

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 7621 - L2 Version 3  
Chandra X-Ray Center

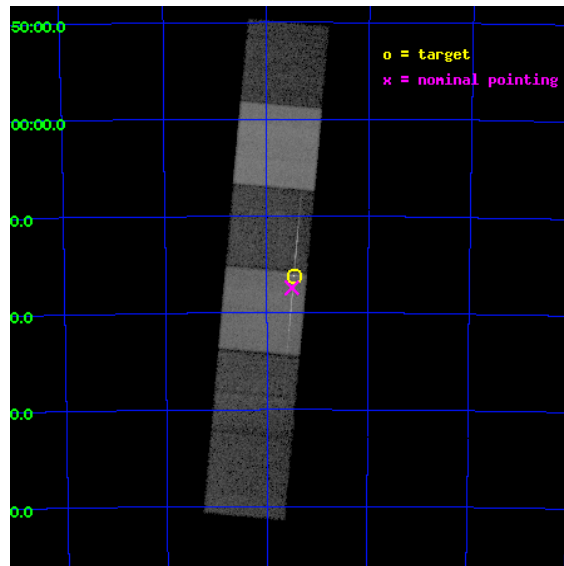
L2 Processing Date : May 1 2012

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# 1 Front

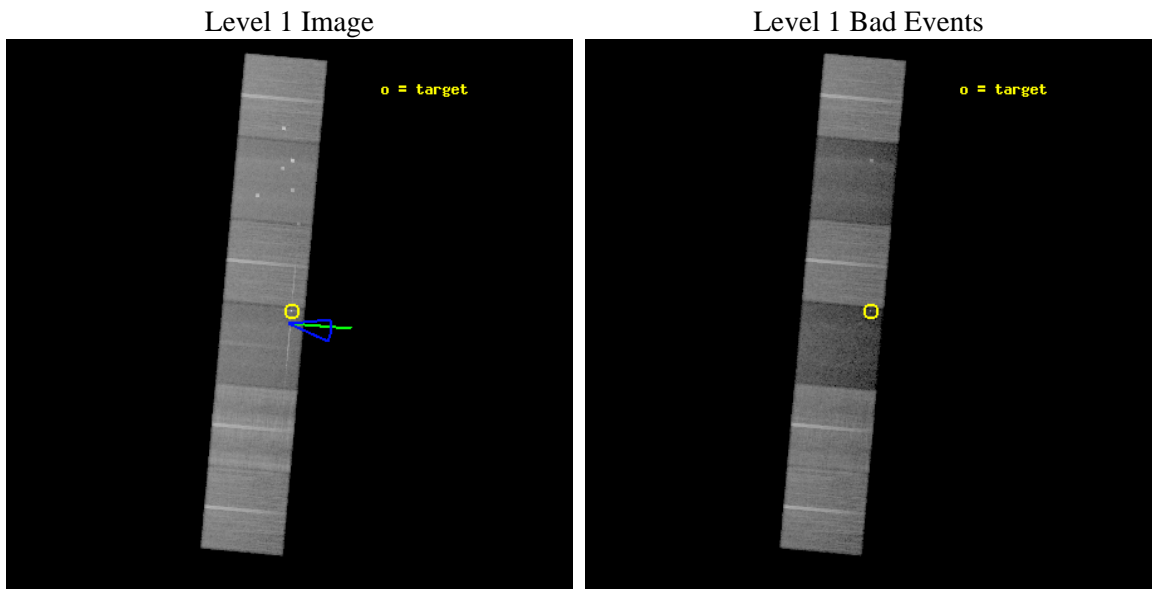
seq_num	500750	Sequence number
obs_id	7621	Observation id
title	SPATIALLY RESOLVED LETG SPECTROMETRY OF SNR1987A	Proposal title
observer	Dr. Richard McCray	Principal investigator
object	SNR1987A	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.87635211897	Nominal RA [deg]
dec_nom	-69.290406459032	Nominal Dec [deg]
roll_nom	95.165689271202	Nominal Roll [deg]
revision	3	Processing version of data
ontime	37423.999860644	Sum of GTIs [s]
livetime	36950.114640382	Livetime [s]
ontime4	37423.999860644	Sum of GTIs [s]
ontime5	37423.999860644	Sum of GTIs [s]
ontime6	37420.758870423	Sum of GTIs [s]
ontime7	37423.999860644	Sum of GTIs [s]
ontime8	37417.517900109	Sum of GTIs [s]
ontime9	37423.999860644	Sum of GTIs [s]
l2events	306619	Number of level 2 events



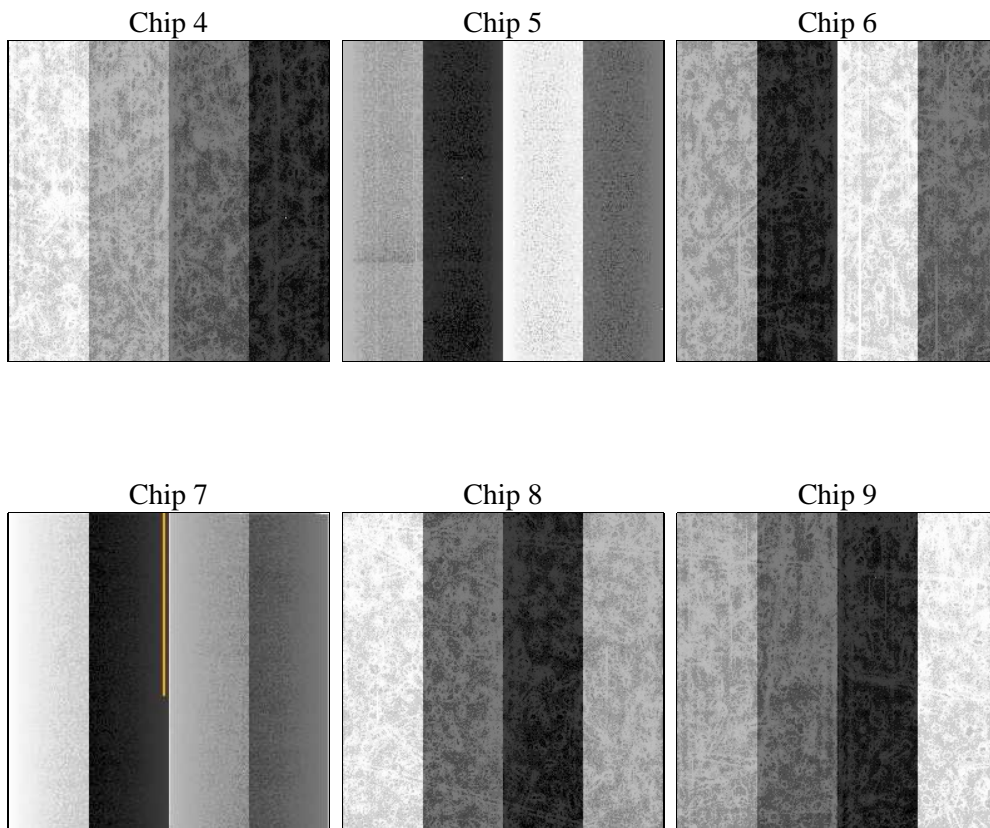
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	37385.737000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	37423.999860644	Sum of GTIs [s]
caldbver	4.4.9	&#160	ontime4	37423.999860644	Sum of GTIs [s]
date	2012-05-01T06:34:58	Date and time of file creation	ontime5	37423.999860644	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	37420.758870423	Sum of GTIs [s]
			ontime7	37423.999860644	Sum of GTIs [s]
			ontime8	37417.517900109	Sum of GTIs [s]
			ontime9	37423.999860644	Sum of GTIs [s]
			l1events	1544536	Number of level 1 events

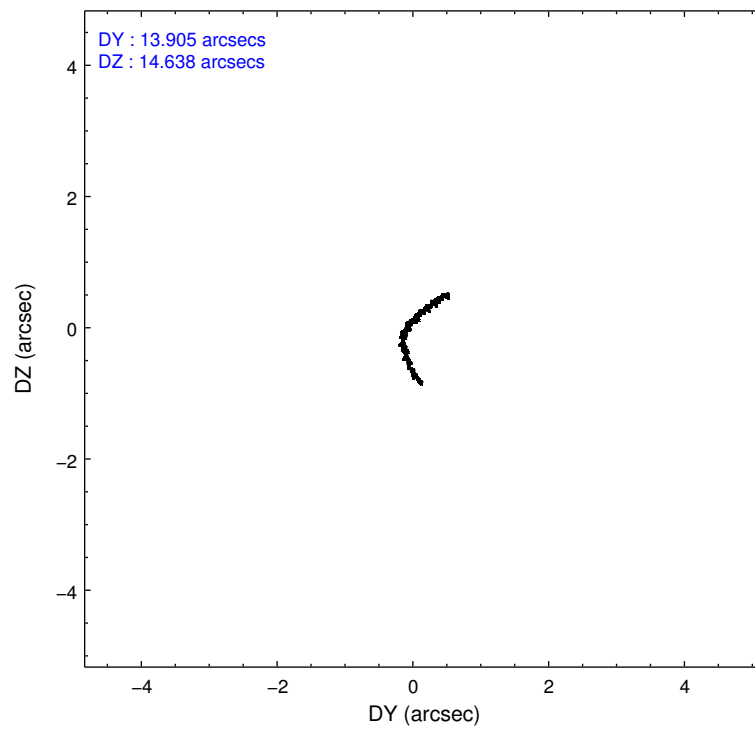
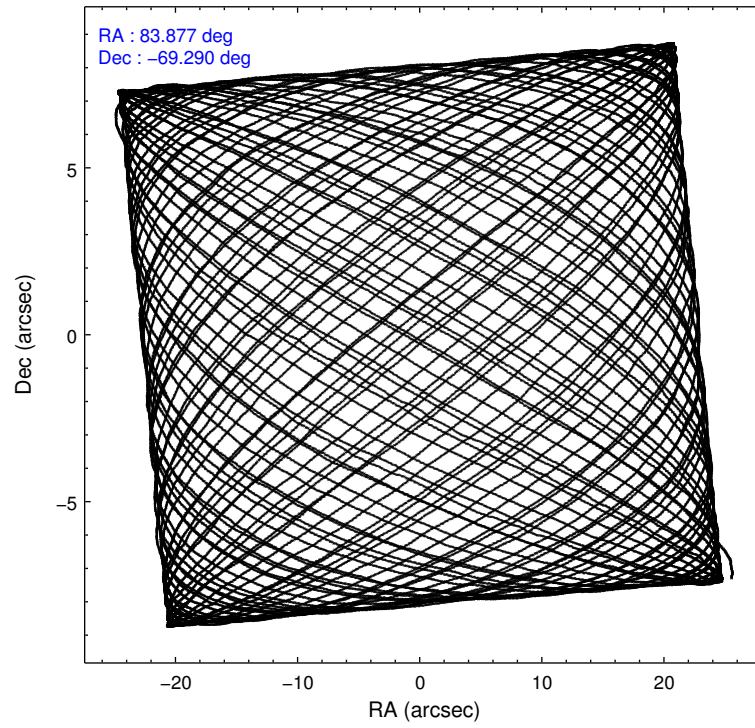
### 2.1.4 Events

