

V&V Reference Report

L2 ASCDS Version : 8.5.1.1

Observation 6142 - L2 Version 4
Chandra X-Ray Center

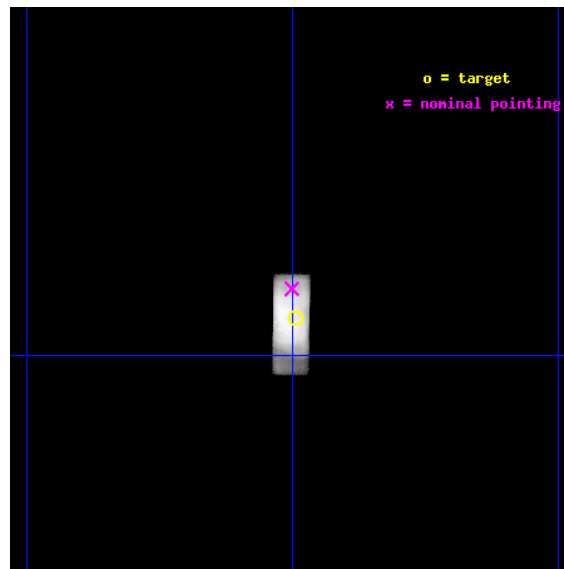
L2 Processing Date : Dec 31 2012

Contents

1	Front	2
2	OBI	3
2.1	OBI	3
2.1.1	Images	3
2.1.2	Parameters	4
2.1.3	Events	4
2.2	Compared Parameters	5
2.3	Aspect	6
2.4	Star Slots	9
2.4.1	Slot 3	9
2.4.2	Slot 4	10
2.4.3	Slot 5	11
2.4.4	Slot 6	12
2.4.5	Slot 7	13
2.5	FID Slots	14
2.5.1	Slot 0	14
2.5.2	Slot 1	15
2.5.3	Slot 2	16
3	Gratings	17
3.1	HEG Arm	17
3.2	MEG Arm	19
A	Summary	21
A.1	Status	21
A.2	Comments	21

1 Front

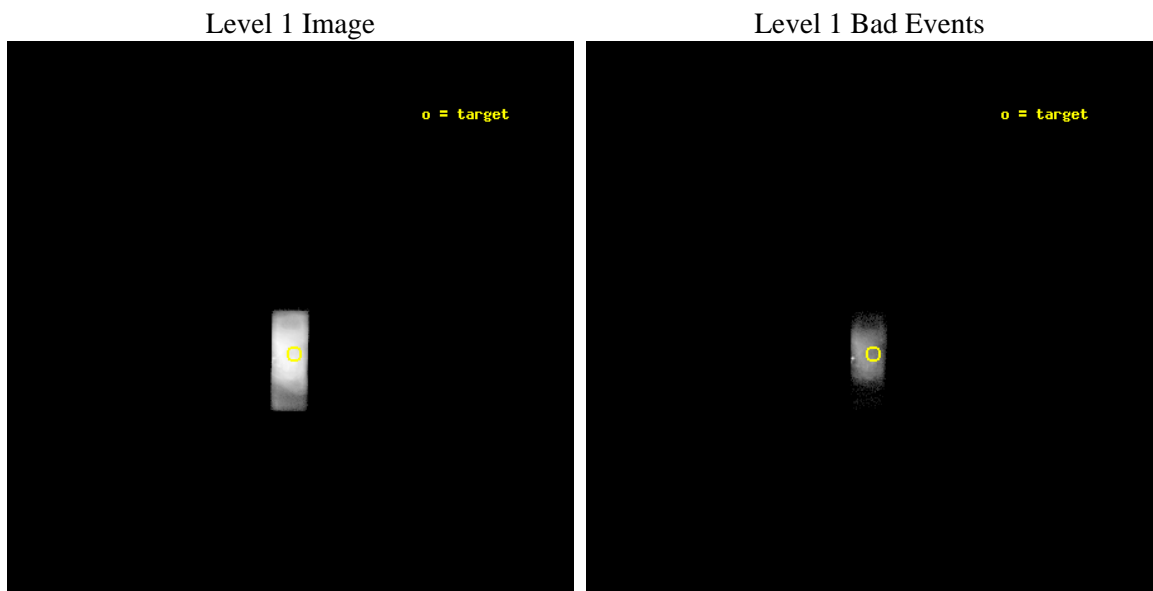
seq_num	500595	Sequence number
obs_id	6142	Observation id
title	Monitoring of the Relativistic Magnetohydrodynamic Shock in the Crab Nebula	Proposal title
observer	Dr Koji Mori	Principal investigator
object	The Crab Nebula	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	83.62375	Observer's specified target RA [deg]
dec_targ	22.016472	Observer's specified target Dec [deg]
ra_nom	83.62536305539	Nominal RA [deg]
dec_nom	22.02887099592	Nominal Dec [deg]
roll_nom	90.838085960665	Nominal Roll [deg]
revision	4	Processing version of data
ontime	10146.60040319	Sum of GTIs [s]
livetime	8925.5809317291	Livetime [s]
ontime7	10146.60040319	Sum of GTIs [s]
l2events	2452145	Number of level 2 events



2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Parameters

obi_num	0	Obi number	sched_exp_time	10000.000000	[s] Scheduled observation exposure time
ascdsver	8.5.1.1	Processing system revision	ontime	10146.60040319	Sum of GTIs [s]
caldsver	4.5.5	 	ontime7	10146.60040319	Sum of GTIs [s]
date	2012-12-31T12:43:12	Date and time of file creation	l1events	2612922	Number of level 1 events
revision	4	Processing version of data			

2.1.3 Events

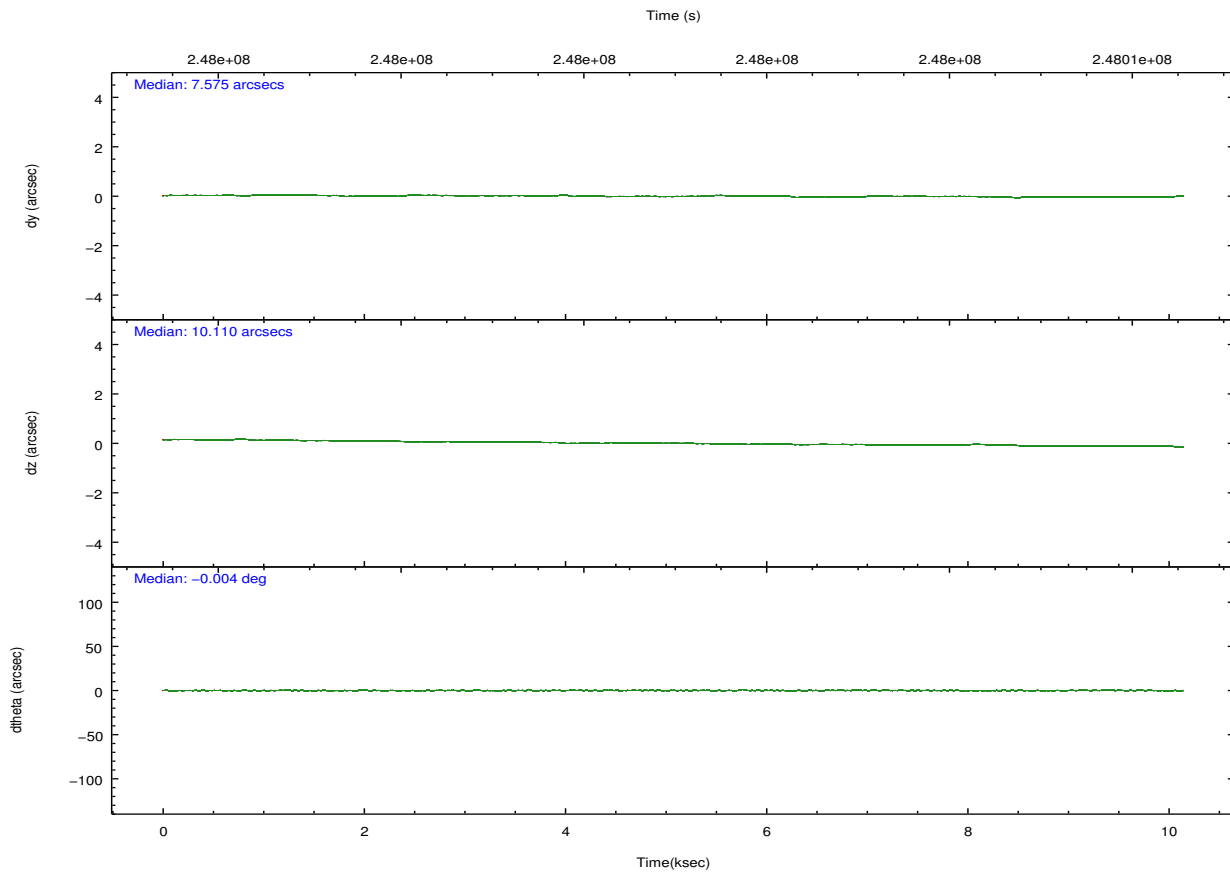
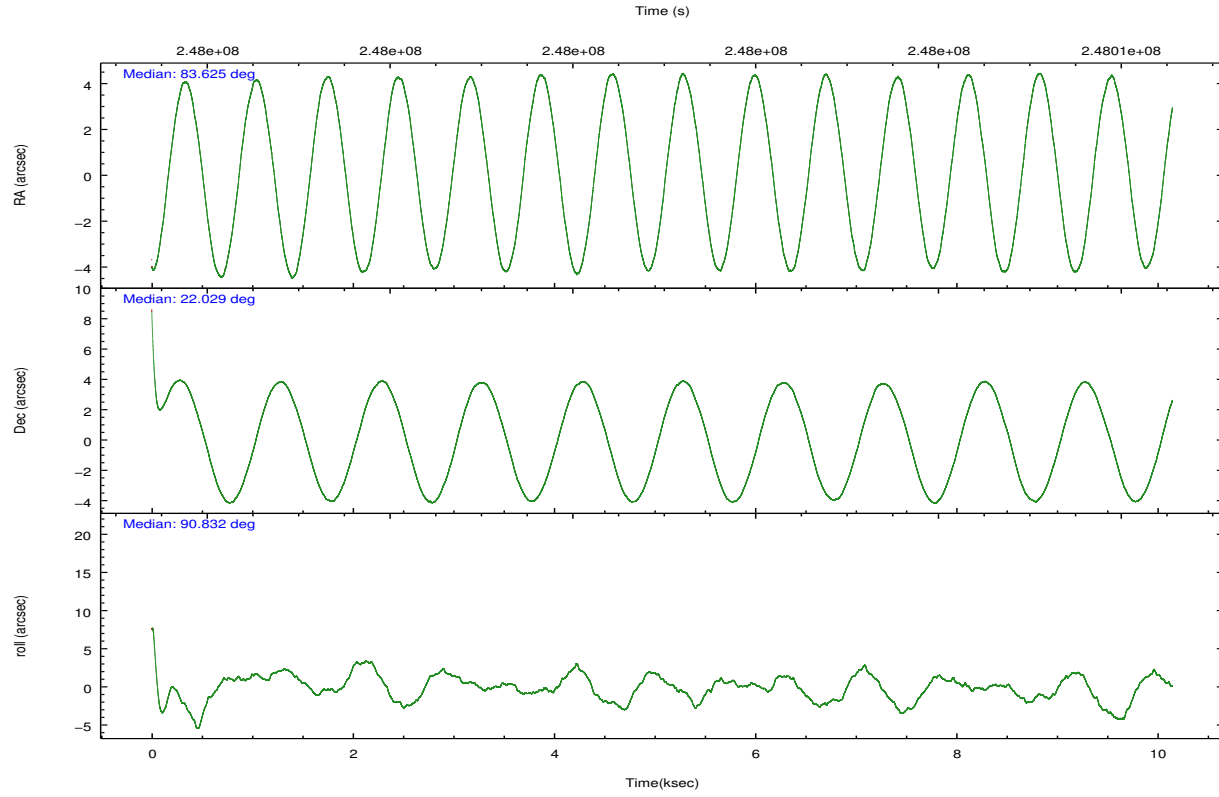
	ccd 7
level 1 events	2612922
rejected events	129845
rejected %	4%

