

# V&V Reference Report

## L2 ASCDS Version : 10.9.1

Observation 4707 - L2 Version 4  
Chandra X-Ray Center

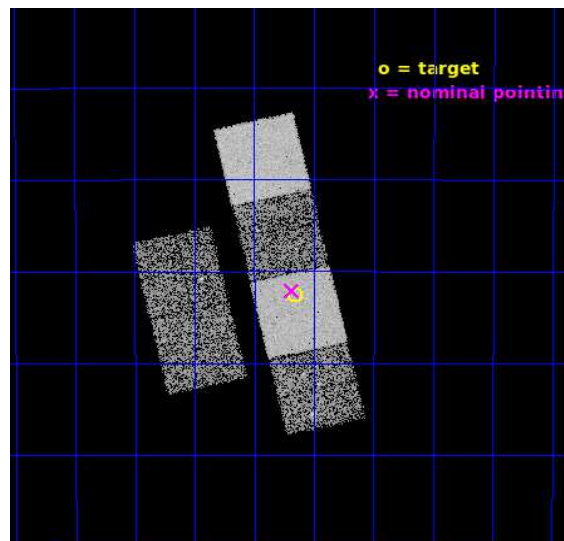
L2 Processing Date : Sep 29 2020

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# 1 Front

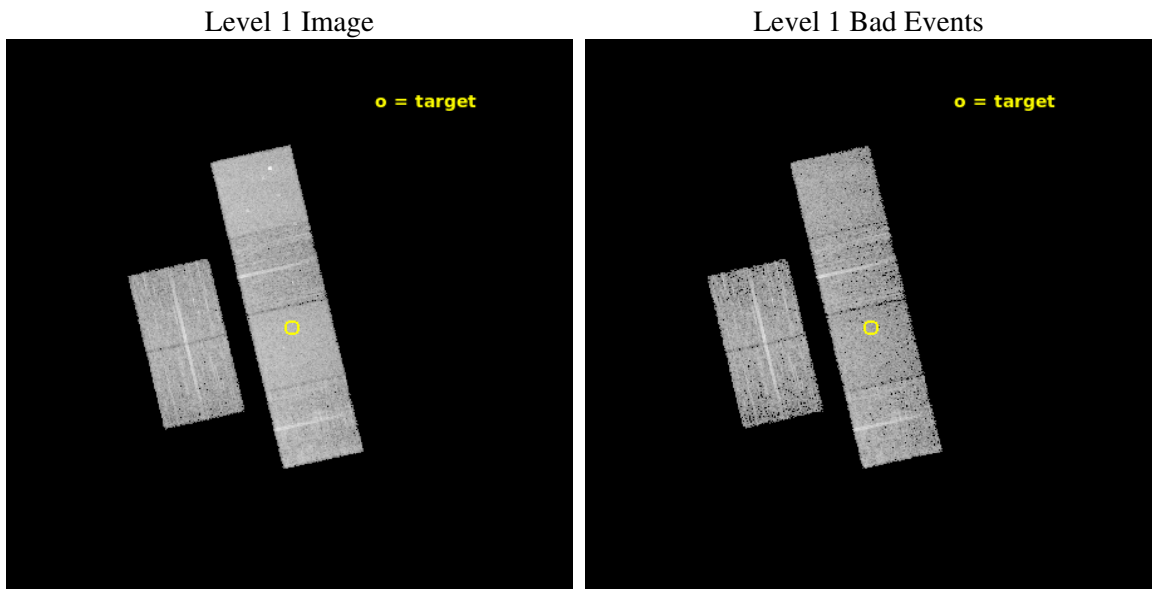
|          |  |   |
|----------|--|---|
| seq_num  | 600362   | Sequence number                             |
| obs_id   | 4707   | Observation id                              |
| title    | Using the Sculptor Dwarf Spheroidal Galaxy to Constrain X-ray Binary Production in Population II | Proposal title                              |
| observer | Thomas Maccarone   | Principal investigator                      |
| object   | SCULPTOR DWARF SPHEROIDAL  | Source name                                 |
| dtcycle  | 0  | &#160                                       |
| cycle    | P  | events from which exps?<br>Prim/Second/Both |
| ra_targ  | 15.039167  | Observer's specified target RA [deg]        |
| dec_targ | -33.708889   | Observer's specified target Dec [deg]       |
| ra_nom   | 15.046140539446  | Nominal RA [deg]                            |
| dec_nom  | -33.701711464987   | Nominal Dec [deg]                           |
| roll_nom | 77.074975753038  | Nominal Roll [deg]                          |
| revision | 4  | Processing version of data                  |
| ontime   | 5957.6331135929  | Sum of GTIs [s]                             |
| livetime | 5882.1939758526  | Livetime [s]                                |
| ontime2  | 5954.4331932068  | Sum of GTIs [s]                             |
| ontime3  | 5957.509993583   | Sum of GTIs [s]                             |
| ontime5  | 5957.5920735896  | Sum of GTIs [s]                             |
| ontime6  | 5957.5510335863  | Sum of GTIs [s]                             |
| ontime7  | 5957.6331135929  | Sum of GTIs [s]                             |
| ontime8  | 5954.2279733419  | Sum of GTIs [s]                             |
| l2events | 68615  | Number of level 2 events                    |



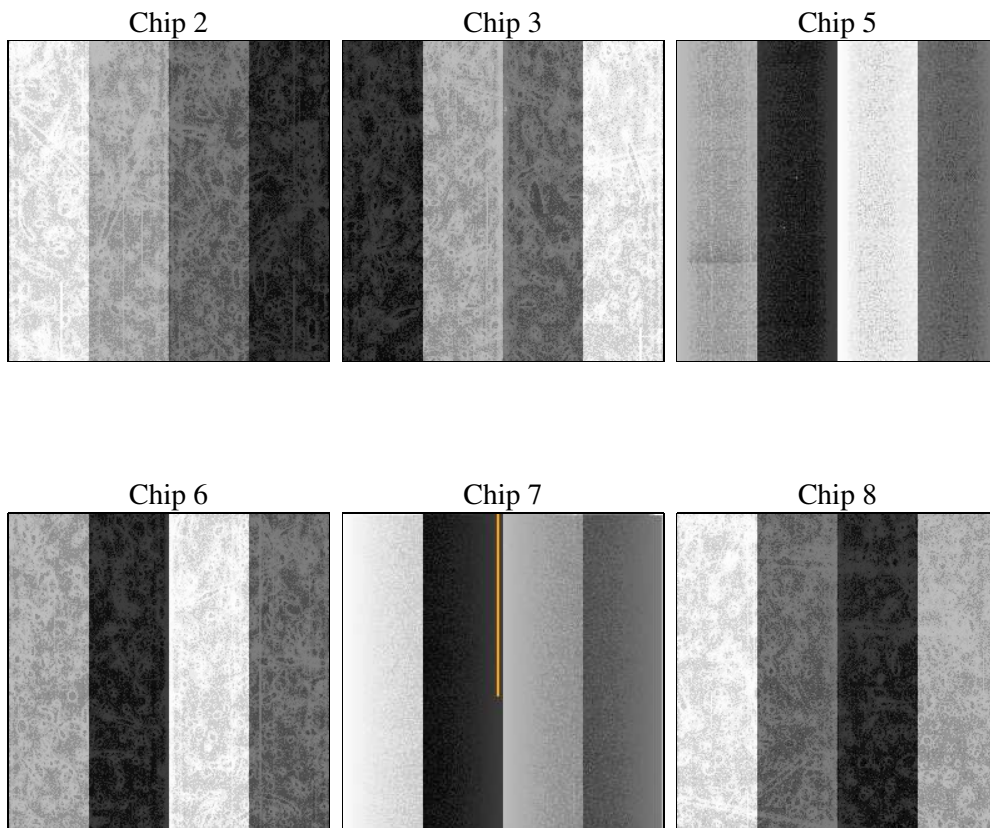
## 2 OBI

### 2.1 OBI

#### 2.1.1 Images



#### 2.1.2 Bias



### 2.1.3 Parameters

|          |                     |                                |                |                 |   |
|----------|---------------------|--------------------------------|----------------|-----------------|---|
| obi_num  | 1                   | Obi number                     | sched_exp_time | 6000.000000     | [s] Scheduled observation exposure time |
| ascdsver | 10.9.1              | Processing system revision     | ontime         | 5957.6331135929 | Sum of GTIs [s]                         |
| caldbver | 4.9.2               | &#160                          | ontime2        | 5954.4331932068 | Sum of GTIs [s]                         |
| date     | 2020-09-29T06:58:00 | Date and time of file creation | ontime3        | 5957.509993583  | Sum of GTIs [s]                         |
| revision | 4                   | Processing version of data     | ontime5        | 5957.5920735896 | Sum of GTIs [s]                         |
|          |                     |                                | ontime6        | 5957.5510335863 | Sum of GTIs [s]                         |
|          |                     |                                | ontime7        | 5957.6331135929 | Sum of GTIs [s]                         |
|          |                     |                                | ontime8        | 5954.2279733419 | Sum of GTIs [s]                         |
|          |                     |                                | l1events       | 306481          | Number of level 1 events                |

