	95.051577	95.16573530539831	CCD S0 on	O1	Y
[deg] Roll angle	100.000000	100.000000	CCD S1 on	Y	Y
[deg] Roll tolerance	15.000000	15.000000	CCD S2 on	Y	Y
Roll constraint allows 180D rotation	N	N	CCD S3 on	Y	Y
[mm] SIM focus pos	-0.684267	-0.6828225247311905	CCD S4 on	Y	Y
[mm] SIM defocus	0	0.001444936568705701	CCD S5 on	O2	Y
[mm] SIM translation stage pos	-182.132523	-182.139514760308	Number of optional ACIS chips dropped	0	0
[mm] SIM translation stage offset	-8	-7.993007822699838	On-chip summing requested	N	N
[s] Observation start time (MET)	306314484.184000	306313419.74536	Subarray requested	NONE	NONE
Observation start date	2007-09-16T07:20:19	2007-09-16T07:03:39	Alternating exposures requested	N	N
[s] Observation end time (MET)	306339484.184000	306339826.82163	[s] Primary exposure time	0.000000	3.2
Observation end date	2007-09-16T14:16:59	2007-09-16T14:23:46			
Read mode	TIMED	TIMED			

## 2.3 Aspect



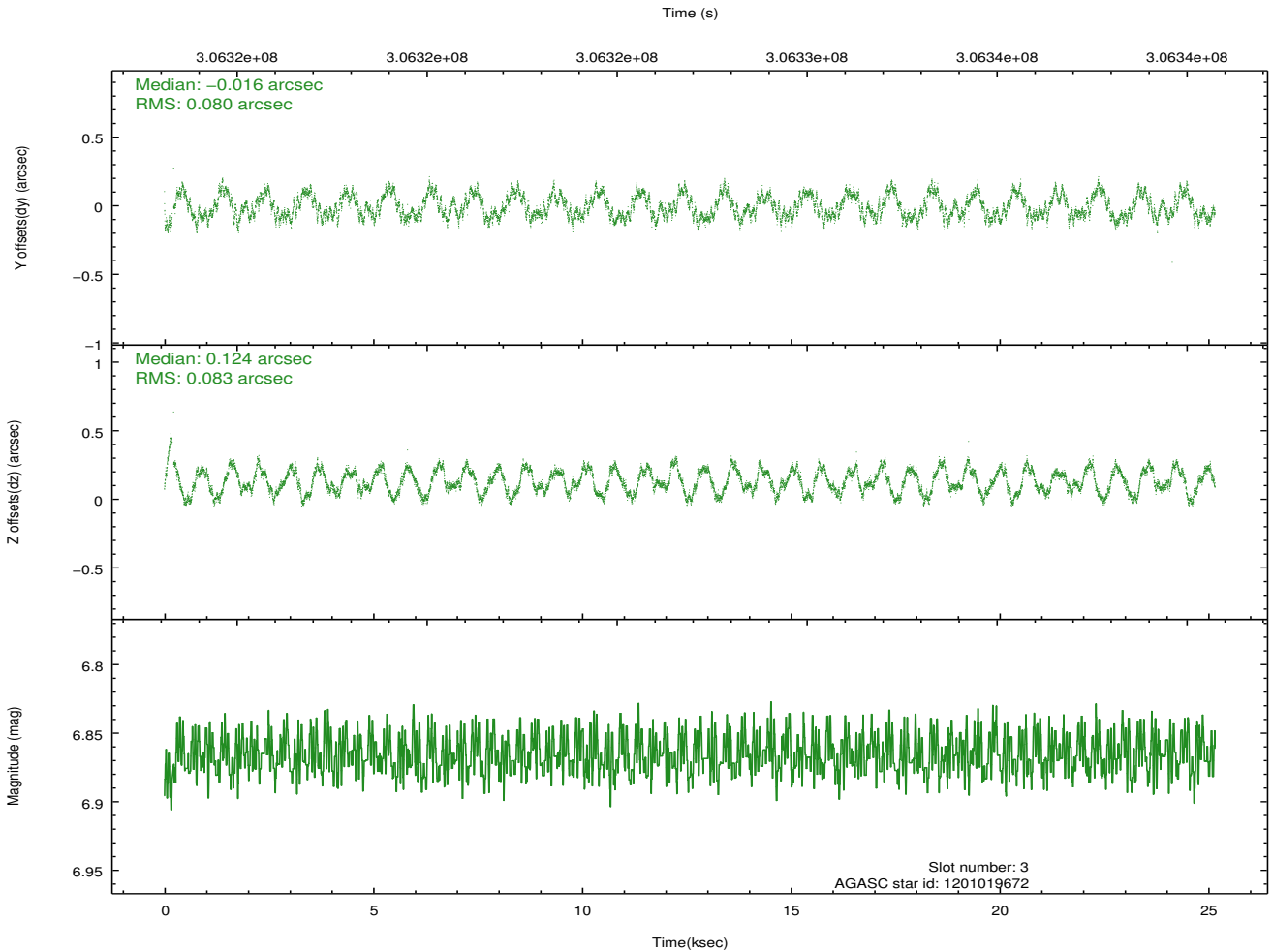
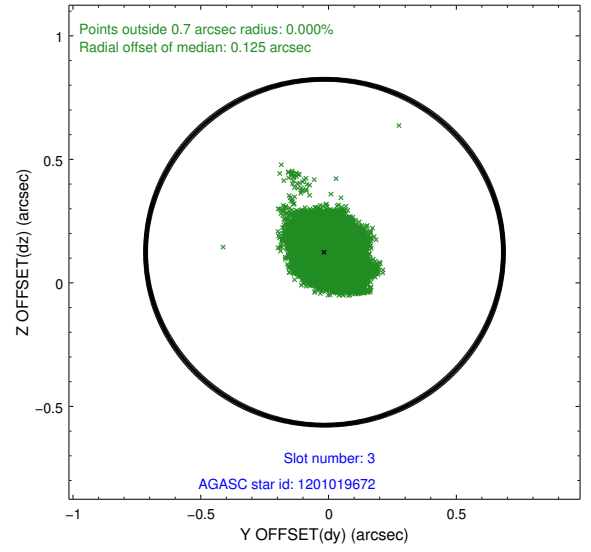
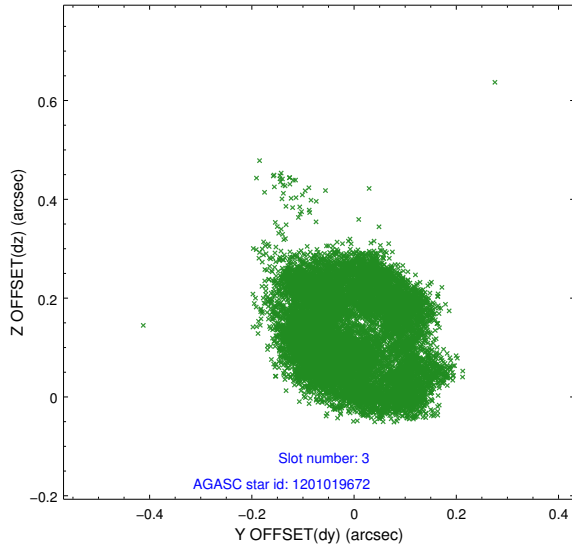


