

# V&V Reference Report

## L2 ASCDS Version : 8.4.4

Observation 7620 - L2 Version 3  
Chandra X-Ray Center

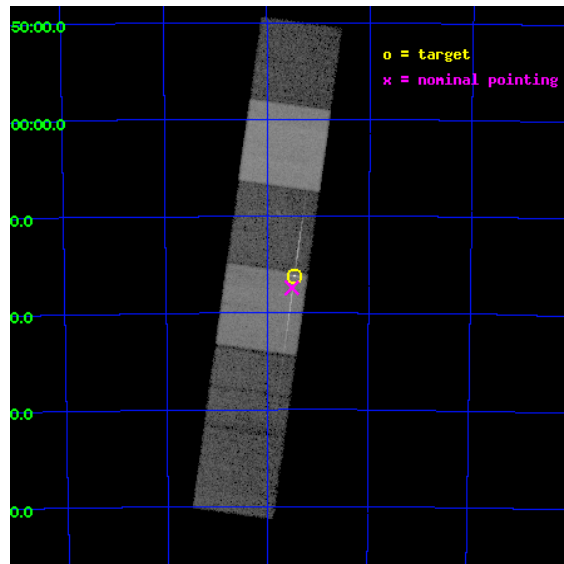
L2 Processing Date : Apr 30 2012

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# 1 Front

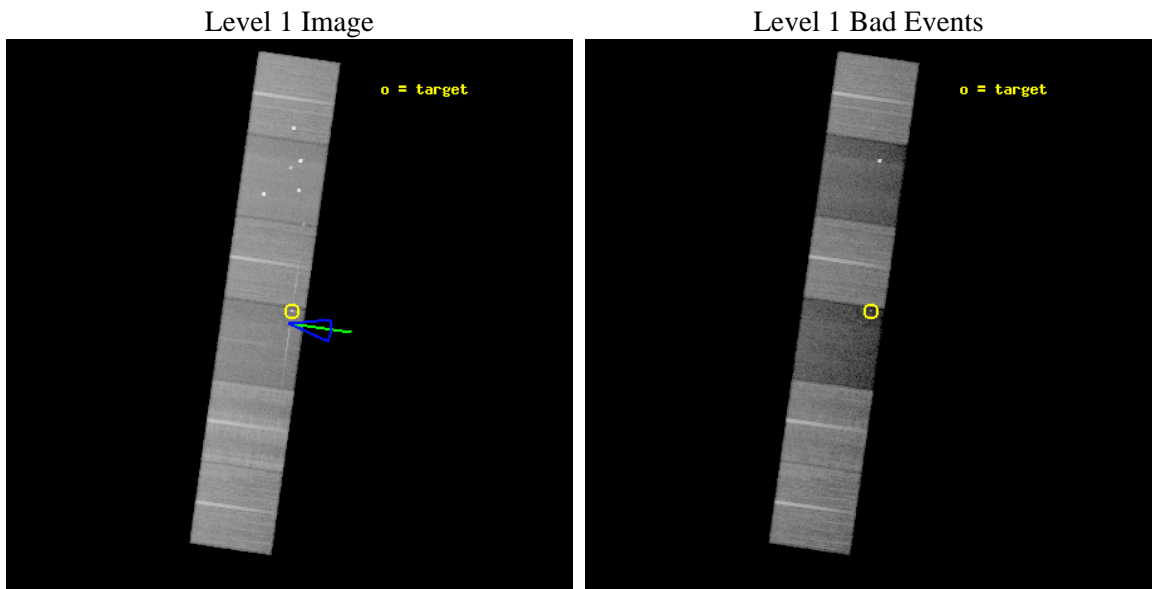
seq_num	500750	Sequence number
obs_id	7620	Observation id
title	SPATIALLY RESOLVED LETG SPECTROMETRY OF SNR1987A	Proposal title
observer	Dr. Richard McCray	Principal investigator
object	SNR1987A	Source name
dtycycle	0	&#160
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.866667	Observer's specified target RA [deg]
dec_targ	-69.26975	Observer's specified target Dec [deg]
ra_nom	83.879264571308	Nominal RA [deg]
dec_nom	-69.290209774888	Nominal Dec [deg]
roll_nom	98.068413217776	Nominal Roll [deg]
revision	3	Processing version of data
ontime	35068.799869418	Sum of GTIs [s]
livetime	34624.737609575	Livetime [s]
ontime4	35068.799869418	Sum of GTIs [s]
ontime5	35068.799869418	Sum of GTIs [s]
ontime6	35065.558899105	Sum of GTIs [s]
ontime7	35068.799869418	Sum of GTIs [s]
ontime8	35065.558889031	Sum of GTIs [s]
ontime9	35039.631136715	Sum of GTIs [s]
l2events	284273	Number of level 2 events



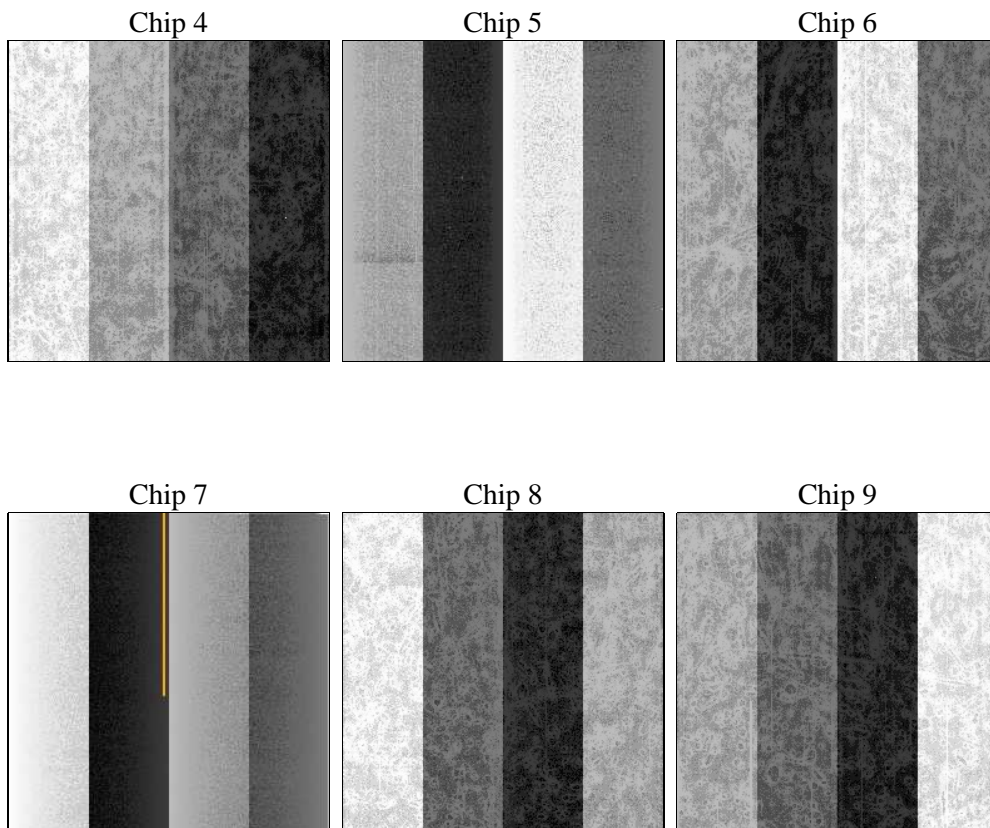
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	35000.000000	[s] Scheduled observation exposure time
ascdsver	8.4.4	Processing system revision	ontime	35068.799869418	Sum of GTIs [s]
caldbver	4.4.9	&#160	ontime4	35068.799869418	Sum of GTIs [s]
date	2012-04-30T16:41:29	Date and time of file creation	ontime5	35068.799869418	Sum of GTIs [s]
revision	2	Processing version of data	ontime6	35065.558899105	Sum of GTIs [s]
			ontime7	35068.799869418	Sum of GTIs [s]
			ontime8	35065.558889031	Sum of GTIs [s]
			ontime9	35039.631136715	Sum of GTIs [s]
			l1events	1456314	Number of level 1 events

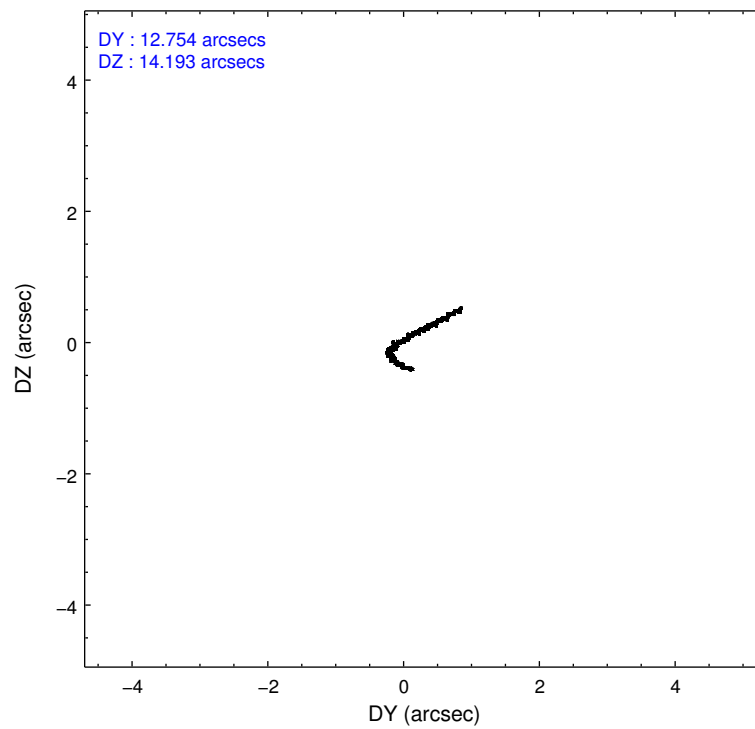
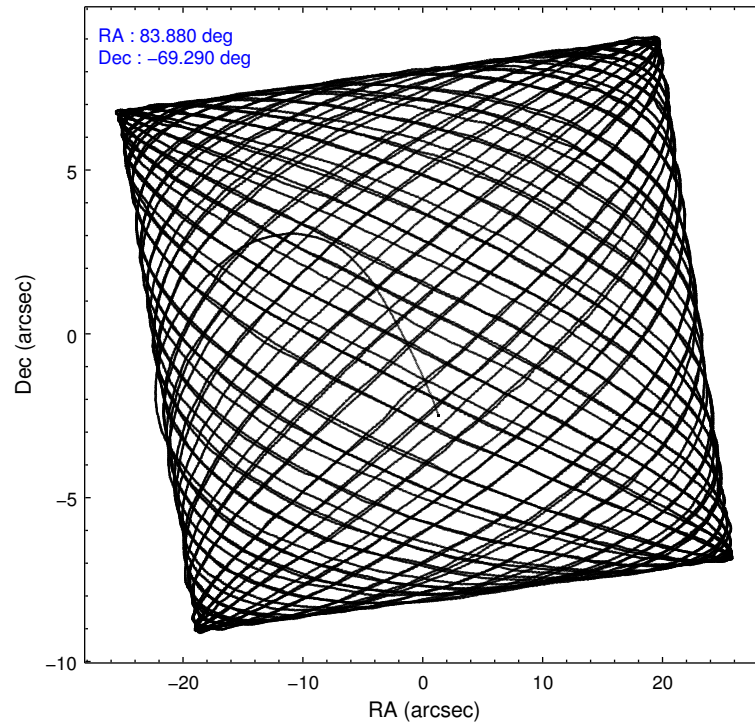
### 2.1.4 Events