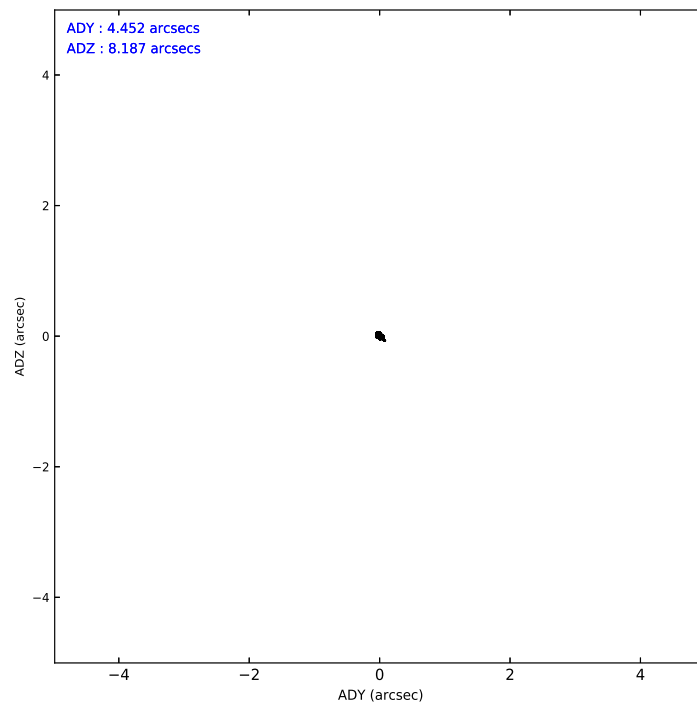
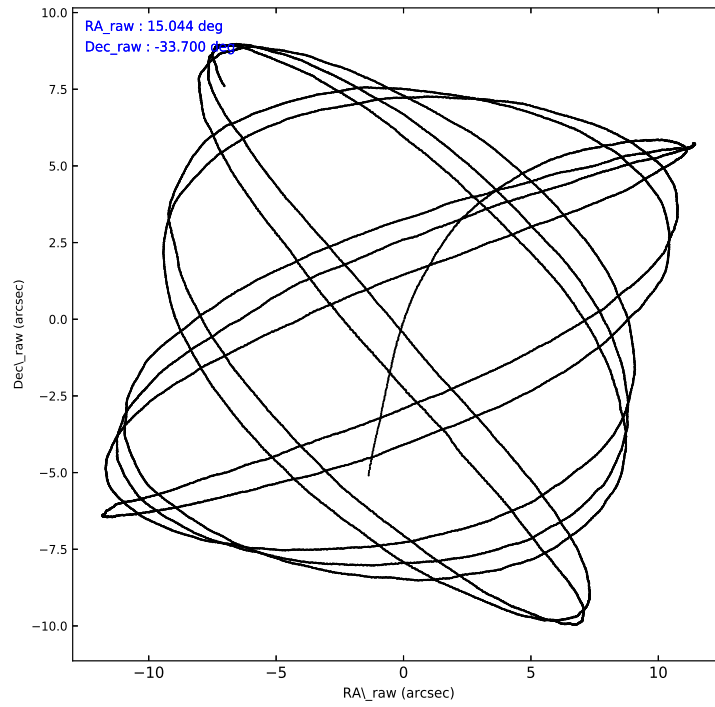
### 2.1.4 Events

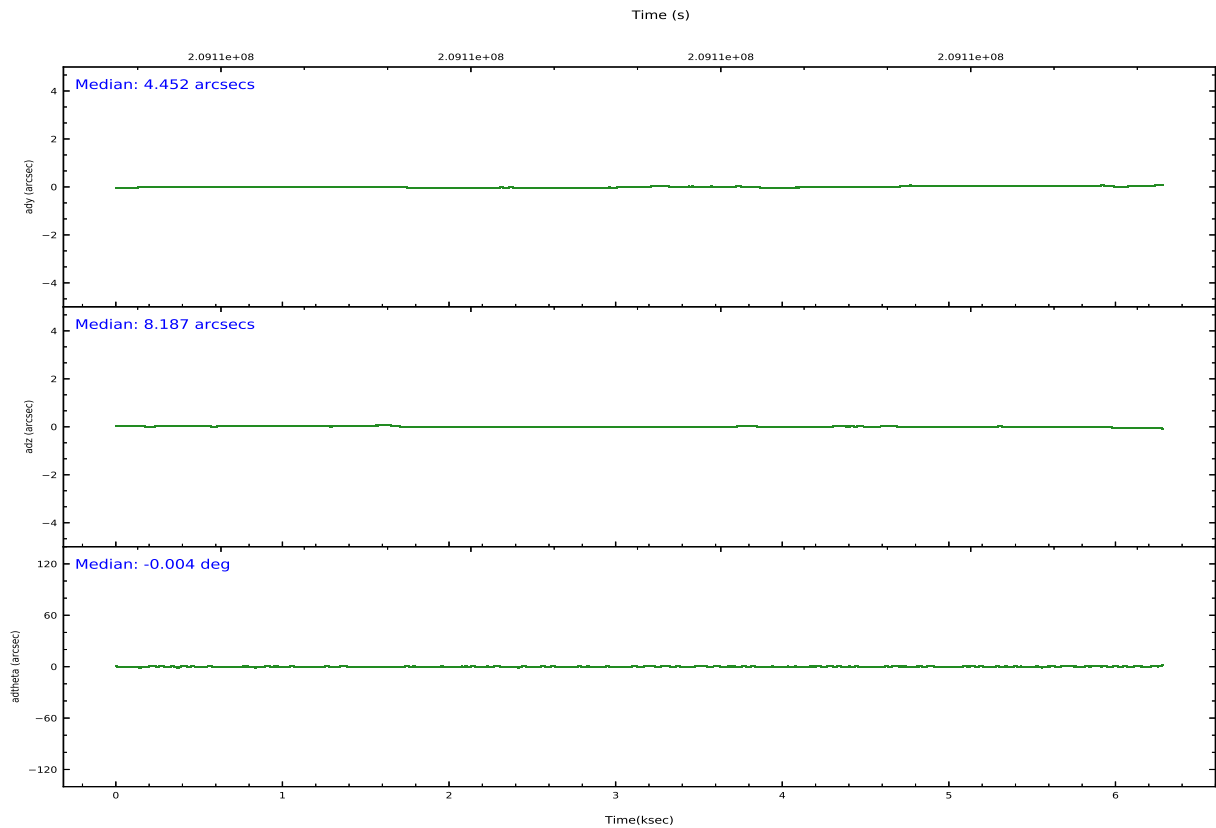
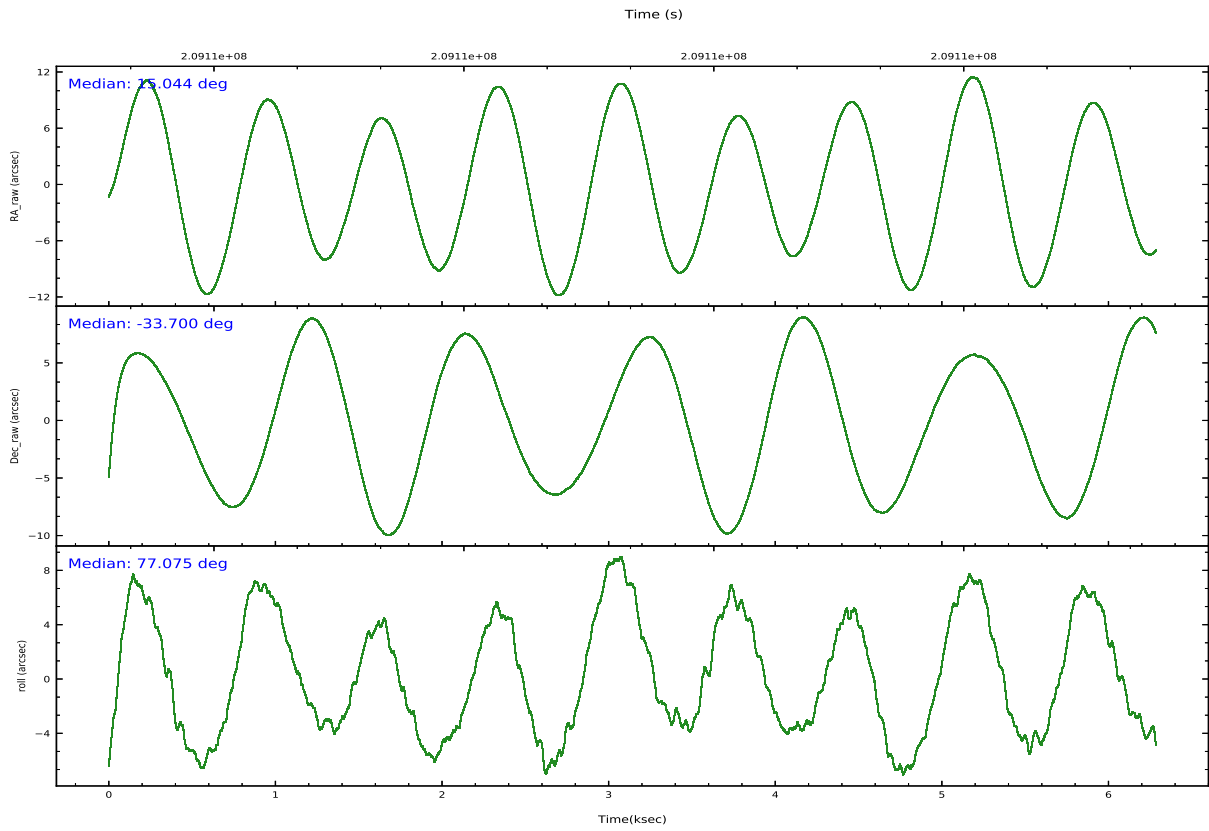
|                 | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |                | ccd 2 | ccd 3 | ccd 5 | ccd 6 | ccd 7 | ccd 8 |
|-----------------|-------|-------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|-------|-------|
| level 1 events  | 43974 | 41688 | 64084 | 43507 | 57677 | 55551 | grade 0 events | 2244  | 2180  | 2868  | 2077  | 2071  | 3783  |
| rejected events | 38852 | 36684 | 35093 | 38354 | 33718 | 43606 |                | 5%    | 5%    | 4%    | 4%    | 3%    | 6%    |
| rejected %      | 88%   | 87%   | 54%   | 88%   | 58%   | 78%   | grade 1 events | 22    | 30    | 106   | 23    | 47    | 42    |
|                 |       |       |       |       |       |       |                | 0%    | 0%    | 0%    | 0%    | 0%    | 0%    |
|                 |       |       |       |       |       |       | grade 2 events | 1119  | 1010  | 8557  | 1118  | 4856  | 2743  |
|                 |       |       |       |       |       |       |                | 2%    | 2%    | 13%   | 2%    | 8%    | 4%    |
|                 |       |       |       |       |       |       | grade 3 events | 475   | 470   | 1088  | 465   | 2132  | 1232  |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |       |       |       |       | grade 4 events | 458   | 468   | 1030  | 471   | 2051  | 1178  |
|                 |       |       |       |       |       |       |                | 1%    | 1%    | 1%    | 1%    | 3%    | 2%    |
|                 |       |       |       |       |       |       | grade 5 events | 1761  | 1880  | 4619  | 1919  | 5537  | 2614  |
|                 |       |       |       |       |       |       |                | 4%    | 4%    | 7%    | 4%    | 9%    | 4%    |
|                 |       |       |       |       |       |       | grade 6 events | 830   | 882   | 15486 | 1026  | 12860 | 3038  |
|                 |       |       |       |       |       |       |                | 1%    | 2%    | 24%   | 2%    | 22%   | 5%    |
|                 |       |       |       |       |       |       | grade 7 events | 37065 | 34768 | 30330 | 36408 | 28123 | 40921 |
|                 |       |       |       |       |       |       |                | 84%   | 83%   | 47%   | 83%   | 48%   | 73%   |

