V&V Reference Report
L2 ASCDS Version : 7.6.7.1

Observation 4570 - L2 Version 3
### Chandra X-Ray Center

L2 Processing Date : Apr 12 2008

Contents

1 Front

|	
seq_num	400353
obs_id	4570
title	Resolving Relativistic Effects and the Accretion Flow Geometry of a Black Hole in Outburst
observer	Dr Jon Miller
object	GX 339-4
ra_targ	255.70625
dec_targ	-48.789722
ra_nom	255.70444535939
dec_nom	-48.787824283965
roll_nom	254.10018735216
revision	3
ontime	39051.702491432
livetime	38899.156778575
ontime4	50185.25
ontime5	50185.25
ontime6	33304.024588019
ontime7	39051.702491432
ontime8	45345.083678722
ontime9	50185.25
l2events	17001840

2 OBI

2.1 OBI

2.1.1 Images

<div align="center">
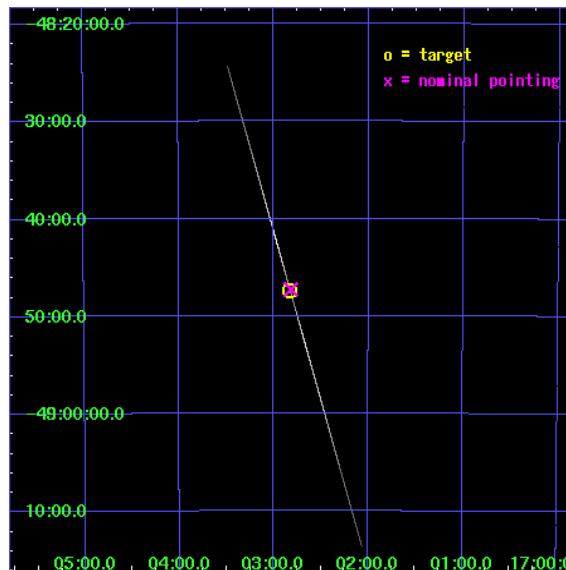
Level 1 Image   Level 1 Bad Events

</div>
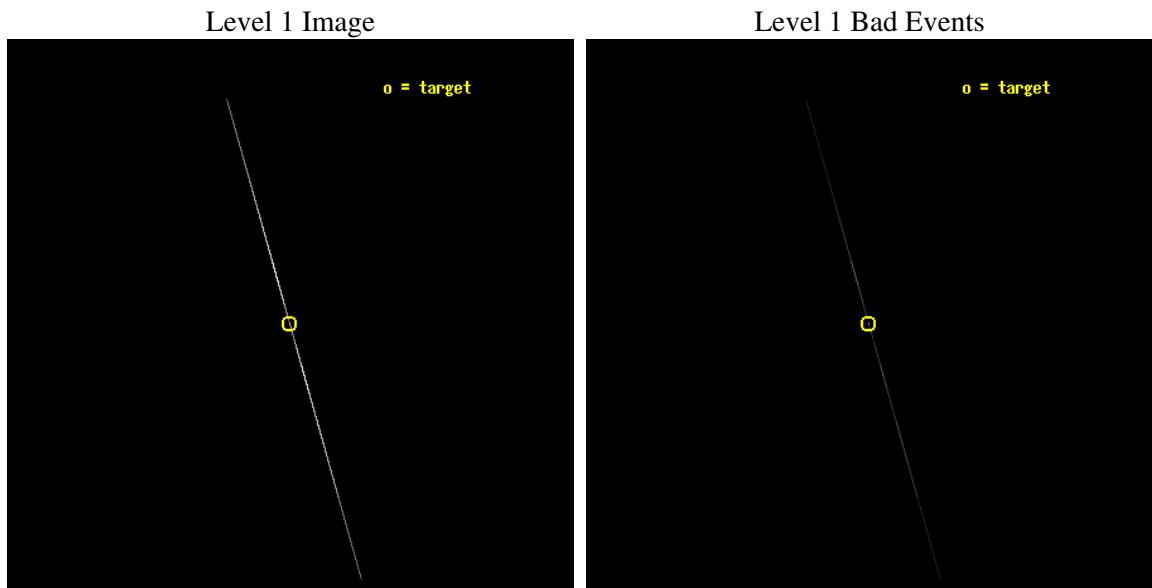
2.1.2 Parameters

obi_num	0
ascdsver	7.6.11.6
caldbver	3.4.4
date	2008-04-12T00:19:57
revision	3

sched_exp_time	50000.000000
ontime	39051.702491432
ontime4	50185.25
ontime5	50185.25
ontime6	33304.024588019
ontime7	39051.702491432
ontime8	45345.083678722
ontime9	50185.25
l1events	18530729

2.1.3 Events

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
level 1 events	371330	2564413	5365076	6128908	3522211	578791
rejected events	23212	84042	75514	123674	50598	22281
rejected %	6%	3%	1%	2%	1%	3%

	ccd 4	ccd 5	ccd 6	ccd 7	ccd 8	ccd 9
grade 0 events	19415	470037	2276339	1289610	2383140	67128
	5%	18%	42%	21%	67%	11%
grade 1 events	283	890	7876	8023	7308	451
	0%	0%	0%	0%	0%	0%
grade 2 events	284042	1103860	2565087	1748996	802254	422796
	76%	43%	47%	28%	22%	73%
grade 3 events	9288	130952	103160	619779	97349	10163
	2%	5%	1%	10%	2%	1%
grade 4 events	9762	127870	102811	615958	96373	10911
	2%	4%	1%	10%	2%	1%
grade 5 events	15083	58902	37759	86140	31112	18580
	4%	2%	0%	1%	0%	3%
grade 6 events	33457	671902	272044	1760402	104675	48762
	9%	26%	5%	28%	2%	8%
grade 7 events	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%

2.2 Compared Parameters

| Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	HETG	HETG
Data mode	CC33_GRADED	CC33_GRADED
Observation mode	POINTING	POINTING
Pointing RA	255.693830	255.7044453593934
Pointing Dec	-48.761518	-48.78782428396516
Pointing Roll	253.935575	254.1001873521601
SIM focus pos (mm)	-0.684267	-0.6828225247311905
SIM defocus (mm)	0	0.001444936568705701
SIM translation stage pos (mm)	-182.632523	-182.6398635053184
SIM translation stage offset (mm)	-7.5	-7.49265907768941
Observation start time	213256379.184000	213254697.59273
Observation start date	2004-10-04T05:51:55	2004-10-04T05:24:57
Observation end time	213306379.184000	213307224.74508
Observation end date	2004-10-04T19:45:15	2004-10-04T20:00:24
Read mode	CONTINUOUS	CONTINUOUS

Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	0

2.3 Aspect

RA : 255.704 deg
Dec : −48.788 deg

DY : 7.512 arcsecs
DZ : 11.601 arcsecs

7
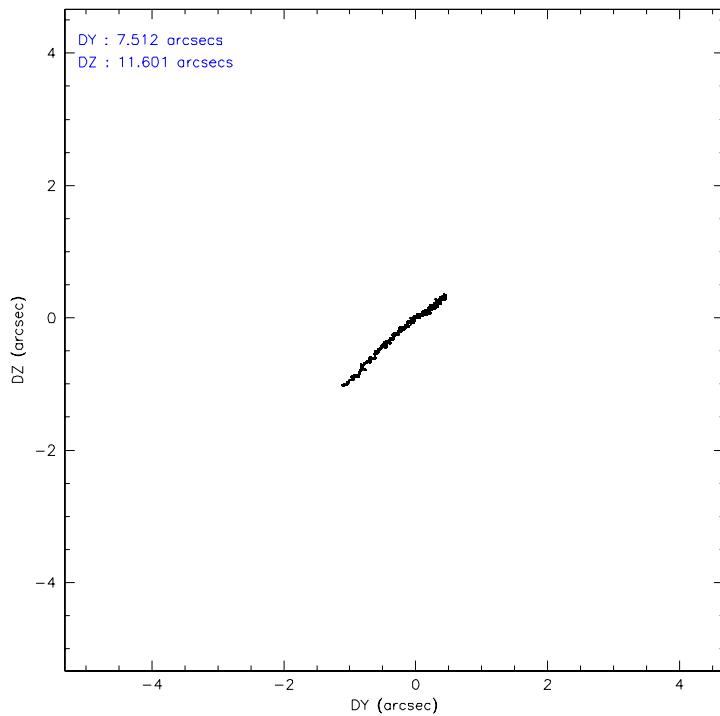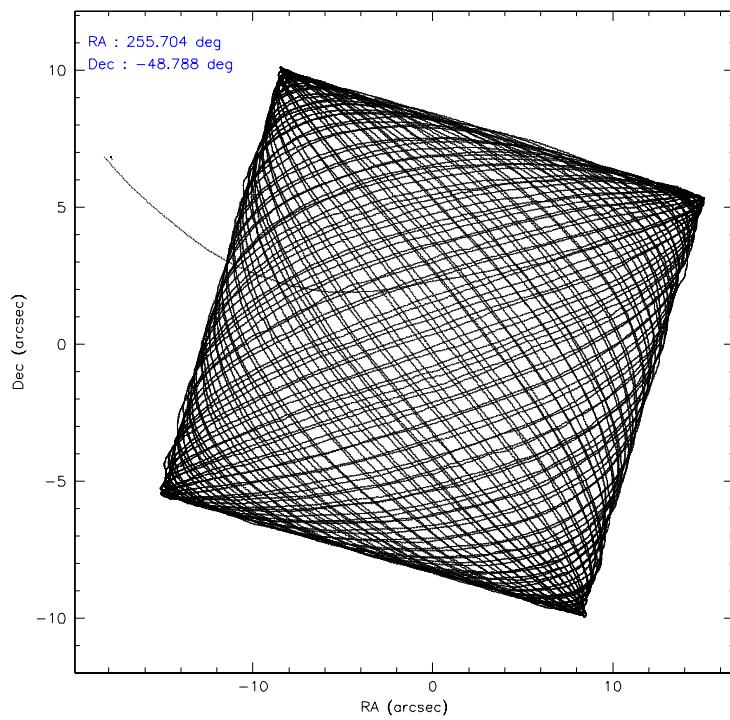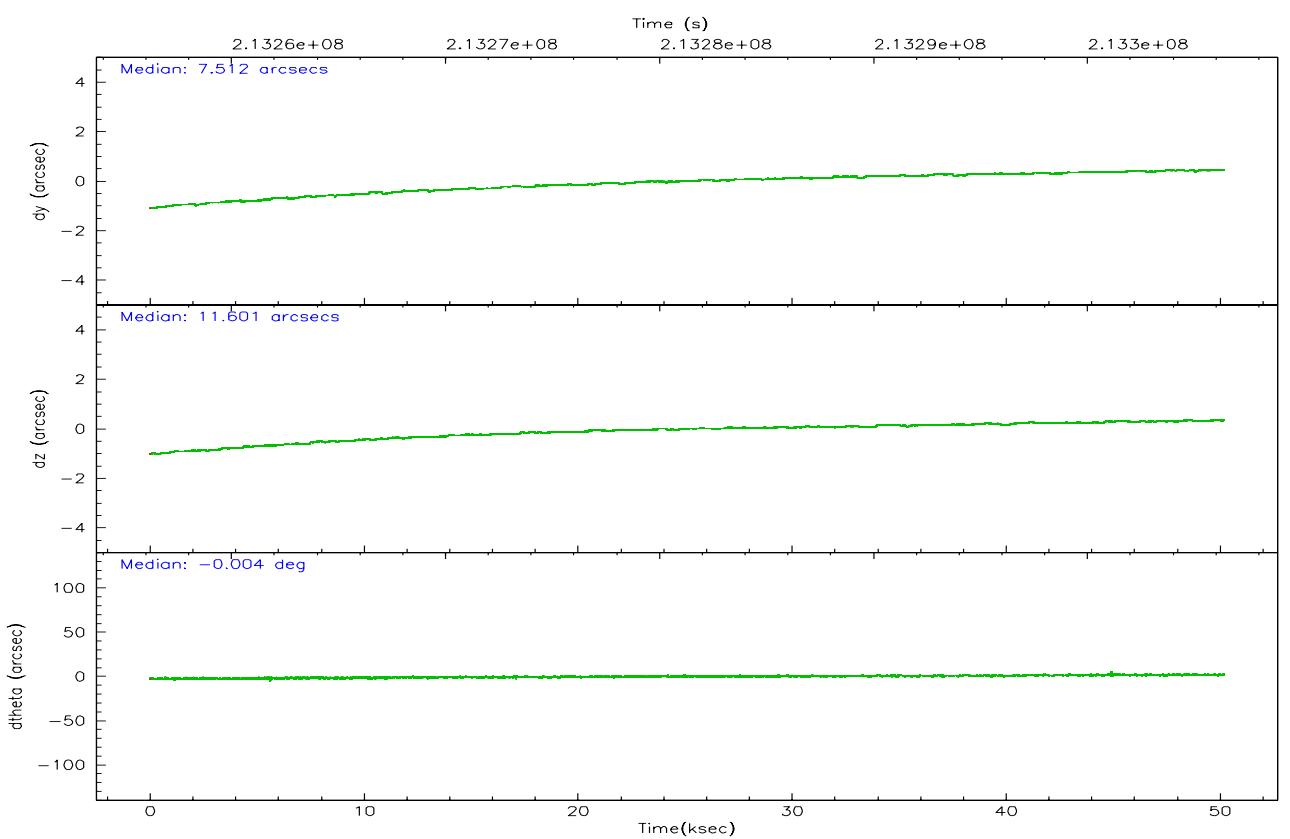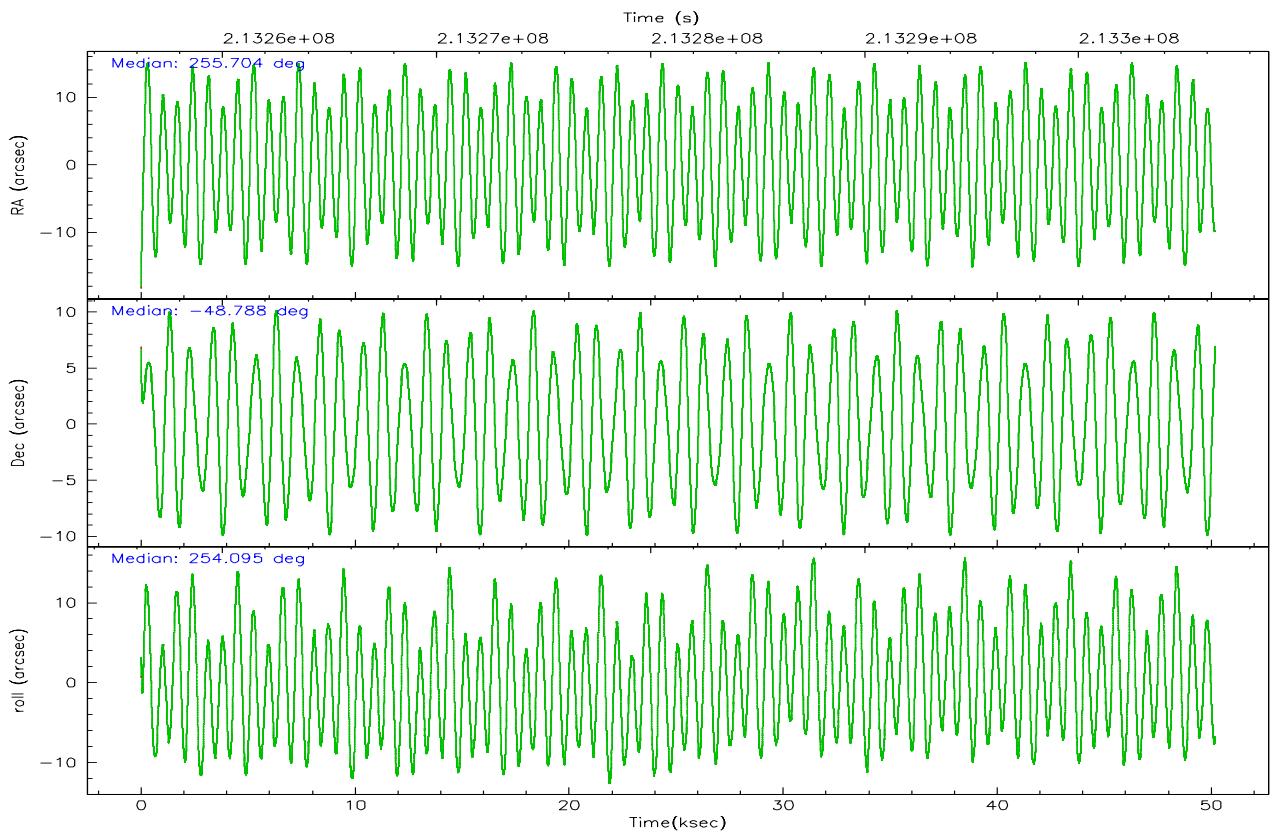
Slot Statistics

slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-4	7.17	12242	0.039	0.007	0.010	0.019	0.000000	0.000000	2153.74	21.49
1	FID	ACIS-S-5	7.23	12241	-0.023	0.017	0.007	0.042	0.000000	0.000000	-1812.54	15.00
2	FID	ACIS-S-6	7.39	12241	-0.043	-0.010	0.011	0.027	0.000000	0.000000	401.95	658.69
3	GUIDE	1091973408	8.91	24475	0.008	-0.137	0.078	0.125	255.800233	-48.601800	-622.17	84.37
4	GUIDE	1091975392	6.40	24484	-0.368	0.171	0.068	0.116	255.805002	-48.336791	-1542.83	-167.15
5	GUIDE	1092111344	9.94	24456	0.037	-0.006	0.181	0.377	256.132869	-48.213784	-2183.17	467.33
6	GUIDE	1092485728	6.89	24483	0.082	0.110	0.066	0.106	254.773222	-48.875124	1009.31	-1977.36
7	GUIDE	1092491384	9.13	24465	0.244	-0.156	0.088	0.145	254.923973	-49.184437	1973.85	-1316.83