### Slot Statistics

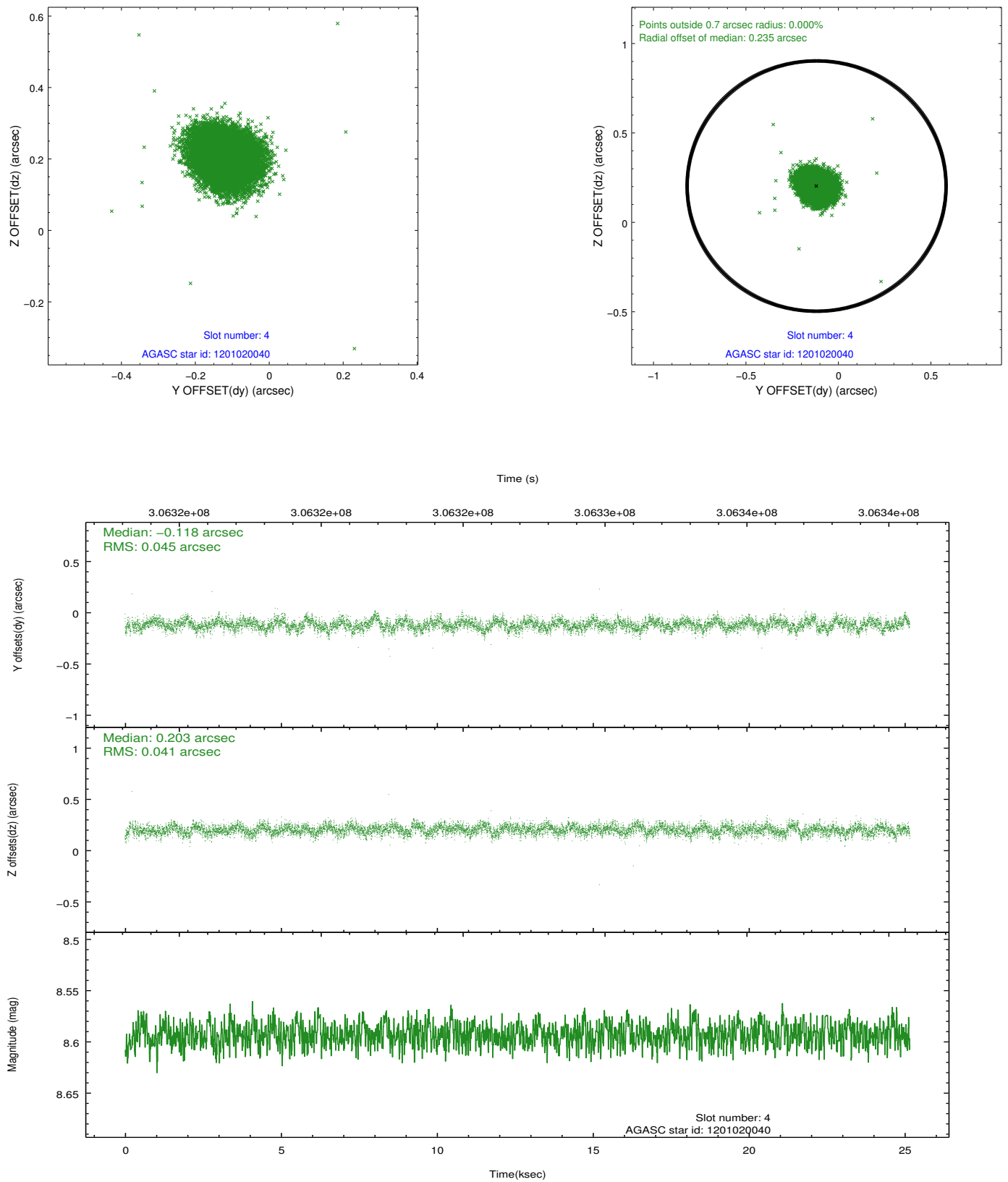
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.08	6129	-0.138	-0.046	0.006	0.012	0.000000	0.000000	-765.46	-1900.43
1	FID	ACIS-S-4	7.16	6129	0.122	0.133	0.007	0.011	0.000000	0.000000	2148.01	8.08
2	FID	ACIS-S-6	7.39	6129	-0.011	0.074	0.007	0.012	0.000000	0.000000	396.79	645.55
3	GUIDE	1201019672	6.87	12258	-0.016	0.124	0.127	0.178	85.312192	-68.770187	1765.27	-1974.87
4	GUIDE	1201020040	8.59	12251	-0.118	0.203	0.064	0.103	85.379163	-68.879396	1364.89	-2017.85
5	GUIDE	1201406184	7.92	12256	-0.126	-0.008	0.070	0.121	82.503234	-69.975517	-2243.72	1953.59
6	GUIDE	1201410616	9.32	12239	0.230	-0.161	0.123	0.186	82.516808	-69.784406	-1558.27	1892.37
7	GUIDE	1200885760	9.45	12246	0.016	-0.164	0.088	0.150	83.723637	-68.777667	1940.32	88.17