## 2.2 Compared Parameters

| Parameter                         | Planned             | Actual               | Parameter                             | Planned   | Actual  |
|-----------------------------------|---------------------|----------------------|---------------------------------------|-----------|---------|
| Instrument                        | ACIS                | ACIS                 | Obspar version number                 | 8         | 8       |
| Detector                          | ACIS-235678         | ACIS-235678          | Obspar file type                      | PREDICTED | ACTUAL  |
| Grating                           | NONE                | NONE                 | Obspar update status                  | NONE      | UPDATED |
| Data mode                         | VFAINT              | VFAINT               | Number of optional ACIS chips dropped | 0         | 0       |
| Observation mode                  | POINTING            | POINTING             | On-chip summing requested             | N         | N       |
| [deg] Pointing RA                 | 15.053751           | 15.046140539446      | Subarray requested                    | NONE      | NONE    |
| [deg] Pointing Dec                | -33.725905          | -33.701711464987     | Alternating exposures requested       | N         | N       |
| [deg] Pointing Roll               | 76.923479           | 77.074975753038      | [s] Primary exposure time             | 0.000000  | 3.2     |
| [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)  | 209106655.184000    | 209105642.95762      |                                       |           |         |
| Observation start date            | 2004-08-17T05:09:51 | 2004-08-17T04:54:02  |                                       |           |         |
| [s] Observation end time (MET)    | 209112655.184000    | 209113702.53298      |                                       |           |         |
| Observation end date              | 2004-08-17T06:49:51 | 2004-08-17T07:08:22  |                                       |           |         |
| Read mode                         | TIMED               | TIMED                |                                       |           |         |

## 2.3 Aspect





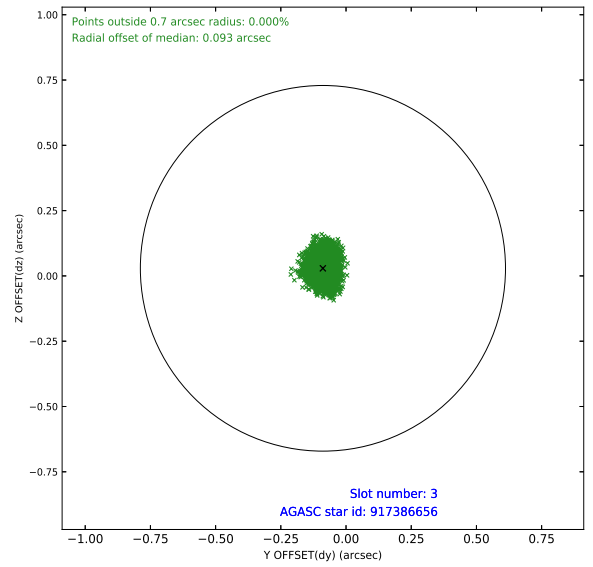
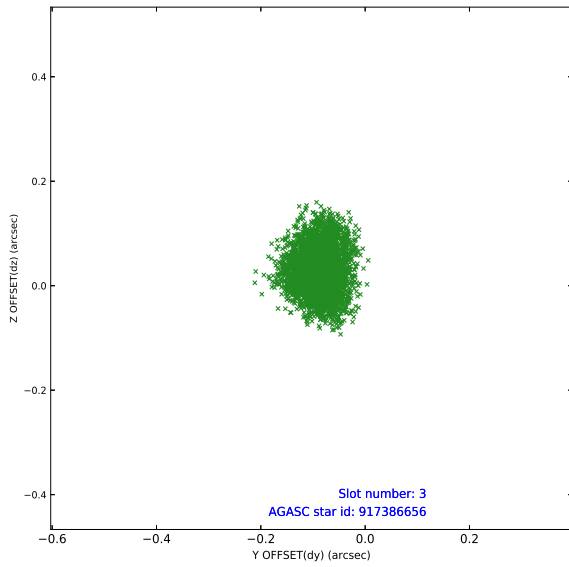
### Slot Statistics

| pt | status | used | id        | mag  | n_pts | frac_pts | med_dy | med_dz | dr1   | dr2   | ra        | dec        | mean_y   | mea   |
|----|--------|------|-----------|------|-------|----------|--------|--------|-------|-------|-----------|------------|----------|-------|
| 0  | FID    |      | ACIS-S-1  | 7.18 | 1534  | 1.000    | 0.034  | -0.069 | 0.007 | 0.011 | 0.000000  | 0.000000   | 938.90   | -1725 |
| 1  | FID    |      | ACIS-S-4  | 7.20 | 1534  | 1.000    | 0.116  | 0.036  | 0.006 | 0.011 | 0.000000  | 0.000000   | 2156.94  | 178   |
| 2  | FID    |      | ACIS-S-5  | 7.24 | 1534  | 1.000    | -0.177 | 0.046  | 0.006 | 0.010 | 0.000000  | 0.000000   | -1808.95 | 172   |
| 3  | GUIDE  | used | 917386656 | 7.25 | 3068  | 1.000    | -0.089 | 0.029  | 0.059 | 0.093 | 15.342124 | -33.359890 | 1478.42  | -546  |
| 4  | GUIDE  | used | 917389288 | 9.55 | 3068  | 1.000    | -0.045 | 0.131  | 0.123 | 0.192 | 15.394706 | -33.185862 | 2124.80  | -560  |
| 5  | GUIDE  | used | 917390768 | 9.86 | 3065  | 1.000    | 0.067  | -0.058 | 0.111 | 0.177 | 14.870561 | -33.104152 | 2055.46  | 1044  |
| 6  | GUIDE  | used | 917642024 | 8.88 | 3067  | 1.000    | 0.019  | 0.139  | 0.092 | 0.148 | 15.645887 | -34.369984 | -1864.49 | -2239 |
| 7  | GUIDE  | used | 917650528 | 8.72 | 3067  | 1.000    | 0.044  | -0.243 | 0.074 | 0.124 | 14.274554 | -33.869842 | -1041.11 | 2148  |