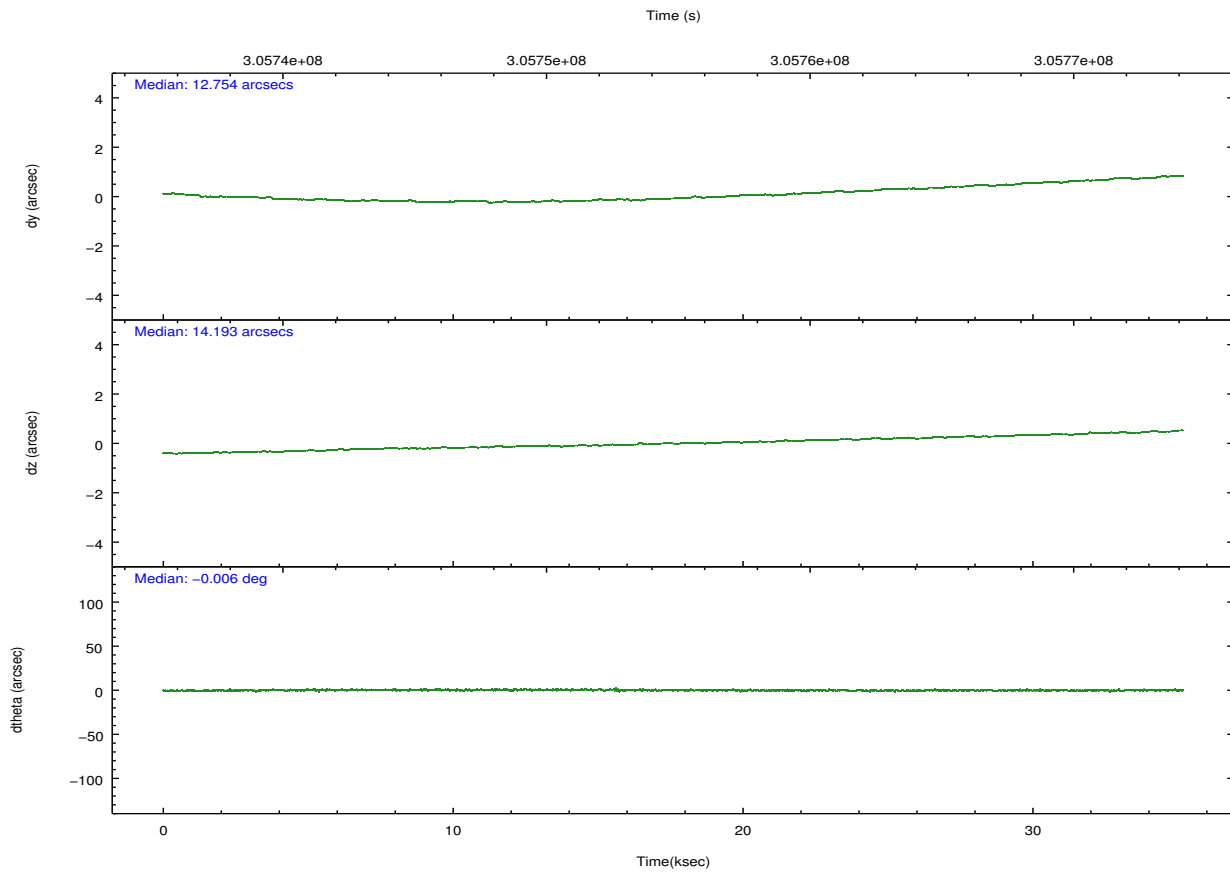
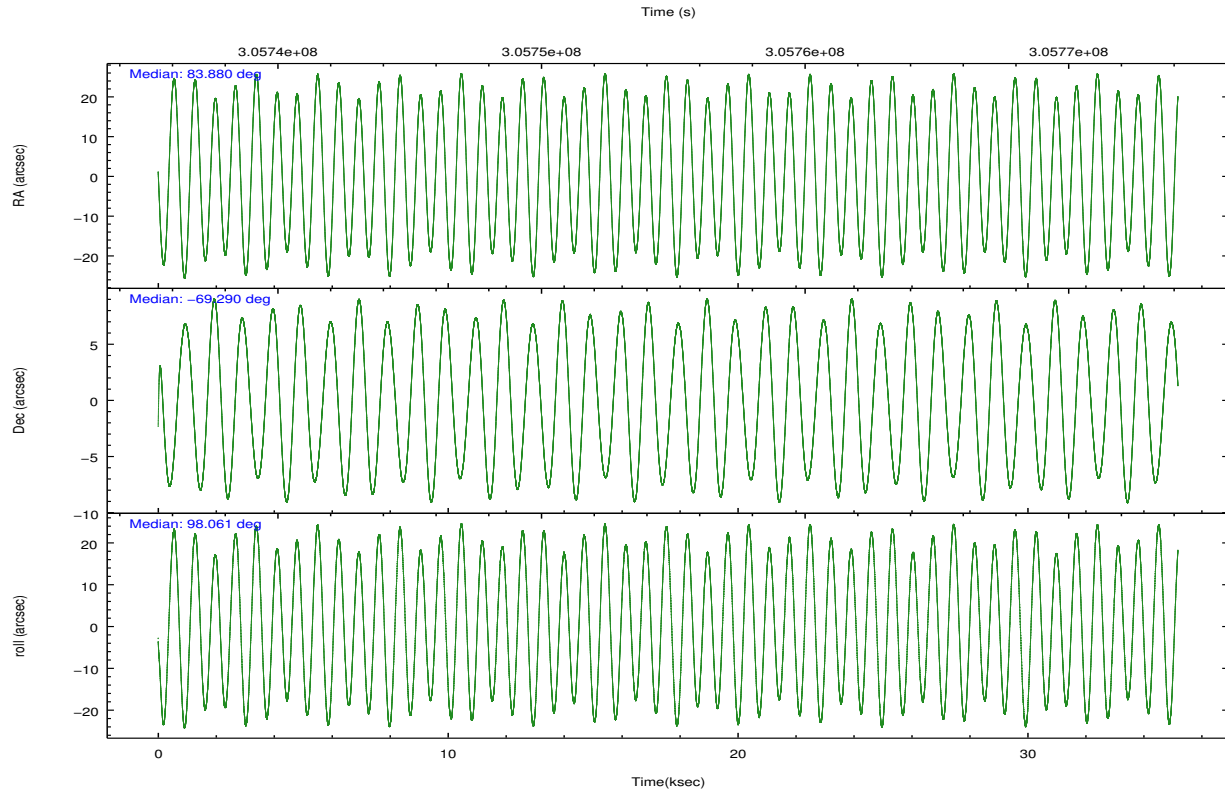
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9		ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	293654	234887	250061	152323	291255	234134	grade 0 events	16535	31546	13119	14071	22117	8525
rejected events	263434	89242	223232	59429	214266	212791		5%	13%	5%	9%	7%	3%
rejected %	89%	37%	89%	39%	73%	90%	grade 1 events	319	5196	132	370	279	146
								0%	2%	0%	0%	0%	0%
							grade 2 events	5913	43835	5220	22781	18099	4508
								2%	18%	2%	14%	6%	1%
							grade 3 events	2406	6801	2517	9890	8394	2405
								0%	2%	1%	6%	2%	1%
							grade 4 events	2299	6667	2430	9577	7696	2330
								0%	2%	0%	6%	2%	0%
							grade 5 events	4942	17678	4890	14769	8153	5484
								1%	7%	1%	9%	2%	2%
							grade 6 events	3069	56809	3547	36581	20690	3578
								1%	24%	1%	24%	7%	1%
							grade 7 events	258171	66355	218206	44284	205827	207158
								87%	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	83.927845	83.87926457130752	CCD I2 on	N	N
[deg] Pointing Dec	-69.311514	-69.2902097748875	CCD I3 on	N	N
[deg] Pointing Roll	97.957228	98.06841321777603	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	-182.1344861297048	Number of optional ACIS chips dropped	0	0
[mm] SIM translation stage offset	-8	-7.998036453302973	On-chip summing requested	N	N
[s] Observation start time (MET)	305737390.184000	305736312.94259	Subarray requested	NONE	NONE
Observation start date	2007-09-09T15:02:05	2007-09-09T14:45:12	Alternating exposures requested	N	N
[s] Observation end time (MET)	305772390.184000	305773607.56938	[s] Primary exposure time	0.000000	3.2
Observation end date	2007-09-10T00:45:25	2007-09-10T01:06:47			
Read mode	TIMED	TIMED			

