

# V&V Reference Report

## L2 ASCDS Version : 7.6.10

Observation 1798 - L2 Version 001  
Chandra X-Ray Center

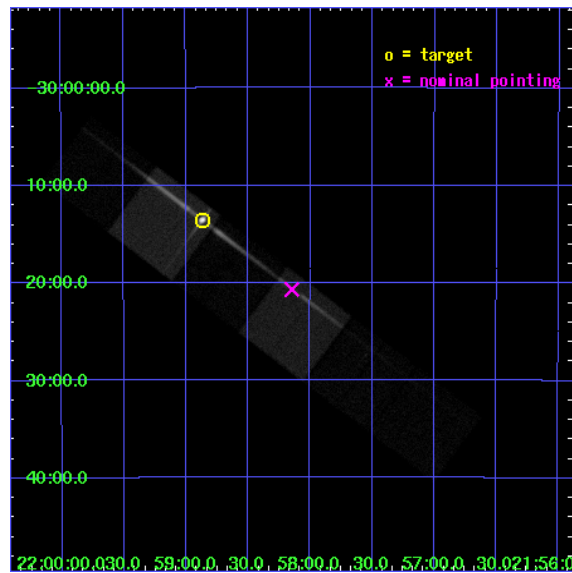
L2 Processing Date : Jun 2 2007

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# 1 Front

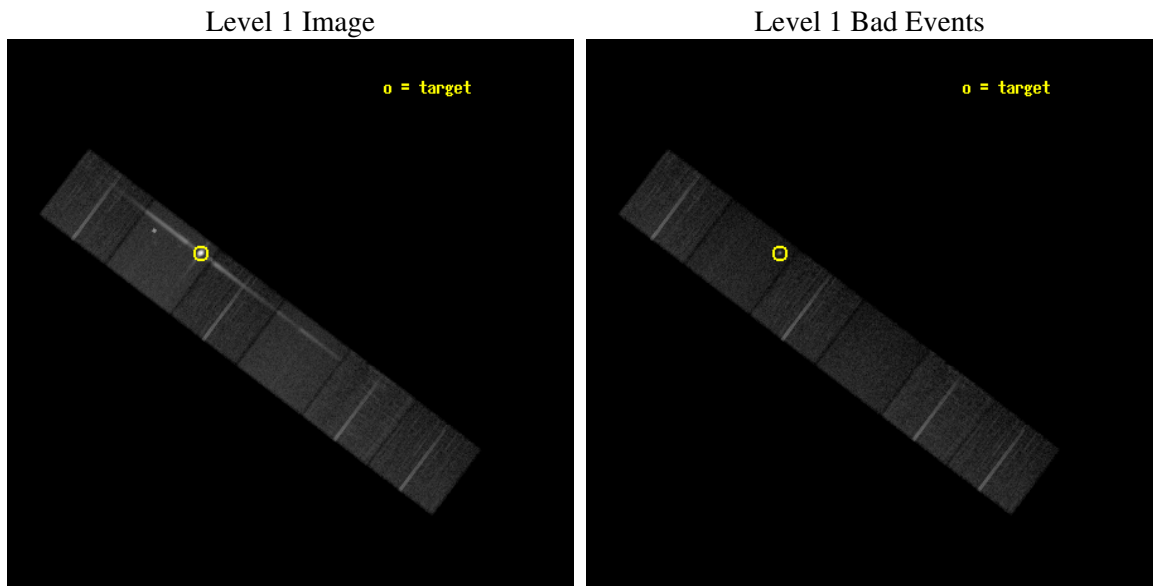
seq_num	390016
obs_id	1798
title	GRATINGS CALIBRATION OBSERVATIONS OF PKS2155-304
observer	Dr. CXC Calibration
object	PKS2155-304
dtcycle	0
cycle	P
ra_targ	329.716667
dec_targ	-30.225556
ra_nom	329.53680874637
dec_nom	-30.344671886307
roll_nom	37.077657118832
revision	3
ontime	19756.759048164
livetime	19506.587069004
ontime4	19756.759048164
ontime5	19756.759048164
ontime6	19756.759048164
ontime7	19760.000018403
ontime8	19760.000018403
ontime9	19760.000018403
l2events	278303



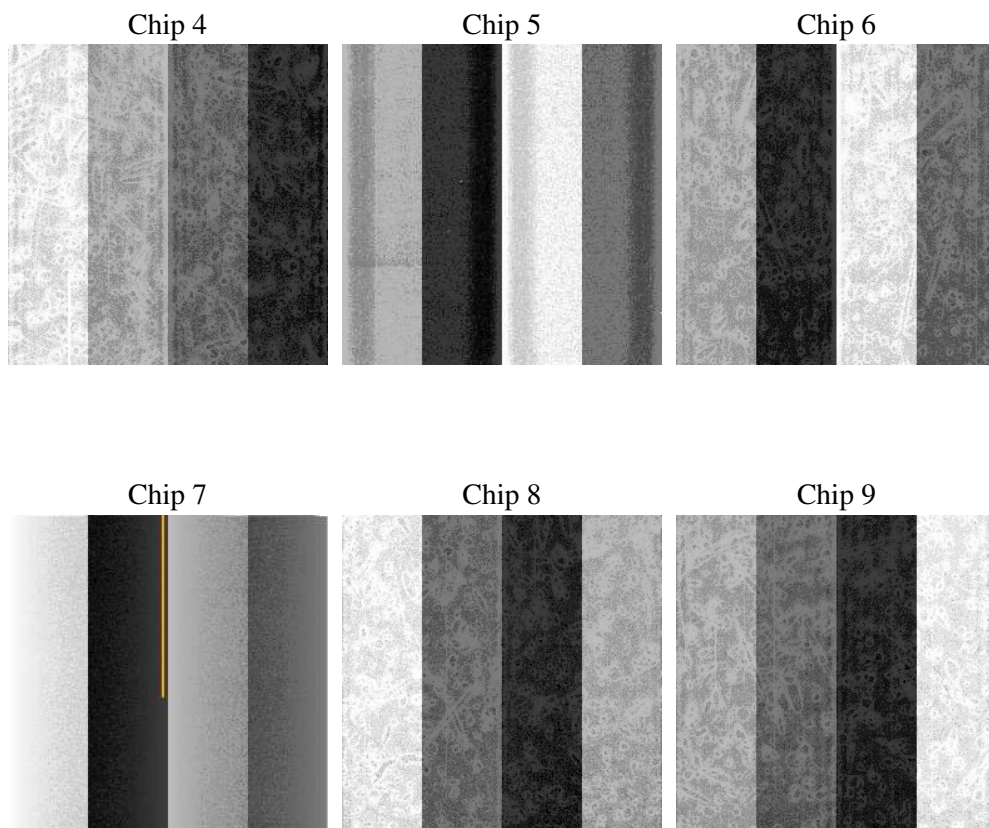
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

obi_num	0
ascdsver	7.6.10
caldsver	3.4.0
date	2007-06-02T06:54:53
revision	3

sched_exp_time	20000.000000
ontime	19756.759048164
ontime4	19756.759048164
ontime5	19756.759048164
ontime6	19756.759048164
ontime7	19760.000018403
ontime8	19760.000018403
ontime9	19760.000018403
l1events	893812

