

V&V Reference Report

L2 ASCDS Version : 10.4.3.1

Observation 18841 - L2 Version 1
Chandra X-Ray Center

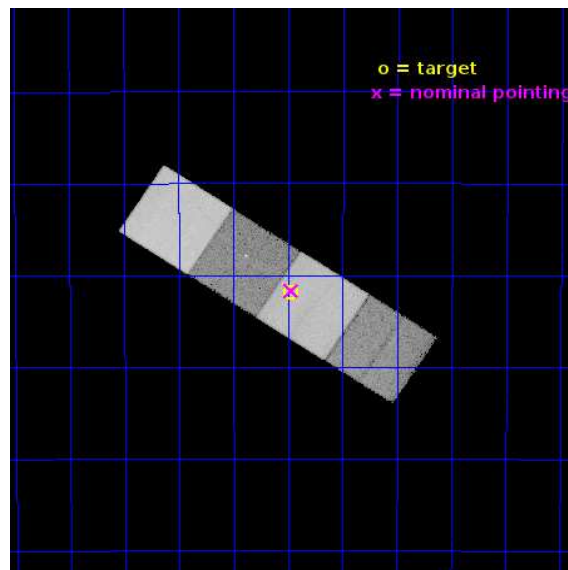
L2 Processing Date : May 3 2016

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1 Front

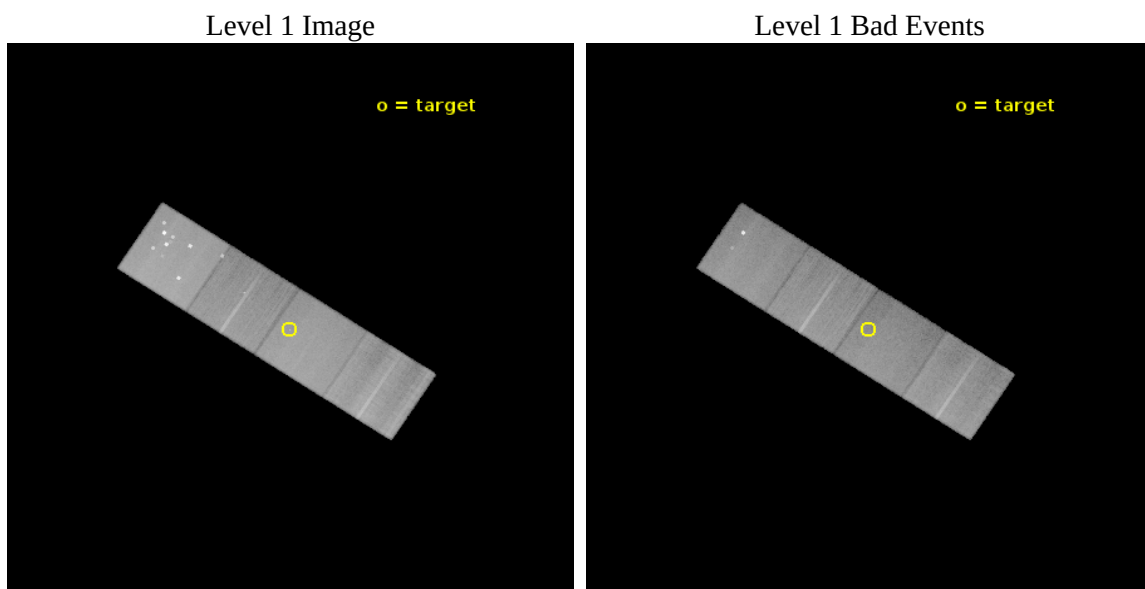
seq_num	201074	Sequence number
obs_id	18841	Observation id
title	Heating the Primordial Soup: X-raying the Circumstellar Disk of RY Lupi	Proposal title
observer	David Principe	Principal investigator
object	RY Lup	Source name
dtcycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	239.868333	Observer's specified target RA [deg]
dec_targ	-40.364222	Observer's specified target Dec [deg]
ra_nom	239.86739483141	Nominal RA [deg]
dec_nom	-40.361766099932	Nominal Dec [deg]
roll_nom	33.156035341904	Nominal Roll [deg]
revision	1	Processing version of data
ontime	43024.90033102	Sum of GTIs [s]
livetime	42462.748333725	Livetime [s]
ontime5	43024.90033102	Sum of GTIs [s]
ontime6	43024.90033102	Sum of GTIs [s]
ontime7	43024.90033102	Sum of GTIs [s]
ontime8	43015.477280259	Sum of GTIs [s]
l2events	393473	Number of level 2 events



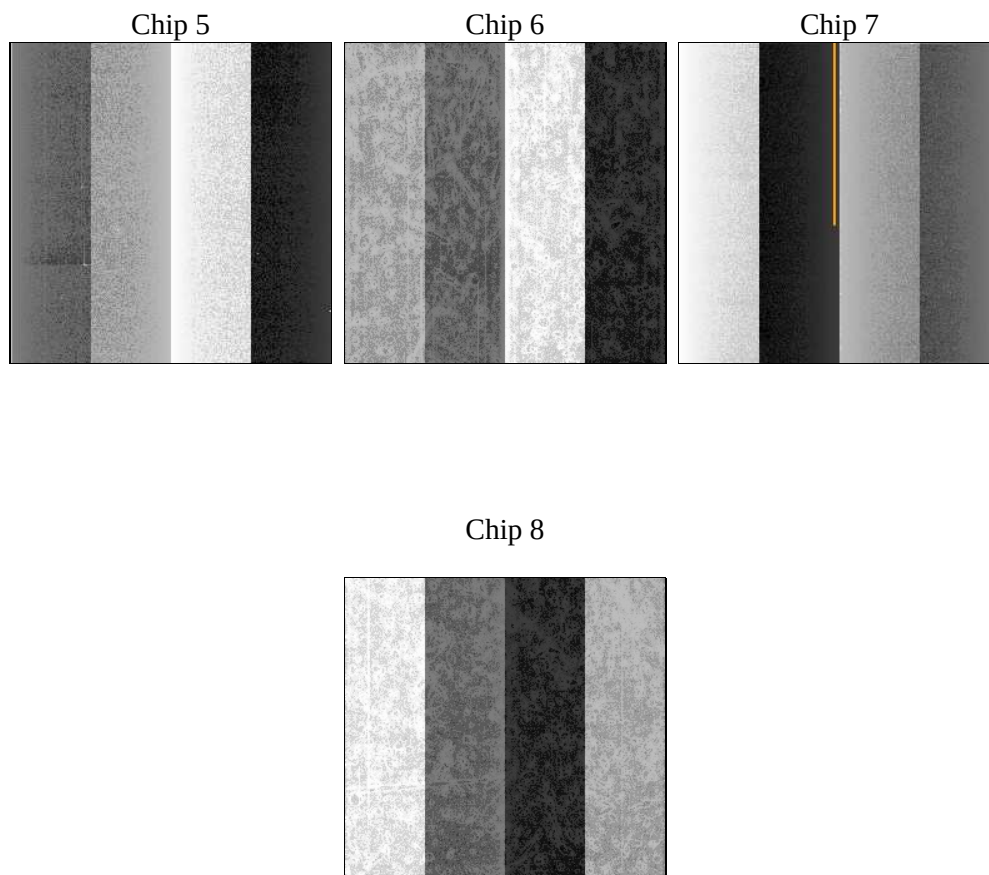
2 OBI

2.1 OBI

2.1.1 Images



2.1.2 Bias



2.1.3 Parameters

obi_num	0	Obi number	sched_exp_time	43000.000000	[s] Scheduled observation exposure time
ascdsver	10.4.3.1	Processing system revision	ontime	43024.90033102	Sum of GTIs [s]
caldsver	4.7.1	 	ontime5	43024.90033102	Sum of GTIs [s]
date	2016-05-03T15:26:21	Date and time of file creation	ontime6	43024.90033102	Sum of GTIs [s]
revision	1	Processing version of data	ontime7	43024.90033102	Sum of GTIs [s]
			ontime8	43015.477280259	Sum of GTIs [s]
			l1events	1434073	Number of level 1 events
			tgmethod	TGDETECT	Method used to create src1a file
			zo_pos	(4093.24, 4077.59)	src1a sky pixel position

2.1.4 Events

	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	471573	267839	345495	349166
rejected events	230636	237032	197242	258153
rejected %	48%	88%	57%	73%