## 2.3 Aspect



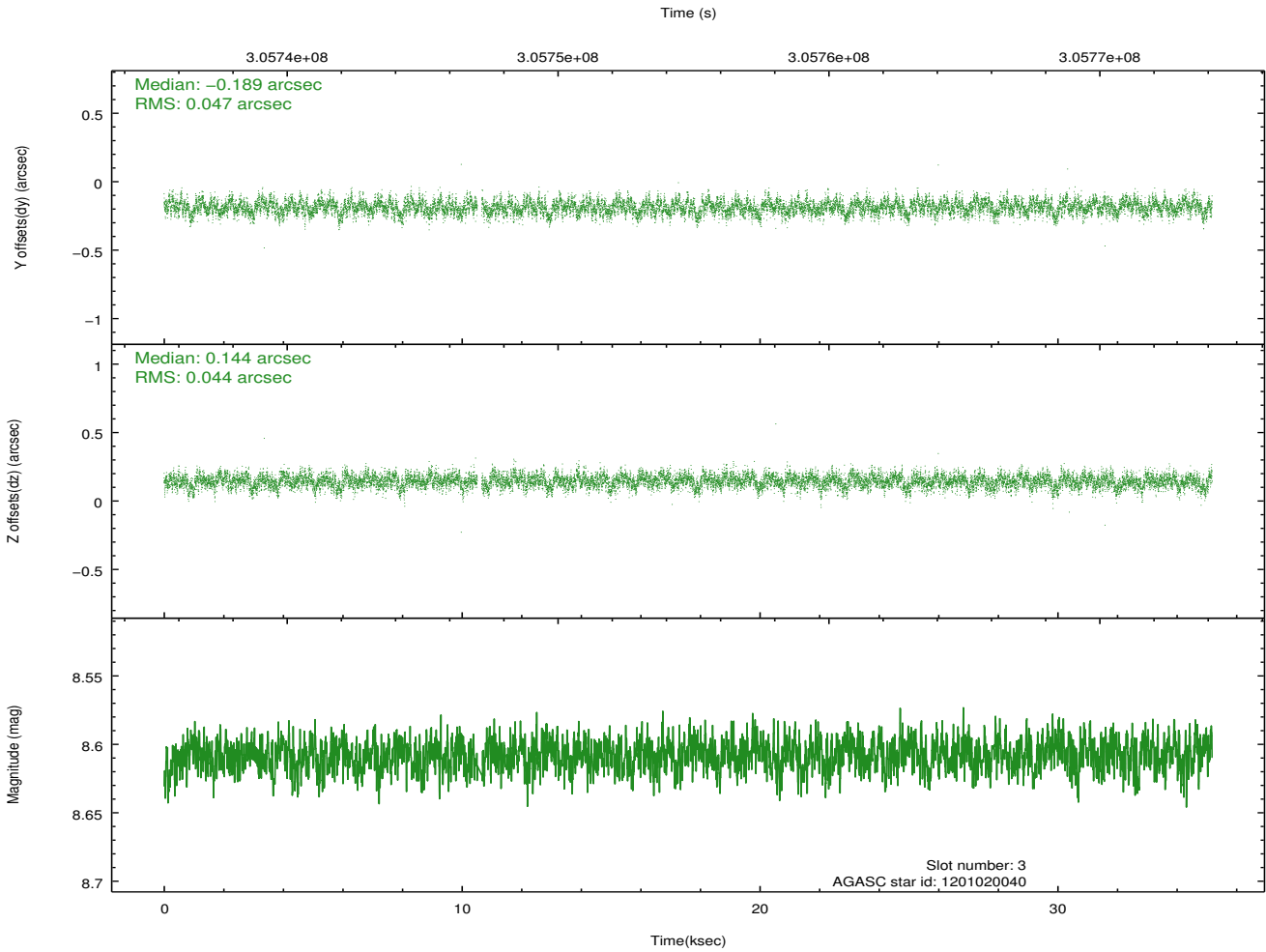
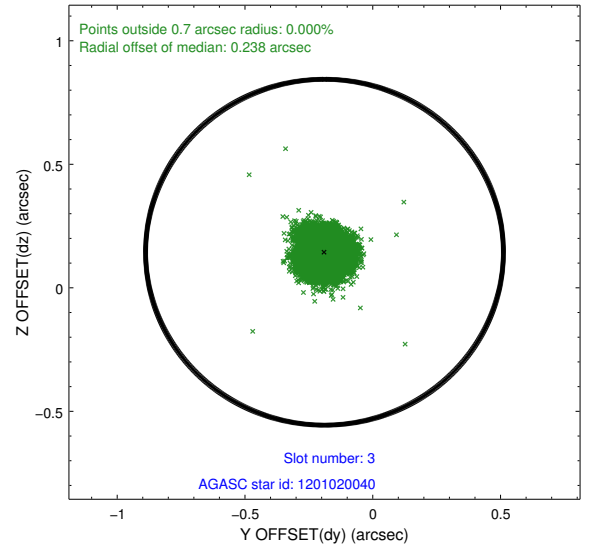
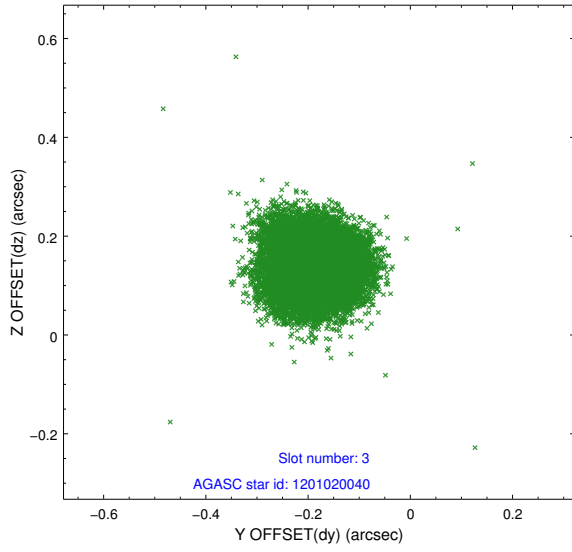


