V&V Reference Report
L2 ASCDS Version : 7.6.8

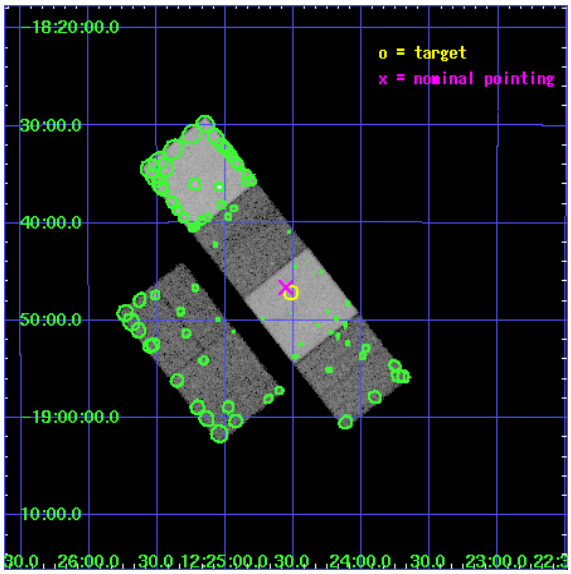
Observation 3760 - L2 Version 001
Chandra X-Ray Center

L2 Processing Date : Jul 27 2006

Contents

1 Front

seq_num	200230
obs_id	3760
title	FINE X-RAY TOMOGRAPHY OF PLANETARY NEBULA
observer	MR JUN'ICHI KOTOKU
object	NGC 4361
dtycycle	0
cycle	P
ra_targ	186.129167
dec_targ	-18.785889
ra_nom	186.13867430931
dec_nom	-18.777289945039
roll_nom	51.602533423078
revision	2
ontime	29756.799889147
livetime	29380.001371557
ontime2	29753.558928788
ontime3	29756.799889147
ontime5	29756.799889147
ontime6	29756.799889147
ontime7	29756.799889147
ontime8	29753.558898896
l2events	290248

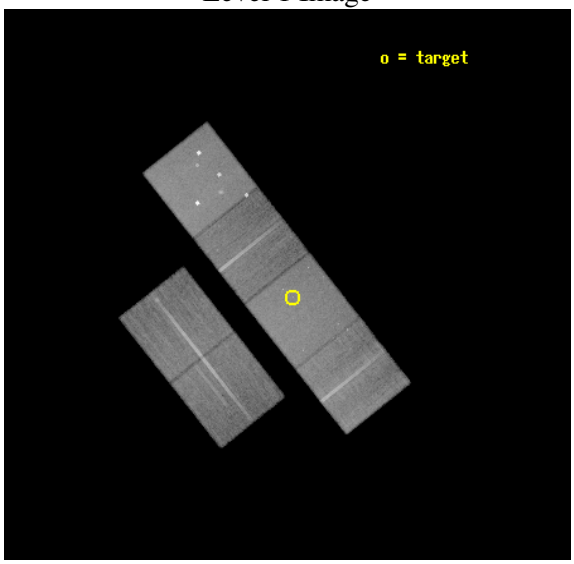


2 OBI

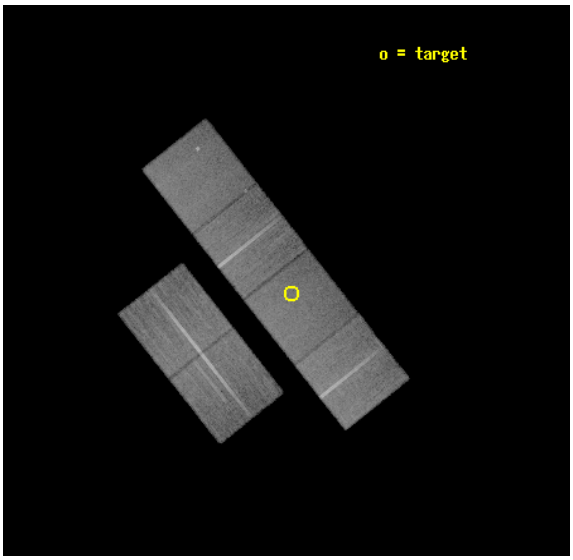
2.1 OBI

2.1.1 Images

Level 1 Image

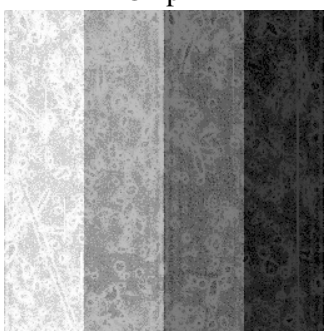


Level 1 Bad Events

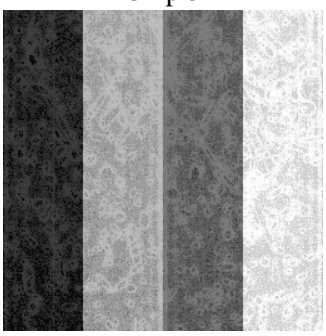


2.1.2 Bias

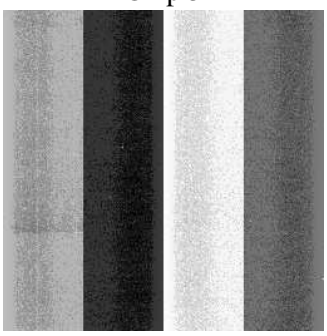
Chip 2



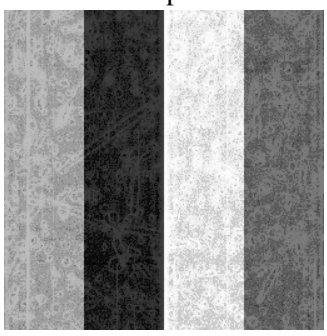
Chip 3



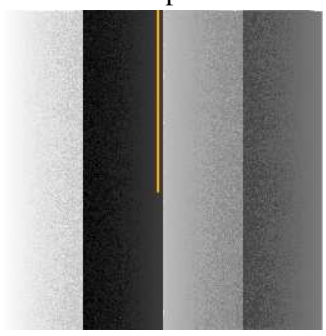
Chip 5



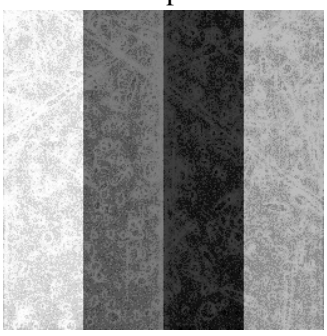
Chip 6



Chip 7



Chip 8



2.1.3 Parameters

obi_num	0
ascdsver	7.6.8
caldbver	3.2.2
date	2006-07-27T16:11:46
revision	2

sched_exp_time	30000.000000
ontime	29762.189480603
ontime2	29758.948480427
ontime3	29765.430480778
ontime5	29762.189480603
ontime6	29765.430480778
ontime7	29762.189480603
ontime8	29762.189420879
l1events	1344703

2.1.4 Events

	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
level 1 events	193440	181119	292297	186922	250020	240905
rejected events	171140	159838	153296	164668	152847	190501
rejected %	88%	88%	52%	88%	61%	79%

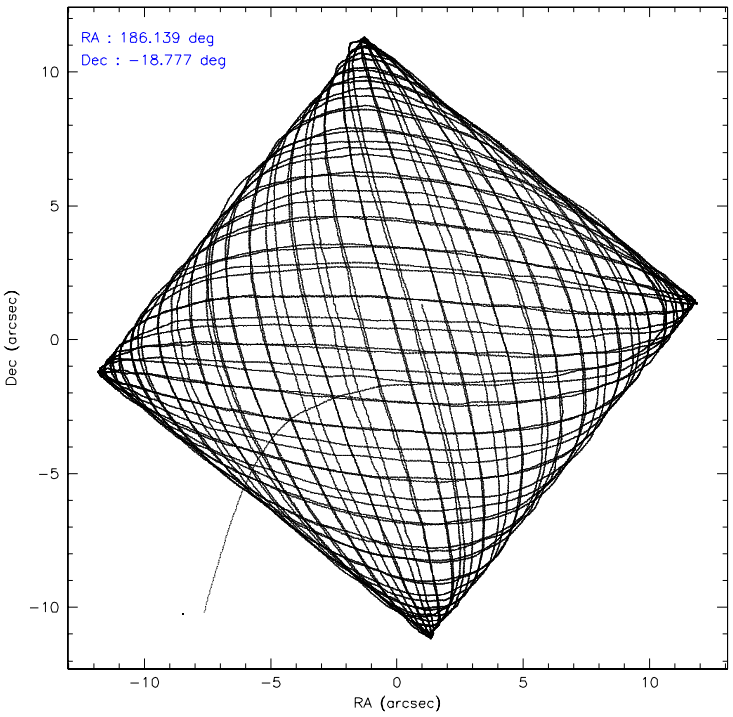
	ccd 2	ccd 3	ccd 5	ccd 6	ccd 7	ccd 8
grade 0 events	9878	9245	25383	9022	6438	16416
	5%	5%	8%	4%	2%	6%
grade 1 events	114	101	1088	86	140	162
	0%	0%	0%	0%	0%	0%
grade 2 events	4445	4074	38411	4625	23988	10630
	2%	2%	13%	2%	9%	4%
grade 3 events	2113	2127	2987	2103	5138	5470
	1%	1%	1%	1%	2%	2%
grade 4 events	2121	2120	2826	2142	4934	5141
	1%	1%	0%	1%	1%	2%
grade 5 events	7302	7852	13243	8488	16691	10791
	3%	4%	4%	4%	6%	4%
grade 6 events	3745	3720	69417	4371	56695	12759
	1%	2%	23%	2%	22%	5%
grade 7 events	163722	151880	138942	156085	135996	179536
	84%	83%	47%	83%	54%	74%