	ccd 7
grade 0 events	512880
	19%
grade 1 events	9167
	0%
grade 2 events	647870
	24%
grade 3 events	287979
	11%
grade 4 events	276802
	10%
grade 5 events	37520
	1%
grade 6 events	798693
	30%
grade 7 events	42011
	1%

2.2 Compared Parameters

Parameter	Planned	Actual	Parameter	Planned	Actual
Instrument	ACIS	ACIS	Obspar format version number	7	7
Detector	ACIS-7	ACIS-7	Obspar file type	PREDICTED	ACTUAL
Grating	HETG	HETG	Obspar update status	NONE	UPDATED
Data mode	GRADED	GRADED	Number of optional ACIS chips dropped	0	0
Observation mode	POINTING	POINTING	On-chip summing requested	N	N
[deg] Pointing RA	83.640784	83.62536305538964	Subarray requested	CUSTOM	CUSTOM
[deg] Pointing Dec	22.005662	22.0288709959197	Subarray start row	127	127
[deg] Pointing Roll	90.675664	90.8380859606646	Subarray row count	101	101
[mm] SIM focus pos	-0.684267	-0.6828225247311905	Alternating exposures requested	N	N
[mm] SIM defocus	0	0.001444936568705701	[s] Primary exposure time	0.000000	0.3
[mm] SIM translation stage pos	-182.132523	-182.1370004450064			
[mm] SIM translation stage offset	-8	-7.995522138001405			
[s] Observation start time (MET)	247996047.184000	247994282.58444			
Observation start date	2005-11-10T07:46:23	2005-11-10T07:18:02			
[s] Observation end time (MET)	248006047.184000	248007757.23506			
Observation end date	2005-11-10T10:33:03	2005-11-10T11:02:37			
Read mode	TIMED	TIMED			