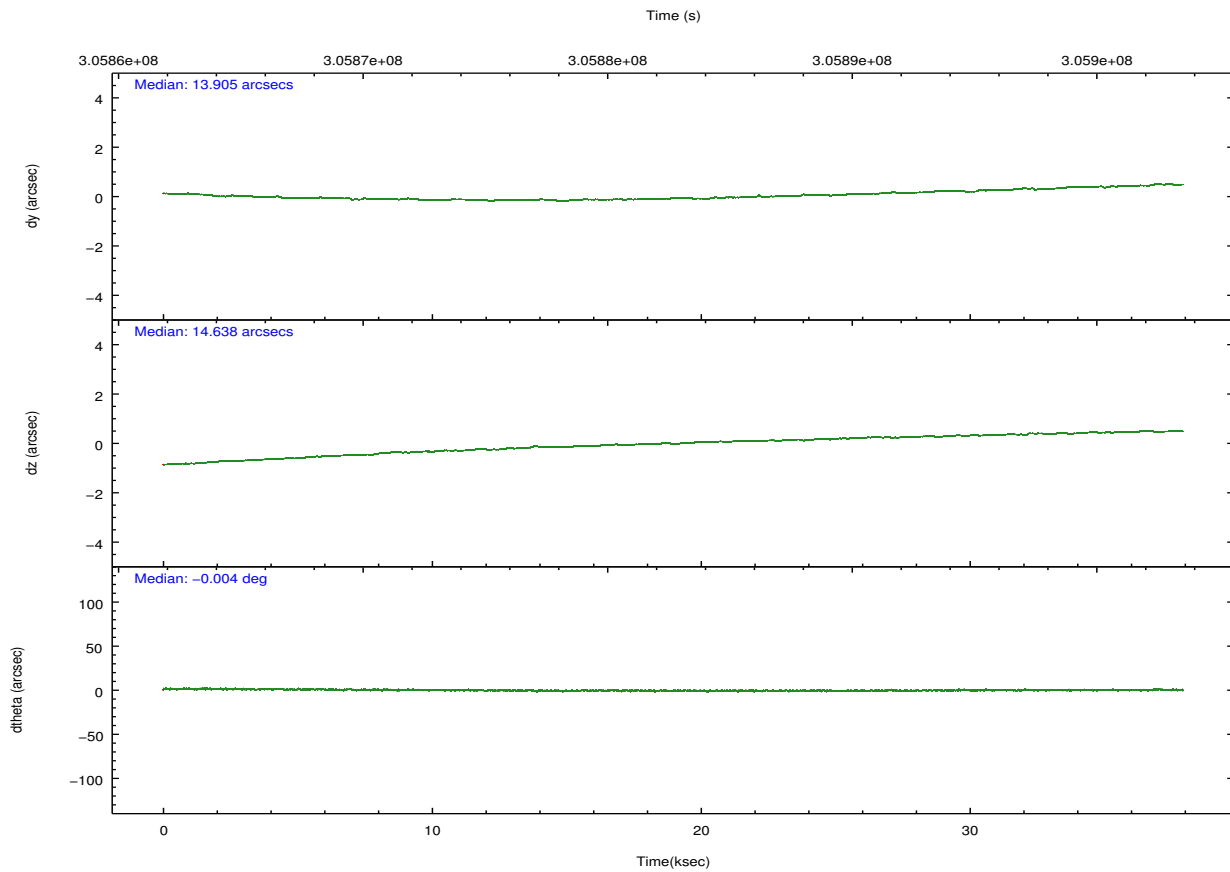
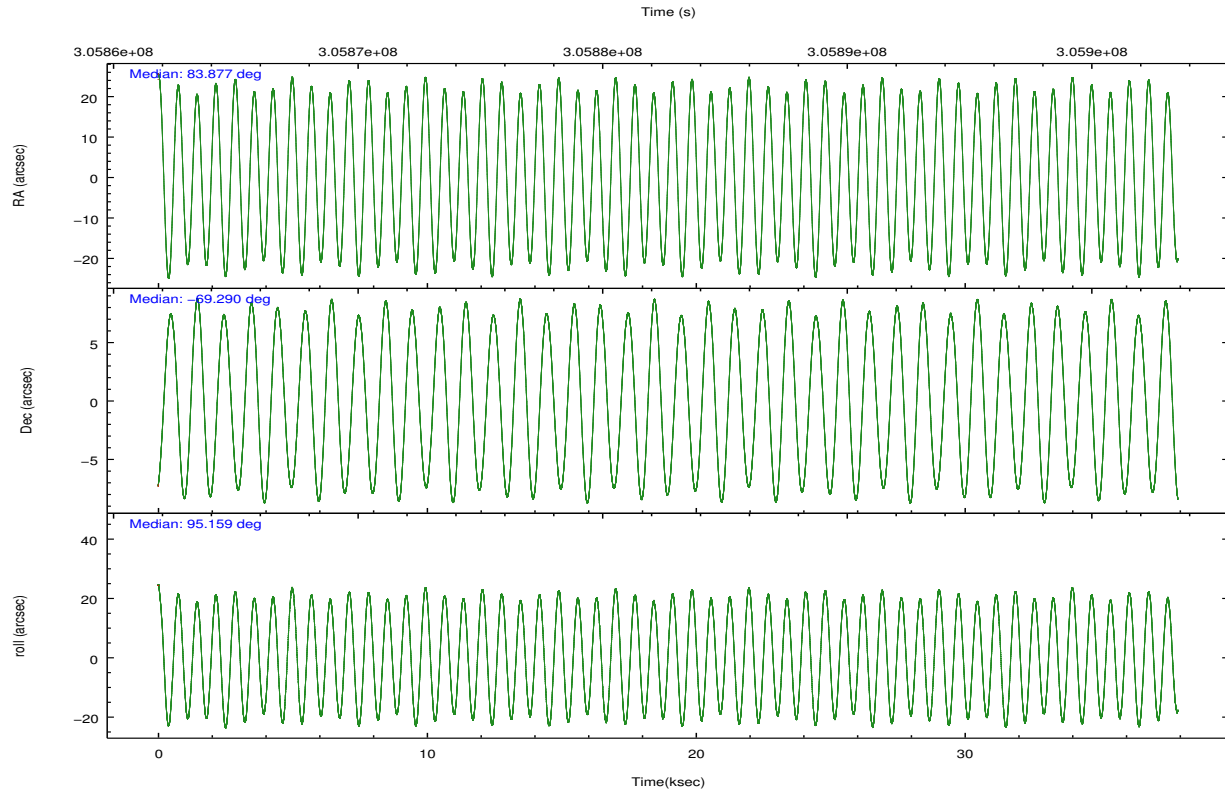
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	316678	232635	262899	164432	316737	251155	grade 0 events	13463	21418	14205	14912	24126	8985
rejected events	288593	91059	233909	64692	231918	228402		4%	9%	5%	9%	7%	3%
rejected %	91%	39%	88%	39%	73%	90%	grade 1 events	252	1379	146	417	263	146
								0%	0%	0%	0%	0%	0%
							grade 2 events	6168	45113	5589	24461	19609	4803
								1%	19%	2%	14%	6%	1%
							grade 3 events	2646	7142	2716	10408	9518	2567
								0%	3%	1%	6%	3%	1%
							grade 4 events	2515	6842	2659	10268	8768	2533
								0%	2%	1%	6%	2%	1%
							grade 5 events	5234	18450	5162	16021	8947	5980
								1%	7%	1%	9%	2%	2%
							grade 6 events	3297	61070	3822	39708	22799	3868
								1%	26%	1%	24%	7%	1%
							grade 7 events	283103	71221	228600	48237	222707	222273
								89%	30%	86%	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	83.8763521189702	CCD I2 on	N	N
[deg] Pointing Dec	-69.312539	-69.2904064590317	CCD I3 on	N	N
[deg] Pointing Roll	95.051577	95.16568927120237	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	-182.1370004450064	Number of optional ACIS chips dropped	0	0
[mm] SIM translation stage offset	-8	-7.995522138001405	On-chip summing requested	N	N
[s] Observation start time (MET)	305864238.184000	305862910.18618	Subarray requested	NONE	NONE
Observation start date	2007-09-11T02:16:13	2007-09-11T01:55:10	Alternating exposures requested	N	N
[s] Observation end time (MET)	305901623.184000	305901845.83805	[s] Primary exposure time	0.000000	3.2
Observation end date	2007-09-11T12:39:18	2007-09-11T12:44:05			
Read mode	TIMED	TIMED			