## 2.4 Star Slots

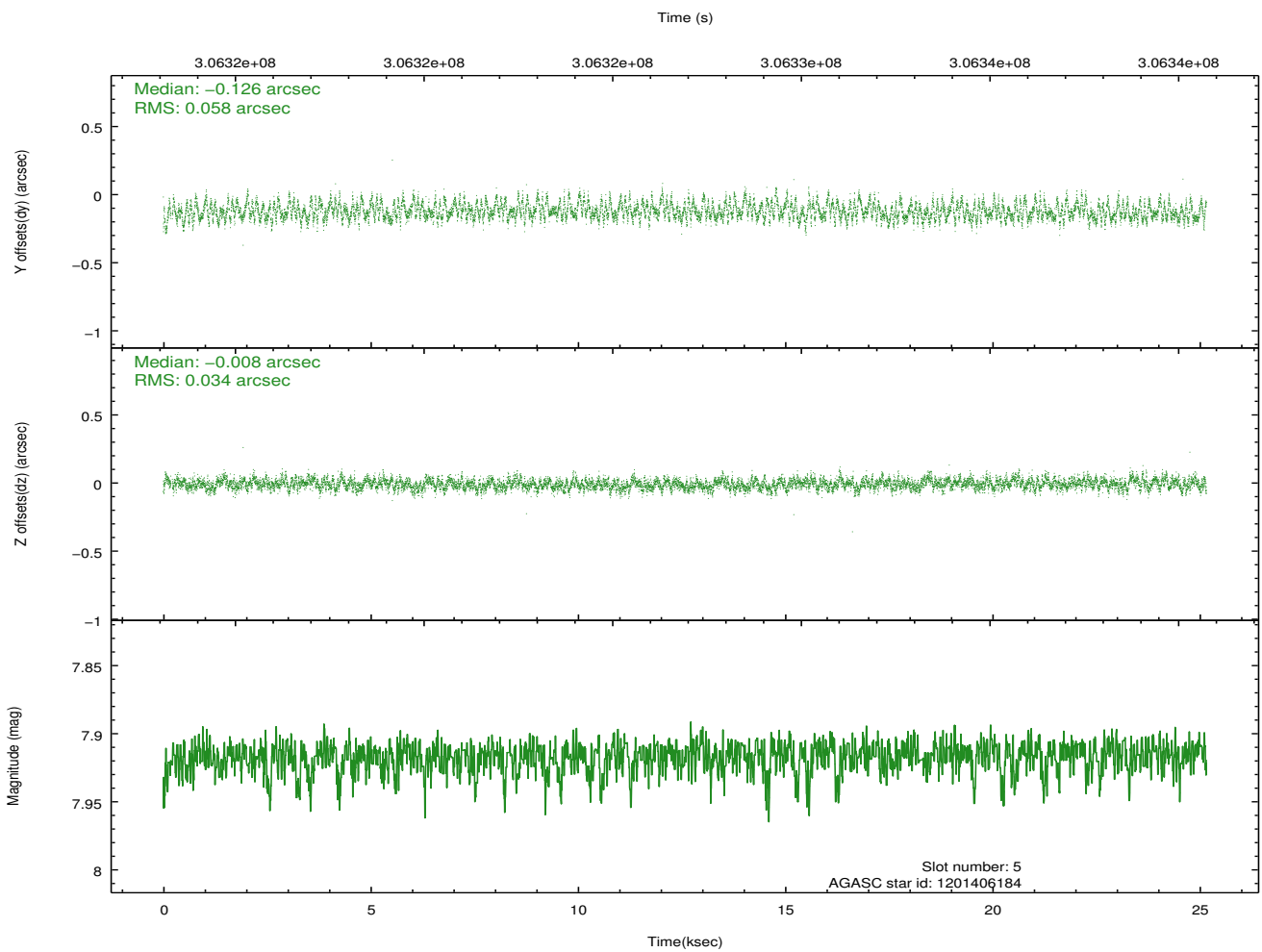
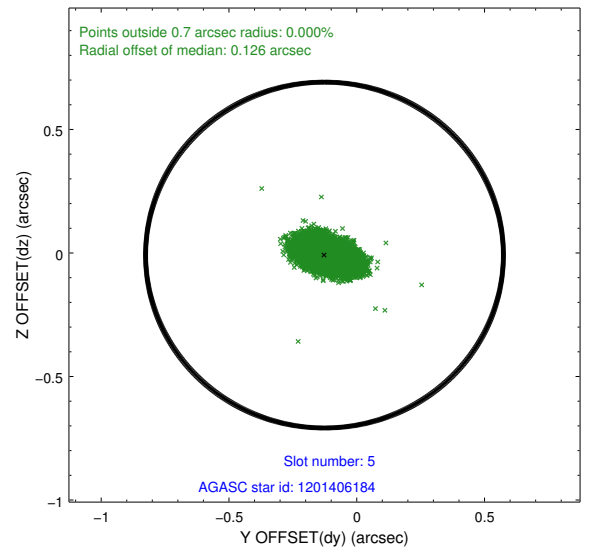
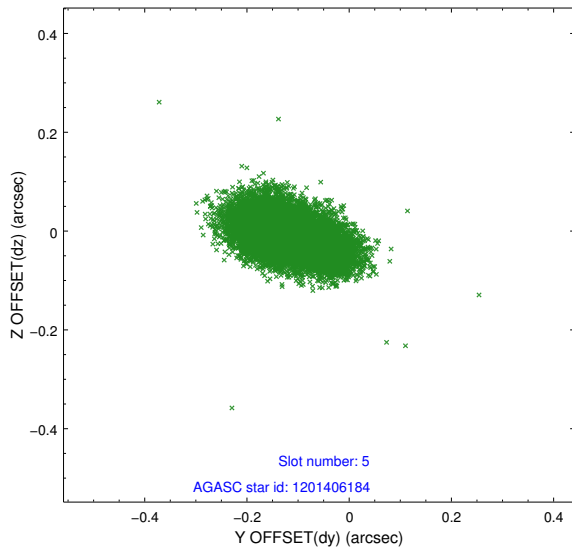