### Slot Statistics

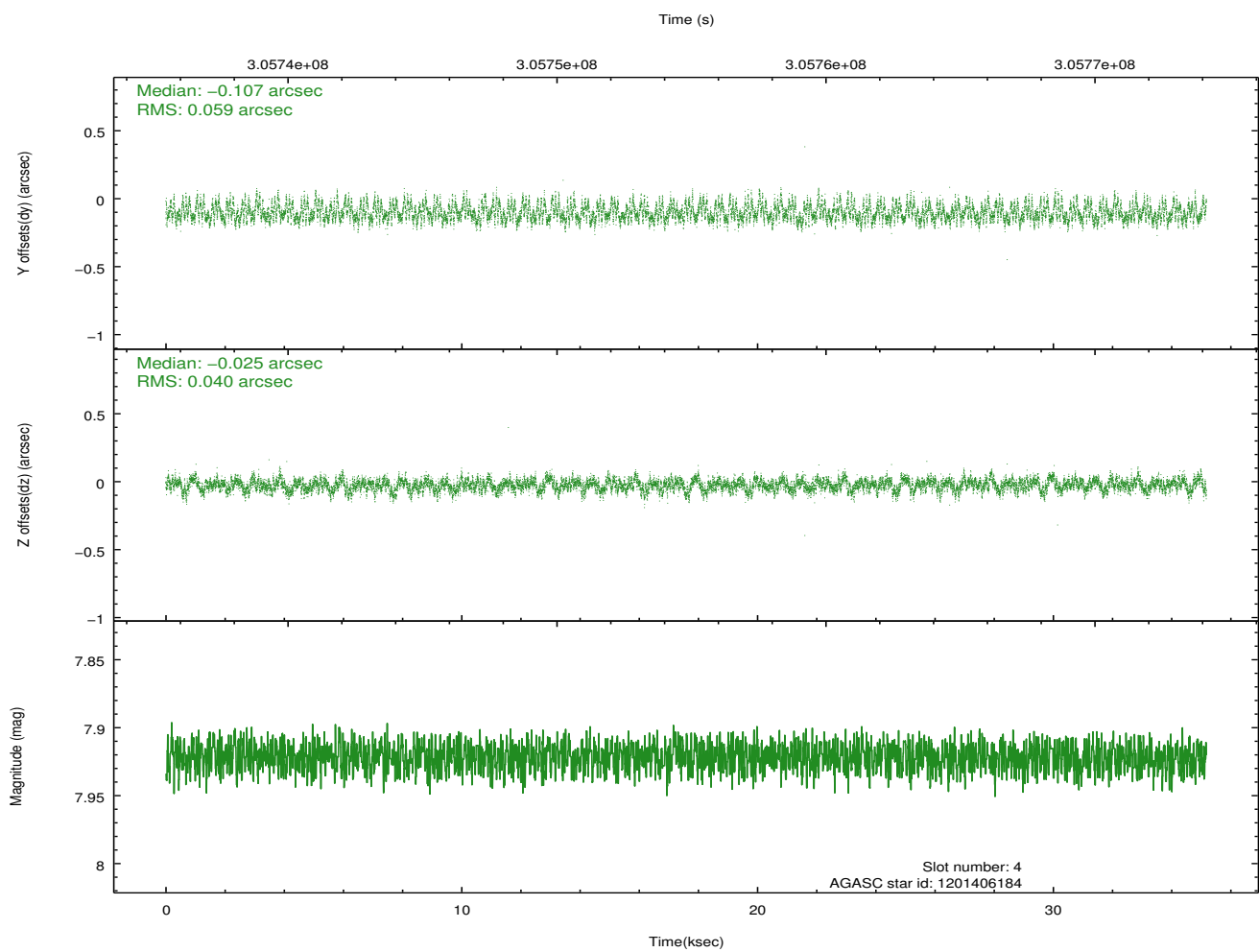
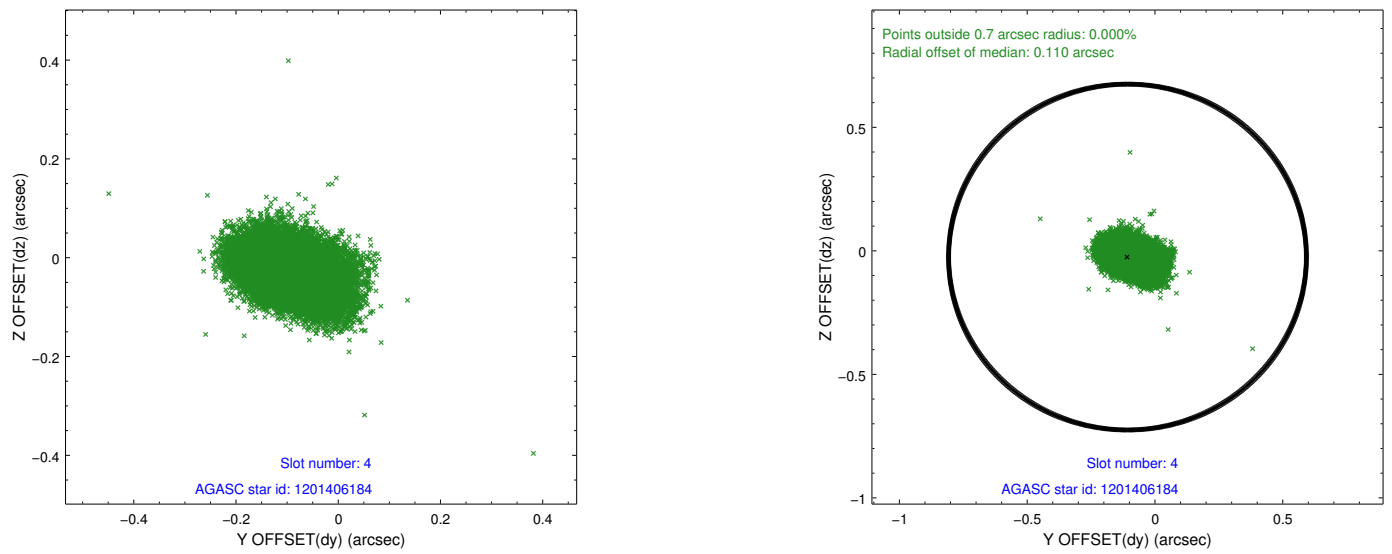
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.17	8579	0.064	0.135	0.018	0.031	0.000000	0.000000	930.92	-1895.82
1	FID	ACIS-S-2	7.08	8581	-0.151	-0.101	0.009	0.015	0.000000	0.000000	-765.18	-1900.68
2	FID	ACIS-S-6	7.39	8581	0.066	-0.031	0.013	0.023	0.000000	0.000000	396.53	645.28
3	GUIDE	1201020040	8.61	17082	-0.189	0.144	0.068	0.111	85.379163	-68.879396	1258.21	-2076.04
4	GUIDE	1201406184	7.92	17156	-0.107	-0.025	0.075	0.125	82.503234	-69.975517	-2144.75	2072.70
5	GUIDE	1201540776	9.57	17134	0.169	0.075	0.101	0.164	85.107945	-69.858480	-2166.31	-1174.04
6	GUIDE	1201410616	9.33	17147	0.185	-0.230	0.097	0.153	82.516808	-69.784406	-1463.25	1976.59
7	GUIDE	1201019672	6.85	17159	-0.064	0.042	0.055	0.090	85.312192	-68.770187	1660.33	-2053.43

## 2.4 Star Slots

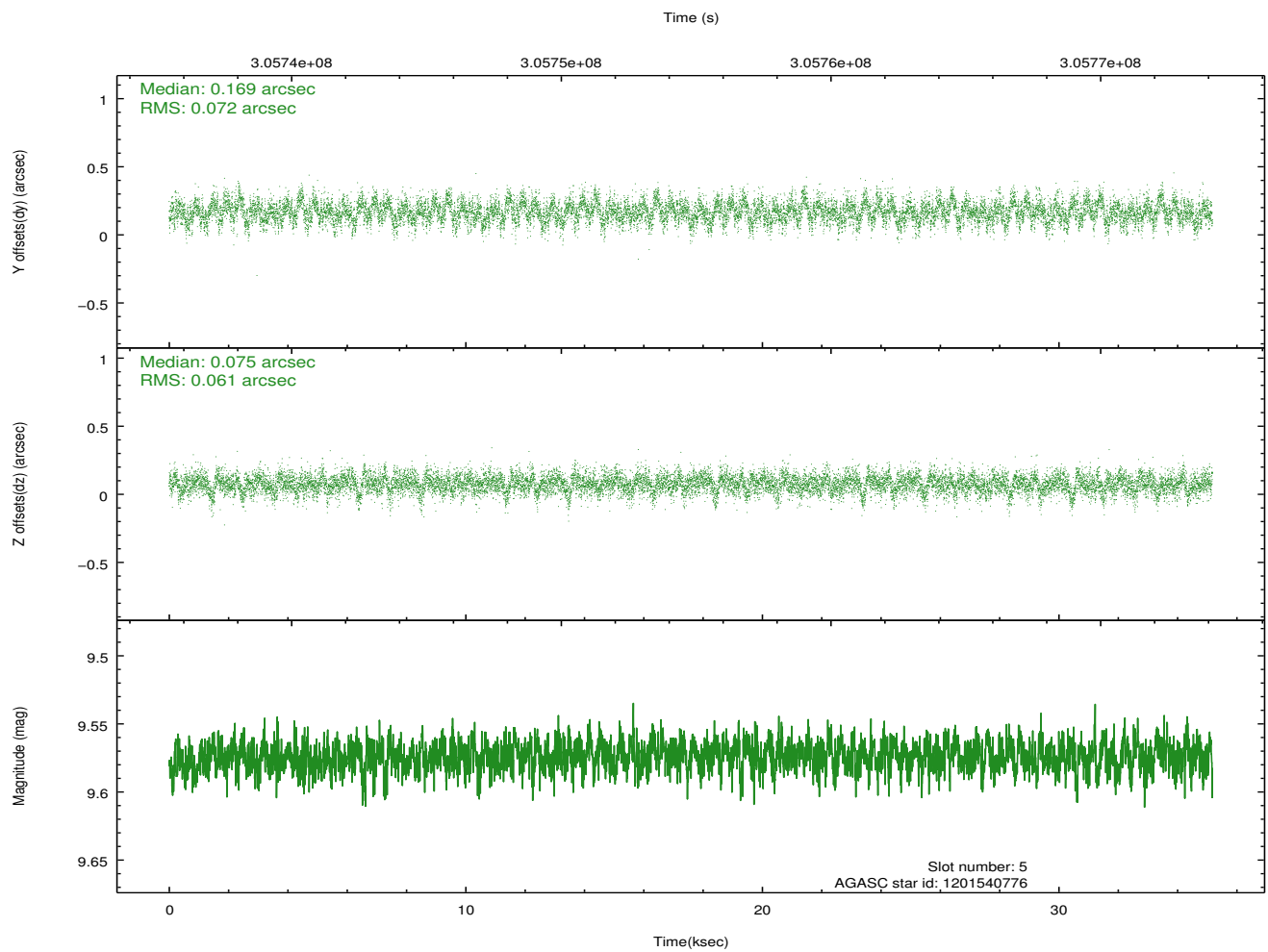
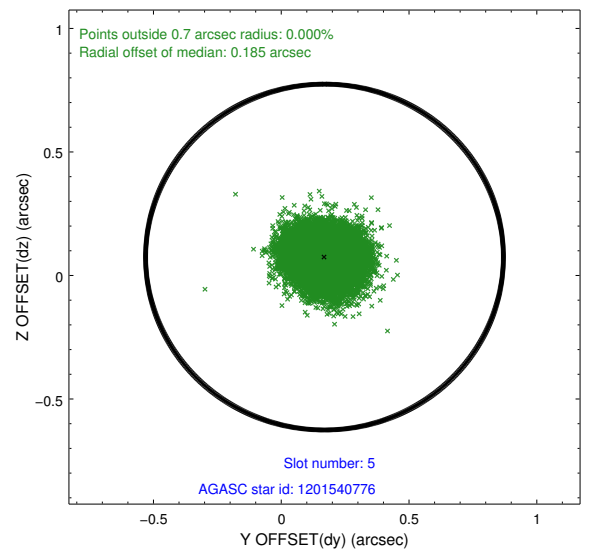
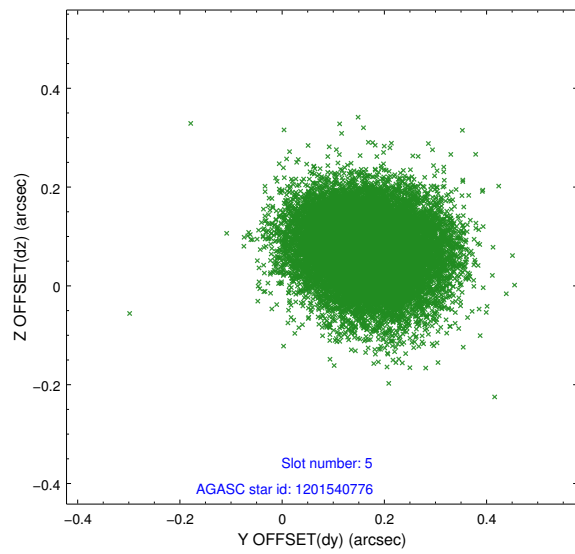
### 2.4.1 Slot 3