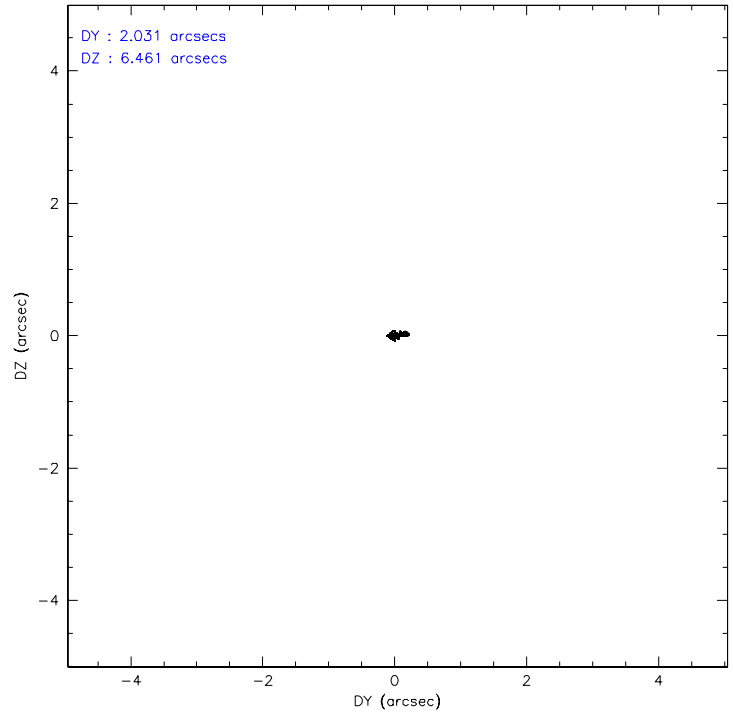
2.2 Compared Parameters

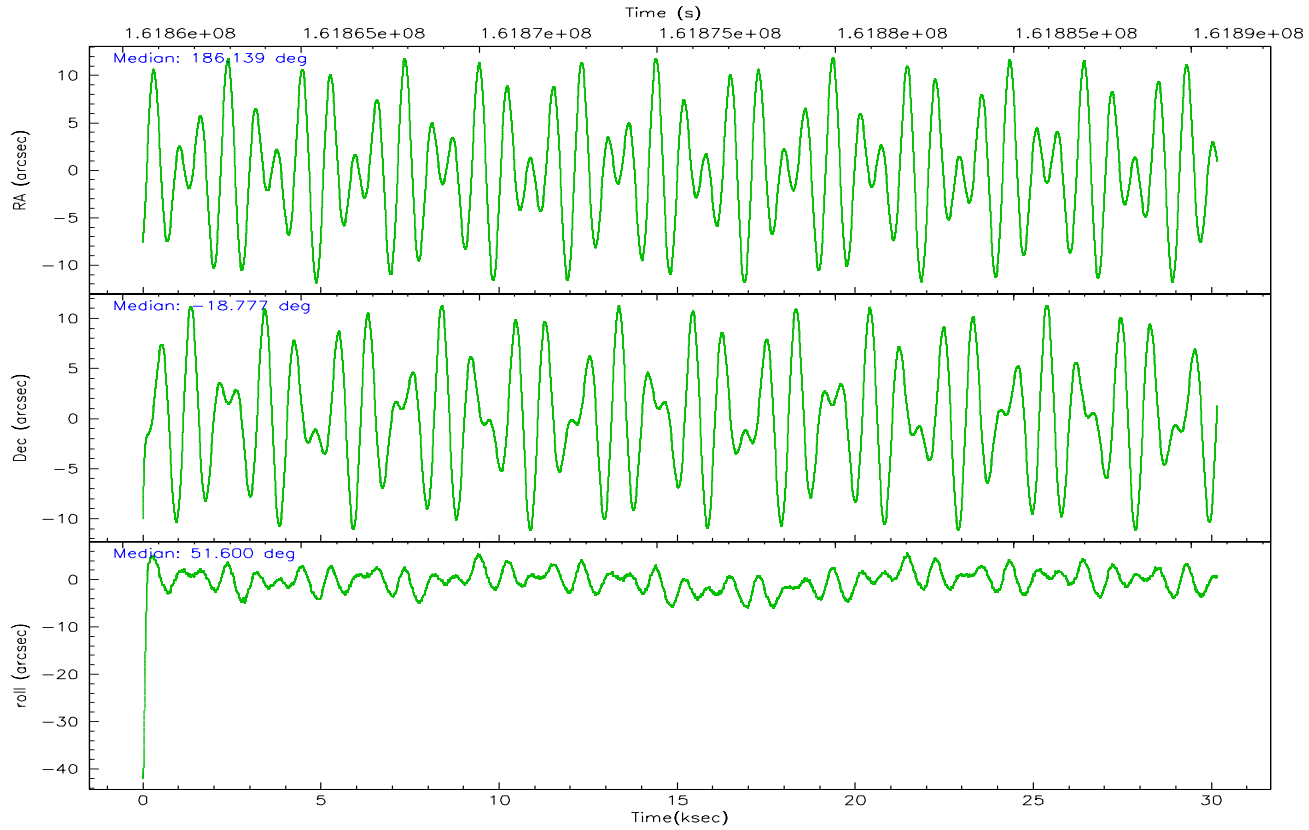
Parameter	Planned	Actual
Instrument	ACIS	ACIS
Detector	ACIS-235678	ACIS-235678
Grating	NONE	NONE
Data mode	FAINT	FAINT
Observation mode	POINTING	POINTING
Pointing RA	186.134869	186.1386743093074
Pointing Dec	-18.804252	-18.77728994503877
Pointing Roll	51.444696	51.60253342307826
SIM focus pos (mm)	-0.684267	-0.6828225247311905
SIM defocus (mm)	0	0.001444936568705701
SIM translation stage pos (mm)	-190.132523	-190.1400660498719
SIM translation stage offset (mm)	0	0.00754346686406393
Observation start time	161860725.184000	161859929.48882
Observation start date	2003-02-17T09:17:41	2003-02-17T09:05:29
Observation end time	161890725.184000	161891514.86515
Observation end date	2003-02-17T17:37:41	2003-02-17T17:51:54
Read mode	TIMED	TIMED

