V&V Reference Report
L2 ASCDS Version : 8.1.2

Observation 1071 - L2 Version 3
Chandra X-Ray Center

L2 Processing Date : Dec 16 2009

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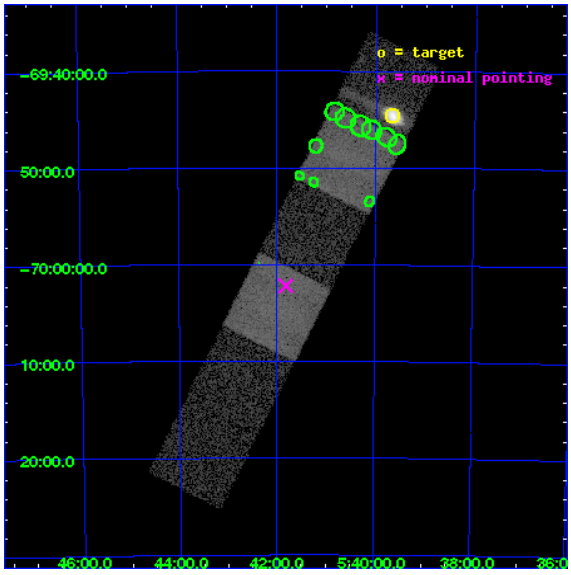
1 Front

seq_num	480021	Sequence number
obs_id	1071	Observation id
title		Proposal title
observer	Dr. CXC Calibration	Principal investigator
object	LMC X-1	Source name
dtycycle	0	
cycle	P	events from which exps? Prim/Second/Both
ra_targ	84.914583	Observer's specified target RA
dec_targ	-69.743611	Observer's specified target Dec
ra_nom	85.453820217643	Nominal RA
dec_nom	-70.036629482764	Nominal Dec
roll_nom	116.85368268222	Nominal Roll
revision	3	Processing version of data
ontime	1756.8000016361	Sum of GTIs [s]
livetime	1734.5543421975	Livetime [s]
ontime4	1756.8000016361	Sum of GTIs [s]
ontime5	1756.8000016361	Sum of GTIs [s]
ontime6	1756.8000016361	Sum of GTIs [s]
ontime7	1756.8000016361	Sum of GTIs [s]
ontime8	1756.8000016361	Sum of GTIs [s]
ontime9	1756.8000016361	Sum of GTIs [s]
l2events	143140	Number of level 2 events

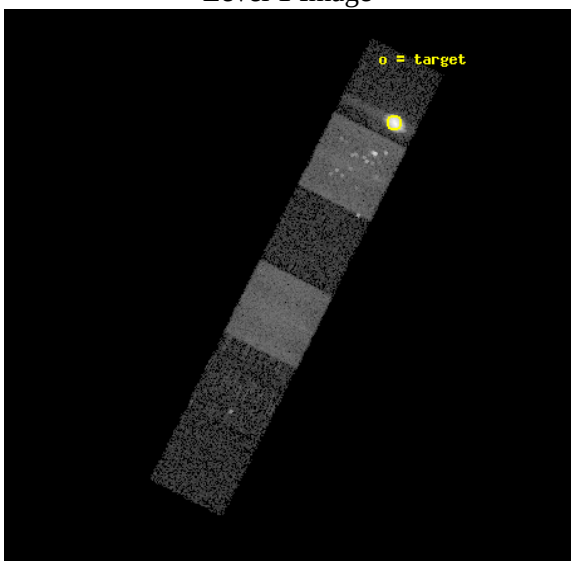


2 OBI

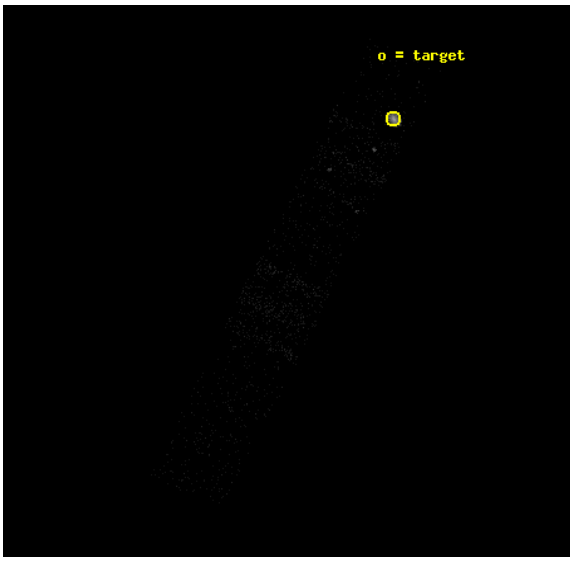
2.1 OBI

2.1.1 Images

Level 1 Image

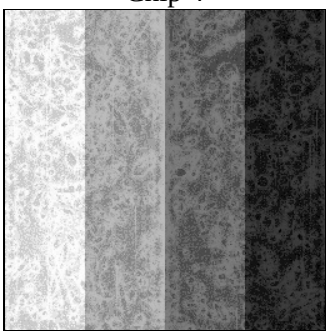


Level 1 Bad Events

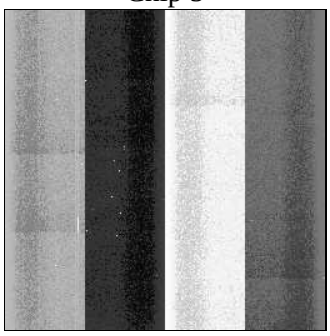


2.1.2 Bias

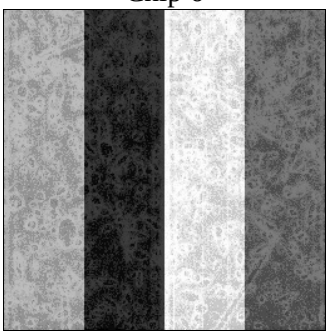
Chip 4



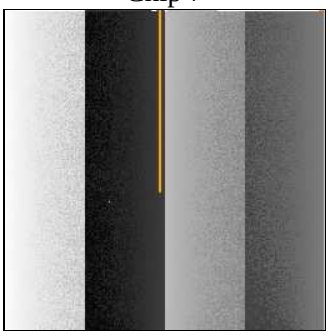
Chip 5



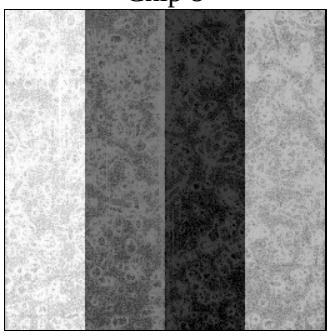
Chip 6



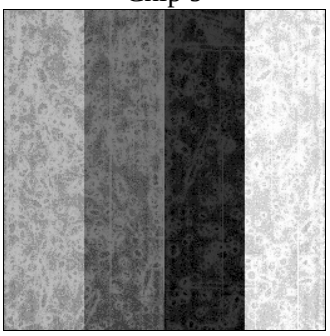
Chip 7



Chip 8



Chip 9



2.1.3 Parameters

obi_num	0	Obi number
ascdsver	8.1.2	ASCDS version number
caldbver	4.1.4	
date	2009-12-16T05:55:25	Date and time of file creation
revision	3	Processing version of data

sched_exp_time	2000.000000	Scheduled observation exposure time
ontime	1756.8000016361	Sum of GTIs [s]
ontime4	1756.8000016361	Sum of GTIs [s]
ontime5	1756.8000016361	Sum of GTIs [s]
ontime6	1756.8000016361	Sum of GTIs [s]
ontime7	1756.8000016361	Sum of GTIs [s]
ontime8	1756.8000016361	Sum of GTIs [s]
ontime9	1756.8000016361	Sum of GTIs [s]
l1events	164771	Number of level 1 events

2.1.4 Events

	ccd 4	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**	**ccd 9**
level 1 events	78118	36247	6312	31139	7424	5531
rejected events	3000	1925	1145	2444	1142	1104
rejected %	3%	5%	18%	7%	15%	19%