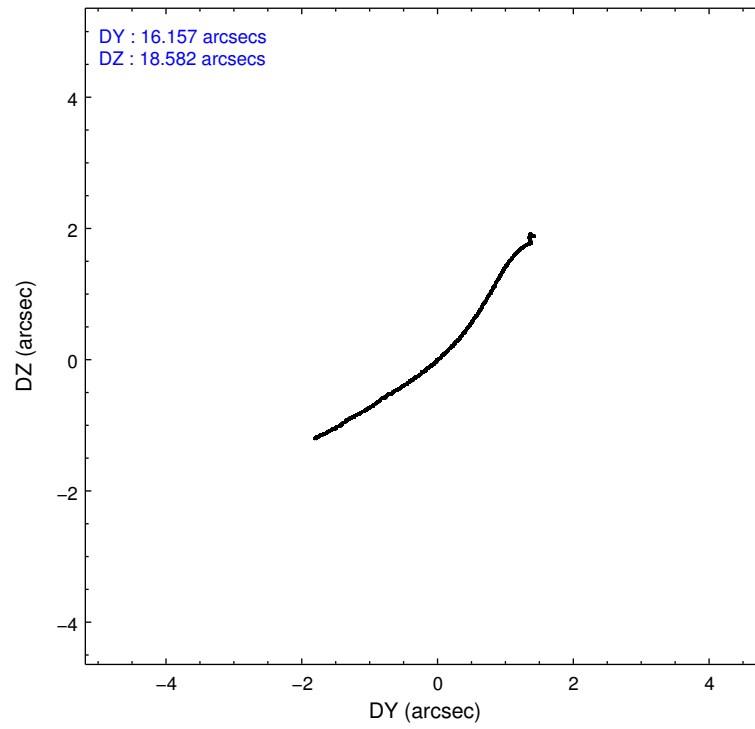
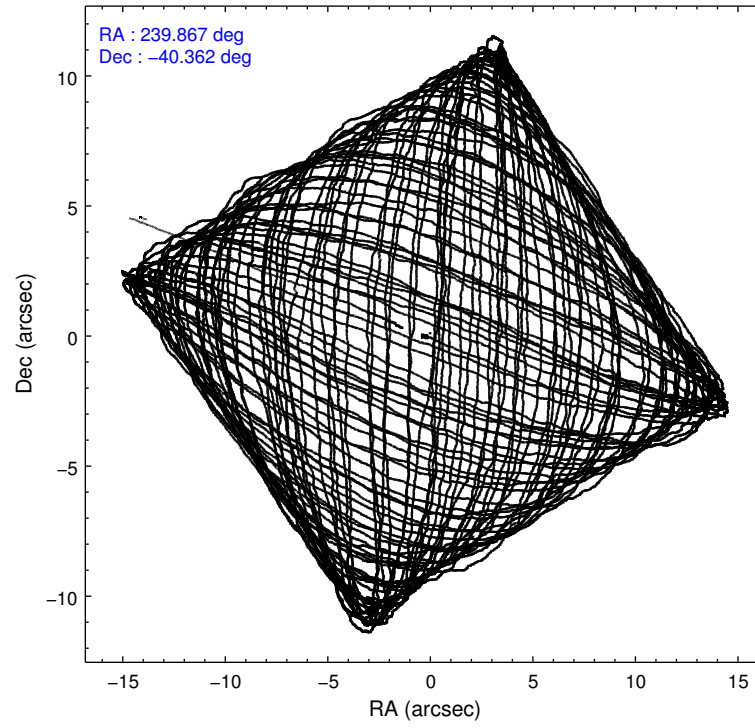
	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	46274	10362	12129	25619
	9%	3%	3%	7%
grade 1 events	953	121	449	268
	0%	0%	0%	0%
grade 2 events	68741	7177	31413	22403
	14%	2%	9%	6%
grade 3 events	7634	2974	11845	9261
	1%	1%	3%	2%
grade 4 events	6787	3030	11674	8829
	1%	1%	3%	2%
grade 5 events	30235	12885	34313	19517
	6%	4%	9%	5%
grade 6 events	111763	7299	81367	25066
	23%	2%	23%	7%
grade 7 events	199186	223991	162305	238203
	42%	83%	46%	68%

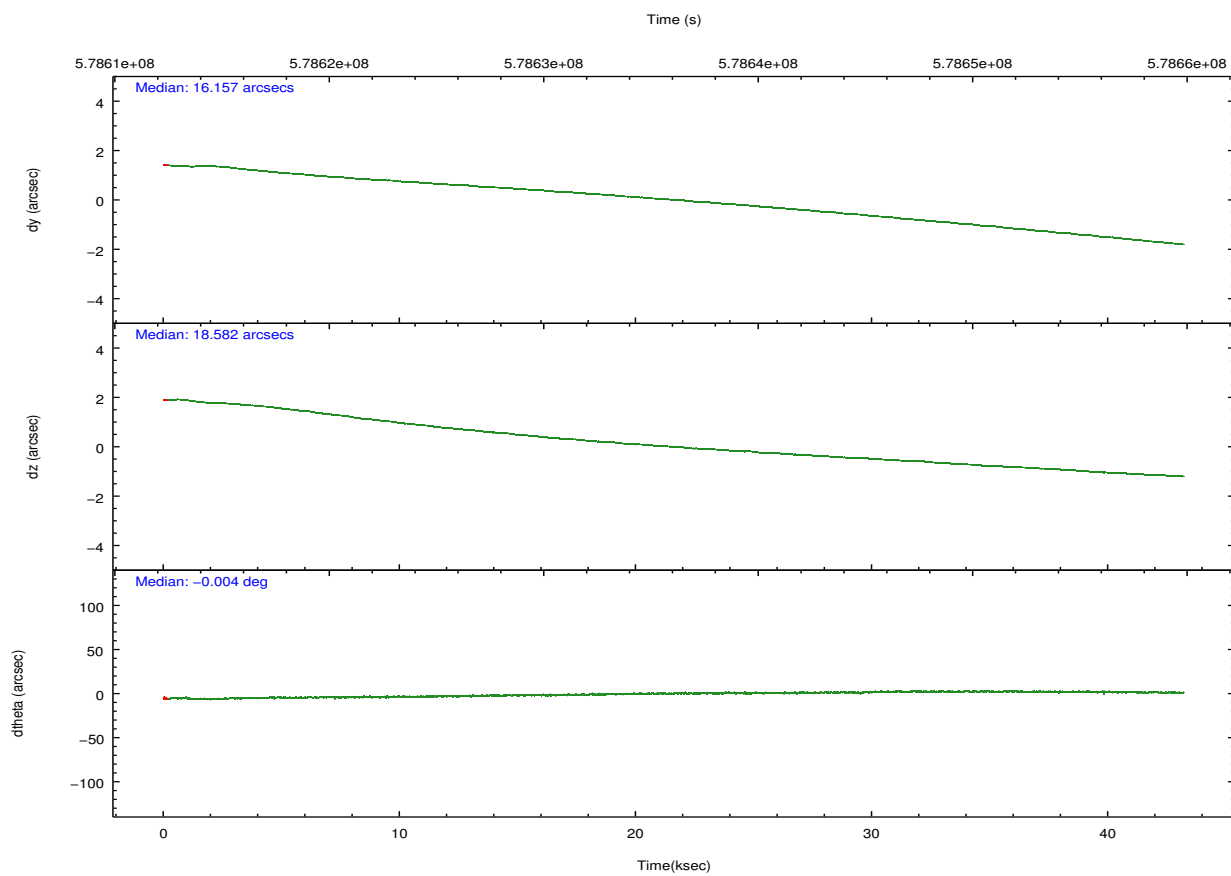
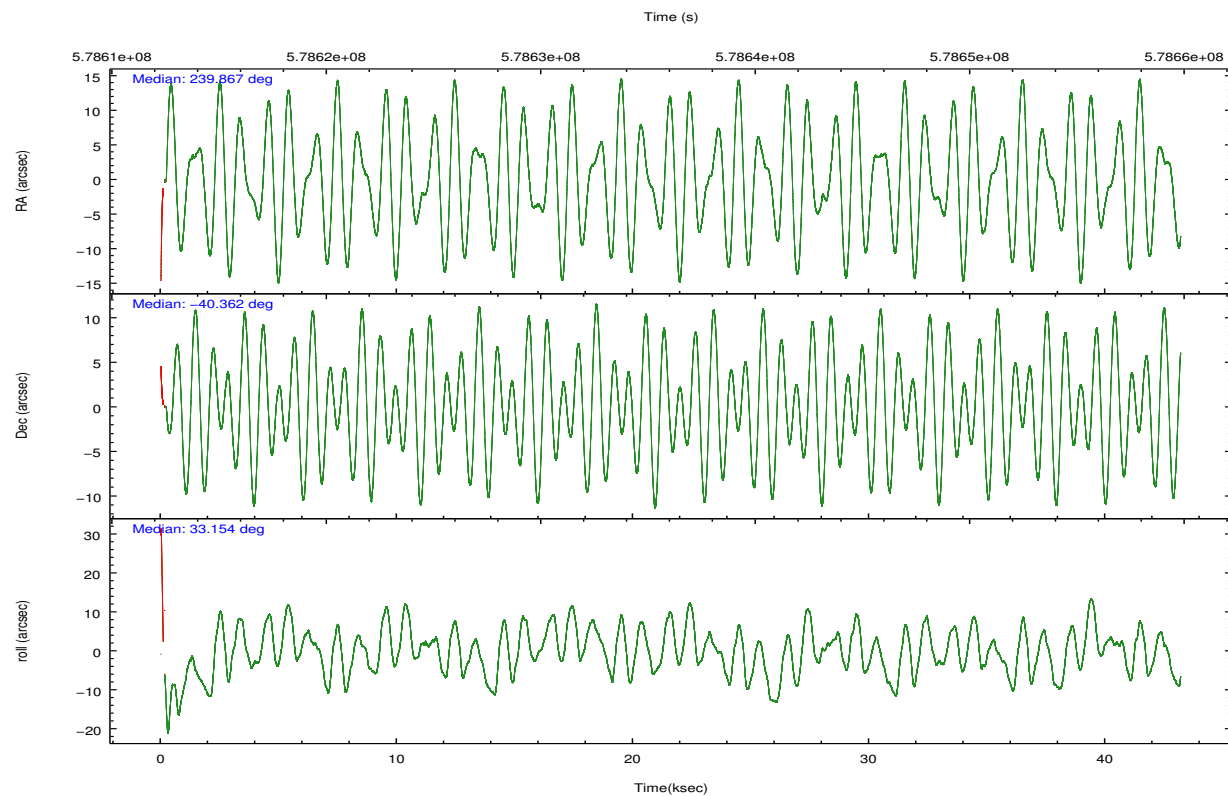
2.2 Compared Parameters

Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-5678	ACIS-5678
Grating	HETG	HETG
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	239.851549	239.8673948314063
[deg] Pointing Dec	-40.386420	-40.36176609993203
[deg] Pointing Roll	32.989130	33.1560353419036
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1425803651734
[mm] SIM translation stage offset	0	0.01005778216563158
[s] Observation start time (MET)	578614684.184000	578613402.1429501
Observation start date	2016-05-02T22:16:56	2016-05-02T21:56:42
[s] Observation end time (MET)	578657684.184000	578658325.33302
Observation end date	2016-05-03T10:13:36	2016-05-03T10:25:25
Read mode	TIMED	TIMED

Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
CCD I0 on	N	N
CCD I1 on	N	N
CCD I2 on	N	N
CCD I3 on	N	N
CCD S0 on	O1	N
CCD S1 on	Y	Y
CCD S2 on	Y	Y
CCD S3 on	Y	Y
CCD S4 on	Y	Y
CCD S5 on	O2	N
Number of optional ACIS chips dropped	2	2
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
[s] Primary exposure time	0.000000	3.1

2.3 Aspect



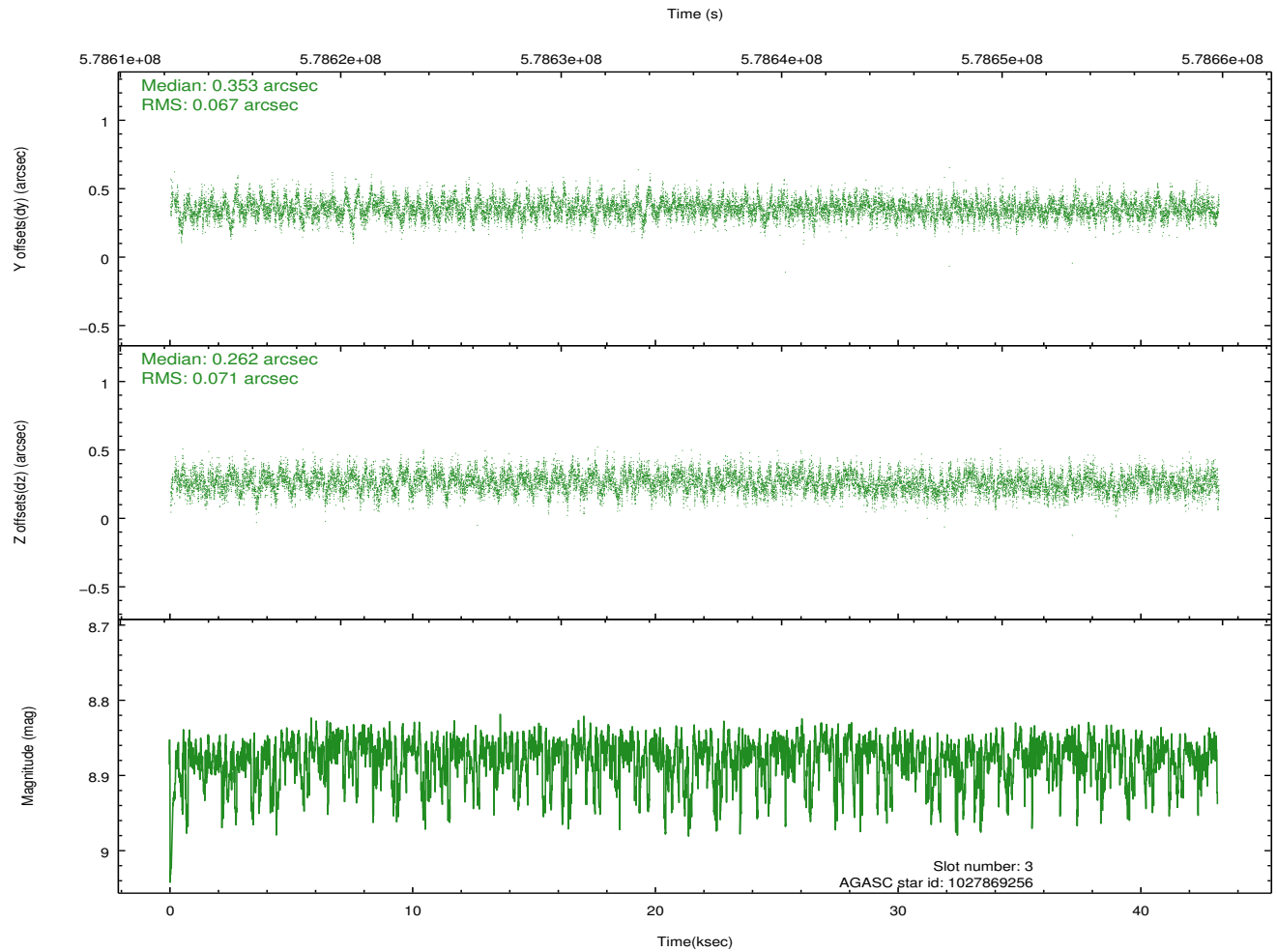
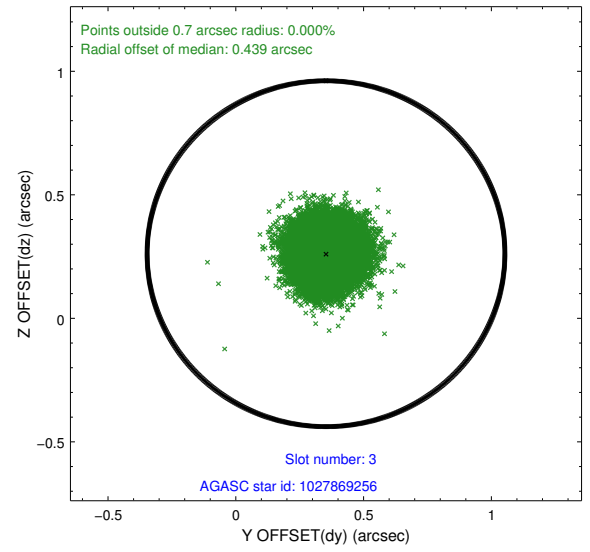
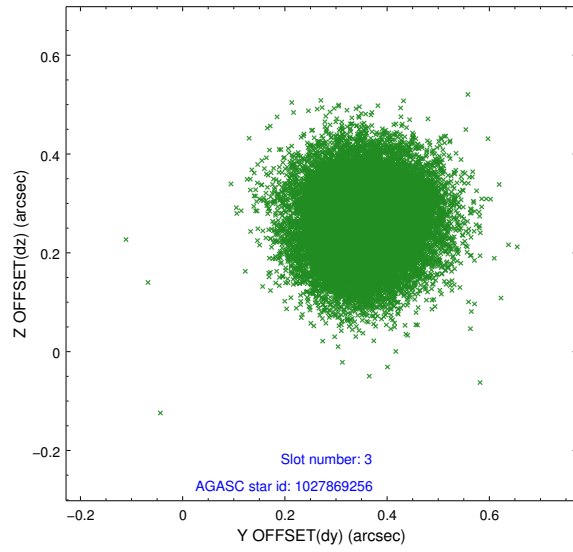


Slot Statistics

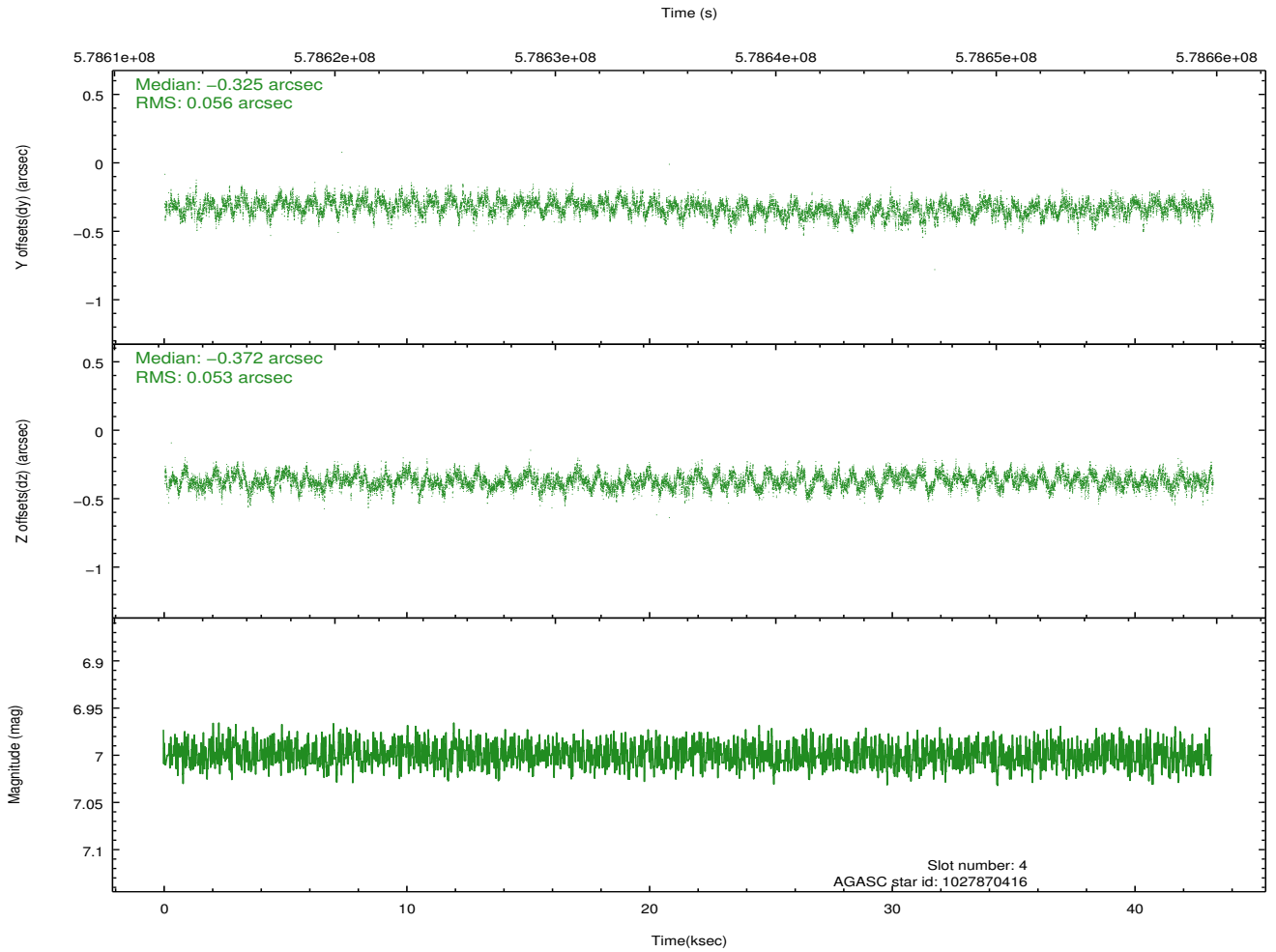
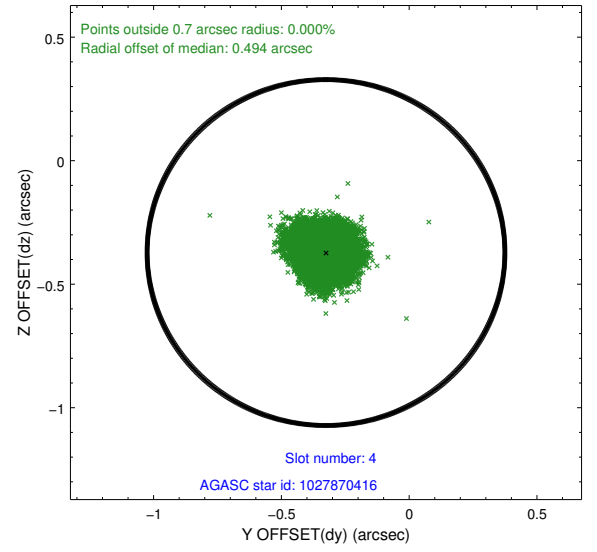
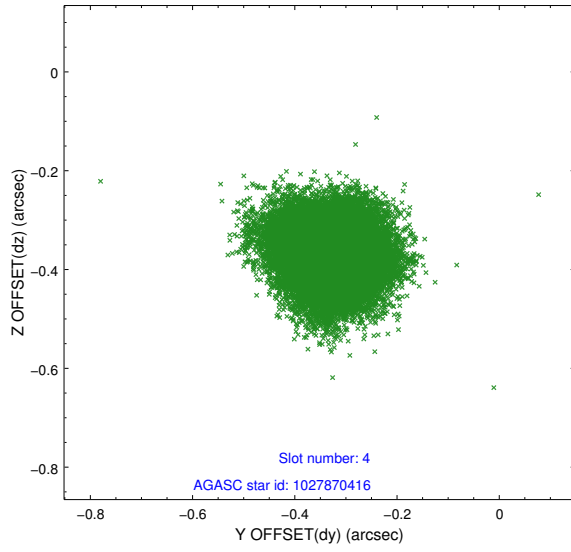
slot	status	used	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID		ACIS-S-2	7.13	10520	-0.186	-0.133	0.018	0.032	0.000000	0.000000	-769.26	-1740.30
1	FID		ACIS-S-4	7.22	10522	0.451	0.124	0.007	0.013	0.000000	0.000000	2144.64	168.44
2	FID		ACIS-S-5	7.23	10521	-0.297	0.018	0.016	0.028	0.000000	0.000000	-1822.22	162.00
3	GUIDE	used	1027869256	8.87	21026	0.353	0.262	0.105	0.167	239.454969	-40.997193	-2101.84	-1259.35
4	GUIDE	used	1027870416	7.00	21041	-0.325	-0.372	0.082	0.131	239.373148	-40.360546	-1052.10	789.32
5	GUIDE	used	1027874552	8.10	21034	0.198	0.289	0.097	0.153	239.330920	-40.927418	-2250.00	-865.75
6	GUIDE	used	1029576200	9.69	20988	-0.222	-0.184	0.180	0.296	240.164152	-39.881469	1713.07	1053.19
7	MONITOR	unused		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00