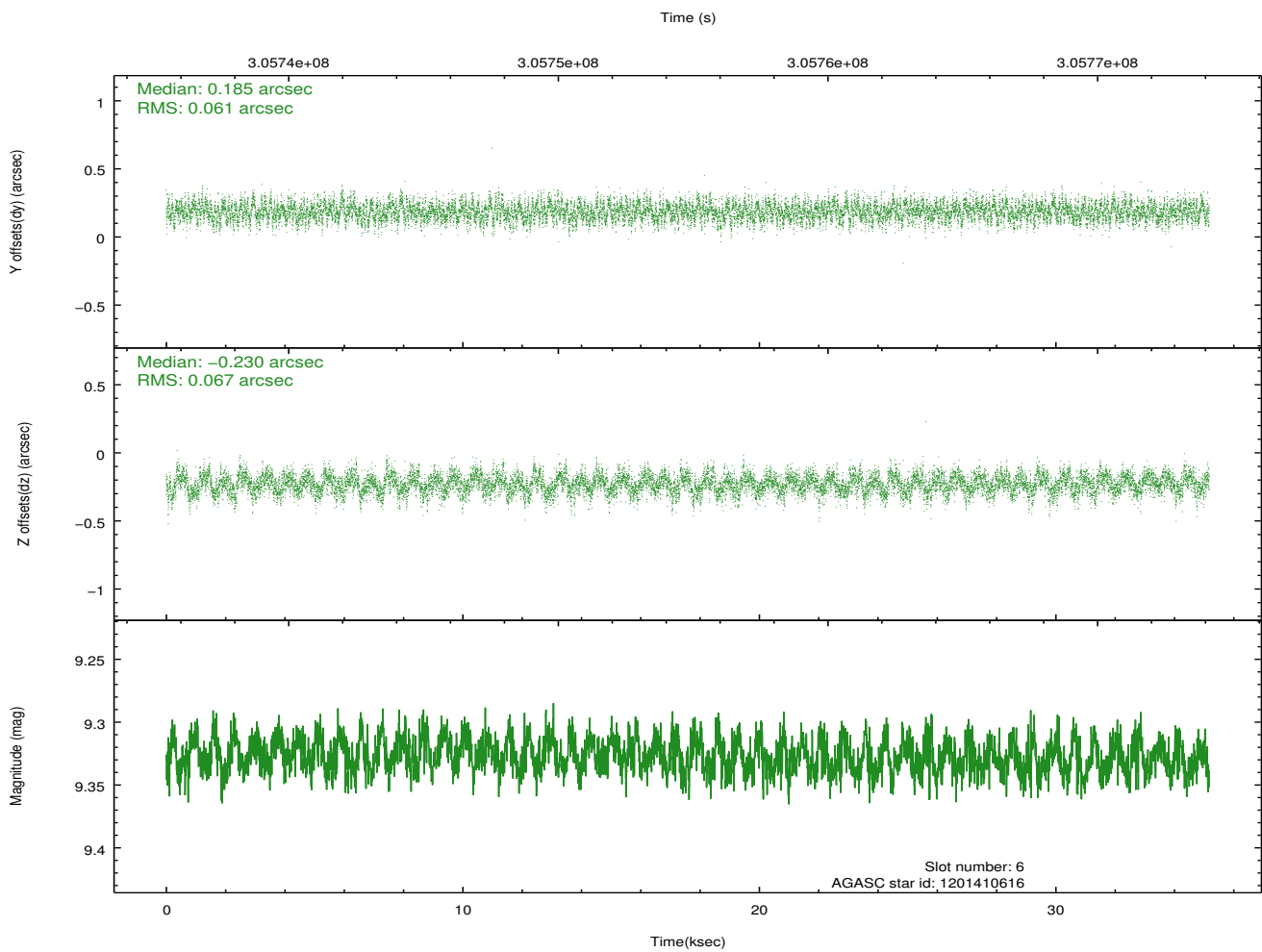
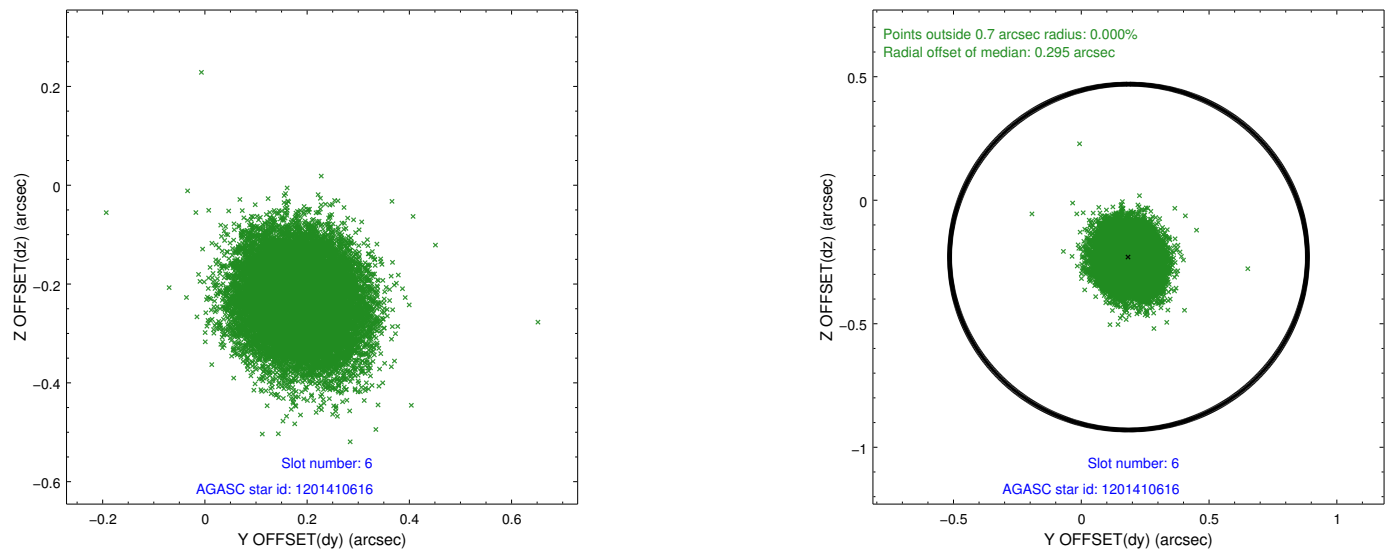
## 2.4.2 Slot 4



