V&V Reference Report
L2 ASCDS Version : 7.6.7.1

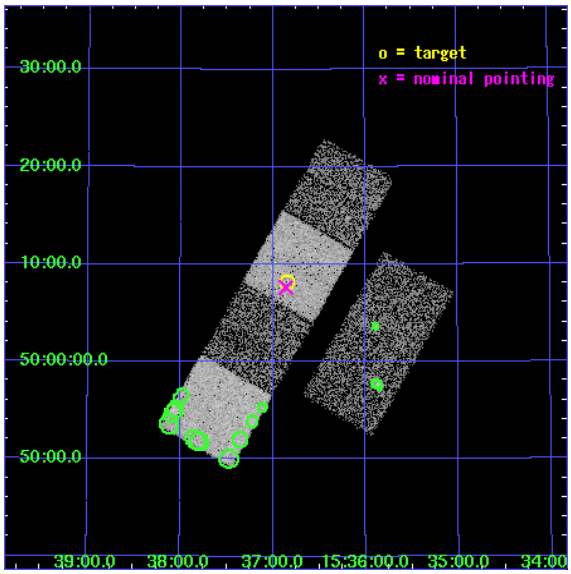
Observation 5614 - L2 Version 002
Chandra X-Ray Center

L2 Processing Date : Mar 25 2006

Contents

1 Front

seq_num	701037
obs_id	5614
title	A Chandra Survey of the Most Distant Quasars: X-raying the First Massive Black Holes
observer	Prof. William Brandt
object	SDSS J1536+5008
dtycycle	0
cycle	P
ra_targ	234.209583
dec_targ	50.136194
ra_nom	234.21473556018
dec_nom	50.127229041138
roll_nom	299.89316276338
revision	2
ontime	4678.3999825716
livetime	4619.159264998
ontime2	4678.3999825716
ontime3	4678.3999825716
ontime5	4678.3999825716
ontime6	4678.3999825716
ontime7	4678.3999825716
ontime8	4678.3999825716
l2events	51186

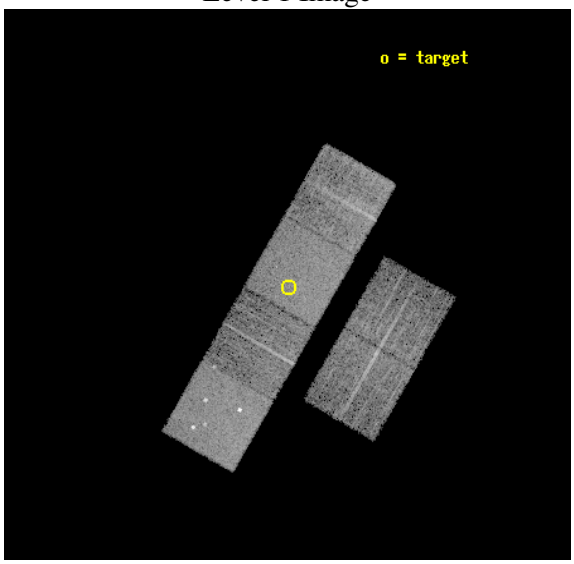


2 OBI

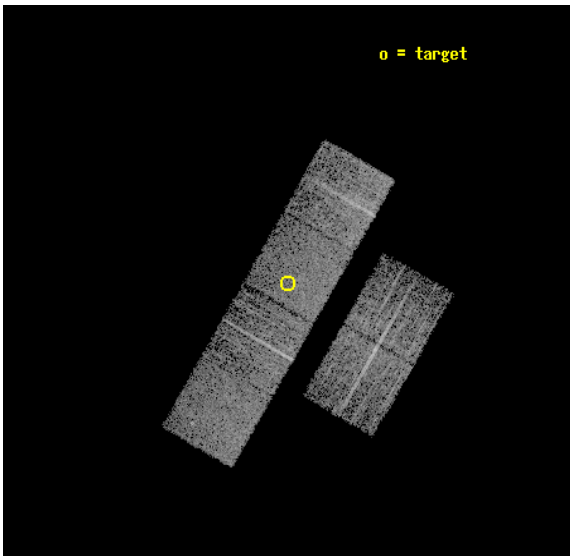
2.1 OBI

2.1.1 Images

Level 1 Image

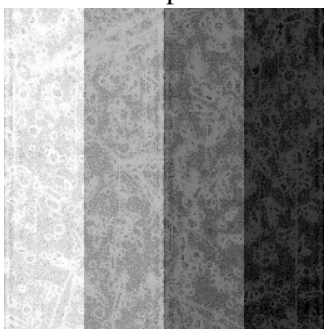


Level 1 Bad Events

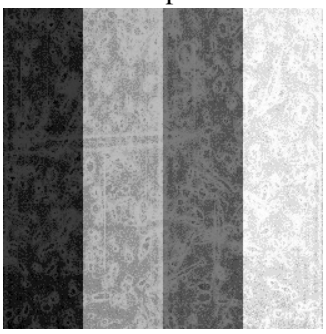


2.1.2 Bias

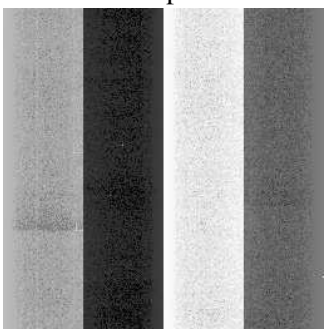
Chip 2



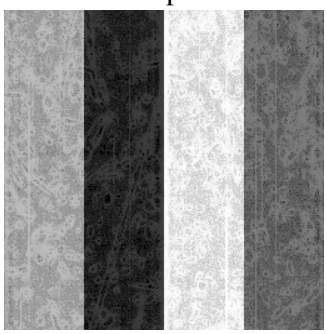
Chip 3



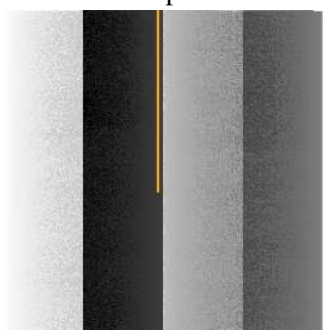
Chip 5



Chip 6



Chip 7



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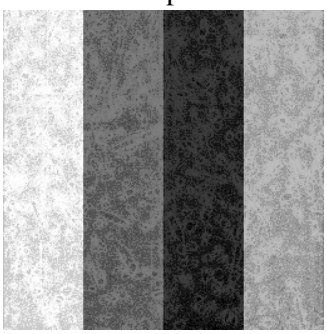


2.1.3 Parameters

obi_num	0
ascdsver	7.6.7.1
caldbver	3.2.1
date	2006-03-25T22:25:05
revision	2

sched_exp_time	4500.000000
ontime	4718.9041471183
ontime2	4718.9041272104
ontime3	4722.1451473236
ontime5	4722.1451473236
ontime6	4722.1451473236
ontime7	4718.9041471183
ontime8	4722.1451473236
l1events	230068

2.1.4 Events

	ccd 2	**ccd 3**	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**
level 1 events	31236	29062	51395	31667	44934	41774
rejected events	27246	25216	27714	27680	28014	33194
rejected %	87%	86%	53%	87%	62%	79%

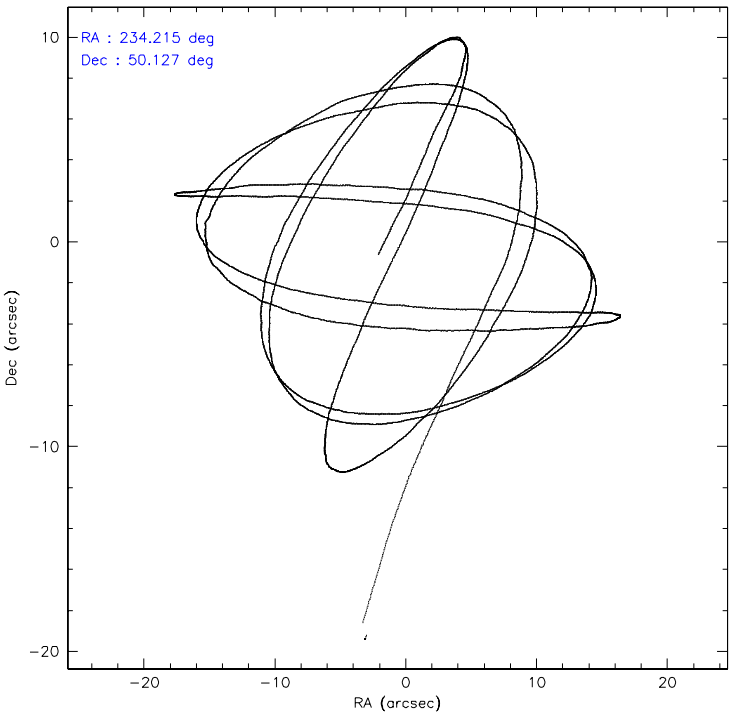
	ccd 2	**ccd 3**	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**
grade 0 events	1819	1685	3516	1592	1039	2807
	5%	5%	6%	5%	2%	6%
grade 1 events	29	33	160	10	32	29
	0%	0%	0%	0%	0%	0%
grade 2 events	822	785	6945	833	4280	1887
	2%	2%	13%	2%	9%	4%
grade 3 events	349	367	467	377	858	974
	1%	1%	0%	1%	1%	2%
grade 4 events	378	359	500	377	825	850
	1%	1%	0%	1%	1%	2%
grade 5 events	1316	1519	2405	1609	2947	2100
	4%	5%	4%	5%	6%	5%
grade 6 events	655	692	12482	850	10083	2131
	2%	2%	24%	2%	22%	5%
grade 7 events	25868	23622	24920	26019	24870	30996
	82%	81%	48%	82%	55%	74%