### 2.4.1 Slot 3



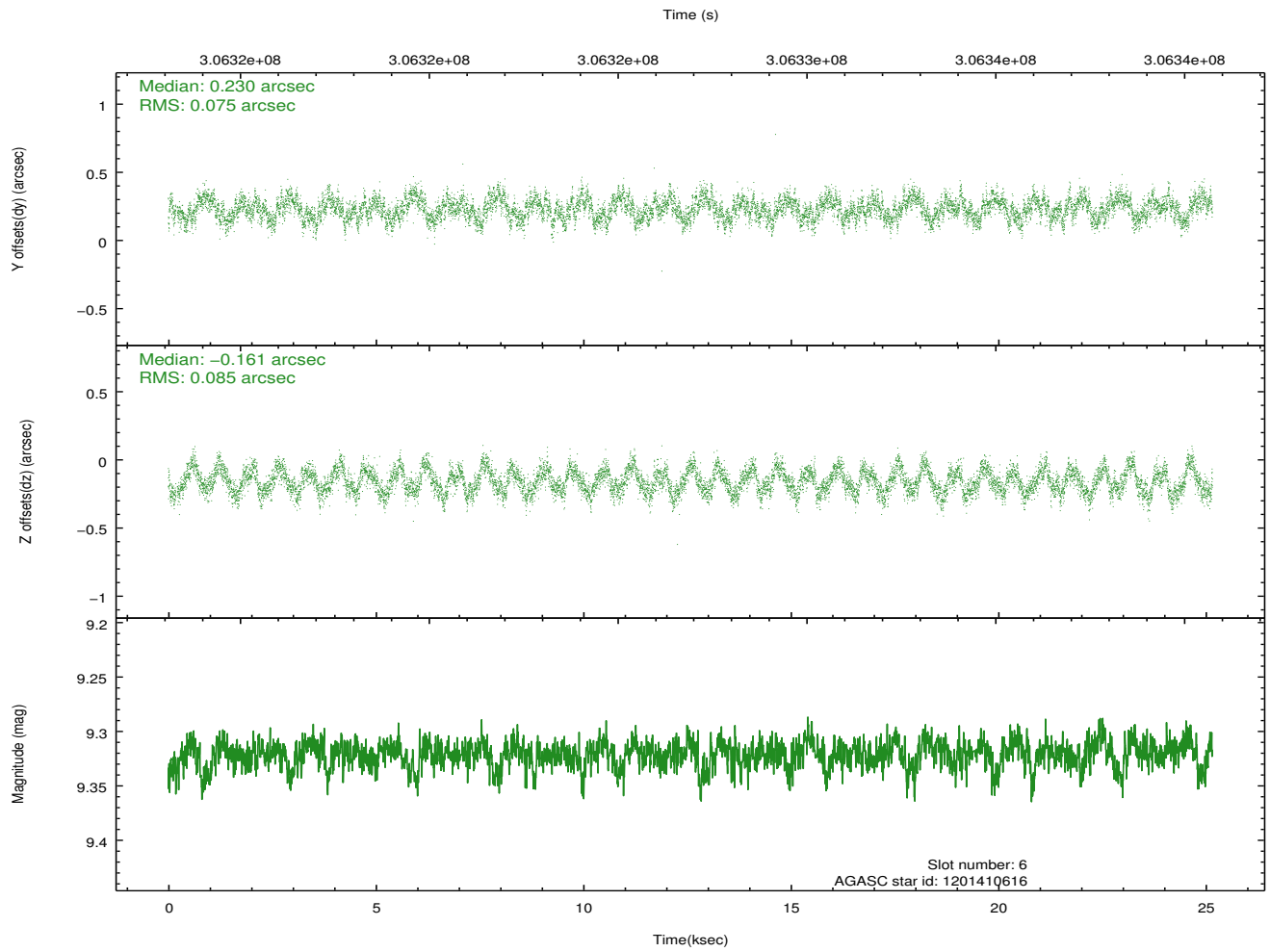
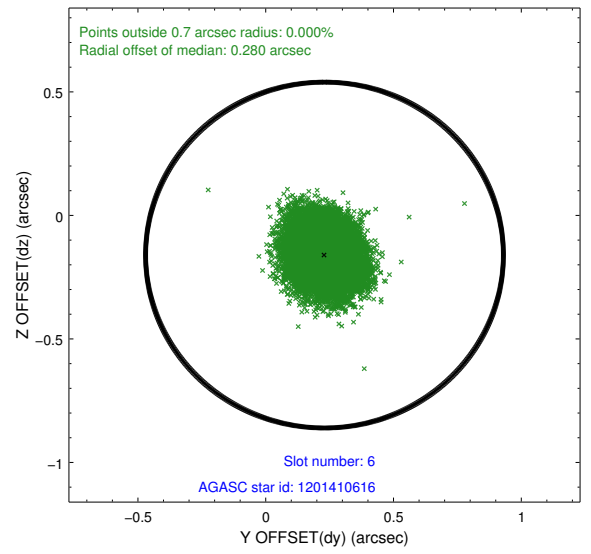
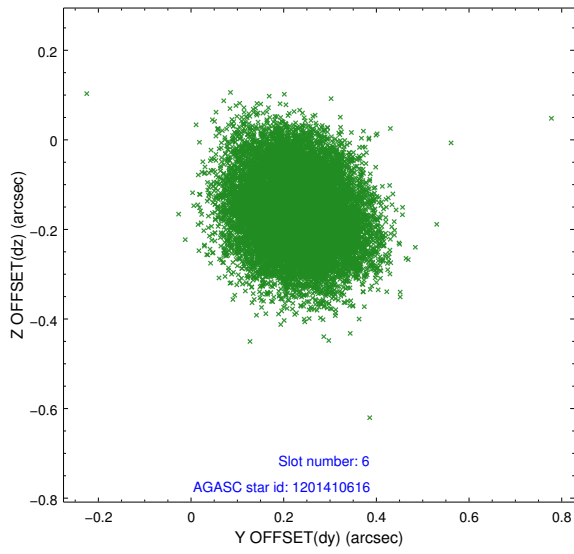
## 2.4.2 Slot 4