2.4 Star Slots

2.4.1 Slot 3
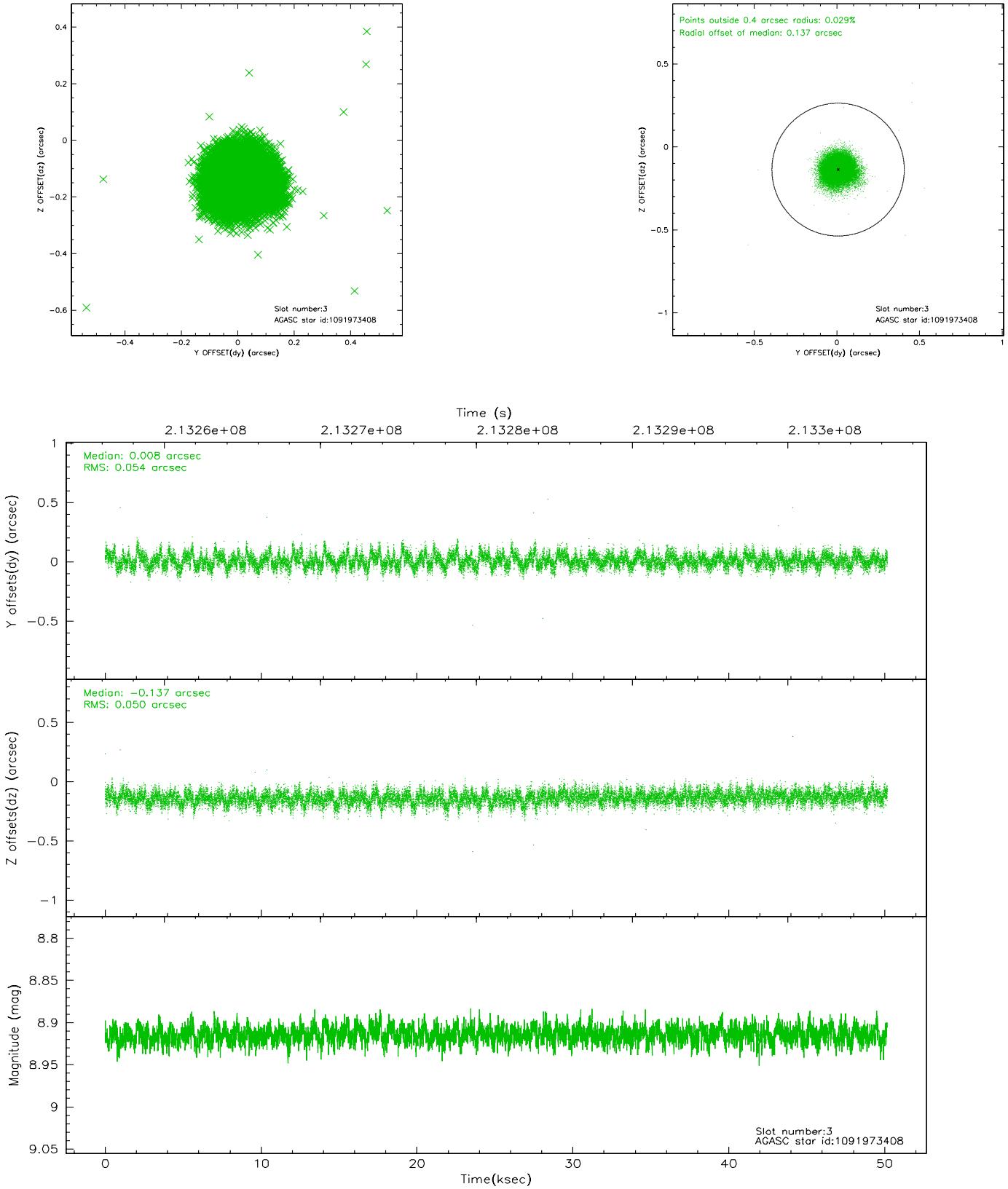
2.4.2 Slot 4
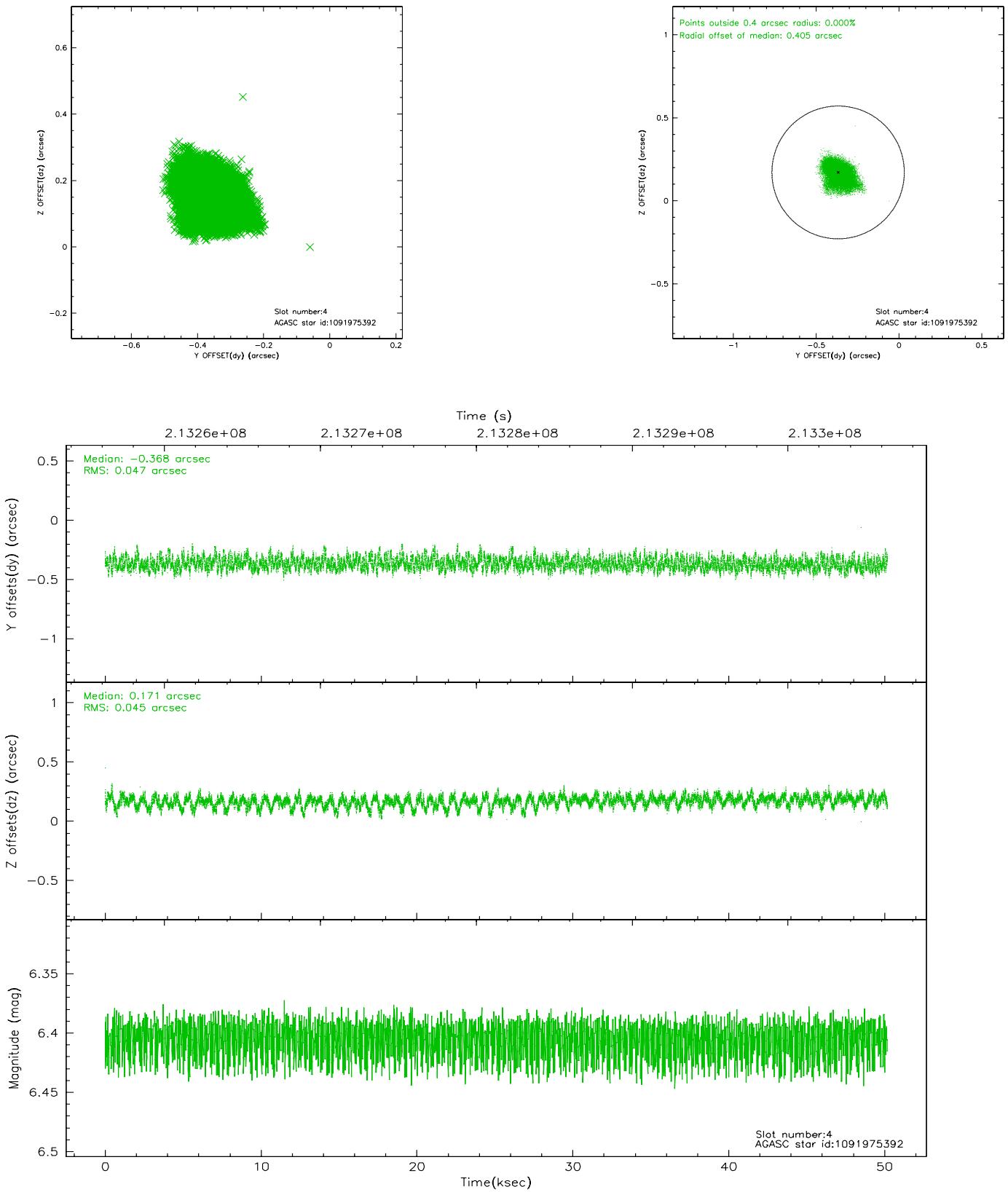
2.4.3 Slot 5