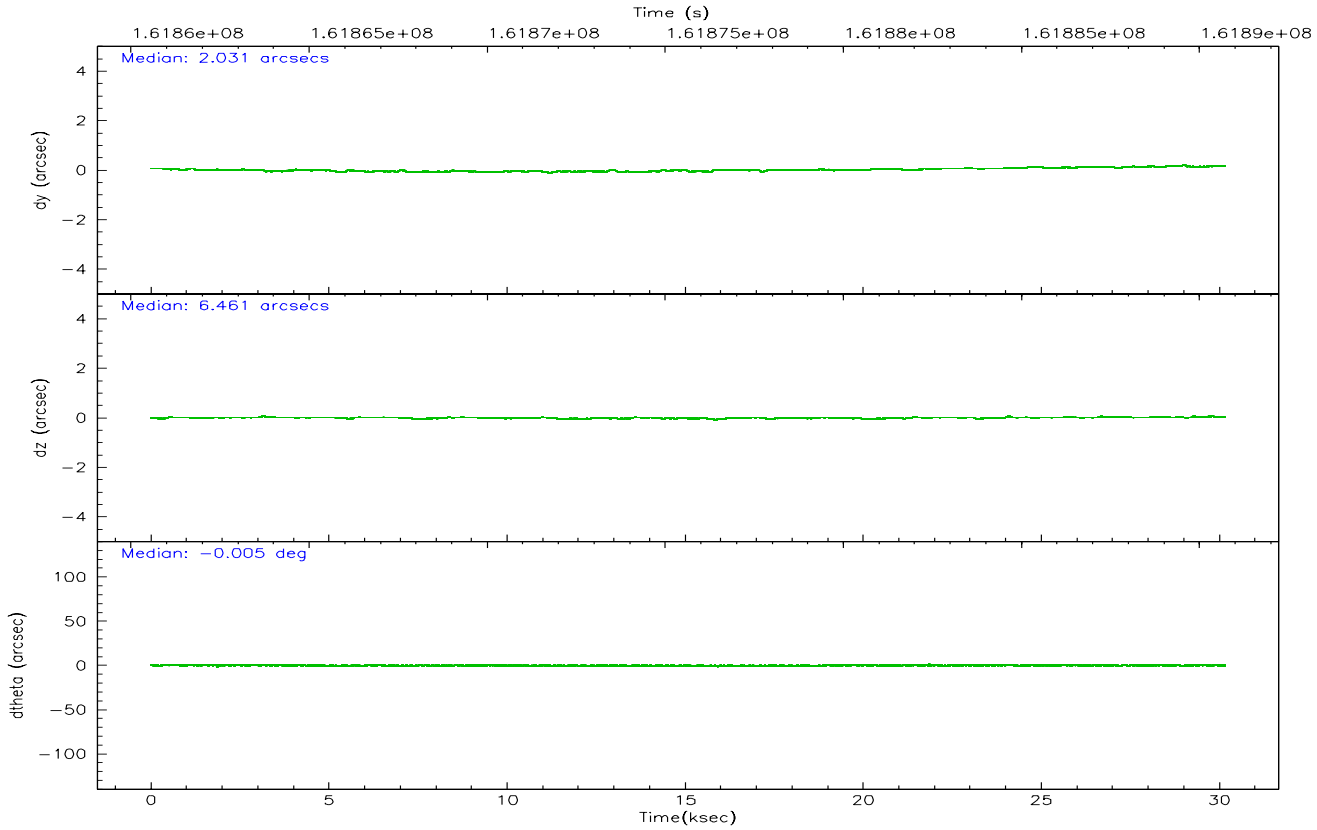
Parameter	Planned	Actual
Obspar format version number	6	6
Obspar file type	PREDICTED	ACTUAL
Obspar update status	NONE	UPDATED
On-chip summing requested	N	N
Subarray requested	NONE	NONE
Alternating exposures requested	N	N
Primary exposure time	0.000000	3.2

2.3 Aspect


RA : 186.139 deg
Dec : −18.777 deg
Dec (arcsec)
RA (arcsec)
10
5
0
−5
−10
−10
−5
0
5
10


DY : 2.031 arcsecs
DZ : 6.461 arcsecs
DZ (arcsec)
DY (arcsec)
4
2
0
−2
−4
−4
−2
0
2
4


Time (s)
1.6186e+08
1.61865e+08
1.6187e+08
1.61875e+08
1.6188e+08
1.61885e+08
1.6189e+08
Median: 186.139 deg
RA (arcsec)
Median: −18.777 deg
Dec (arcsec)
Median: 51.600 deg
roll (arcsec)
Time(ksec)

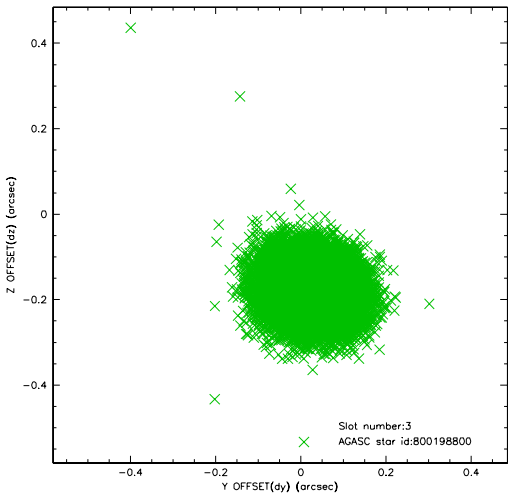

Time (s)
1.6186e+08
1.61865e+08
1.6187e+08
1.61875e+08
1.6188e+08
1.61885e+08
1.6189e+08
Median: 2.031 arcsecs
dy (arcsec)
Median: 6.461 arcsecs
dz (arcsec)
Median: −0.005 deg
dtheta (arcsec)
Time(ksec)

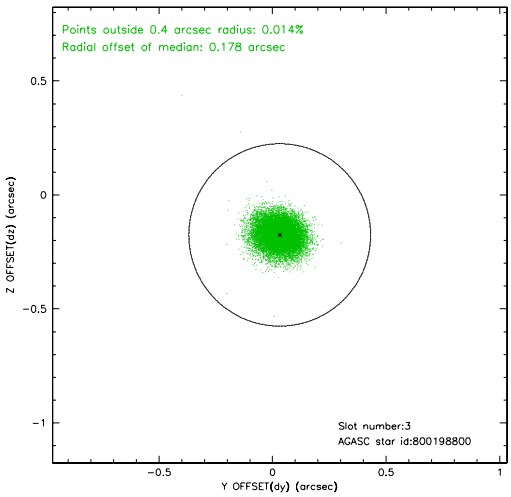
Slot Statistics

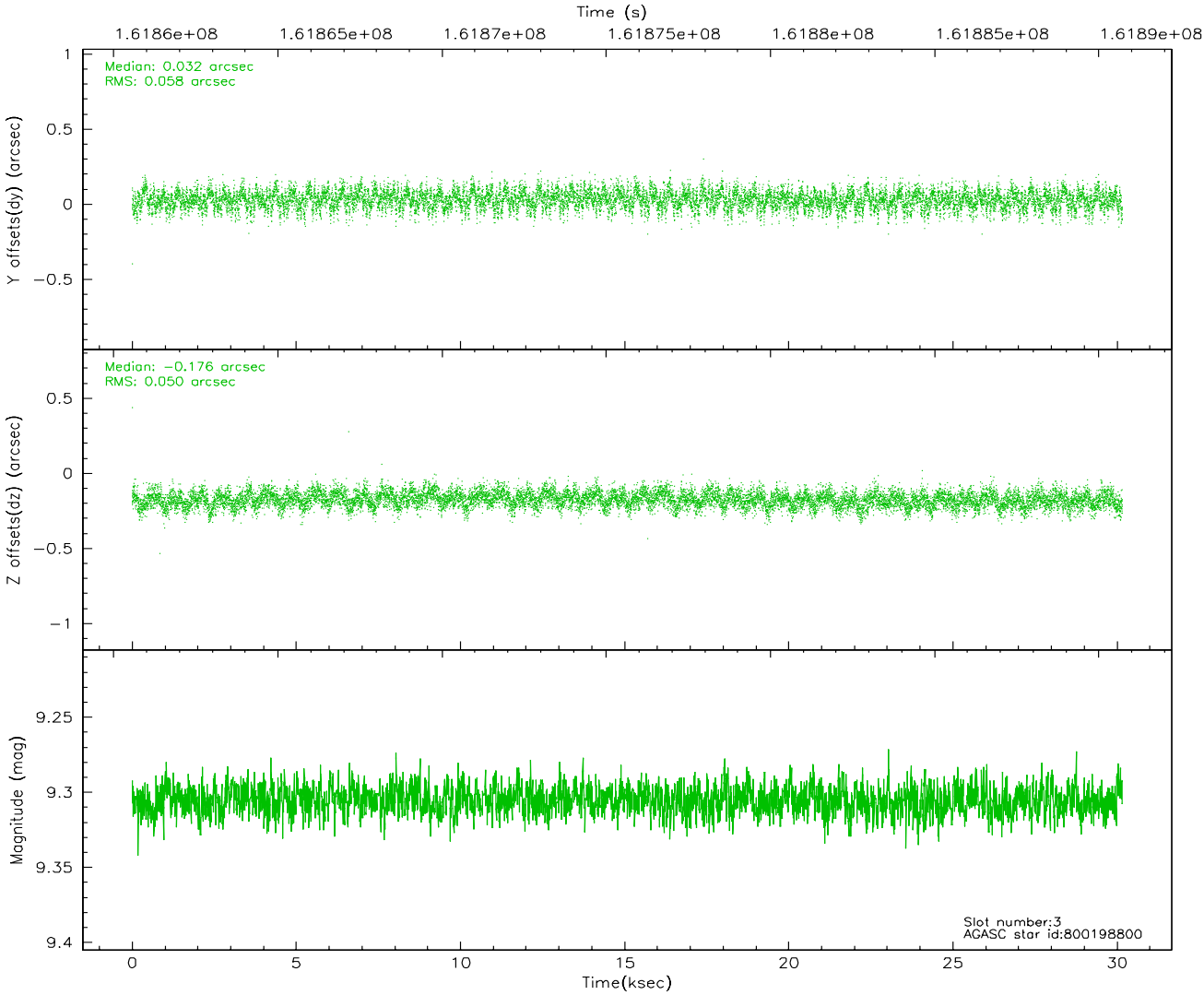
slot	status	id	mag	n_pts	med_dy	med_dz	dr1	dr2	ra	dec	mean_y	mean_z
0	FID	ACIS-S-2	7.12	7357	-0.040	0.021	0.014	0.019	0.000000	0.000000	-754.67	-1727.61
1	FID	ACIS-S-4	7.21	7357	-0.038	0.013	0.020	0.028	0.000000	0.000000	2158.54	180.85
2	FID	ACIS-S-5	7.24	7358	0.044	-0.025	0.013	0.018	0.000000	0.000000	-1807.37	174.49
3	GUIDE	800198800	9.31	14711	0.032	-0.176	0.081	0.130	186.138211	-18.243677	1585.30	1249.12
4	GUIDE	800205384	8.87	14708	0.246	0.036	0.081	0.126	186.219439	-19.549541	-1918.95	-1896.39
5	GUIDE	800205488	7.30	14714	0.113	0.082	0.056	0.088	185.969542	-19.225597	-1536.42	-505.97
6	GUIDE	800195416	9.03	14710	-0.215	-0.117	0.078	0.125	186.408187	-18.164014	2384.47	705.20
7	GUIDE	800326944	7.26	14713	-0.176	0.180	0.072	0.117	186.986954	-18.609747	2354.42	-1840.80