### 2.1.4 Events

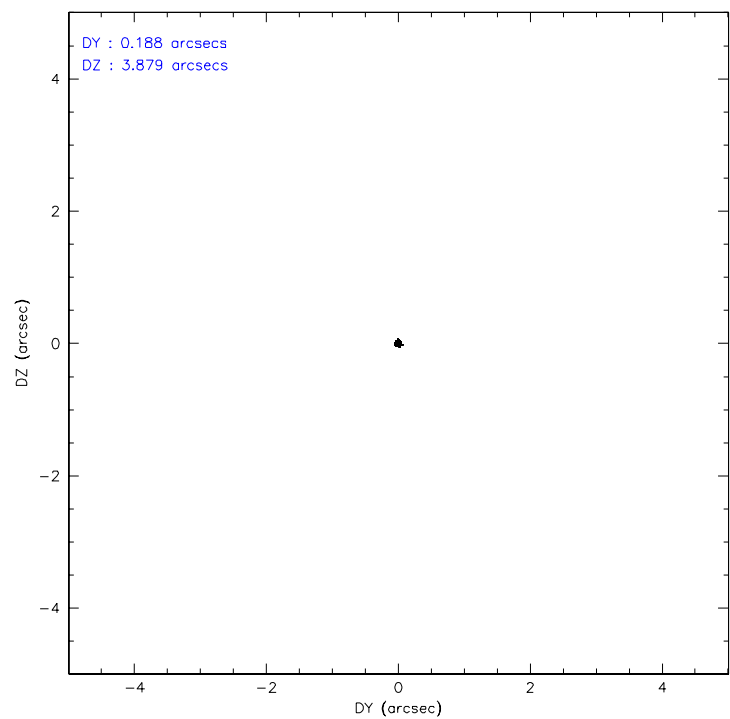
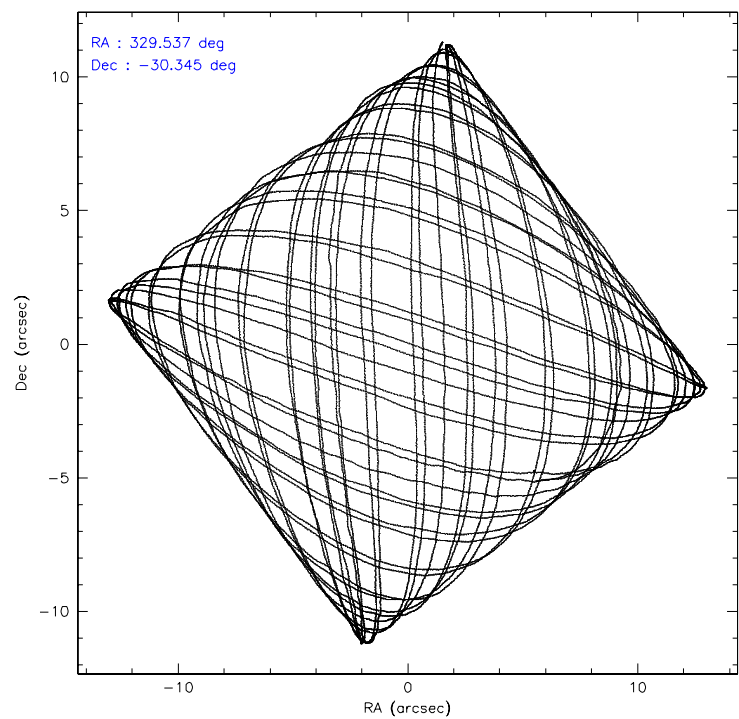
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	125616	240553	128892	143963	141673	113115
rejected events	110019	82023	99974	80039	115056	100348
rejected %	87%	34%	77%	55%	81%	88%

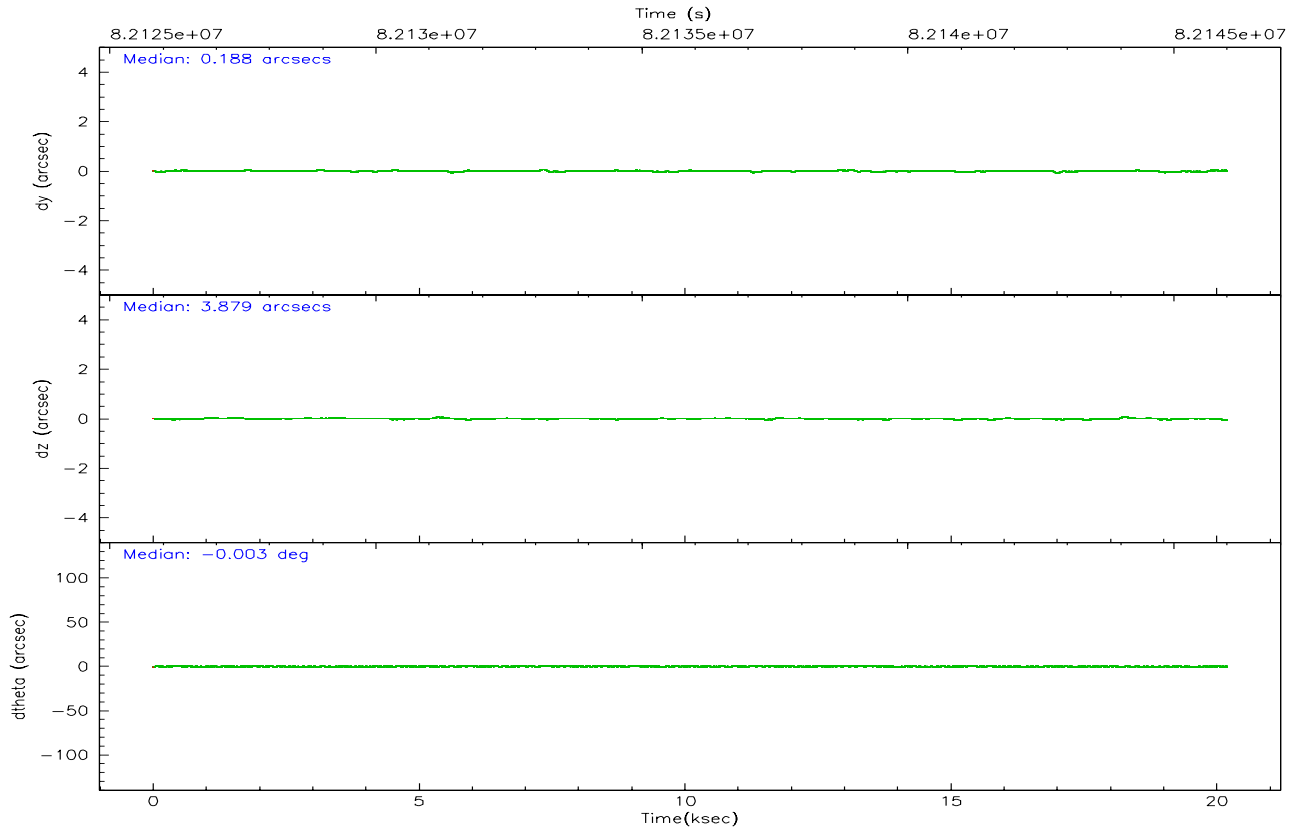
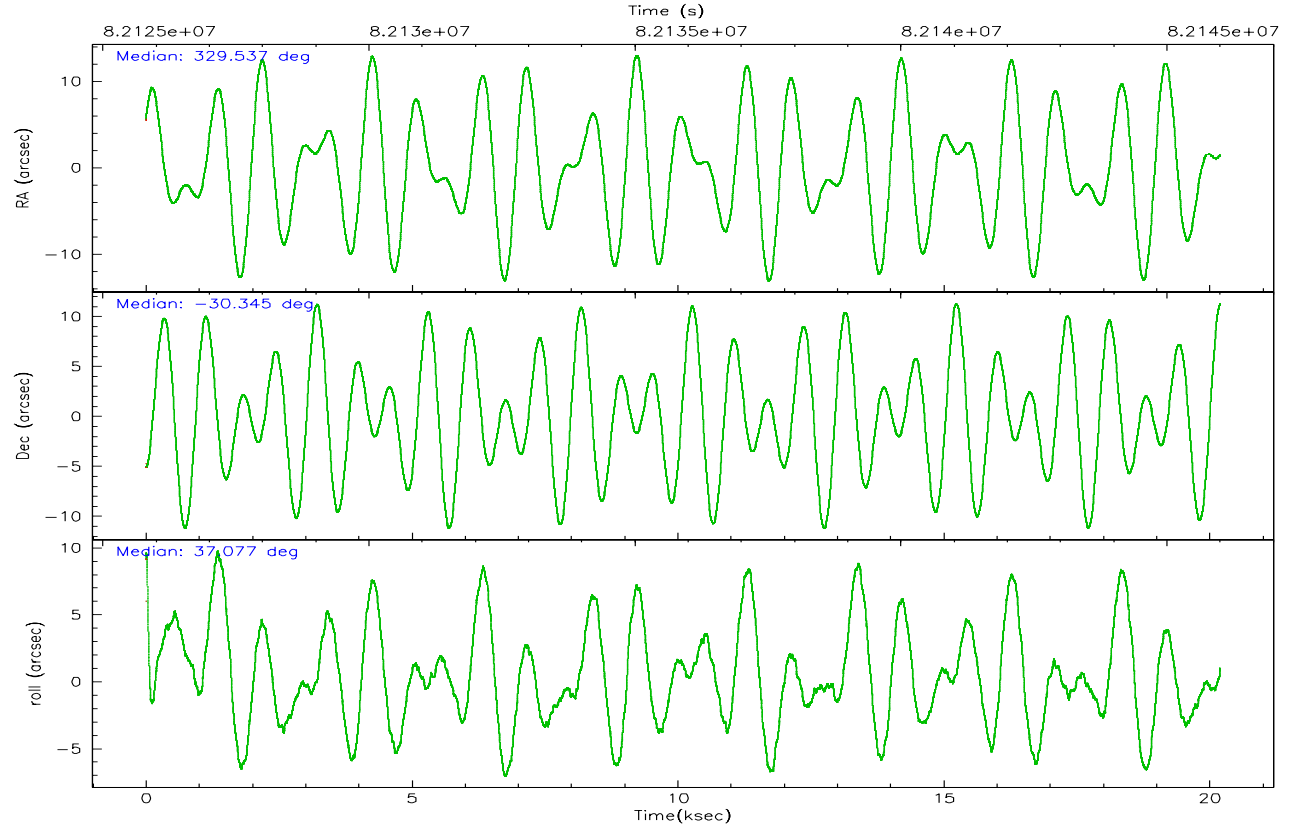
	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	7644	51789	19100	10174	8558	5153
	6%	21%	14%	7%	6%	4%
grade 1 events	53	578	90	130	87	44
	0%	0%	0%	0%	0%	0%
grade 2 events	3174	41671	3897	12347	5534	2623
	2%	17%	3%	8%	3%	2%
grade 3 events	1319	10851	1661	5652	2860	1267
	1%	4%	1%	3%	2%	1%
grade 4 events	1224	11138	1702	5719	2680	1261
	0%	4%	1%	3%	1%	1%
grade 5 events	3804	12347	4537	13045	5689	4660
	3%	5%	3%	9%	4%	4%
grade 6 events	2237	43139	2567	30061	6986	2468
	1%	17%	1%	20%	4%	2%
grade 7 events	106161	69040	95338	66835	109279	95639
	84%	28%	73%	46%	77%	84%

