V&V Reference Report
L2 ASCDS Version : 8.5.1.1

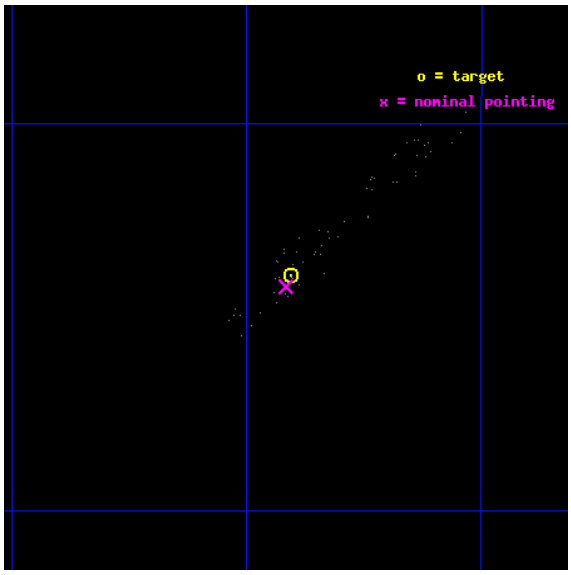
Observation 341 - L2 Version 5
Chandra X-Ray Center

L2 Processing Date : Jan 25 2013

Contents

1 Front

seq_num	700013	Sequence number
obs_id	341	Observation id
title	STUDIES OF RADIO JETS AND THE NARROW LINE REGIONS	Proposal title
observer	Professor Andrew Wilson	Principal investigator
object	NGC 526A	Source name
dtycycle	0	
cycle	P	events are from which exps? P[rimary] S[econdar
ra_targ	20.97633	Observer's specified target RA [deg]
dec_targ	-35.06561	Observer's specified target Dec [deg]
ra_nom	20.979139273631	Nominal RA [deg]
dec_nom	-35.070524284762	Nominal Dec [deg]
roll_nom	315.93176819384	Nominal Roll [deg]
revision	5	Processing version of data
ontime	331.2732097134	Sum of GTIs [s]
livetime	58.118106967264	Livetime [s]
ontime7	331.2732097134	Sum of GTIs [s]
l2events	160	Number of level 2 events

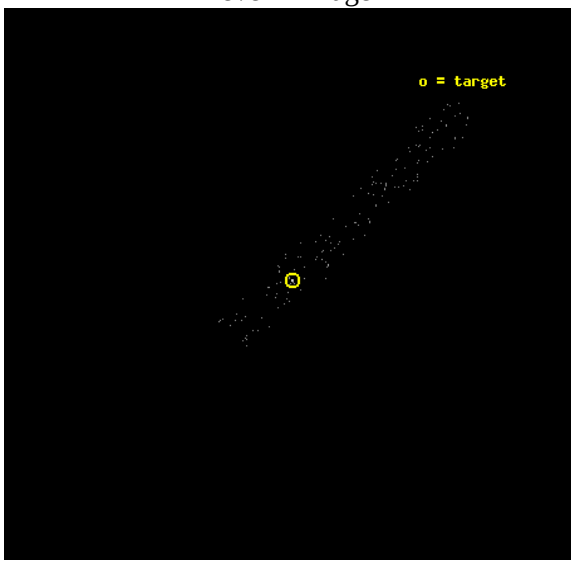


2 OBI Primary

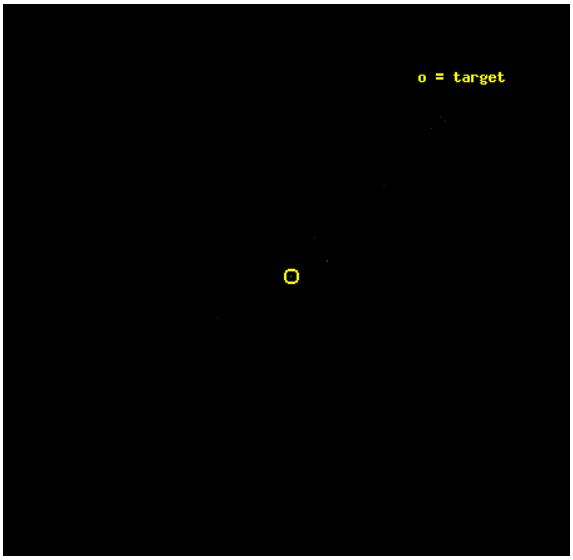
2.1 OBI

2.1.1 Images

Level 1 Image

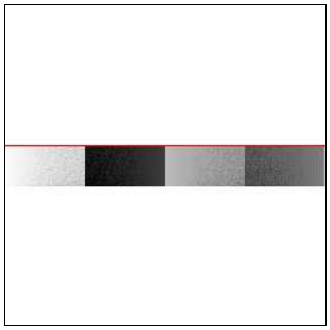


Level 1 Bad Events



2.1.2 Bias

Chip 7



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.5.1.1	Processing system revision
caldbver	4.5.5	
date	2013-01-25T22:14:10	Date and time of file creation
revision	5	Processing version of data

sched_exp_time	1000.000000	[s] Scheduled observation exposure time
ontime	331.2732097134	Sum of GTIs [s]
ontime7	331.2732097134	Sum of GTIs [s]
l1events	270	Number of level 1 events

2.1.4 Events

	ccd 7
level 1 events	270
rejected events	101
rejected %	37%

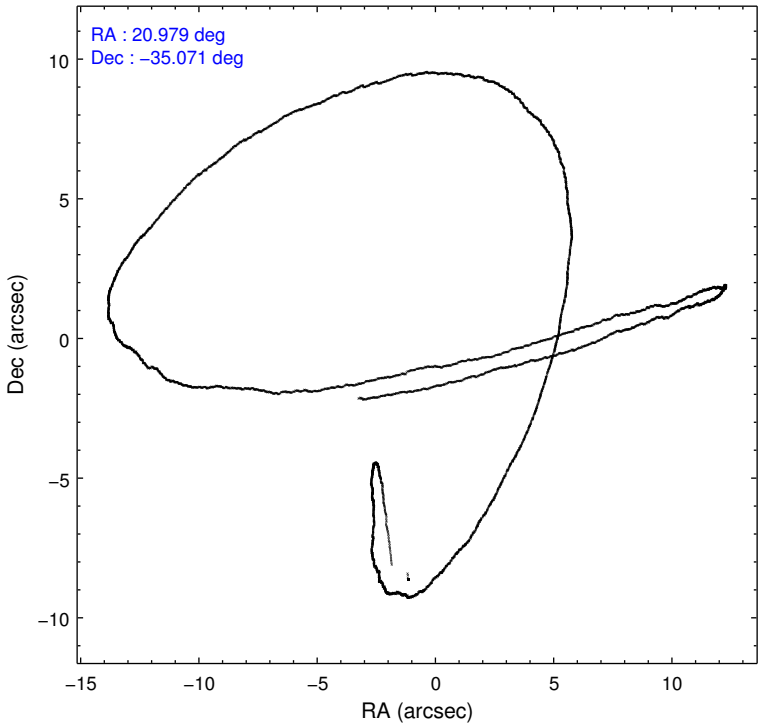
	ccd 7
grade 0 events	23
	8%
grade 1 events	1
	0%
grade 2 events	40
	14%
grade 3 events	28
	10%
grade 4 events	19
	7%
grade 5 events	14
	5%
grade 6 events	59
	21%
grade 7 events	86
	31%