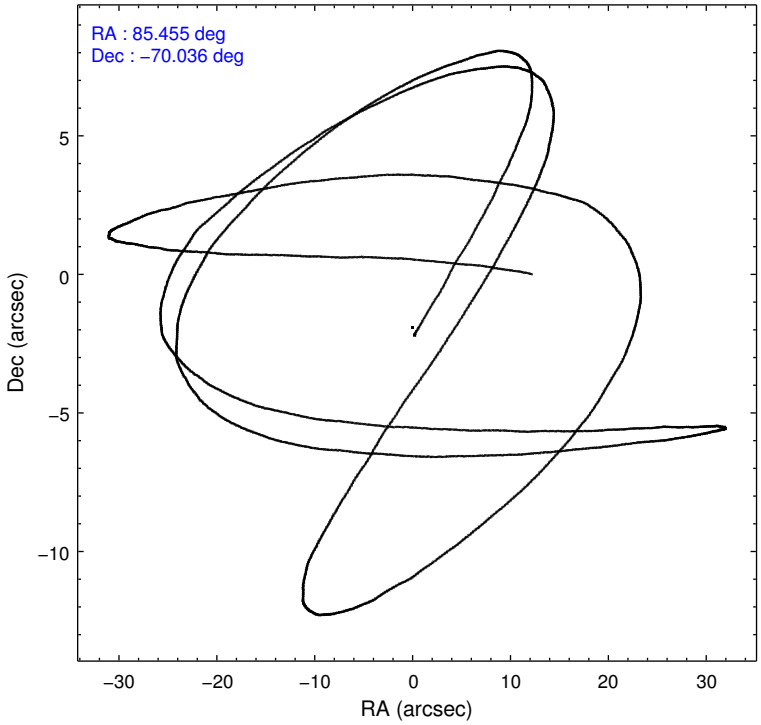
	ccd 4	**ccd 5**	**ccd 6**	**ccd 7**	**ccd 8**	**ccd 9**
grade 0 events	56809	7933	2058	2357	2637	1728
	72%	21%	32%	7%	35%	31%
grade 1 events	1223	115	7	13	15	10
	1%	0%	0%	0%	0%	0%
grade 2 events	9717	5620	1368	3853	1415	1063
	12%	15%	21%	12%	19%	19%
grade 3 events	2914	2246	262	2202	461	264
	3%	6%	4%	7%	6%	4%
grade 4 events	2975	2171	249	1863	384	238
	3%	5%	3%	5%	5%	4%
grade 5 events	1533	1564	1093	2193	1104	1068
	1%	4%	17%	7%	14%	19%
grade 6 events	2947	16598	1275	18658	1408	1160
	3%	45%	20%	59%	18%	20%
grade 7 events	0	0	0	0	0	0
	0%	0%	0%	0%	0%	0%

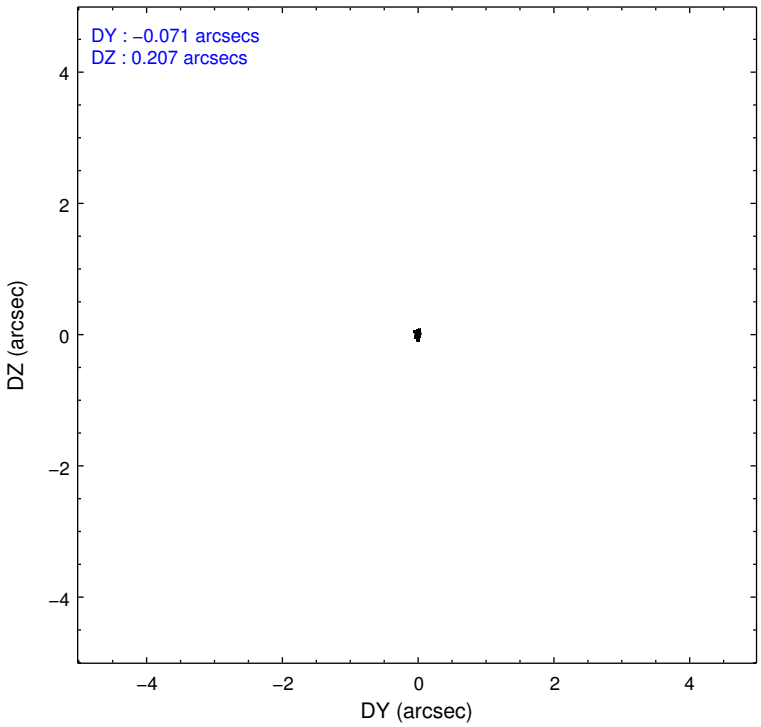
2.2 Compared Parameters

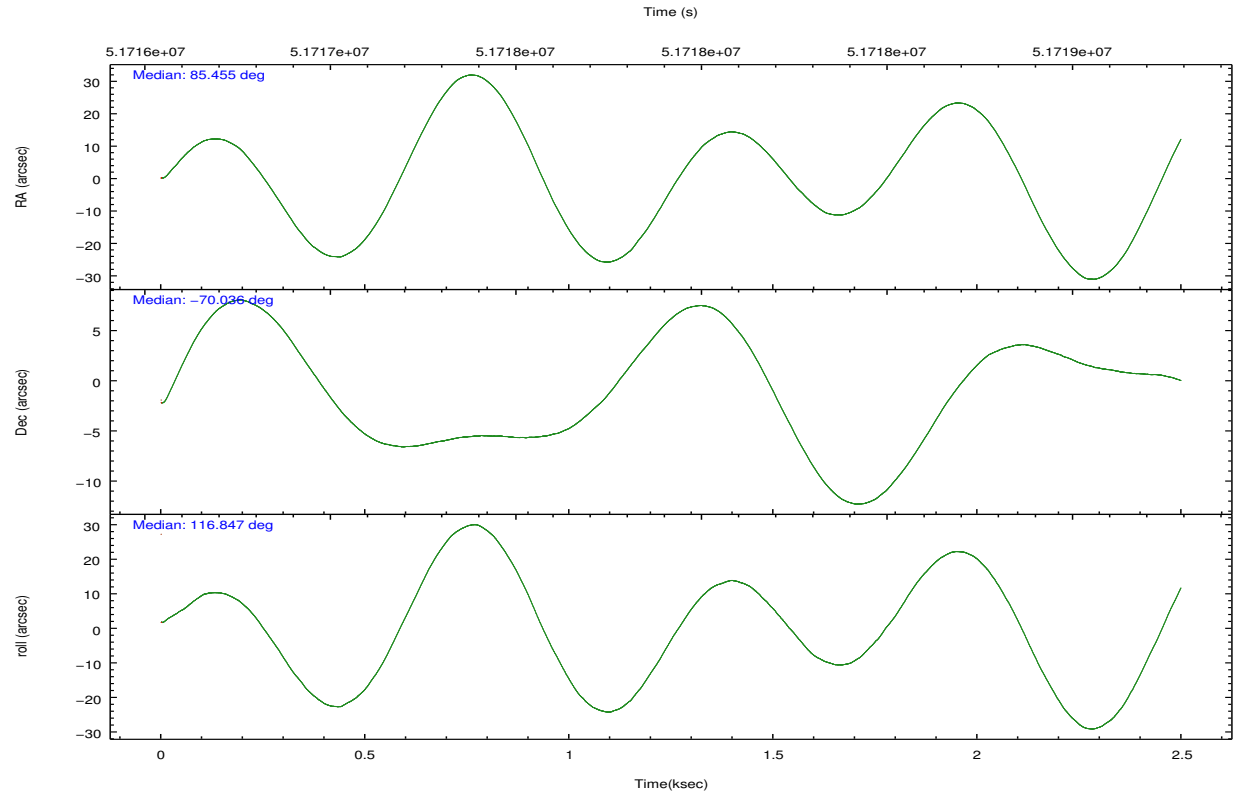
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-456789	ACIS-456789
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	85.521279	85.45382021764345
Pointing Dec	-70.052378	-70.03662948276437
Pointing Roll	116.760458	116.8536826822184
SIM focus pos (mm)	-0.684267	-0.865731118321573
SIM defocus (mm)	0	-0.1814636570216768
SIM translation stage pos (mm)	-190.132523	-190.1199515274594
SIM translation stage offset (mm)	0	-0.012571055548392
Observation start time	51717169.184000	51716495.533034
Observation start date	1999-08-22T13:51:45	1999-08-22T13:41:35
Observation end time	51719169.184000	51719295.833134
Observation end date	1999-08-22T14:25:05	1999-08-22T14:28:15
Read mode	TIMED	TIMED