## 2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	6	6
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
Pointing RA	329.524598	329.536808746366	Subarray requested	NONE	NONE
Pointing Dec	-30.369961	-30.34467188630716	Alternating exposures requested	N	N
Pointing Roll	36.914848	37.07765711883221	Primary exposure time	0.000000	3.2
SIM focus pos (mm)	-0.684267	-0.6828225247311905			
SIM defocus (mm)	0	0.001444936568705701			
SIM translation stage pos (mm)	-182.131972	-182.1344861297048			
SIM translation stage offset (mm)	-8.000551	-7.998036453302973			
Observation start time	82126003.184000	82125626.800612			
Observation start date	2000-08-08T12:45:39	2000-08-08T12:40:26			
Observation end time	82146003.184000	82147600.751431			
Observation end date	2000-08-08T18:18:59	2000-08-08T18:46:40			
Read mode	TIMED	TIMED			

## 2.3 Aspect





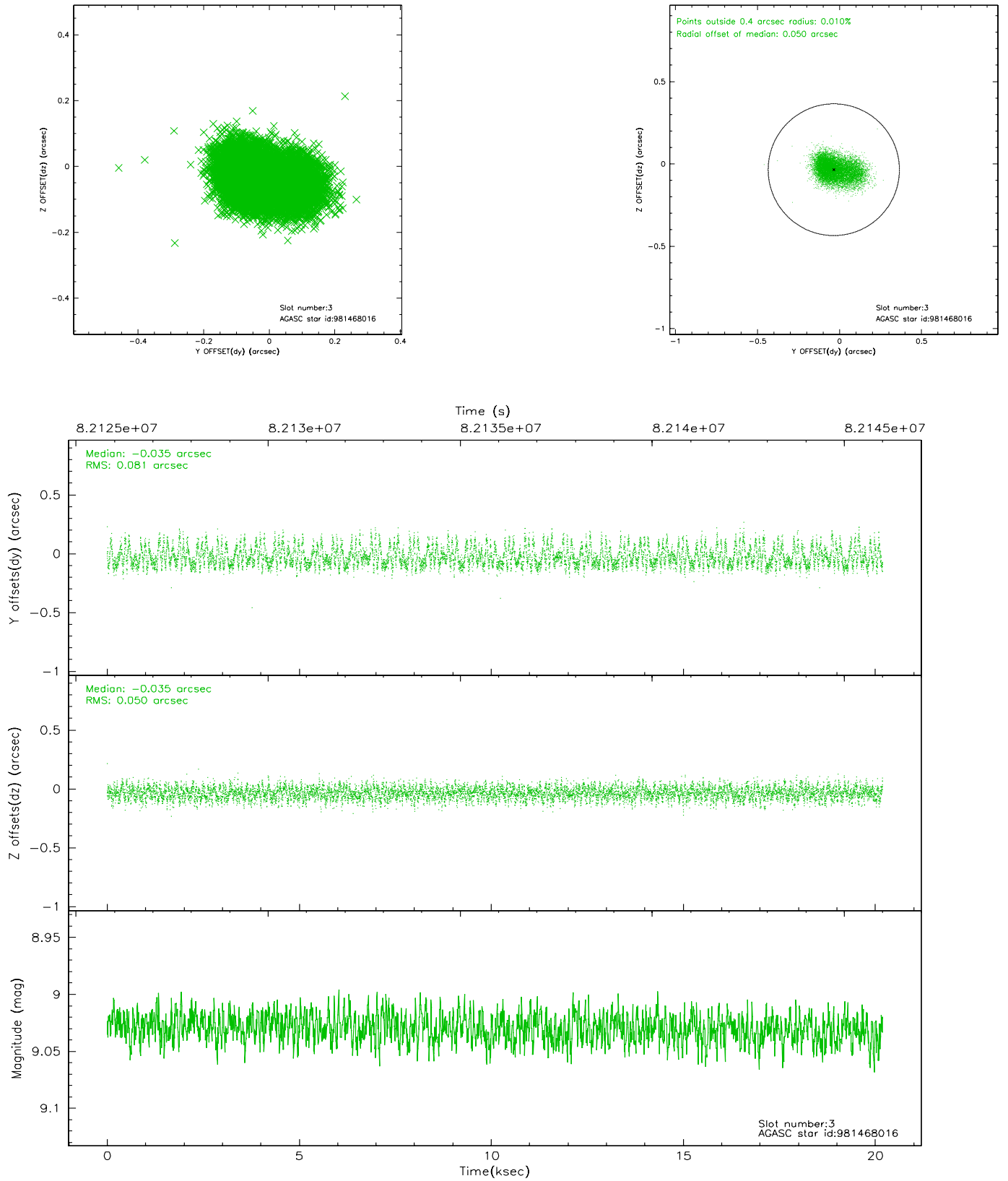
### Slot Statistics

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	4925	-0.043	-0.090	0.007	0.011	0.000000	0.000000	-752.26	-1889.80
1	FID	ACIS-S-4	7.18	4925	0.037	0.045	0.005	0.009	0.000000	0.000000	2161.05	18.53
2	FID	ACIS-S-5	7.22	4926	-0.026	0.053	0.007	0.012	0.000000	0.000000	-1804.81	12.49
3	GUIDE	981468016	9.03	9848	-0.035	-0.035	0.101	0.169	328.842457	-30.034984	-979.34	2236.11
4	GUIDE	912275088	9.05	9849	-0.109	0.000	0.067	0.110	329.619228	-29.738698	1601.23	1639.67
5	GUIDE	981468288	9.21	9850	0.096	0.039	0.119	0.198	328.608359	-30.257017	-2040.46	2027.41
6	GUIDE	981478152	9.39	9848	-0.018	0.036	0.082	0.134	329.415589	-30.057192	404.42	1104.55
7	GUIDE	981468128	9.36	9849	0.068	-0.042	0.078	0.127	329.756350	-30.158334	1034.07	175.52