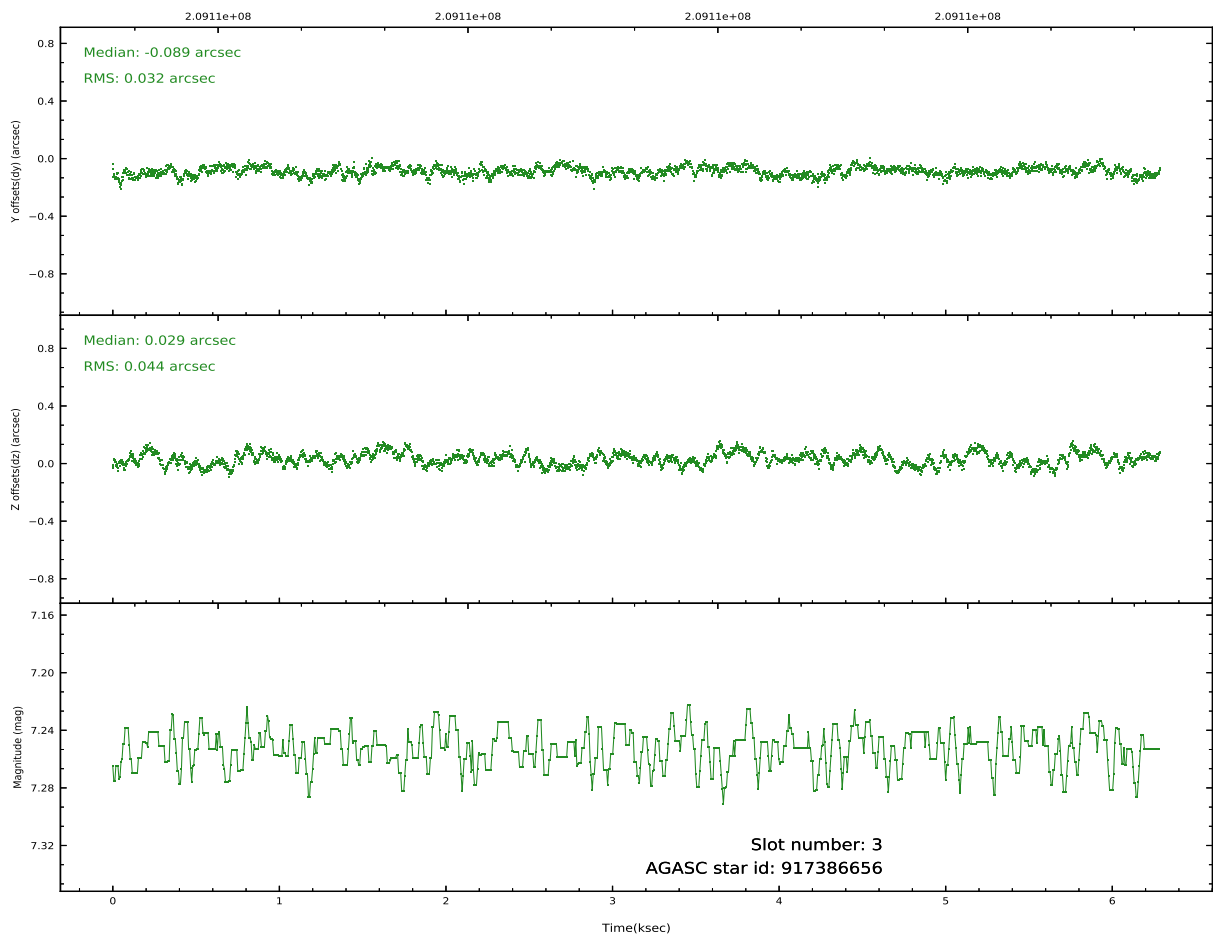
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## 2.4 Star Slots

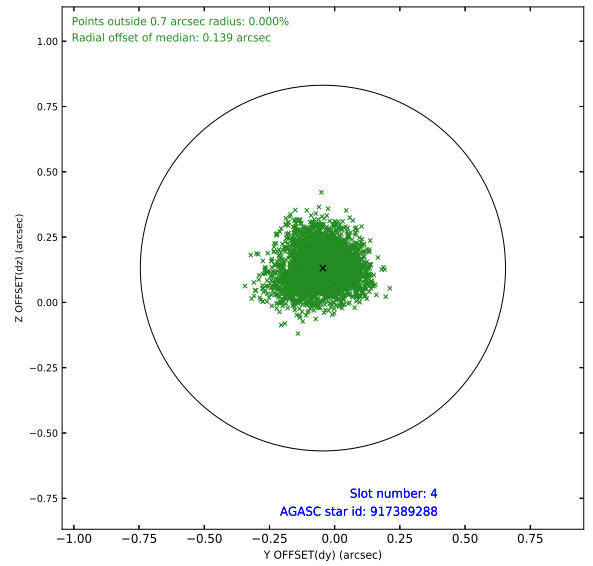
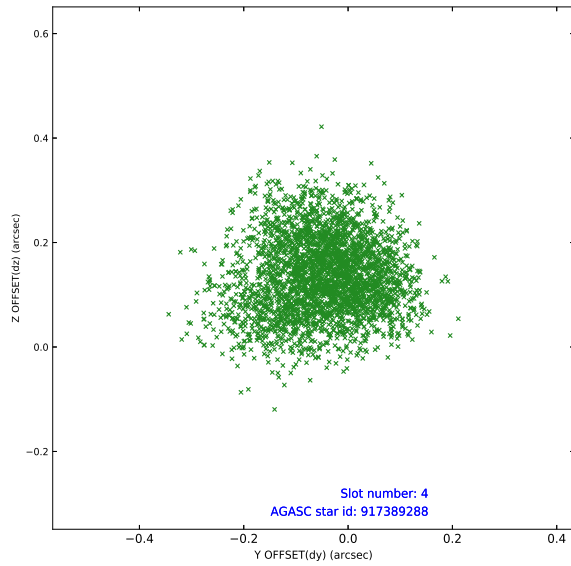
### 2.4.1 Slot 3



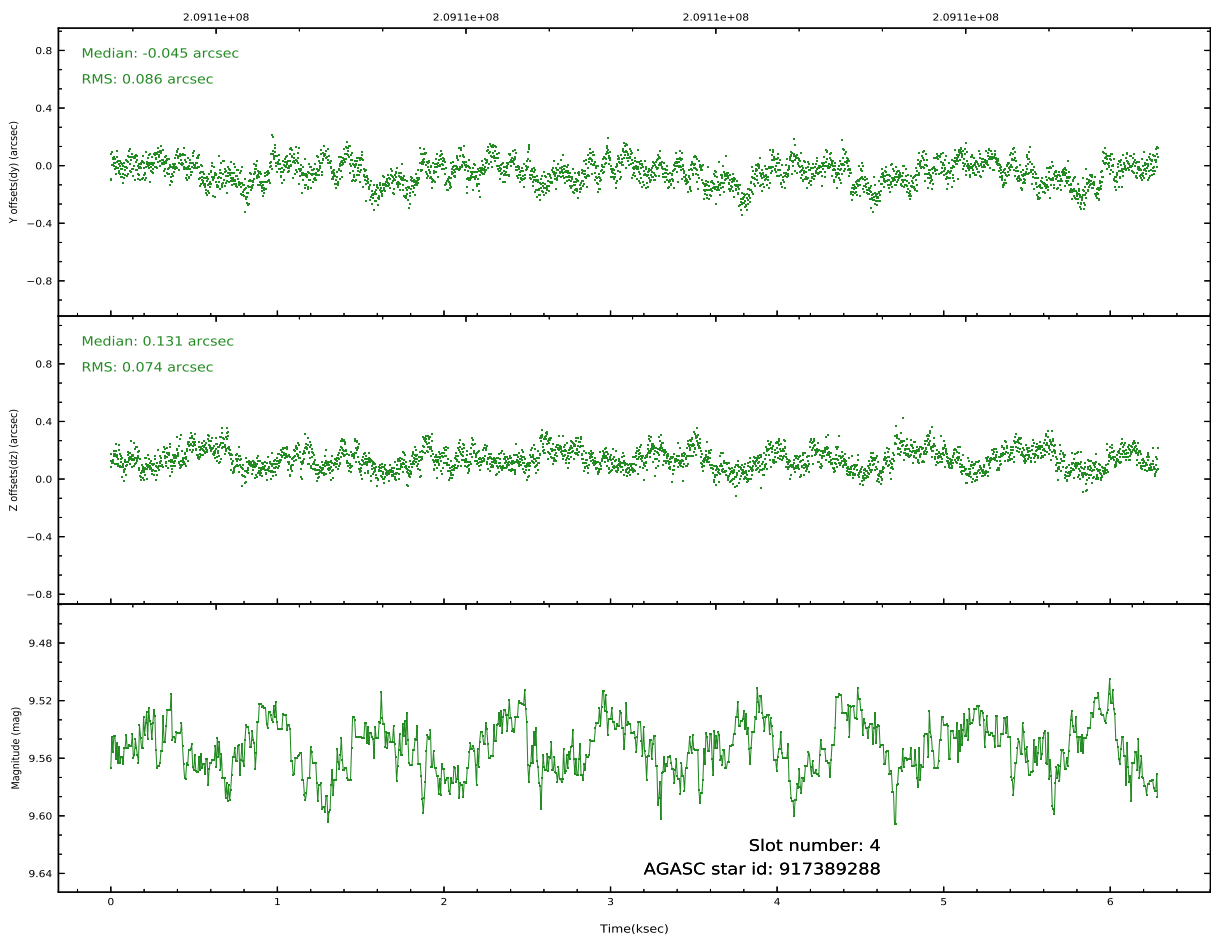
Time (s)