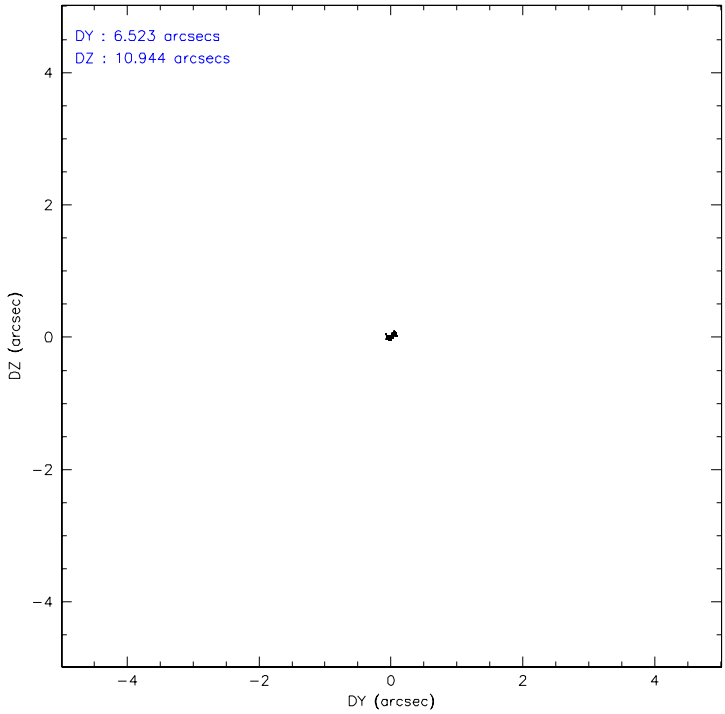
2.2 Compared Parameters

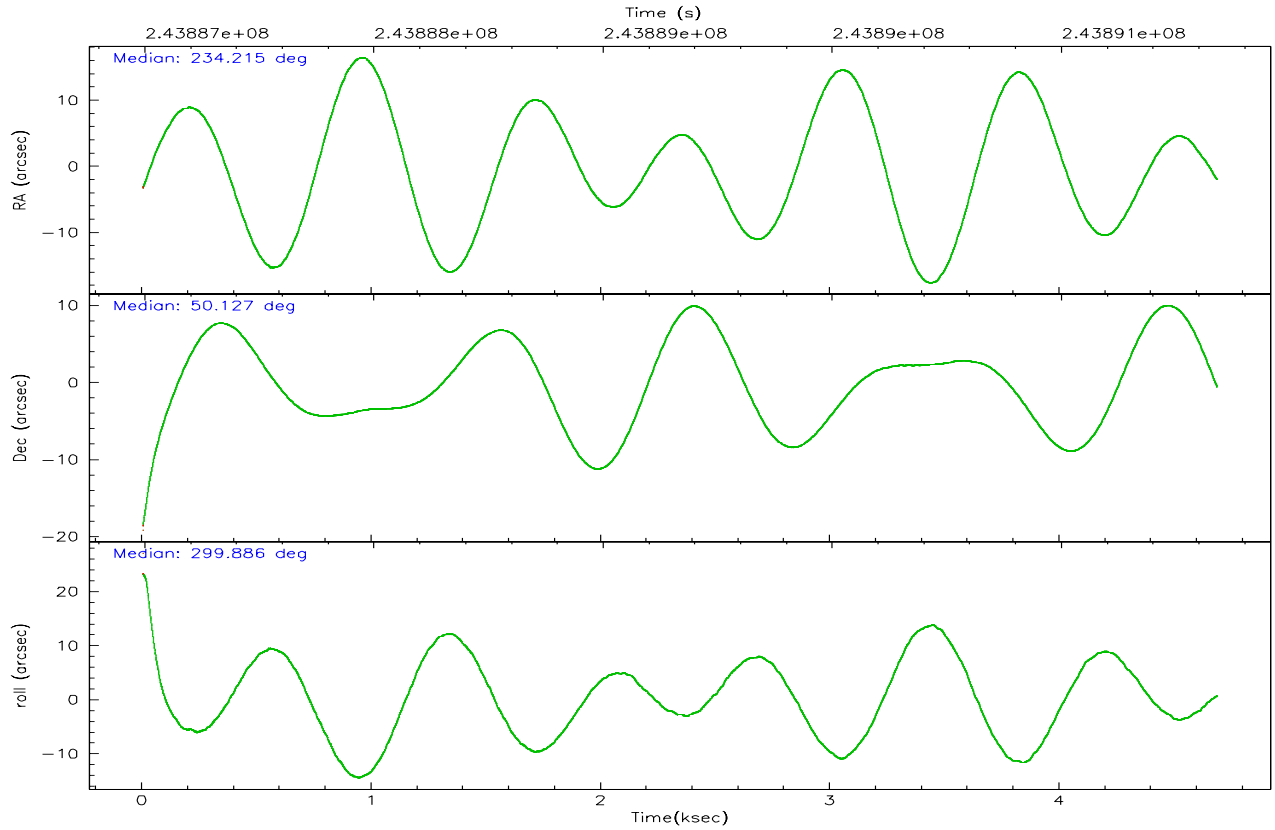
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-235678	ACIS-235678
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	234.177650	234.2147355601847
Pointing Dec	50.140425	50.12722904113807
Pointing Roll	299.764953	299.8931627633825
SIM focus pos (mm)	-0.684267	-0.6828225247311905
SIM defocus (mm)	0	0.001444936568705701
SIM translation stage pos (mm)	-190.132523	-190.1425803651734
SIM translation stage offset (mm)	0	0.01005778216563158
Observation start time	243887183.184000	243886094.6952
Observation start date	2005-09-23T18:25:19	2005-09-23T18:08:14
Observation end time	243891683.184000	243893315.30803
Observation end date	2005-09-23T19:40:19	2005-09-23T20:08:35
Read mode	TIMED	TIMED

