Integrated Slew

Since this notebook is so close to the one required to run LVV-T2216, I will re-run it using the slew command. This will tell us if we can slew and track while have the mirrors LUTs using the mount telemetry and what are the limitations.

This notebook is used to execute the LVV-T2215 (2.0) test script during System Spread Integration Tests on Level 3.
It is part of the plan LVV-P81 and of the test cylce LVV-C175.
Execution steps are separated by horizontal lines.
Upon completion, save the notebook and its output as a pdf file to be attached to the test execution in JIRA.

History:

- LVV-T2215 (1.0) has a notebook which doesn't do the slew sequence described on the test script. For this reason the version 2.0 was created.
- LVV-T2215 (2.0) is similar to LVV-T2290 (2.0) test case, but without taking a ComCam image.

Execution steps are separated by horizontal lines. Upon completion, save the notebook and its output as a pdf file to be attached to the test execution in JIRA.

Last executed by J. Esteves 20220408

Under Construction:

Things to do:

1. Add log info
2. Test on Tucson

In [ ]:
```
from lsst.ts import utils

# Extract your name from the Jupyter Hub
__executed_by__ = os.environ["JUPYTERHUB_USER"]

# Extract execution date
__executed_on__ = utils.astropy_time_from_tai_unix(utils.current_tai())
__executed_on__.format = "isot"

# This is used later to define where Butler stores the images
summit = os.environ["LSST_DDS_PARTITION_PREFIX"] == "summit"
```

```
print(f"\nExecuted by {__executed_by__} on {__executed_on__}."
      f"\n  At the summit? {summit}")
```

Load all the needed libraries

Using the setup procedure, get the remotes and the components ready.

This includes simulators as well as real hardware when available (this will depend on when the test is conducted at NCSA or on level 3 or on the telescope):

- pointing
- mount (with the CCW)
- rotator
- ready M1M3: raise mirror, turn on FB, clear forces. Note that if used at level 3, we need to have M1M3 LUT use mount telemetry
- ready M2: turn on FB, clear forces. Note that if used at level 3, we need to have M2 LUT use mount telemetry
- Get cam hex Ready: check config; make sure LUT is on and has valid inputs; make sure hex is at LUT position
- Get M2 hex (simulator) Ready: check config; make sure LUT is on and has valid inputs; make sure hex is at LUT position
- Finally, get the MTAOS CSC ready

Run the setup.ipnyb notebook to bring all components up and in their enabled position. Check Chronograph.

Check Chronograph.

In [1]:
```
%load_ext autoreload
%autoreload 2
```

In [2]:
```
import rubin_jupyter_utils.lab.notebook as nb
nb.utils.get_node()
```

```
/tmp/ipykernel_65122/1665379685.py:2: DeprecationWarning: Call to deprecated f
unction (or staticmethod) get_node. (Please use lsst.rsp.get_node())
  nb.utils.get_node()
```

Out[2]:
```
'yagan07'
```

In [3]:
```
import os
import sys
import asyncio
import logging
import time
```

```
import pandas as pd
import numpy as np

from matplotlib import pyplot as plt
from astropy.time import Time
from datetime import datetime, timedelta
import pandas as pd

from lsst.ts import salobj
from lsst.ts.observatory.control.maintel import MTCS, ComCam
from lsst.ts.observatory.control import RotType
```

```
lsst.ts.utils.tai INFO: Update leap second table
lsst.ts.utils.tai INFO: current_tai uses the system TAI clock
```

In [4]:
```
logging.basicConfig(format="%(name)s:%(message)s", level=logging.DEBUG)
```

In [5]:
```
log = logging.getLogger("setup")
log.level = logging.DEBUG
```

In [6]:
```
domain = salobj.Domain()
```

In [7]:
```
mtcs = MTCS(domain=domain, log=log)
mtcs.set_rem_loglevel(10)
```

```
setup.MTCS DEBUG: mtmount: Adding all resources.
setup.MTCS DEBUG: mtptg: Adding all resources.
setup.MTCS DEBUG: mtaos: Adding all resources.
setup.MTCS DEBUG: mtm1m3: Adding all resources.
setup.MTCS DEBUG: mtm2: Adding all resources.
setup.MTCS DEBUG: mthexapod_1: Adding all resources.
setup.MTCS DEBUG: mthexapod_2: Adding all resources.
setup.MTCS DEBUG: mtrotator: Adding all resources.
setup.MTCS DEBUG: mtdome: Adding all resources.
setup.MTCS DEBUG: mtdometrajectory: Adding all resources.
```