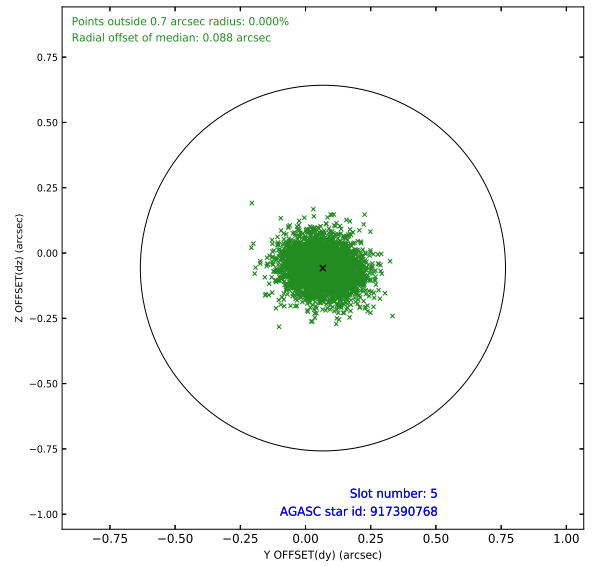
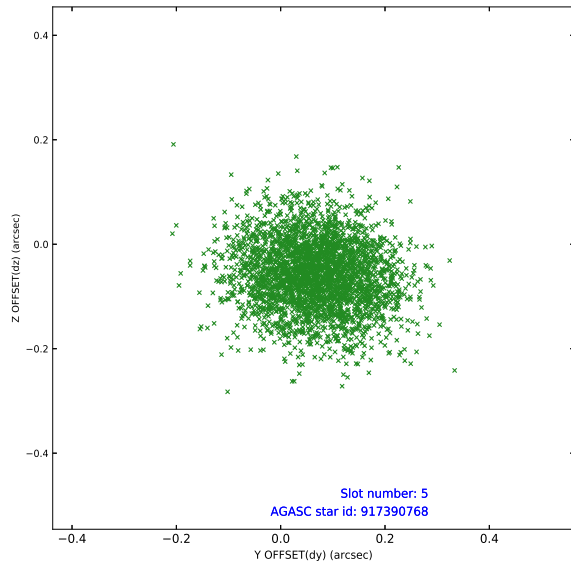
## 2.4.2 Slot 4



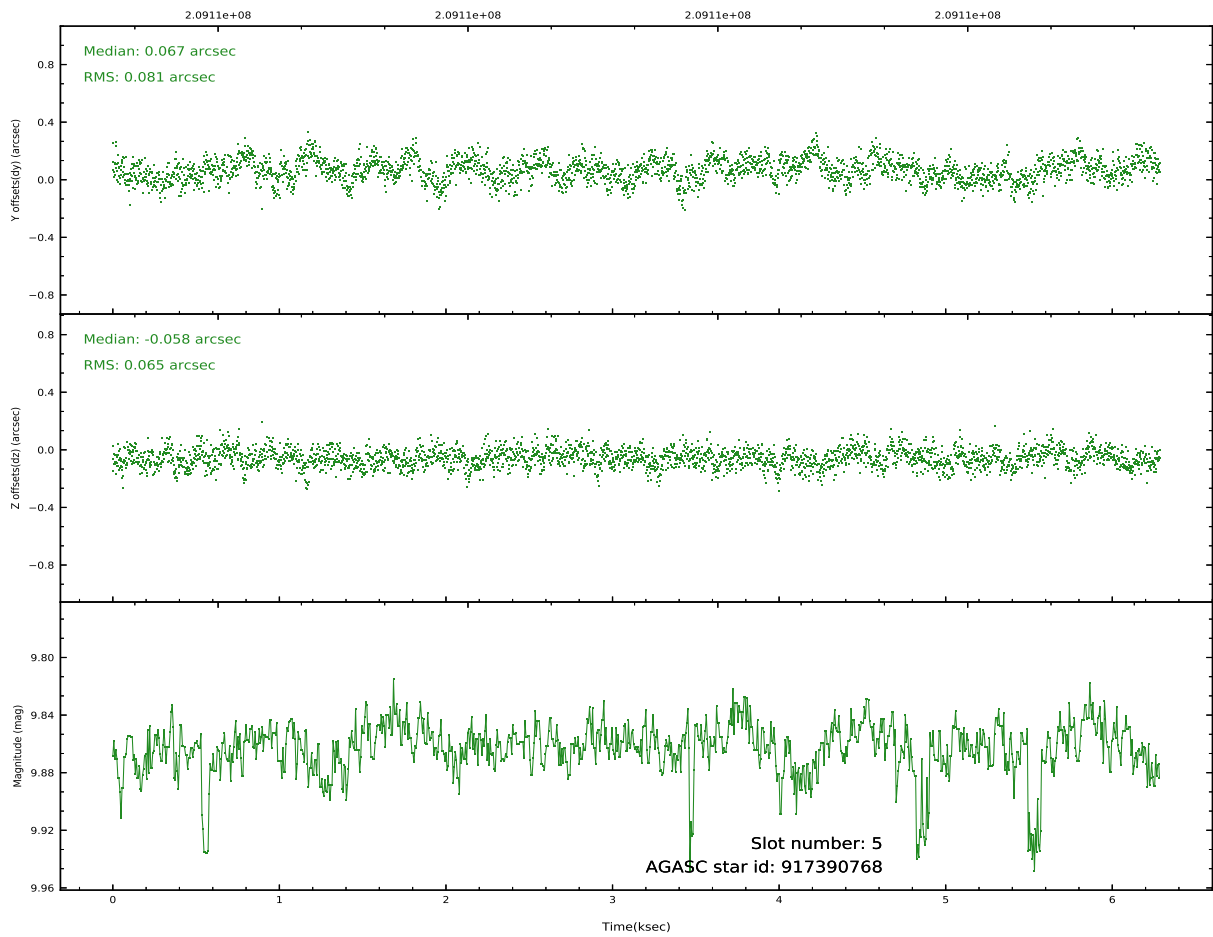
Time (s)



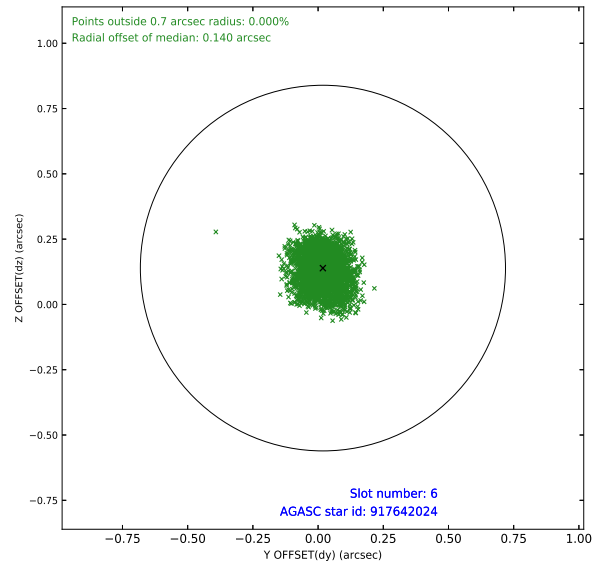
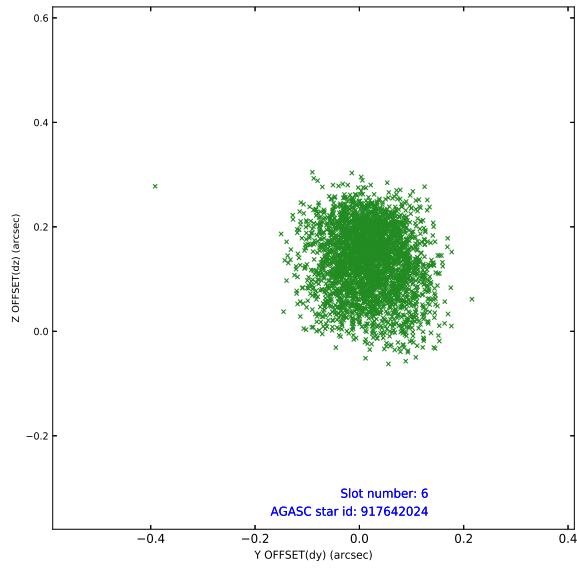
### 2.4.3 Slot 5