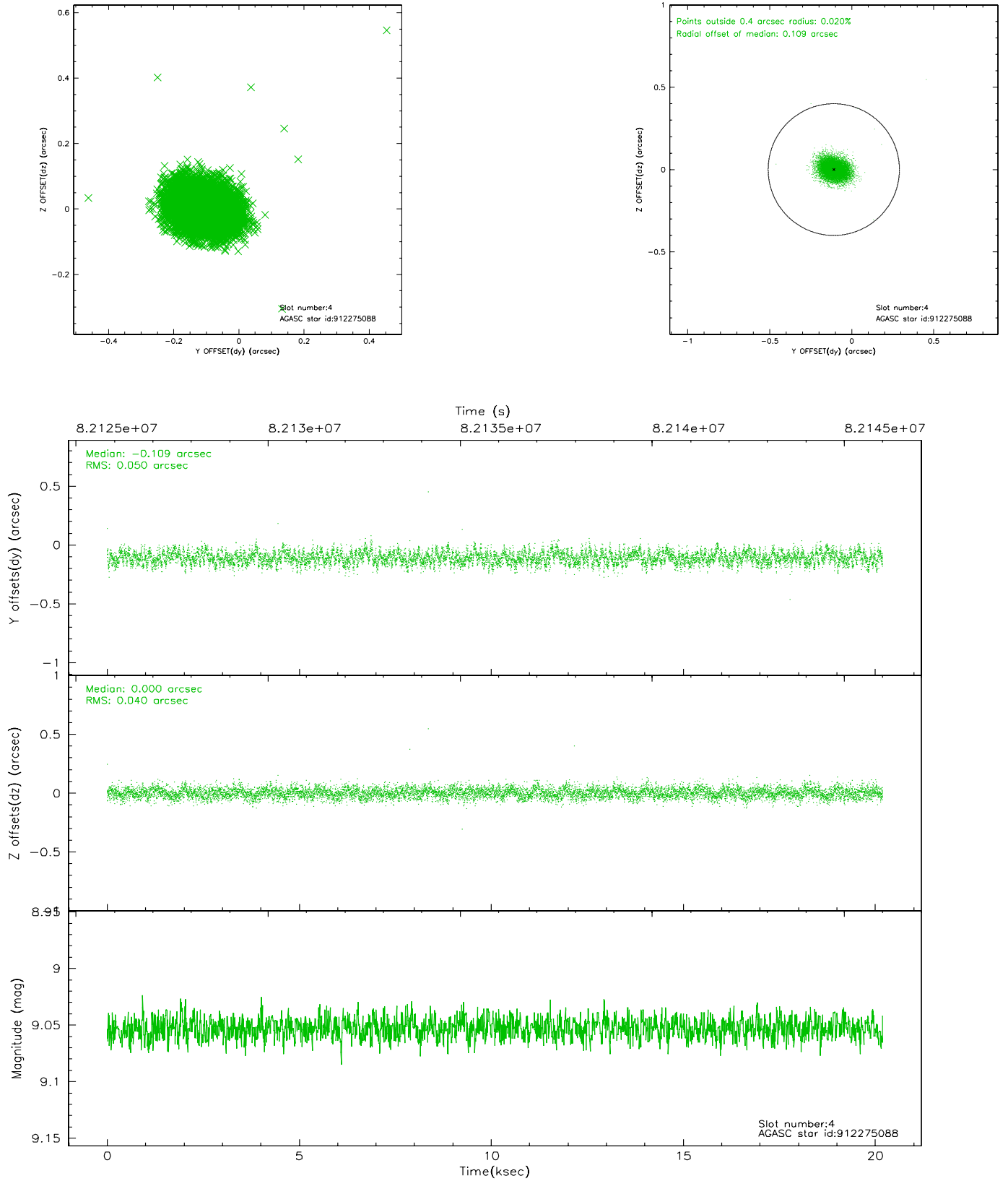


## 2.4 Star Slots

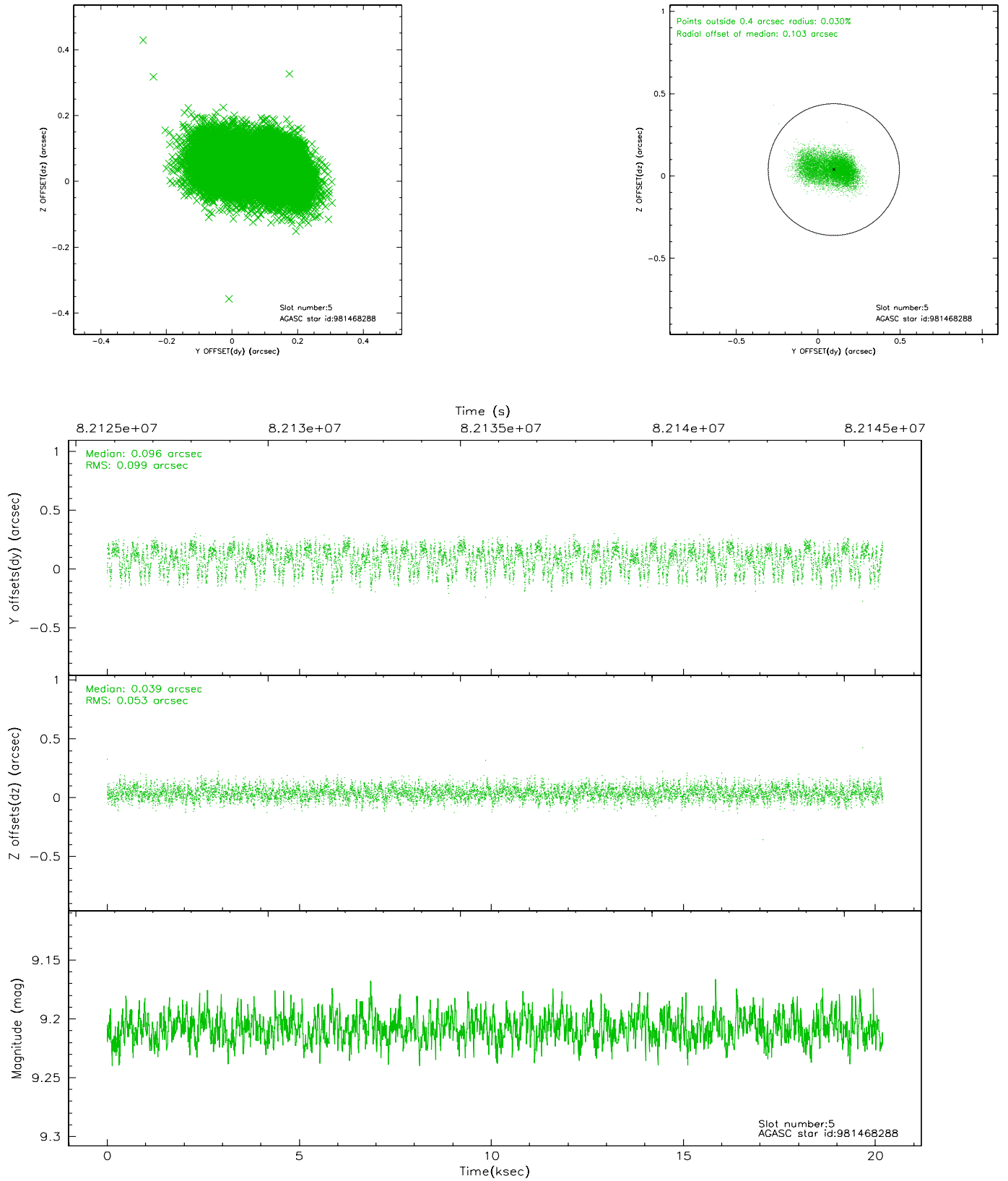
### 2.4.1 Slot 3



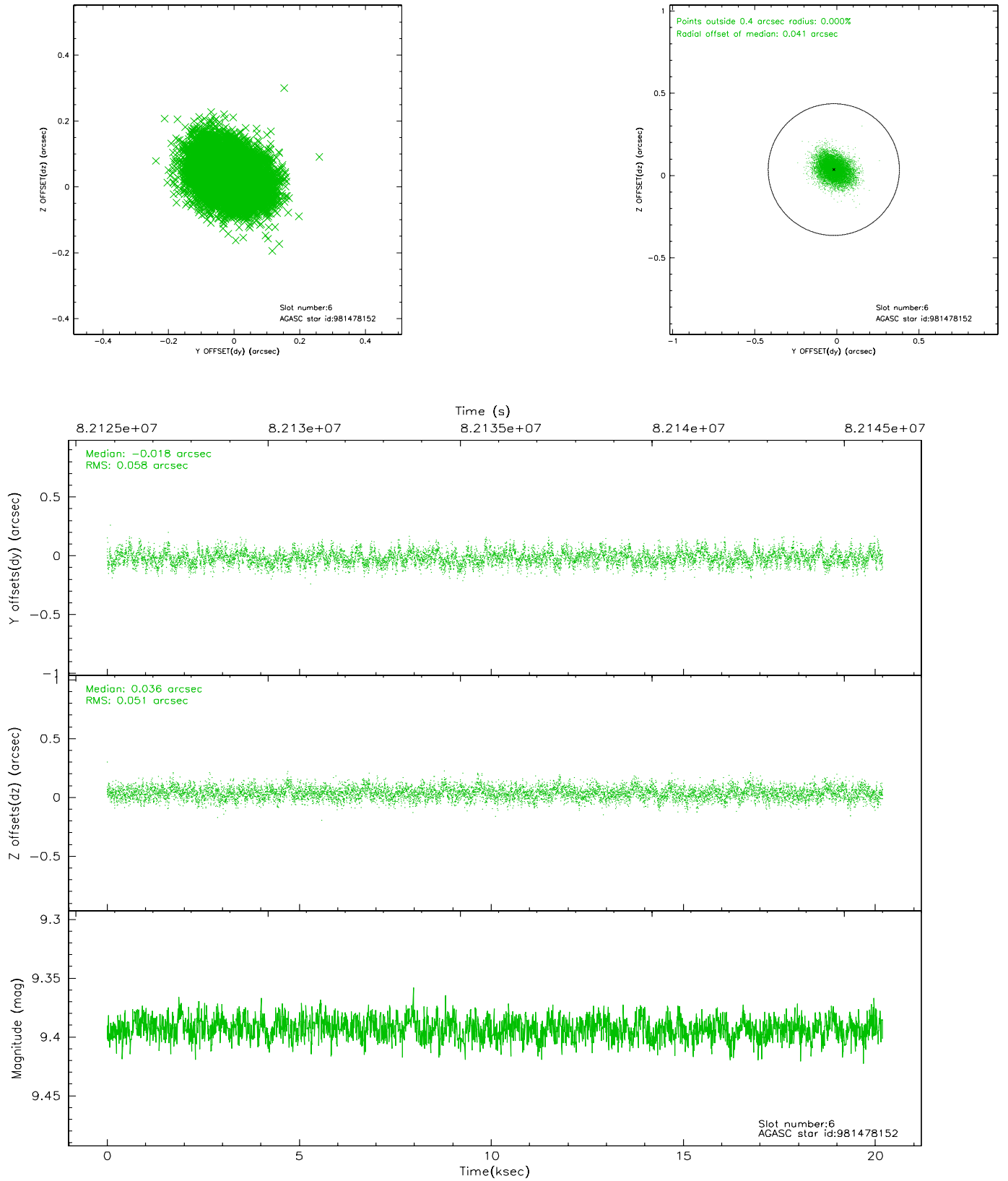