2.4 Star Slots

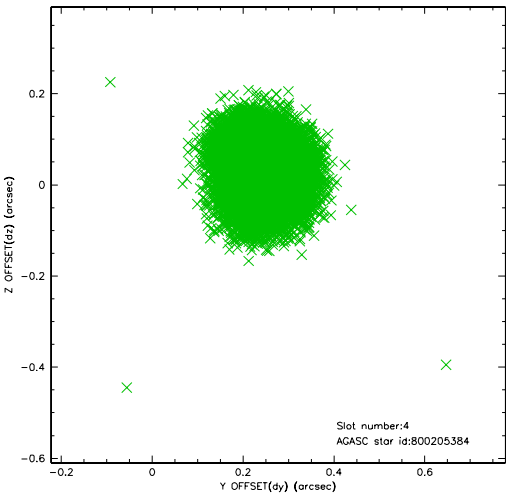
2.4.1 Slot 3

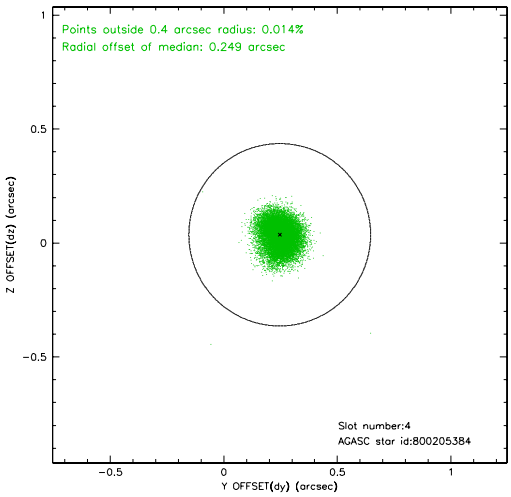


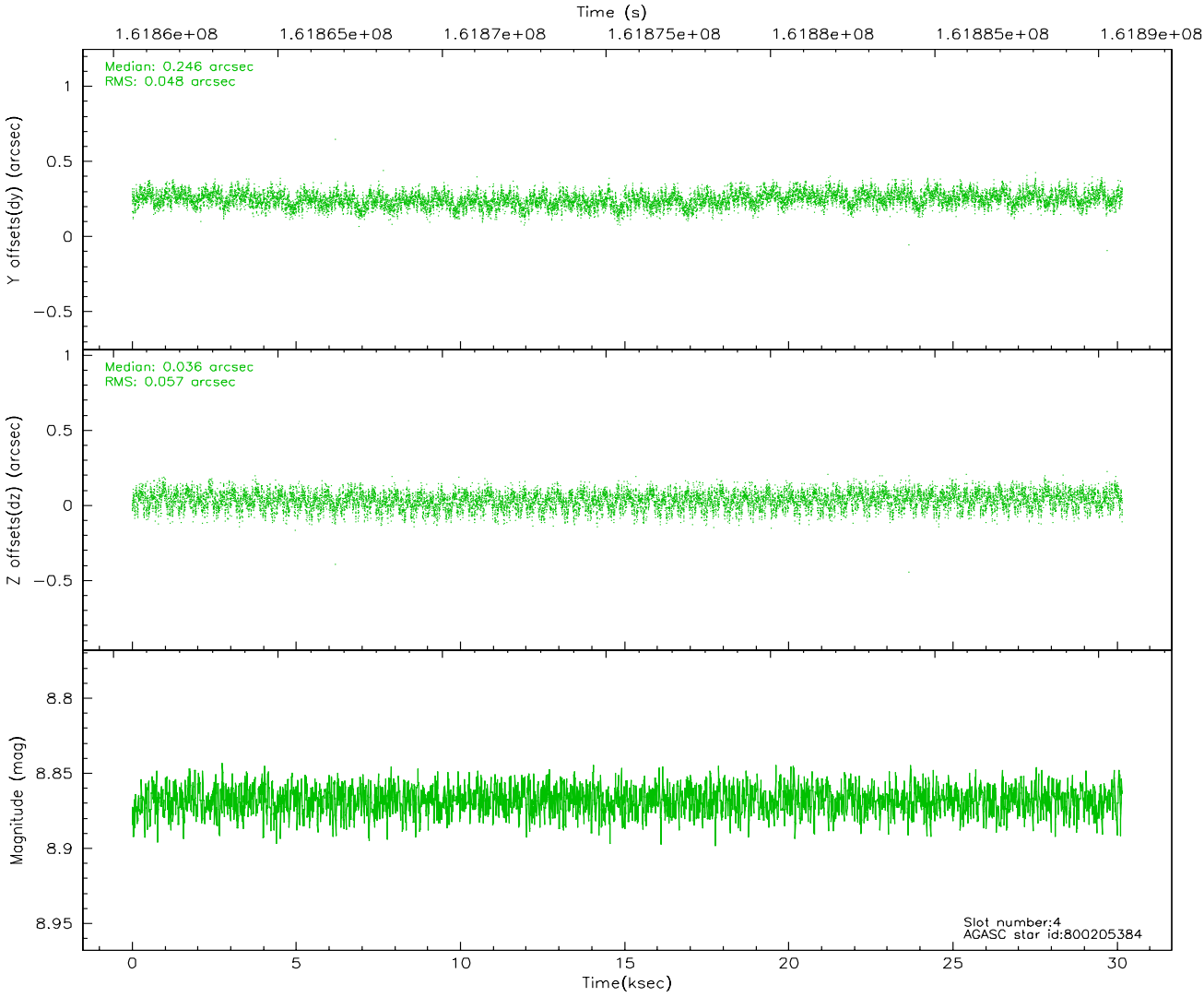




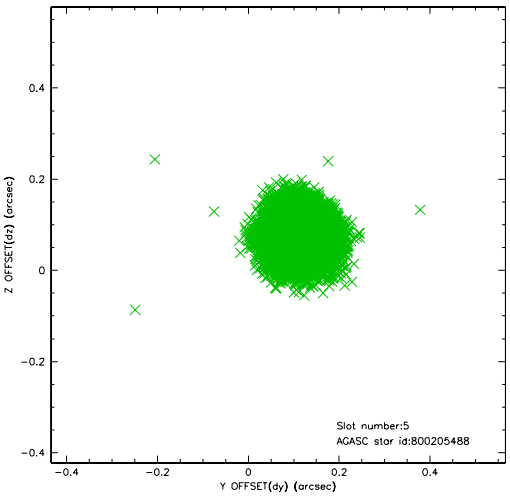
2.4.2 Slot 4

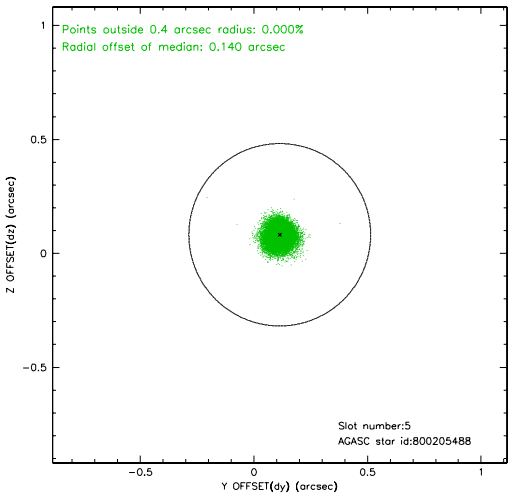

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:800205384

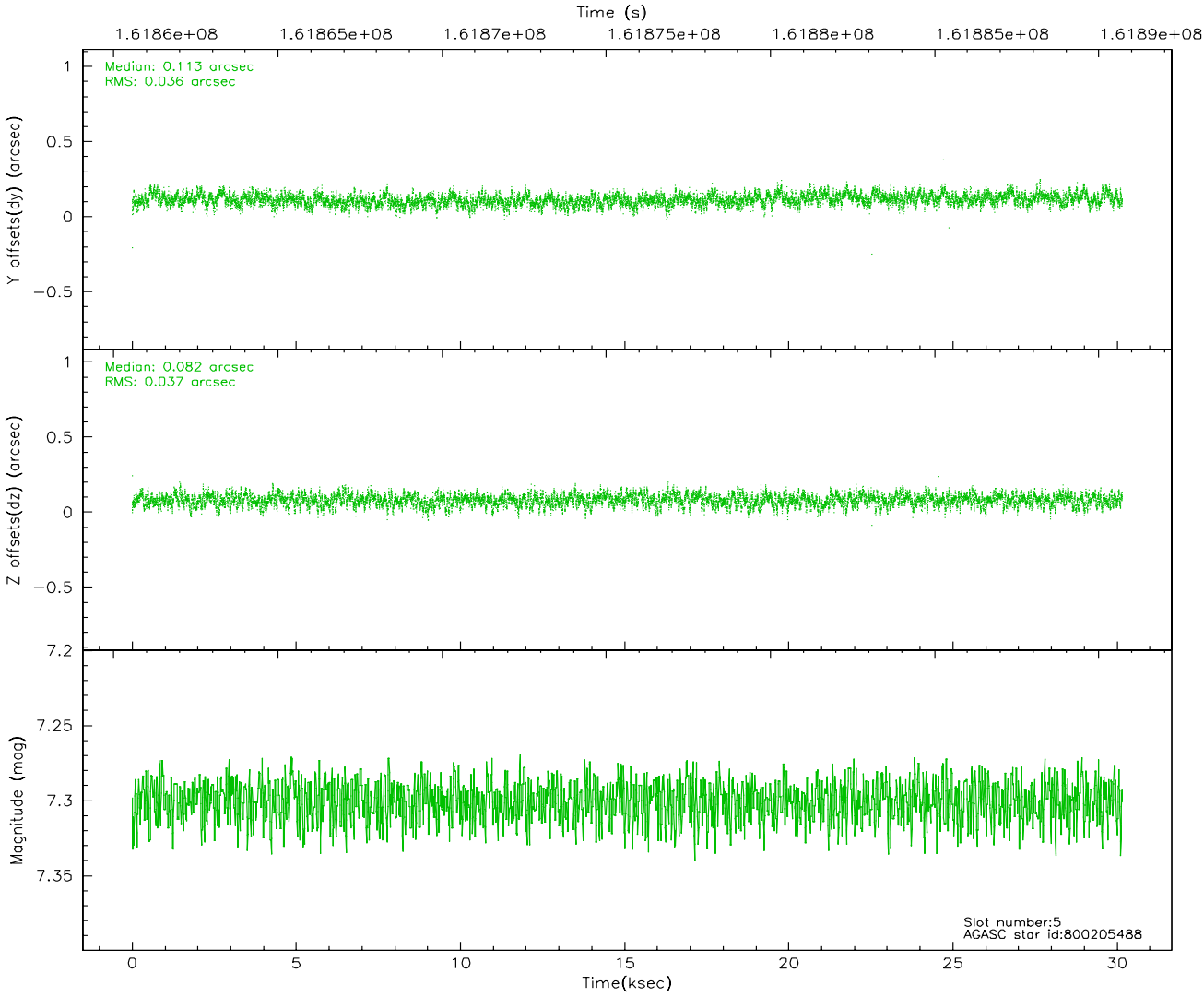

Points outside 0.4 arcsec radius: 0.014%
Radial offset of median: 0.249 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:4
AGASC star id:800205384


Time (s)