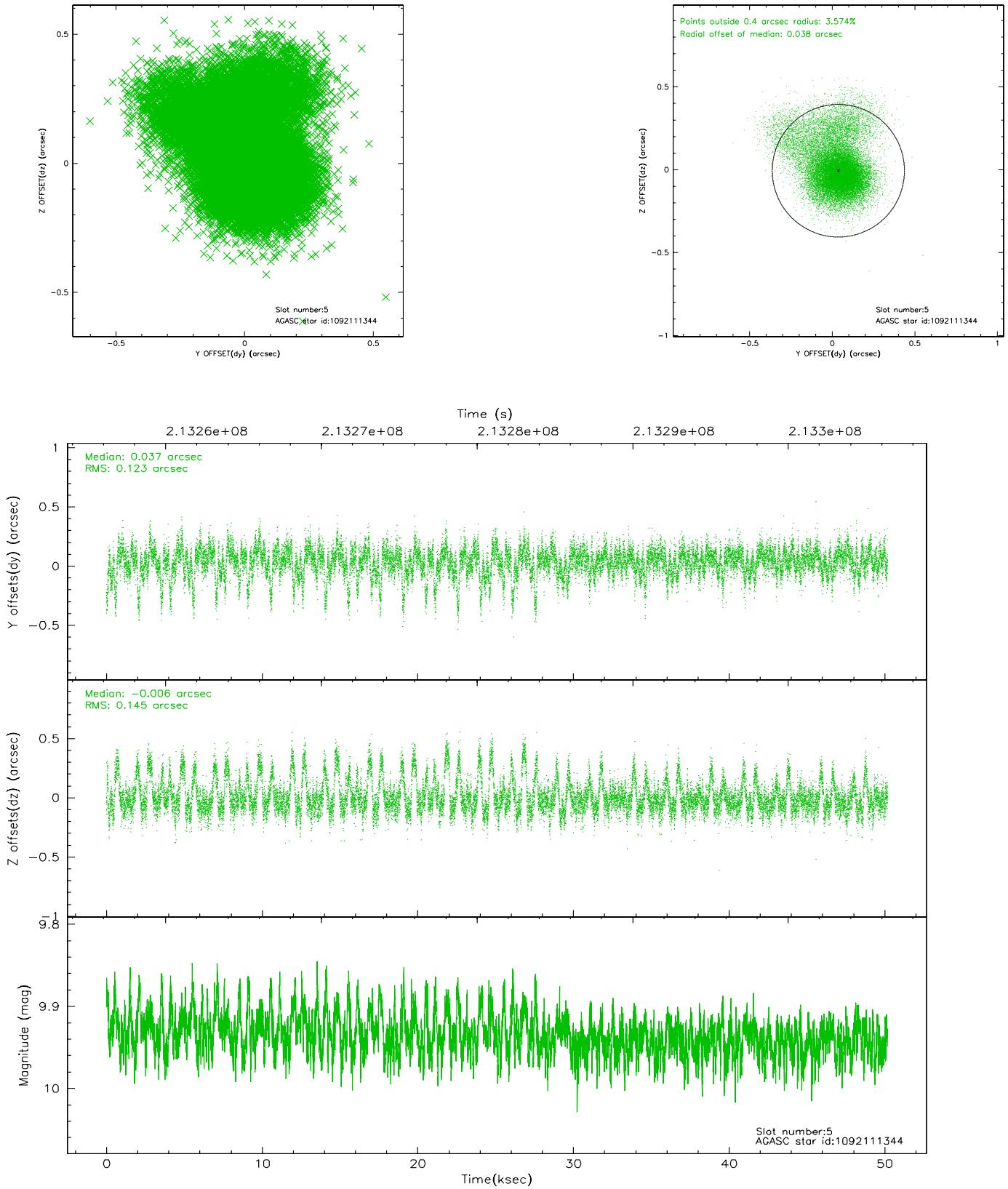
2.4.4 Slot 6
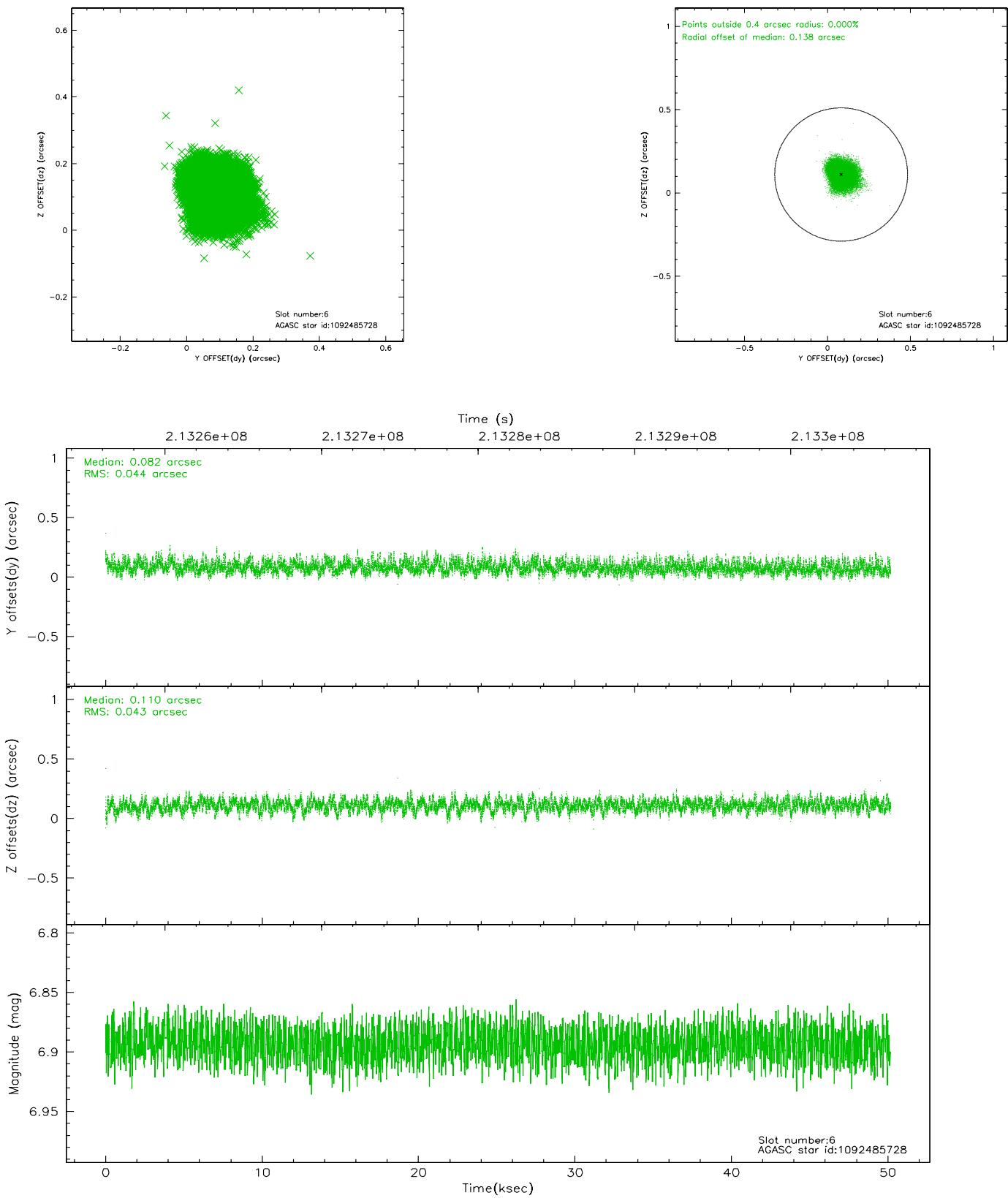
## 2.4.5 Slot 7
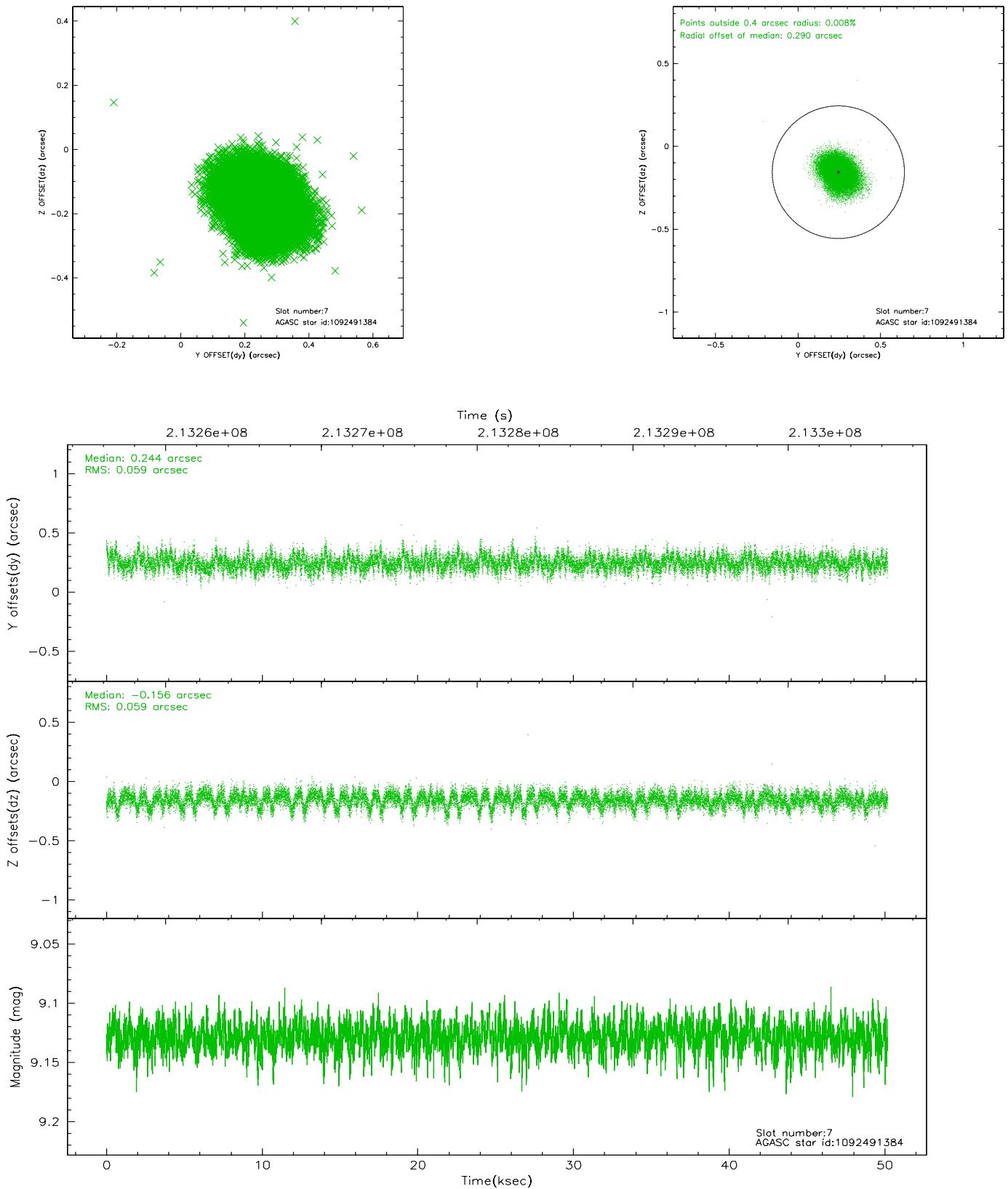
2.5 FID Slots