2.3 Aspect

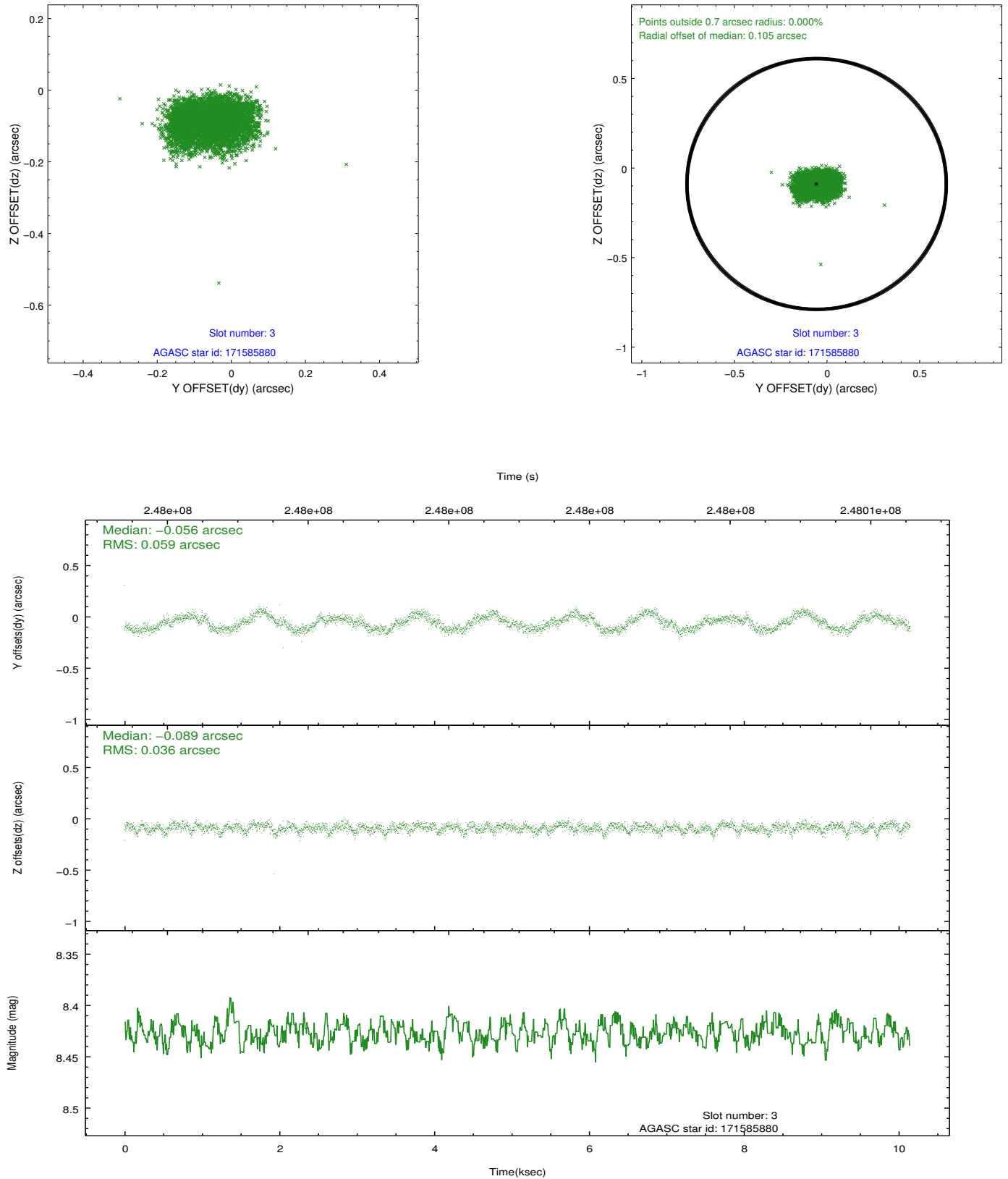


Slot Statistics

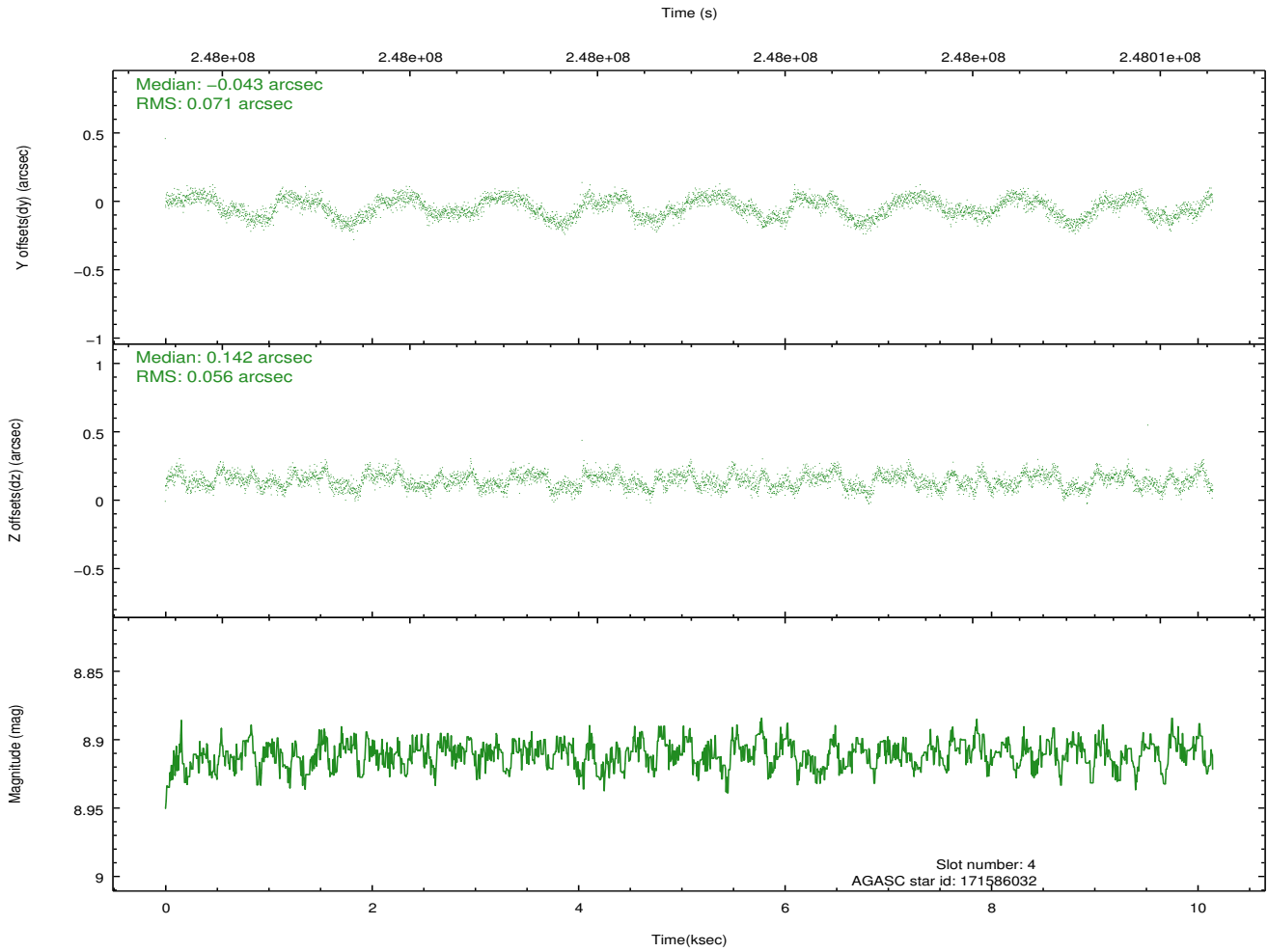
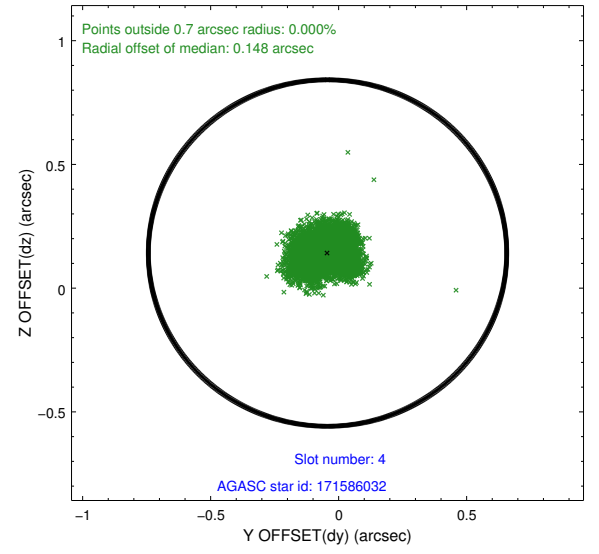
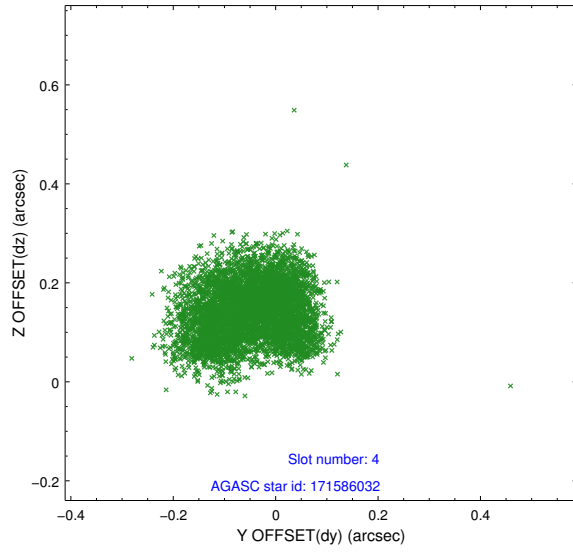
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	2475	-0.071	-0.091	0.006	0.011	0.000000	0.000000	-759.83	-1896.17
1	FID	ACIS-S-4	7.18	2476	0.114	0.059	0.005	0.010	0.000000	0.000000	2153.39	11.86
2	FID	ACIS-S-5	7.23	2476	-0.074	0.040	0.006	0.011	0.000000	0.000000	-1812.01	6.08
3	GUIDE	171585880	8.43	4947	-0.056	-0.089	0.075	0.116	83.676260	22.176319	613.15	-125.43
4	GUIDE	171586032	8.91	4951	-0.043	0.142	0.099	0.146	83.950197	22.083225	268.52	-1035.16
5	GUIDE	171721904	9.19	4946	-0.053	0.019	0.088	0.140	84.272676	22.116922	380.49	-2112.10
6	GUIDE	243941560	8.32	4951	-0.096	0.105	0.068	0.105	83.733264	22.568598	2023.07	-331.27
7	GUIDE	171597832	9.15	4936	0.255	-0.179	0.084	0.133	83.183230	21.366702	-2279.01	1560.69

2.4 Star Slots

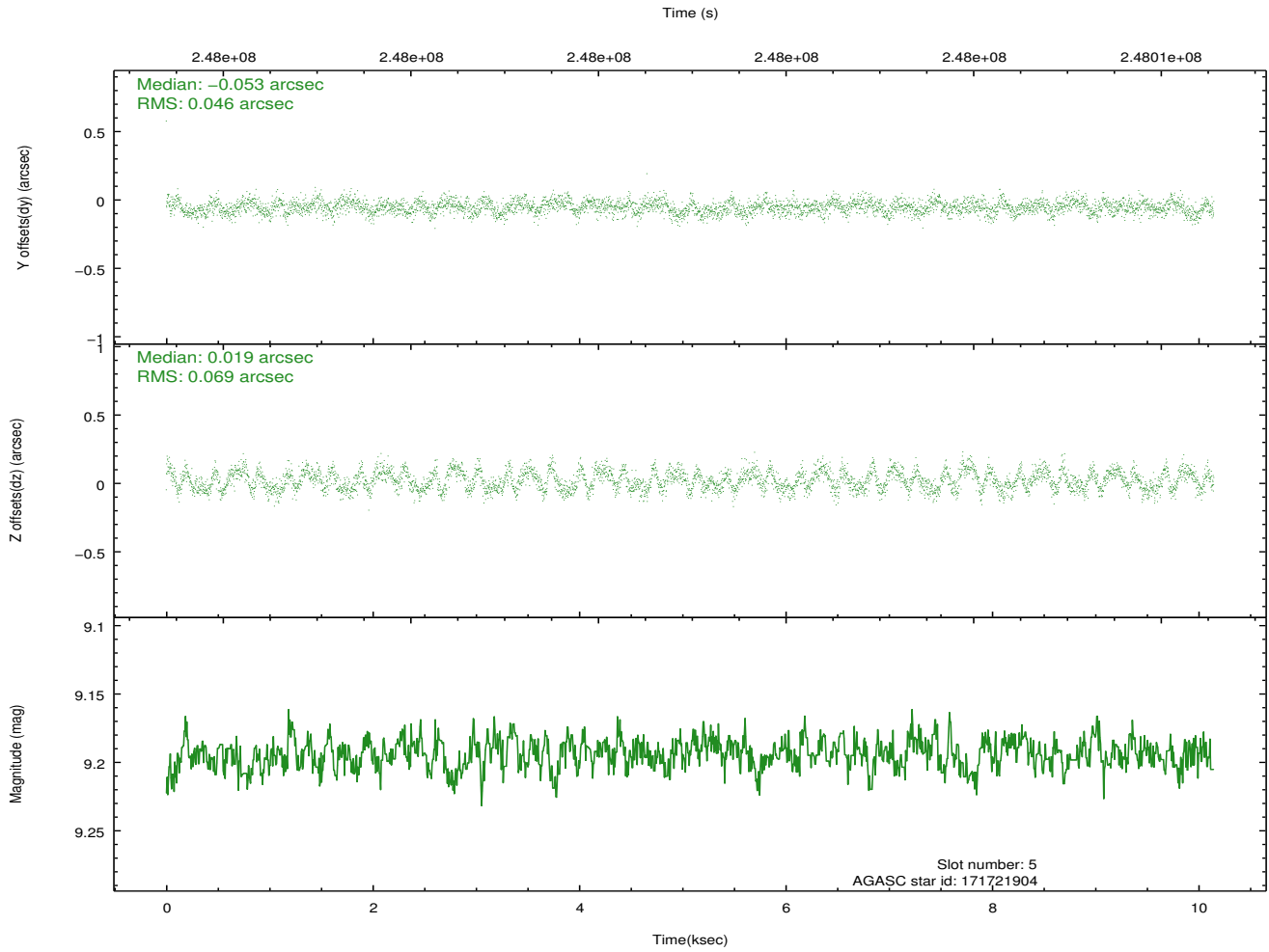
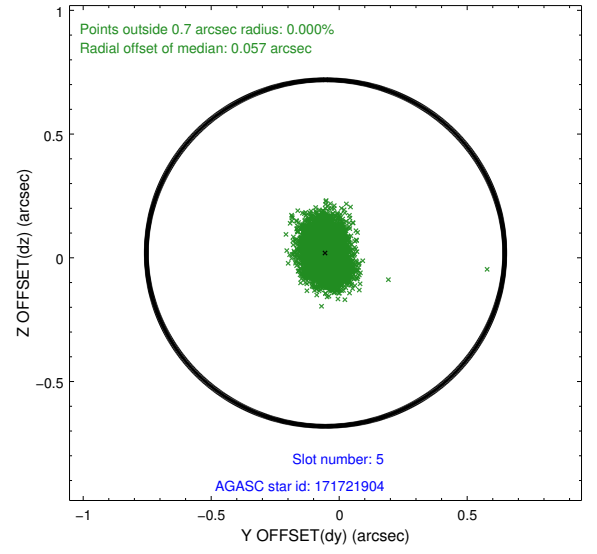
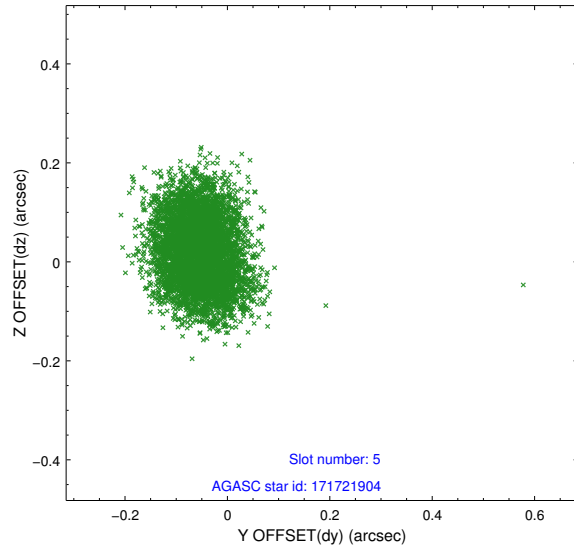
2.4.1 Slot 3