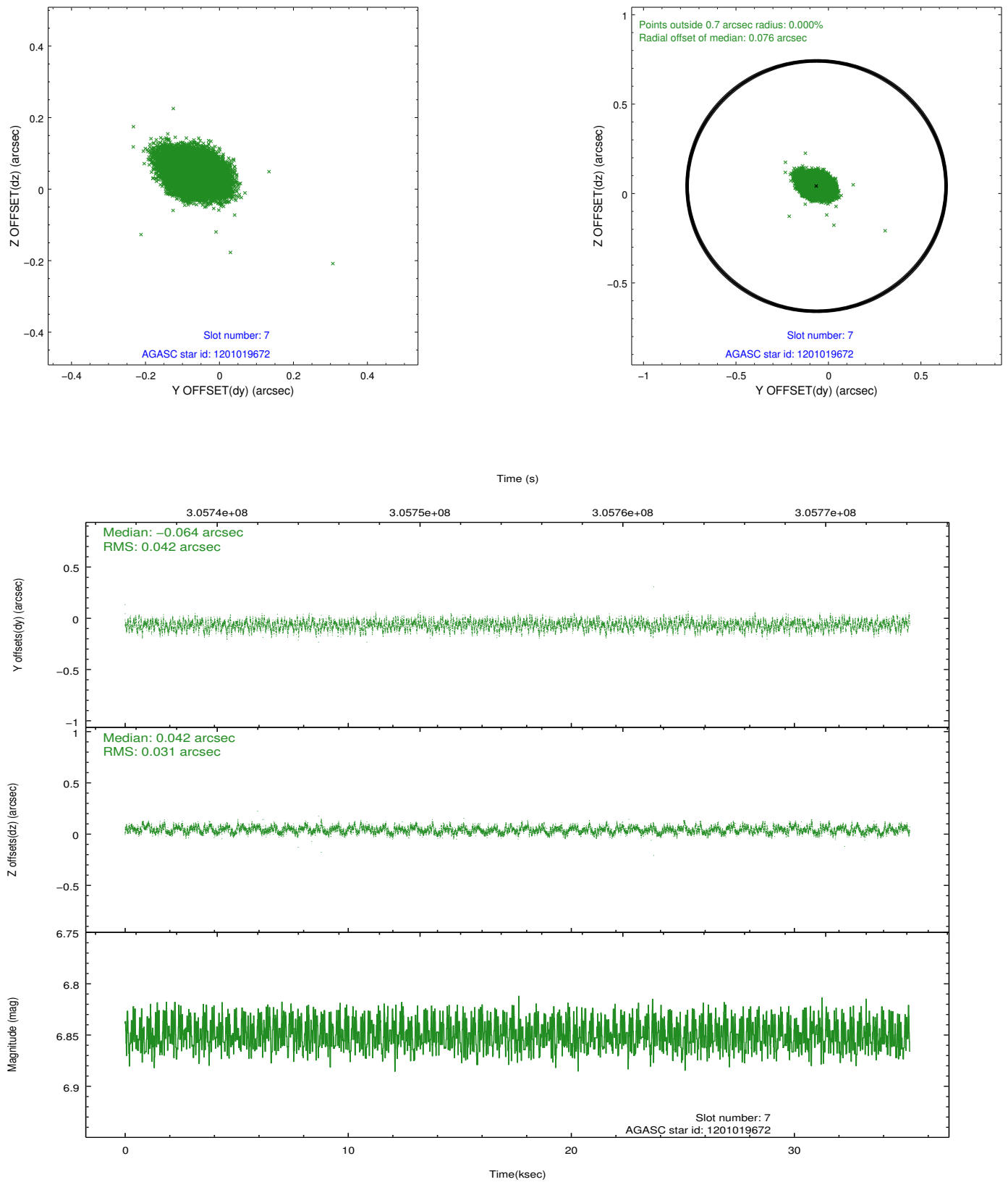
### 2.4.3 Slot 5



## 2.4.4 Slot 6

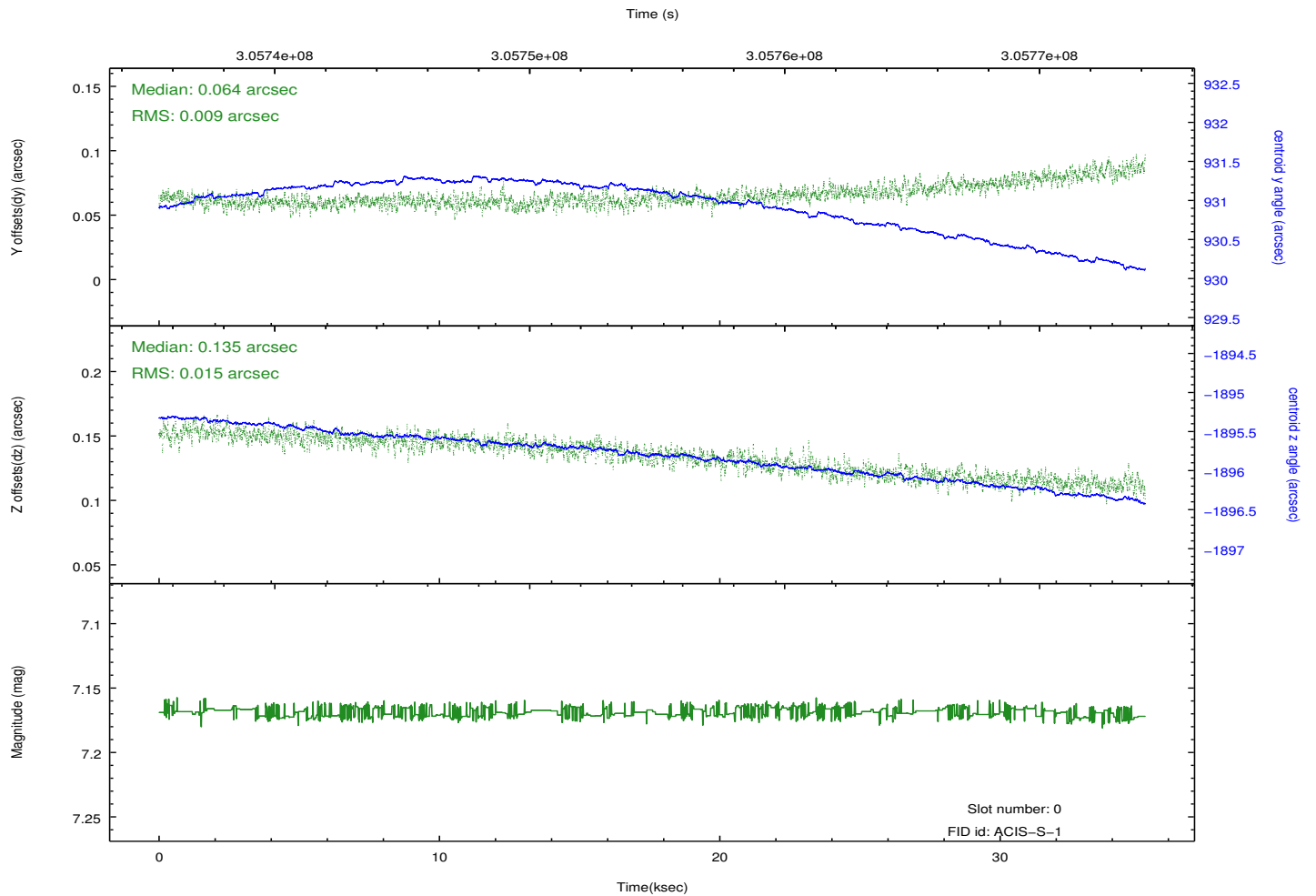
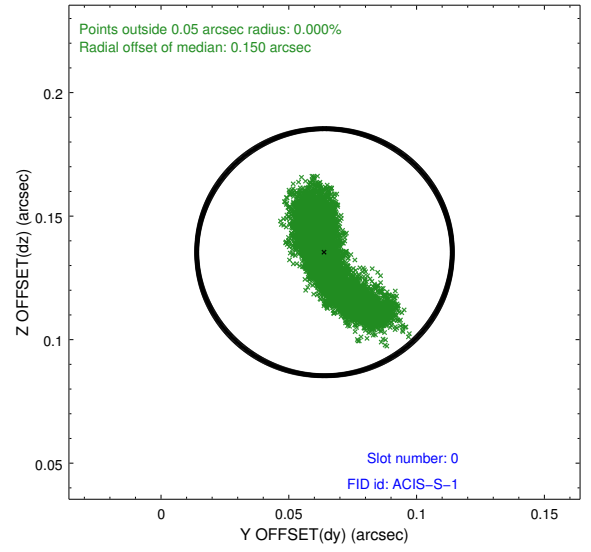
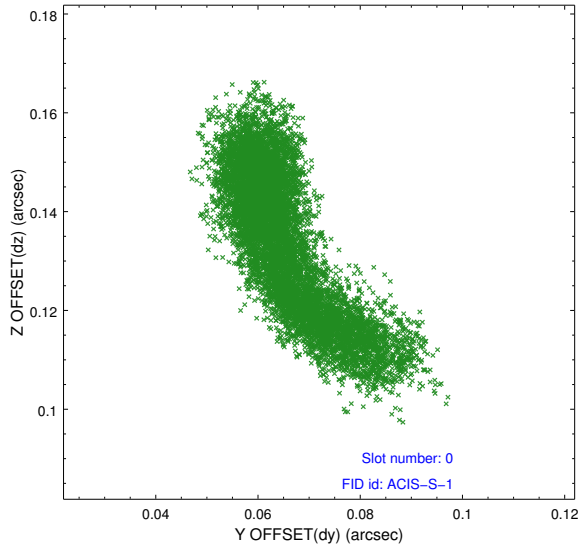


## 2.4.5 Slot 7

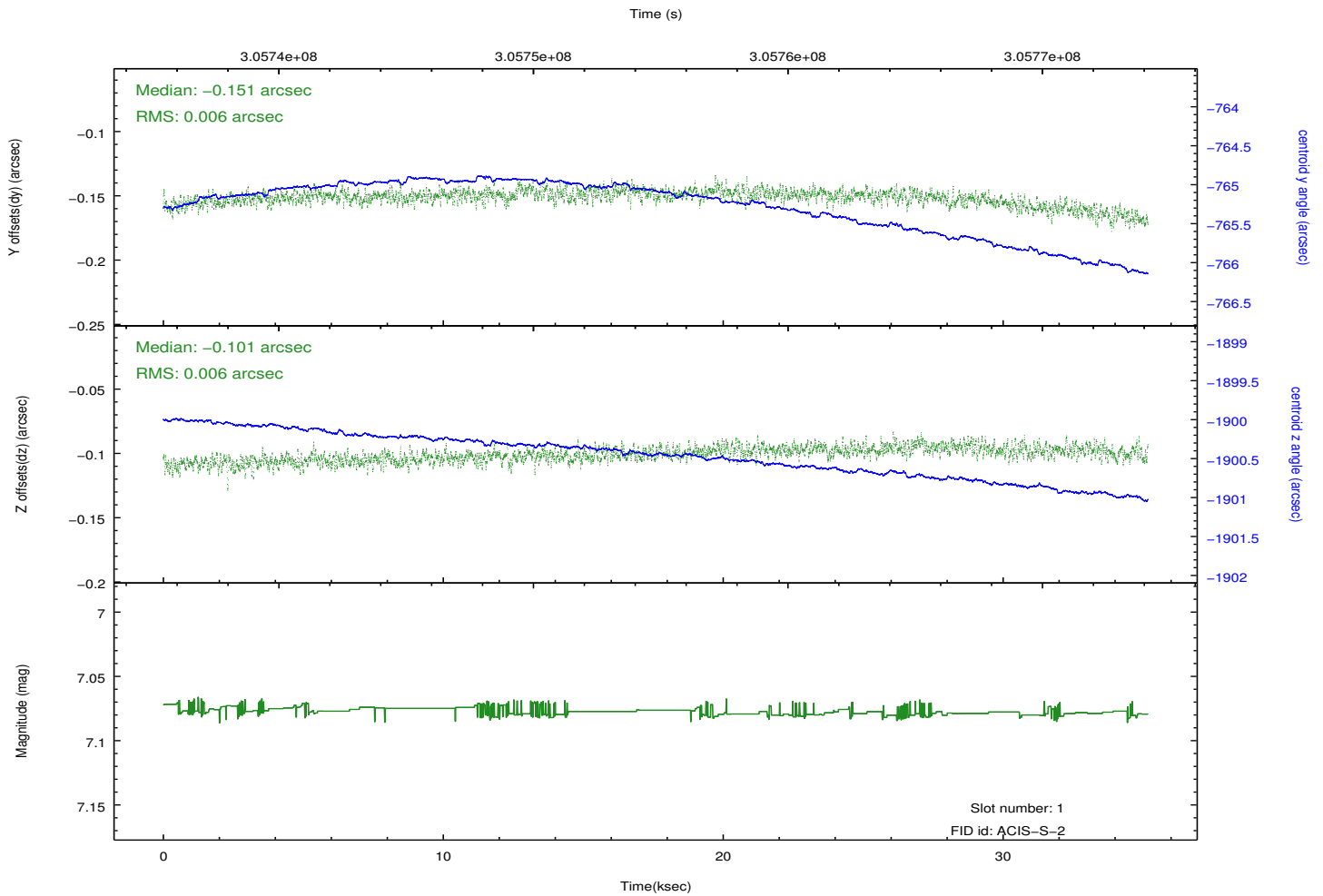
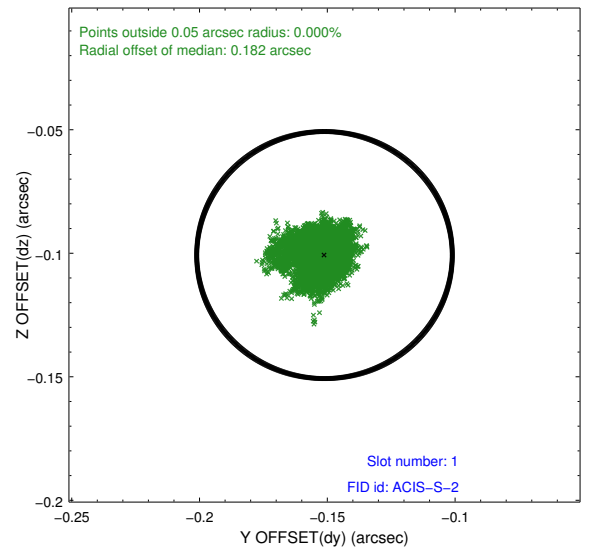
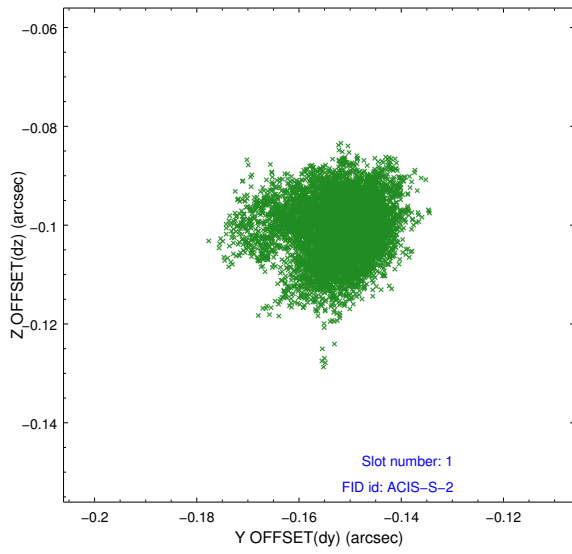