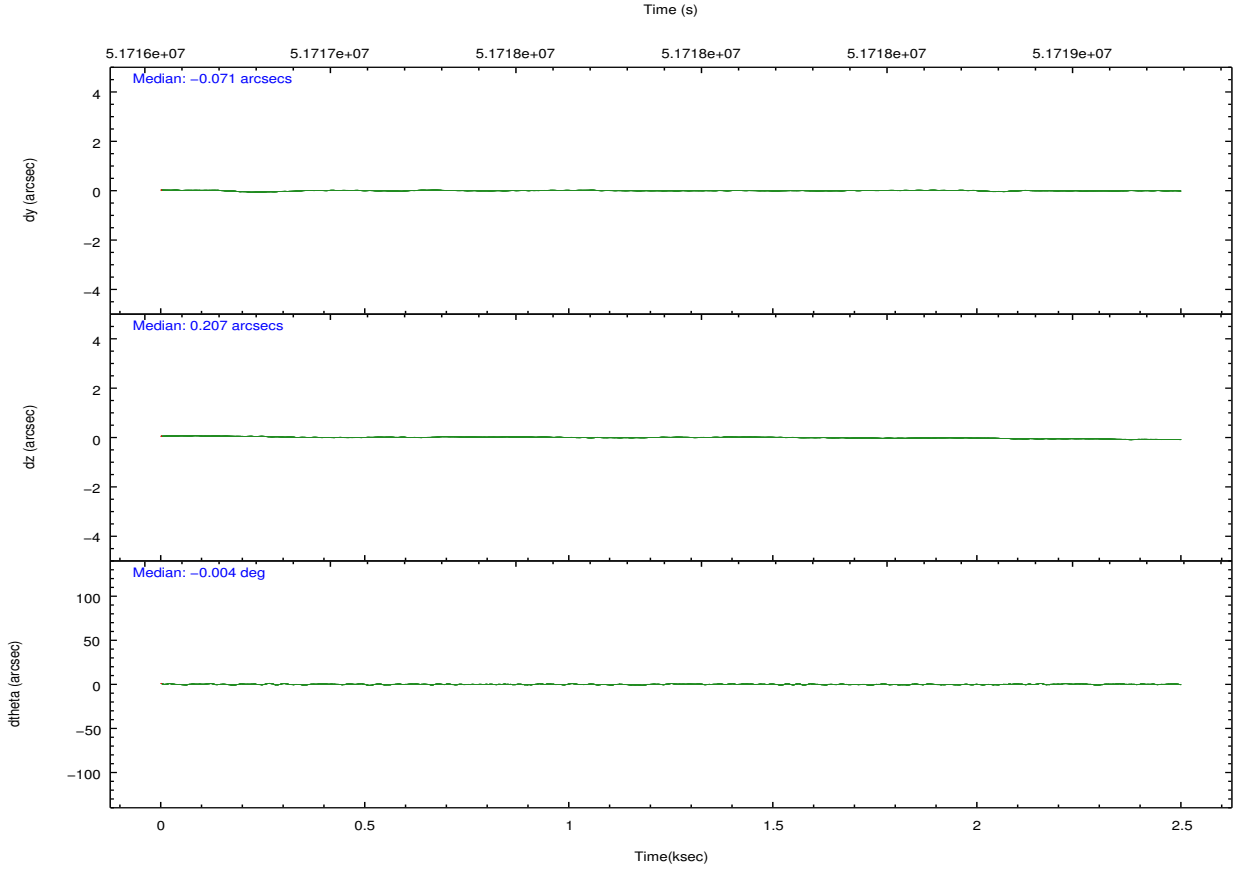
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
Number of optional ACIS chips dropped	0	0
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 85.455 deg
Dec : −70.036 deg
Dec (arcsec)
RA (arcsec)
5
0
−5
−10
−30
−20
−10
0
10
20
30


DY : −0.071 arcsecs
DZ : 0.207 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
5.1716e+07
5.1717e+07
5.1718e+07
5.1718e+07
5.1718e+07
5.1719e+07
Median: 85.455 deg
RA (arcsec)
Median: −70.036 deg
Dec (arcsec)
Median: 116.847 deg
roll (arcsec)
Time(ksec)

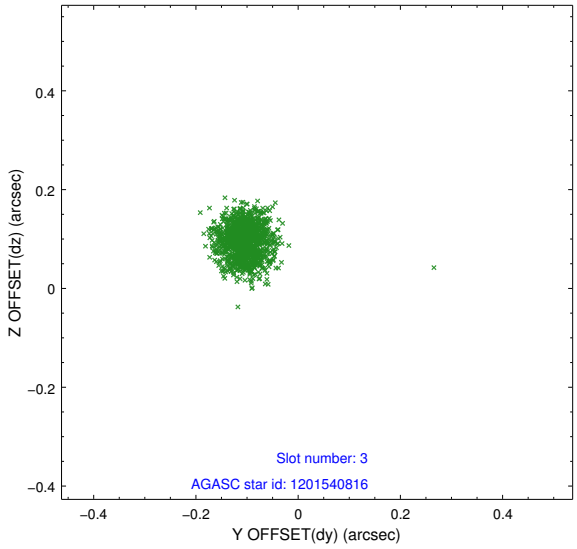

Time (s)
5.1716e+07
5.1717e+07
5.1718e+07
5.1718e+07
5.1718e+07
5.1719e+07
Median: −0.071 arcsecs
dy (arcsec)
Median: 0.207 arcsecs
dz (arcsec)
Median: −0.004 deg
dtheta (arcsec)
Time(ksec)

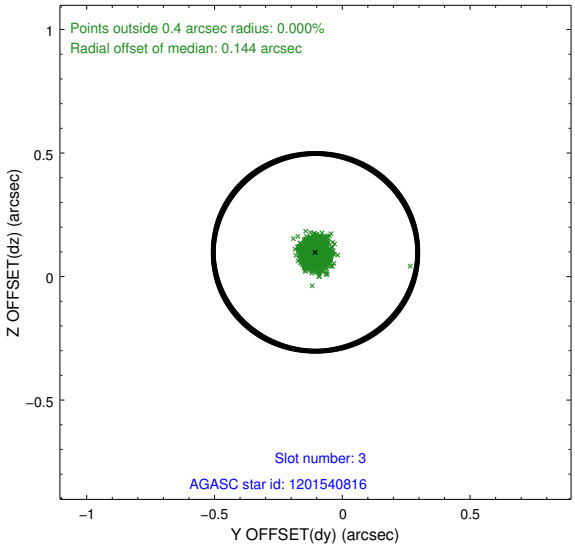
Slot Statistics

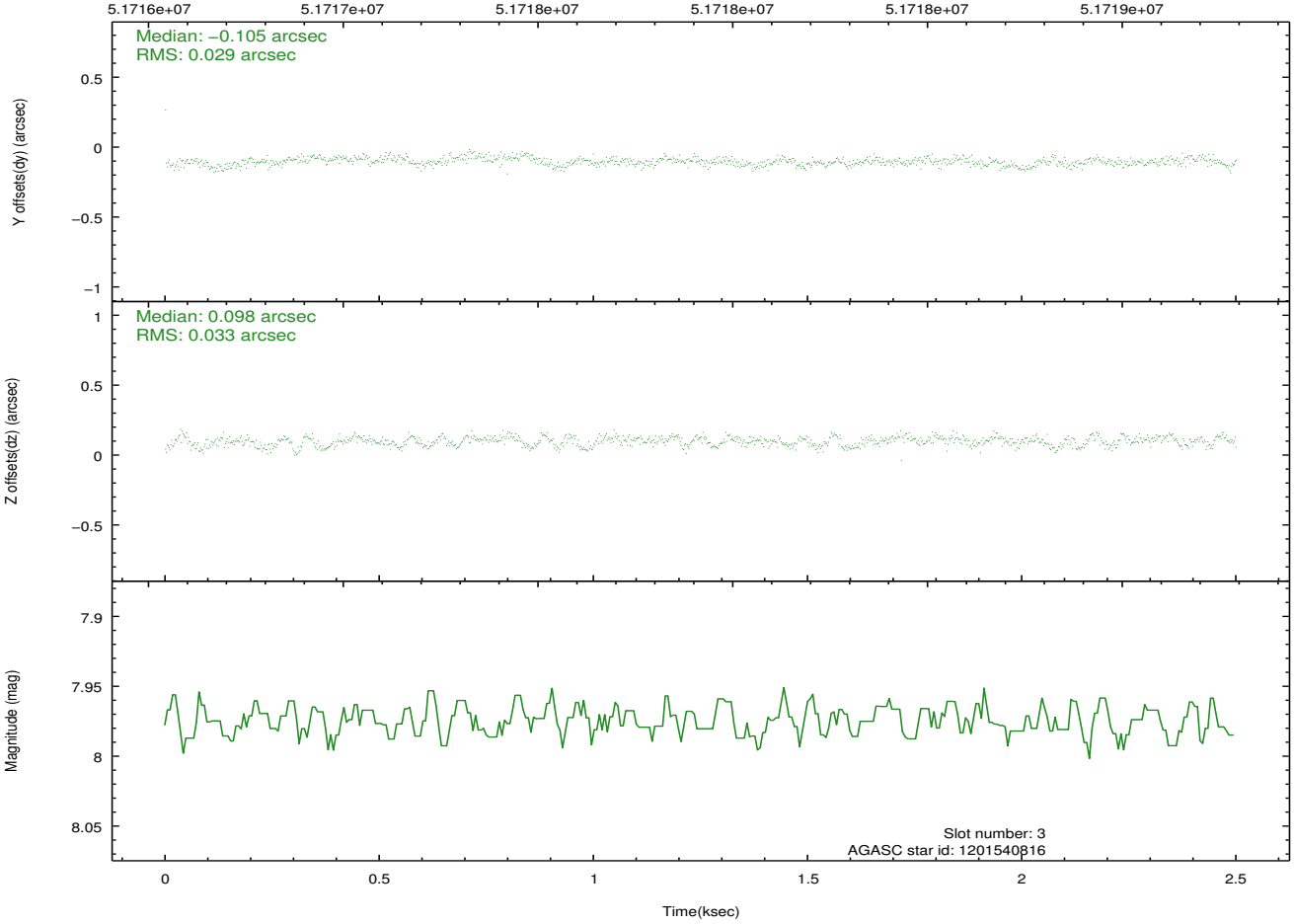
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-1	7.20	1220	0.003	0.071	0.007	0.011	0.000000	0.000000	943.48	-1717.15
1	FID	ACIS-S-4	7.21	1220	0.122	-0.046	0.006	0.011	0.000000	0.000000	2161.72	185.58
2	FID	ACIS-S-5	7.24	1220	-0.151	-0.012	0.006	0.010	0.000000	0.000000	-1803.87	180.69
3	GUIDE	1201540816	7.97	1220	-0.105	0.098	0.046	0.070	86.998494	-69.749817	123.23	-2123.04
4	GUIDE	1201541480	8.49	1218	-0.034	-0.067	0.073	0.108	87.080483	-70.345903	-1815.75	-1200.35
5	GUIDE	1201542672	8.18	1220	0.045	0.012	0.045	0.073	84.492488	-69.957531	864.28	984.18
6	GUIDE	1201407840	7.96	1219	-0.075	-0.075	0.072	0.106	83.696303	-70.172201	587.75	2200.17
7	GUIDE	1201540568	9.97	1218	0.166	0.042	0.098	0.160	85.901764	-70.070643	-270.45	-384.21