Median: 0.246 arcsec
RMS: 0.048 arcsec
Y offsets(dy) (arcsec)
Median: 0.036 arcsec
RMS: 0.057 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:4
AGASC star id:800205384
Time(ksec)

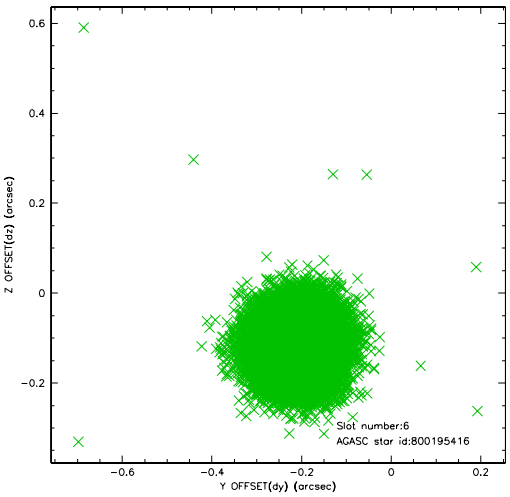
2.4.3 Slot 5

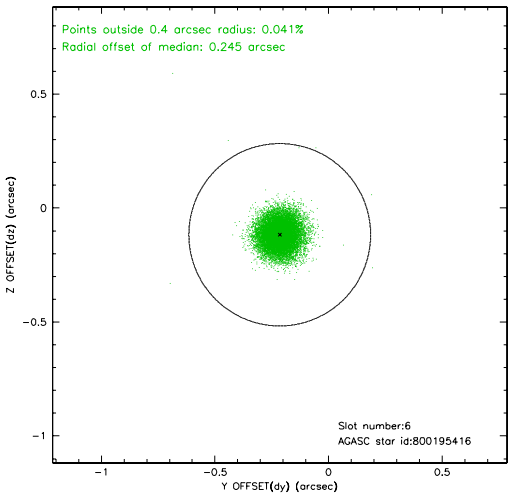

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:800205488

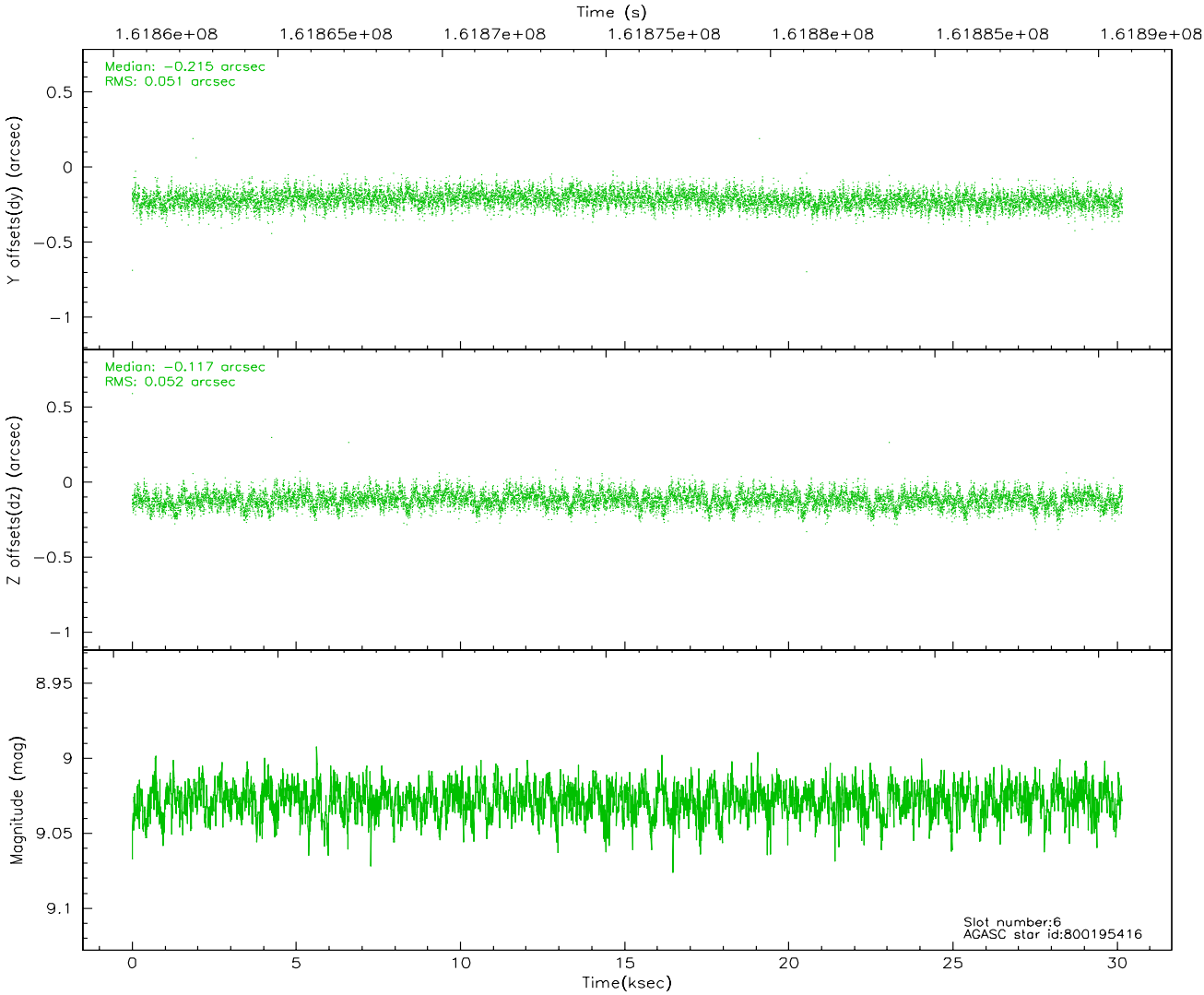

Points outside 0.4 arcsec radius: 0.000%
Radial offset of median: 0.140 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:5
AGASC star id:800205488