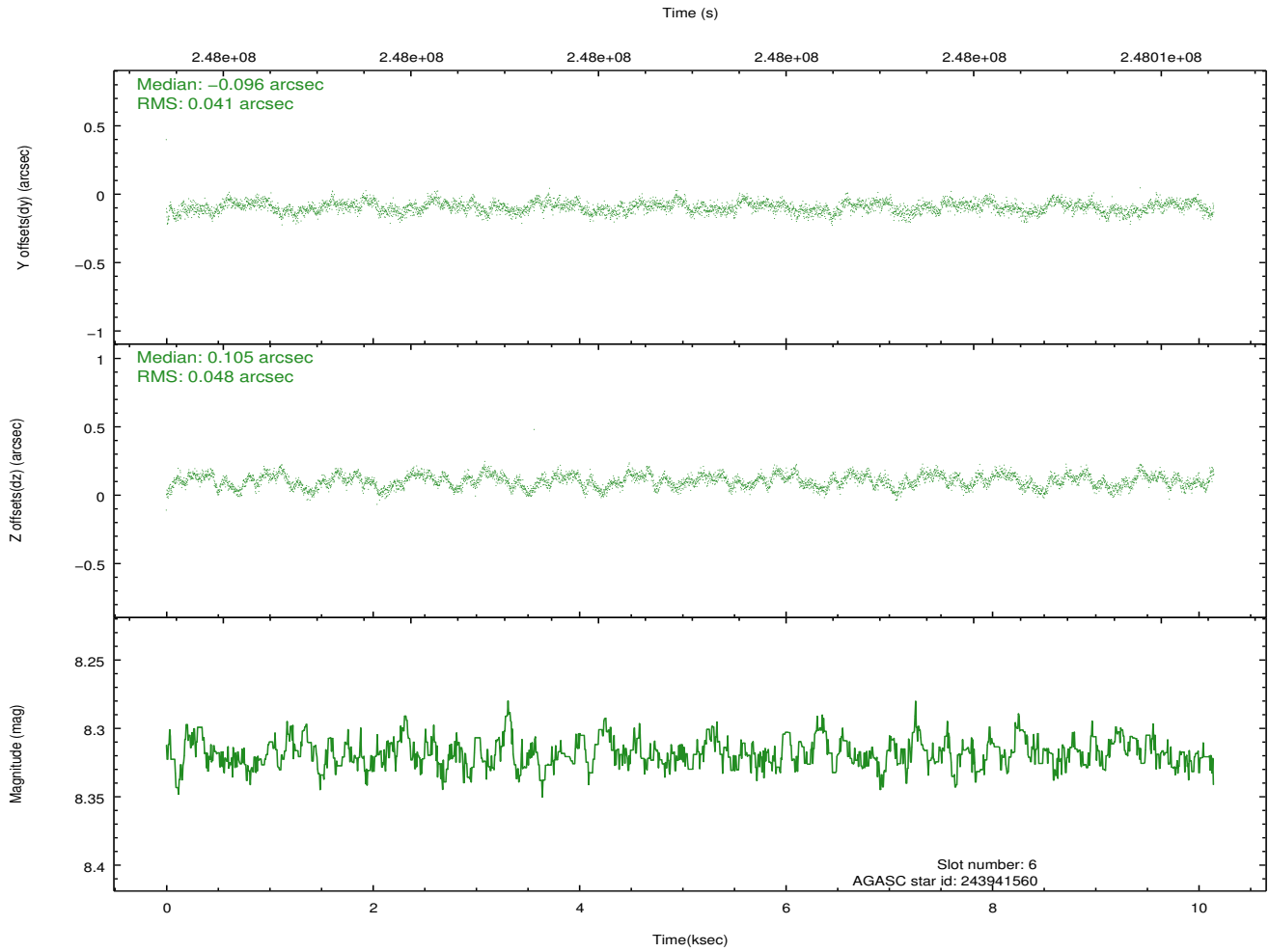
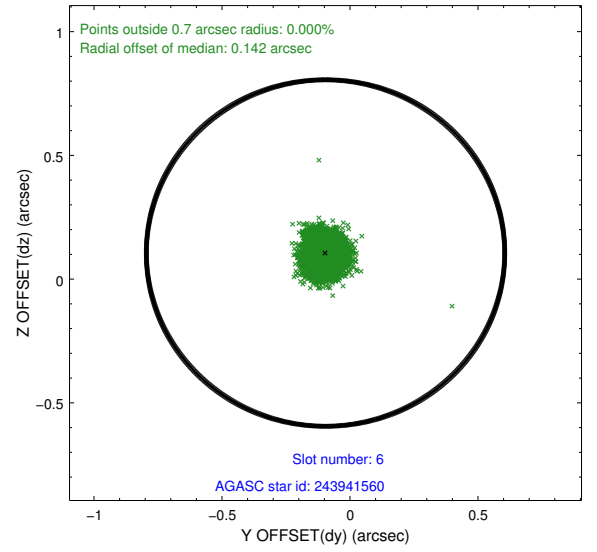
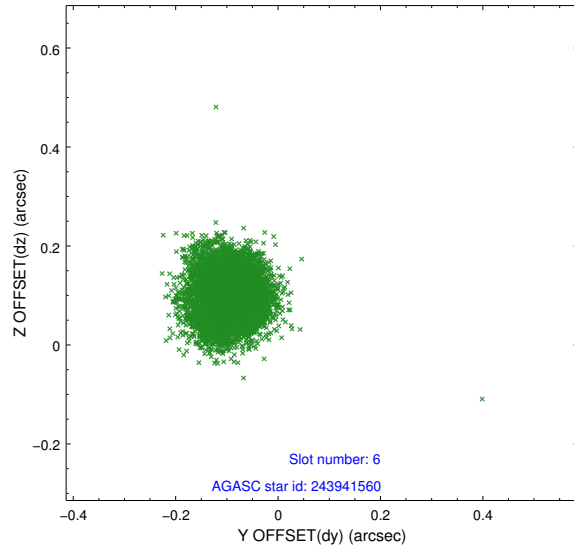
2.4.2 Slot 4