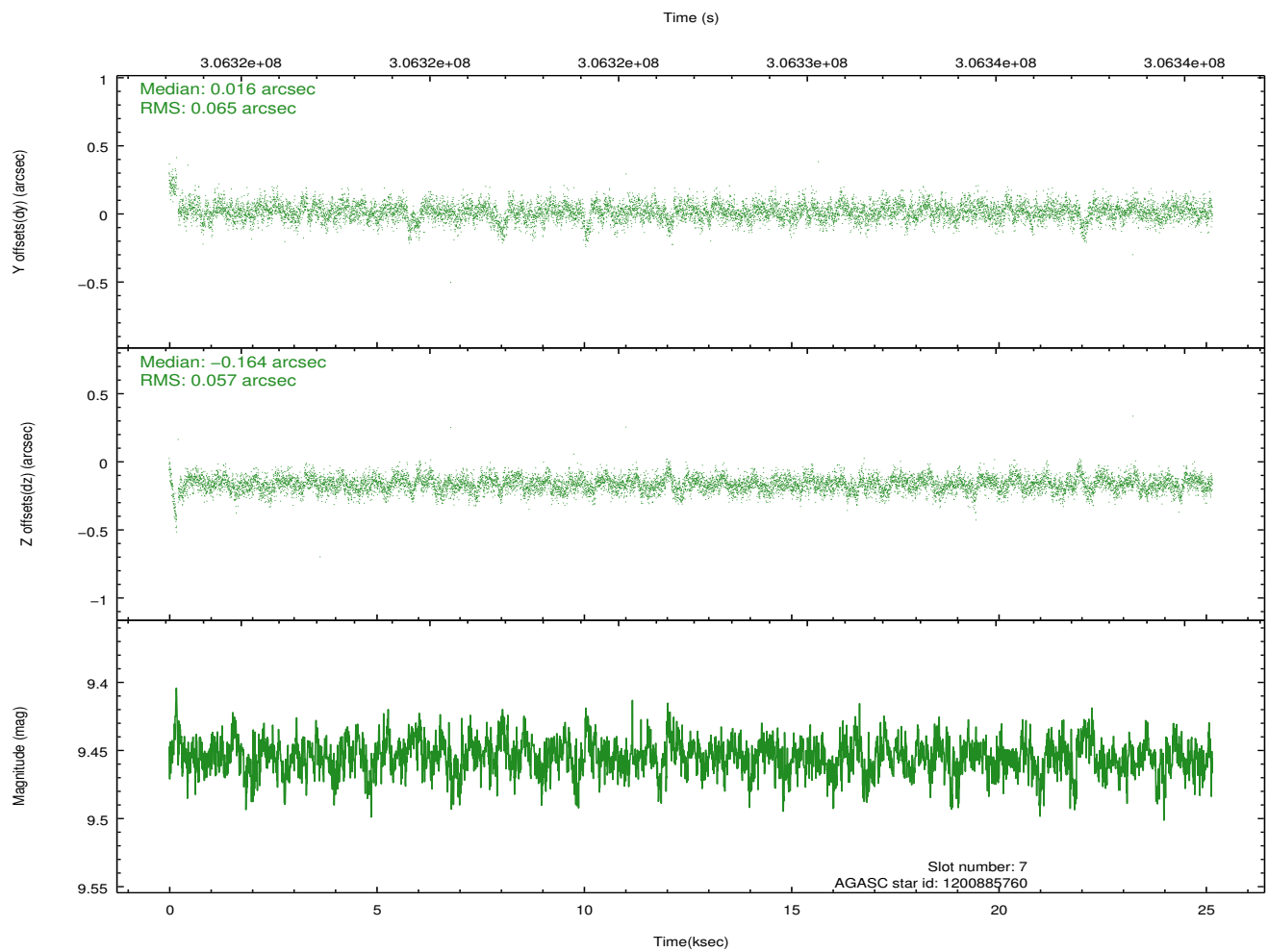
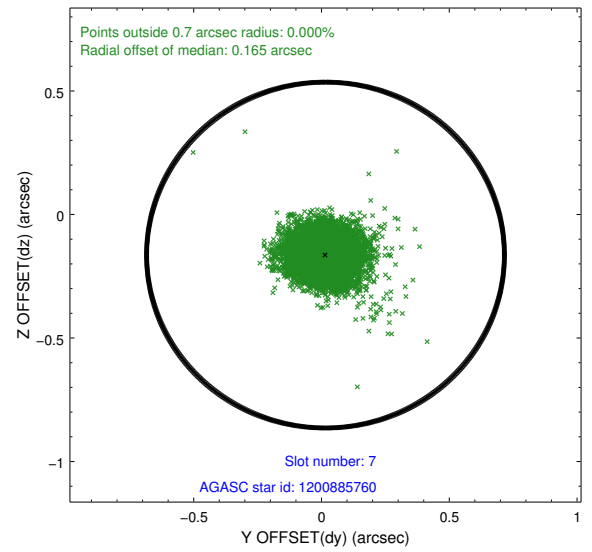
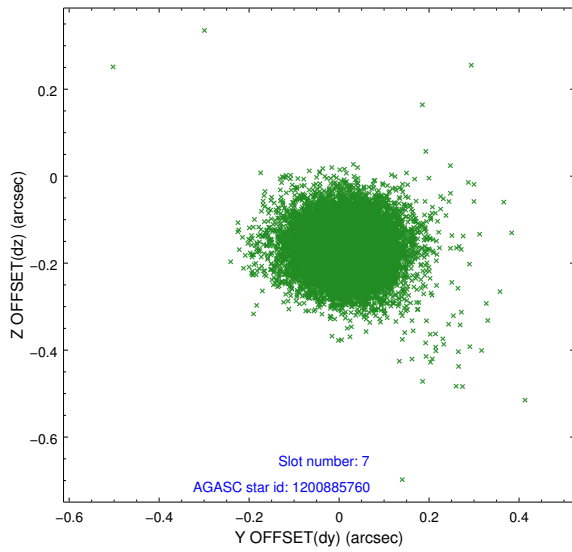
### 2.4.3 Slot 5