2.4 Star Slots

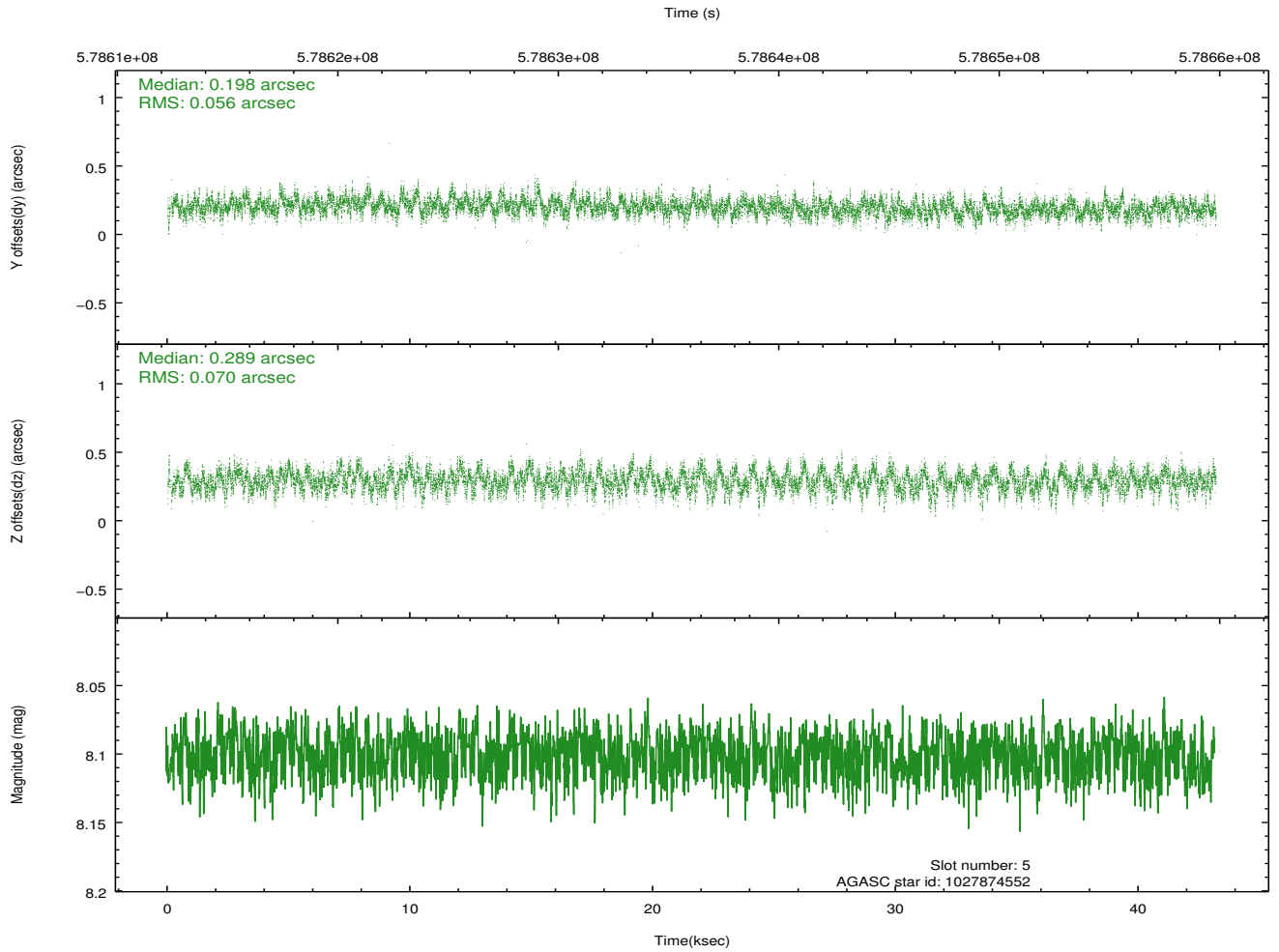
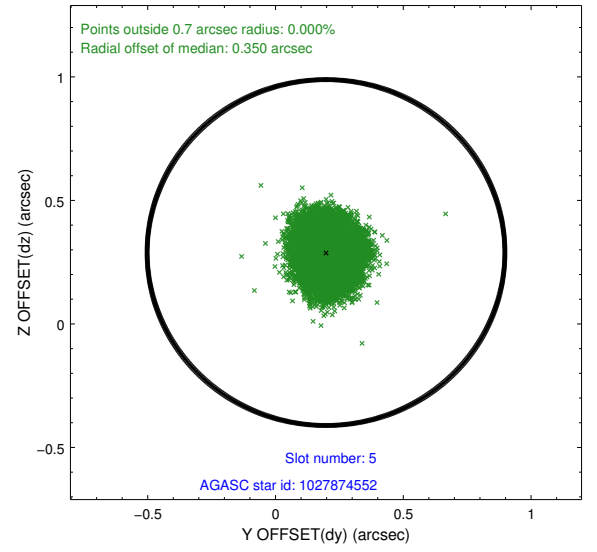
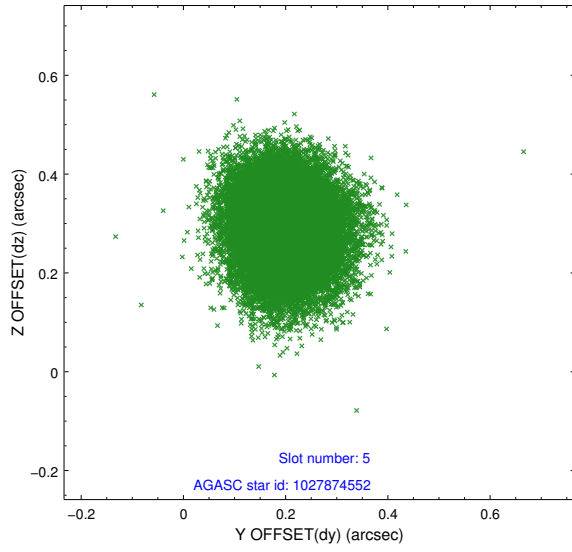
2.4.1 Slot 3