Time (s)
Median: 0.113 arcsec
RMS: 0.036 arcsec
Y offsets(dy) (arcsec)
Median: 0.082 arcsec
RMS: 0.037 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:5
AGASC star id:800205488
Time(ksec)

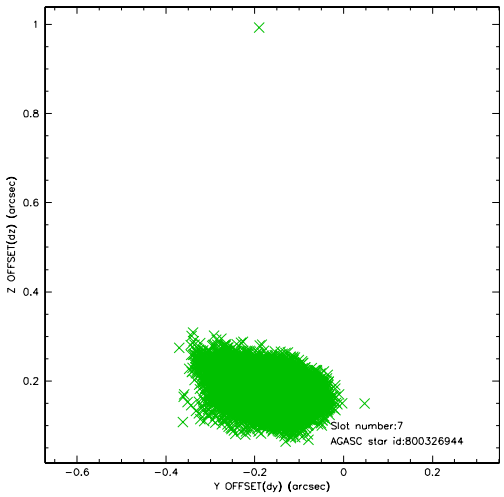
2.4.4 Slot 6

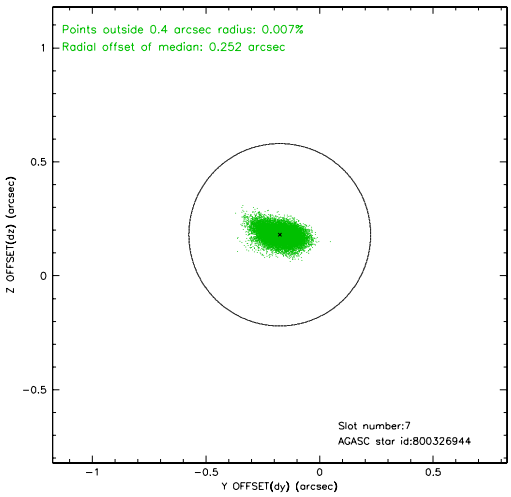

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:800195416

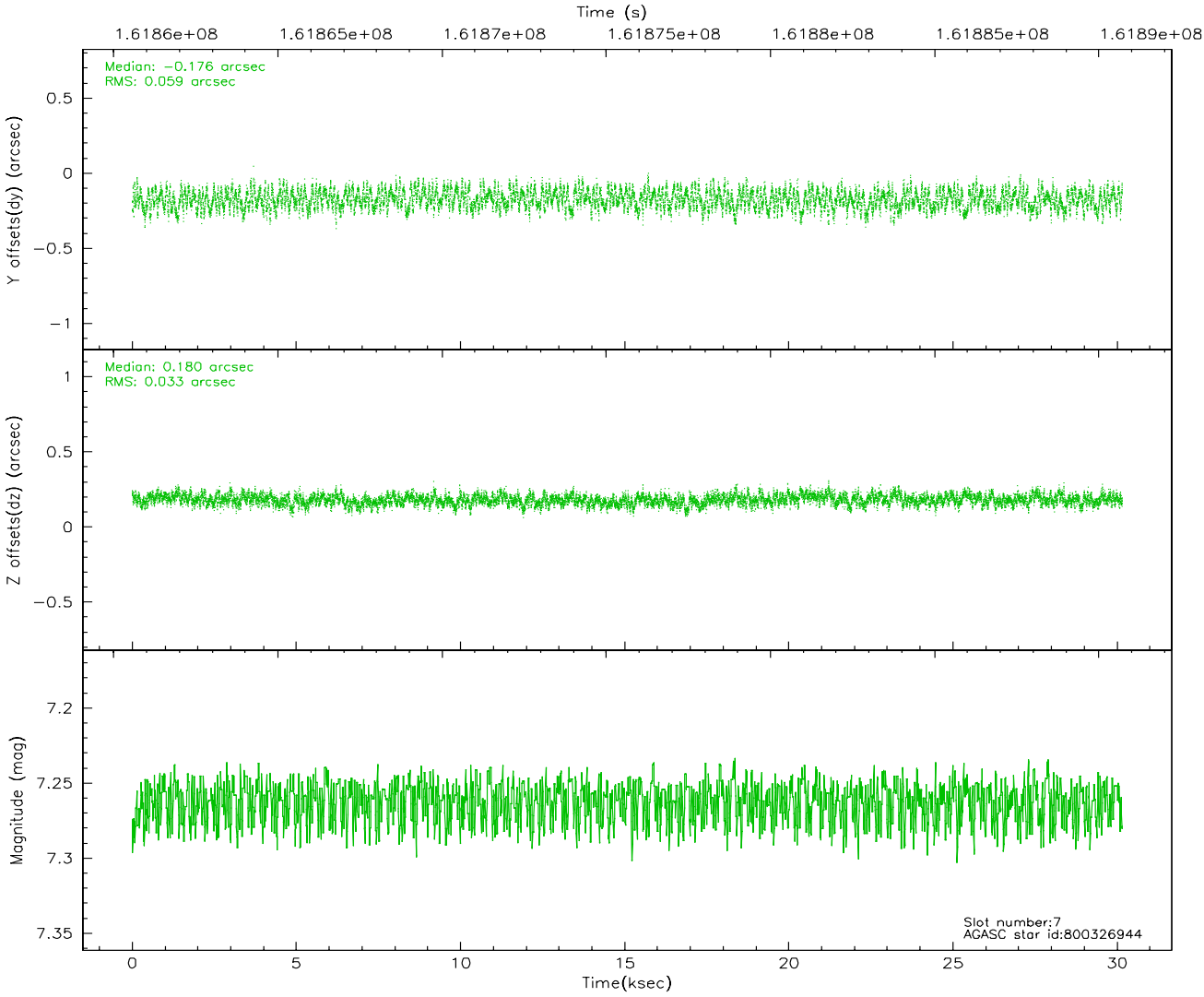

Points outside 0.4 arcsec radius: 0.041%
Radial offset of median: 0.245 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:6
AGASC star id:800195416


Time (s)
Median: −0.215 arcsec
RMS: 0.051 arcsec
Y offsets(dy) (arcsec)
Median: −0.117 arcsec
RMS: 0.052 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:6
AGASC star id:800195416
Time(ksec)

2.4.5 Slot 7

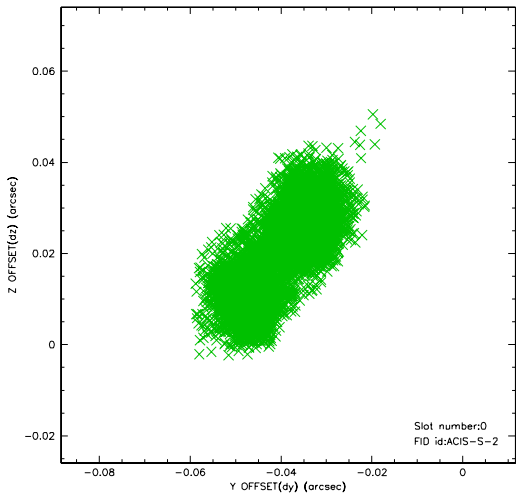

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:800326944

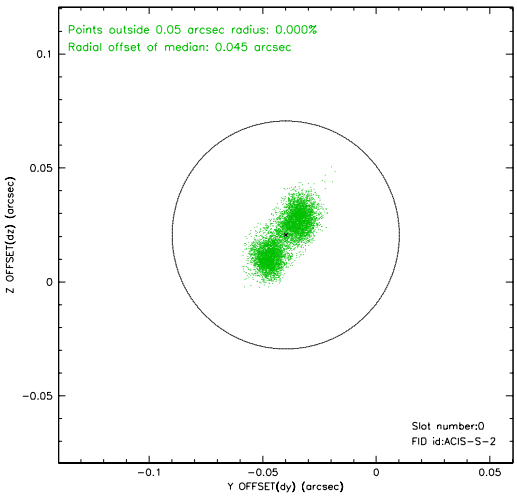

Points outside 0.4 arcsec radius: 0.007%
Radial offset of median: 0.252 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:7
AGASC star id:800326944