## 2.5 FID Slots

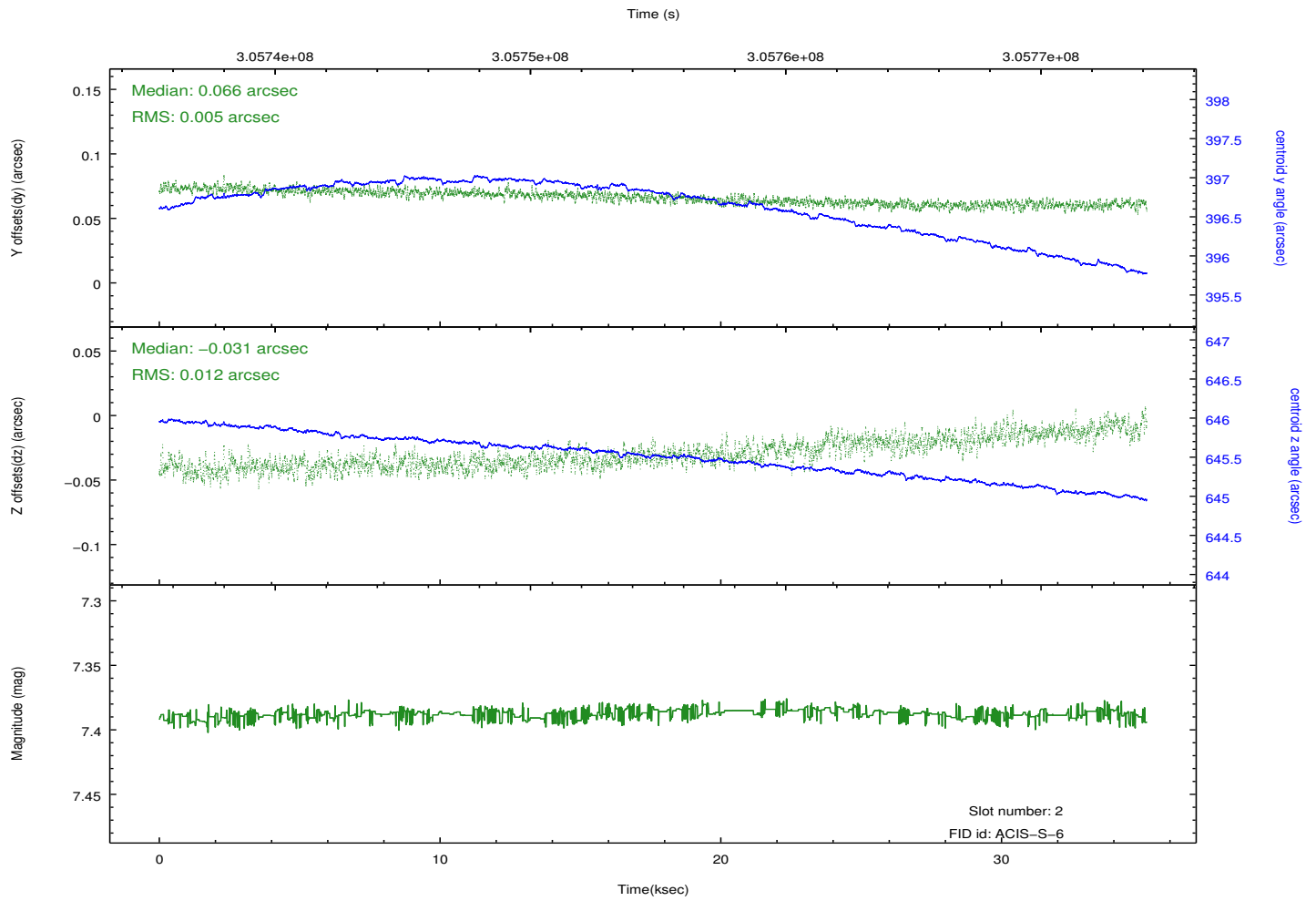
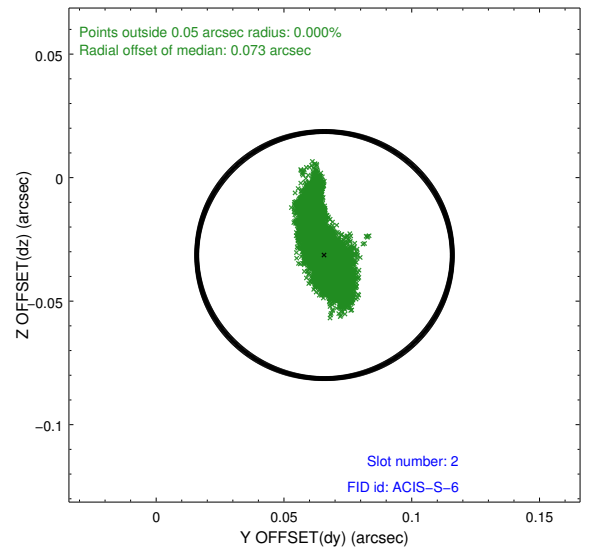
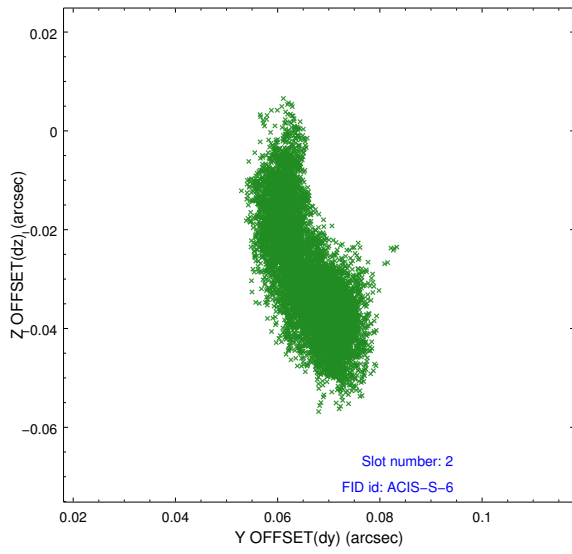
### 2.5.1 Slot 0