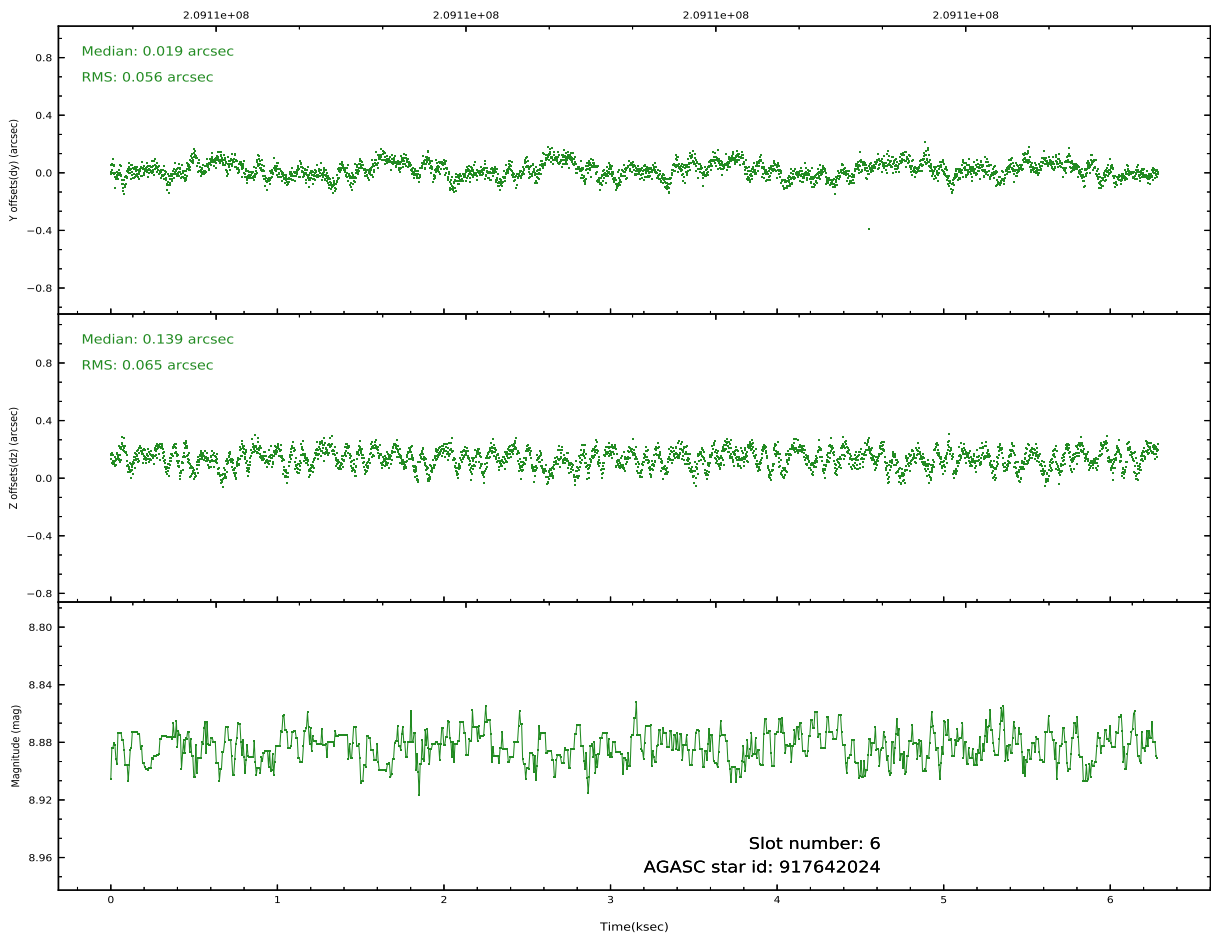
Time (s)



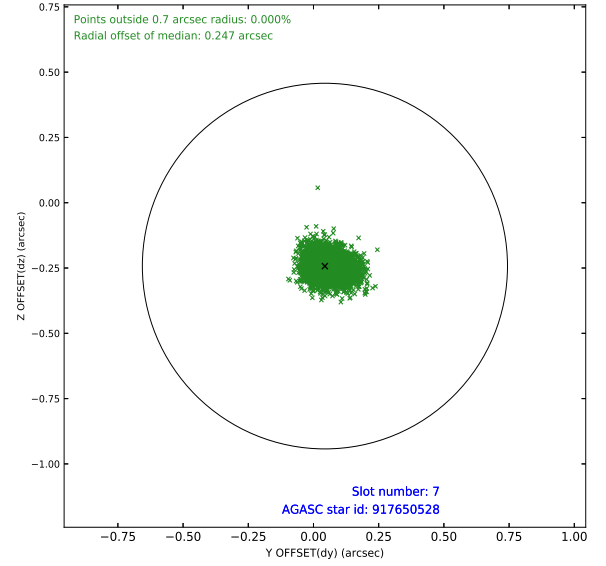
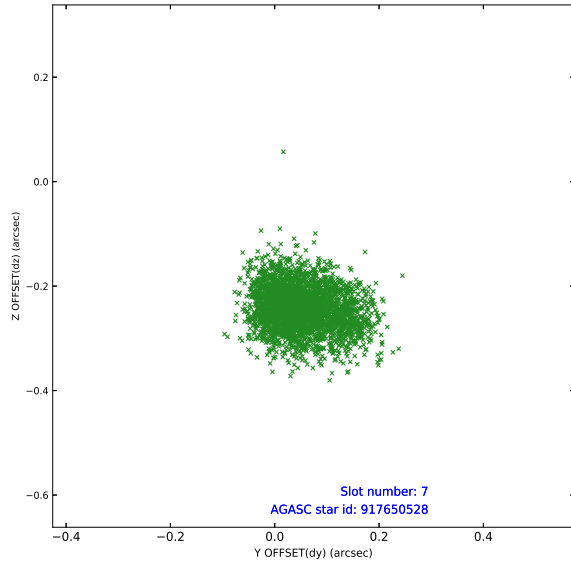
## 2.4.4 Slot 6



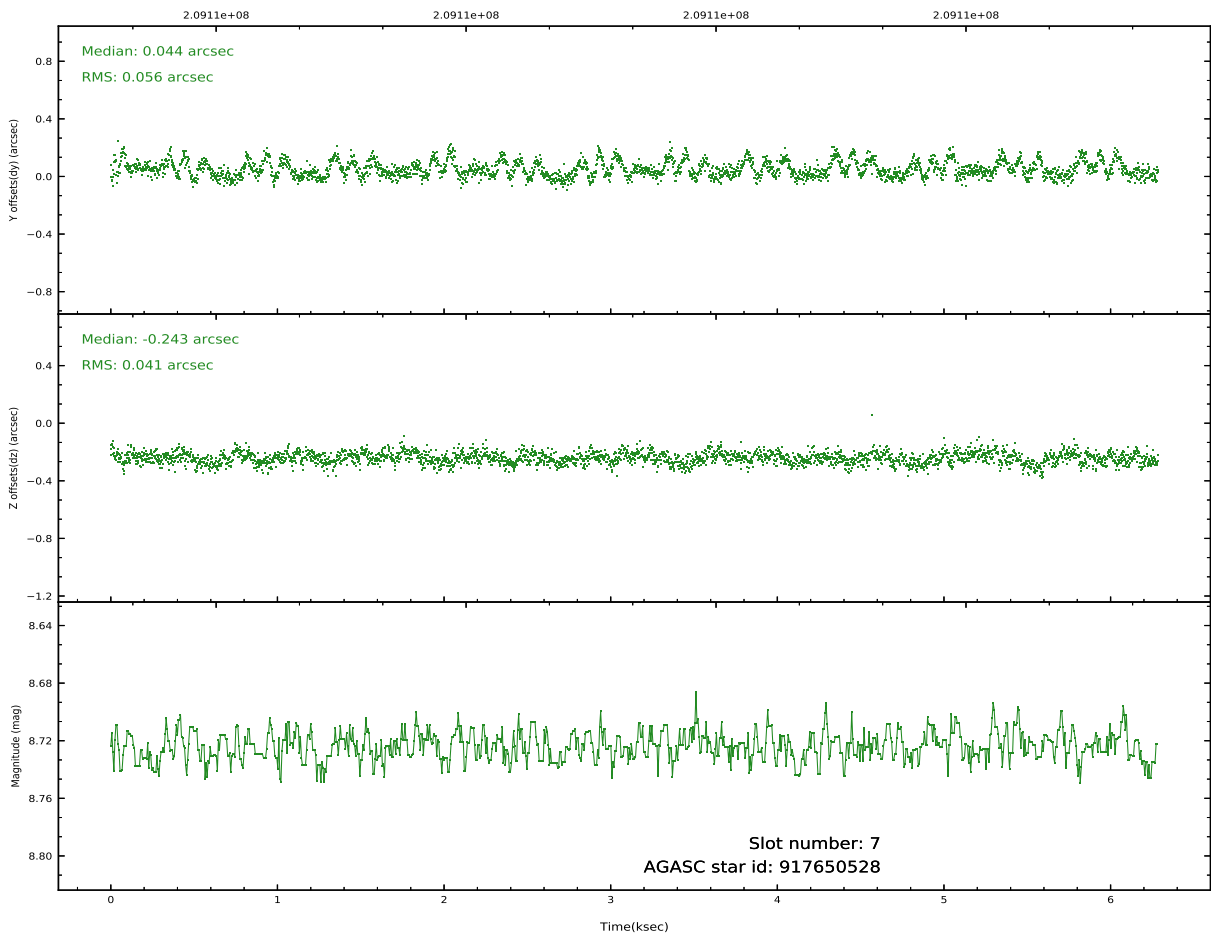
Time (s)