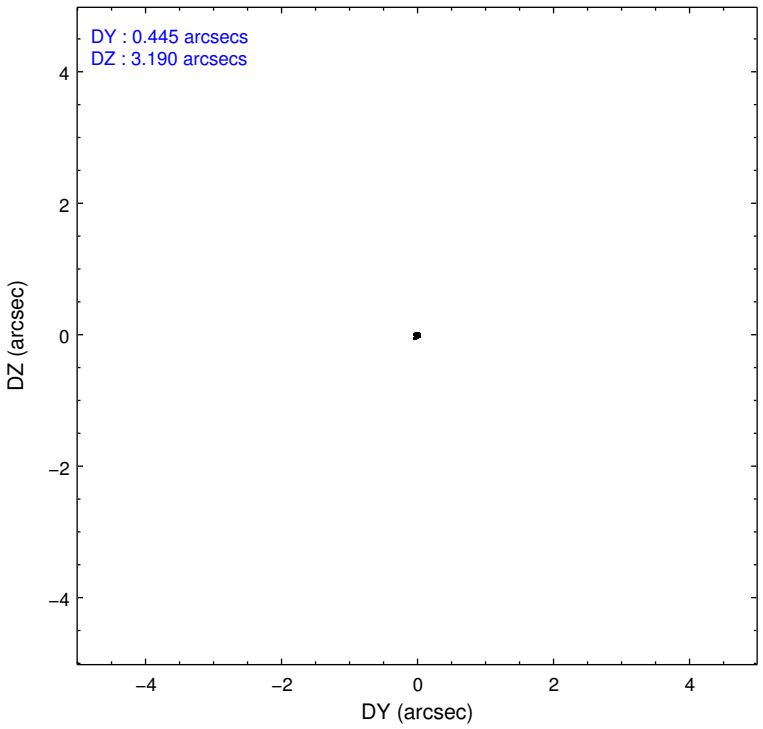
2.2 Compared Parameters

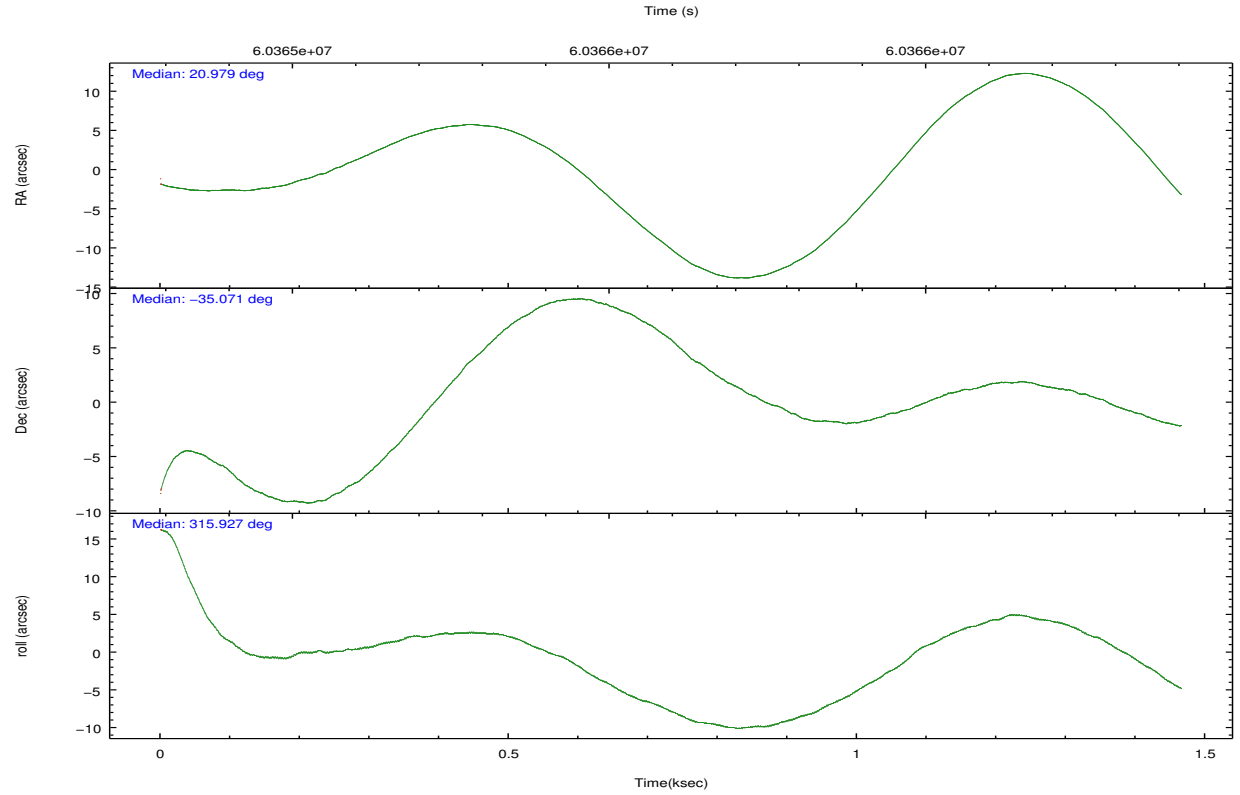
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-7	ACIS-7
Grating	NONE	NONE
Data mode	VFAINT	VFAINT
Observation mode	POINTING	POINTING
[deg] Pointing RA	20.946052	20.97913927363144
[deg] Pointing Dec	-35.063348	-35.07052428476208
[deg] Pointing Roll	315.755983	315.9317681938431
[mm] SIM focus pos	-0.684267	-0.6828225247311905
[mm] SIM defocus	0	0.001444936568705701
[mm] SIM translation stage pos	-190.132523	-190.1400660498719
[mm] SIM translation stage offset	0	0.00754346686406393
[s] Observation start time (MET)	60365332.184000	60364128.724841
Observation start date	1999-11-30T16:07:48	1999-11-30T15:48:48
[s] Observation end time (MET)	60366332.184000	60367117.112449
Observation end date	1999-11-30T16:24:28	1999-11-30T16:38:37
Read mode	TIMED	TIMED