## 2.5.2 Slot 1



### 2.5.3 Slot 2

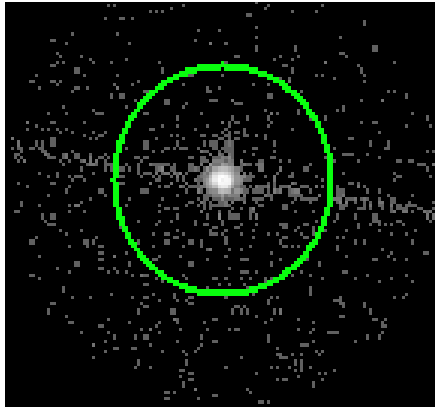


# 3 Gratings

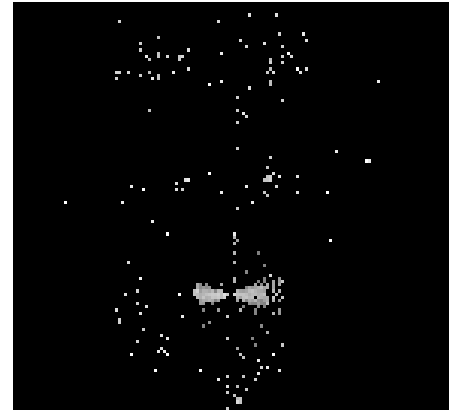
## 3.1 LETG Arm



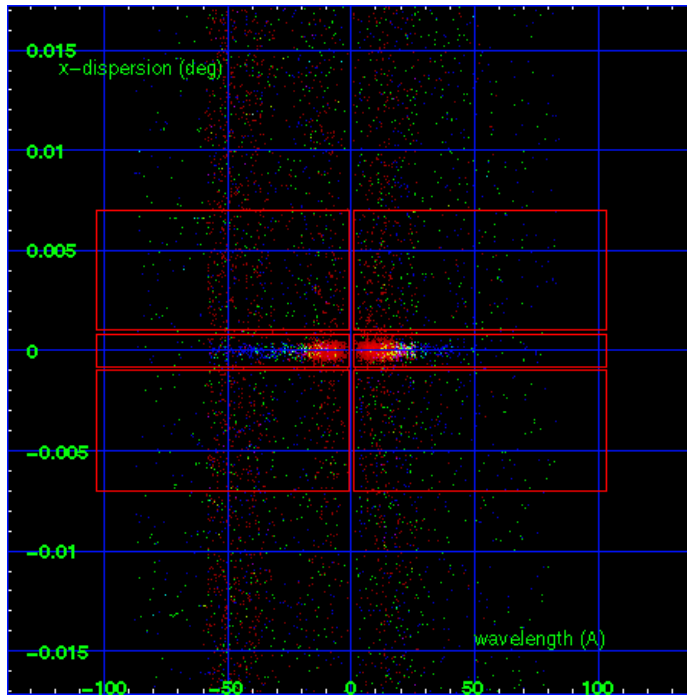
LETG Order Sort 123



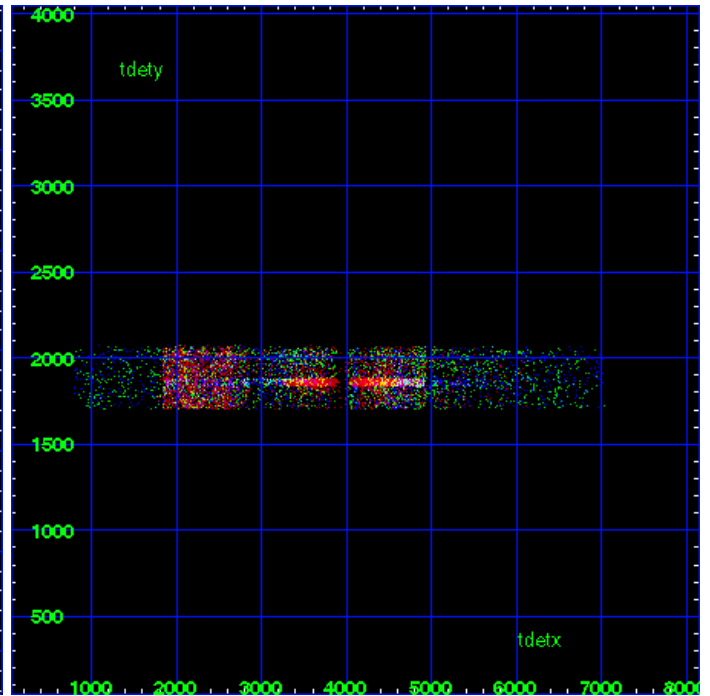
LETG Zero Order



LETG Order Sort ALL

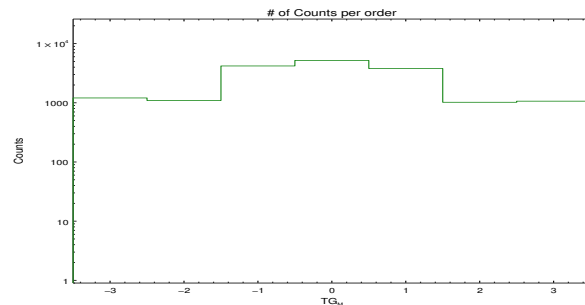


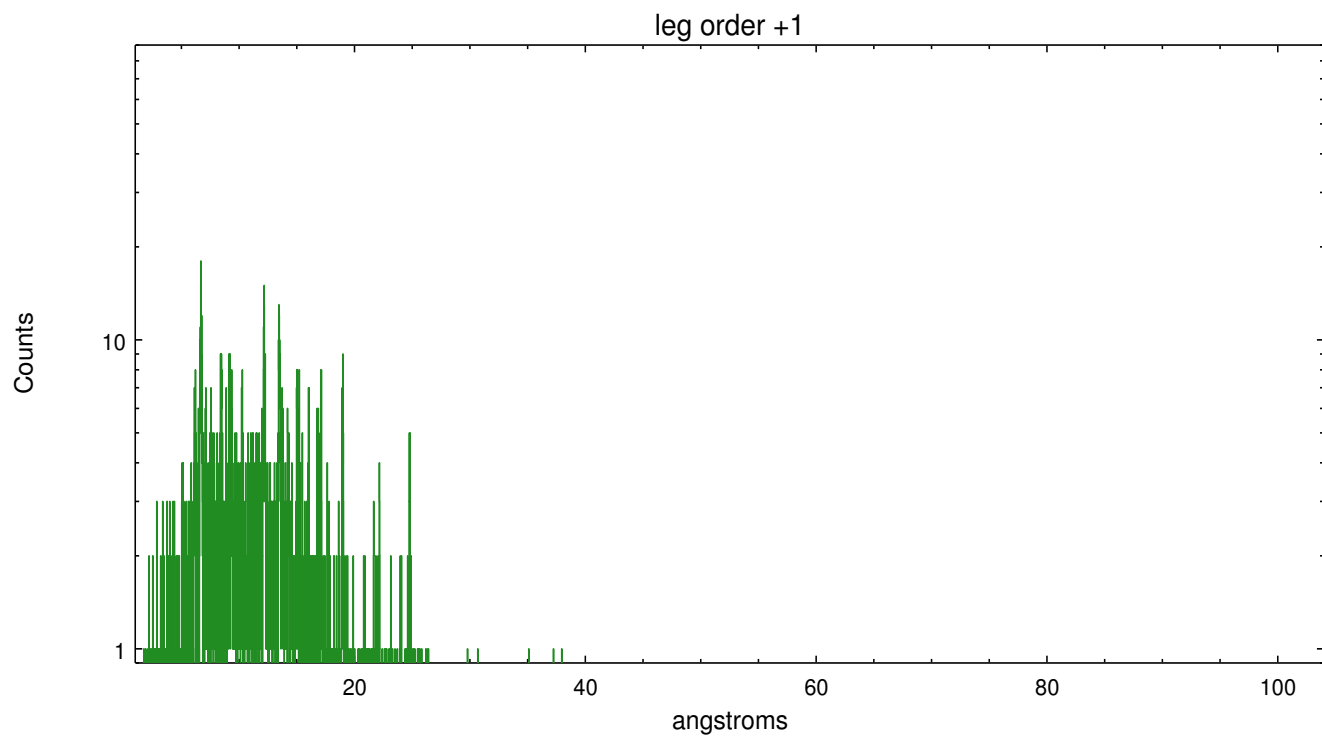
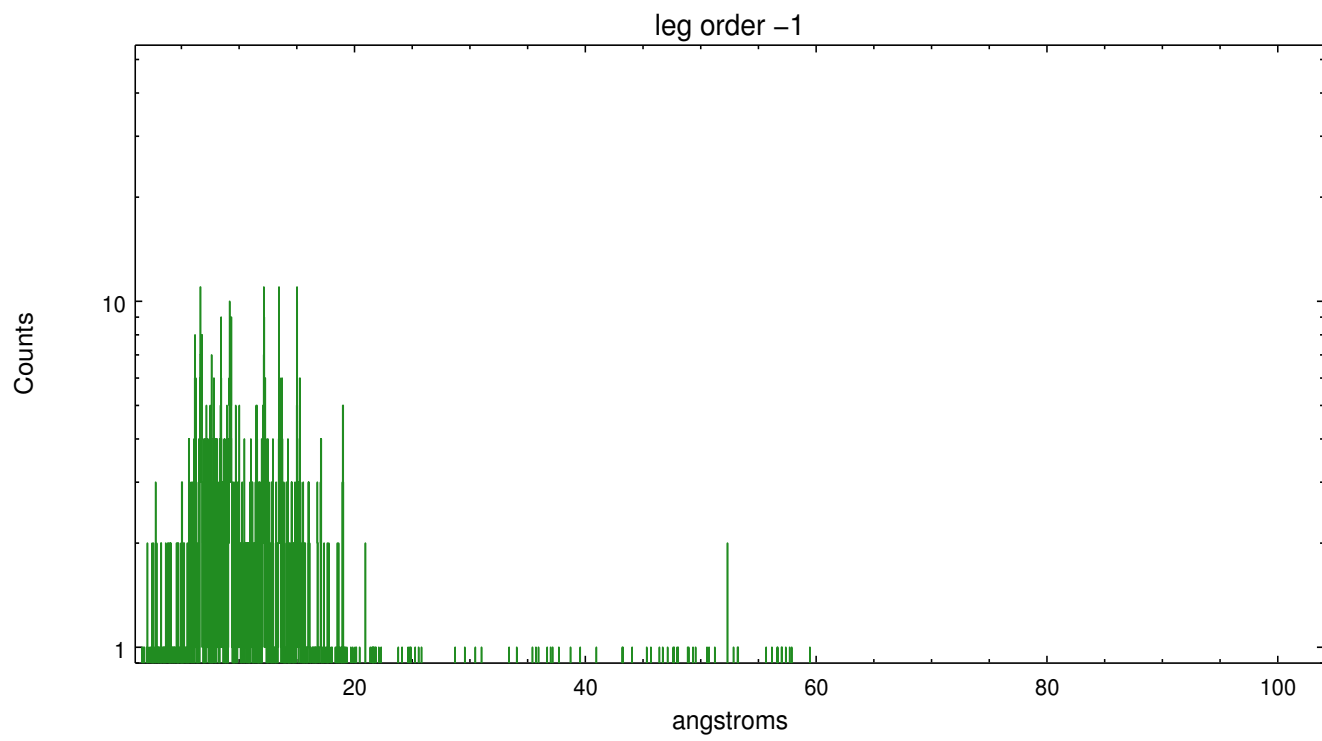
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1208	1094	4195	5204	3795	1020	1065





# 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	35.0687998

## 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.