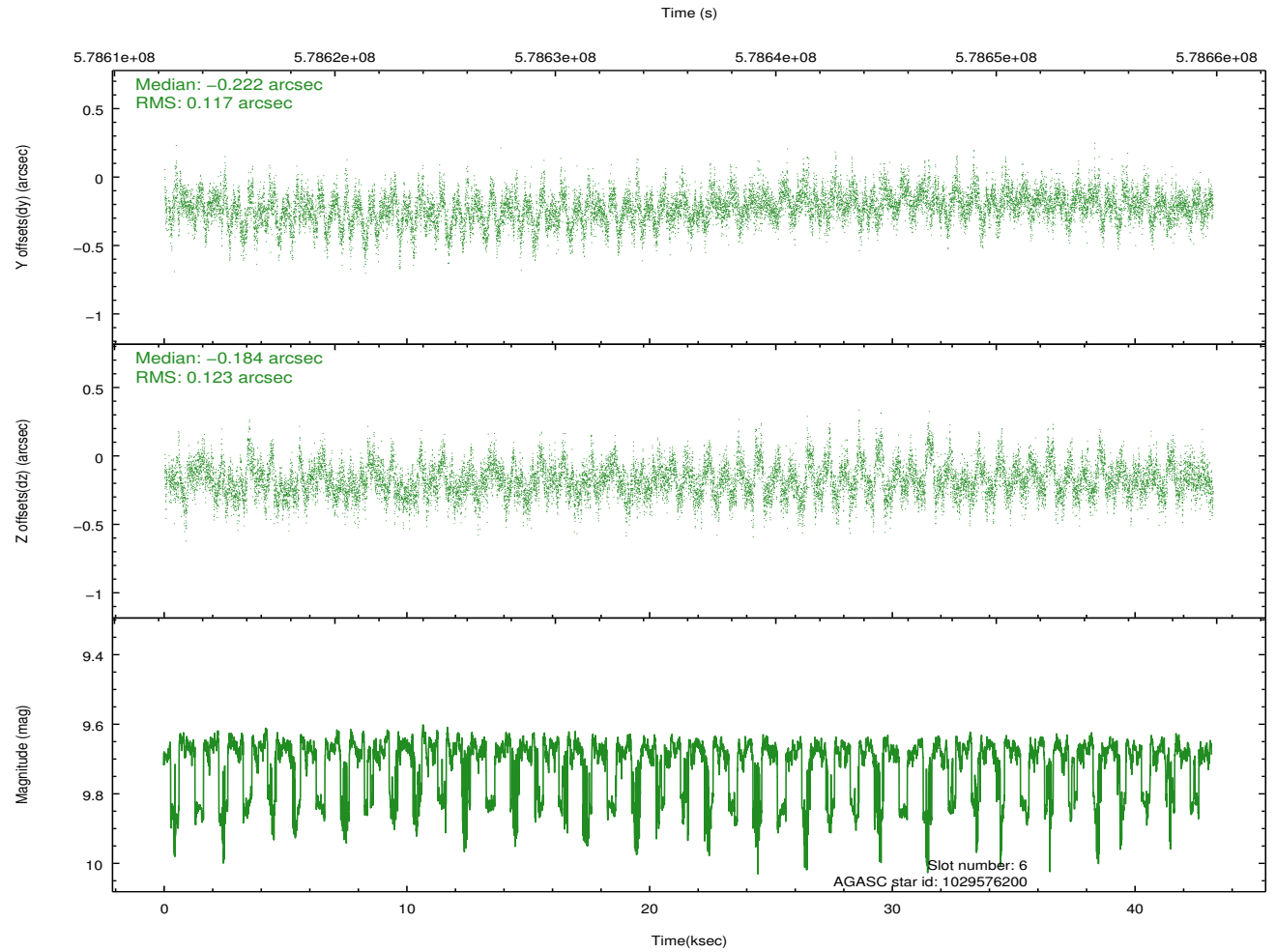
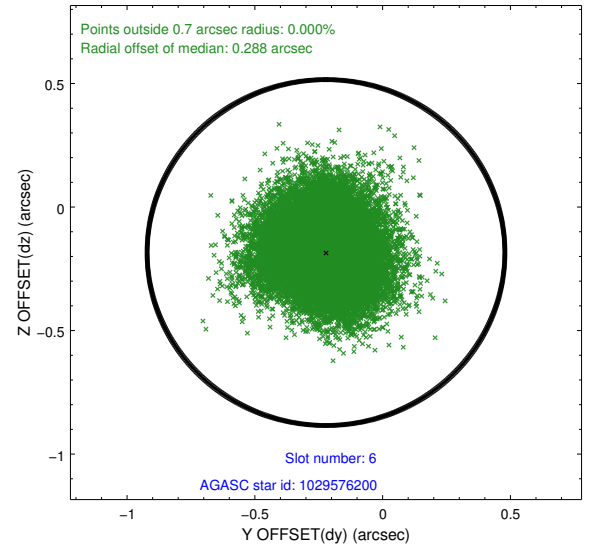
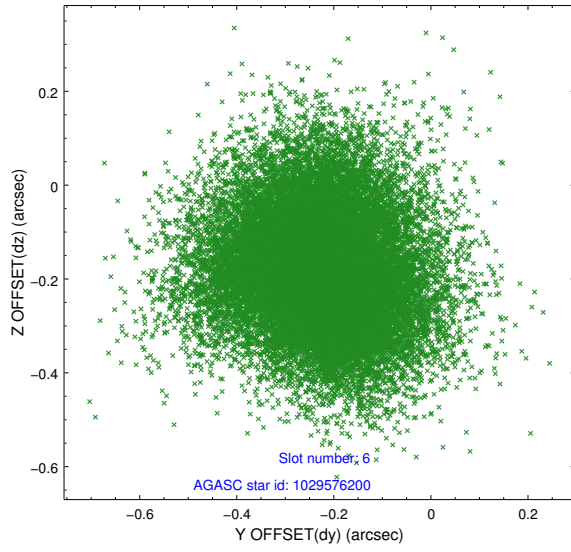
2.4.2 Slot 4