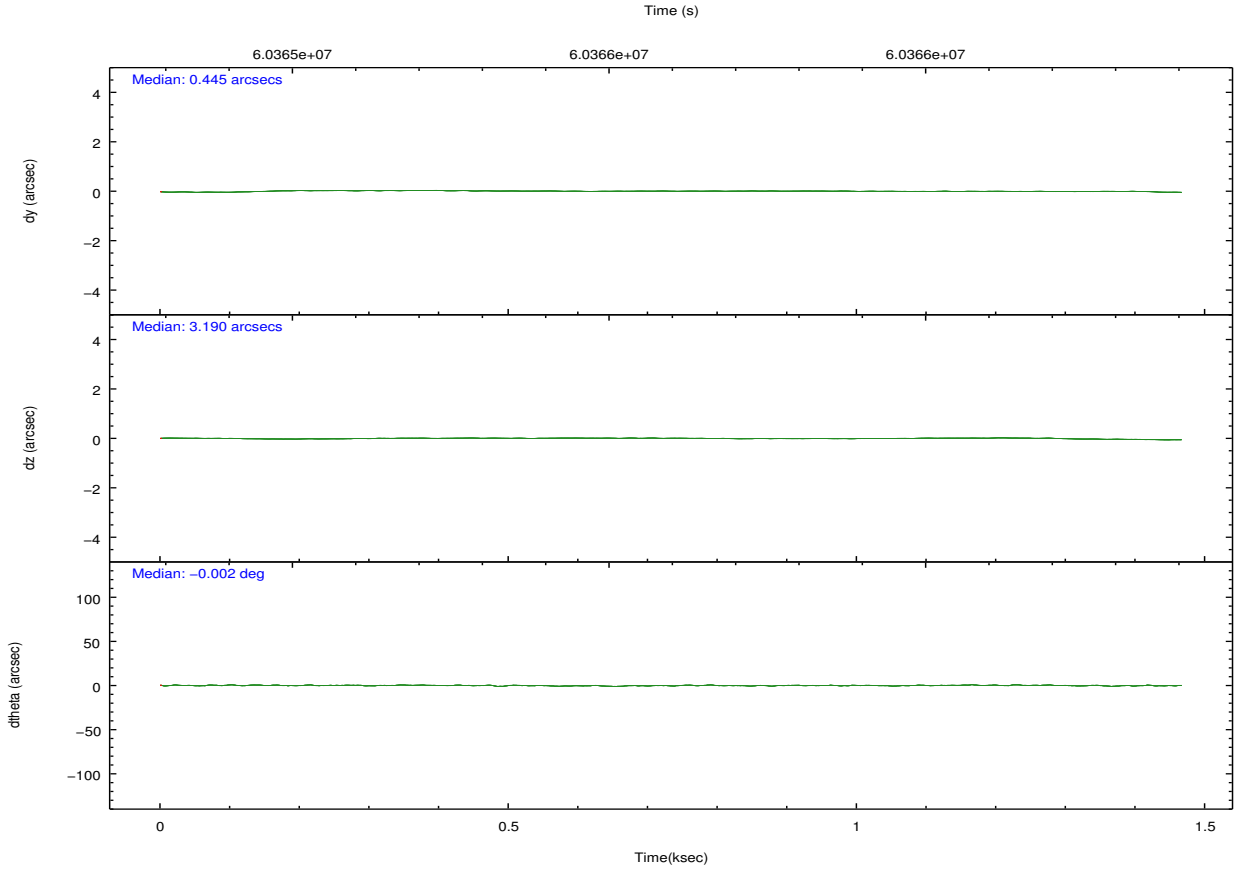
Parameter	Planned	Actual
Obspar format version number	7	7
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	CUSTOM	1/8
Subarray start row	447	447
Subarray row count	128	128
Alternating exposures requested	Y	Y
[s] Primary exposure time	0.100000	0.1
[s] Secondary exposure time	0.400000	0.4
Duty cycle	2	2

2.3 Aspect


RA : 20.979 deg
Dec : −35.071 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−15
−10
−5
0
5
10


DY : 0.445 arcsecs
DZ : 3.190 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
6.0365e+07
6.0366e+07
6.0366e+07
Median: 20.979 deg
RA (arcsec)
Median: −35.071 deg
Dec (arcsec)
Median: 315.927 deg
roll (arcsec)
Time(ksec)

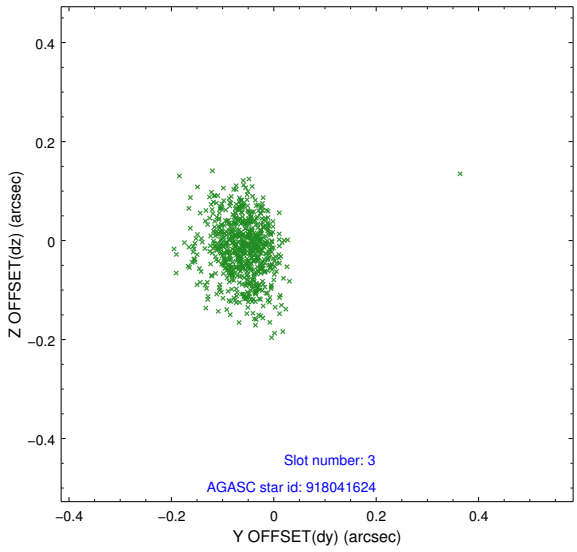

Time (s)
6.0365e+07
6.0366e+07
6.0366e+07
Median: 0.445 arcsecs
dy (arcsec)
Median: 3.190 arcsecs
dz (arcsec)
Median: −0.002 deg
dtheta (arcsec)
Time(ksec)

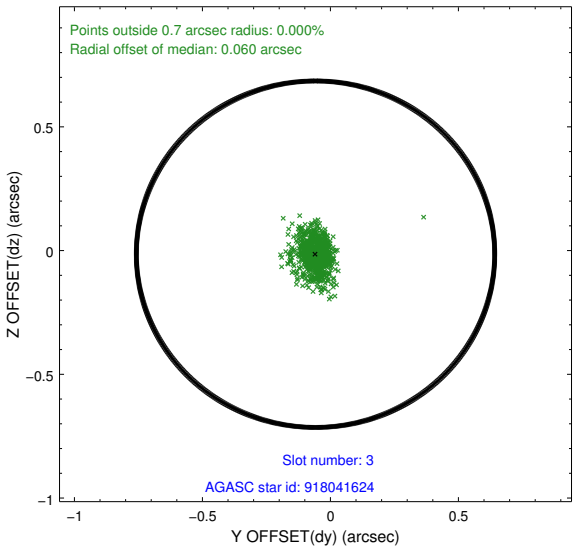
Slot Statistics

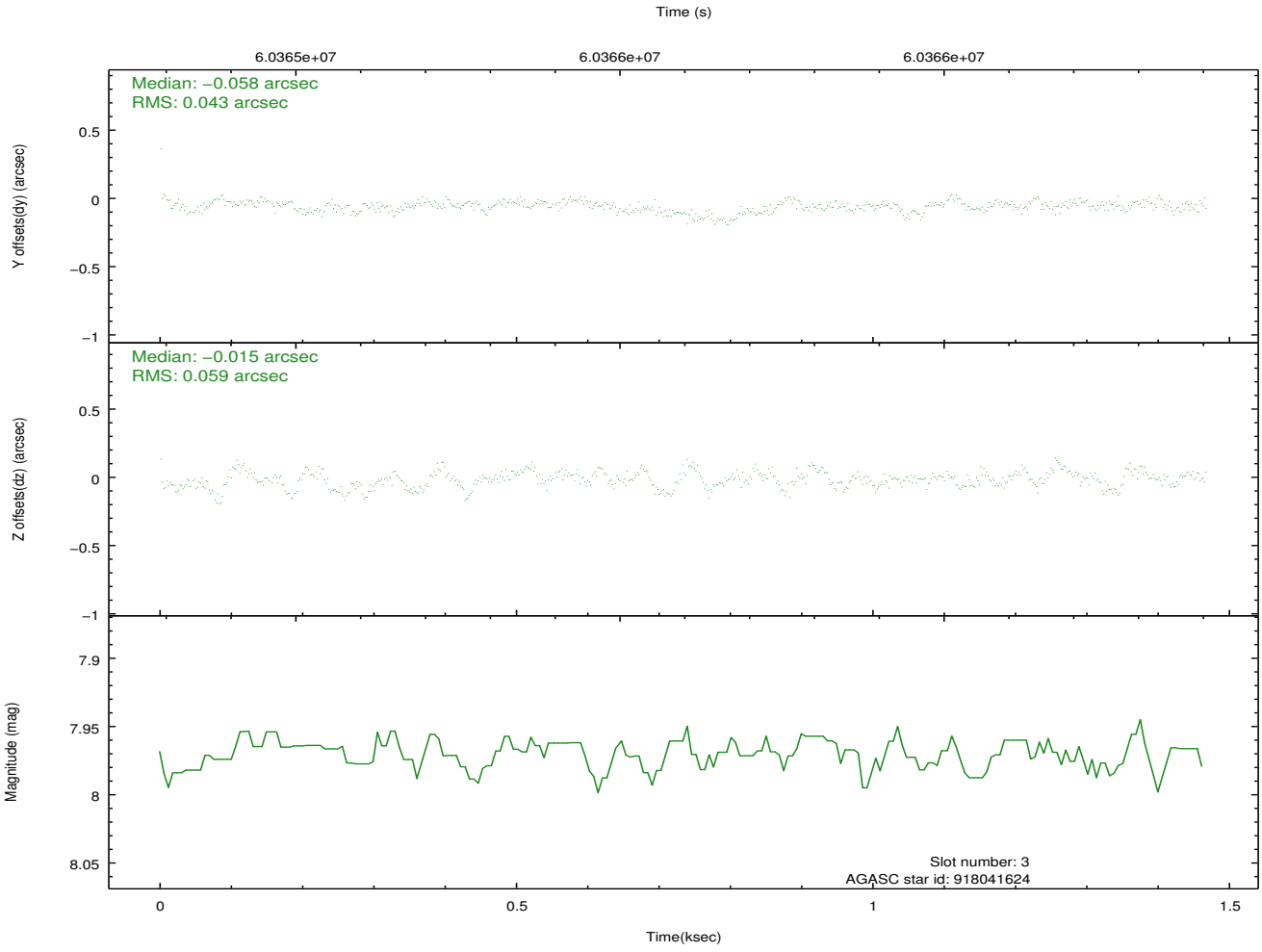
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.11	715	-0.001	-0.017	0.006	0.010	0.000000	0.000000	-753.08	-1724.24
1	FID	ACIS-S-4	7.21	712	0.044	0.005	0.006	0.012	0.000000	0.000000	2159.32	181.91
2	FID	ACIS-S-5	7.24	712	-0.074	0.021	0.007	0.012	0.000000	0.000000	-1803.10	178.23
3	GUIDE	918041624	7.97	711	-0.058	-0.015	0.074	0.126	20.656436	-34.992038	-792.75	-413.23
4	GUIDE	918037384	8.48	714	0.094	-0.050	0.066	0.122	20.982960	-35.723099	1731.03	-1626.95
5	GUIDE	918041544	10.05	713	-0.033	0.061	0.113	0.191	20.868409	-34.646803	-1211.20	911.20
6	UNUSED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00
7	UNUSED		0.00	0	0.000	0.000	0.000	0.000	0.000000	0.000000	0.00	0.00