In [8]:
```
await mtcs.start_task
```

```
MTAOS INFO: Read historical data in 0.03 sec
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, authList)
MTAOS DEBUG: Read 66 history items for RemoteEvent(MTAOS, 0, cameraHexapodC
orrection)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, configurationAp
plied)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, configurationsA
vailable)
MTAOS DEBUG: Read 70 history items for RemoteEvent(MTAOS, 0, degreeOfFreedo
m)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, errorCode)
MTAOS DEBUG: Read 100 history items for RemoteEvent(MTAOS, 0, heartbeat)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, logLevel)
MTAOS DEBUG: Read 100 history items for RemoteEvent(MTAOS, 0, logMessage)
```

```
MTAOS DEBUG: Read 66 history items for RemoteEvent(MTAOS, 0, m1m3Correctio
n)
MTAOS DEBUG: Read 66 history items for RemoteEvent(MTAOS, 0, m2Correction)
MTAOS DEBUG: Read 66 history items for RemoteEvent(MTAOS, 0, m2HexapodCorre
ction)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, ofcDuration)
MTAOS DEBUG: Read 6 history items for RemoteEvent(MTAOS, 0, rejectedDegreeO
fFreedom)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, rejectedM1M3Cor
rection)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, rejectedM2Corre
ction)
MTAOS DEBUG: Read 2 history items for RemoteEvent(MTAOS, 0, rejectedM2Hexap
odCorrection)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, simulationMode)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, softwareVersion
s)
MTAOS DEBUG: Read 15 history items for RemoteEvent(MTAOS, 0, summaryState)
MTAOS DEBUG: Read 90 history items for RemoteEvent(MTAOS, 0, wavefrontErro
r)
MTAOS DEBUG: Read 1 history items for RemoteEvent(MTAOS, 0, wepDuration)
MTPtg INFO: Read historical data in 0.08 sec
MTPtg DEBUG: Read 3 history items for RemoteEvent(MTPtg, 0, airmassWarning)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, azWrapWarning)
MTPtg DEBUG: Read 6 history items for RemoteEvent(MTPtg, 0, currentDebugLev
el)
MTPtg DEBUG: Read 67 history items for RemoteEvent(MTPtg, 0, currentTarget)
MTPtg DEBUG: Read 100 history items for RemoteEvent(MTPtg, 0, detailedStat
e)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, elLimitWarning)
MTPtg DEBUG: Read 5 history items for RemoteEvent(MTPtg, 0, errorCode)
MTPtg DEBUG: Read 5 history items for RemoteEvent(MTPtg, 0, focusNameSelect
ed)
MTPtg DEBUG: Read 100 history items for RemoteEvent(MTPtg, 0, heartbeat)
MTPtg DEBUG: Read 5 history items for RemoteEvent(MTPtg, 0, iers)
MTPtg DEBUG: Read 2 history items for RemoteEvent(MTPtg, 0, iersOutOfDate)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, moonProximityWa
rning)
MTPtg DEBUG: Read 34 history items for RemoteEvent(MTPtg, 0, mountDataWarni
ng)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, objectSetWarnin
g)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, offsetSummary)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, pointingFile)
MTPtg DEBUG: Read 5 history items for RemoteEvent(MTPtg, 0, pointingModel)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, ptgAzCurrentWra
p)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, ptgRotCurrentWr
ap)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, rotWrapWarning)
```

```
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, softwareVersion
s)
MTPtg DEBUG: Read 19 history items for RemoteEvent(MTPtg, 0, summaryState)
MTPtg DEBUG: Read 1 history items for RemoteEvent(MTPtg, 0, sunProximityWar
ning)
MTPtg DEBUG: Read 72 history items for RemoteEvent(MTPtg, 0, timesOfLimits)
MTPtg DEBUG: Read 100 history items for RemoteEvent(MTPtg, 0, trackPosting)
MTPtg DEBUG: Read 5 history items for RemoteEvent(MTPtg, 0, wavelength)
MTPtg DEBUG: Read 100 history items for RemoteEvent(MTPtg, 0, weatherDataAp
plied)
MTPtg DEBUG: Read 2 history items for RemoteEvent(MTPtg, 0, weatherDataInva
lid)
MTHexapod INFO: Read historical data in 0.12 sec
MTHexapod INFO: Read historical data in 0.13 sec
MTMount INFO: Read historical data in 0.14 sec
MTMount DEBUG: Read 1 history items for RemoteEvent(MTMount, 0, authList)
MTMount DEBUG: Read 100 history items for RemoteEvent(MTMount, 0, azimuthIn
Position)
MTMount DEBUG: Read 4 history items for RemoteEvent(MTMount, 0, cameraCable
WrapFollowing)
MTMount DEBUG: Read 100 history items for RemoteEvent(MTMount, 0, cameraCab
leWrapTarget)
MTMount DEBUG: Read 1 history items for RemoteEvent(MTMount, 0, configurati
onApplied)
MTMount DEBUG: Read 1 history items for RemoteEvent(MTMount, 0, configurati
onsAvailable)
MTMount DEBUG: Read 100 history items for RemoteEvent(MTMount, 0, elevation
InPosition)
MTMount DEBUG: Read 1 history items for RemoteEvent(MTMount, 0, errorCode)
MTMount DEBUG: Read 100 history items for RemoteEvent(MTMount, 0, heartbea
t)
MTMount DEBUG: Read 1 history items for RemoteEvent(MTMount, 0, logLevel)
MTMount DEBUG: Read 28 history items for RemoteEvent(MTMount, 0, logMessag
e)
MTMount DEBUG: Read 1 history items for RemoteEvent(MTMount, 0, simulationM
ode)
MTMount DEBUG: Read 1 history items for RemoteEvent(MTMount, 0, softwareVer
sions)
MTMount DEBUG: Read 7 history items for RemoteEvent(MTMount, 0, summarySta
e)