### 2.5.1 Slot 0
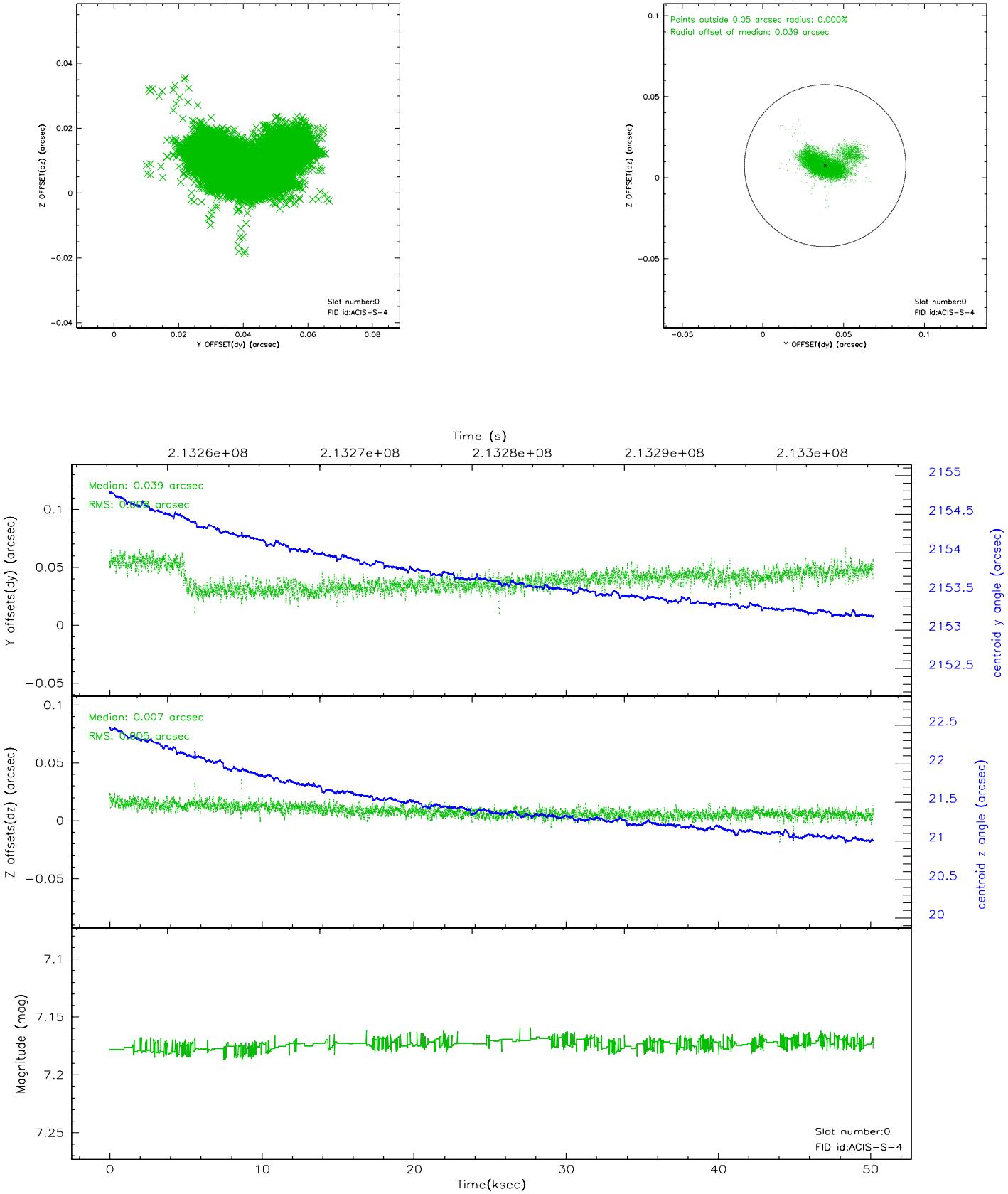
2.5.2 Slot 1
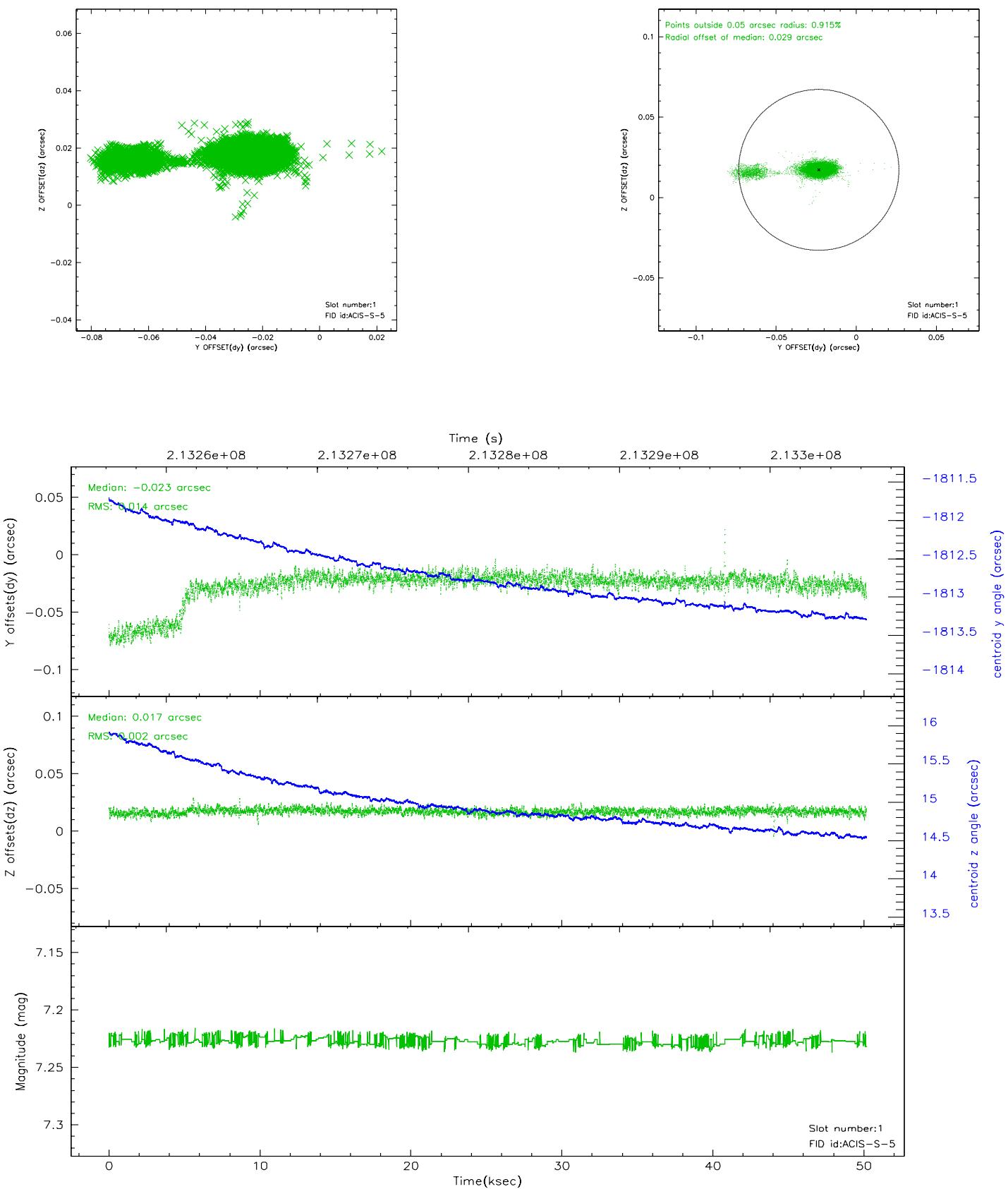
2.5.3 Slot 2
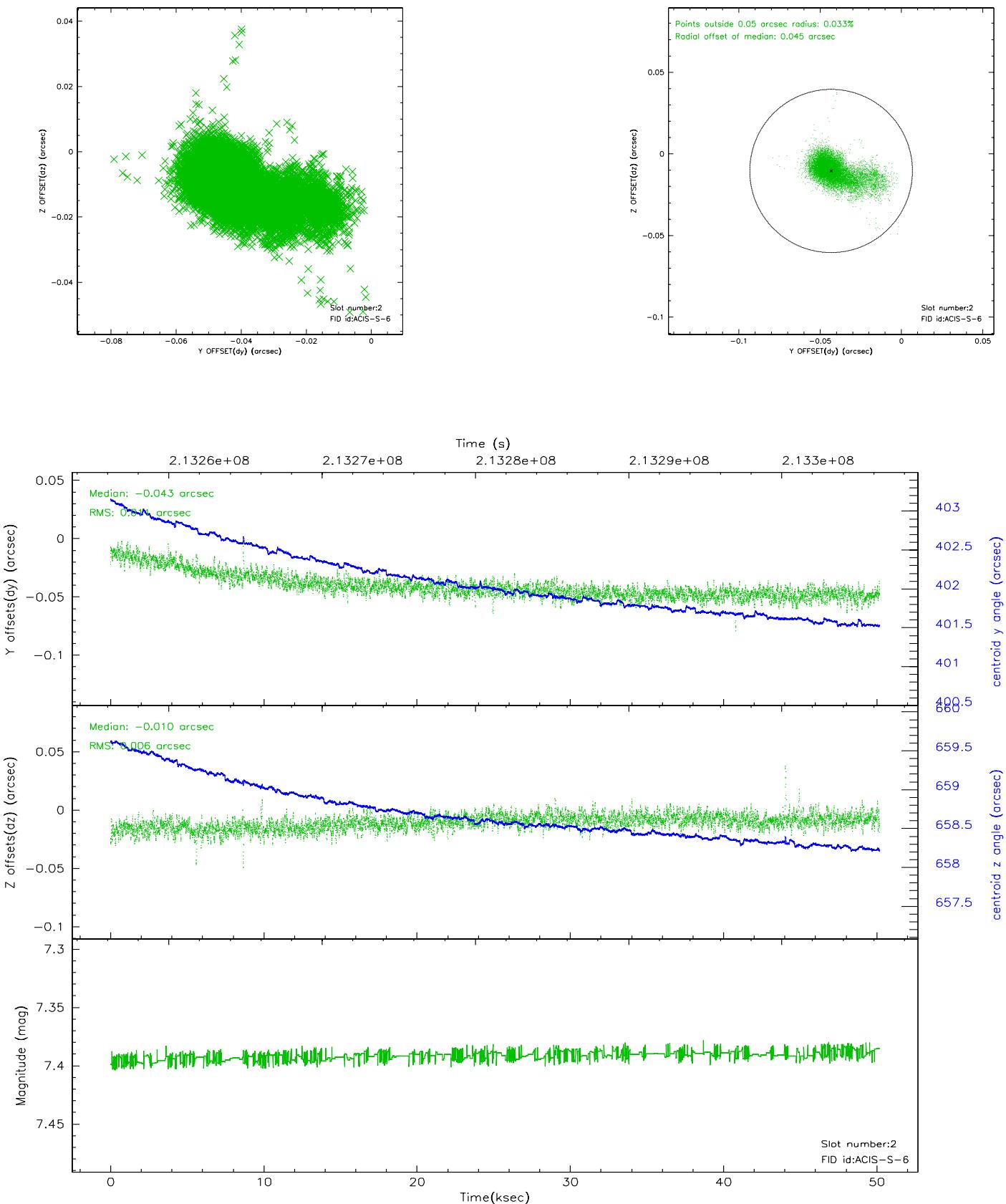
3 Gratings