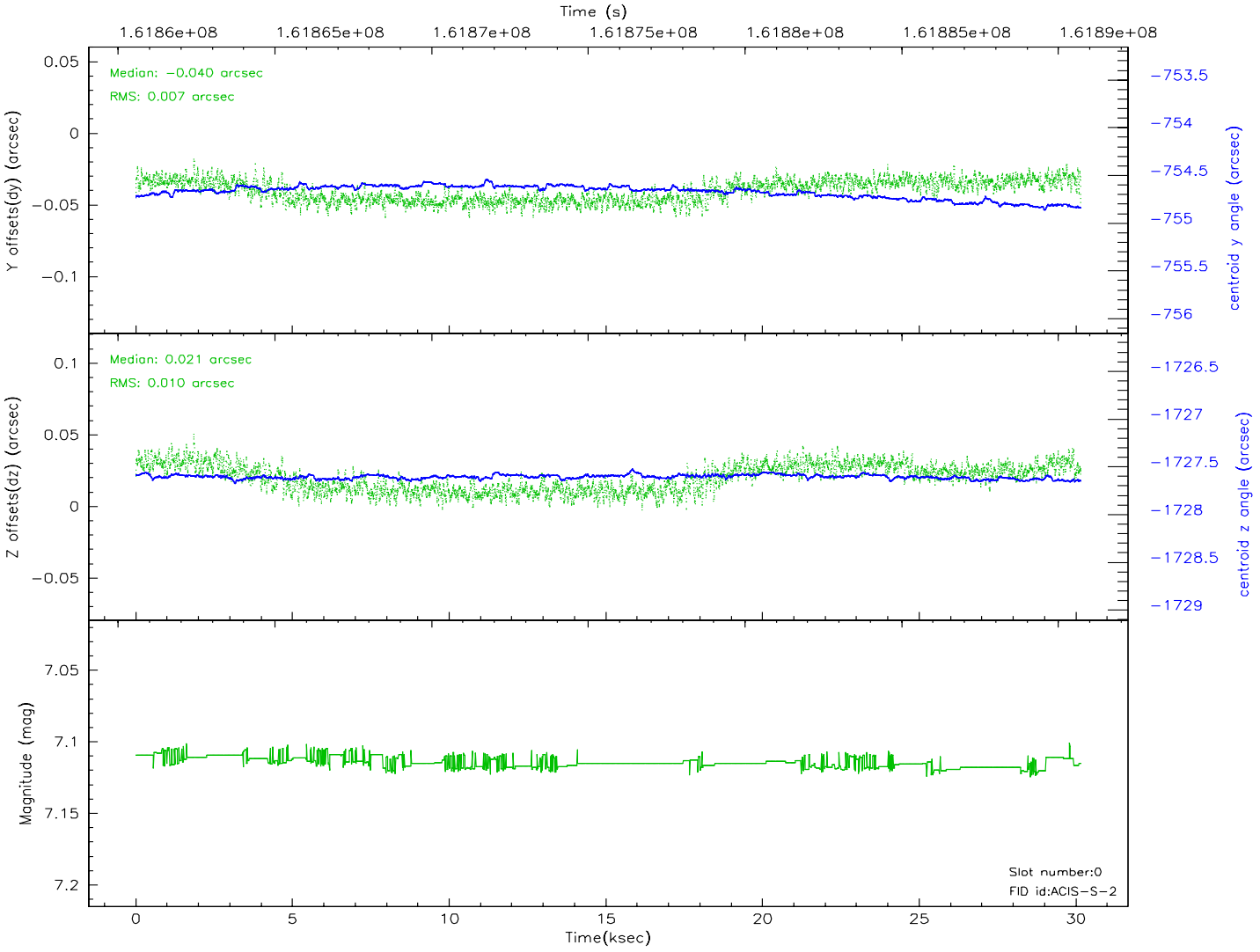

Time (s)
Median: −0.176 arcsec
RMS: 0.059 arcsec
Y offsets(dy) (arcsec)
Median: 0.180 arcsec
RMS: 0.033 arcsec
Z offsets(dz) (arcsec)
Magnitude (mag)
Slot number:7
AGASC star id:800326944
Time(ksec)