2.4 Star Slots

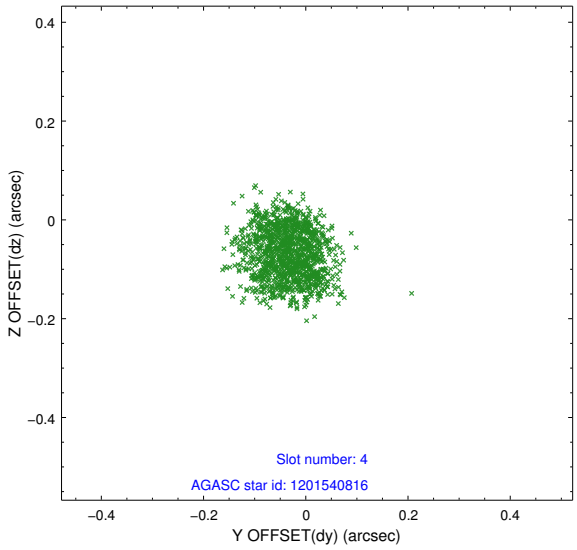
2.4.1 Slot 3

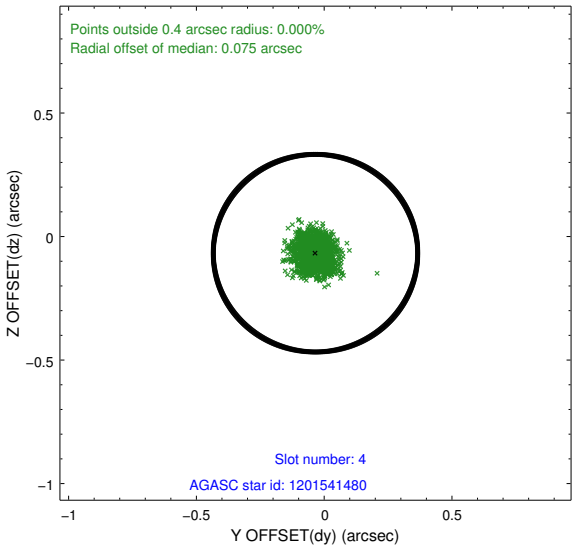


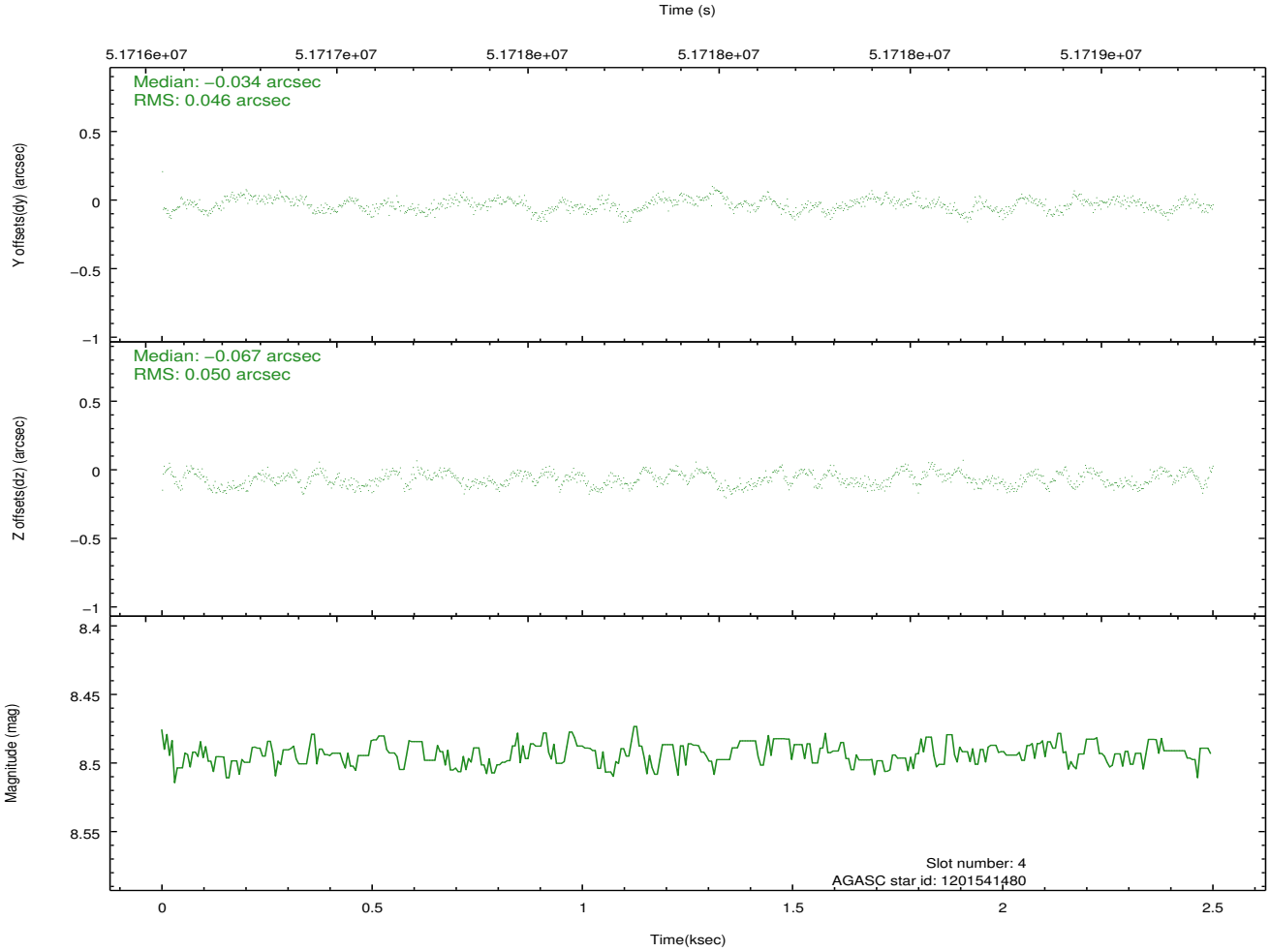




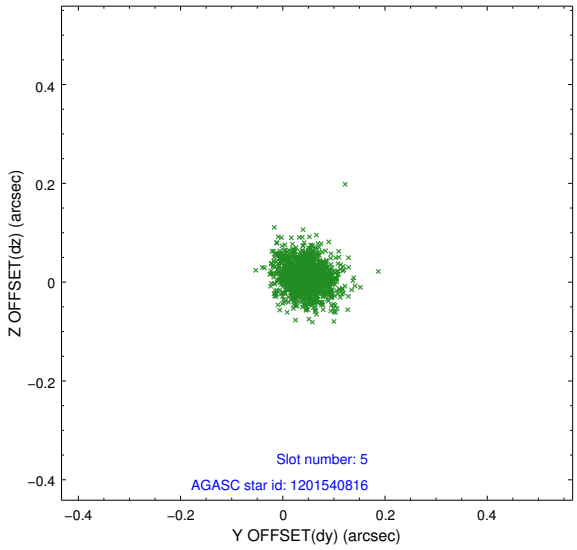
2.4.2 Slot 4

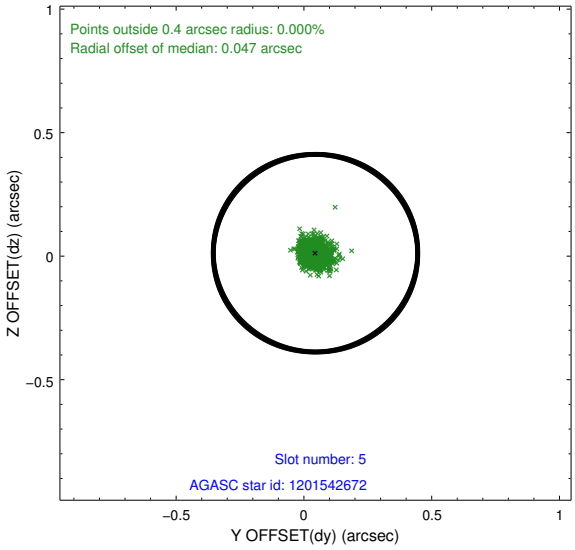

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 1201540816

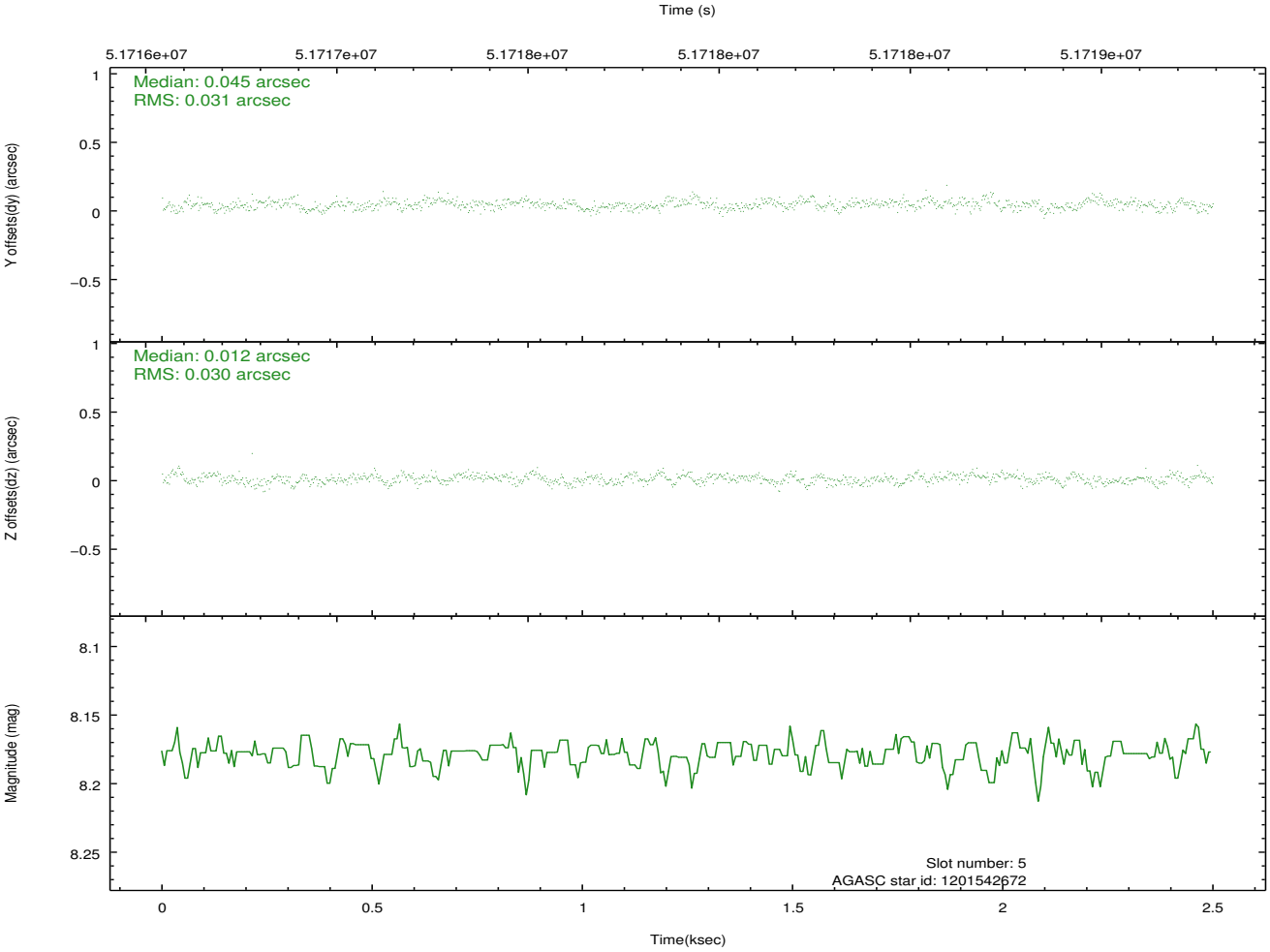

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.075 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 4
AGASC star id: 1201541480


Time (s)