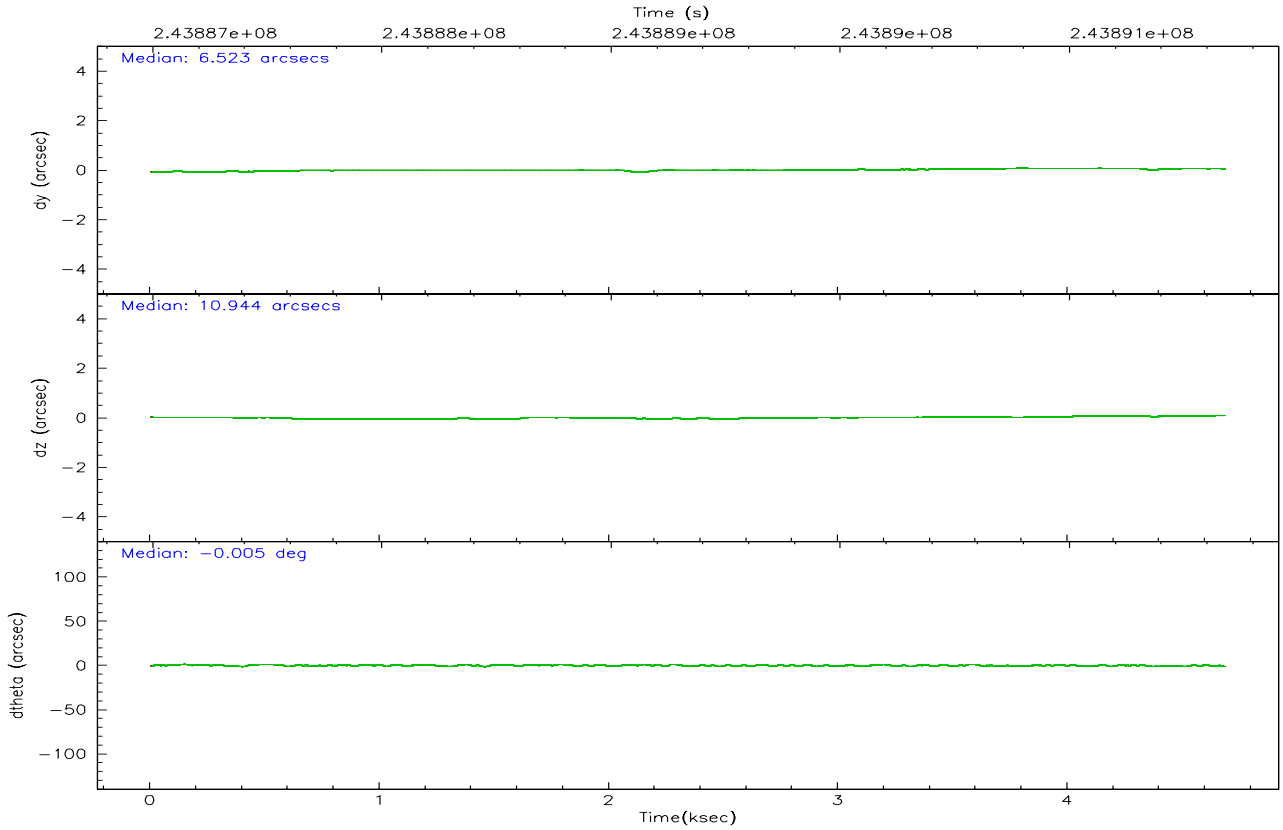
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 234.215 deg
Dec : 50.127 deg
Dec (arcsec)
RA (arcsec)
10
0
−10
−20
−20
−10
0
10
20


DY : 6.523 arcsecs
DZ : 10.944 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
2.43887e+08
2.43888e+08
2.43889e+08
2.4389e+08
2.43891e+08
Median: 234.215 deg
RA (arcsec)
Median: 50.127 deg
Dec (arcsec)
Median: 299.886 deg
roll (arcsec)
Time(ksec)

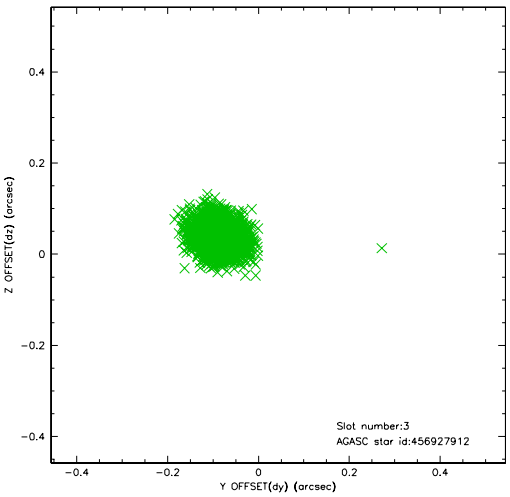

Time (s)
2.43887e+08
2.43888e+08
2.43889e+08
2.4389e+08
2.43891e+08
Median: 6.523 arcsecs
dy (arcsec)
Median: 10.944 arcsecs
dz (arcsec)
Median: −0.005 deg
dtheta (arcsec)
Time(ksec)

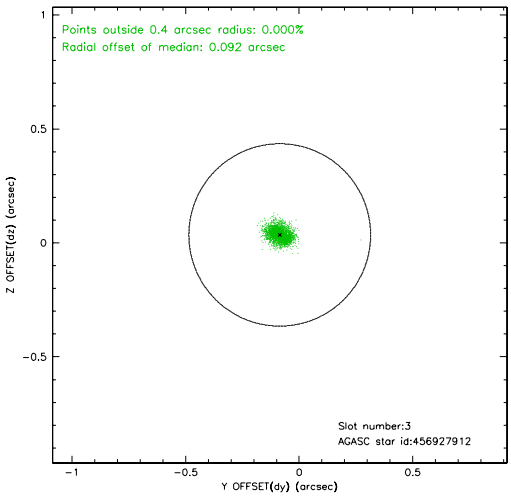
Slot Statistics

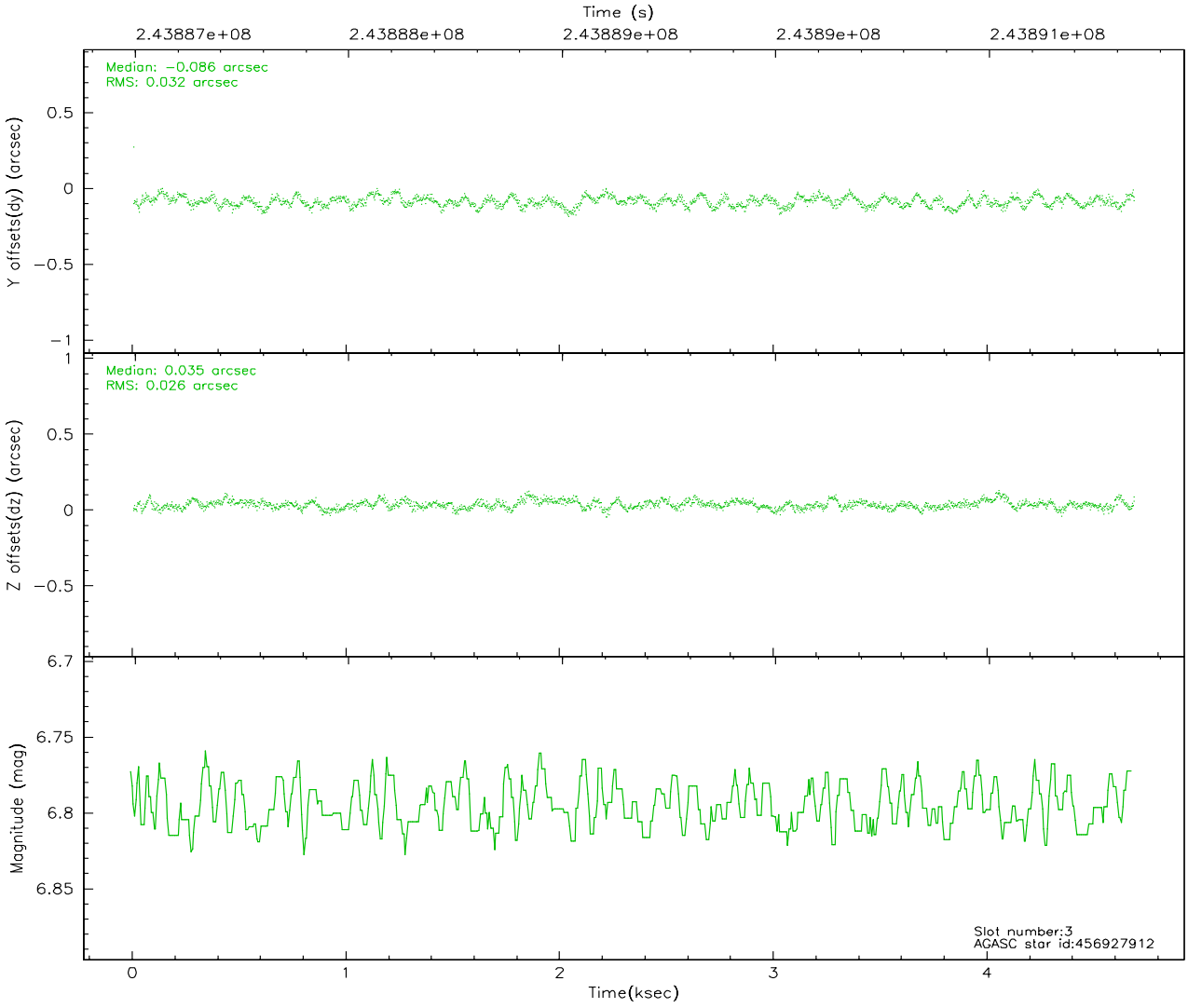
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.10	1143	-0.027	0.007	0.006	0.011	0.000000	0.000000	-759.27	-1732.17
1	FID	ACIS-S-5	7.24	1143	-0.016	-0.022	0.006	0.011	0.000000	0.000000	-1812.99	168.40
2	FID	ACIS-S-6	7.35	1143	0.018	0.023	0.005	0.010	0.000000	0.000000	400.93	813.87
3	GUIDE	456927912	6.80	2286	-0.086	0.035	0.044	0.069	233.811769	49.698370	957.55	-1528.55
4	GUIDE	457320856	8.82	2285	0.032	-0.094	0.066	0.105	234.225195	50.509014	-1096.81	752.21
5	GUIDE	457316216	8.81	2284	-0.021	-0.084	0.088	0.139	233.360540	50.157678	-998.08	-1600.03
6	GUIDE	457315008	8.91	2284	0.065	-0.012	0.099	0.149	235.308988	50.203845	1078.82	2385.29
7	GUIDE	456920104	9.00	2284	0.009	0.151	0.073	0.116	234.356412	49.891668	983.95	-83.26