2.4 Star Slots

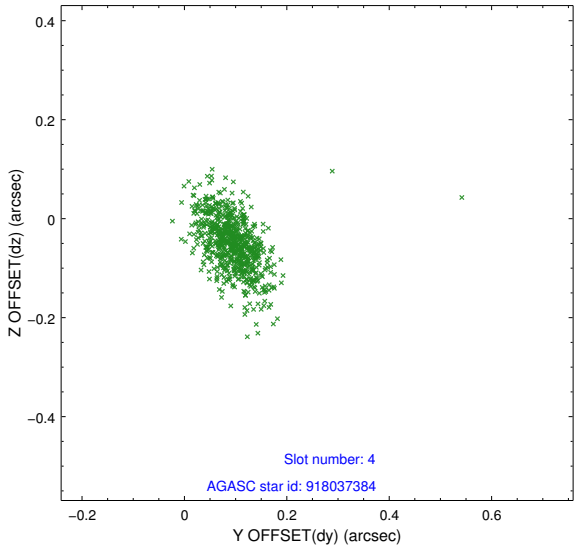
2.4.1 Slot 3

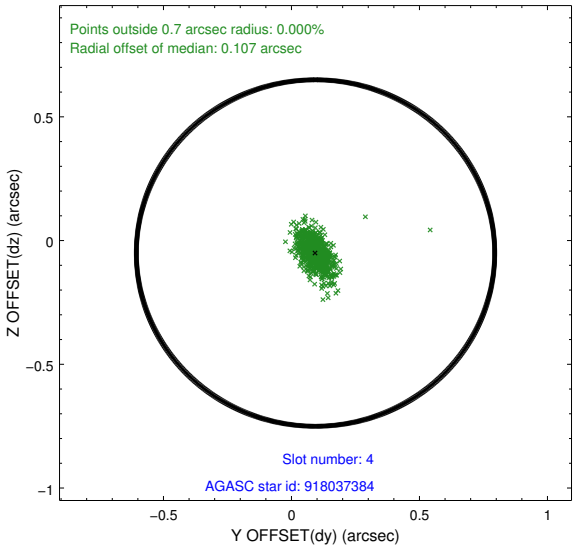


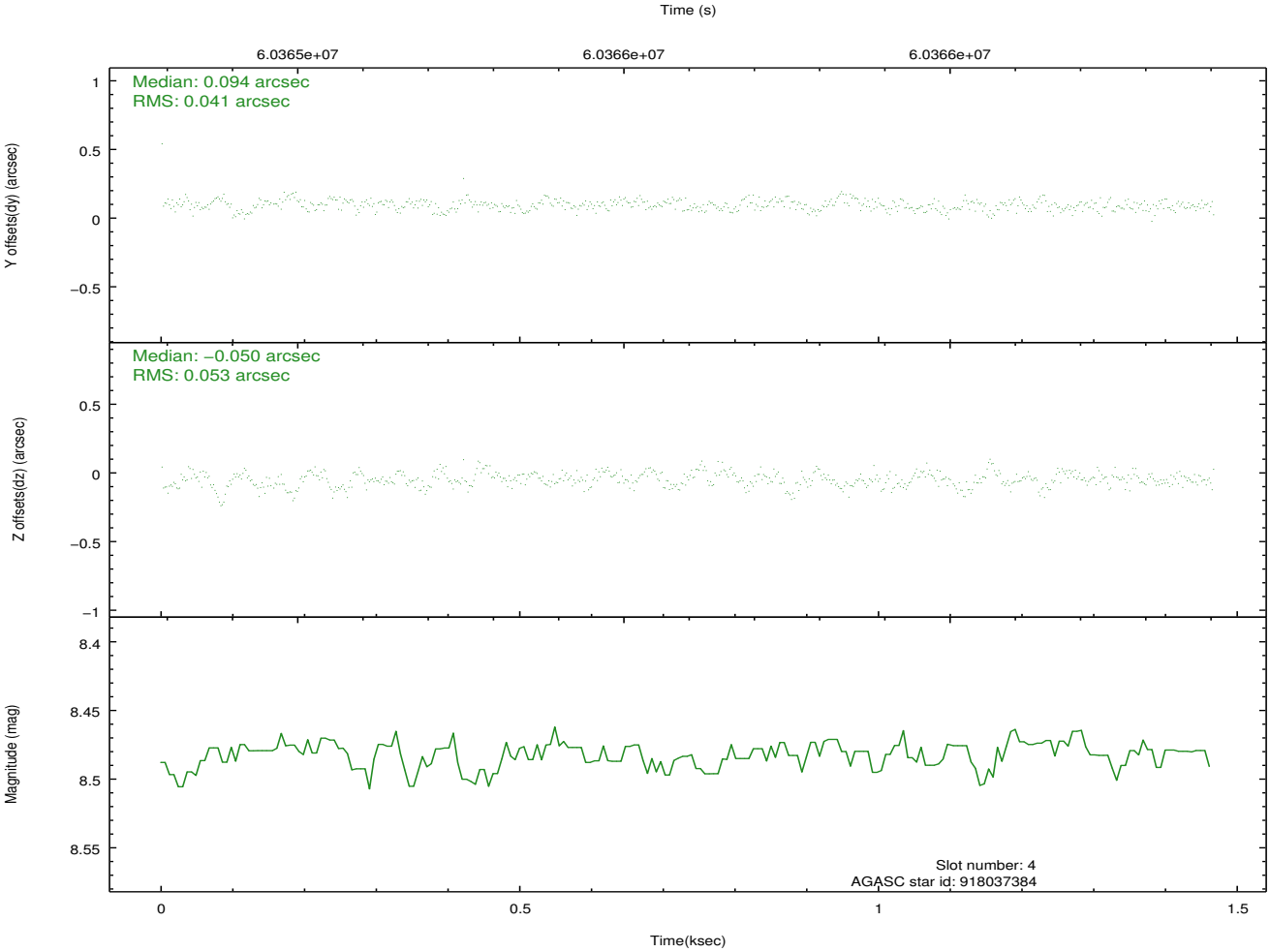




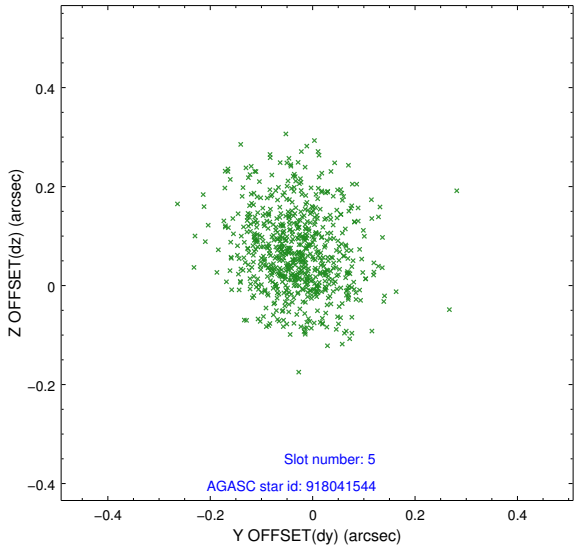
2.4.2 Slot 4

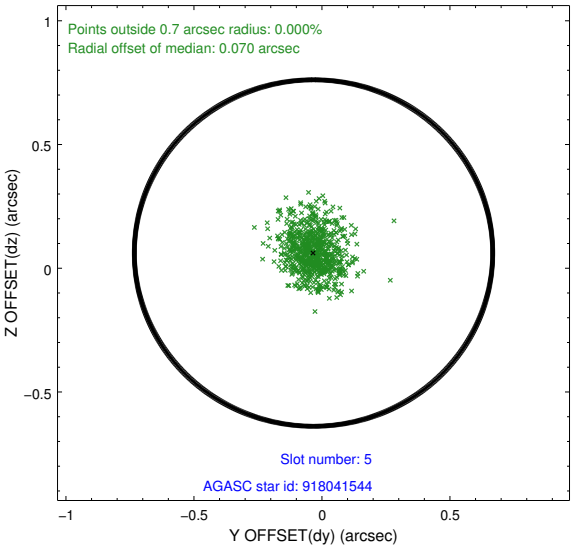

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 918037384

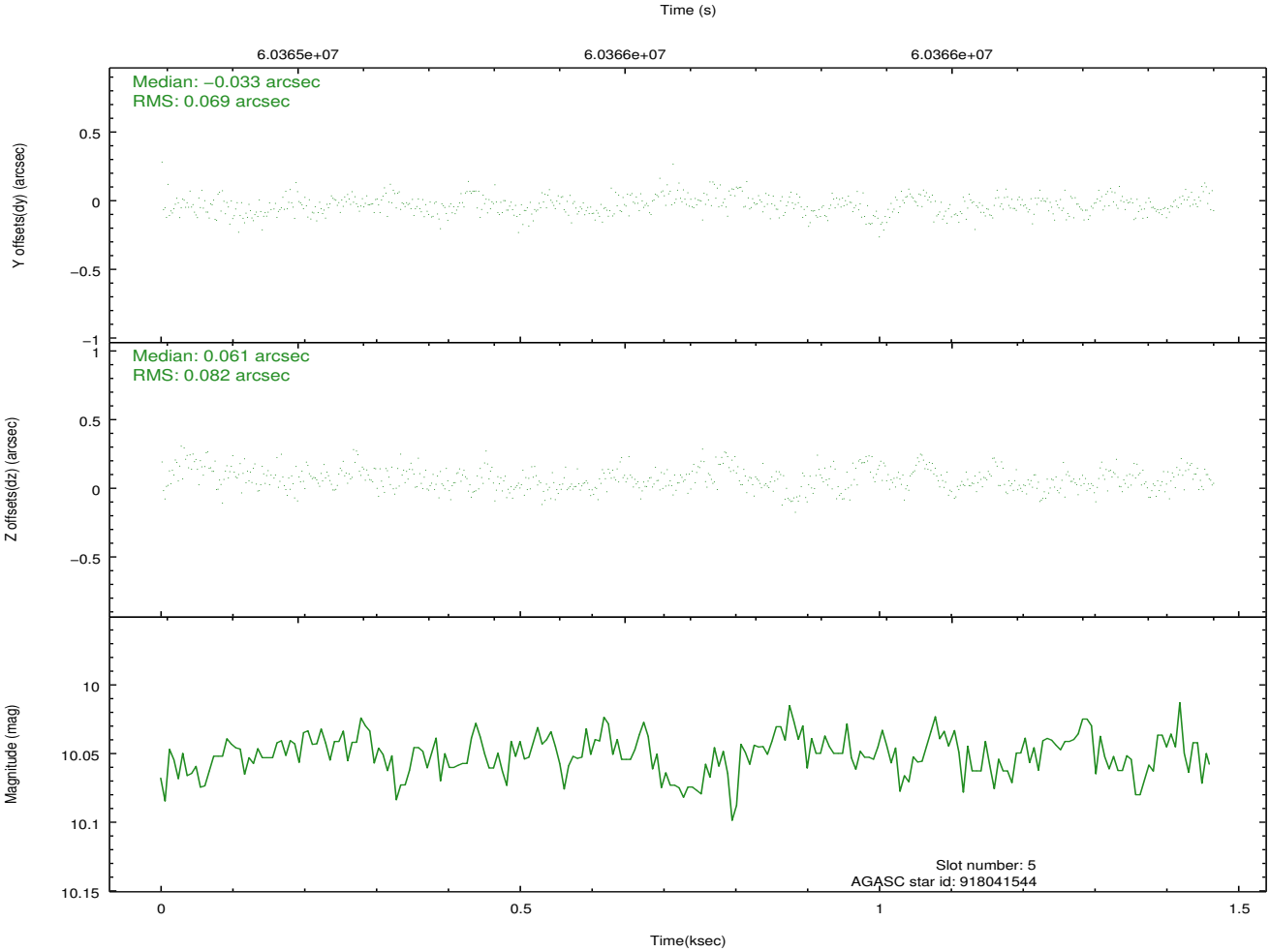

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.107 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 918037384


Time (s)
6.0365e+07
6.0366e+07
6.0366e+07
Median: 0.094 arcsec
RMS: 0.041 arcsec
Y offsets(dy) (arcsec)
Median: −0.050 arcsec
RMS: 0.053 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 918037384
Time(ksec)