3.1 HEG Arm
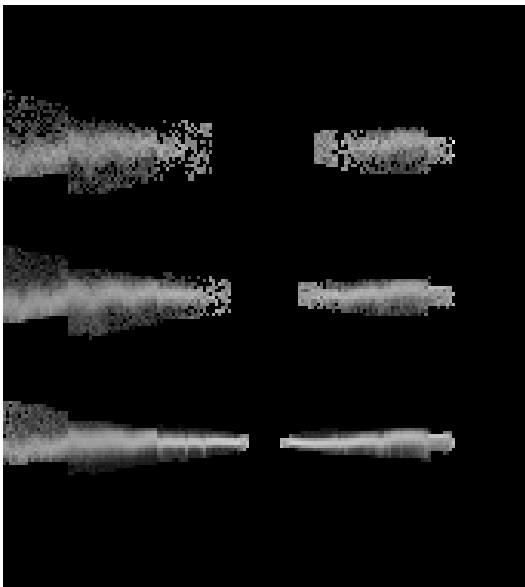
HEG Order Sort 123

HEG Order Sort ALL
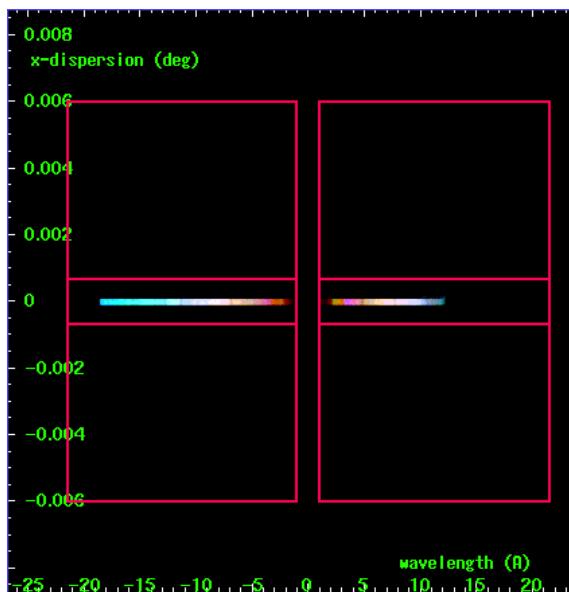
Spot Image HEG
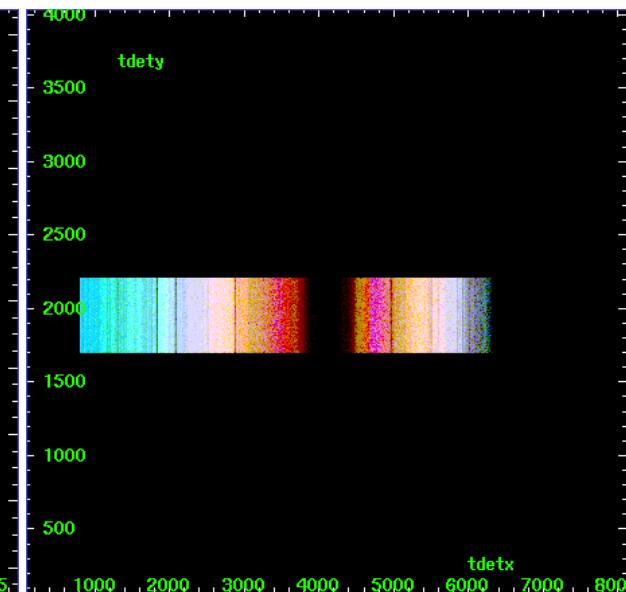
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	49201	242662	2357377	125256	2220277	62708	15165