2.4 Star Slots

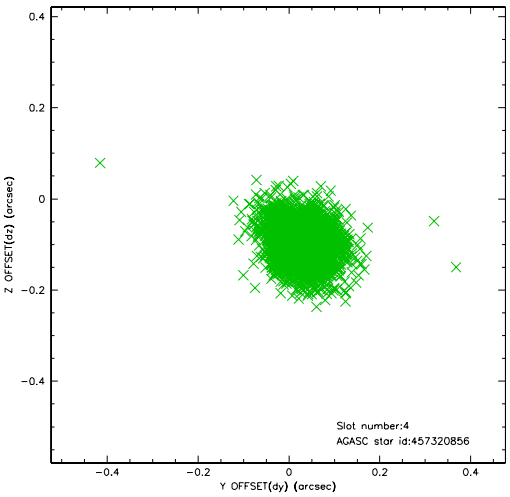
2.4.1 Slot 3

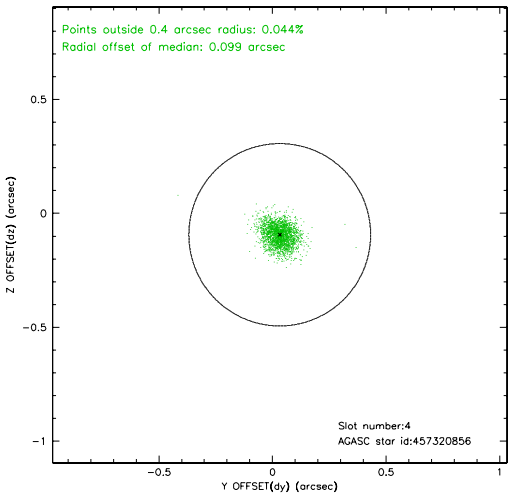


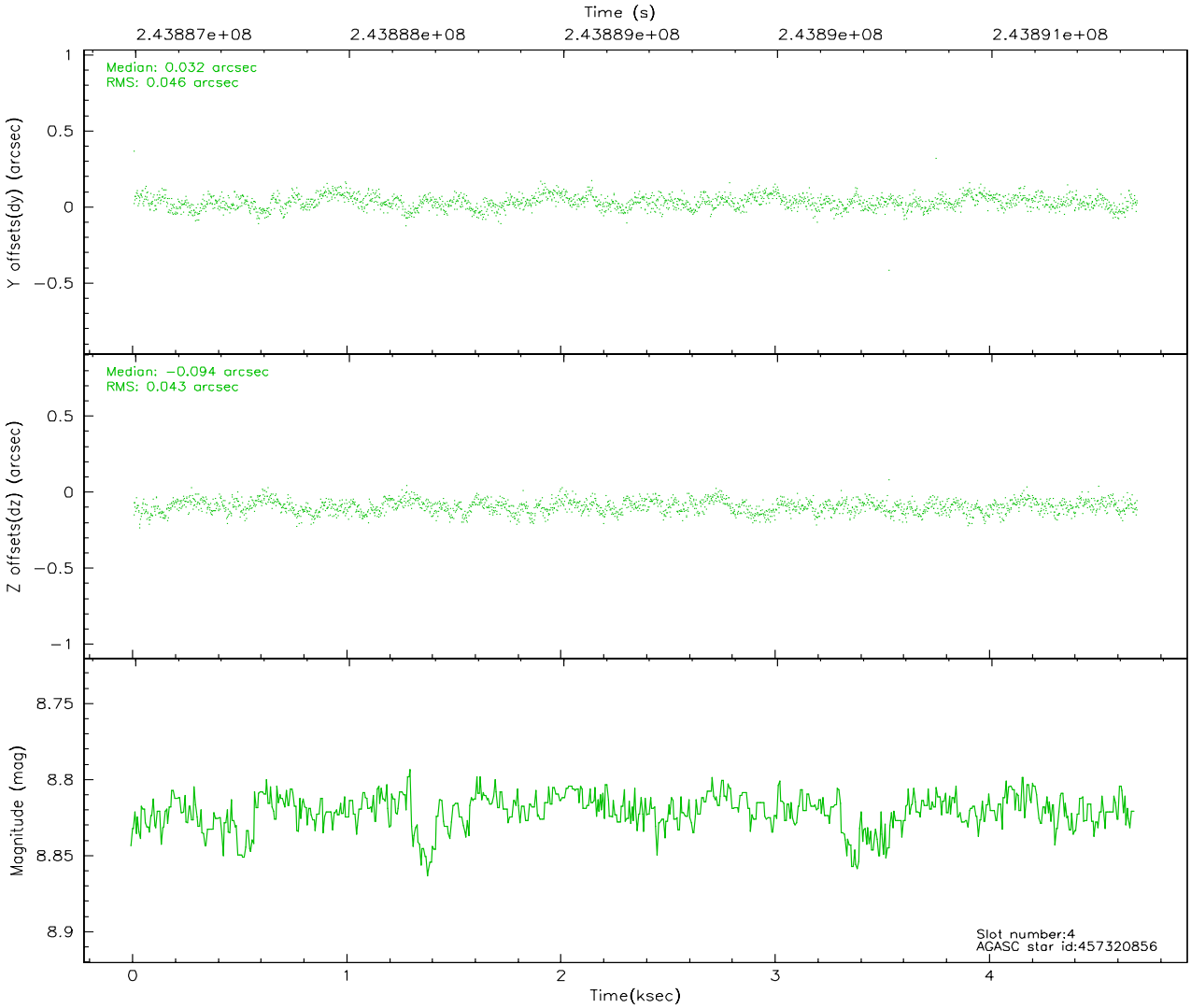




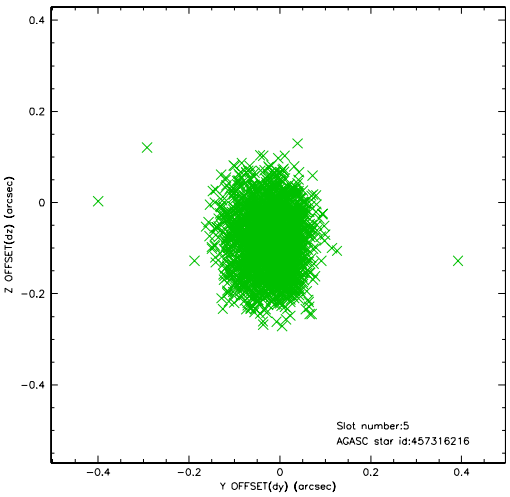
2.4.2 Slot 4

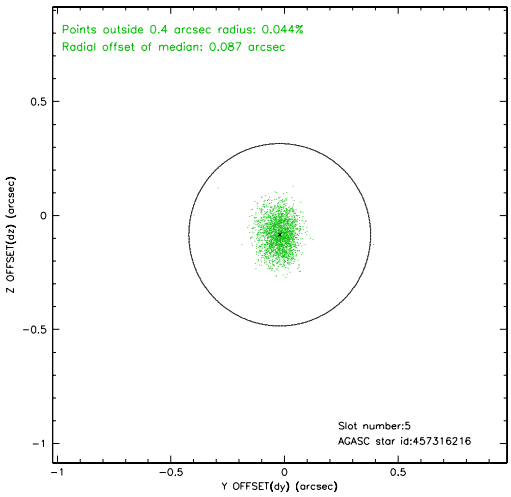

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:457320856

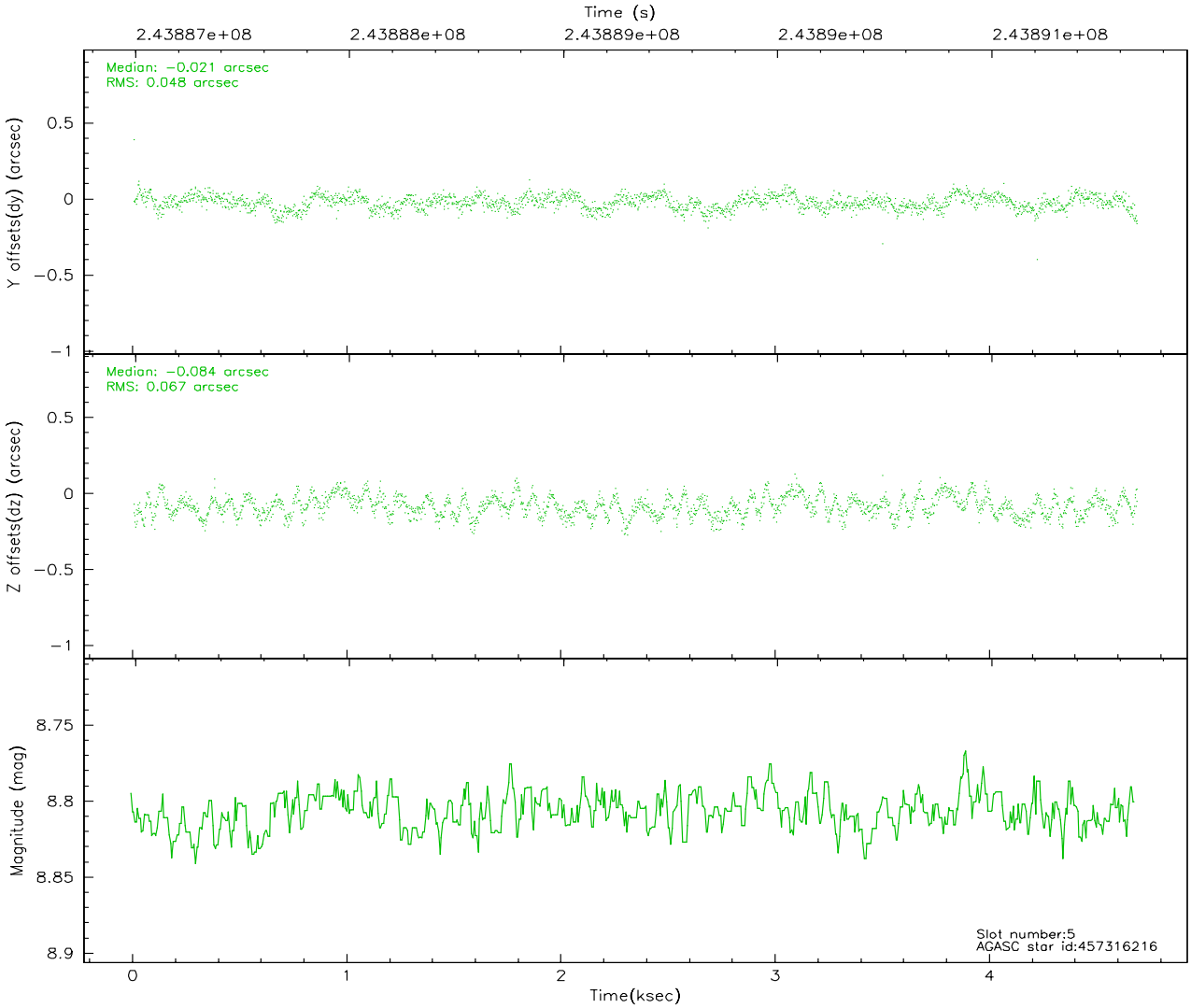

Points outside 0.4 arcsec radius: 0.044%
Radial offset of median: 0.099 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:457320856


Time (s)
2.43887e+08
2.43888e+08
2.43889e+08