## 2.4.2 Slot 4



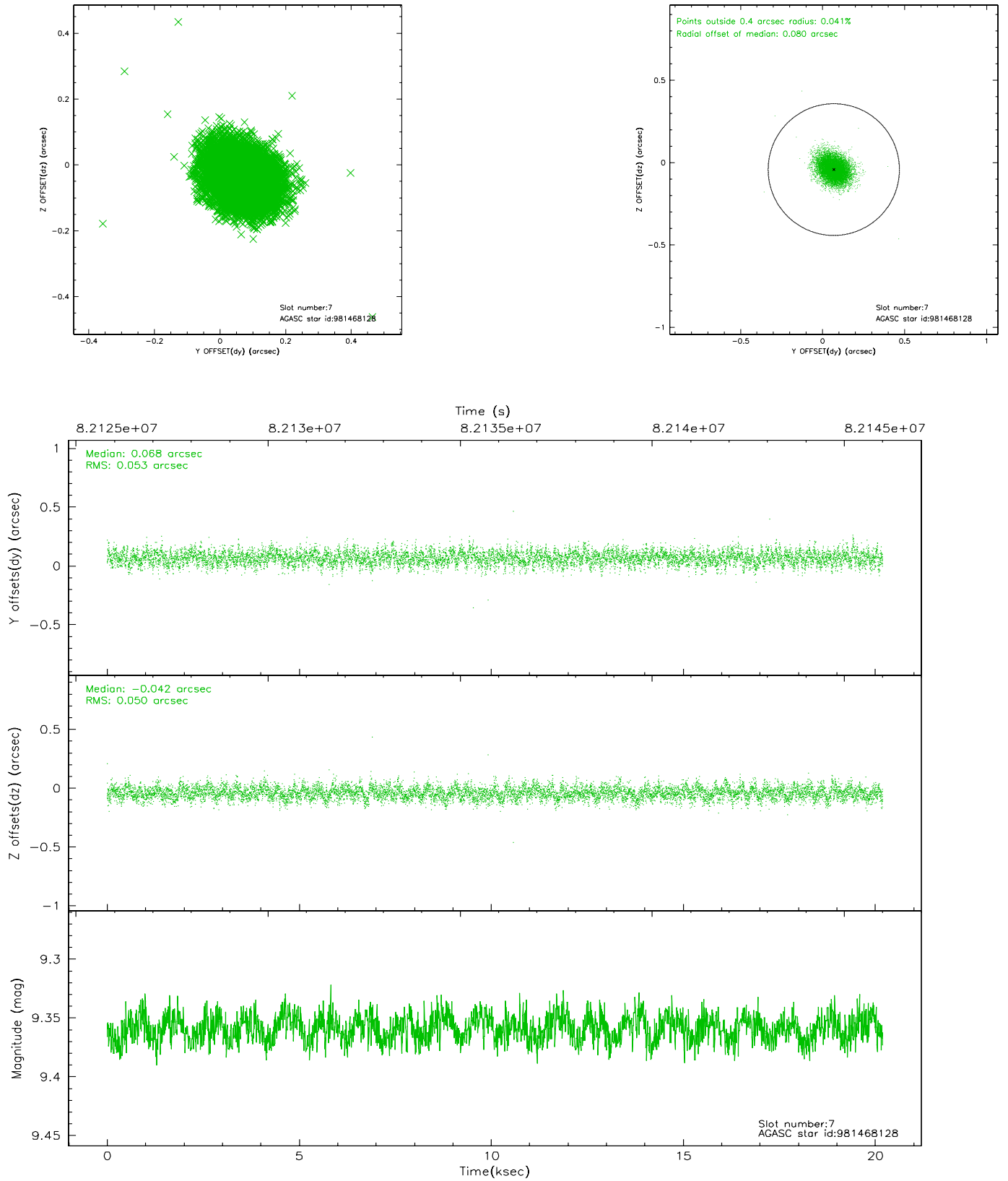
### 2.4.3 Slot 5



## 2.4.4 Slot 6

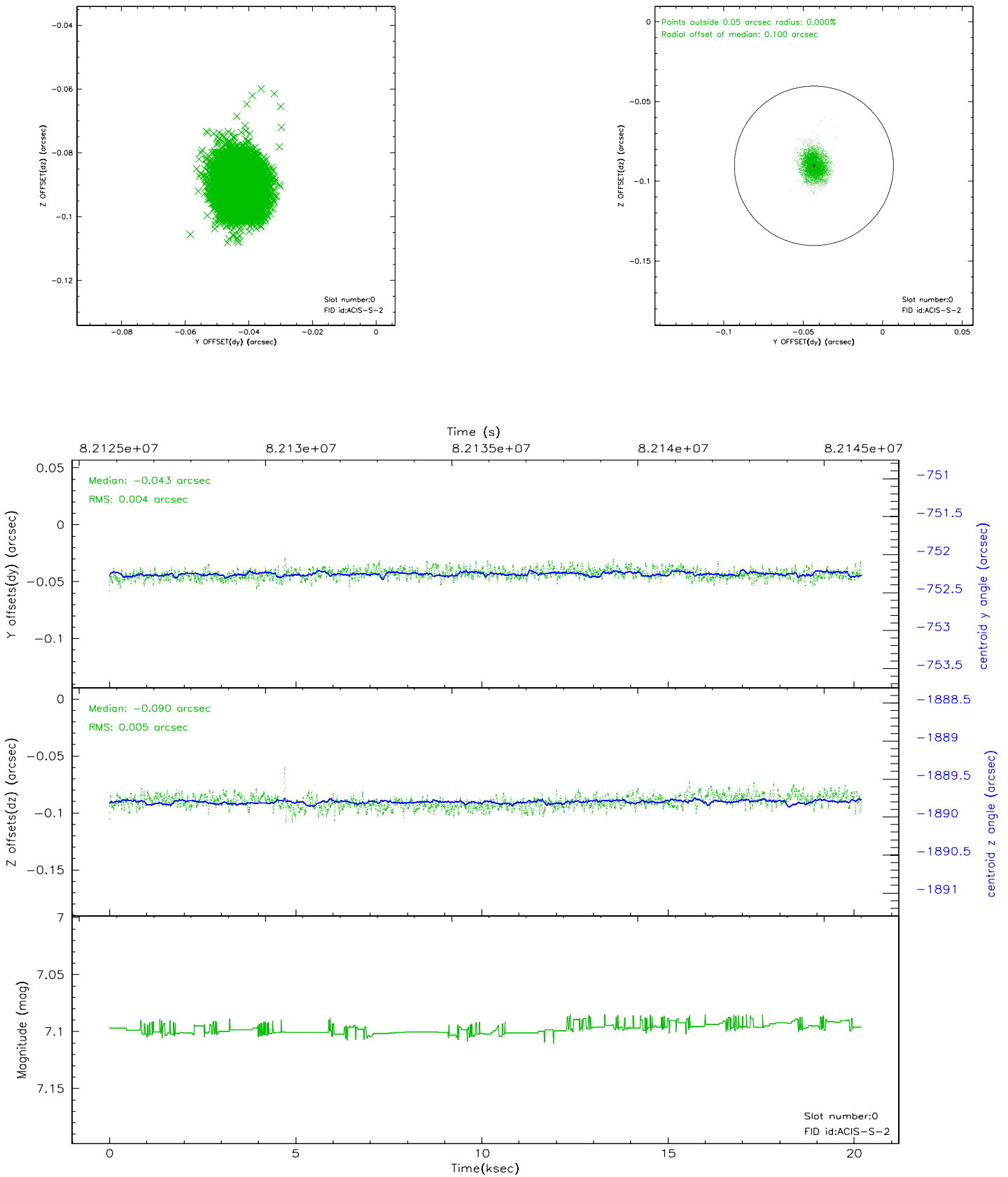