### 2.4.4 Slot 6

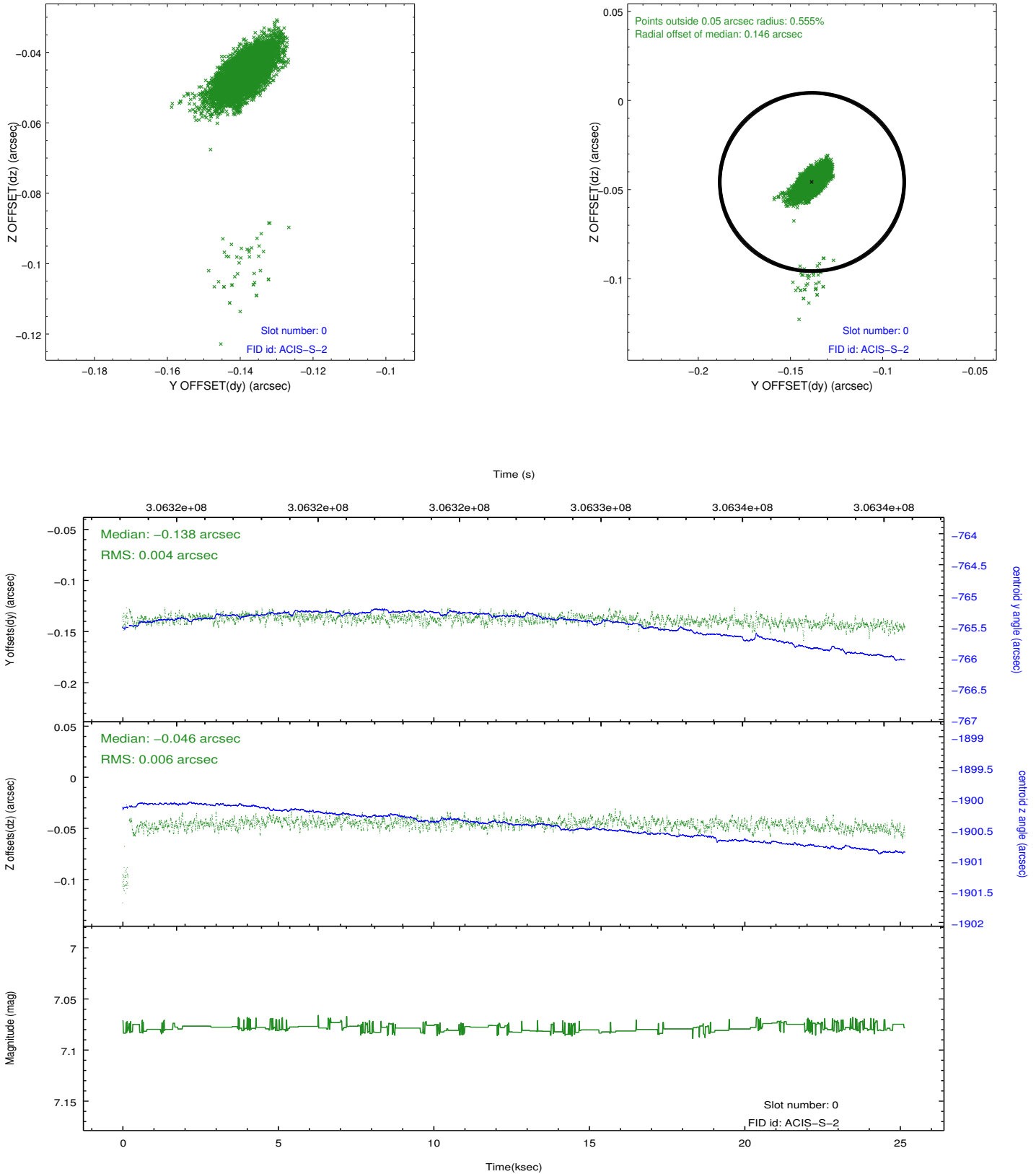


## 2.4.5 Slot 7

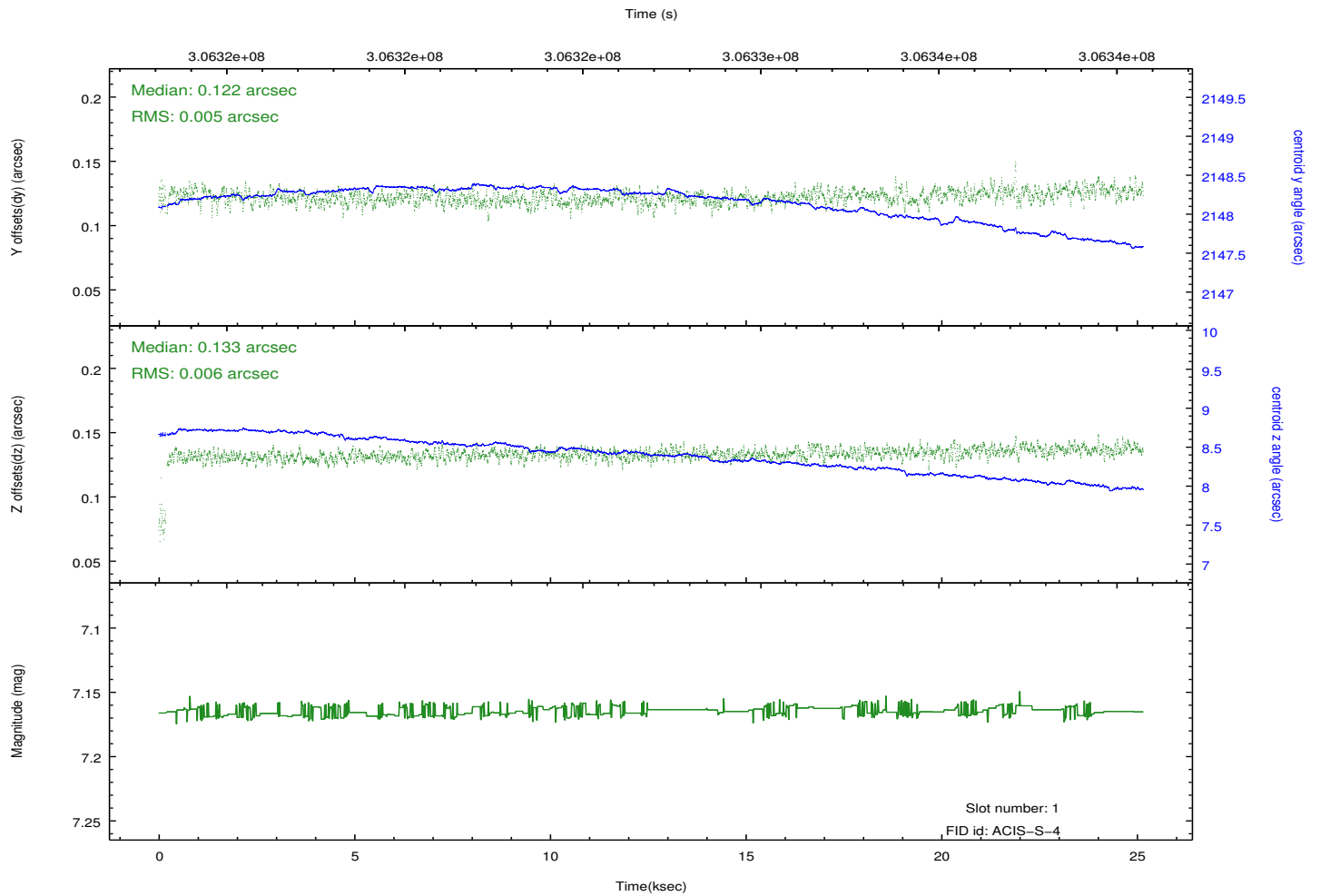
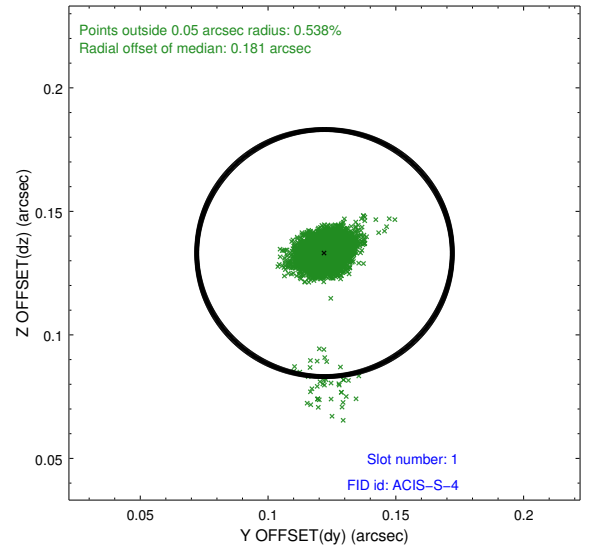
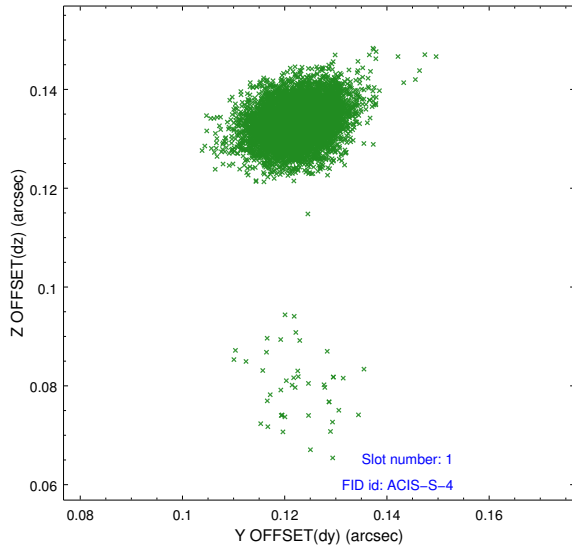