2.4389e+08
2.43891e+08
Median: 0.032 arcsec
RMS: 0.046 arcsec
Y offsets(dy) (arcsec)
Median: −0.094 arcsec
RMS: 0.043 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:457320856
Time(ksec)

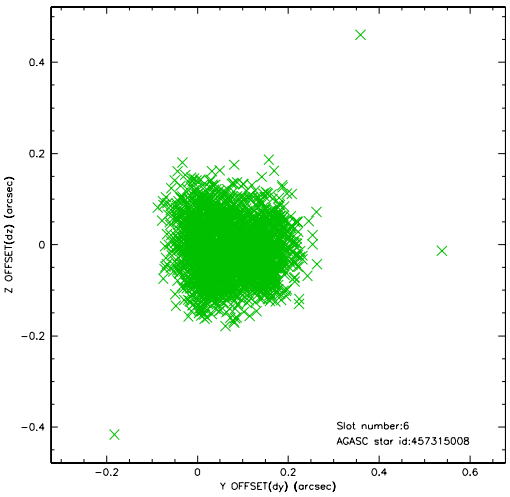
2.4.3 Slot 5

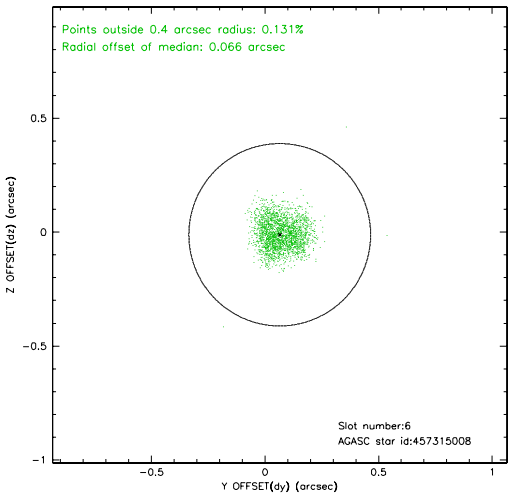

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:457316216

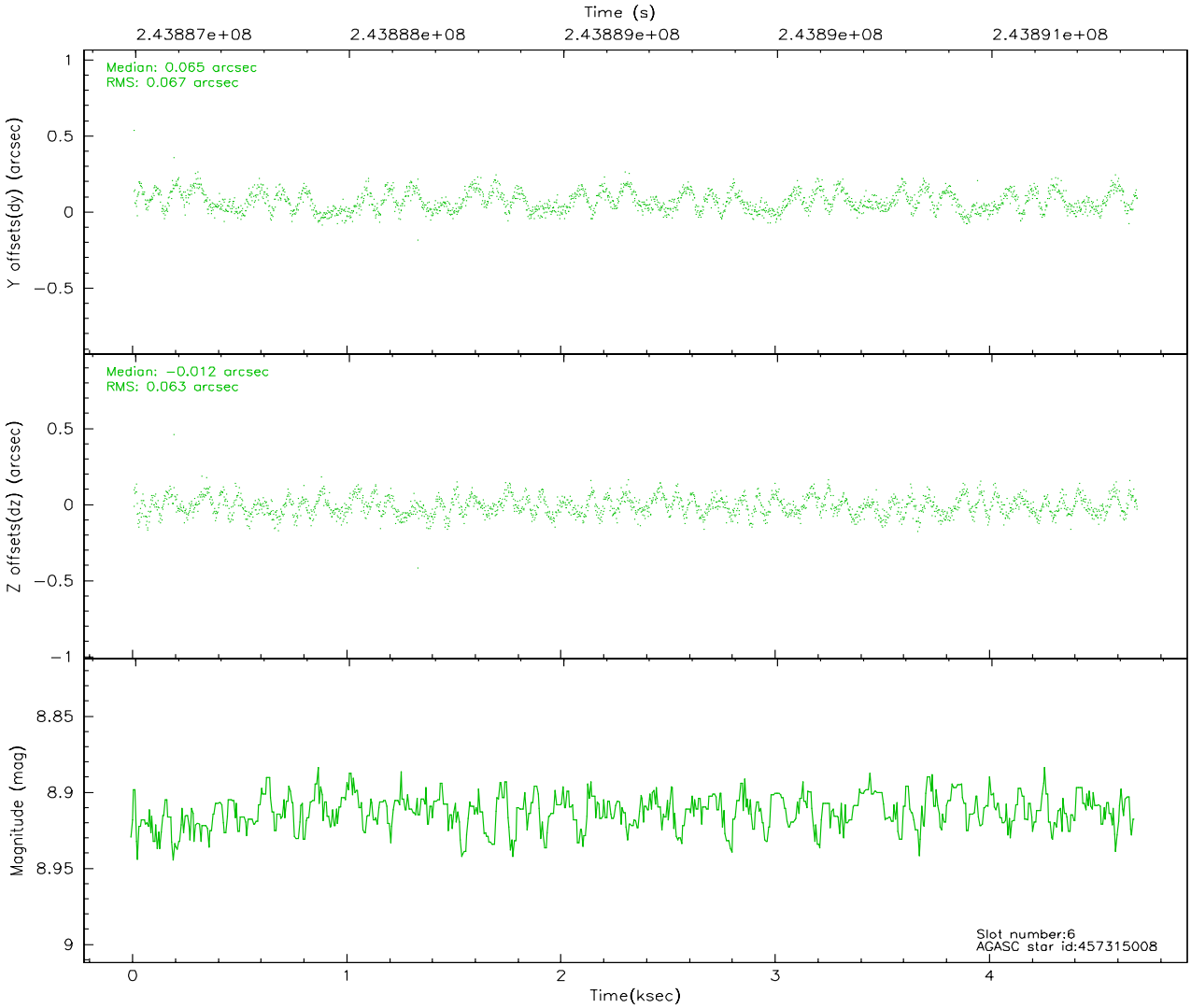

Points outside 0.4 arcsec radius: 0.044%
Radial offset of median: 0.087 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:457316216