## 2.4.5 Slot 7

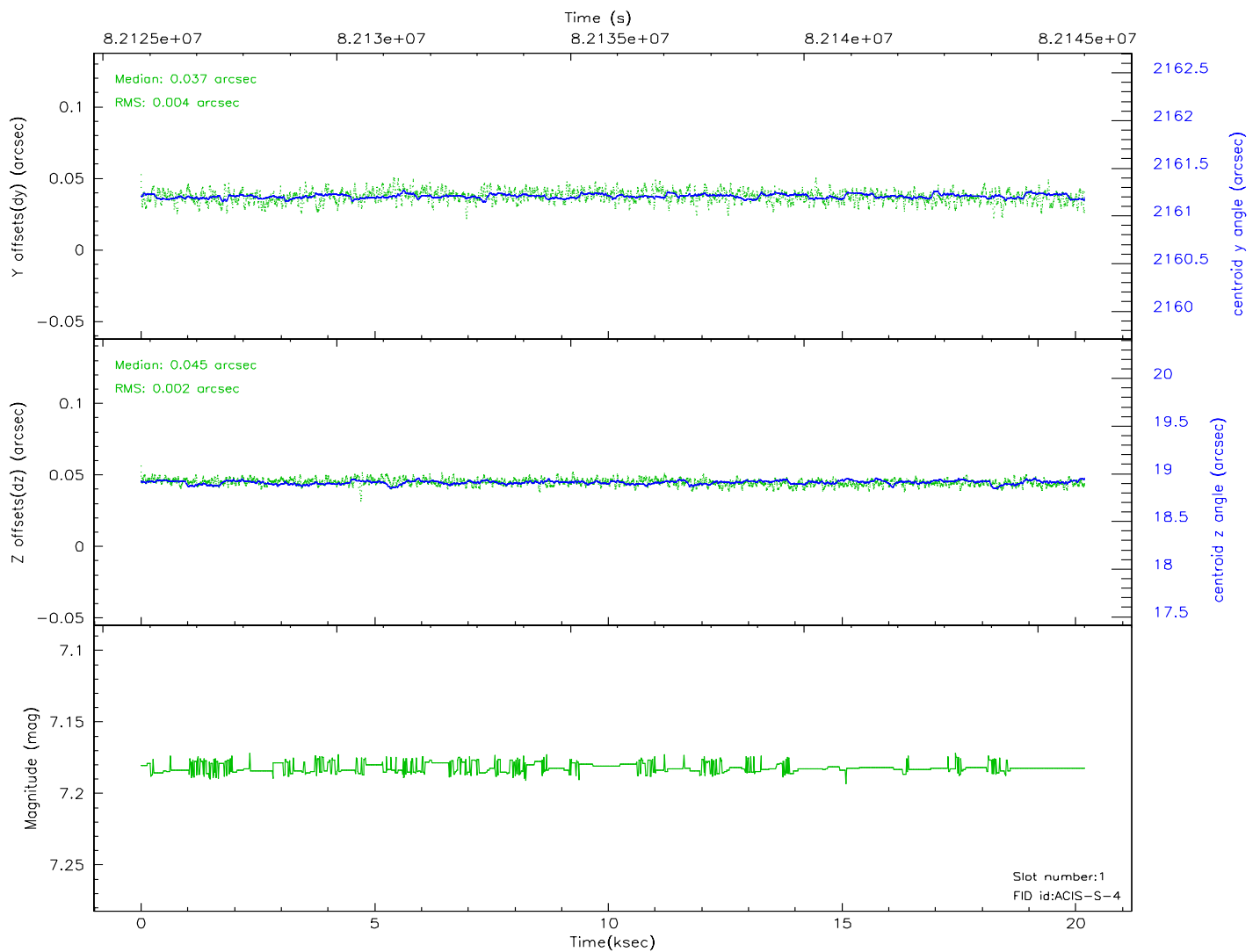
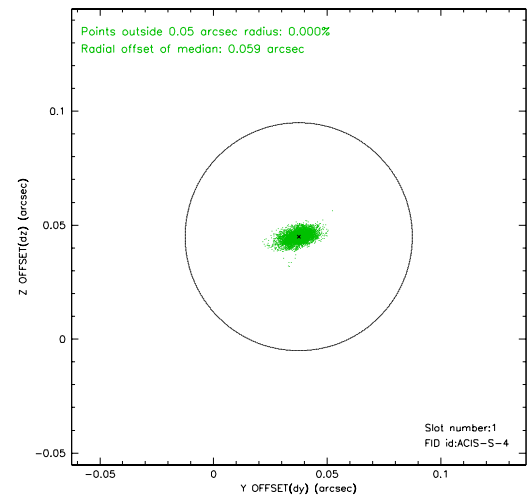
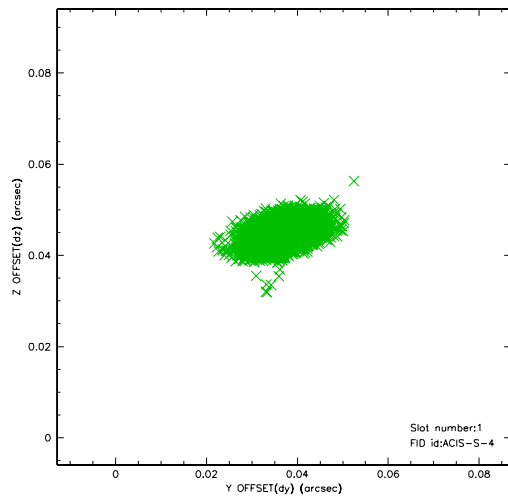