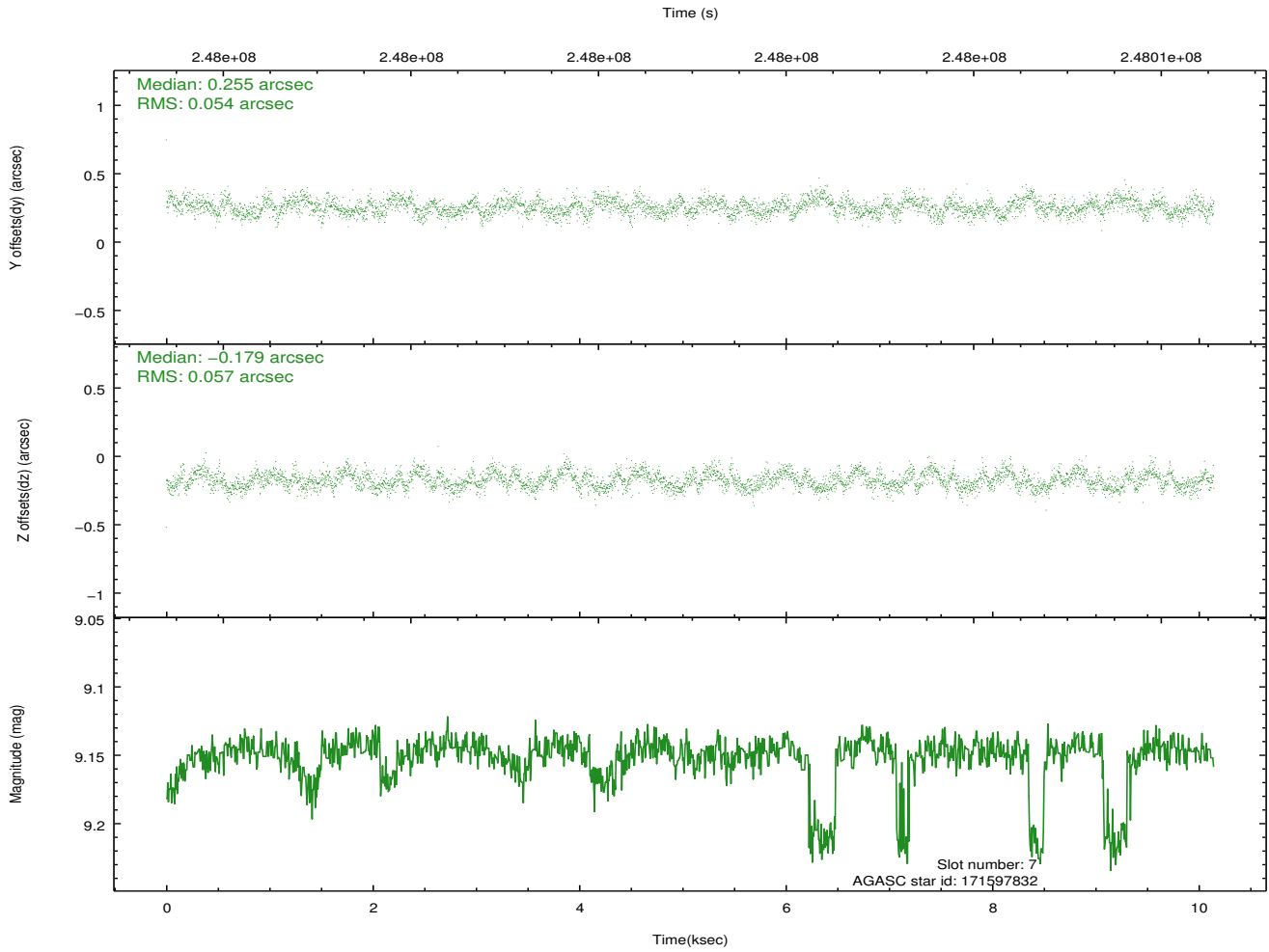
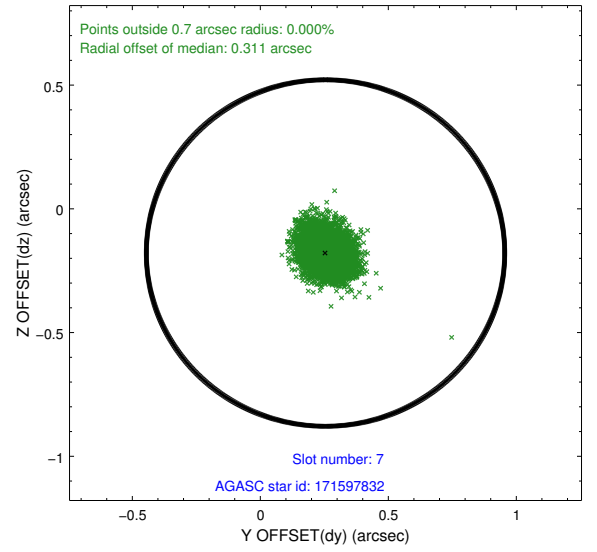
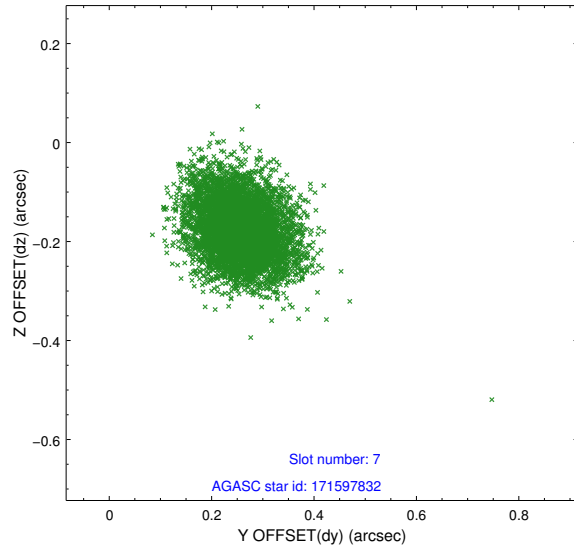
2.4.3 Slot 5