2.5 FID Slots

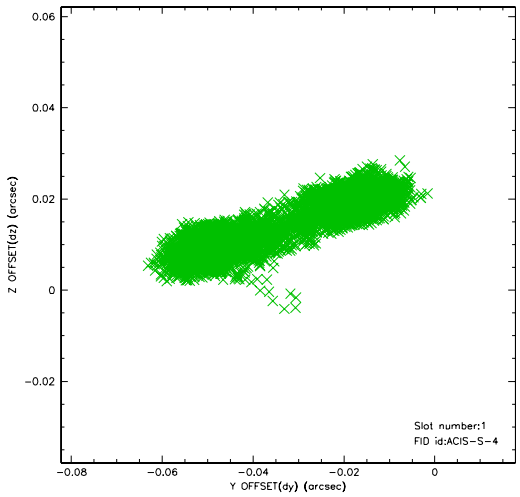
2.5.1 Slot 0

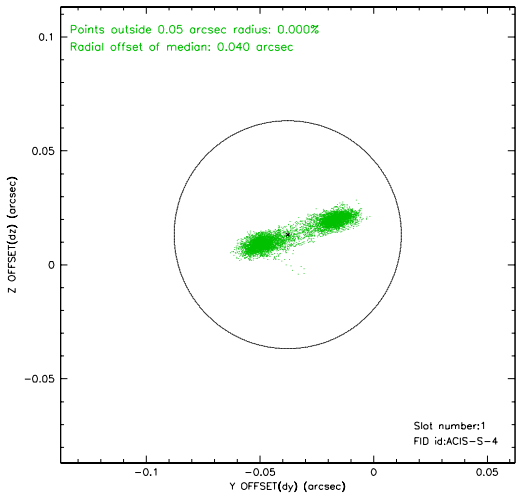


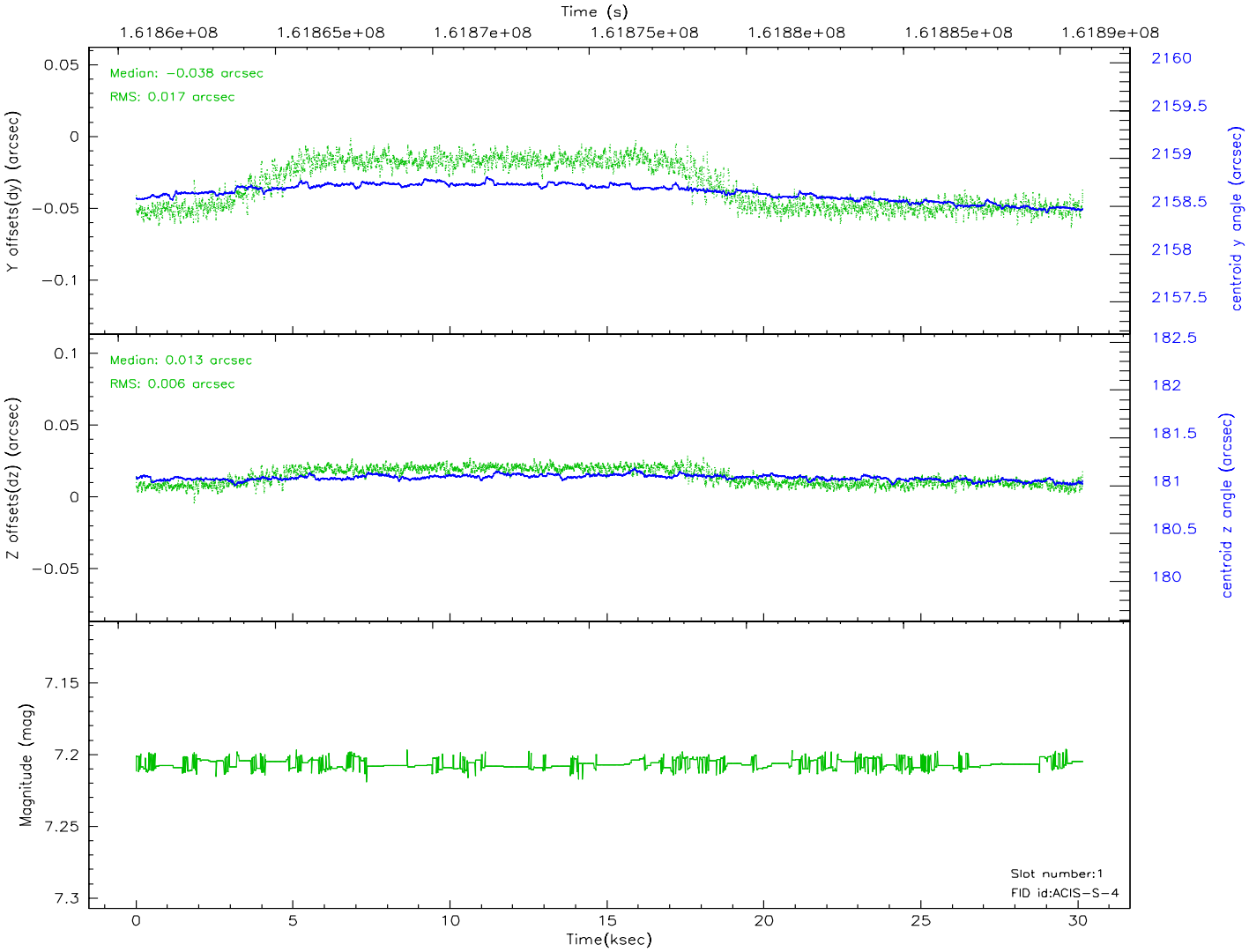




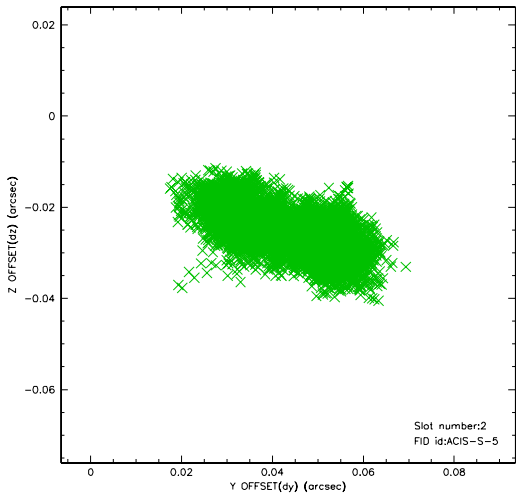
2.5.2 Slot 1

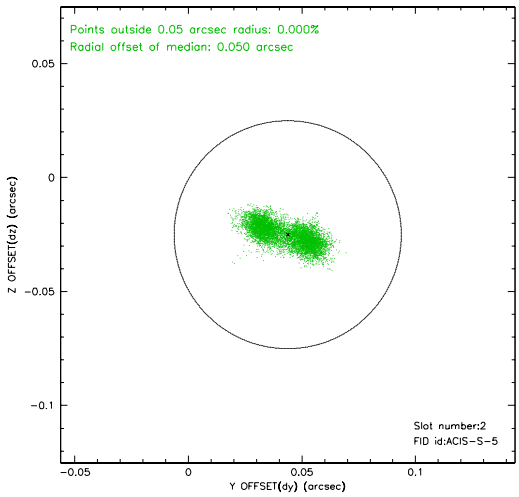

Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4

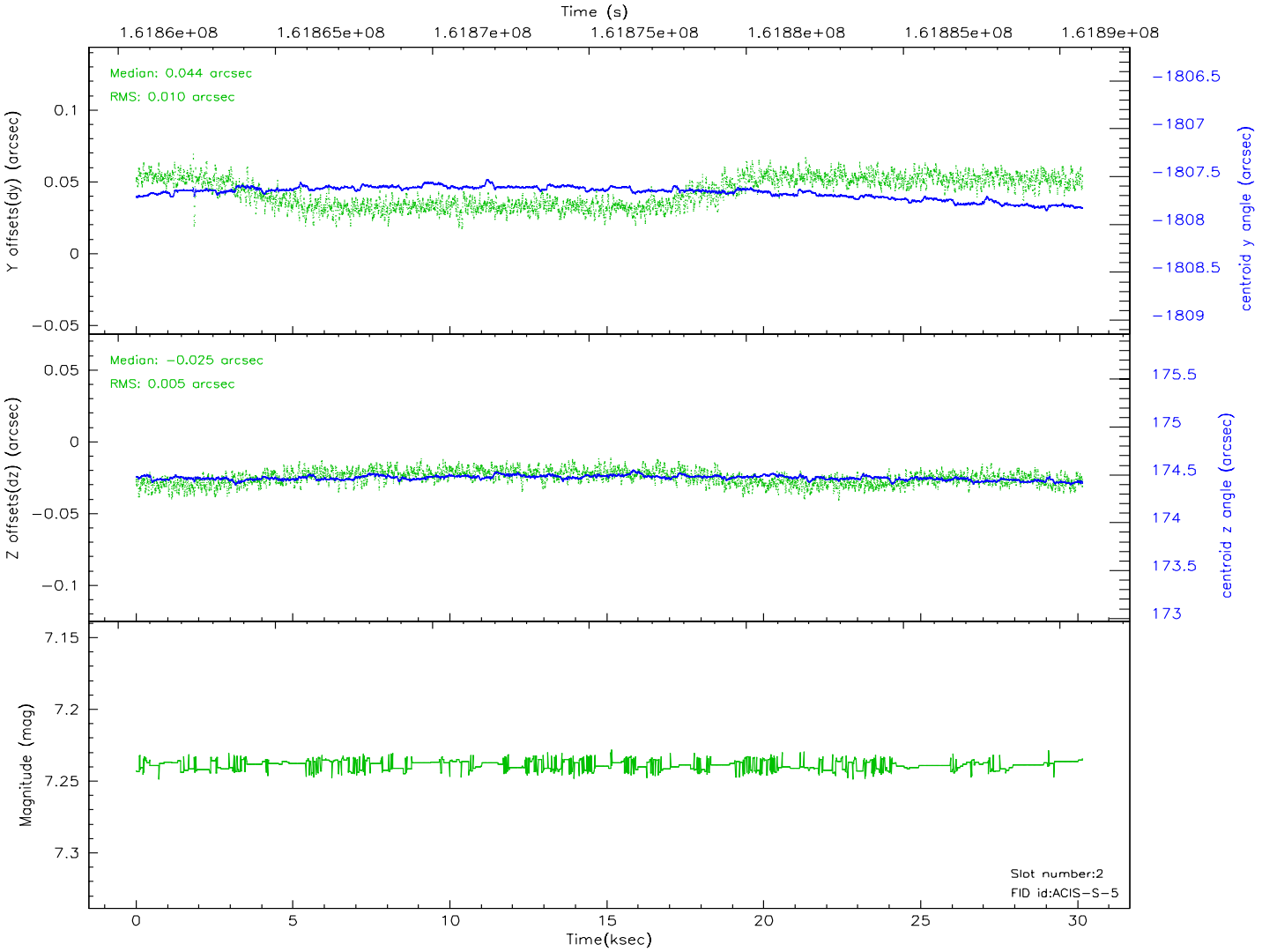

Points outside 0.05 arcsec radius: 0.000%
Radial offset of median: 0.040 arcsec
Z OFFSET(dz) (arcsec)
Y OFFSET(dy) (arcsec)
Slot number:1
FID id:ACIS-S-4


Time (s)
Median: −0.038 arcsec
RMS: 0.017 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: 0.013 arcsec
RMS: 0.006 arcsec
Z offsets(dz) (arcsec)
centroid z angle (arcsec)
Magnitude (mag)
Slot number:1
FID id:ACIS-S-4
Time(ksec)

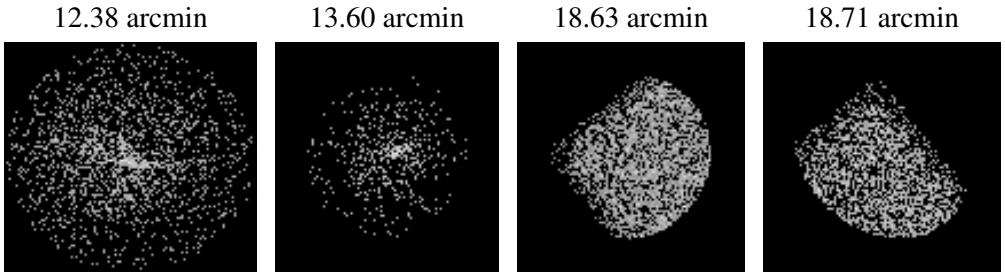
2.5.3 Slot 2


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


Time (s)
Median: 0.044 arcsec
RMS: 0.010 arcsec
Y offsets(dy) (arcsec)
centroid y angle (arcsec)
Median: −0.025 arcsec
RMS: 0.005 arcsec
Z offsets(dz) (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	Jen Lauer
V&V Date (YYYY-MM-DD)	2006.07.27
V&V Edition	1
V&V Disposition and Status	OK
V&V Charge Time	29.759

A.2 Comments