## 2.3 Aspect



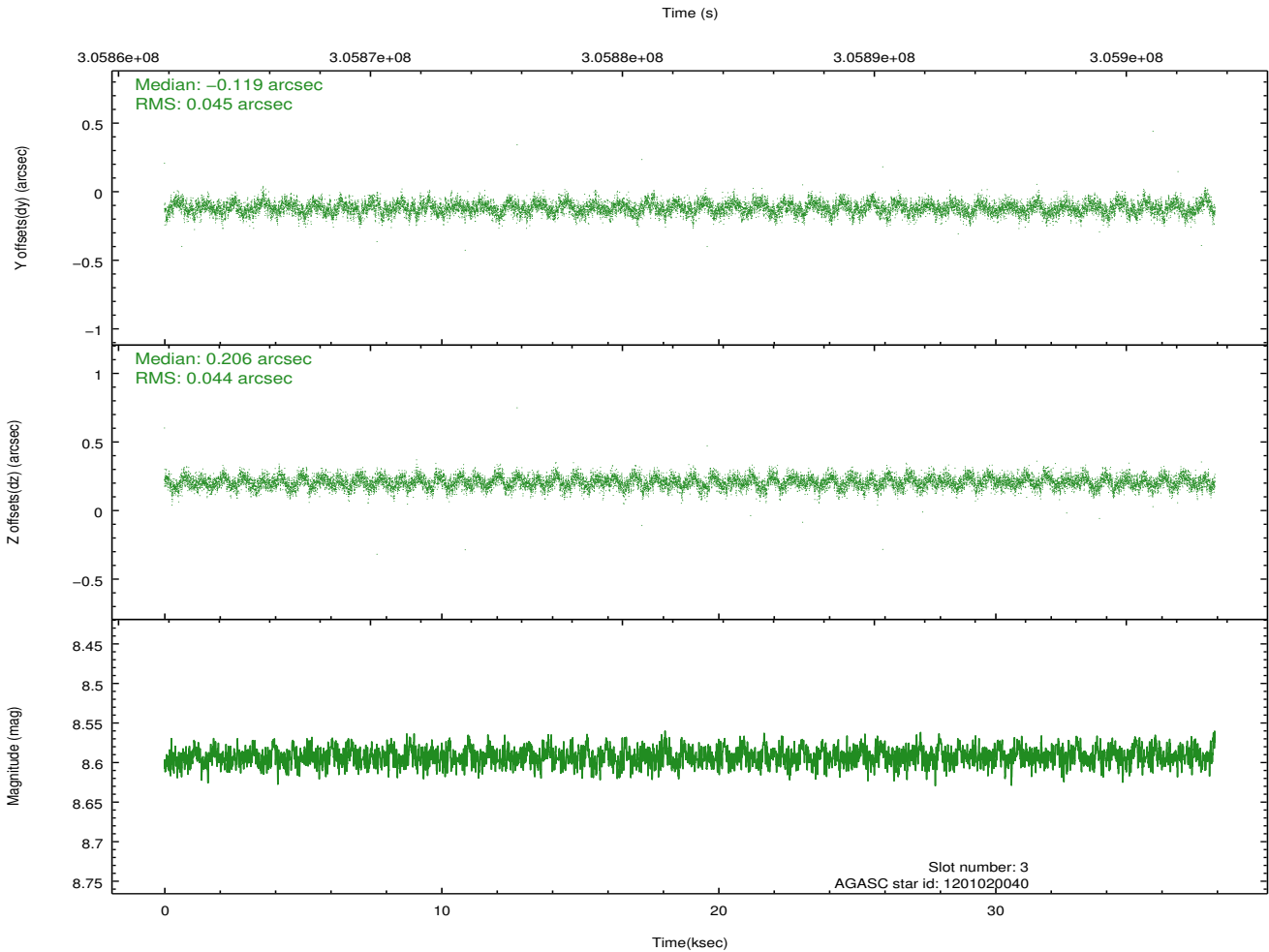
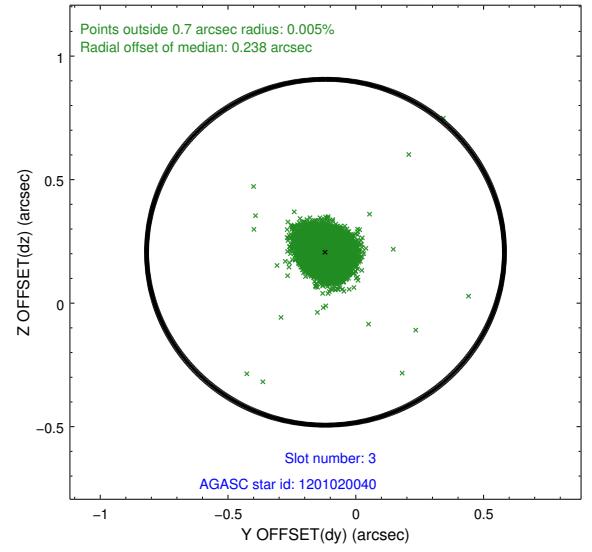
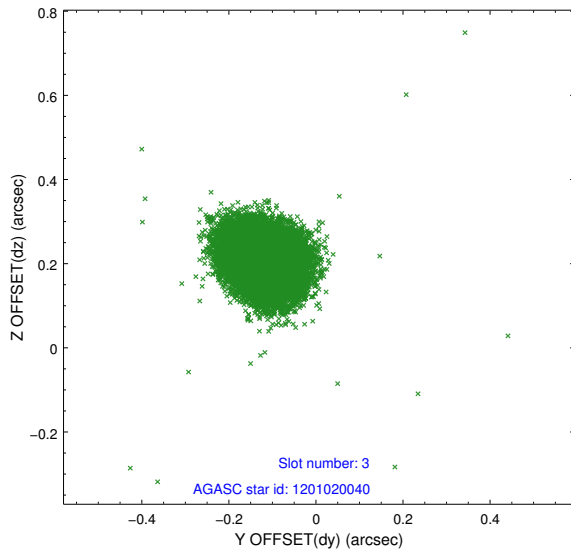


### Slot Statistics

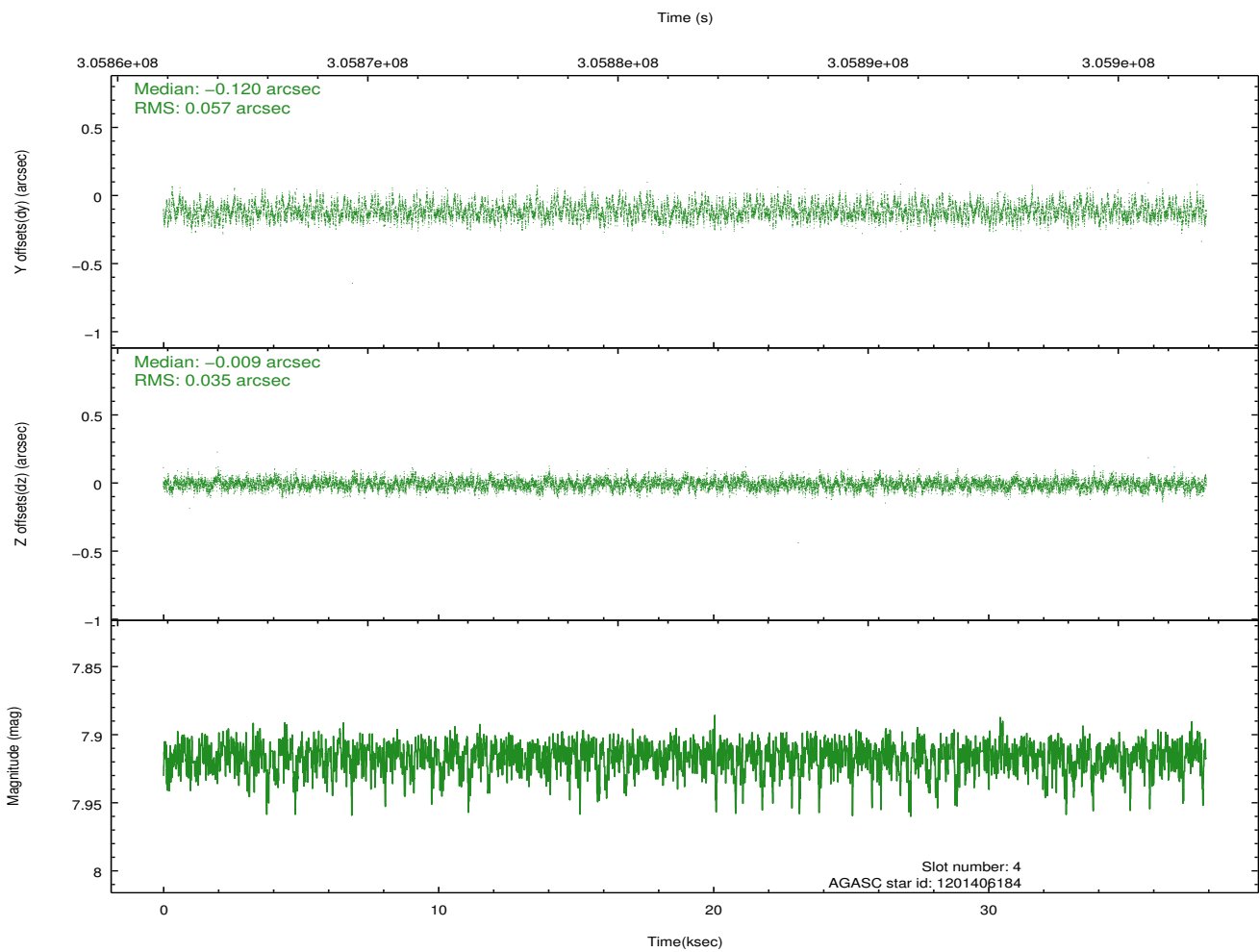
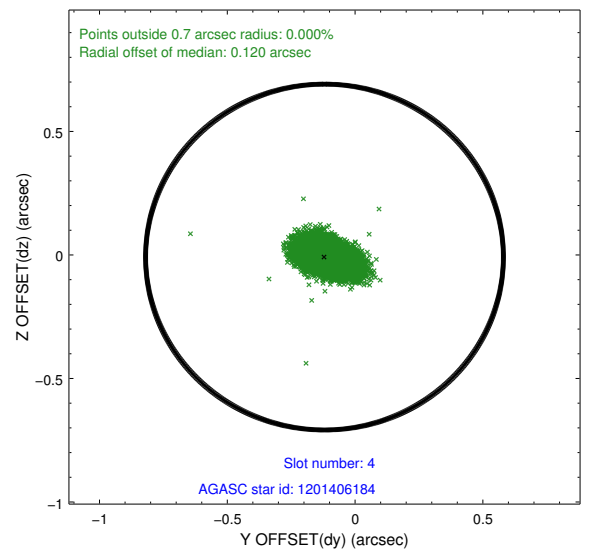
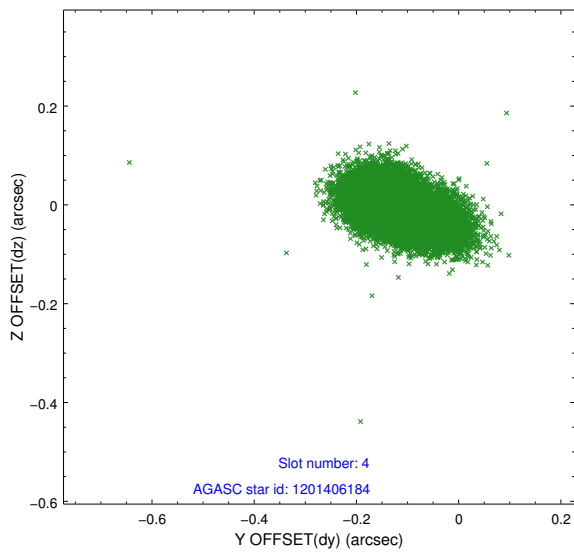
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.08	9249	-0.157	-0.109	0.012	0.027	0.000000	0.000000	-766.50	-1900.77
1	FID	ACIS-S-4	7.16	9249	0.136	0.097	0.009	0.015	0.000000	0.000000	2147.07	7.85
2	FID	ACIS-S-6	7.39	9249	-0.005	0.019	0.010	0.015	0.000000	0.000000	395.68	645.20
3	GUIDE	1201020040	8.59	18494	-0.119	0.206	0.065	0.106	85.379163	-68.879396	1364.74	-2017.73
4	GUIDE	1201406184	7.92	18495	-0.120	-0.009	0.069	0.118	82.503234	-69.975517	-2243.75	1953.59
5	GUIDE	1201410616	9.32	18476	0.229	-0.165	0.121	0.185	82.516808	-69.784406	-1558.22	1892.26
6	GUIDE	1200885760	9.44	18488	0.013	-0.166	0.097	0.159	83.723637	-68.777667	1940.35	88.07
7	GUIDE	1201019672	6.87	18498	-0.016	0.127	0.125	0.174	85.312192	-68.770187	1765.37	-1974.92