## 2.4.5 Slot 7

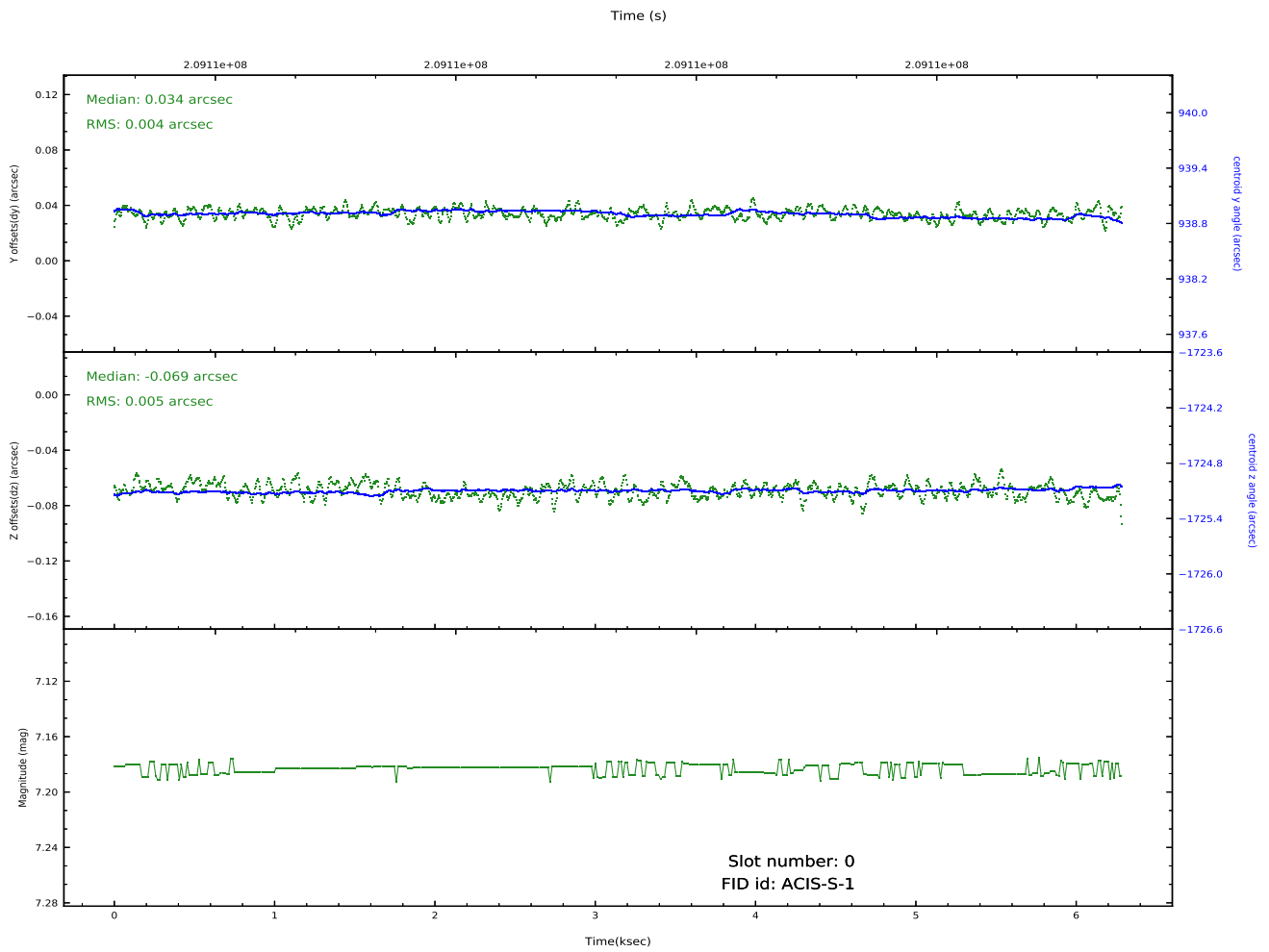
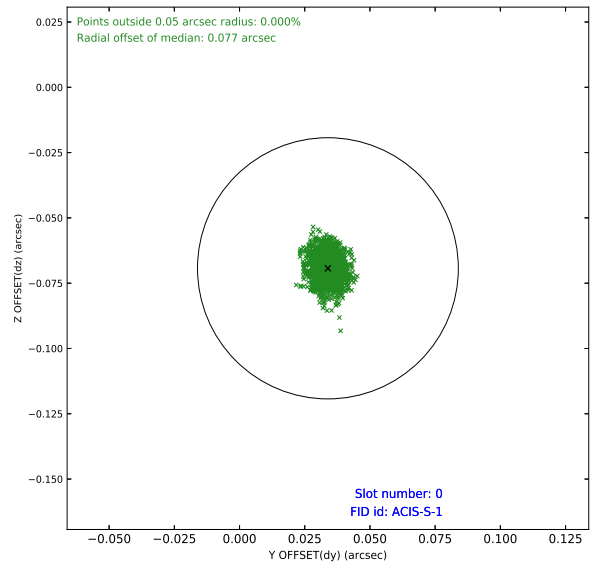
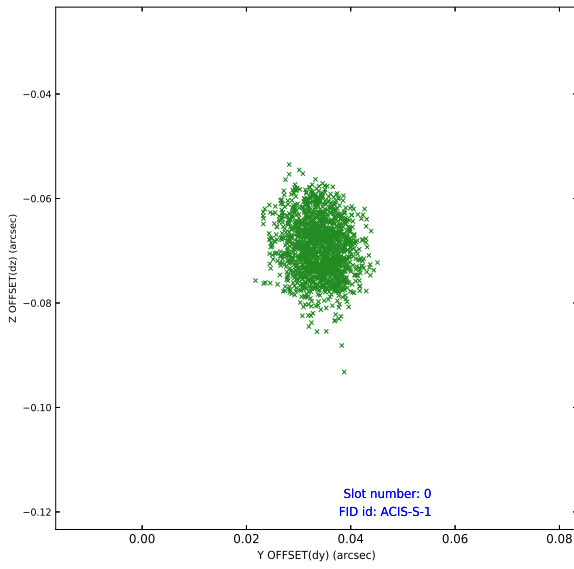


Time (s)

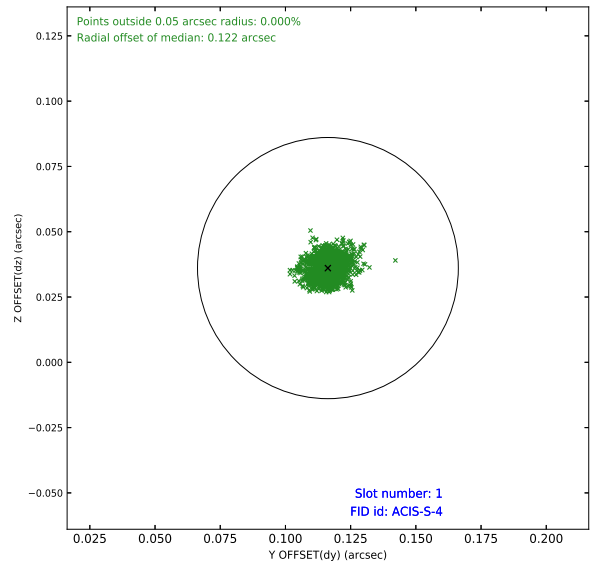
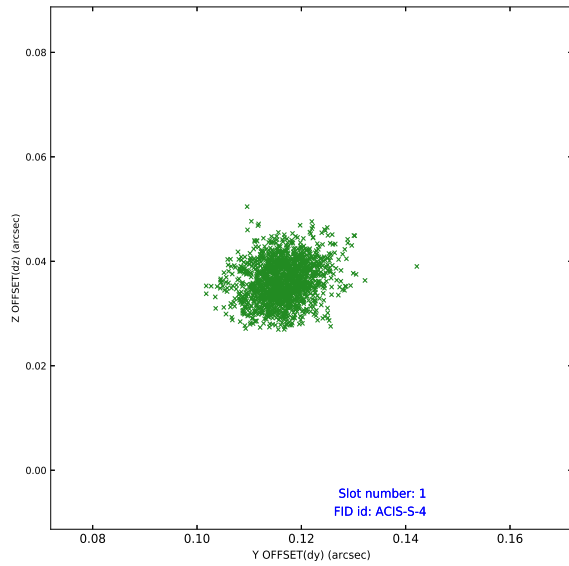