Median: −0.034 arcsec
RMS: 0.046 arcsec
Y offsets(dy) (arcsec)
Median: −0.067 arcsec
RMS: 0.050 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 4
AGASC star id: 1201541480
Time(ksec)

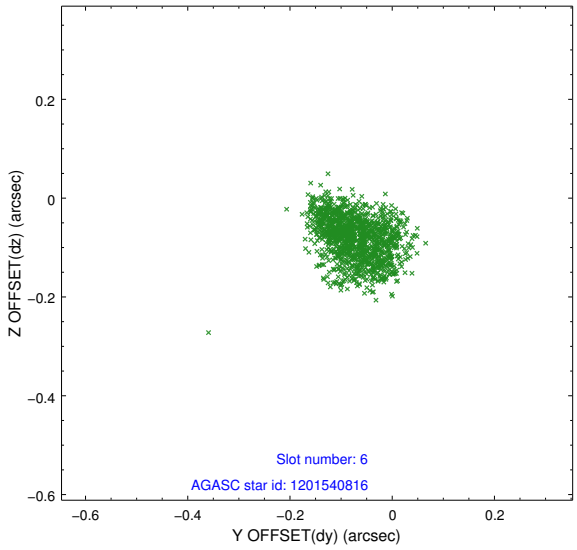
2.4.3 Slot 5

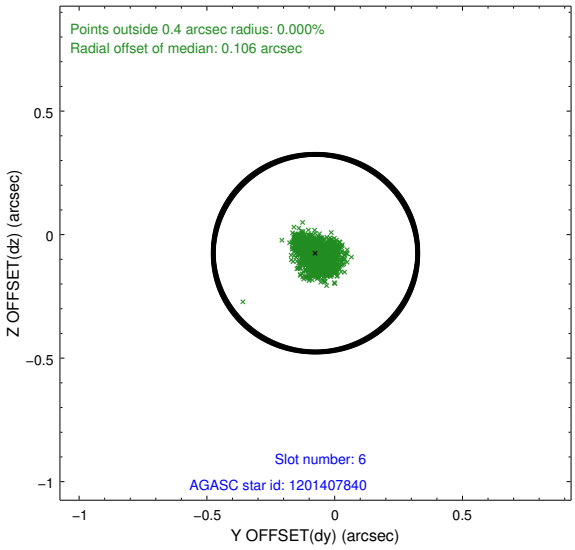

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1201540816

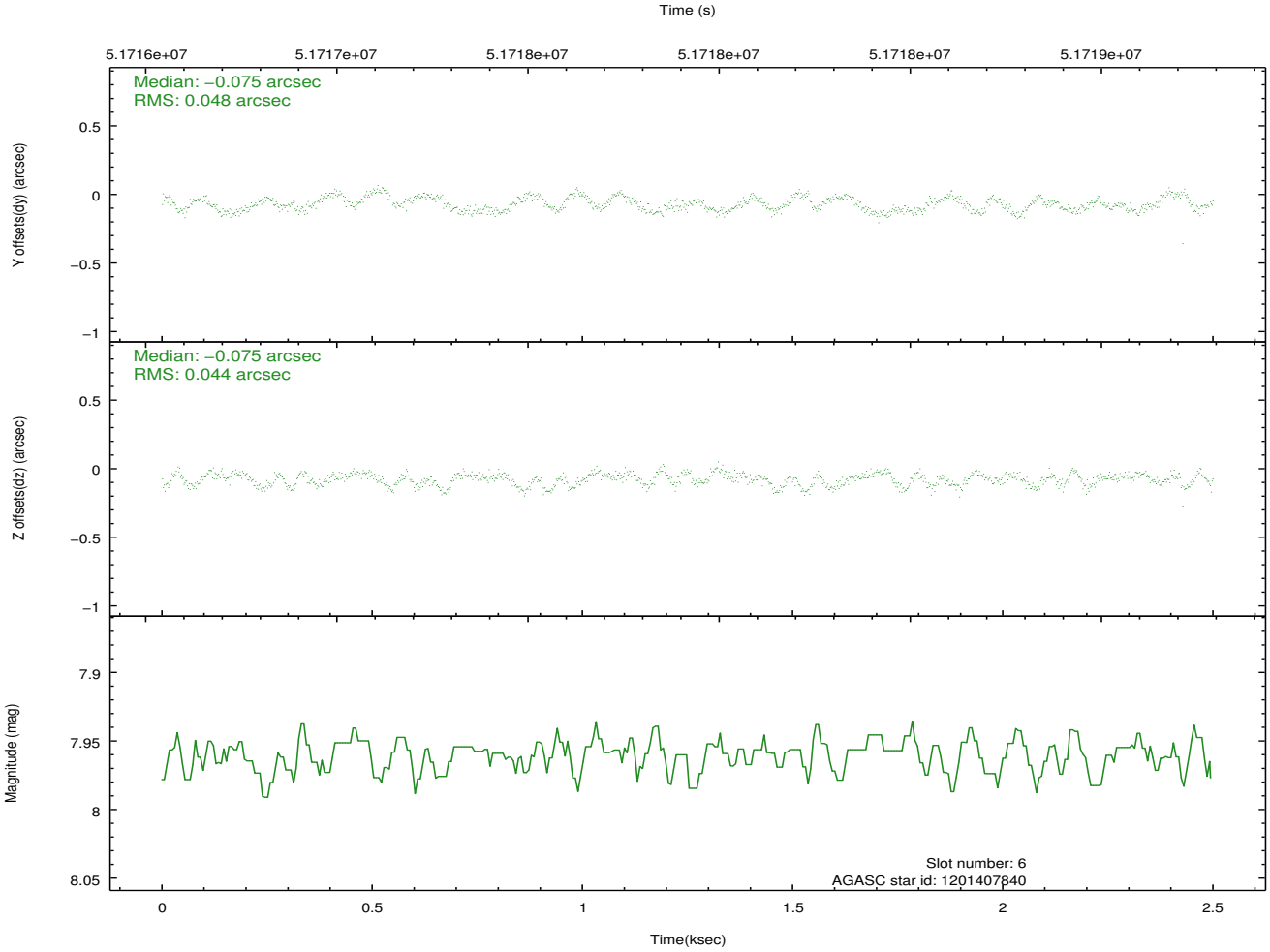

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.047 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 5
AGASC star id: 1201542672