MTMount DEBUG: Read 100 history items for RemoteEvent(MTMount, 0, target)
MTM2 INFO: Read historical data in 0.16 sec
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, authList)
MTM2 DEBUG: Read 5 history items for RemoteEvent(MTM2, 0, commandableByDDS)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, configurationAppl
ied)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, configurationsAva
ilable)
MTM2 DEBUG: Read 13 history items for RemoteEvent(MTM2, 0, controllerState)
MTM2 DEBUG: Read 5 history items for RemoteEvent(MTM2, 0, detailedState)
MTM2 DEBUG: Read 3 history items for RemoteEvent(MTM2, 0, errorCode)
```

```
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, forceBalanceSyste
mStatus)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, hardpointList)
MTM2 DEBUG: Read 100 history items for RemoteEvent(MTM2, 0, heartbeat)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, inclinationTeleme
trySource)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, interlock)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, logLevel)
MTM2 DEBUG: Read 31 history items for RemoteEvent(MTM2, 0, logMessage)
MTM2 DEBUG: Read 100 history items for RemoteEvent(MTM2, 0, m2AssemblyInPos
ition)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, simulationMode)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, softwareVersions)
MTM2 DEBUG: Read 9 history items for RemoteEvent(MTM2, 0, summaryState)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, tcpIpConnected)
MTM2 DEBUG: Read 1 history items for RemoteEvent(MTM2, 0, temperatureOffse
t)
MTDomeTrajectory INFO: Read historical data in 0.18 sec
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, algorithm)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, authList)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, configurationApplied)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, configurationsAvailable)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, errorCode)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, followingMode)
MTDomeTrajectory DEBUG: Read 100 history items for RemoteEvent(MTDomeTrajec
tory, 0, heartbeat)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, logLevel)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, logMessage)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, simulationMode)
MTDomeTrajectory DEBUG: Read 1 history items for RemoteEvent(MTDomeTrajecto
ry, 0, softwareVersions)
MTDomeTrajectory DEBUG: Read 15 history items for RemoteEvent(MTDomeTraject
ory, 0, summaryState)
MTDome INFO: Read historical data in 0.19 sec
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, authList)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, azEnabled)
MTDome DEBUG: Read 100 history items for RemoteEvent(MTDome, 0, azMotion)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, brakesEngage
d)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, configuration
Applied)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, configuration
sAvailable)
```

```
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, elEnabled)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, elMotion)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, errorCode)
MTDome DEBUG: Read 100 history items for RemoteEvent(MTDome, 0, heartbeat)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, interlocks)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, lockingPinsEn
gaged)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, logLevel)
MTDome DEBUG: Read 45 history items for RemoteEvent(MTDome, 0, logMessage)
MTDome DEBUG: Read 6 history items for RemoteEvent(MTDome, 0, operationalMo
de)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, simulationMod
e)
MTDome DEBUG: Read 1 history items for RemoteEvent(MTDome, 0, softwareVersi
ons)
MTDome DEBUG: Read 15 history items for RemoteEvent(MTDome, 0, summaryStat
e)
MTRotator INFO: Read historical data in 0.21 sec
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, authLis
t)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, command
ableByDDS)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, configu
ration)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, configu
rationApplied)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, configu
rationsAvailable)
MTRotator DEBUG: Read 9 history items for RemoteEvent(MTRotator, 0, connect
ed)
MTRotator DEBUG: Read 100 history items for RemoteEvent(MTRotator, 0, contr
ollerState)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, errorCo
de)
MTRotator DEBUG: Read 100 history items for RemoteEvent(MTRotator, 0, heart
beat)
MTRotator DEBUG: Read 100 history items for RemoteEvent(MTRotator, 0, inPos
ition)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, interlo
ck)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, logLeve
l)
MTRotator DEBUG: Read 14 history items for RemoteEvent(MTRotator, 0, logMes
sage)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, simulat
ionMode)
MTRotator DEBUG: Read 1 history items for RemoteEvent(MTRotator, 0, softwar
eVersions)
MTRotator DEBUG: Read 21 history items for RemoteEvent(MTRotator, 0, summar
yState)
MTRotator DEBUG: Read 100 history items for RemoteEvent(MTRotator, 0, targe