## 2.4 Star Slots

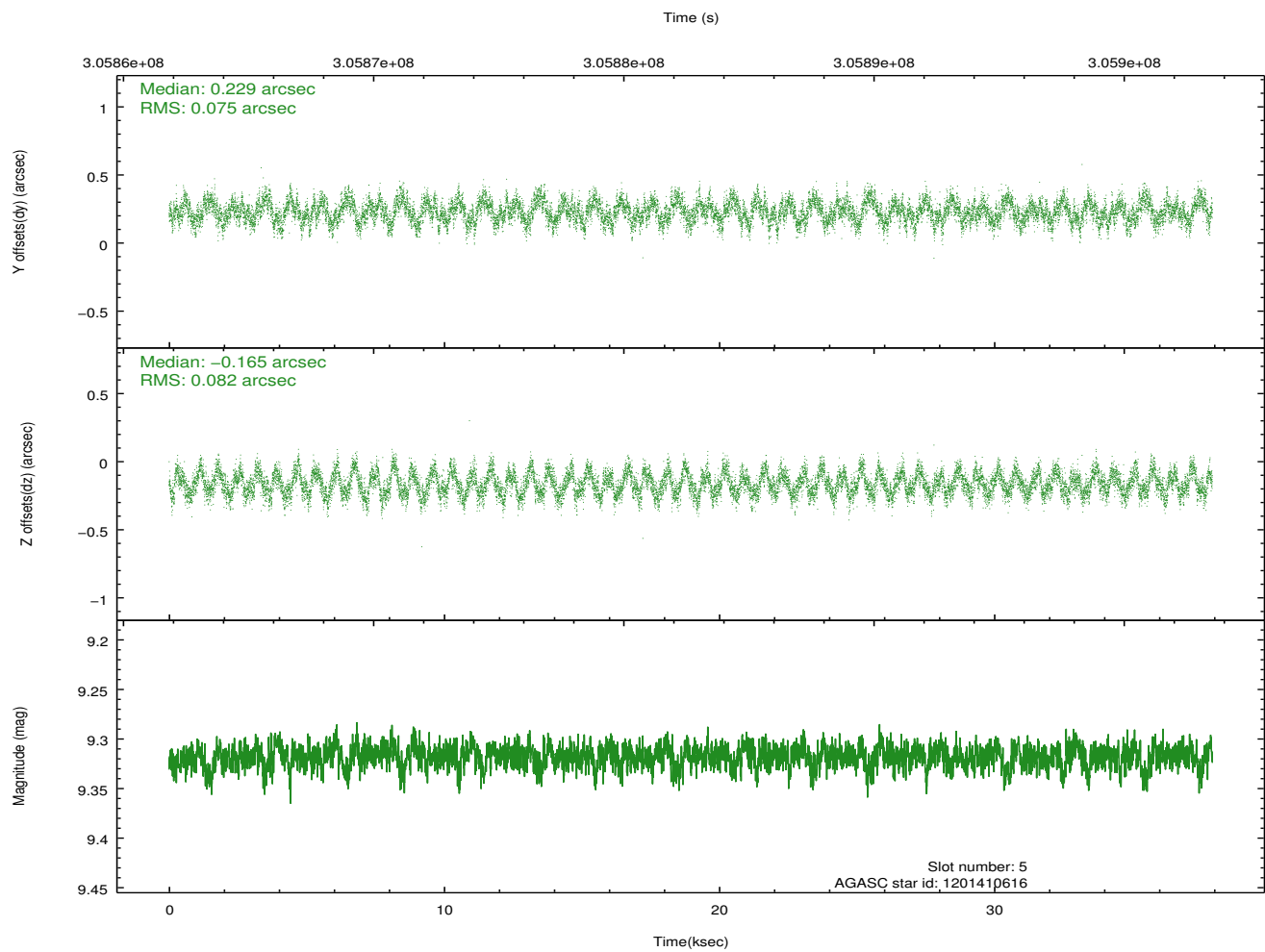
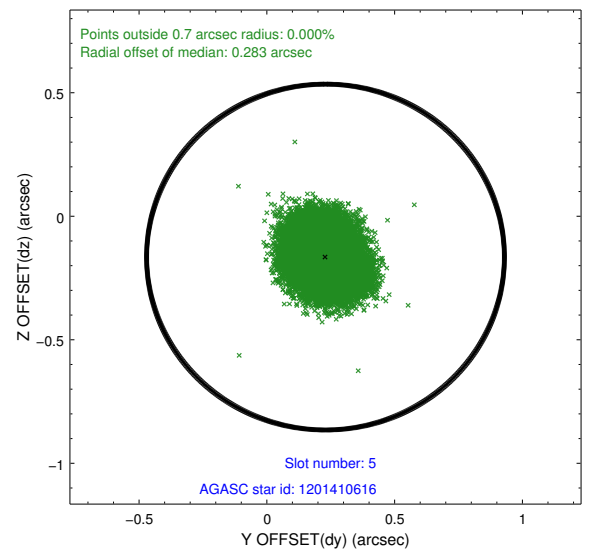
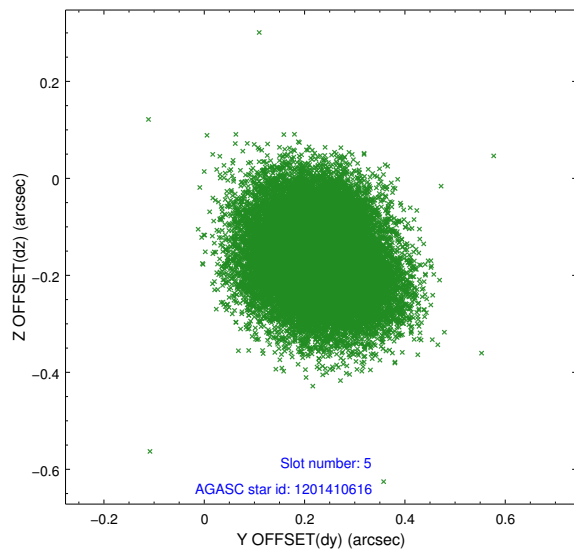
### 2.4.1 Slot 3