Time (s)
2.43887e+08
2.43888e+08
2.43889e+08
2.4389e+08
2.43891e+08
Median: −0.021 arcsec
RMS: 0.048 arcsec
Y offsets(dy) (arcsec)
Median: −0.084 arcsec
RMS: 0.067 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:457316216
Time(ksec)

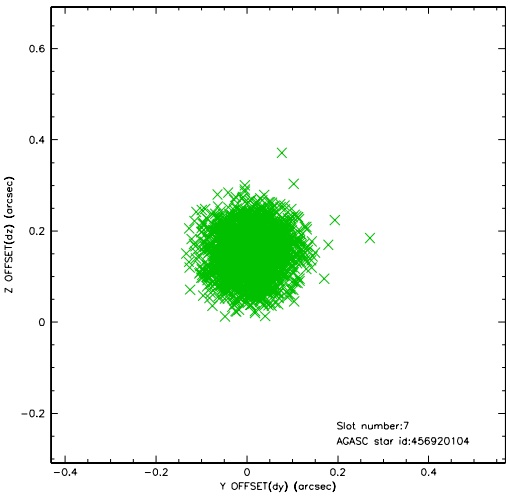
2.4.4 Slot 6

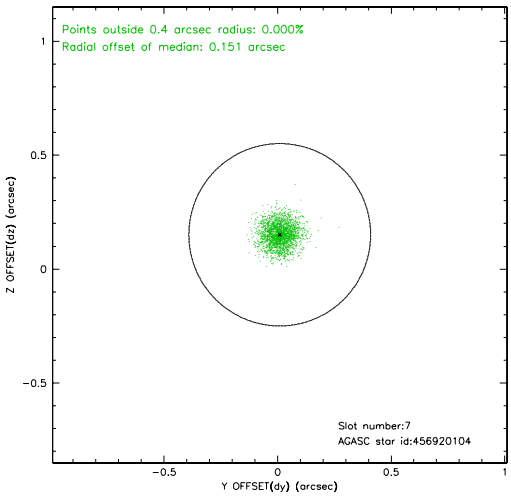

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:457315008

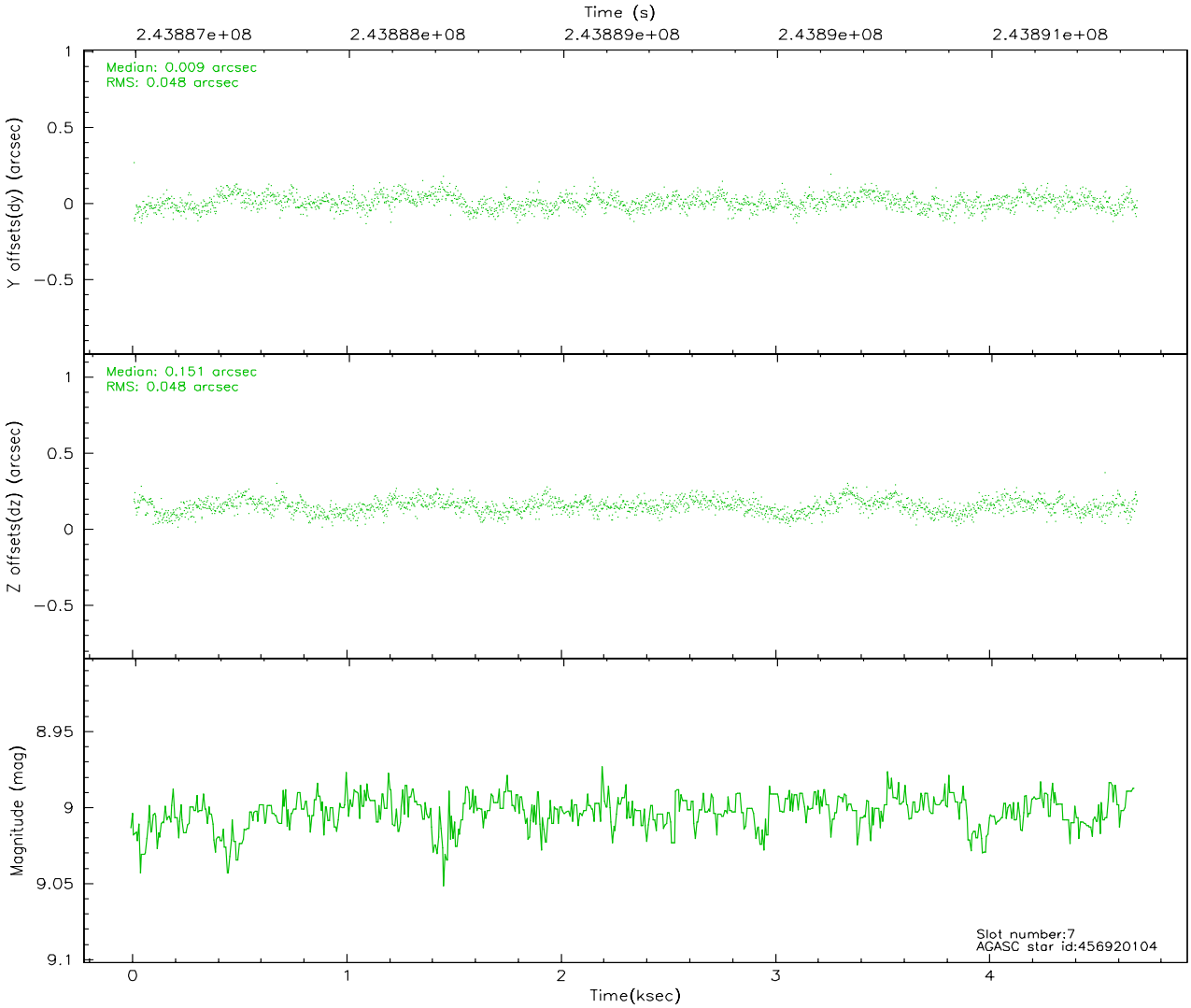

Points outside 0.4 arcsec radius: 0.131%
Radial offset of median: 0.066 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:457315008


Time (s)
2.43887e+08
2.43888e+08
2.43889e+08
2.4389e+08
2.43891e+08
Median: 0.065 arcsec
RMS: 0.067 arcsec
Y offsets(dy) (arcsec)
Median: −0.012 arcsec
RMS: 0.063 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:457315008
Time(ksec)

2.4.5 Slot 7

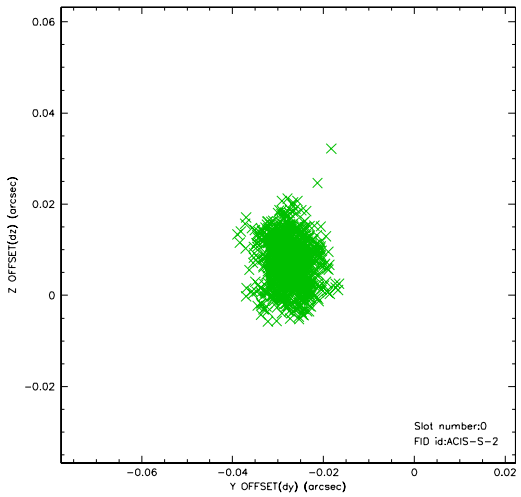

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:456920104

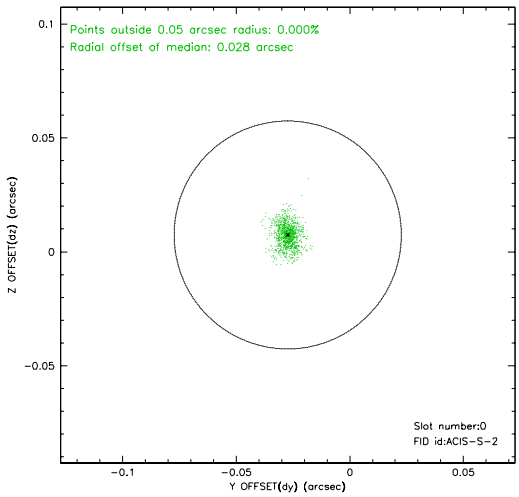

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.151 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:456920104