## 2.5 FID Slots

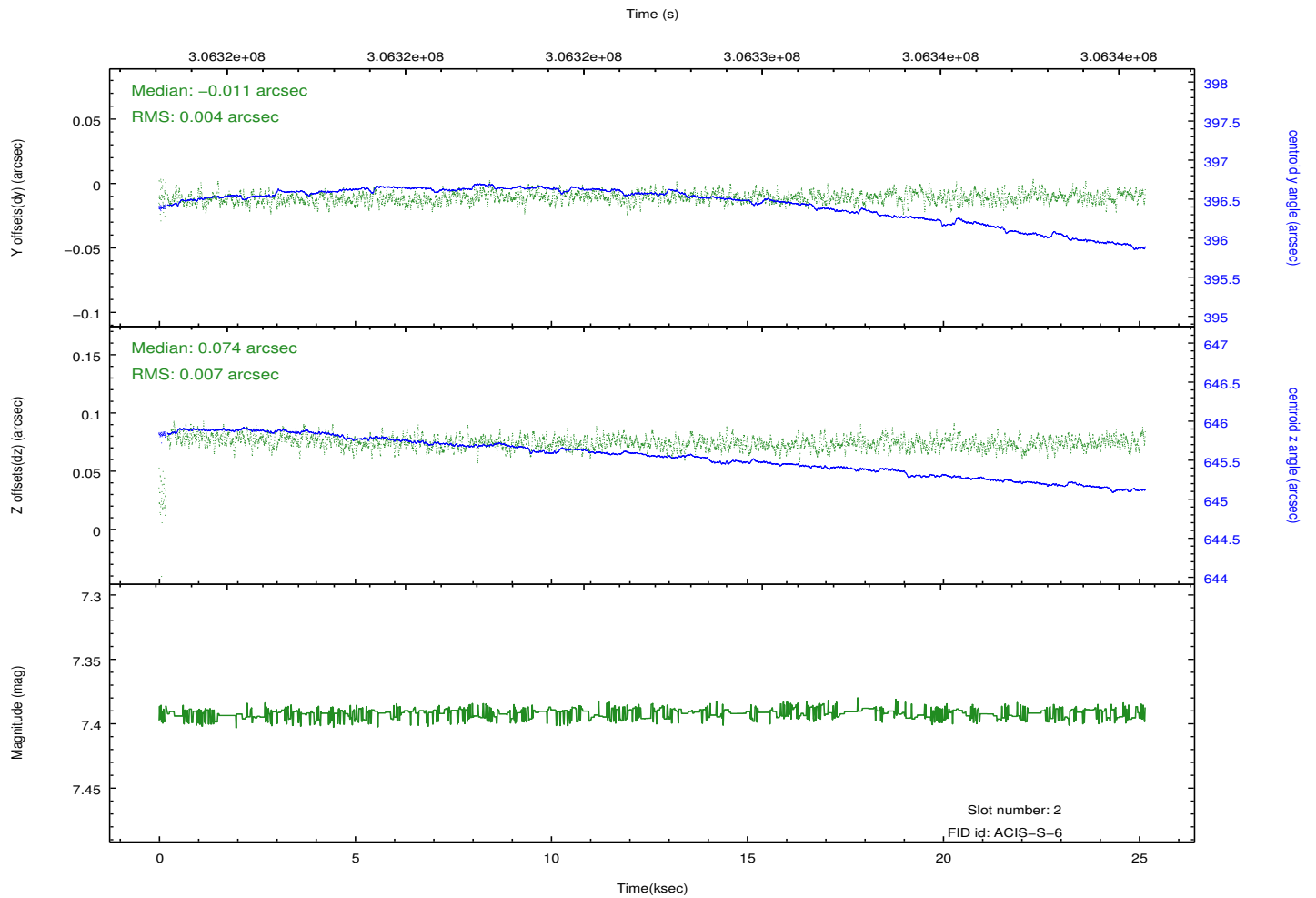
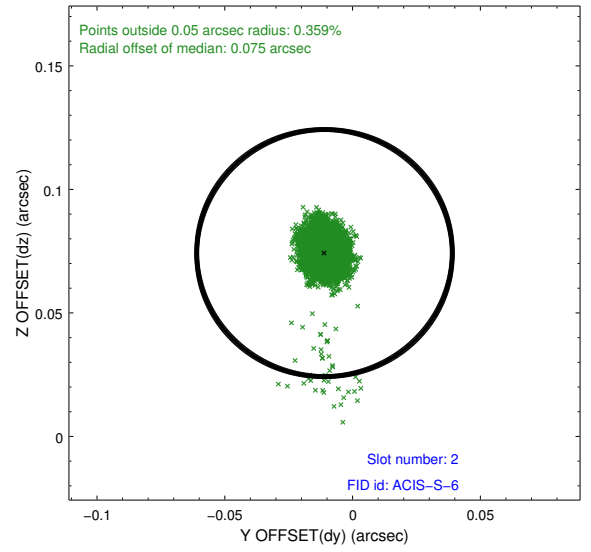
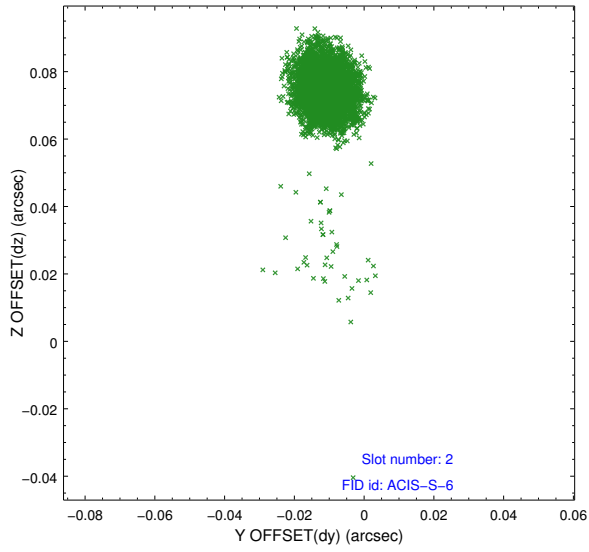
### 2.5.1 Slot 0