2.4.3 Slot 5

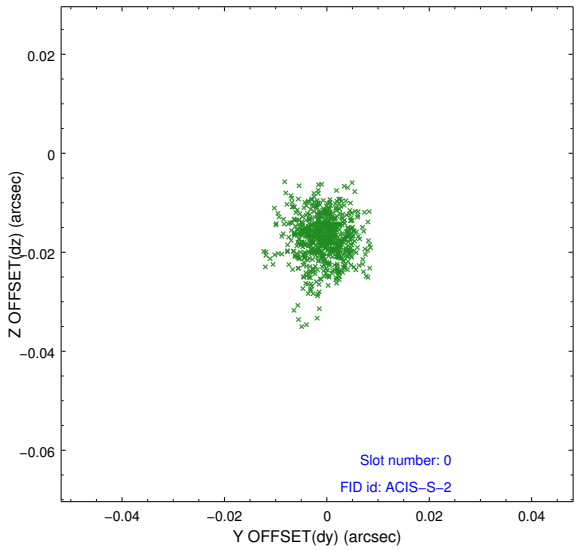

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 918041544

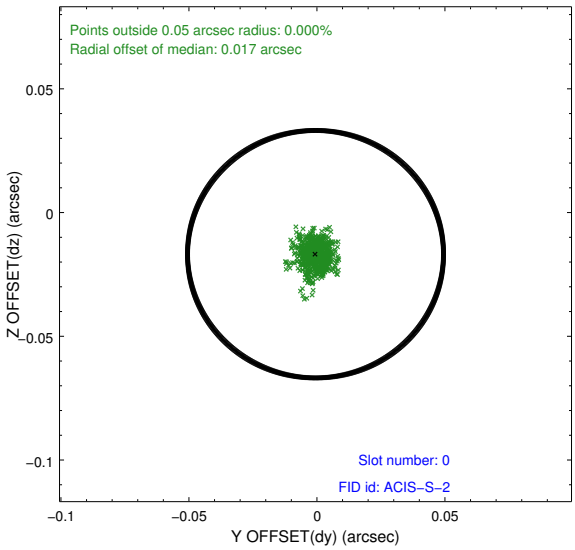

Points outside 0.7 arcsec radius: 0.000%
Radial offset of median: 0.070 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 918041544

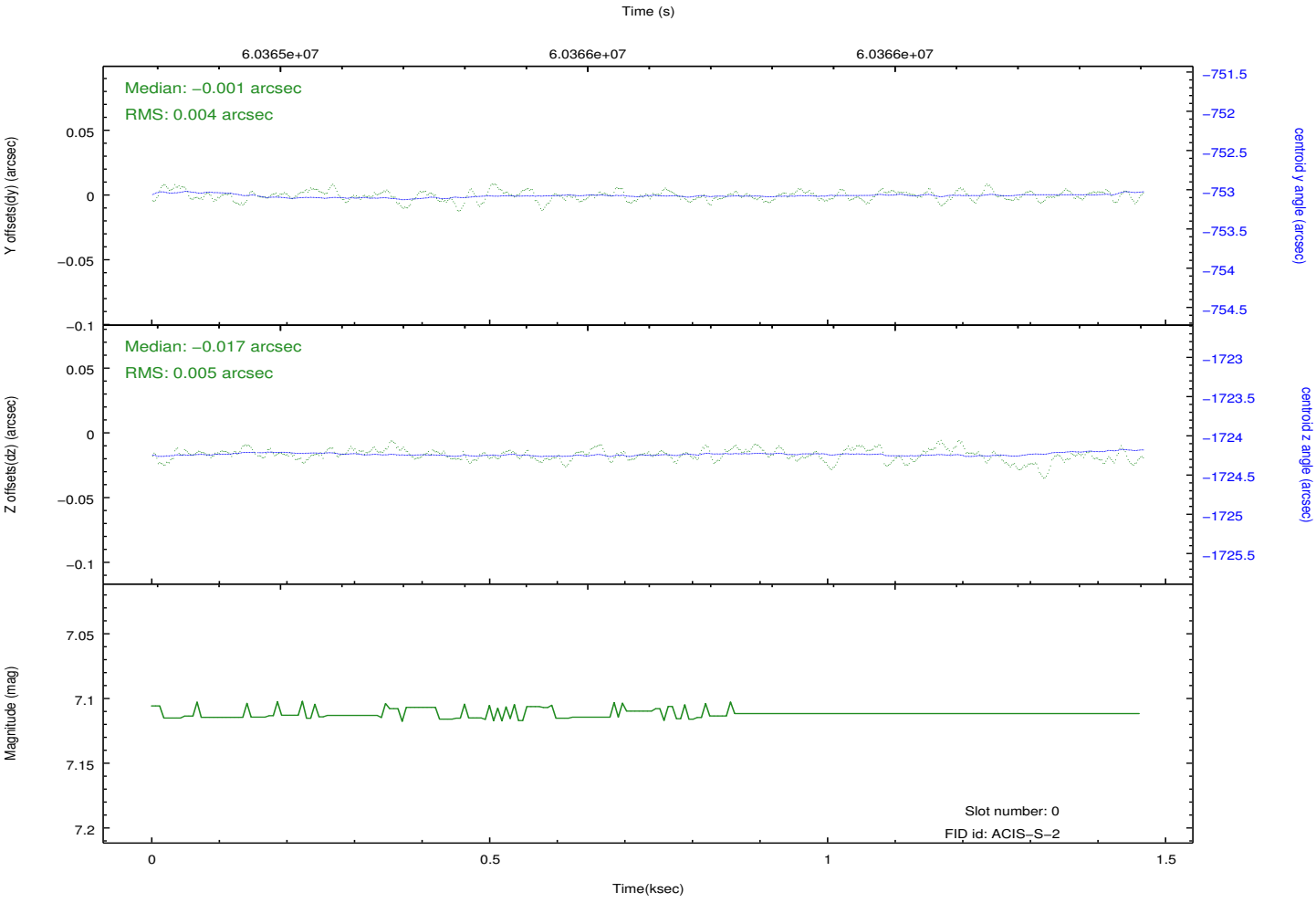

Time (s)
6.0365e+07
6.0366e+07
6.0366e+07
Median: −0.033 arcsec
RMS: 0.069 arcsec
Y offsets(dy) (arcsec)
Median: 0.061 arcsec
RMS: 0.082 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 918041544
Time(ksec)