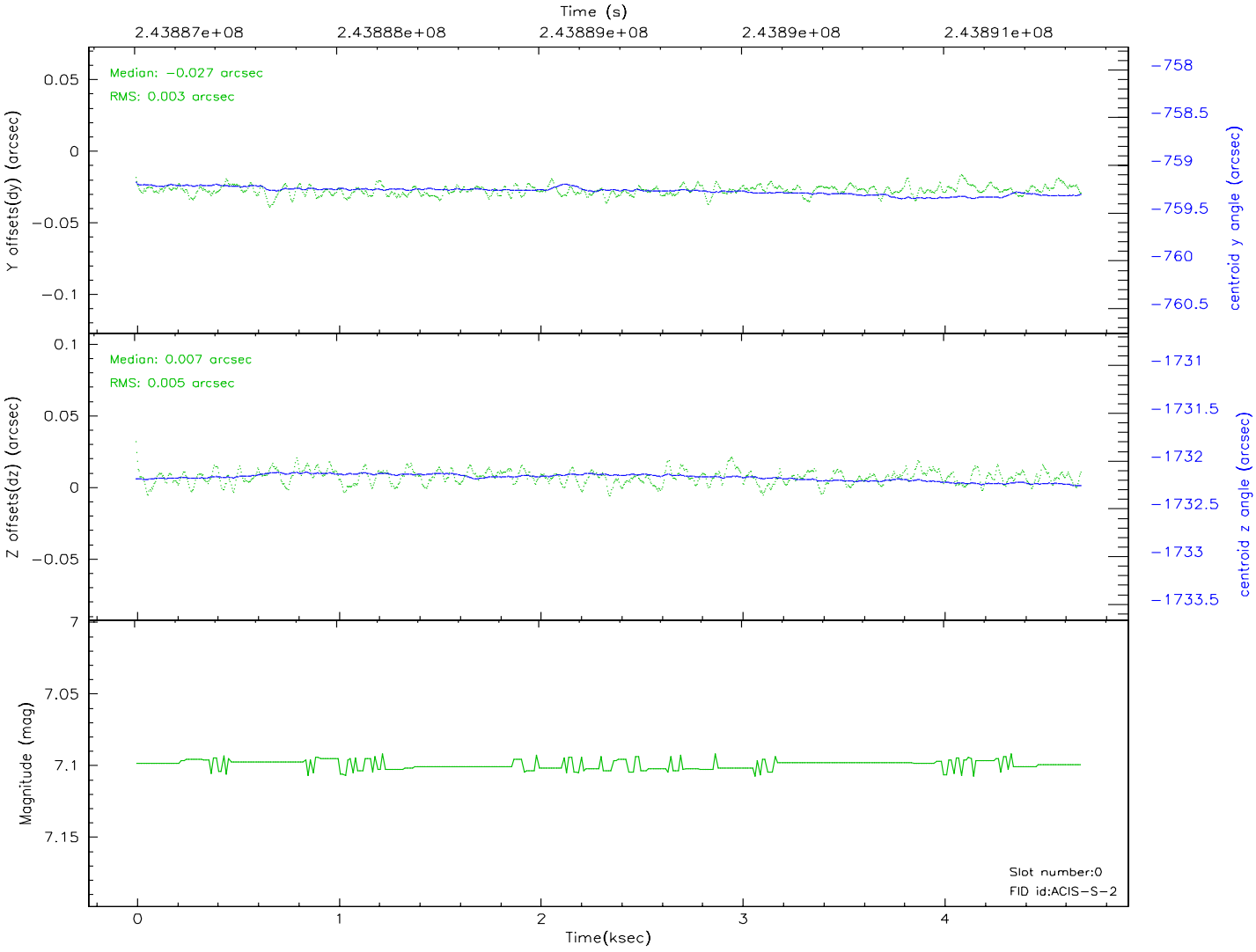

Time (s)
2.43887e+08
2.43888e+08
2.43889e+08
2.4389e+08
2.43891e+08
Median: 0.009 arcsec
RMS: 0.048 arcsec
Y offsets(dy) (arcsec)
Median: 0.151 arcsec
RMS: 0.048 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:456920104
Time(ksec)