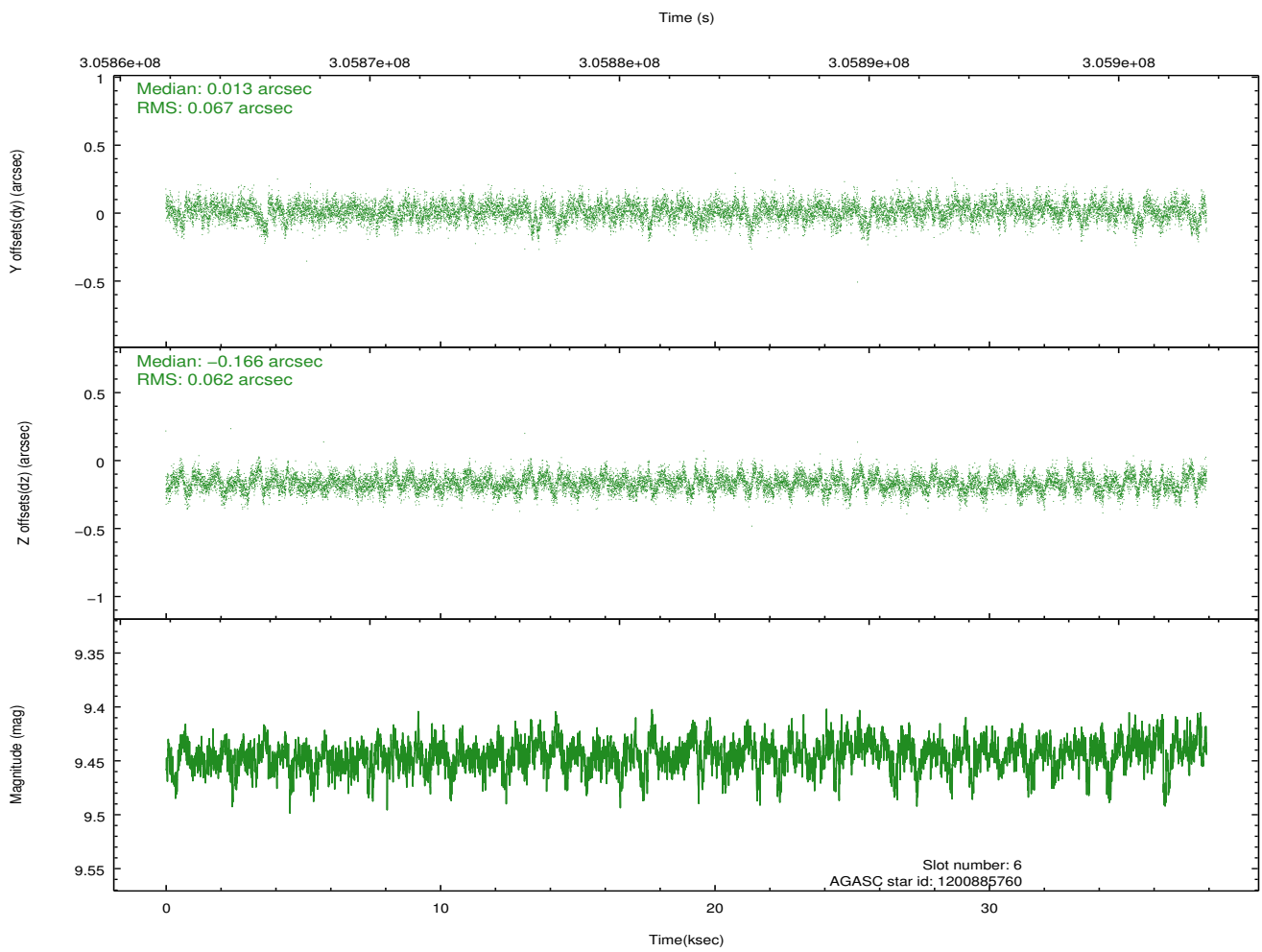
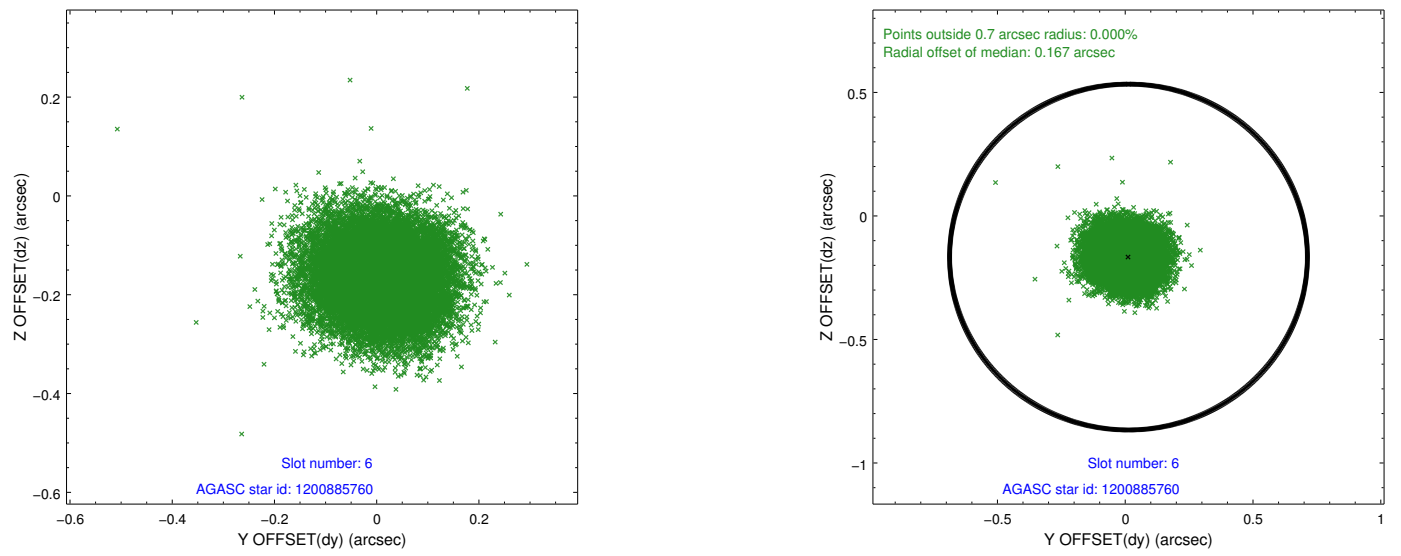
## 2.4.2 Slot 4



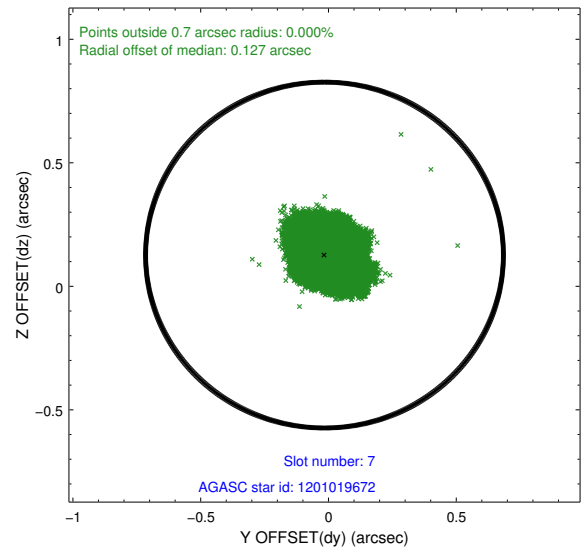
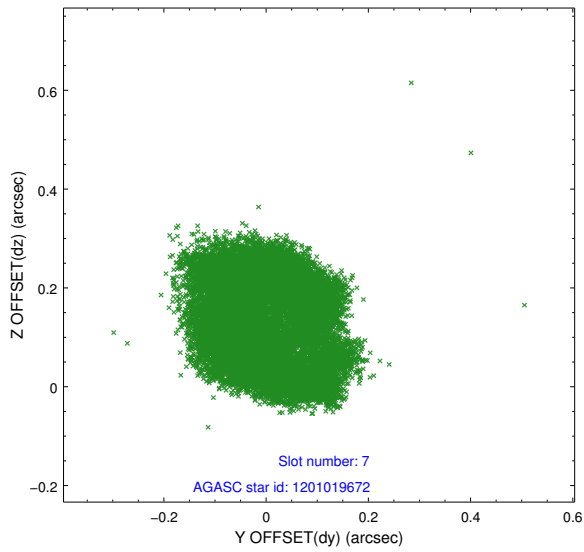
### 2.4.3 Slot 5