## 2.5.2 Slot 1

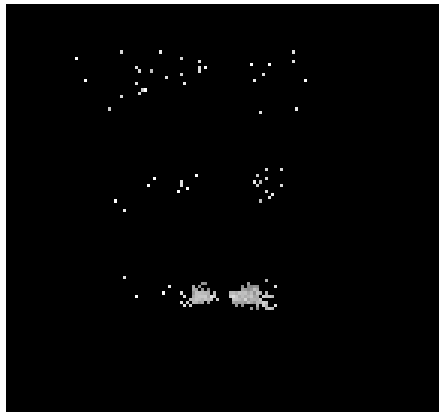


### 2.5.3 Slot 2

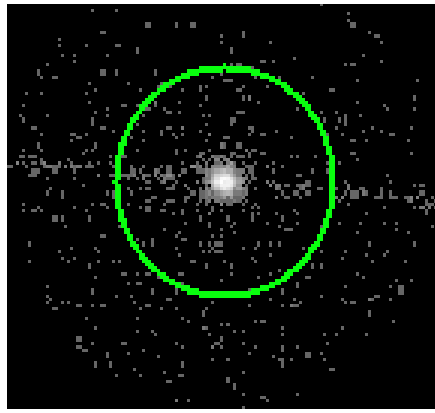


### 3 Gratings

#### 3.1 LETG Arm



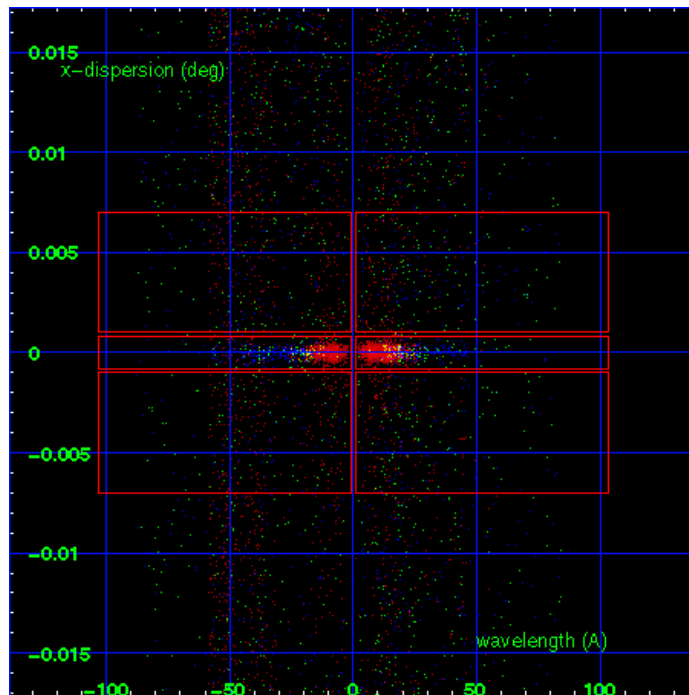
LETG Order Sort 123



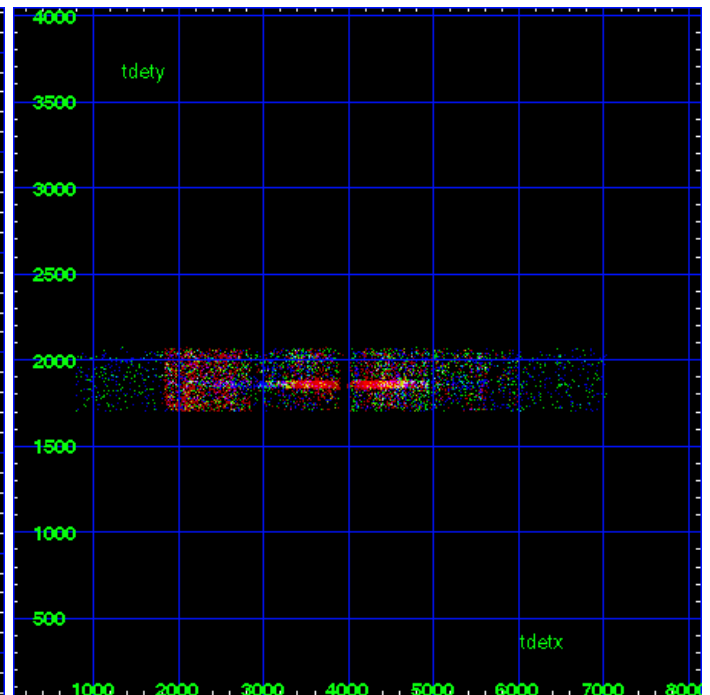
LETG Zero Order



LETG Order Sort ALL

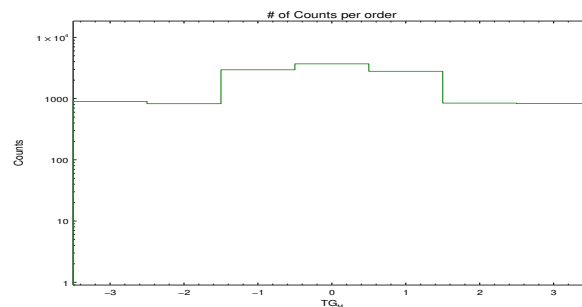


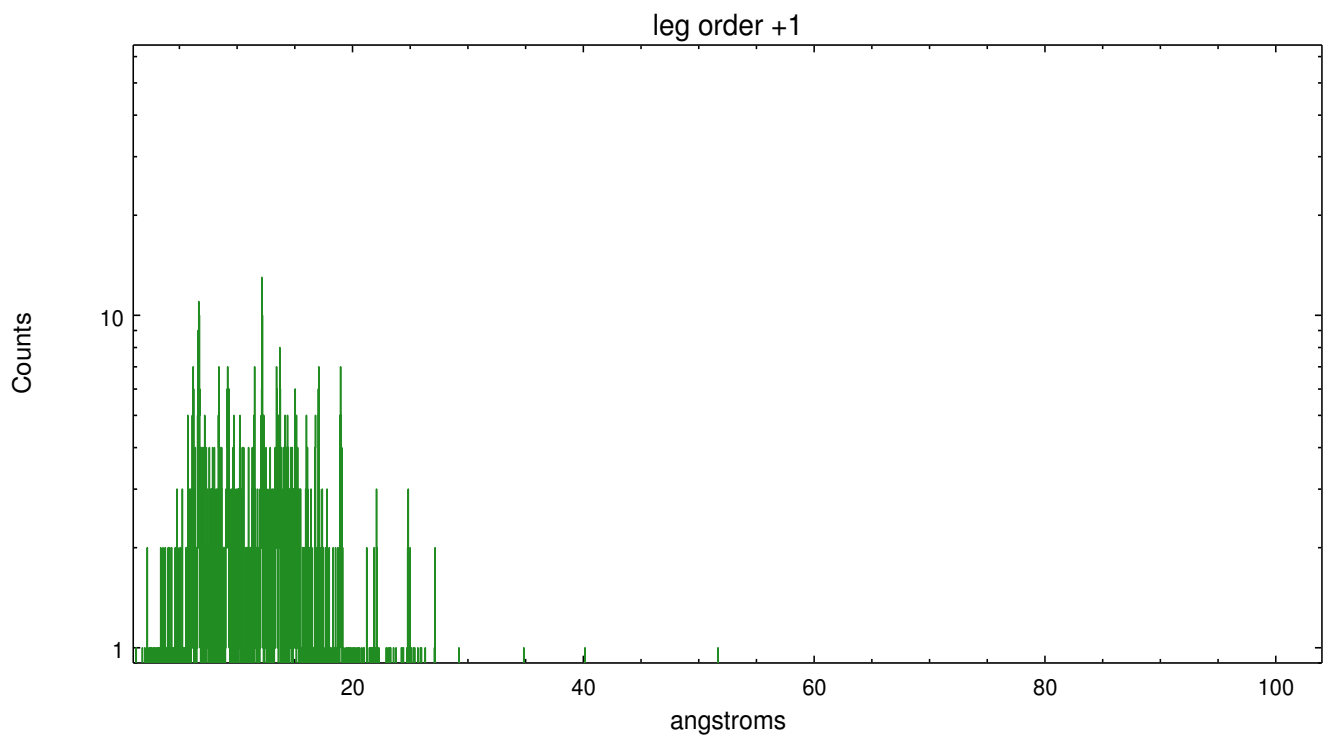
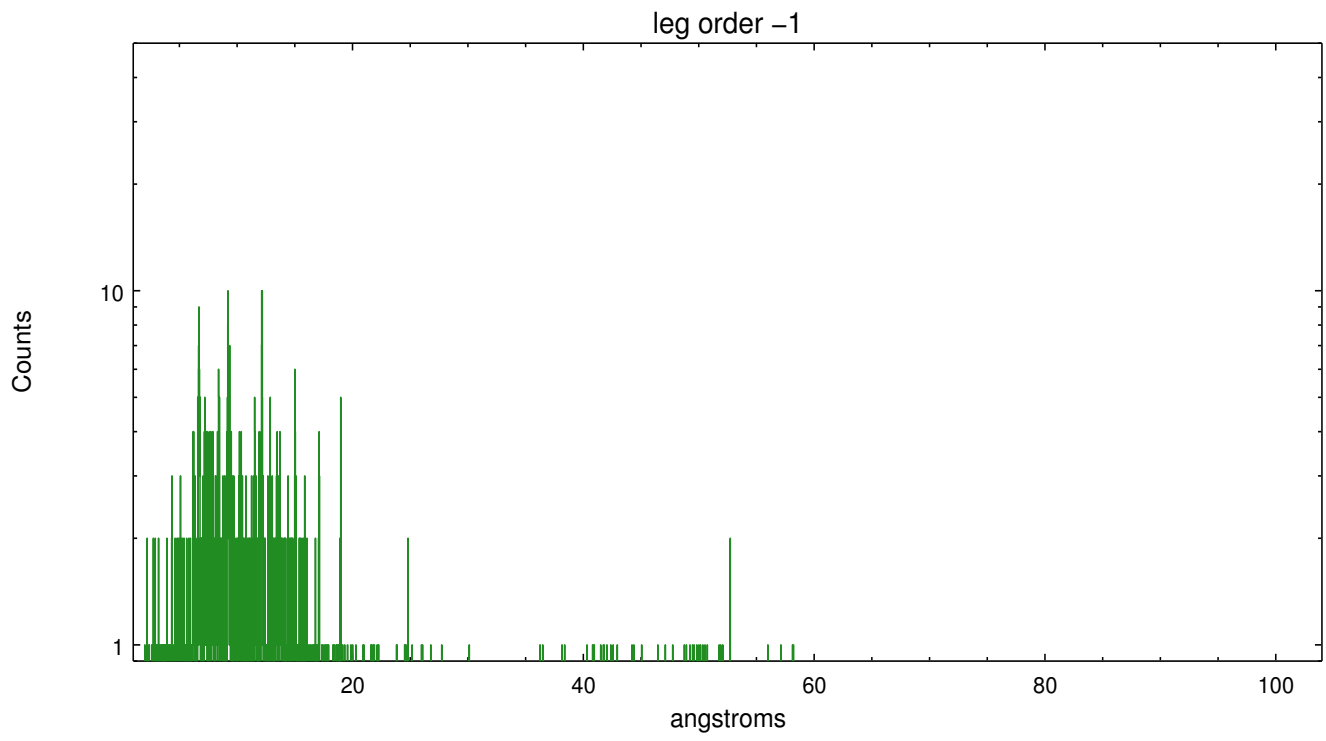
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	899	826	2955	3696	2790	844	831





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2012.05.09
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	24.9695999

## A.2 Comments

Warning: Extended source, dia  $\sim 3$  arc seconds; nominal extraction includes whole source and could be narrowed to reduce background. Background events dominate below 30A. Extraction is centered in supernova remnant, but is not positioned at the brightest region.

===

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  $\sim 0.5$` ) though this can allow more zeroth order background at short wavelengths.