## 2.5 FID Slots

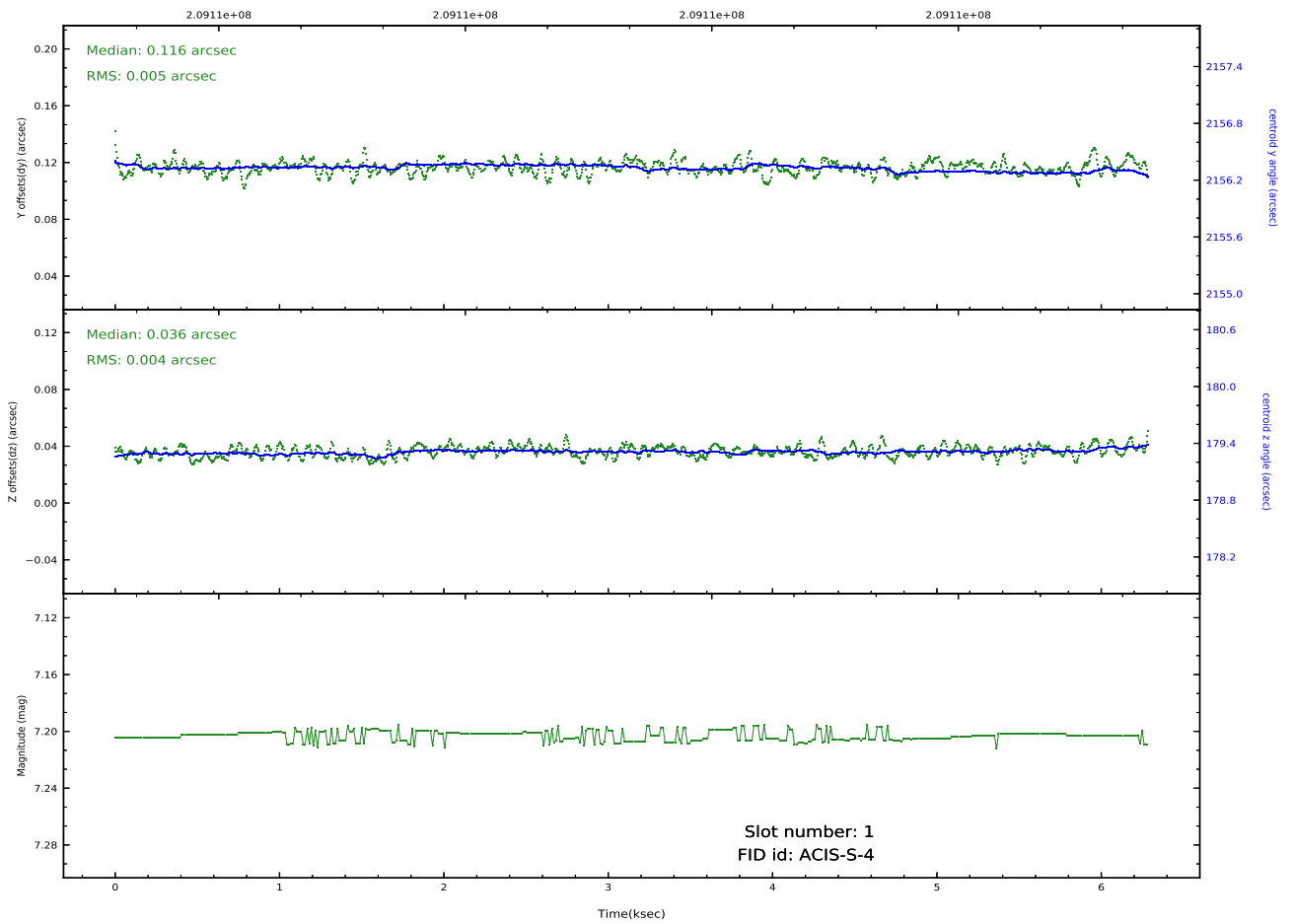
### 2.5.1 Slot 0



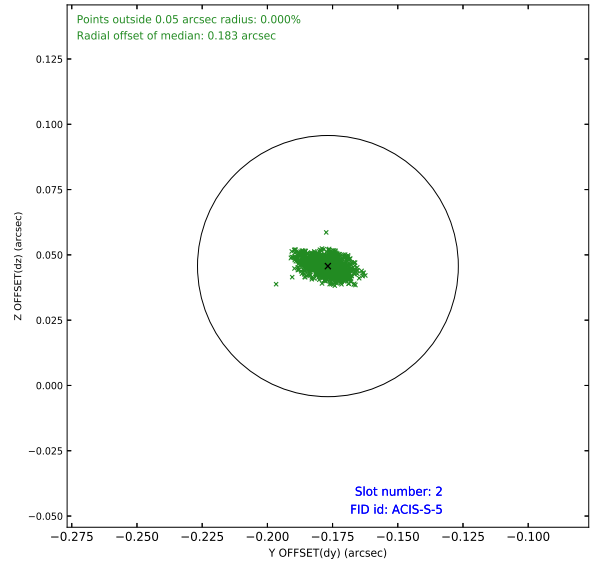
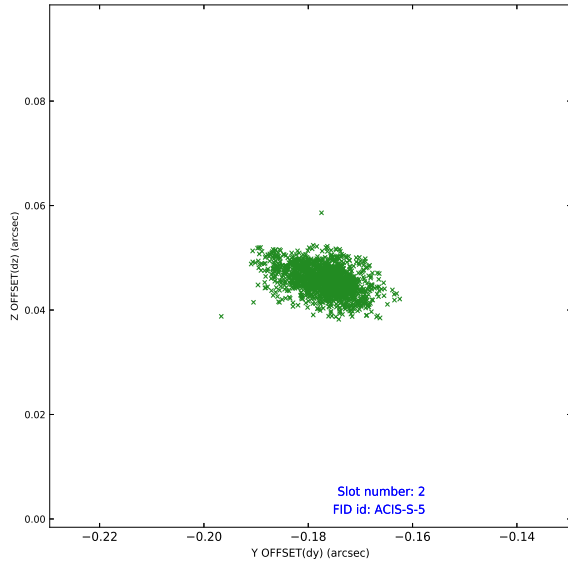
## 2.5.2 Slot 1



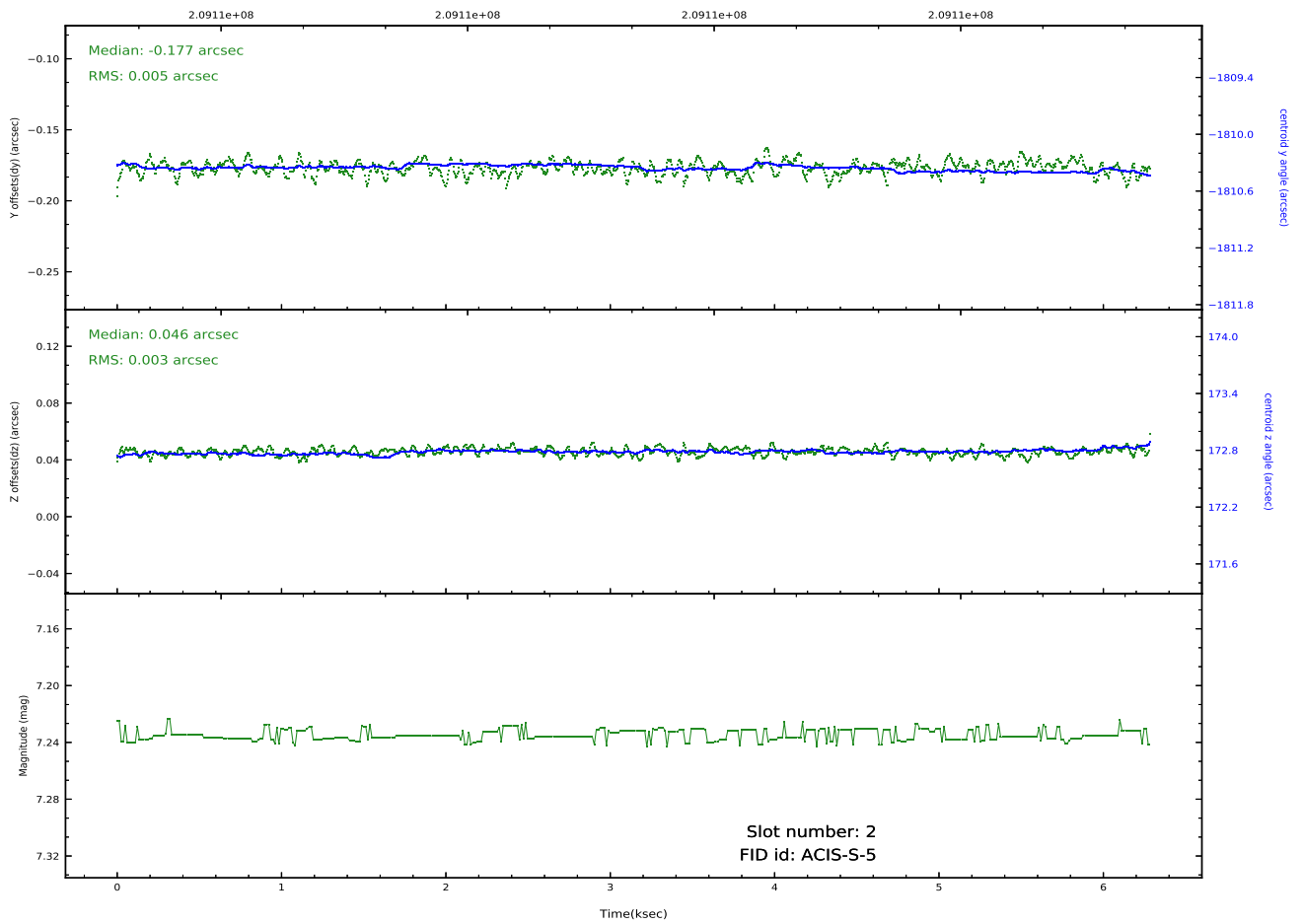
Time (s)



### 2.5.3 Slot 2



Time (s)



# A Summary

## A.1 Status

|                            |            |
|----------------------------|------------|
| V&V Scientist              | Jen Lauer  |
| V&V Date (YYYY-MM-DD)      | 2020.09.29 |
| V&V Edition                | 1          |
| V&V Disposition and Status | OK         |
| V&V Charge Time            | 5.958      |

## A.2 Comments

Monitor constraint met. Joint Proposal: NOAO