2.4.4 Slot 6

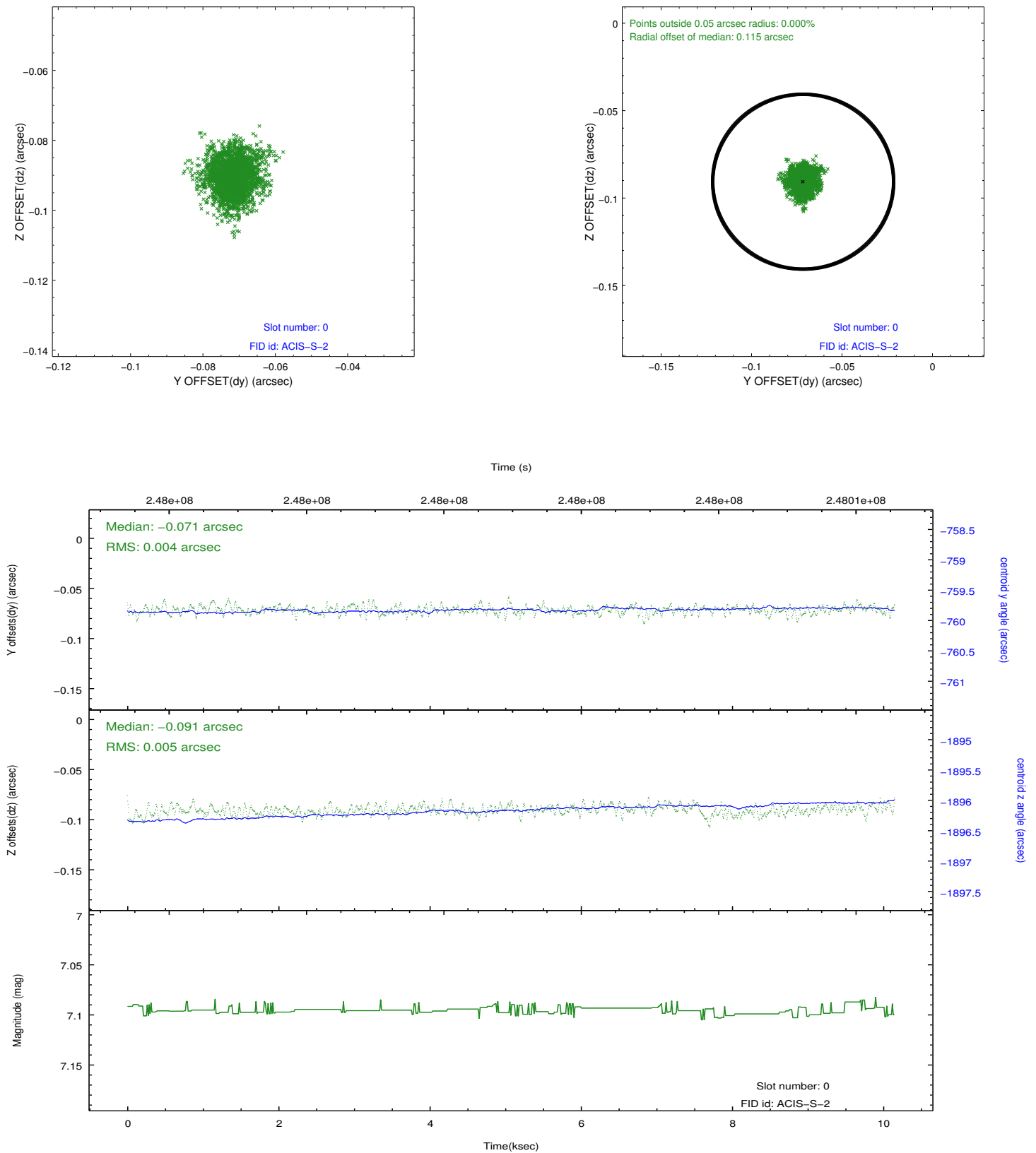


2.4.5 Slot 7

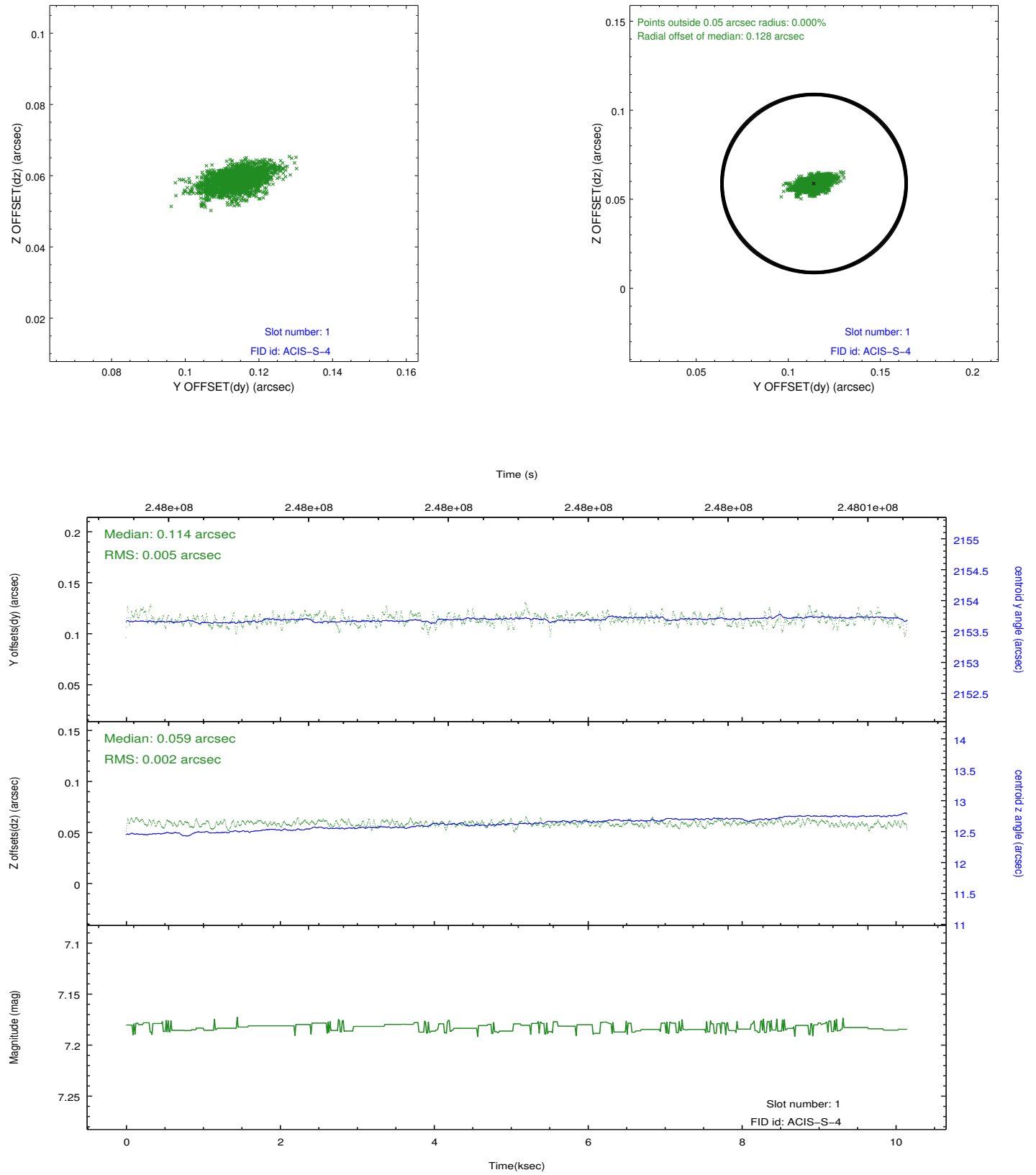


2.5 FID Slots

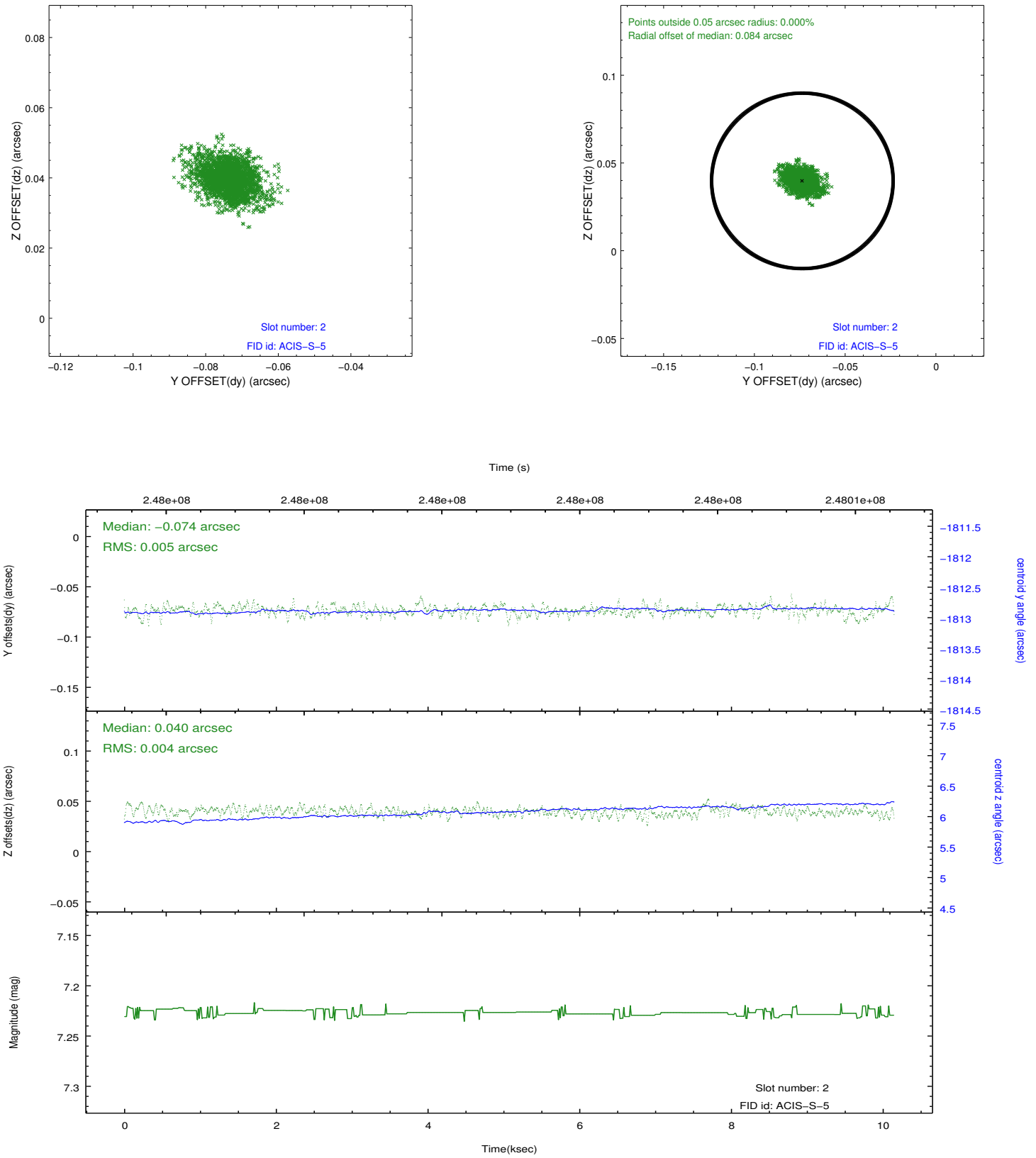
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