heg order −1

Counts

angstroms

heg order +1

Counts

angstroms
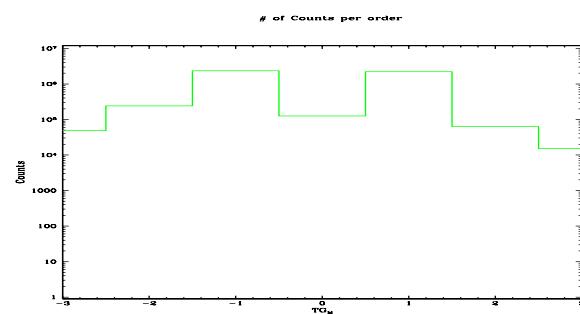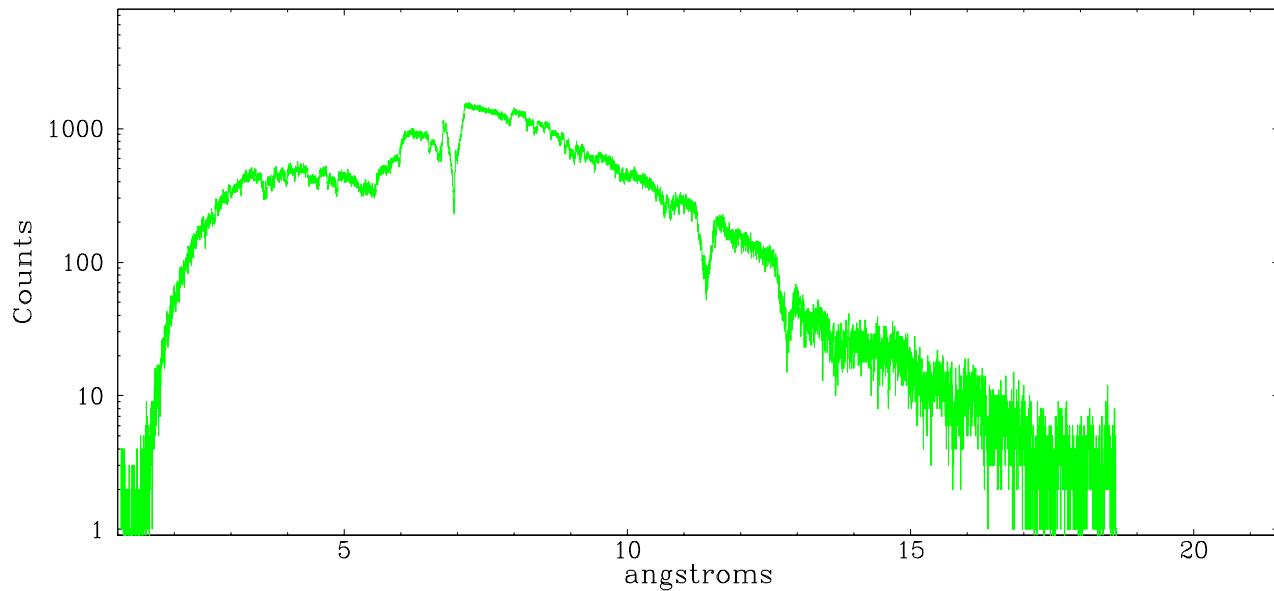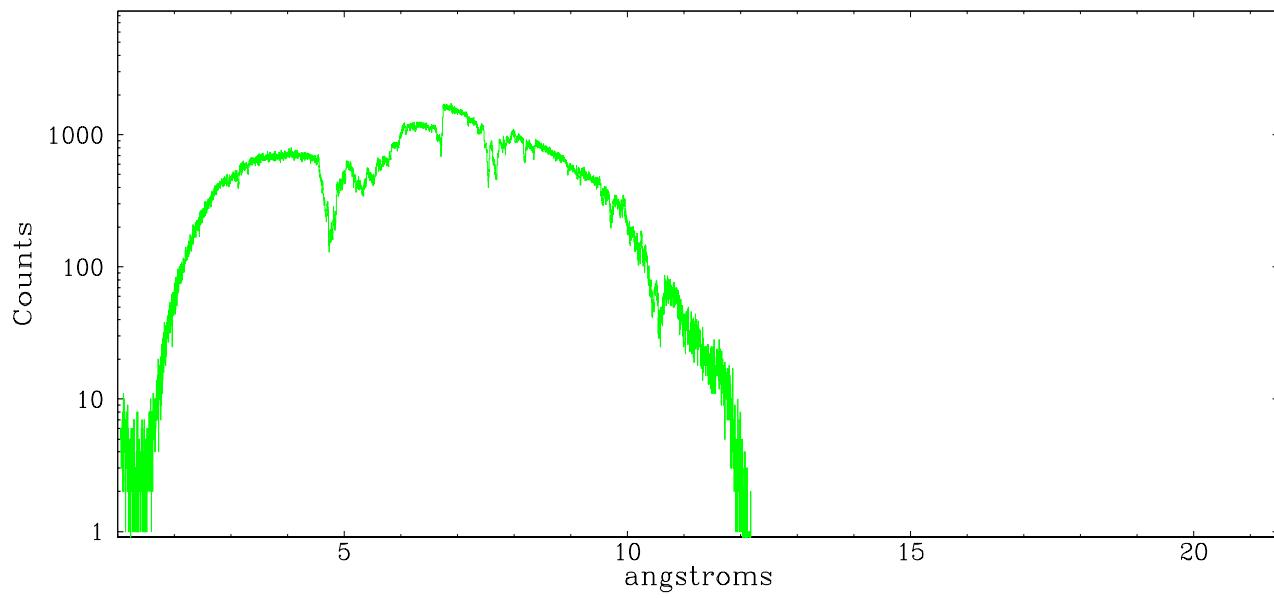
3.2 MEG Arm
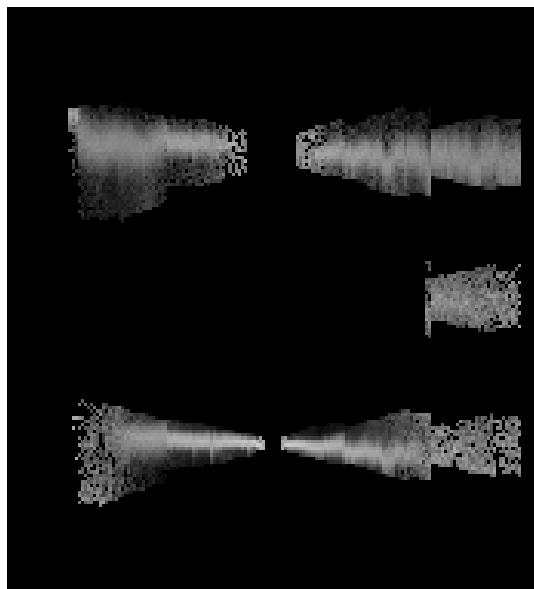
MEG Order Sort 123
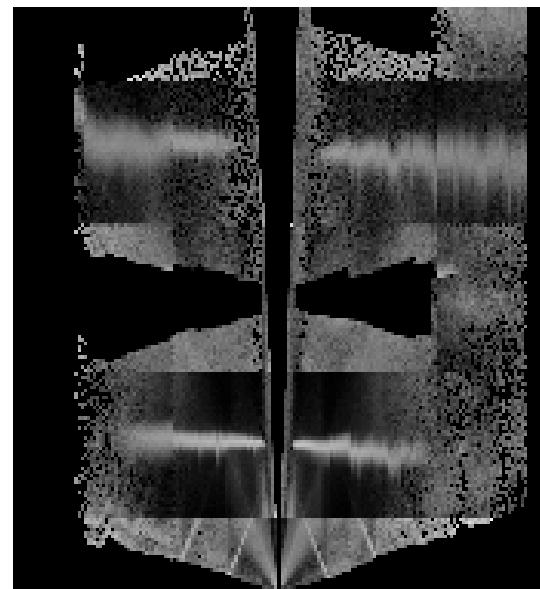
MEG Order Sort ALL
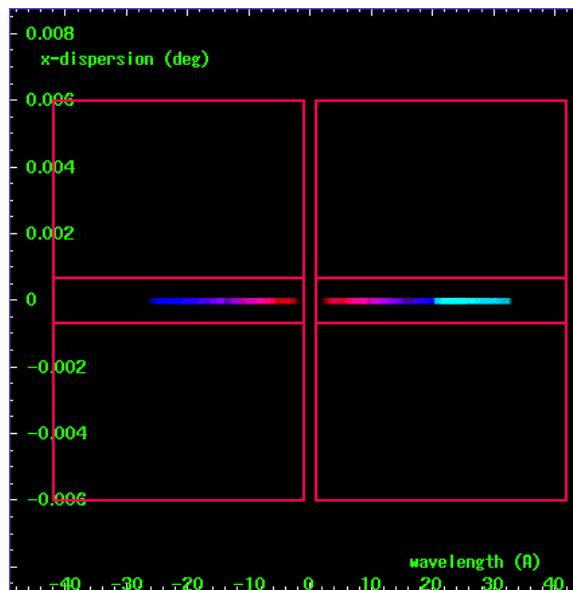
Spot Image MEG
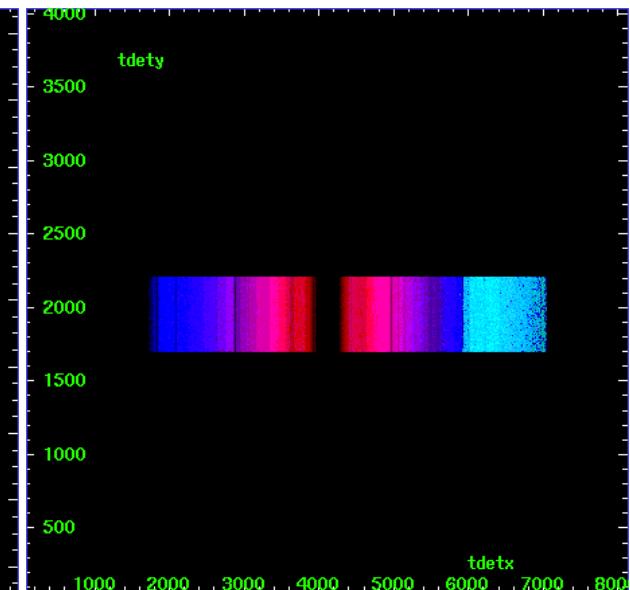

Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	347949	0	3699723	125256	5213487	17271	417479
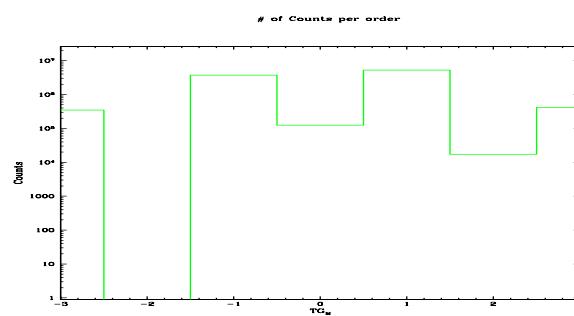
meg order −1
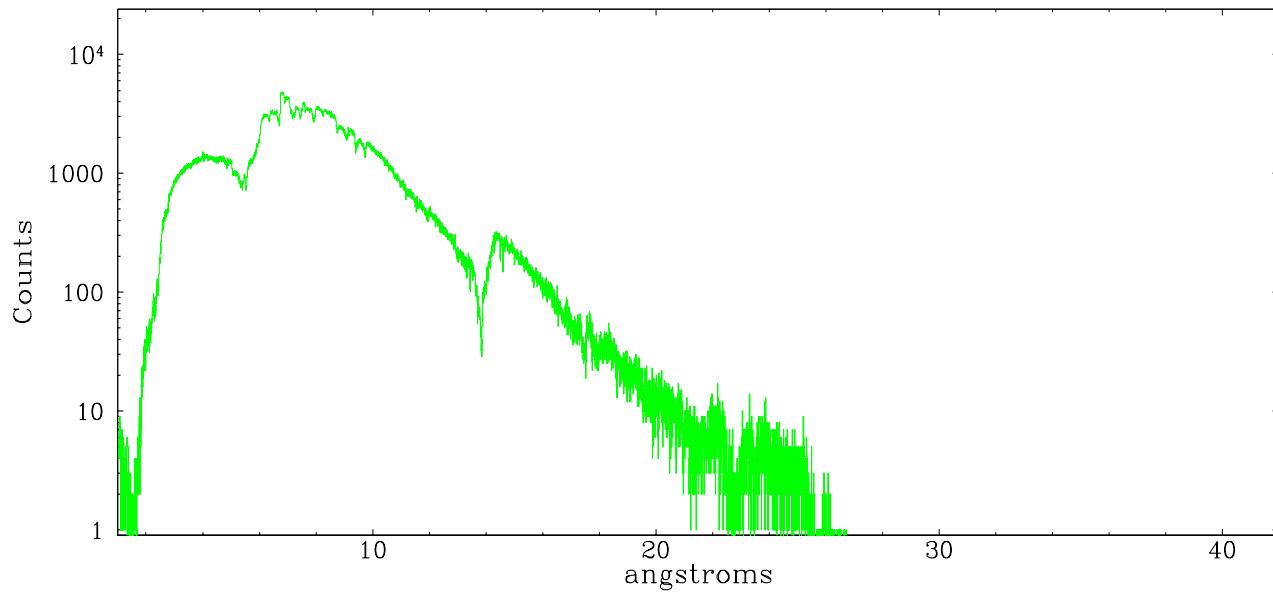
meg order +1
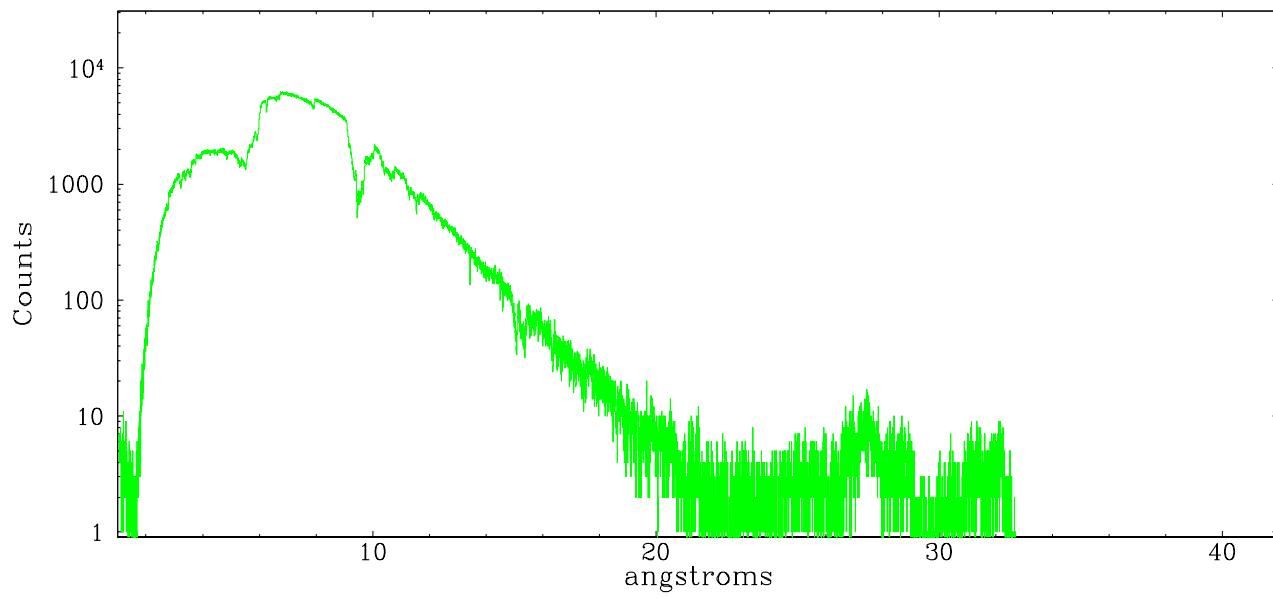
A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2008.04.24
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	50.185

A.2 Comments

```
Charge time: variation in gtime with chip is due to telemetry
saturation. Appropriate HETGS time is the maximum, chip4 time, which
does reflect the requested exposure.
==========================================
Zeroth order is in a 100 column wide count exclusion window with a
sampling rate of 1/20.====================================
Gain and CTI correction are not well calibrated in CC-mode.
Default order sorting can clip some regions, particularly in high
orders. User-specified custom processing parameters may be required
in tg_resolve_events (osipfile=none, osort_lo, osort_hi ~0.3)
though this can allow more zeroth order background at short
wavelengths.========================================
For ACIS/CC-mode w/ HETG, there are no MEG even order counts. MEG
even orders overlap with HEG orders in energy, but MEG even order
efficiencies are very low. Since HEG and MEG cannot be spatially
separated, events are preferentially assigned to HEG. (MEG odd
orders can be resolved.)
```