Time (s)
Median: 0.045 arcsec
RMS: 0.031 arcsec
Y offsets(dy) (arcsec)
Median: 0.012 arcsec
RMS: 0.030 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 5
AGASC star id: 1201542672
Time(ksec)

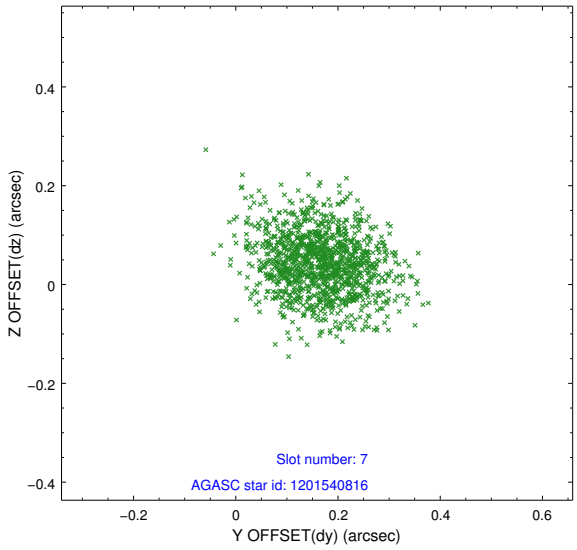
2.4.4 Slot 6

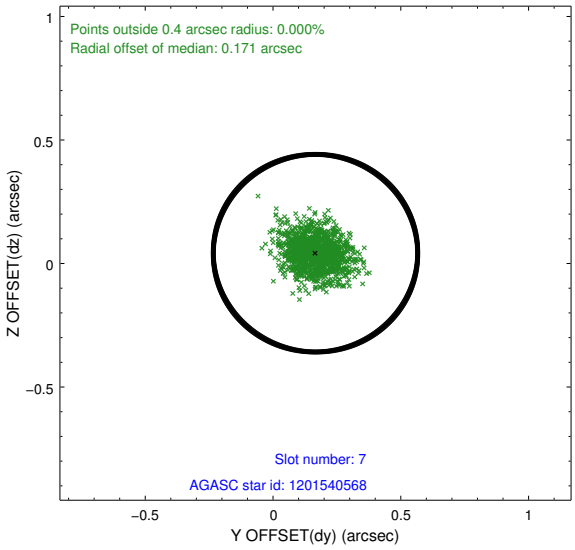

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 1201540816

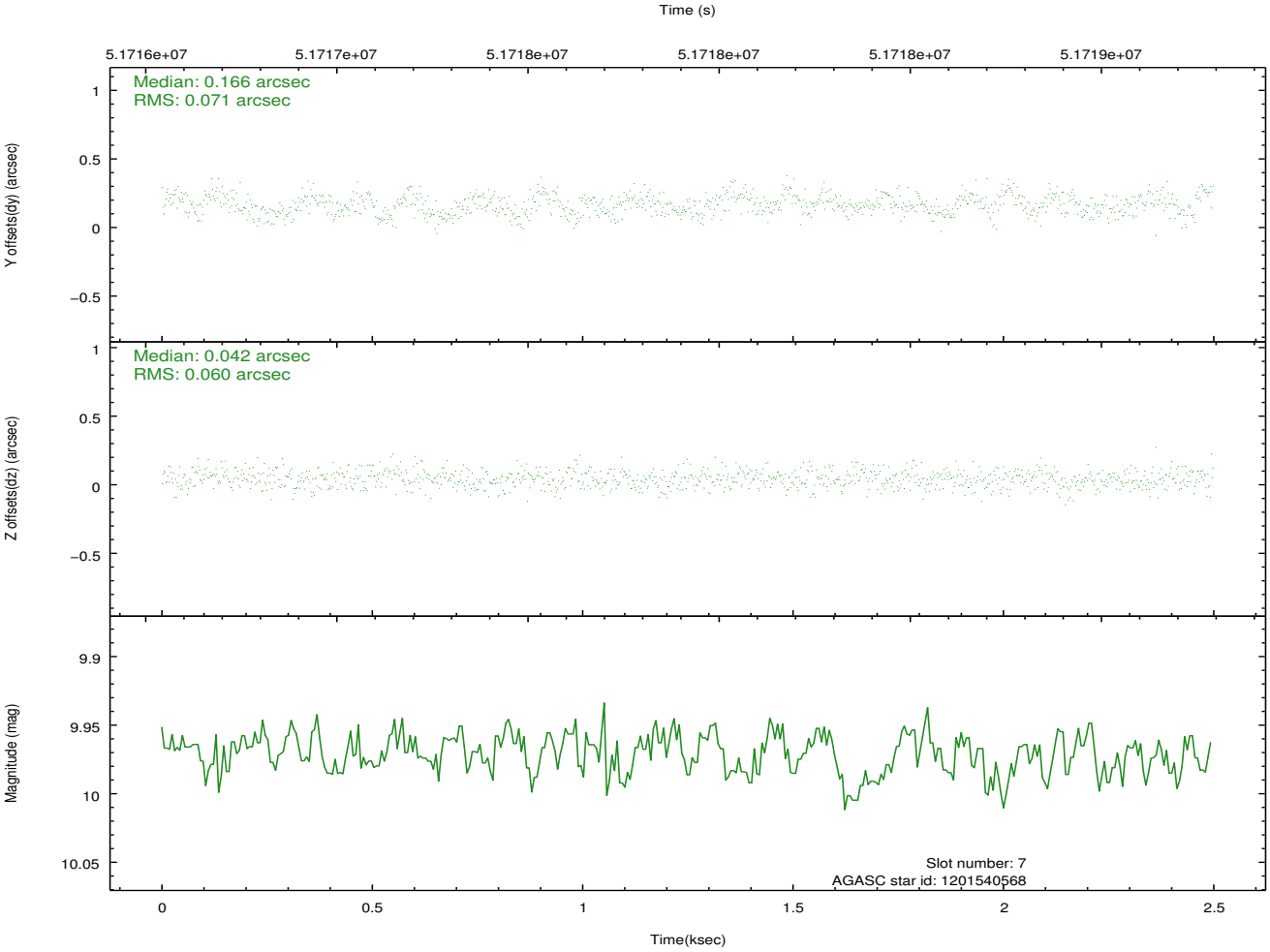

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.106 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 6
AGASC star id: 1201407840


Time (s)
Median: −0.075 arcsec
RMS: 0.048 arcsec
Y offsets(dy) (arcsec)
Median: −0.075 arcsec
RMS: 0.044 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 6
AGASC star id: 1201407840
Time(ksec)

2.4.5 Slot 7

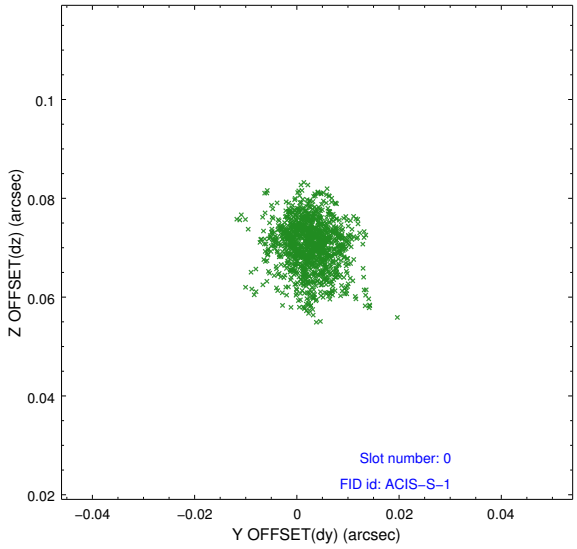

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1201540816

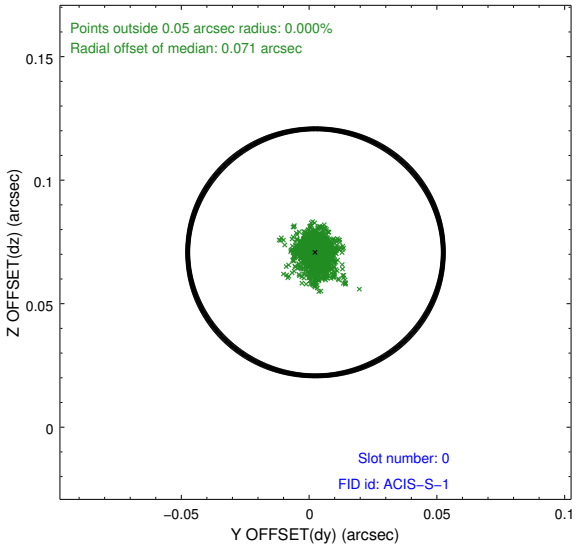

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.171 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 7
AGASC star id: 1201540568