2.5 FID Slots

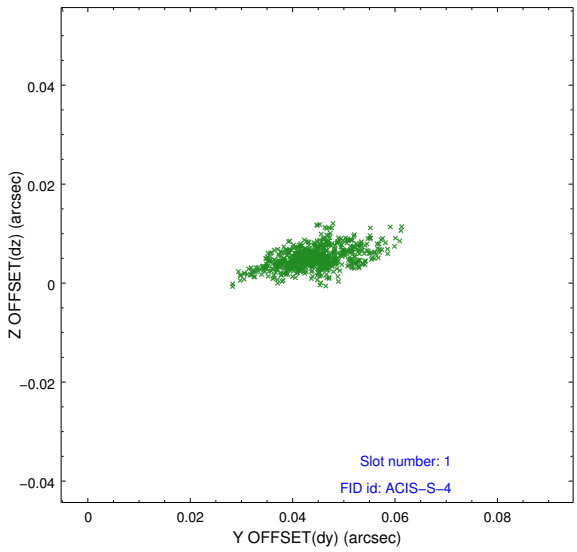
2.5.1 Slot 0

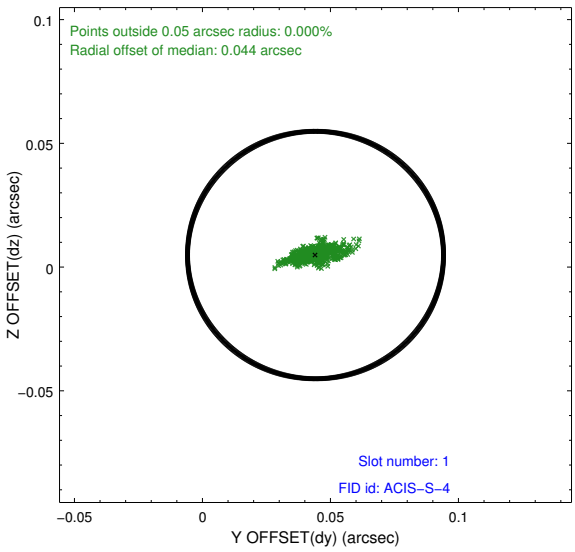


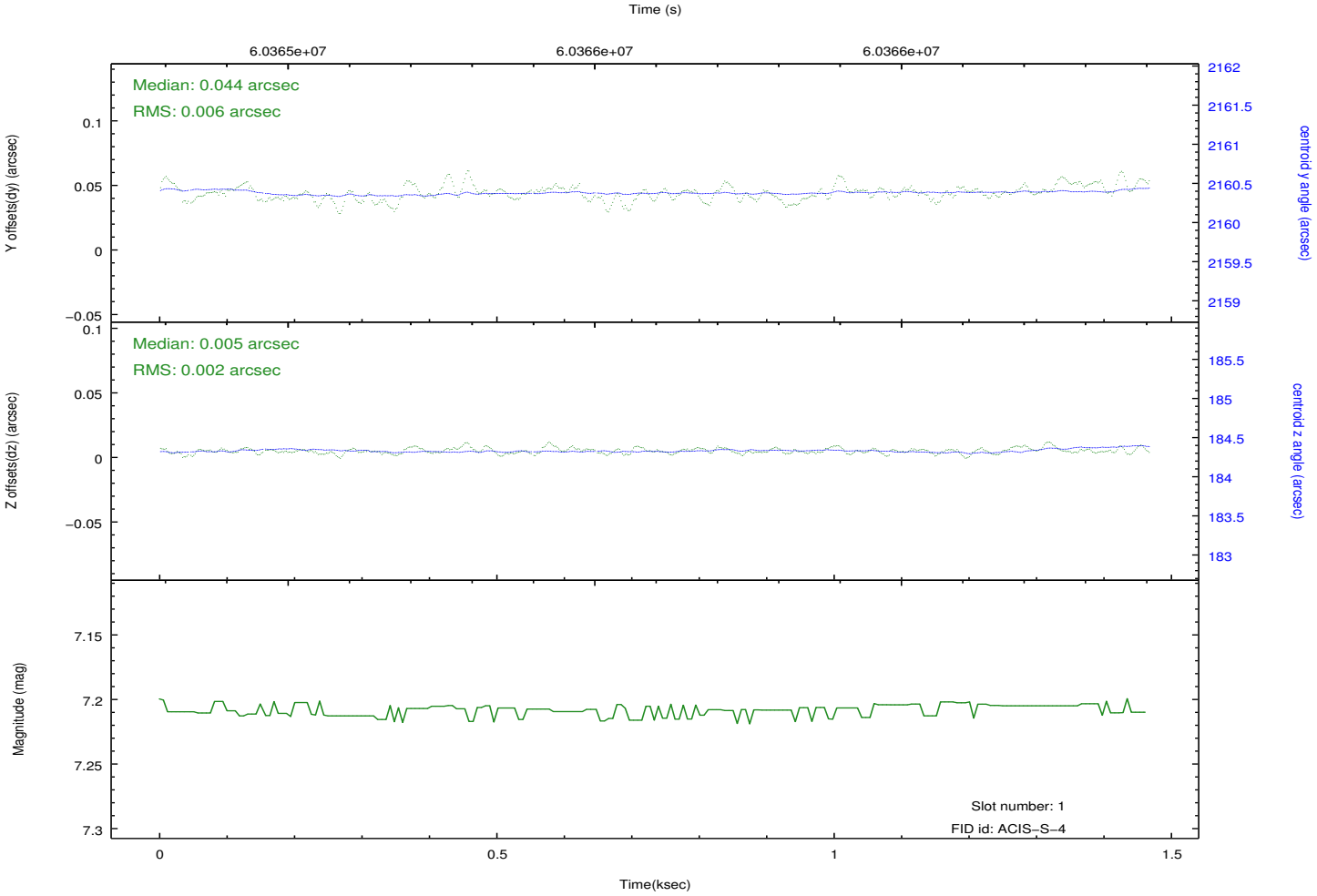




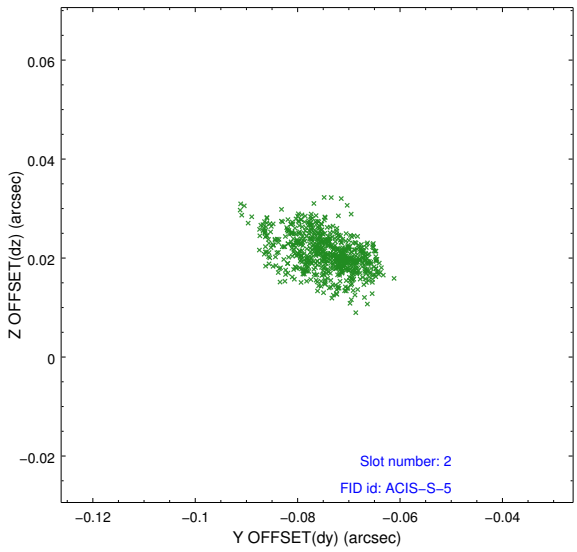
2.5.2 Slot 1

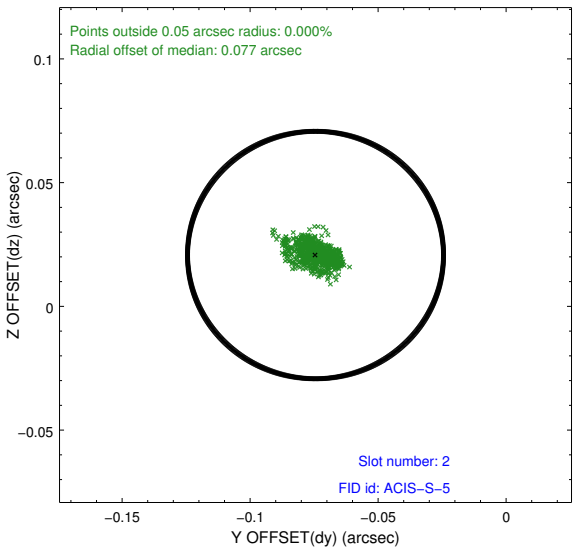

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4

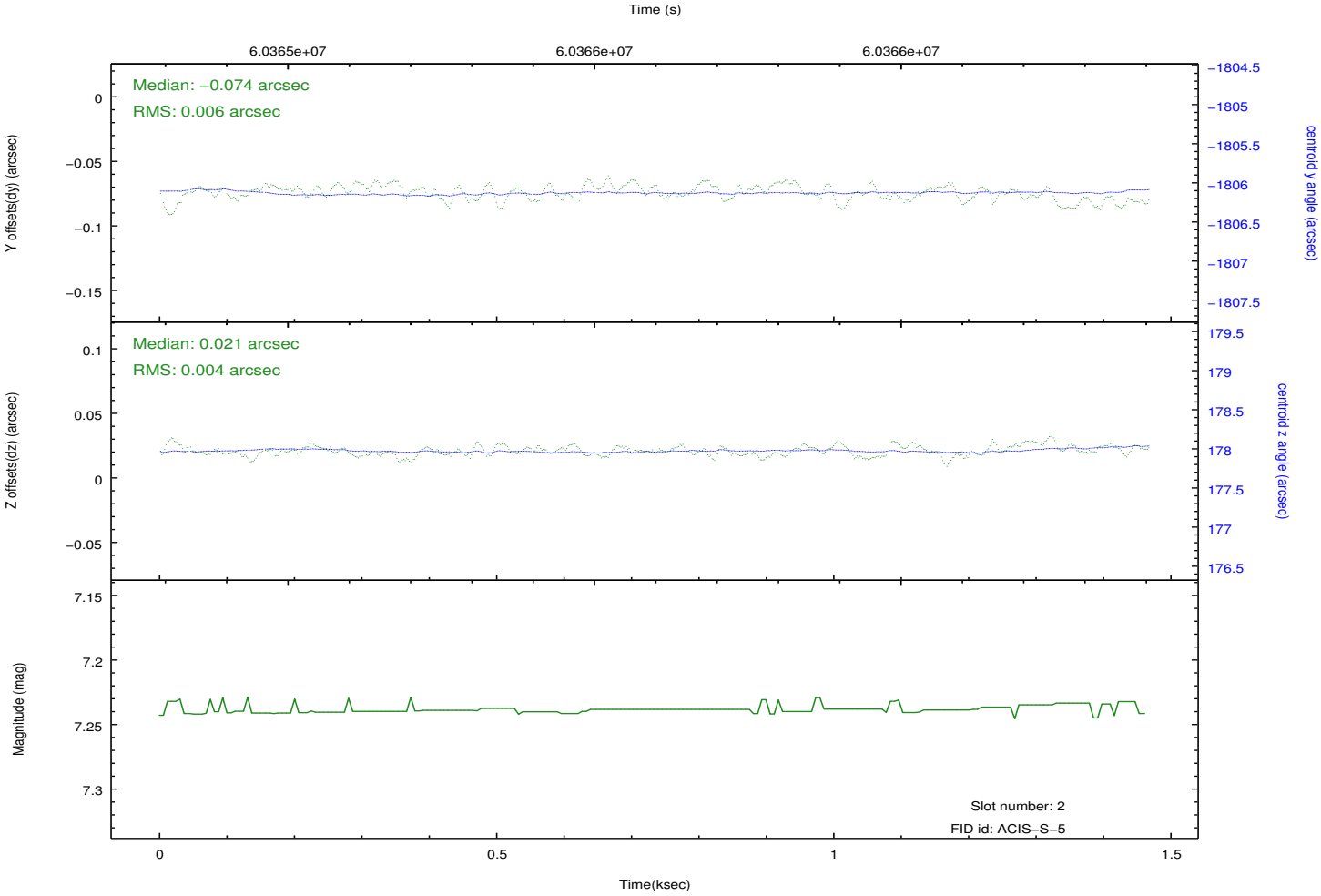

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.044 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 1
FID id: ACIS−S−4


Time (s)
6.0365e+07
6.0366e+07
6.0366e+07
Median: 0.044 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.005 arcsec
RMS: 0.002 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−S−4
Time(ksec)

2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.077 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5

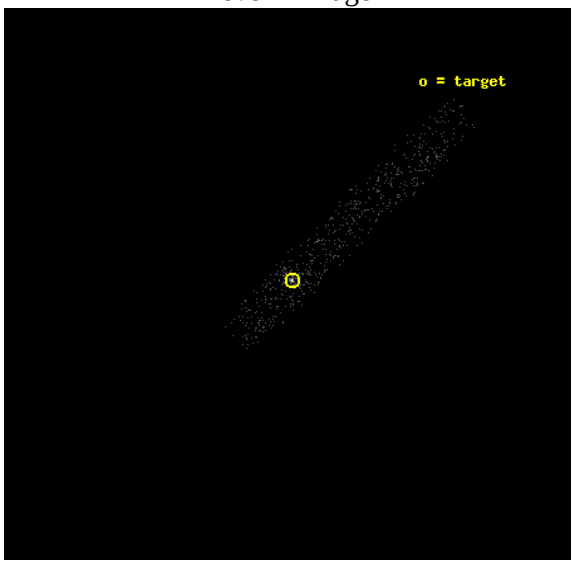

Time (s)
Median: −0.074 arcsec
RMS: 0.006 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.021 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−S−5
Time(ksec)

3 OBI Secondary

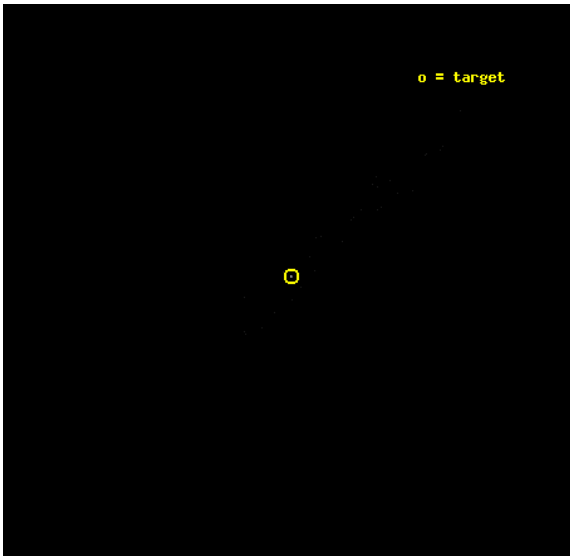
3.1 OBI

3.1.1 Images

Level 1 Image

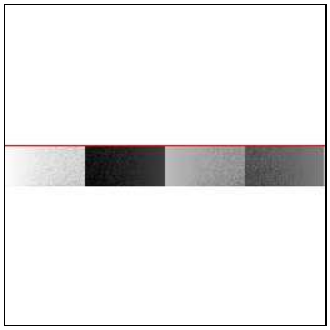


Level 1 Bad Events



3.1.2 Bias

Chip 7



3.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.5.1.1	Processing system revision
caldbver	4.5.5	
date	2013-01-25T22:14:16	Date and time of file creation
revision	5	Processing version of data

sched_exp_time	1000.000000	[s] Scheduled observation exposure time
ontime	511.52914527059	Sum of GTIs [s]
ontime7	511.52914527059	Sum of GTIs [s]
l1events	1502	Number of level 1 events

3.1.4 Events

	ccd 7
level 1 events	1502