2.4.3 Slot 5

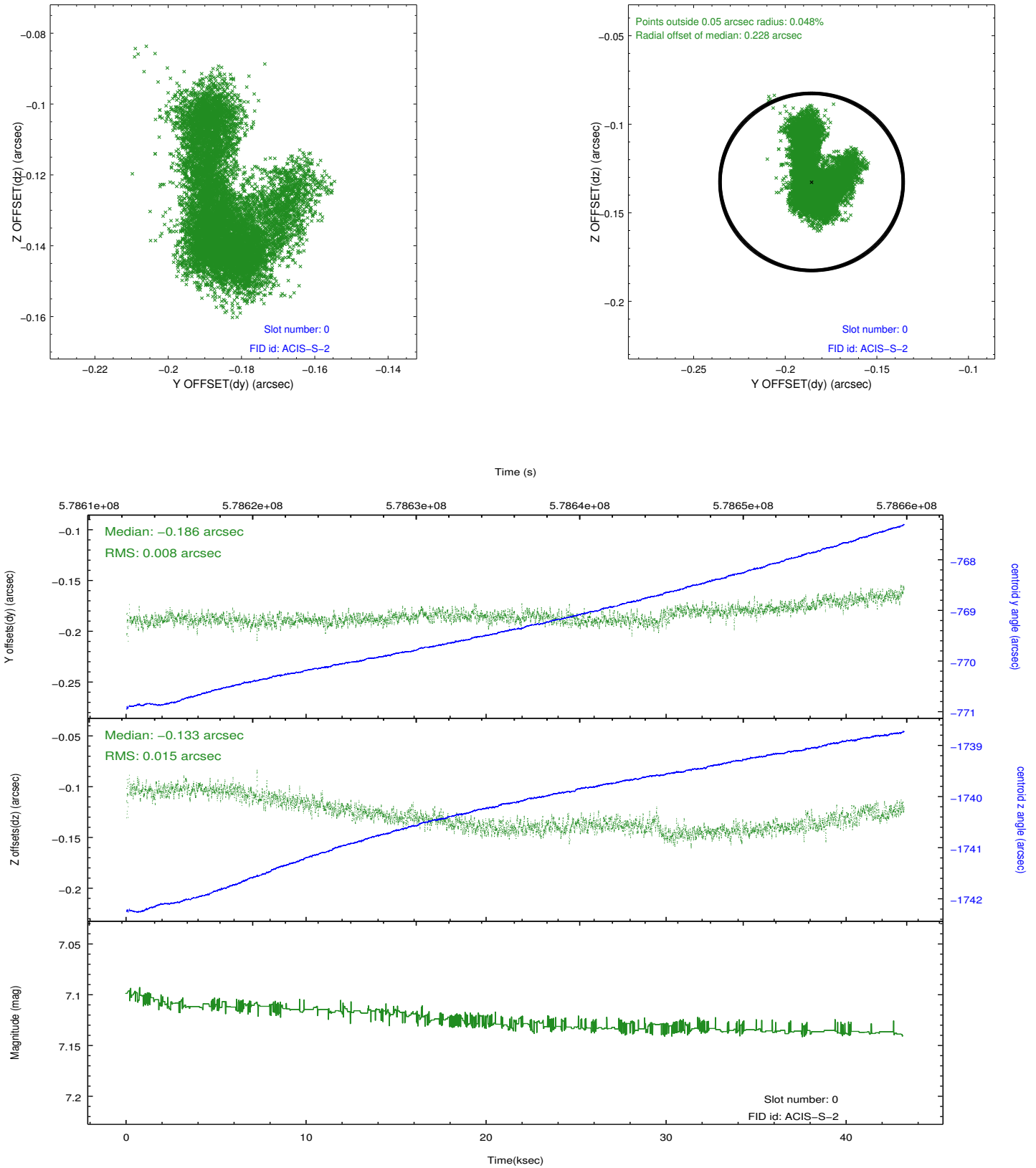


2.4.4 Slot 6

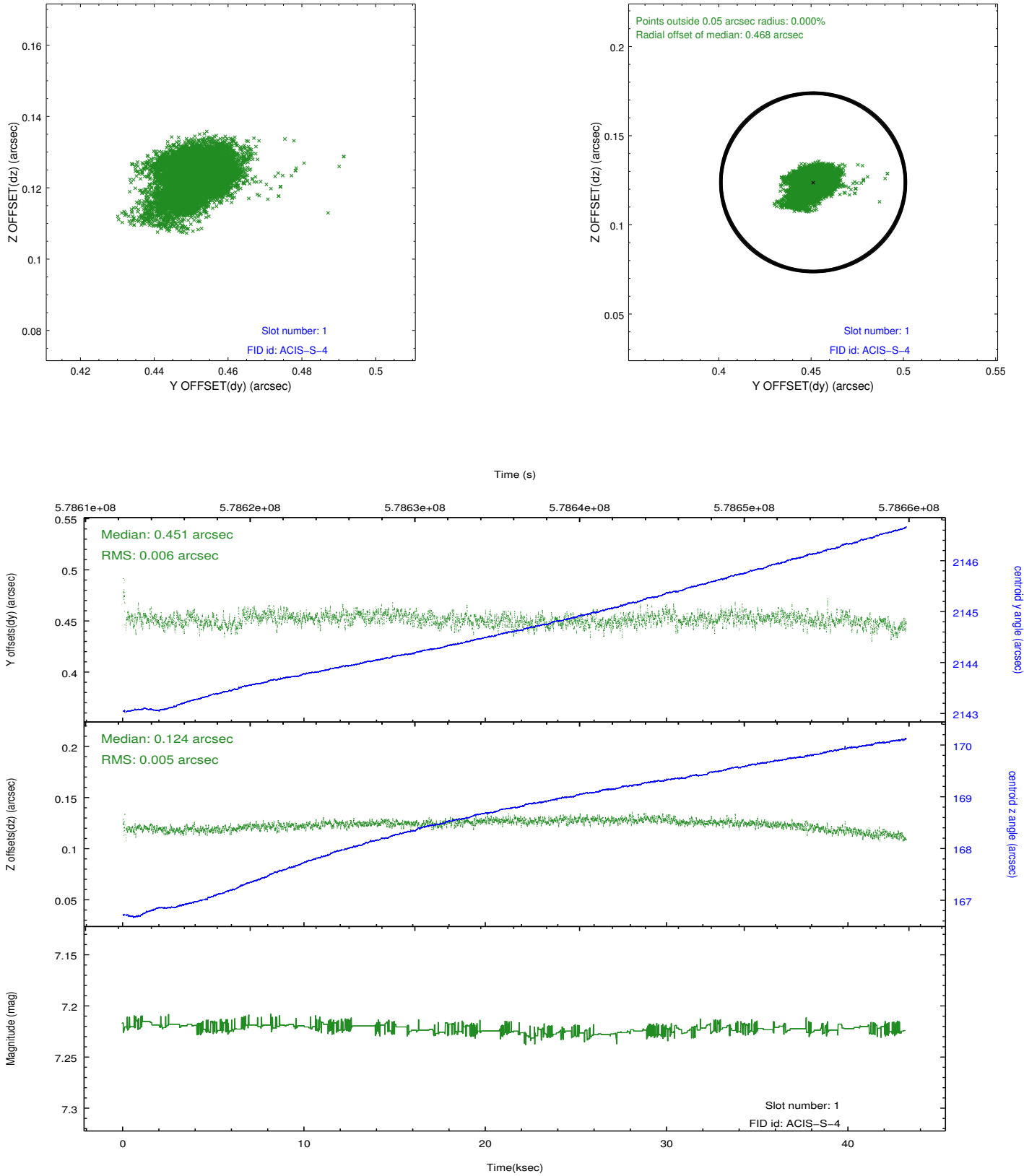


2.5 FID Slots

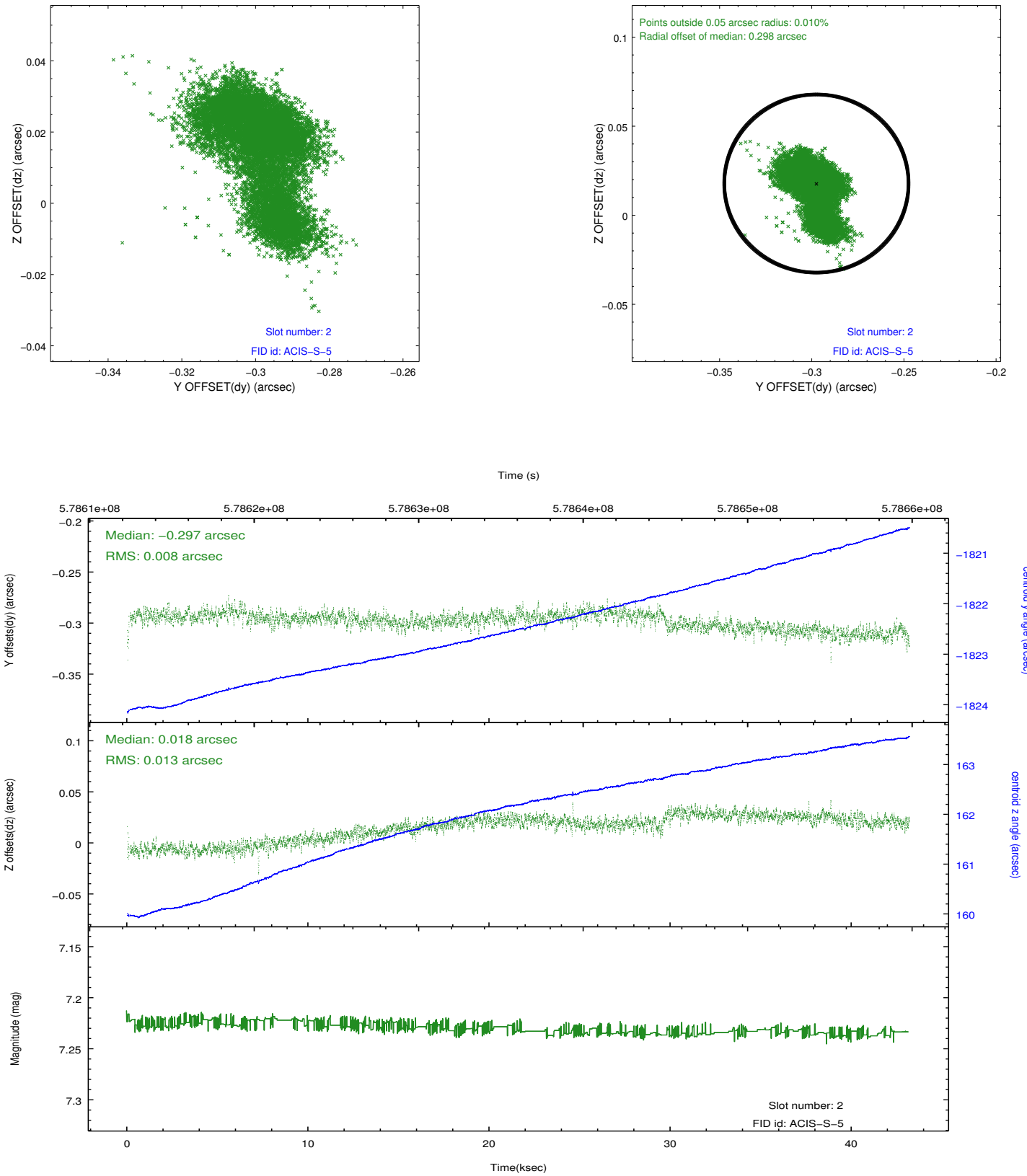
2.5.1 Slot 0



2.5.2 Slot 1



2.5.3 Slot 2

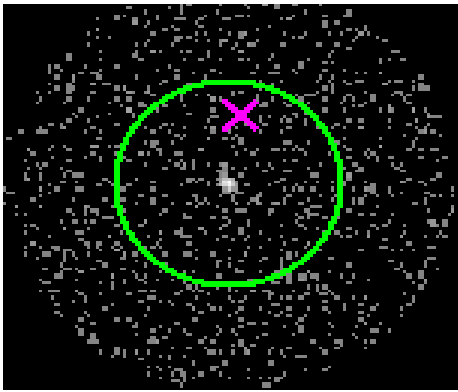


3 Gratings

3.1 HEG Arm



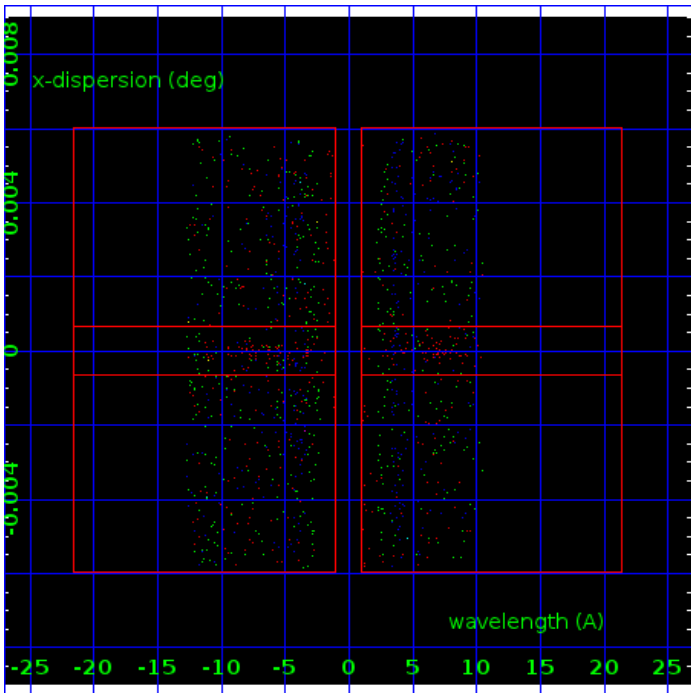