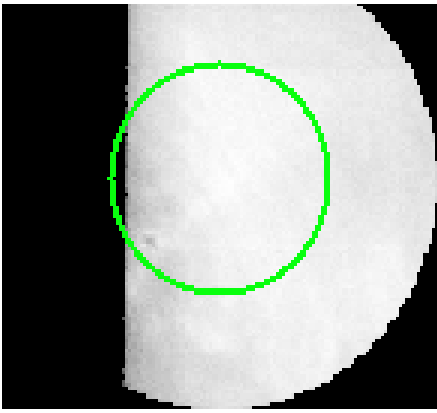


3 Gratings

3.1 HEG Arm



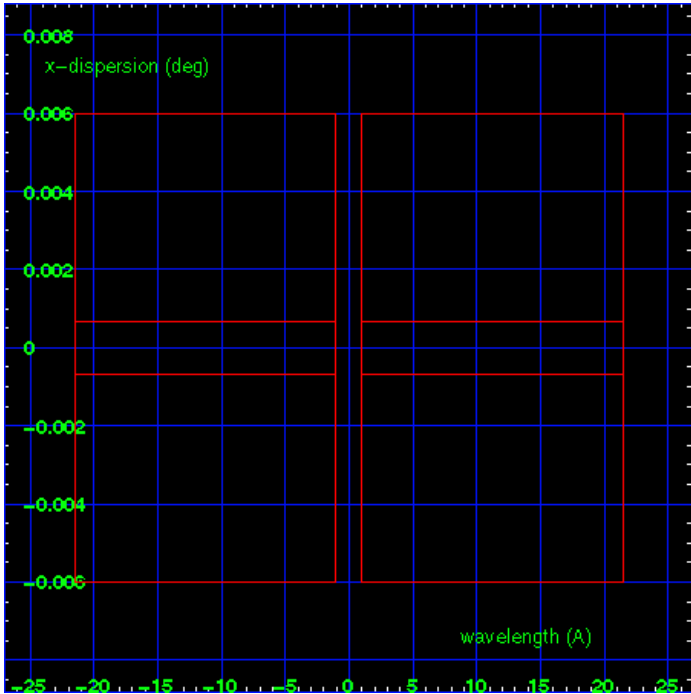
HEG Order Sort 123



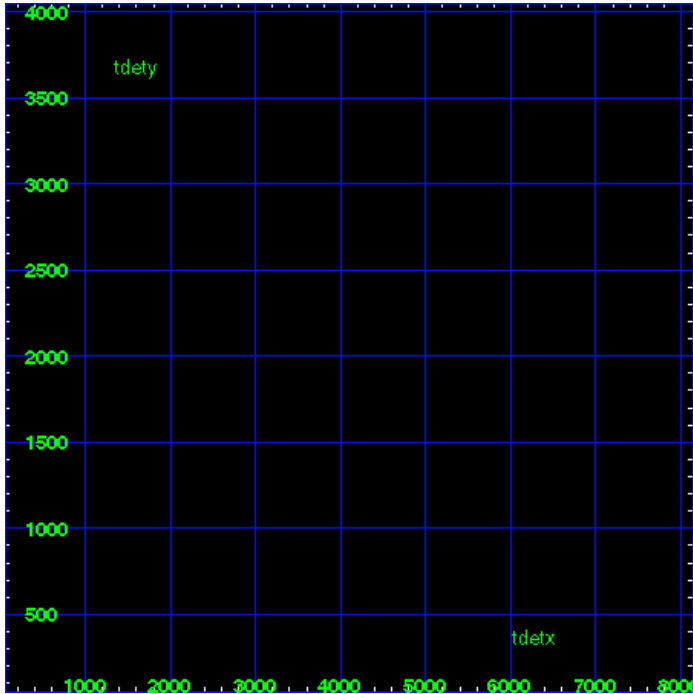
HEG Zero Order



HEG Order Sort ALL

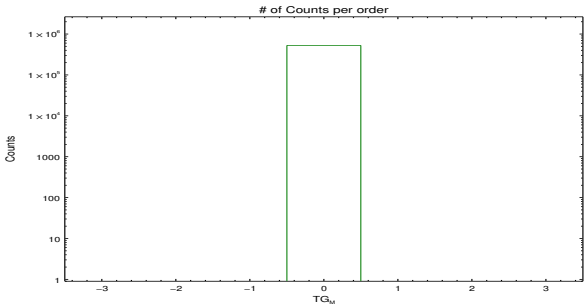


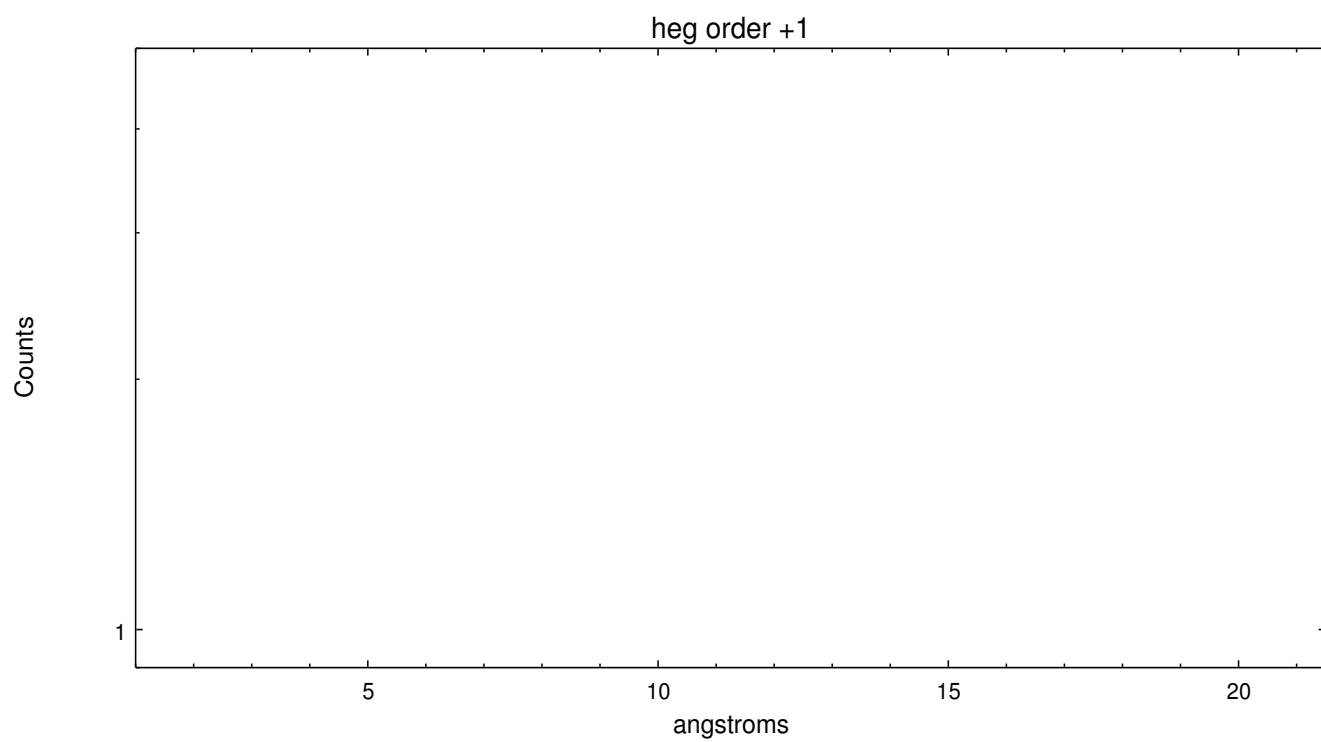
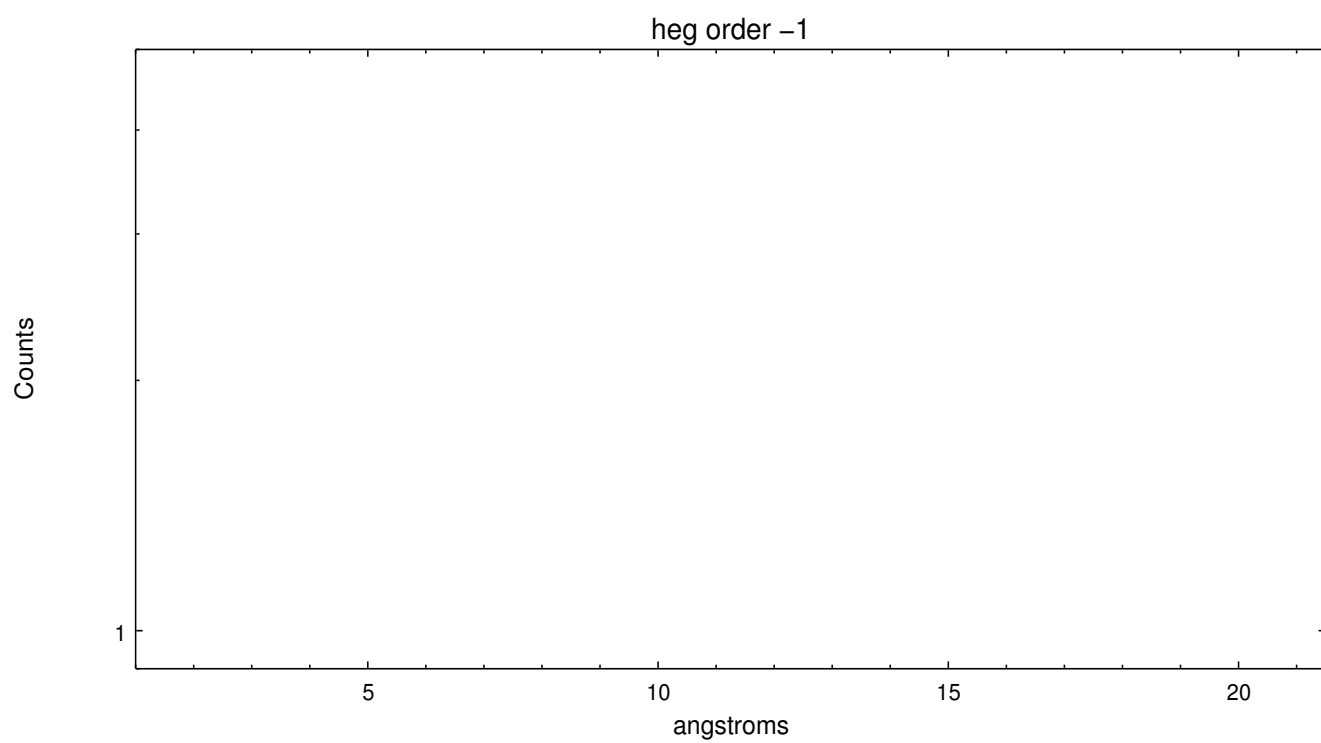
Spot Image HEG



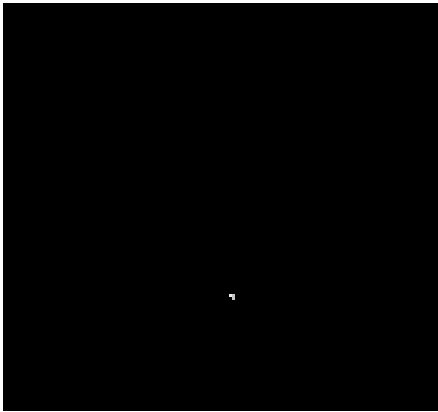
Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	0	527656	0	0	0