2.5 FID Slots

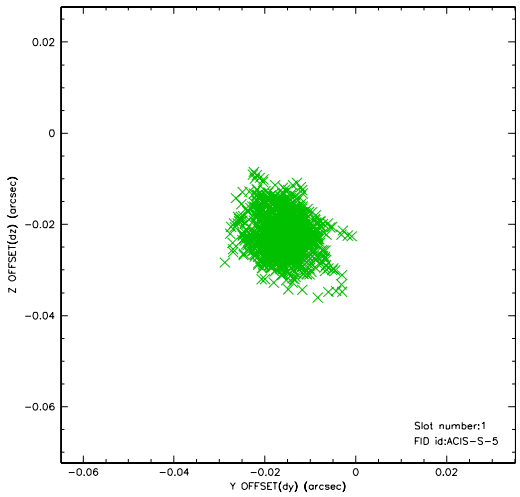
2.5.1 Slot 0

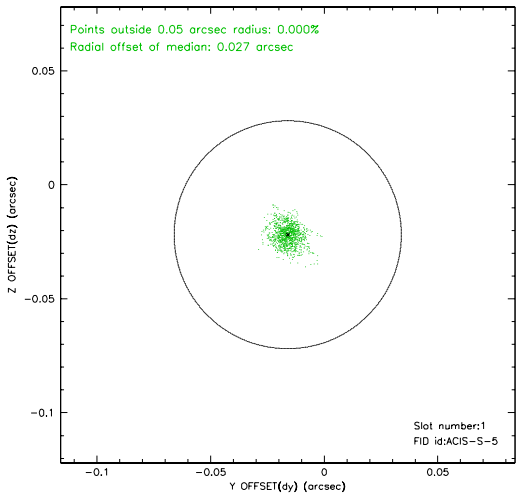


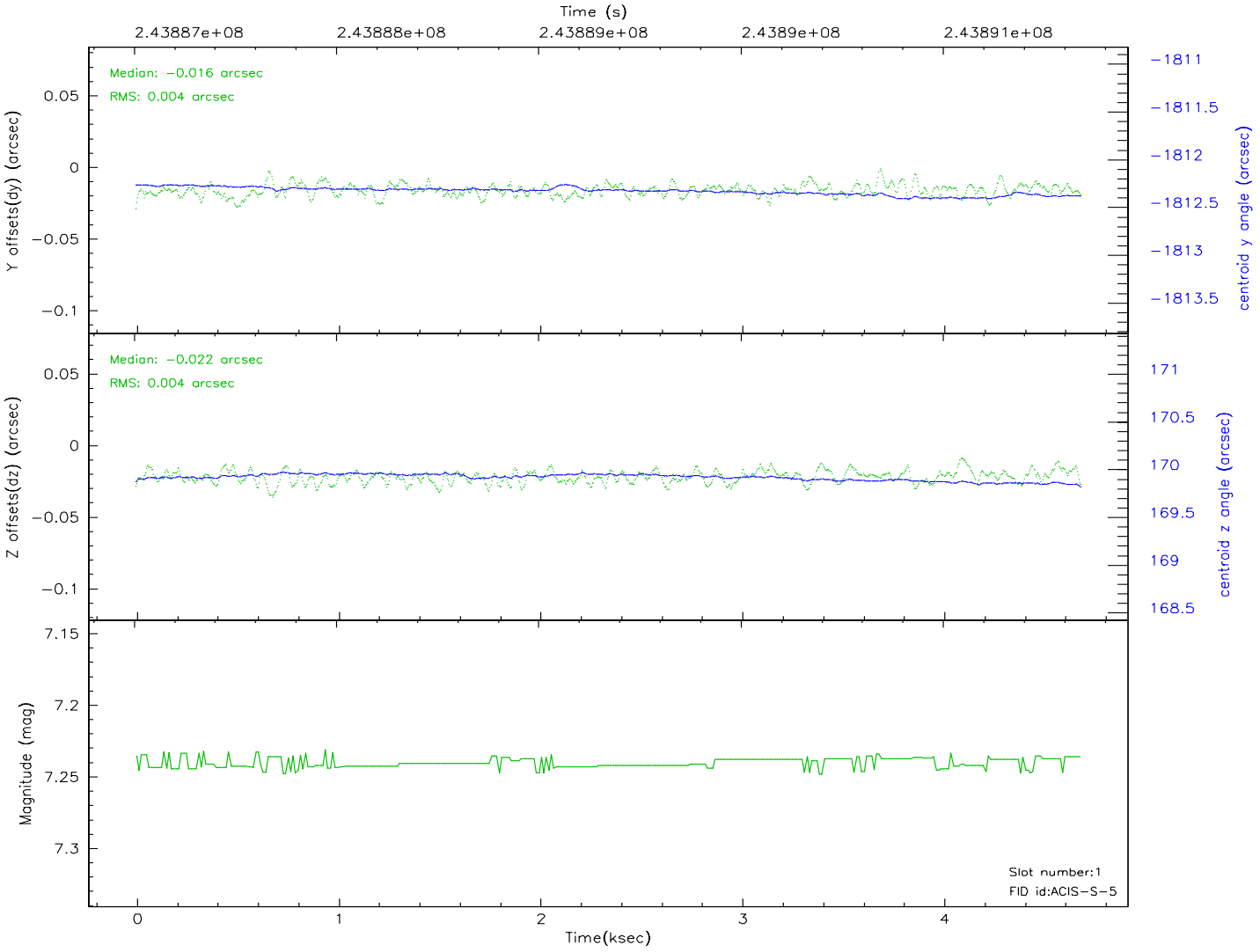




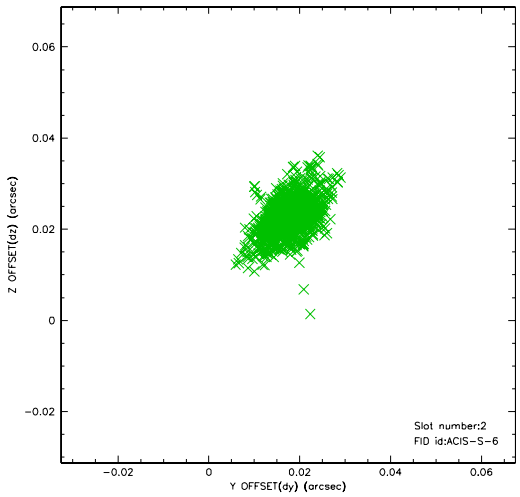
2.5.2 Slot 1

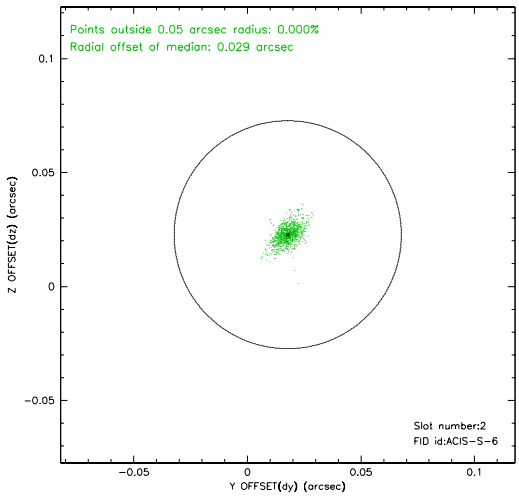

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-5

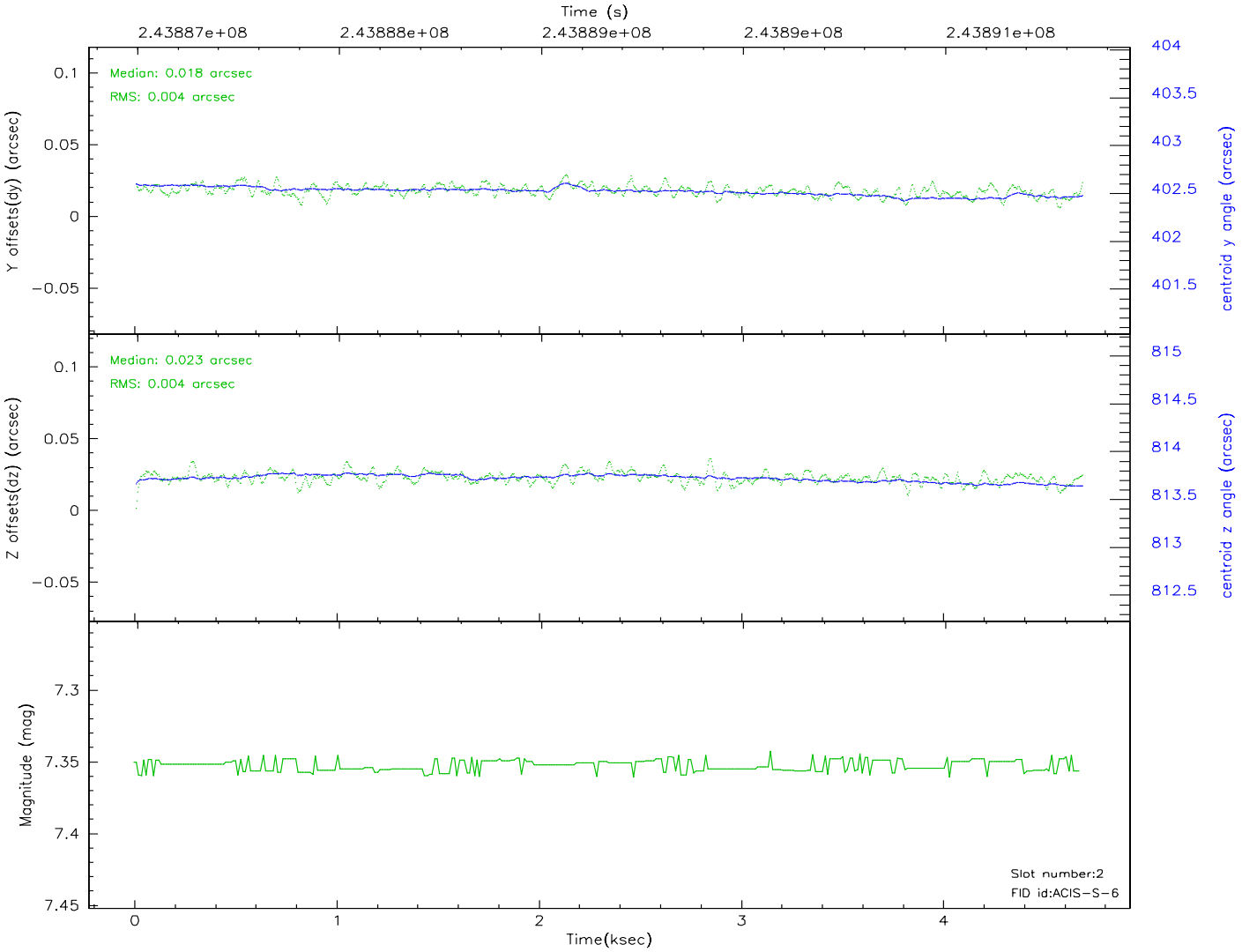

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.027 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-5


Time (s)
Median: −0.016 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.022 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:ACIS-S-5
Time(ksec)

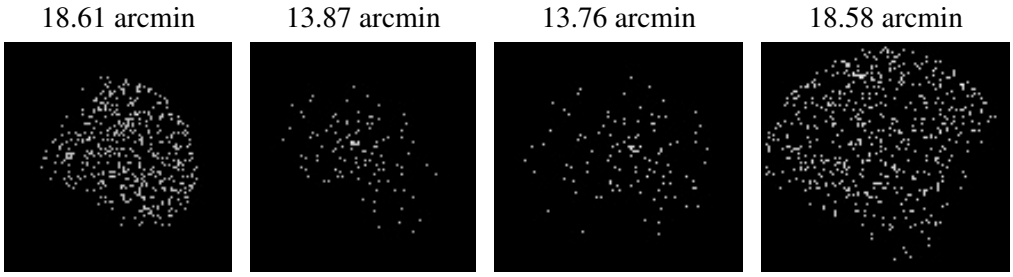
2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-S-6


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.029 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:2
FID id:ACIS-S-6


Time (s)
Median: 0.018 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
Median: 0.023 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid y angle (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:2
FID id:ACIS-S-6
Time(ksec)

3 Point Sources



A Summary

A.1 Status

V&V Scientist	Jen Lauer
V&V Date (YYYY-MM-DD)	2006.03.26
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	4.678399

A.2 Comments

As a consequence of the DEA-A shutdown anomaly on Sep 15th (DOY258), the the reported value of the ACIS FP temperature was ~1.3 degrees warmer than the actual temperature. GOs should subtract 1.3 degrees from the reported temperature to determine the true temperature. In addition the FP temperature was not regulating during this period. The FP temperature fluctuated between -121.3 C and -118.8 C during this time. For analysis of line-dominated spectra from the FI CCDs, GOs might notice a systematic gain shift by up to 0.5%, either towards higher/lower energies depending on if the FP temperature was colder/warmer than -119.7 C. Analysis of line-dominated spectra on S3 are mostly unaffected (where mostly unaffected means that the changes are smaller than the current uncertainties in the calibration). Analysis of continuum-dominated spectra on both the FI and BI CCDs are mostly unaffected. Imaging analysis on both the FI and BI CCDs are mostly unaffected.