## 2.5 FID Slots

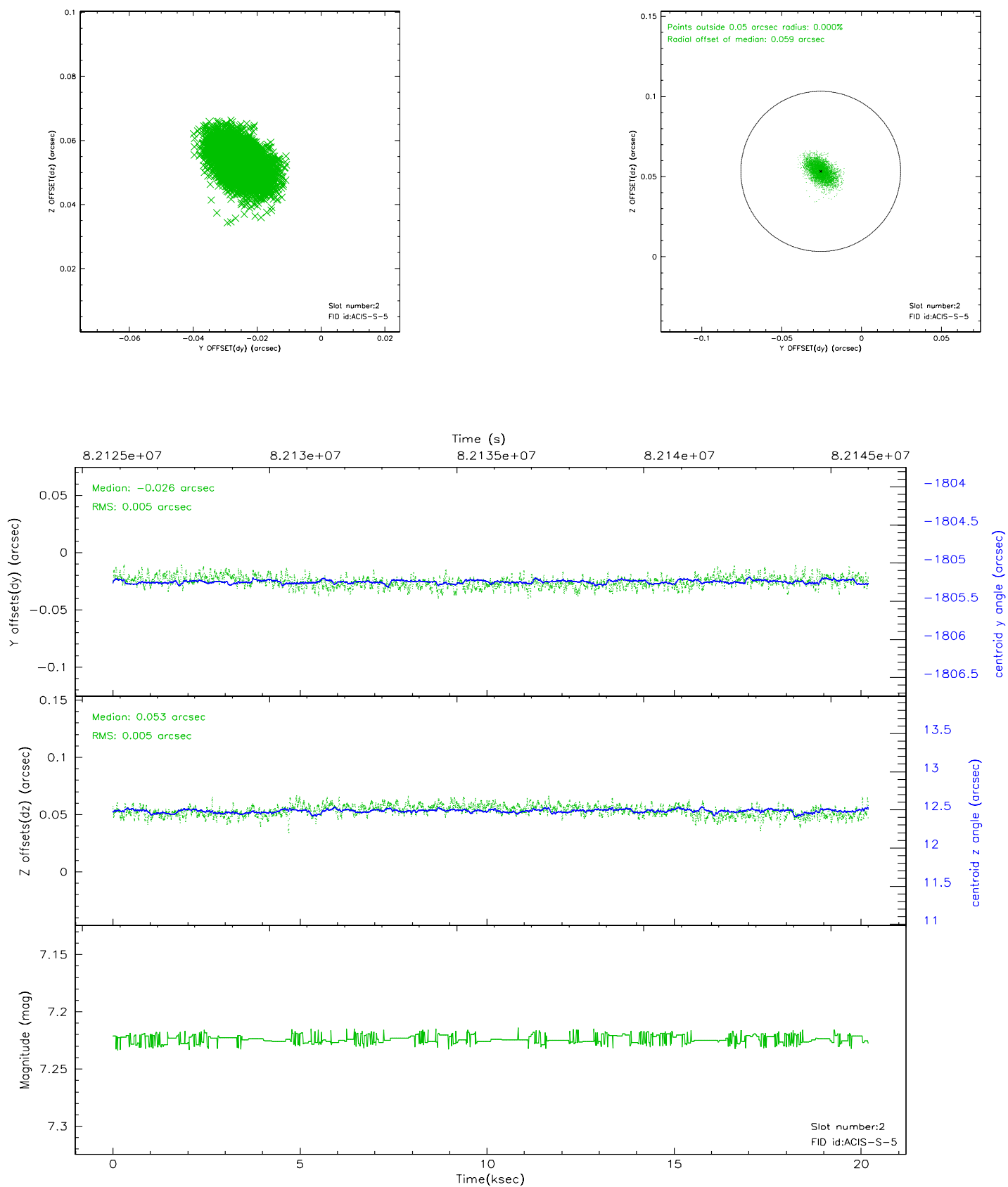
### 2.5.1 Slot 0



## 2.5.2 Slot 1



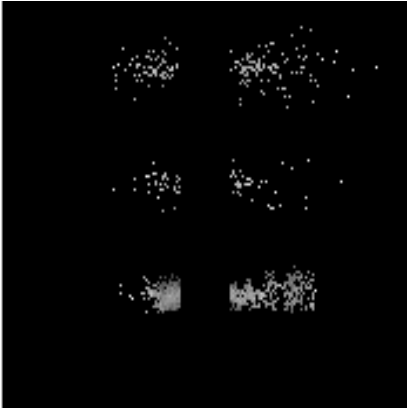
### 2.5.3 Slot 2



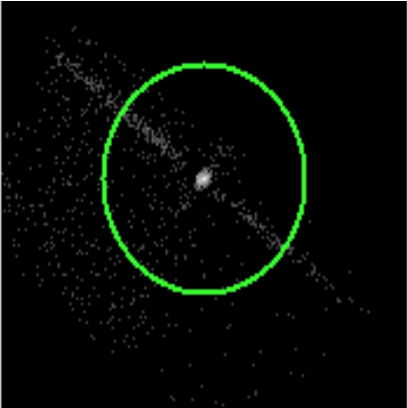


# 3 Gratings

## 3.1 LETG Arm



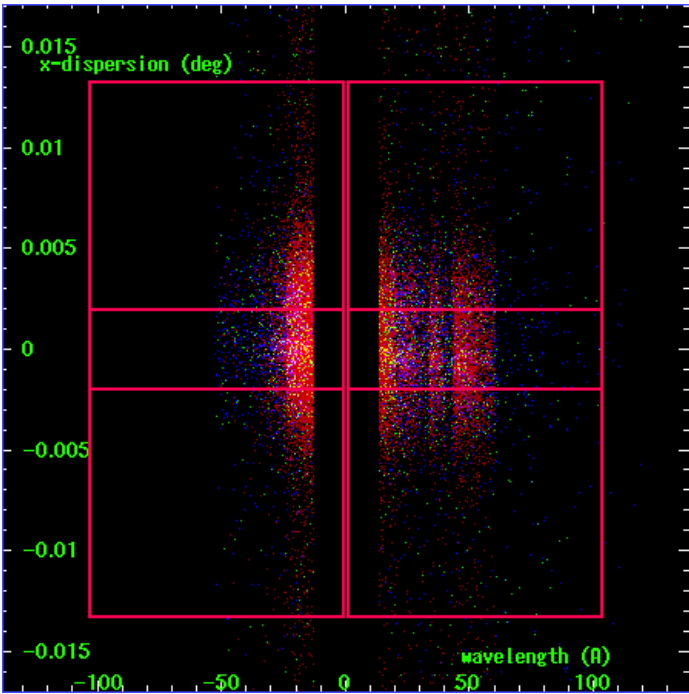
LETG Order Sort 123



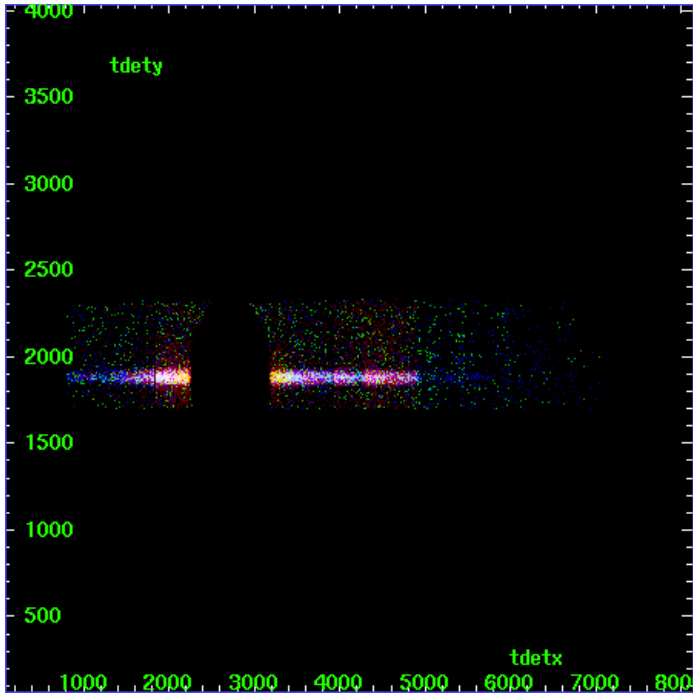
LETG Zero Order



LETG Order Sort ALL

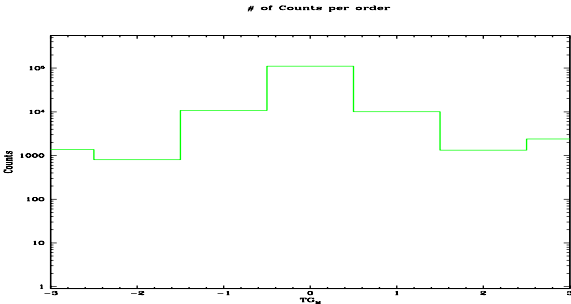


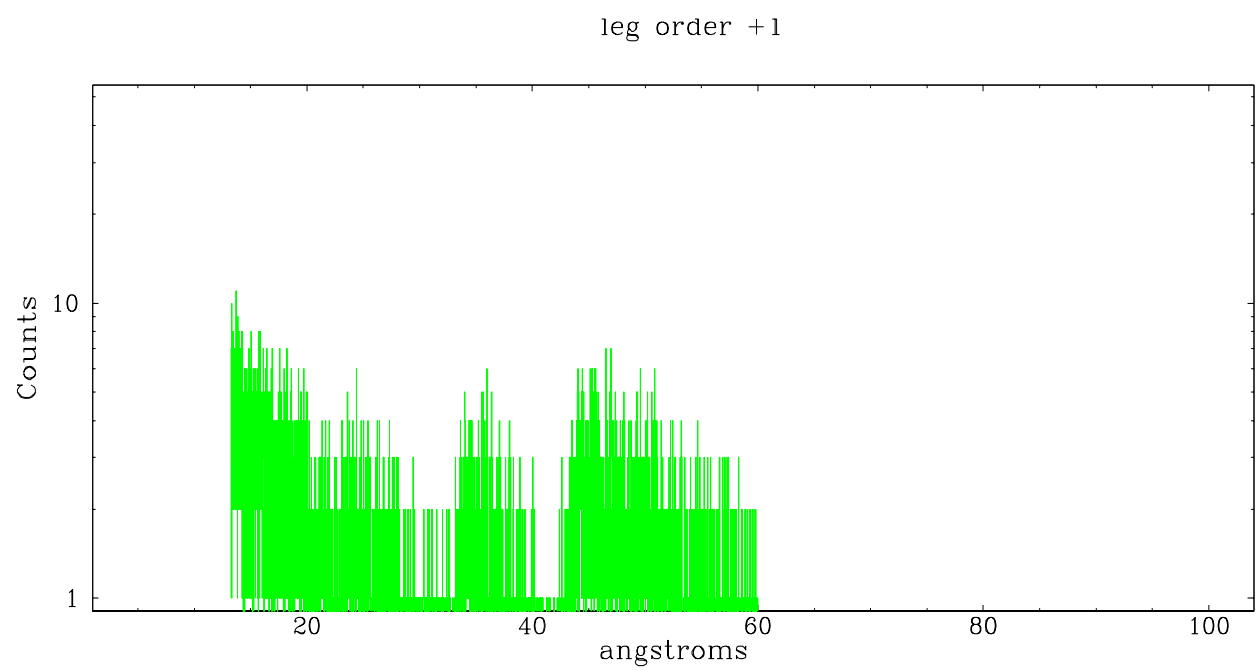
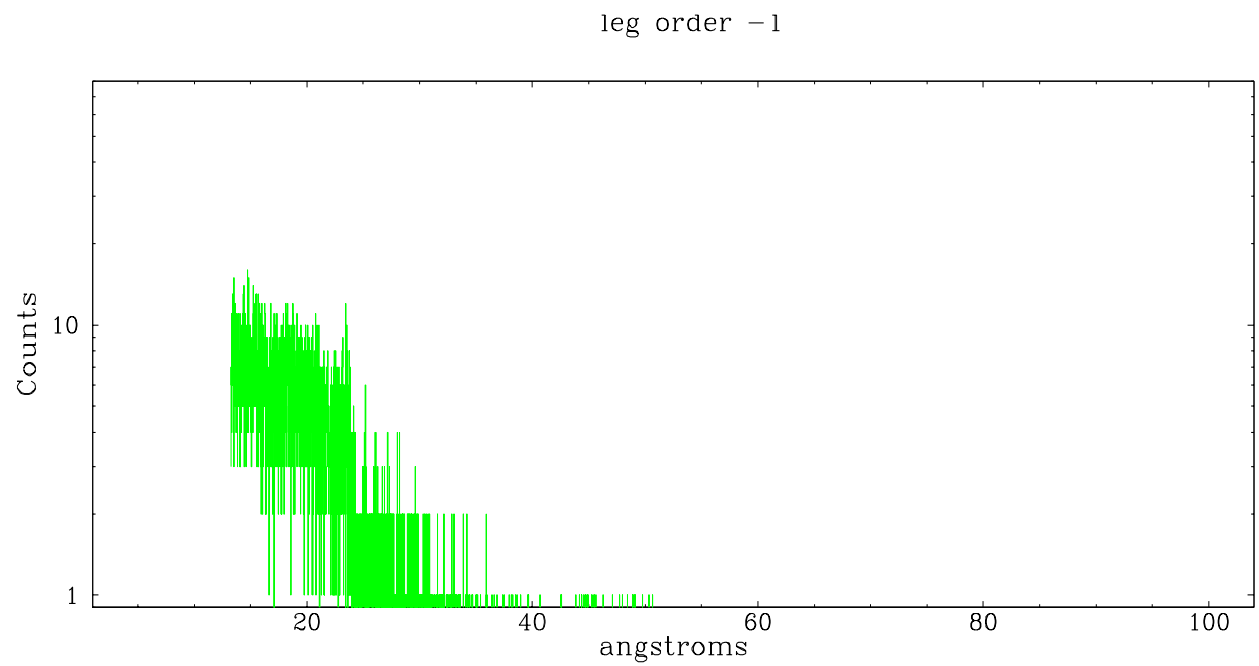
Spot Image LETG



Full Detector LETG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	1365	803	10718	110622	10036	1329	2387





# A Summary

## A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2007.06.07
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	19.66

## A.2 Comments

Charge time for this ObsId remains at original value of 19.66 ks,  
although  
with the current processing the charge time would have been 19.76 ksec.

Off-axis source gratings observation.

WARNING: there are no standard ciao tools for analysis of grating spectra from extended sources. The shape of an emission 'line' will be the shape of the zero order spatial structure convolved with the instrumental LSF. Grating extractions can be used, but need to be combined with custom spatial-spectral analysis, since wavelength is multi-valued at any particular diffraction angle. WARNING: The user will need to deconvolve the PSF of the off-axis source to get an accurate determination of the zeroth order position, then use software tools such as CIAO to specify the coordinates of the zeroth order before running the tools to resolve the dispersed events. The spectral data supplied in this processing are only energy-calibrated for the results of tgdetect, which uses the source-detection tool celldetect.