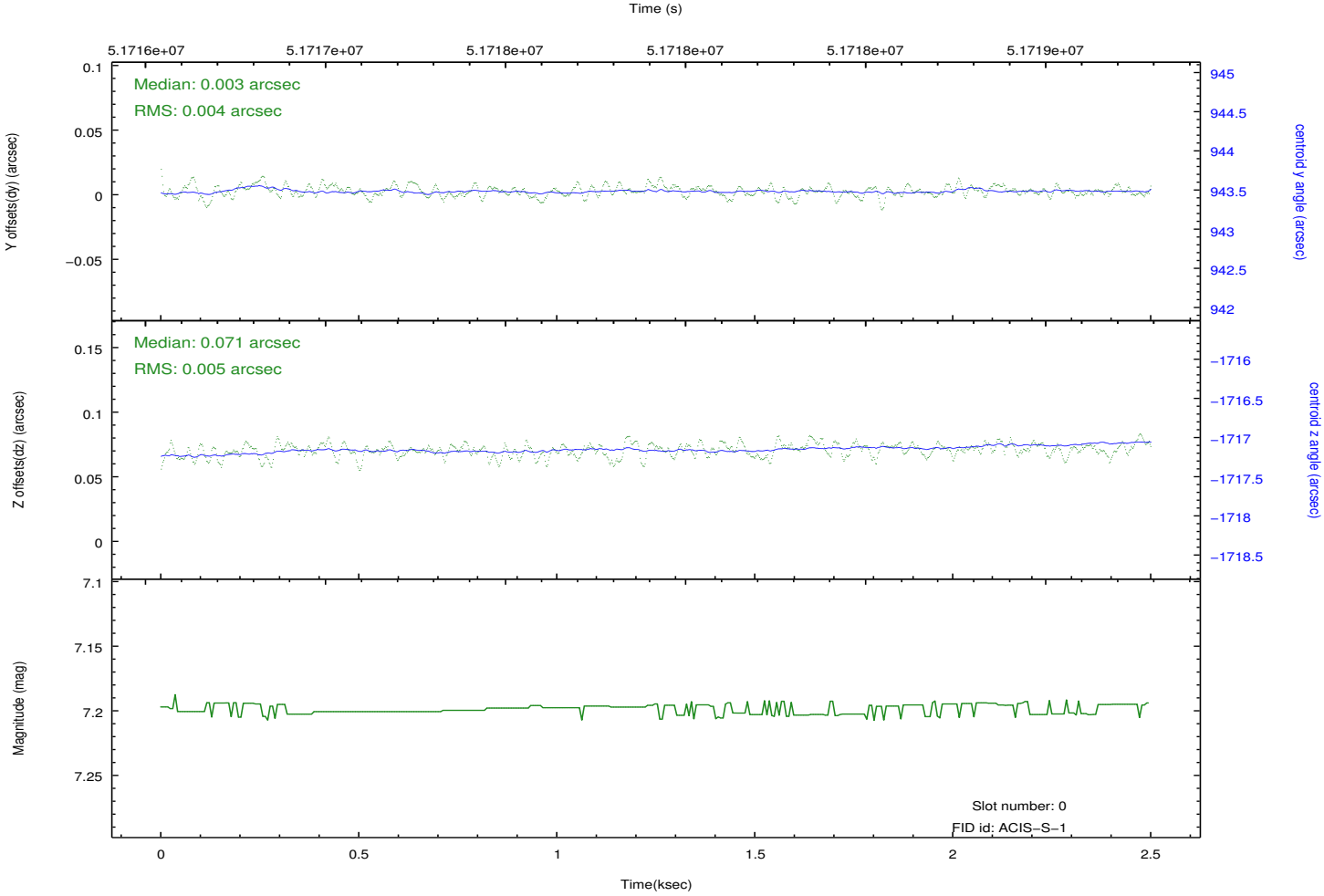

Time (s)
Median: 0.166 arcsec
RMS: 0.071 arcsec
Y offsets(dy) (arcsec)
Median: 0.042 arcsec
RMS: 0.060 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number: 7
AGASC star id: 1201540568
Time(ksec)