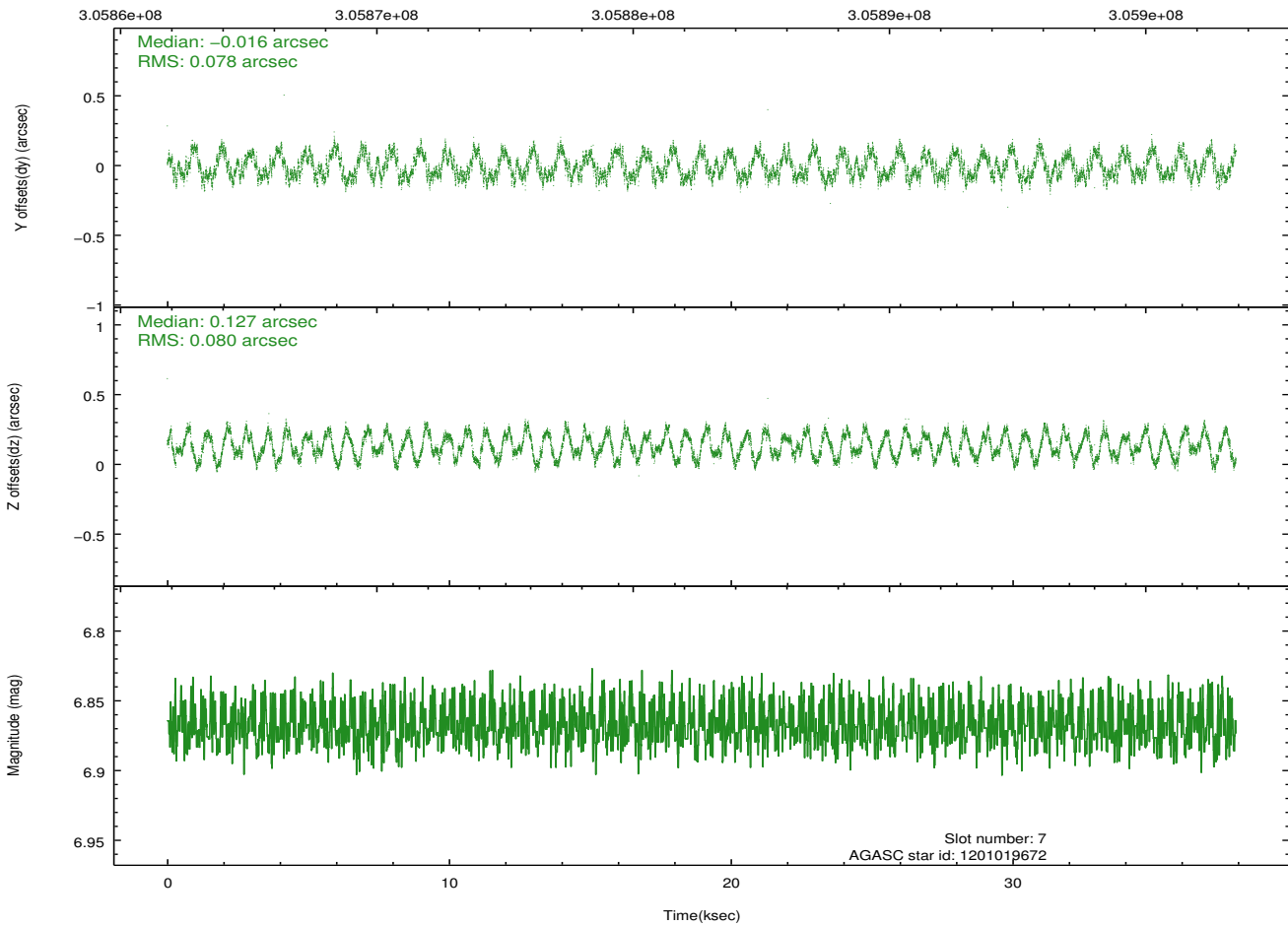
## 2.4.4 Slot 6



## 2.4.5 Slot 7

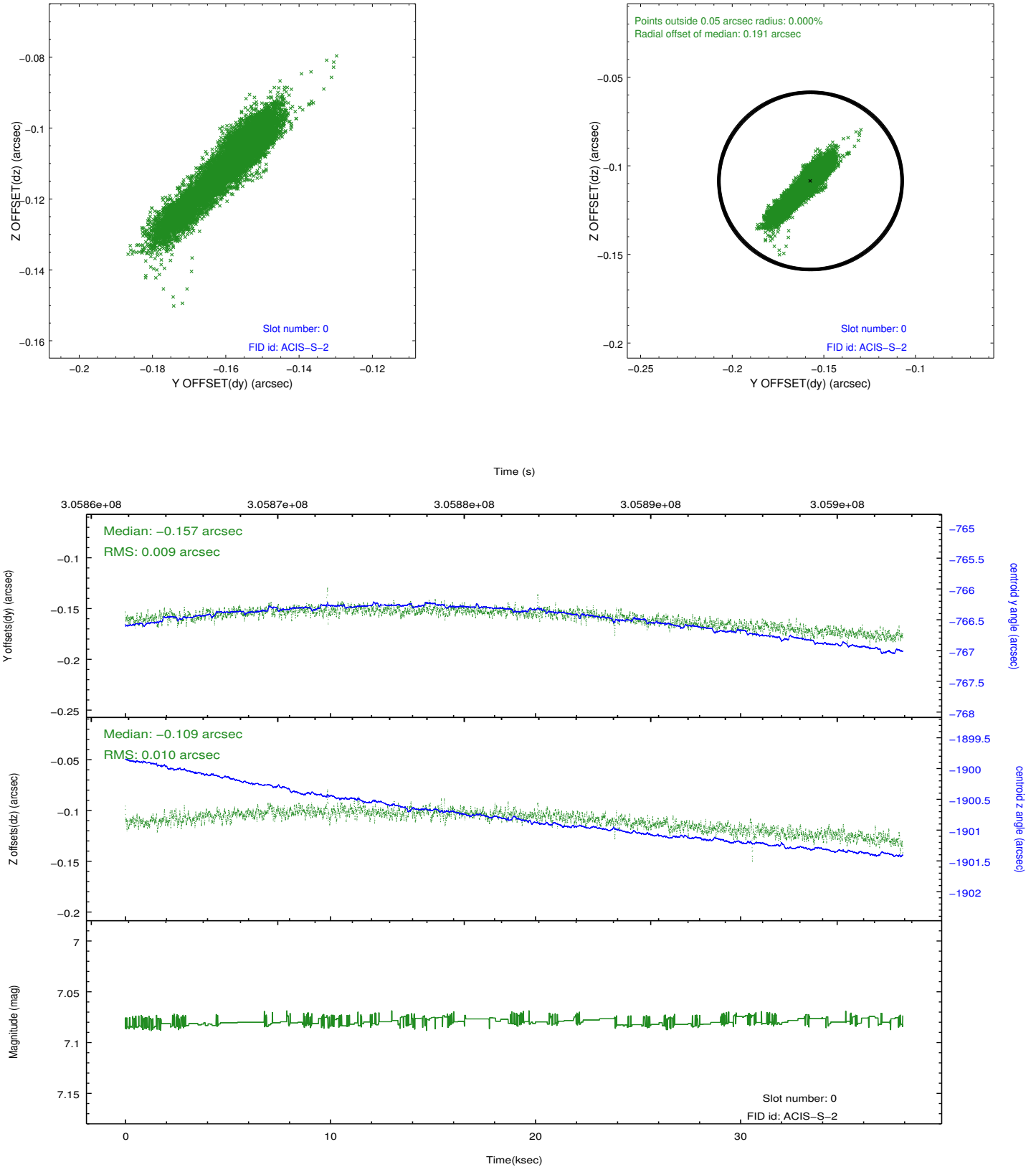


Time (s)

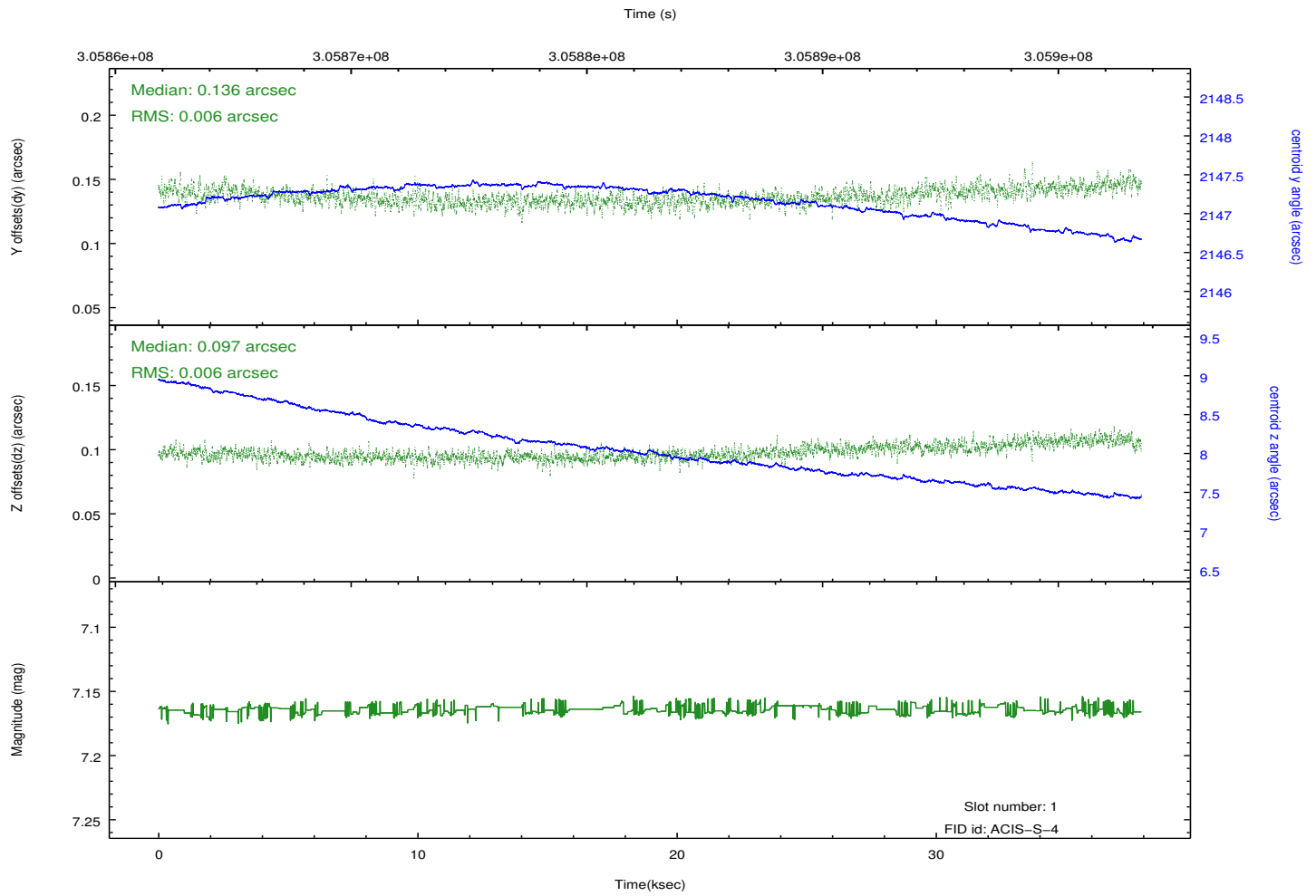
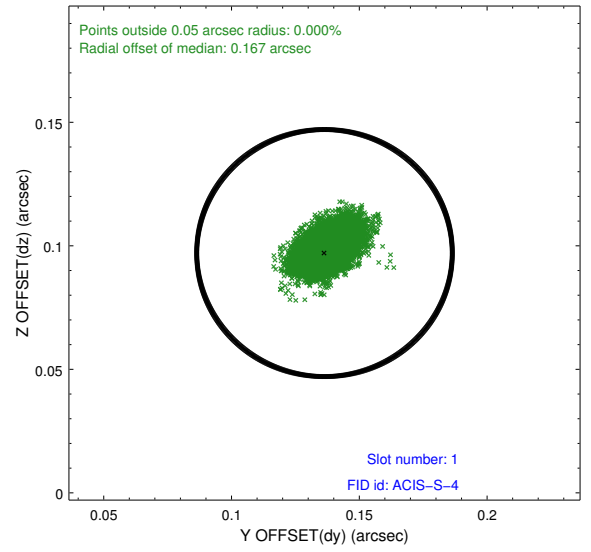
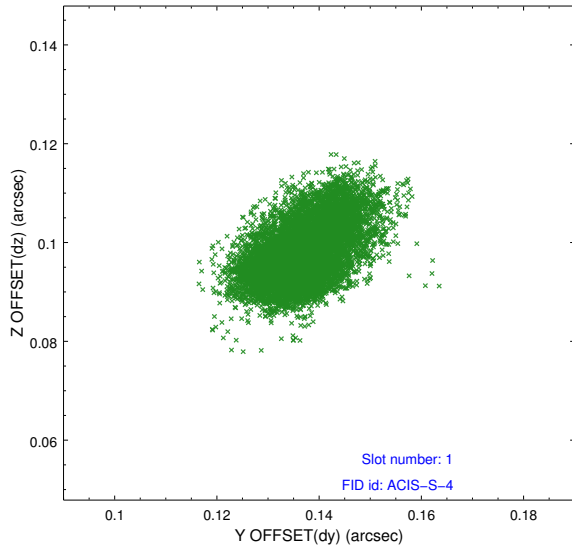