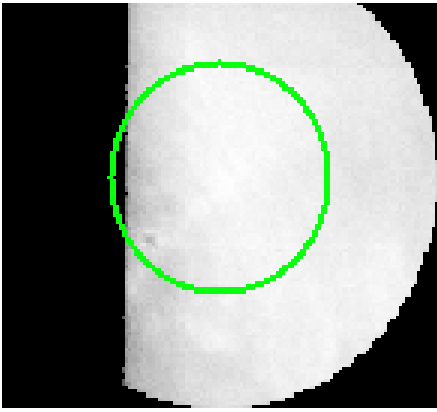




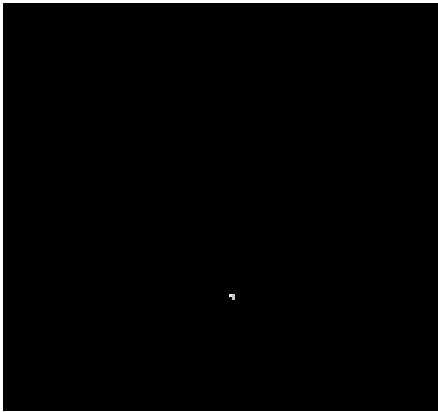
3.2 MEG Arm



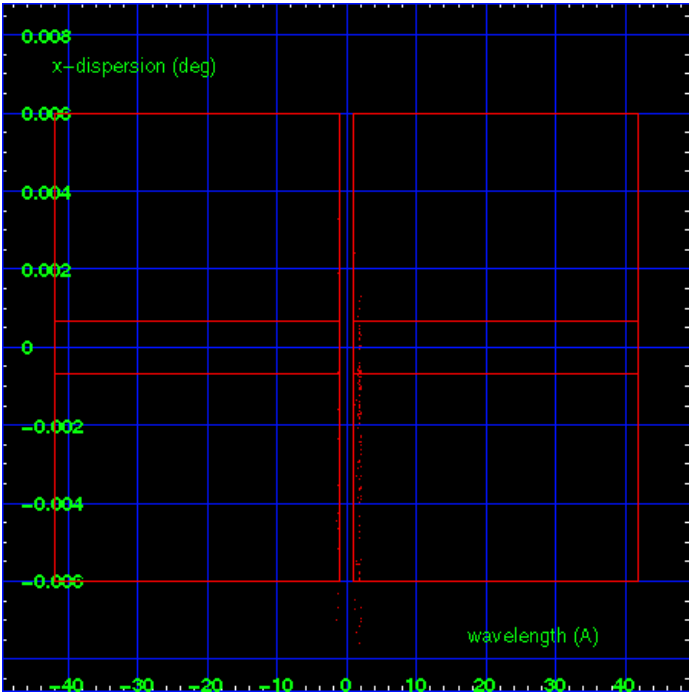
MEG Order Sort 123



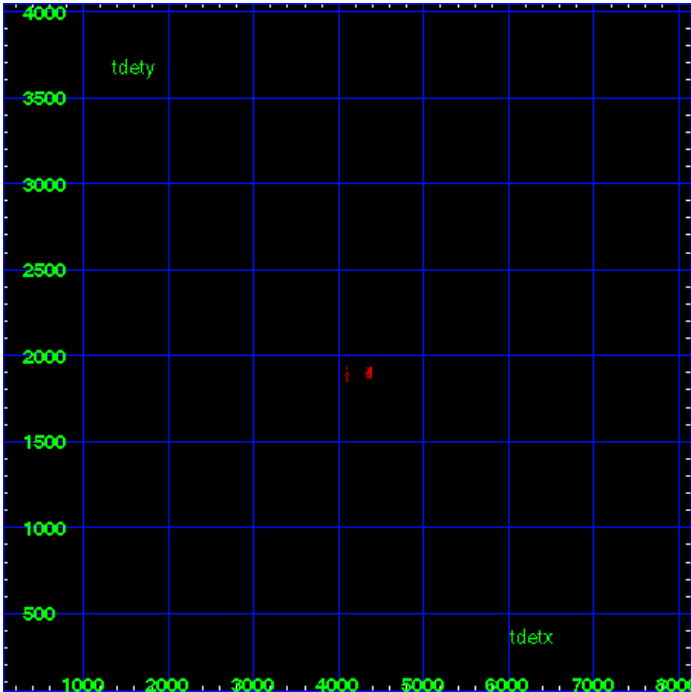
MEG Zero Order



MEG Order Sort ALL

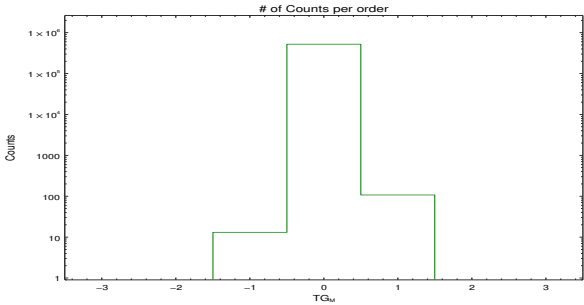


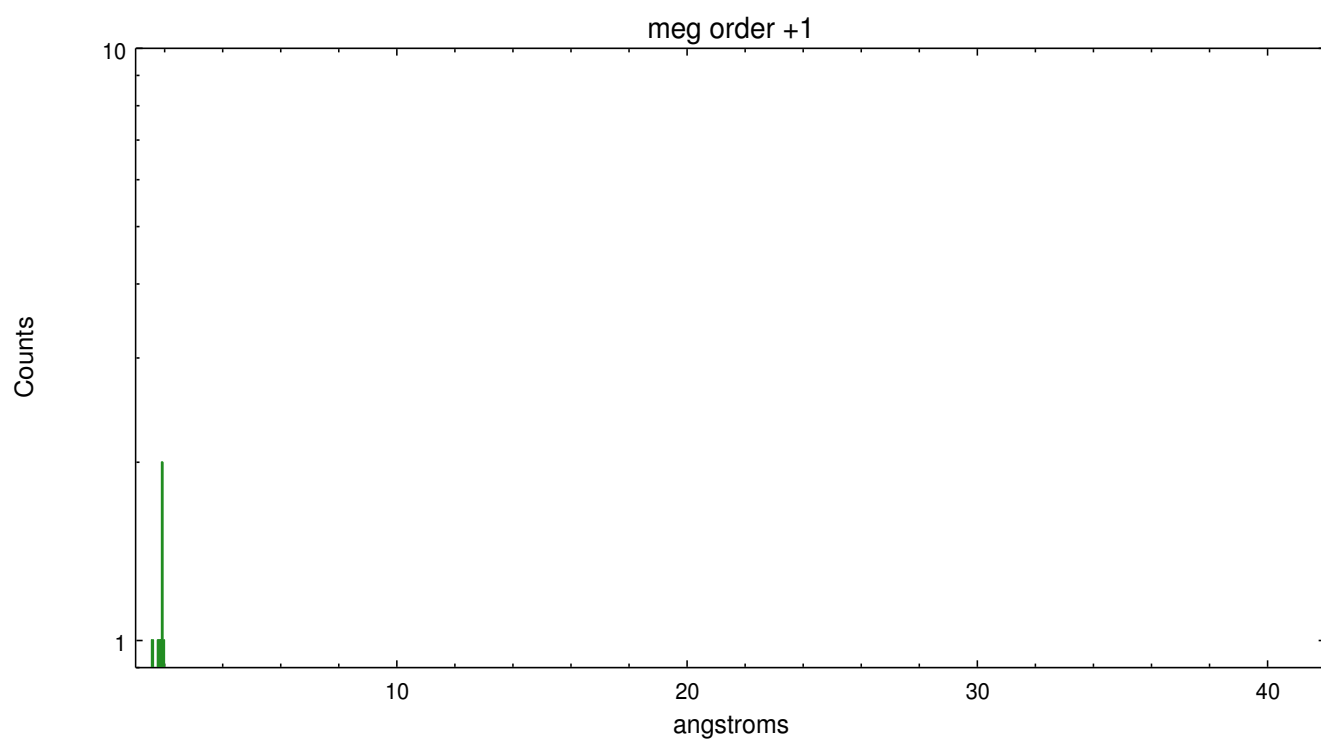
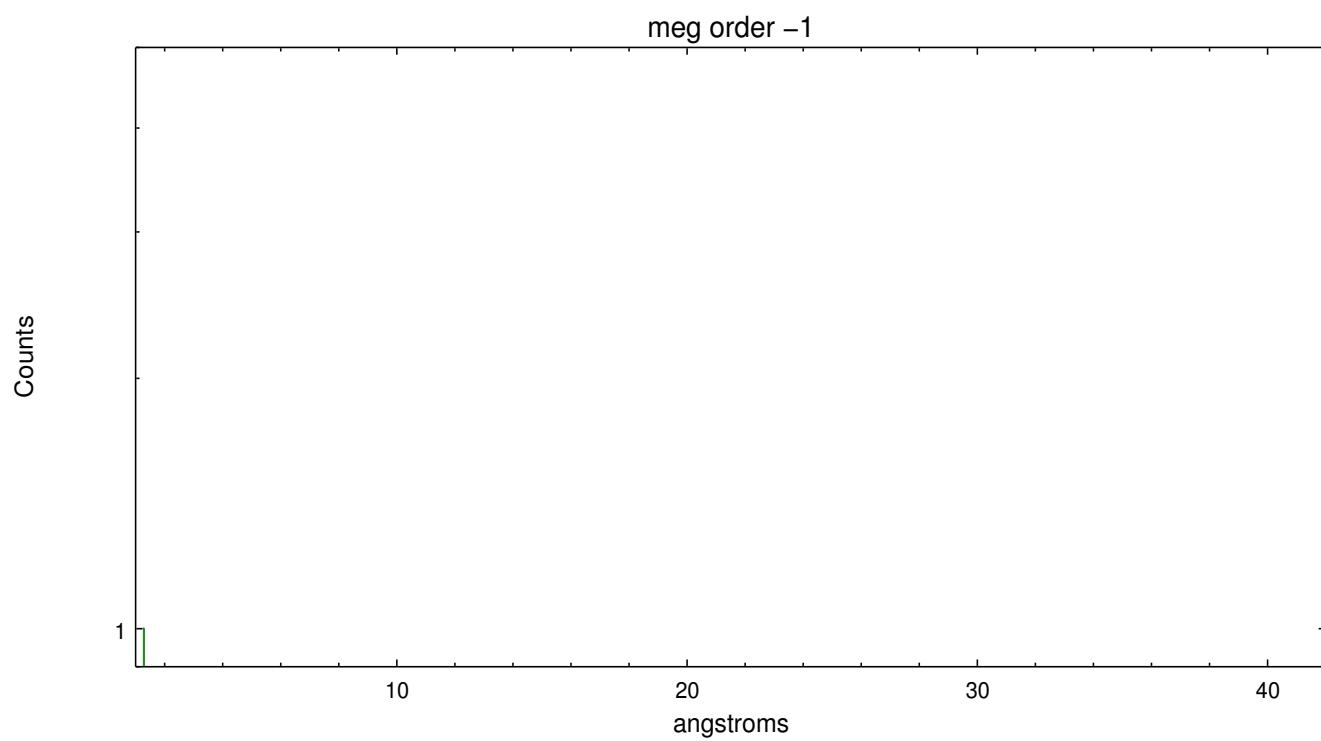
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	0	0	13	527656	107	0	0





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.23
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	10.1466

A.2 Comments

HETG is inserted as a filter; there is very little useful gratings information in the observation. The zeroth order position used in the grating extraction is NOT at the position of the pulsar, but is centered on a bright emission knot to the NW. This knot is the brightest emission in the image. The dispersed spectrum only contains data for the meg orders between 1-2 Å. Aim point offset ~30 arcsec to the west, as requested by the observer. Broad east/west streak in Level 2 data is instrumental, due to the fact that the spacecraft dither during this observation was only 1 arcsec.