2.5 FID Slots

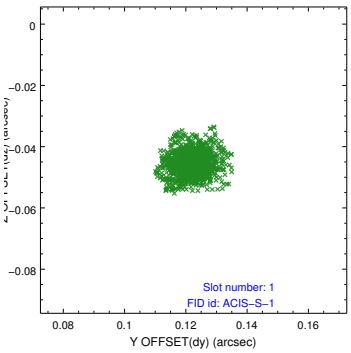
2.5.1 Slot 0

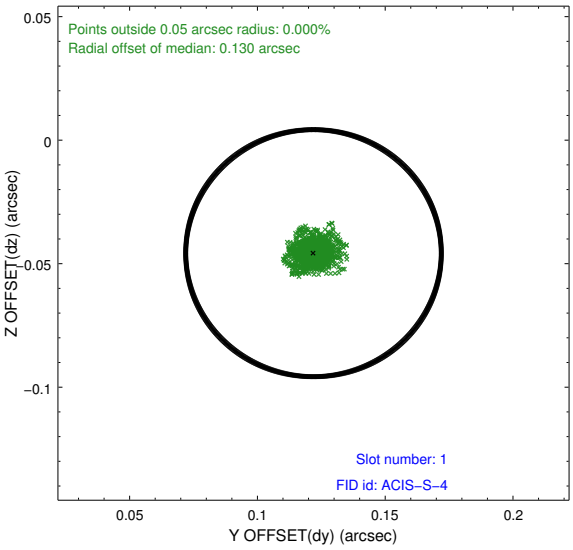


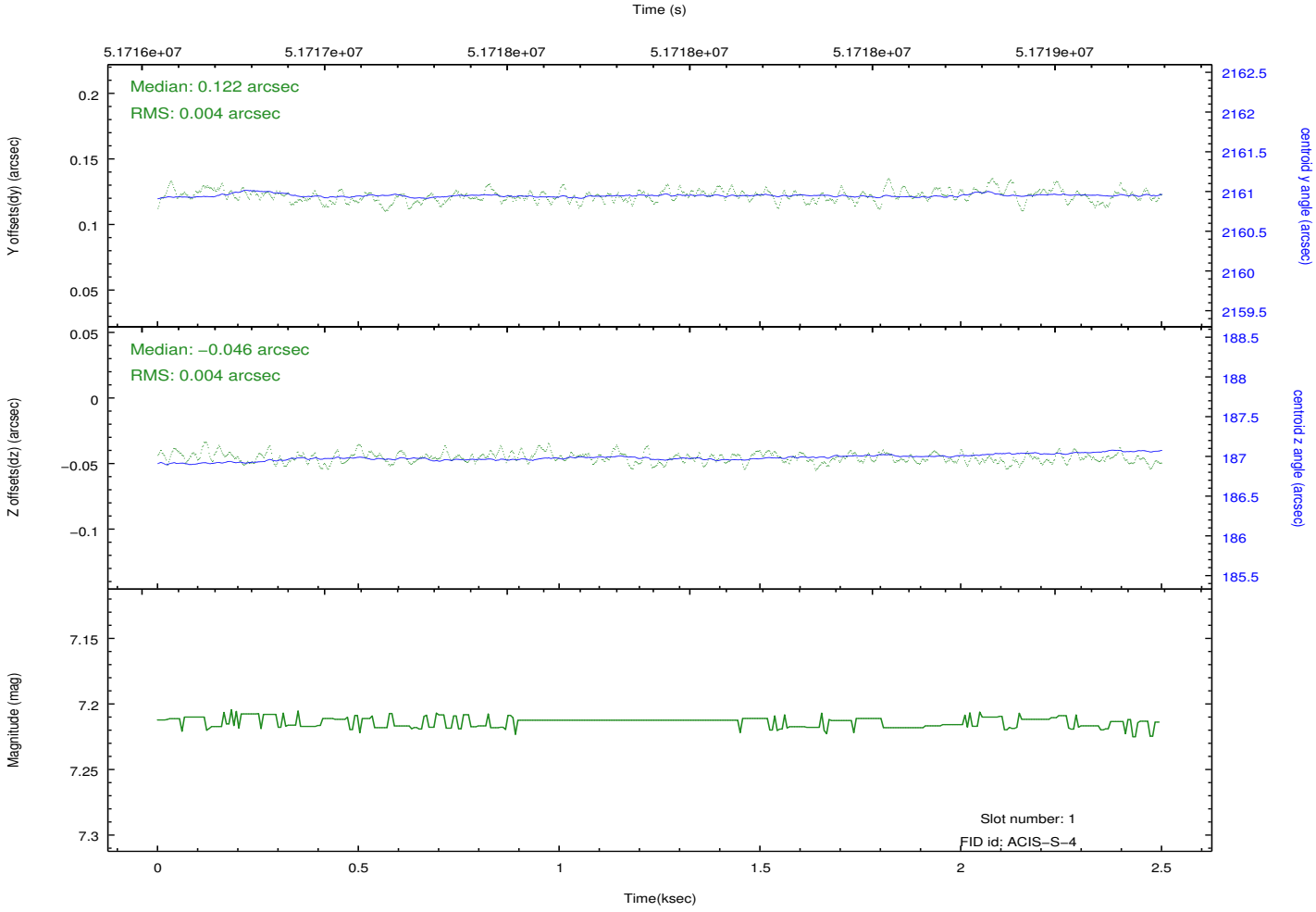




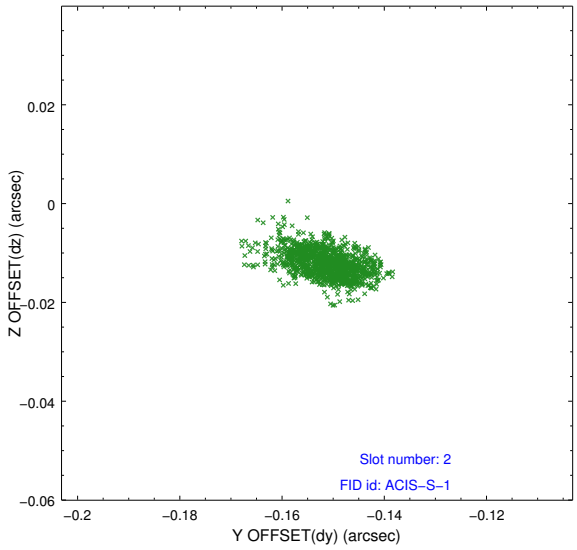
2.5.2 Slot 1

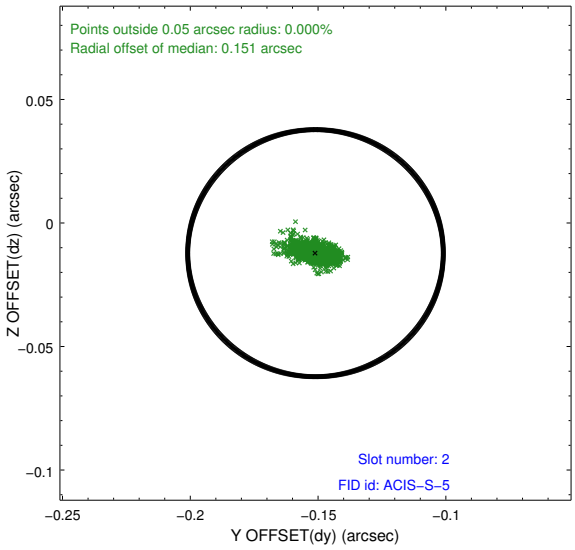

Slot number: 1
FID id: ACIS−S−1
Y OFFSET(dy) (arcsec)

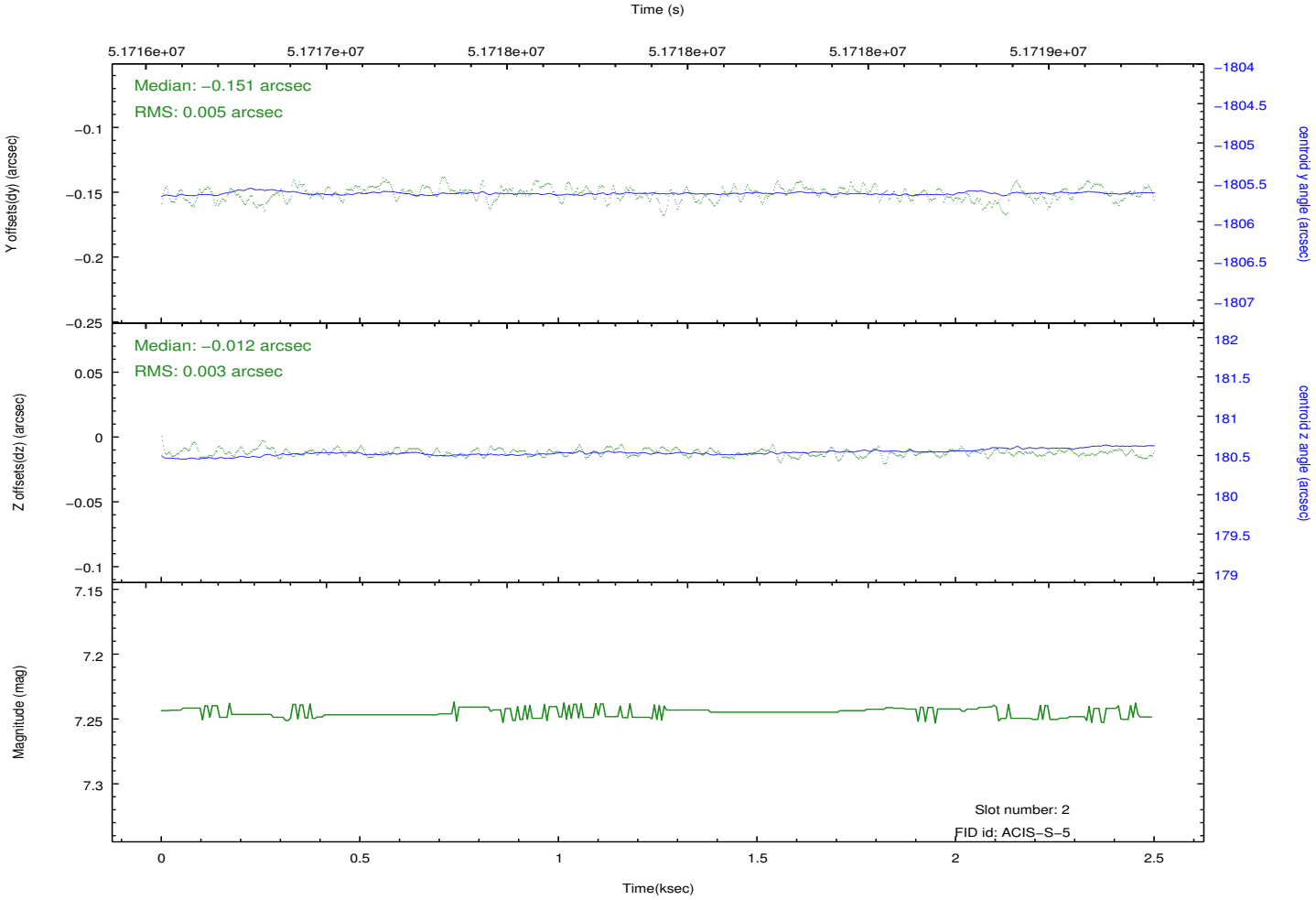

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.130 arcsec
Slot number: 1
FID id: ACIS−S−4
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)


Time (s)
Median: 0.122 arcsec
RMS: 0.004 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.046 arcsec
RMS: 0.004 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 1
FID id: ACIS−S−4
Time(ksec)

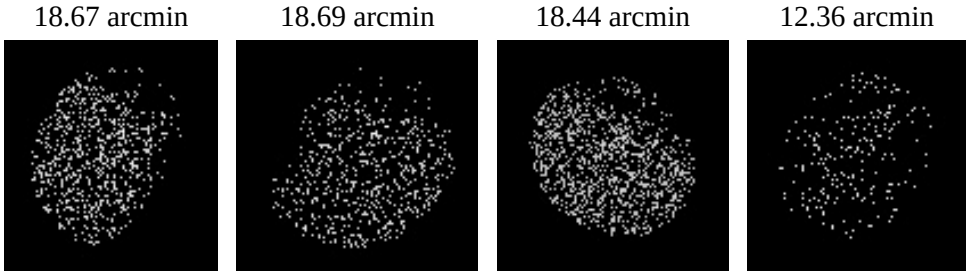
2.5.3 Slot 2


Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−1


Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.151 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number: 2
FID id: ACIS−S−5


Time (s)
Median: −0.151 arcsec
RMS: 0.005 arcsec
Y offsets(dy) (arcsec)
Median: −0.012 arcsec
RMS: 0.003 arcsec
Z offsets(dz) (arcsec)
centroid y angle (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number: 2
FID id: ACIS−S−5
Time(ksec)

3 Point Sources



A Summary

A.1 Status

V&V Scientist	Joy Nichols
V&V Date (YYYY-MM-DD)	2010.05.27
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	1.76

A.2 Comments

```
Target is very off-axis, on chip S0.
===
Charge time for this ObsId remains at previous value of 1.76 ksec,
although
with the current processing the charge time would have been 1.75 ksec.
==
The focal plane temperature is approximately -100 C during this
observation. This reprocessing of the data applies no CTI correction
because none is available for this temperature at present.

The ACIS CTI correction has not been calibrated at this temperature,
because it was early in the mission, and ACIS had not yet been lowered
to the standard -119.7 C. Both front and back illuminated chips are
affected. However a T_GAIN correction has been applied to the BI chips
(ACIS-5 and ACIS-7) data included here.

The ACIS spectral response calibration is less accurate at these warmer
temperatures than it is at -119.7 C. Users whose science objectives
depend on the most accurate spectral response (ie: fitting line-rich
spectra) may notice an effect. Users whose science objectives do not
depend on the most accurate spectral response should not notice an
effect.
```