## 2.5 FID Slots

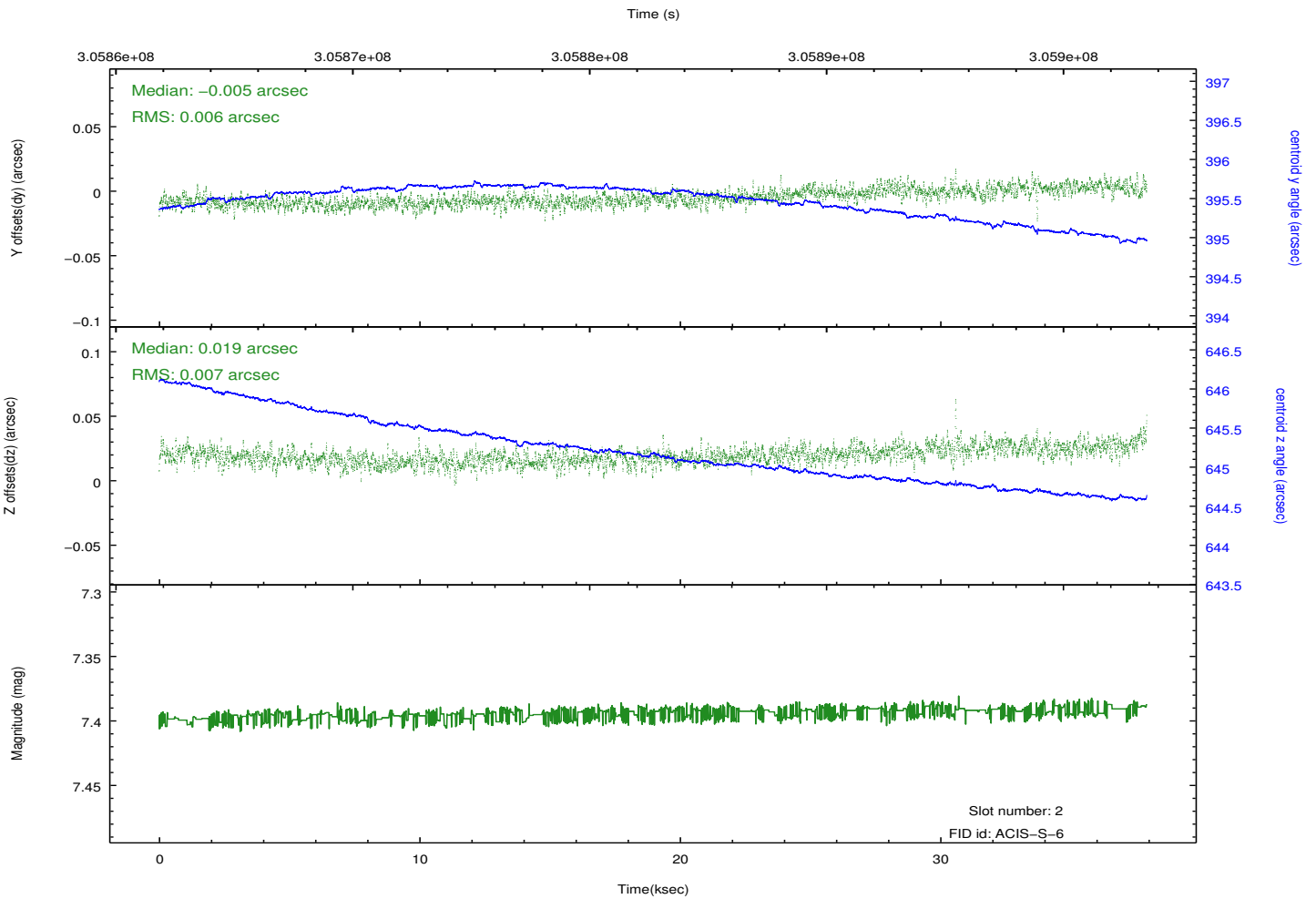
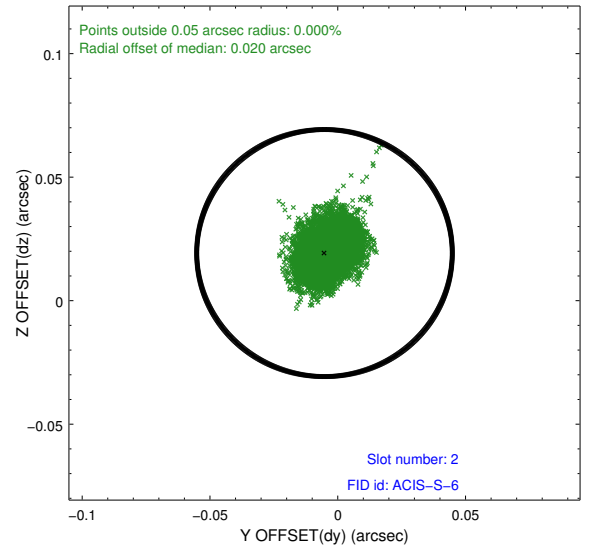
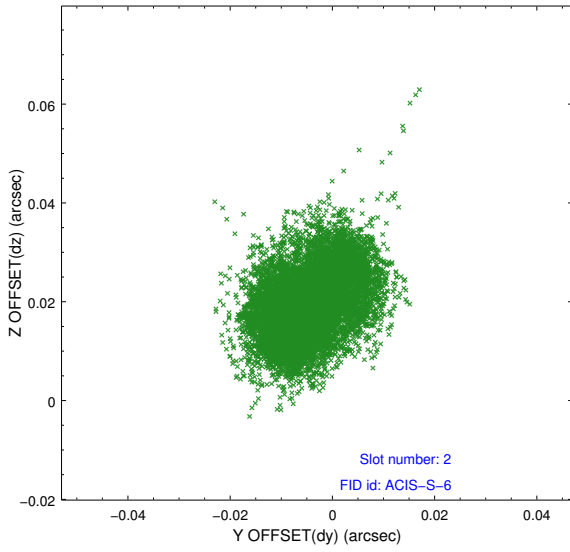
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