HEG Order Sort 123



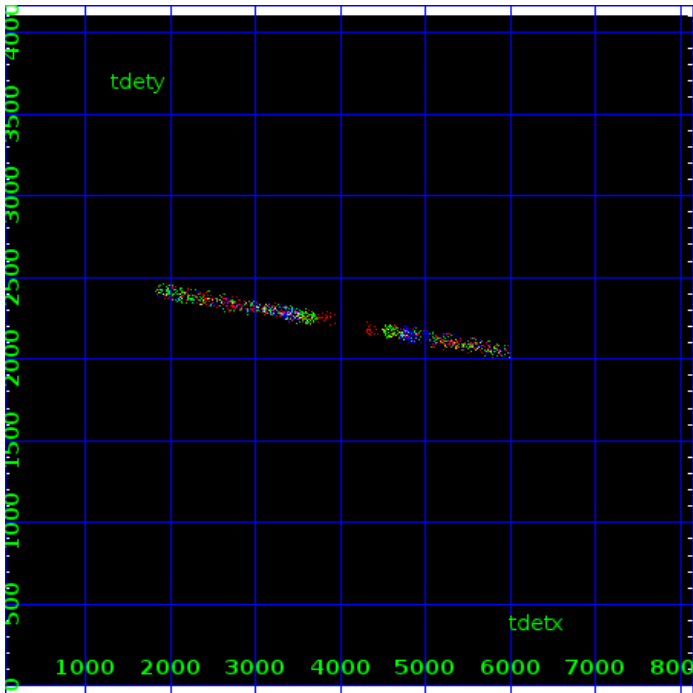
HEG Zero Order



HEG Order Sort ALL

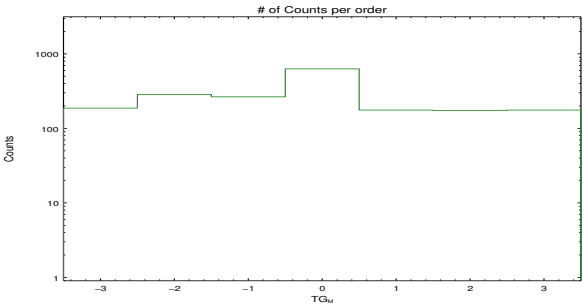


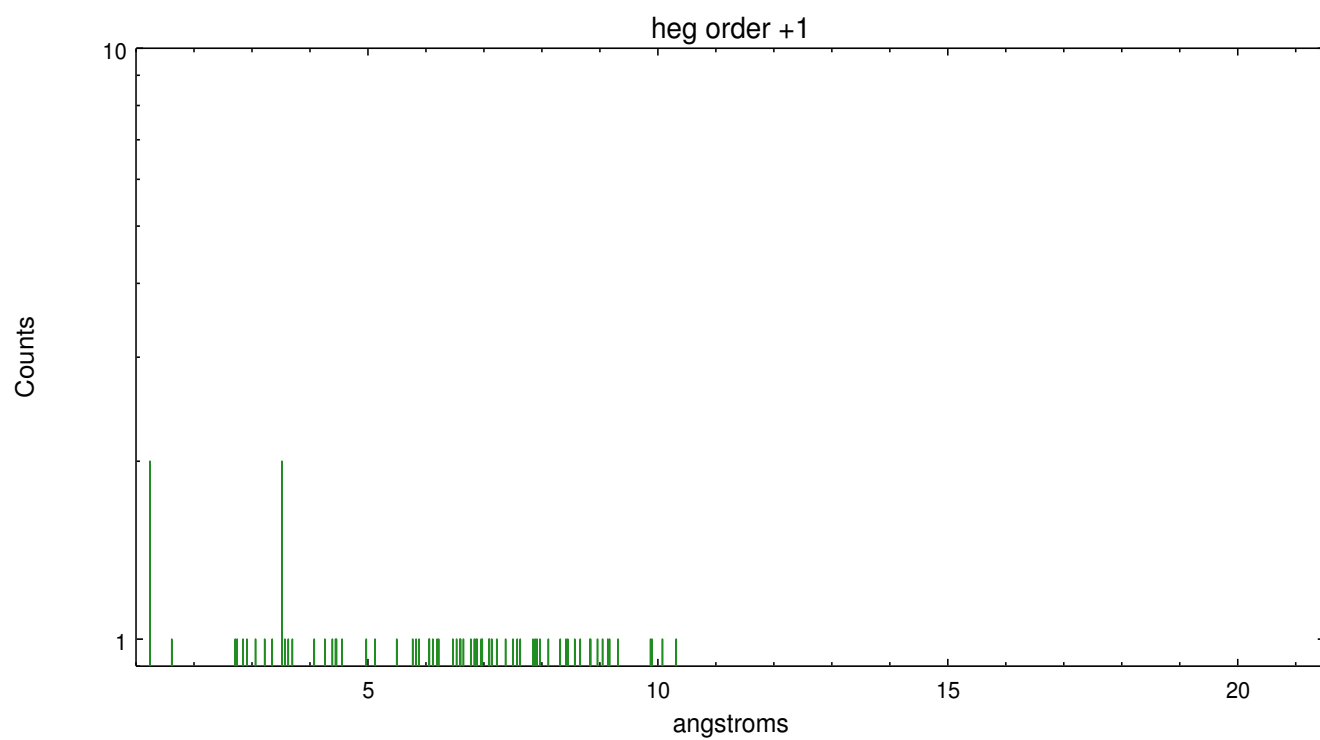
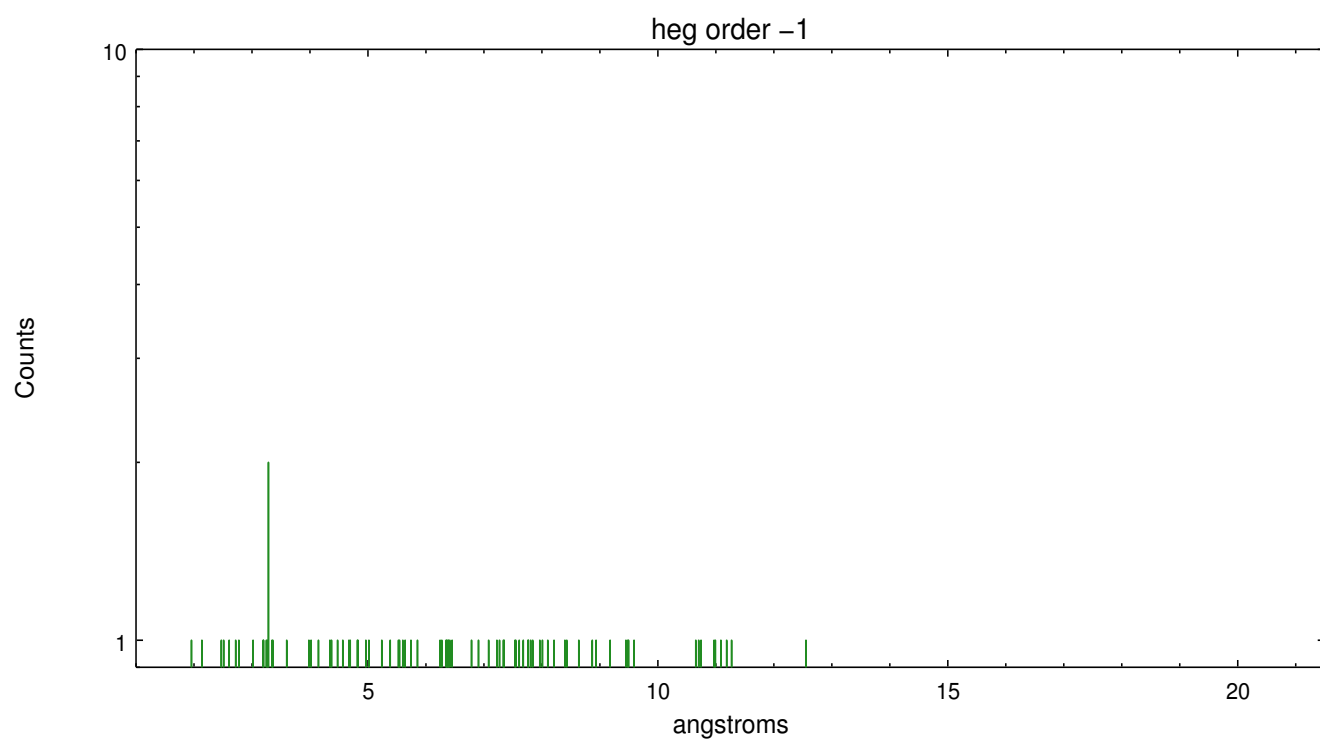
Spot Image HEG



Full Detector HEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	187	285	265	629	176	174	176