rejected events	485
rejected %	32%

	ccd 7
grade 0 events	136
	9%
grade 1 events	3
	0%
grade 2 events	244
	16%
grade 3 events	120
	7%
grade 4 events	117
	7%
grade 5 events	72
	4%
grade 6 events	404
	26%
grade 7 events	406
	27%

A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2013.01.29
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	0.843

A.2 Comments

This is an interleave observation, with alternating short and long observations. For the short observation (e1), the livetime is about 58s instead of 331s because the use of a 0.1 s frame time for the selection of chips and rows used during the observation is shorter than the time it takes to read out one frame of data. The frame time must be at least 0.7 s to avoid 'flushing' the detector before each frame of data is collected. The time required to flush the detector is specified on p. 120 of the ACIS Science Instrument Software User's Guide: http://acis.mit.edu/swuserA/swuser.pdf Events that occur during such a flush are discarded onboard. The flush time is effectively 'dead time.' For this reason, most of the 331s of the shorter observation (e1) was spent flushing the detectors instead of collecting data. Had the frame time been 0.7 s or longer, there would have been about 331s of exposure instead of only about 58s. The second, longer exposure does not have this shortened livetime issue because the exposure read time is 0.4 s.
===
This observation was taken at a focal plane temperature of about -110 C. There is no CTI calibration for this temperature so none was applied.

===
The guide stars in slots 6 and 7 were not acquired for this observation.
===