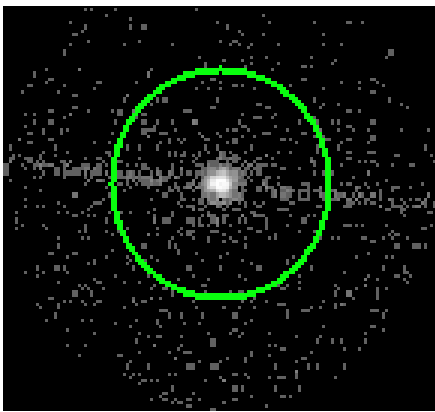


### 3 Gratings

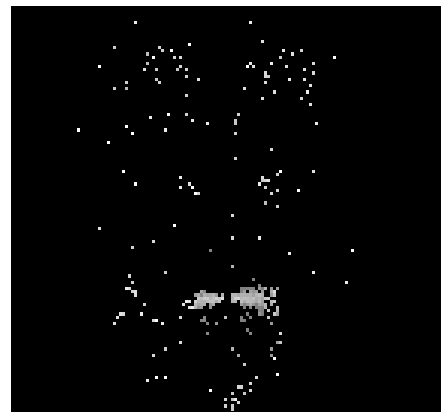
#### 3.1 LETG Arm



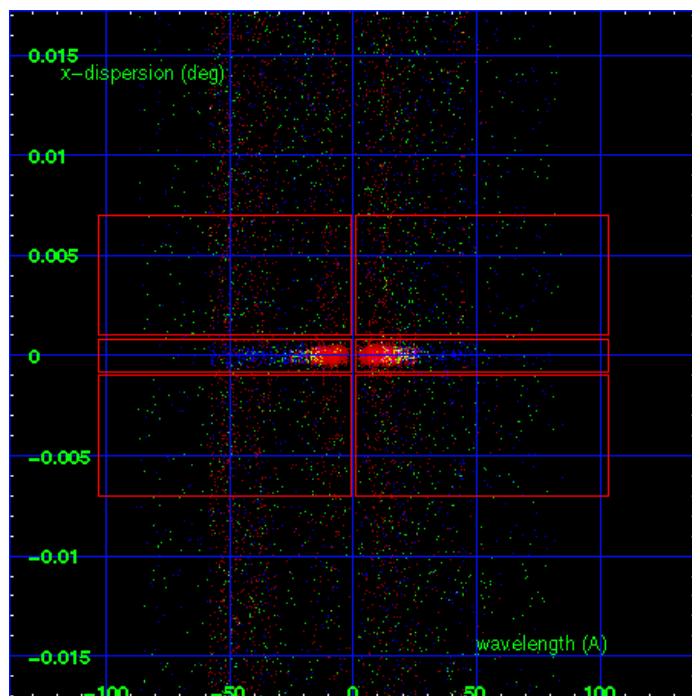
LETG Order Sort 123



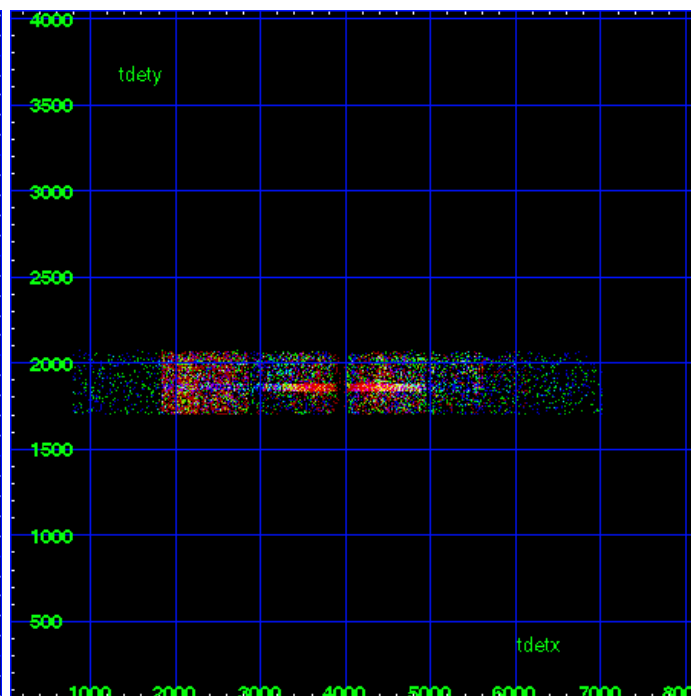
LETG Zero Order



LETG Order Sort ALL

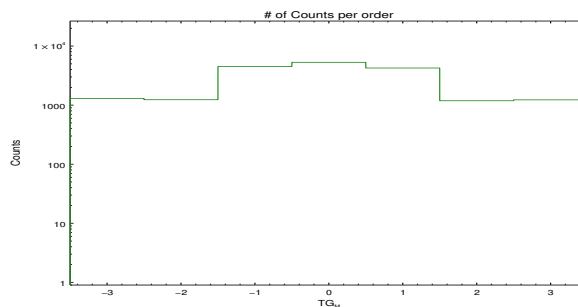


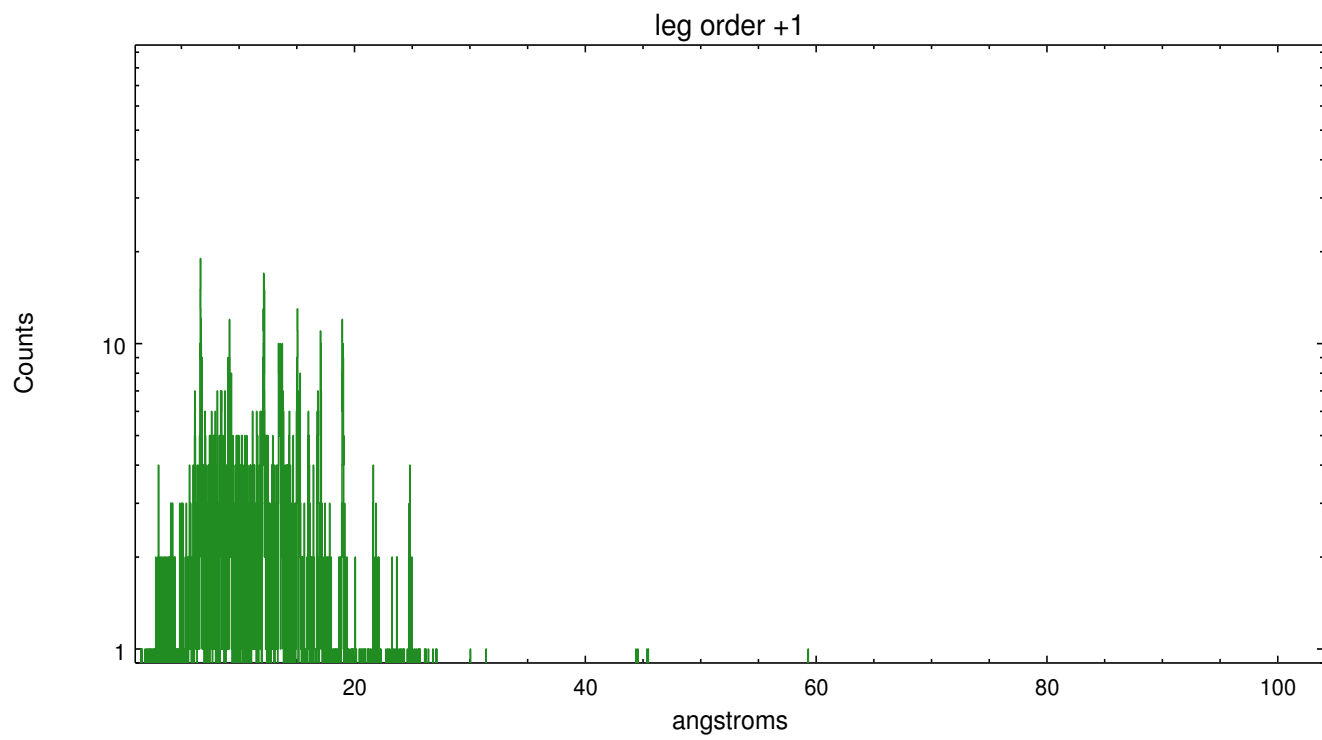
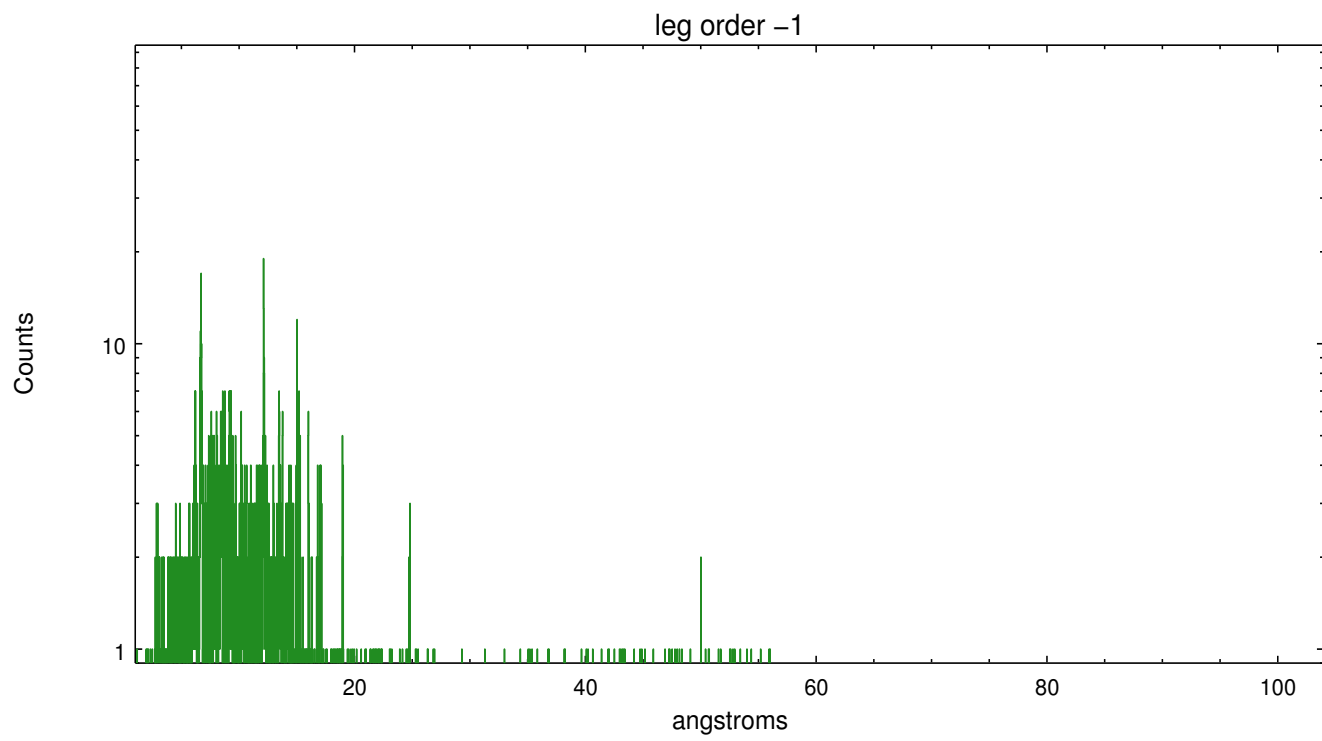
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1298	1235	4499	5304	4250	1187	1229





# 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	37.4239998

## 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.