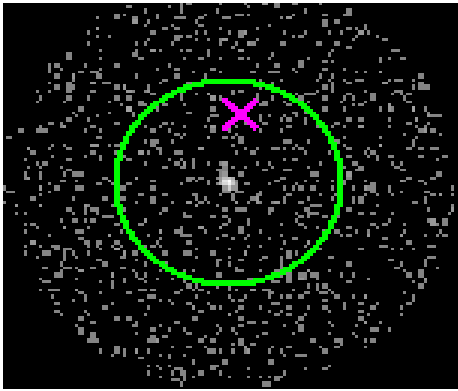




3.2 MEG Arm



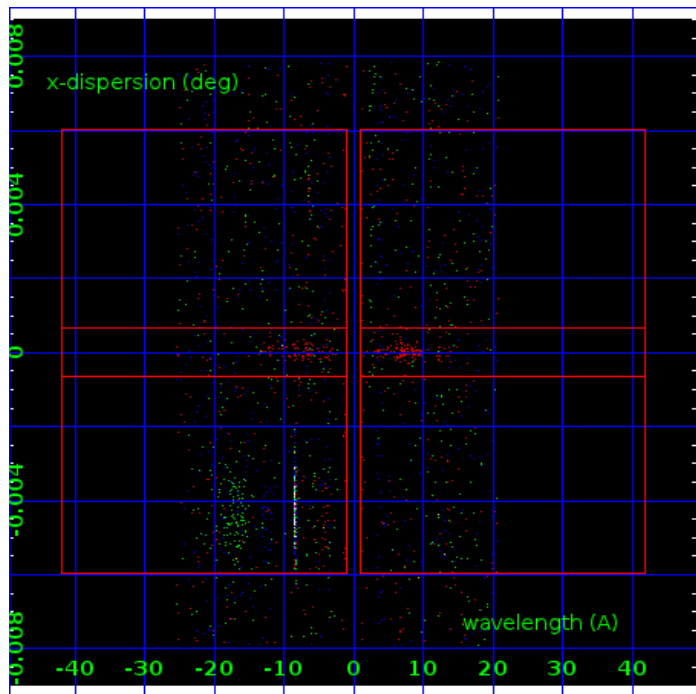
MEG Order Sort 123



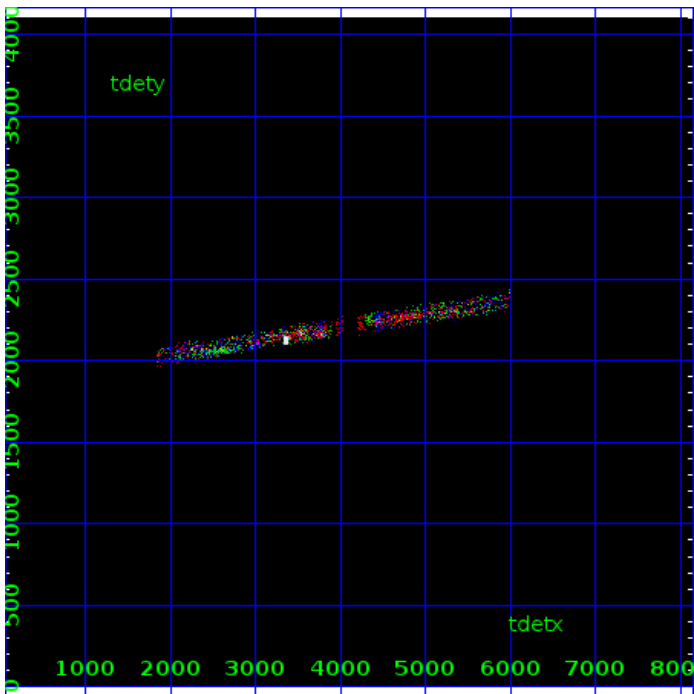
MEG Zero Order



MEG Order Sort ALL

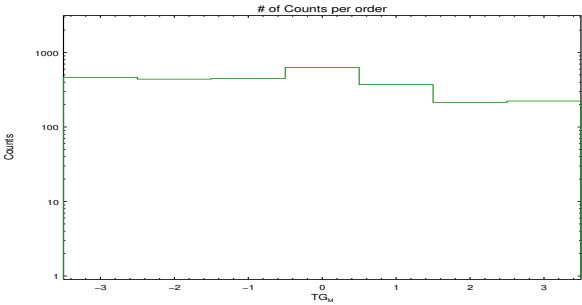


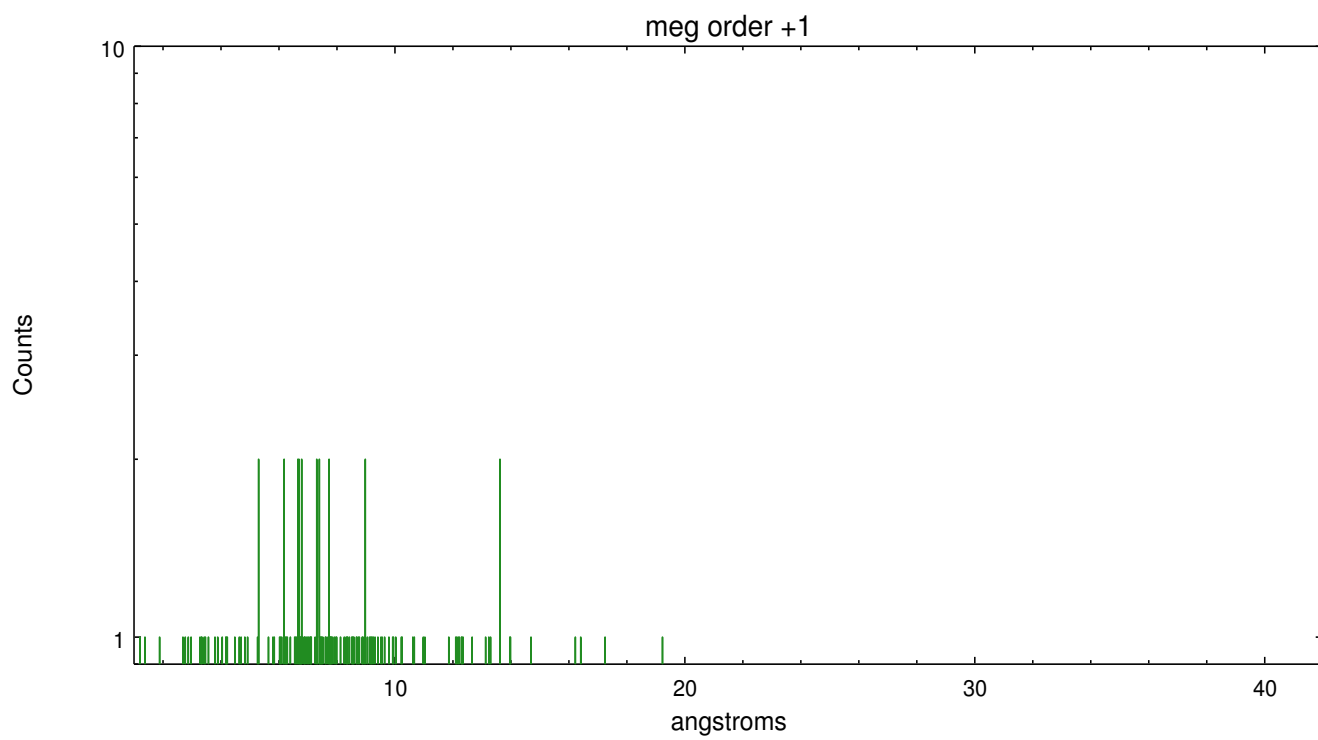
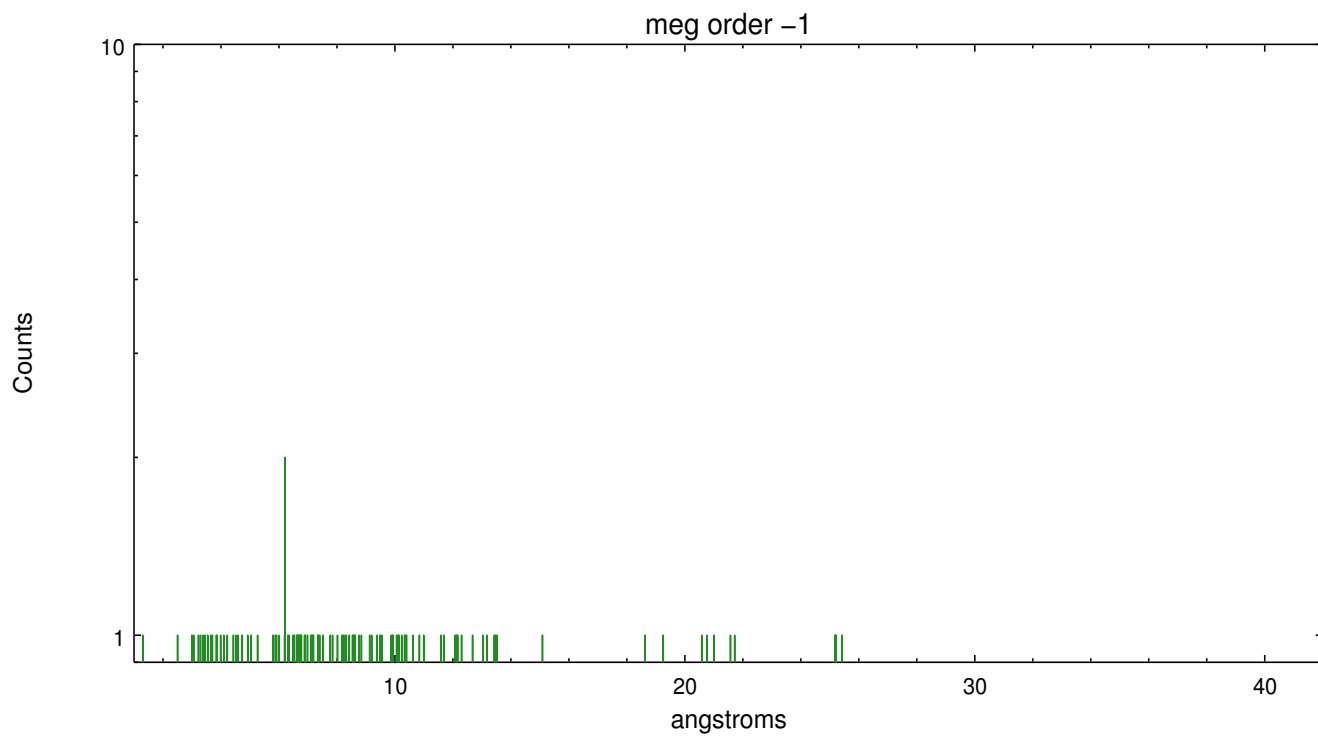
Spot Image MEG



Full Detector MEG

	order -3	order -2	order -1	order 0	order 1	order 2	order 3
Events	464	439	449	629	371	214	223





A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2016.05.04
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	43.02490033102

A.2 Comments

Target was monitored optically during the observation with the Aspect Camera in slot 7. The ACA has the capability to devote one or more of the eight image slots to "monitor" particular sky locations. This allows simultaneous optical photometry of one or more targets in the ACA field of view. These optical sources can be slightly fainter than the ACA guide star limit of $m_{ACA} = 10.2$ mag. The bright-end limit for monitor star photometry is $m_{ACA}=6.2$ mag. However, since there are a fixed number of image slots, devoting a slot to photometry instead of tracking a guide star results in a degradation of the image reconstruction and celestial location accuracy. Using one monitor slot represents a 15 - 25% increase in the aspect image reconstruction RMS diameter, depending on the particular guide star configuration. The photometric accuracy that can be achieved depends primarily on the star magnitude, integration time, CCD dark current, CCD read noise, sky background, and the CCD dark current uncertainty.