t)
```

```
MTRotator DEBUG: Read 100 history items for RemoteEvent(MTRotator, 0, track
ing)
MTM1M3 INFO: Read historical data in 0.24 sec
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, accelerometer
Settings)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, airSupplyStat
us)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedAber
rationForces)
MTM1M3 DEBUG: Read 4 history items for RemoteEvent(MTM1M3, 0, appliedAccele
rationForces)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedActi
veOpticForces)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedAzim
uthForces)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedBala
nceForces)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedCyli
nderForces)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedElev
ationForces)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedForc
es)
MTM1M3 DEBUG: Read 4 history items for RemoteEvent(MTM1M3, 0, appliedOffset
Forces)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedStat
icForces)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, appliedTher
malForces)
MTM1M3 DEBUG: Read 4 history items for RemoteEvent(MTM1M3, 0, appliedVeloci
tyForces)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, cellLightStat
us)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, cellLightWarn
ing)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, configuration
Applied)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, configuration
sAvailable)
MTM1M3 DEBUG: Read 12 history items for RemoteEvent(MTM1M3, 0, detailedStat
e)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, displacementS
ensorSettings)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, enabledForceA
ctuators)
MTM1M3 DEBUG: Read 4 history items for RemoteEvent(MTM1M3, 0, errorCode)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, forceActuator
BumpTestStatus)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, forceActuat
orForceWarning)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, forceActuator
Info)
```

```
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, forceActuator
Settings)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, forceActuat
orState)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, forceActuat
orWarning)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, forceSetpoint
Warning)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, gyroSettings)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, hardpointActu
atorInfo)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, hardpointActu
atorSettings)
MTM1M3 DEBUG: Read 31 history items for RemoteEvent(MTM1M3, 0, hardpointAct
uatorState)
MTM1M3 DEBUG: Read 7 history items for RemoteEvent(MTM1M3, 0, hardpointActu
atorWarning)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, hardpointMoni
torInfo)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, heartbeat)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, ilcWarning)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, inclinometerS
ettings)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, interlockSt
atus)
MTM1M3 DEBUG: Read 30 history items for RemoteEvent(MTM1M3, 0, interlockWar
ning)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, logLevel)
MTM1M3 DEBUG: Read 100 history items for RemoteEvent(MTM1M3, 0, logMessage)
MTM1M3 DEBUG: Read 24 history items for RemoteEvent(MTM1M3, 0, pidInfo)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, pidSettings)
MTM1M3 DEBUG: Read 2 history items for RemoteEvent(MTM1M3, 0, positionContr
ollerSettings)
MTM1M3 DEBUG: Read 12 history items for RemoteEvent(MTM1M3, 0, powerStatus)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, powerSupplySt
atus)
MTM1M3 DEBUG: Read 1 history items for RemoteEvent(MTM1M3, 0, softwareVersi
ons)
MTM1M3 DEBUG: Read 12 history items for RemoteEvent(MTM1M3, 0, summaryStat
e)
```

Out[8]:
```
[None, None, None, None, None, None, None, None, None, None]
```

```
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 24
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 12
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 35 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 22 of 1
00 elements
```

In [11]:
```
async def moveMountInElevationSteps(target_el, azimuth=0, step_size=0.25, time_
    """Move the mount from the current elevation angle to the target elevation
```

```
    in steps to avoid any issues whe M1M3 and/or M2 are running with the LUT us
    Mount instead of the inclinometer.

    This function will actually calculate the number of steps using the ceiling
    in order to make sure that we move carefully.

    Parameters
    ----------
    target_el : float
        Target elevation angle in degrees
    azimuth : float
        Azimuth angle in degres (default)
    step_size : float
        Step elevation size in degrees (default: 0.25)
    time_sleep : float
        Sleep time between movements (default: 1)

    Returns
    -------
    azimuth : float
        Current azimuth
    elevation : float
        Current elevation
    """
    current_el = mtcs.rem.mtmount.tel_elevation.get().actualPosition

    if np.abs(current_el - target_el) < step_size:
        print("Too close to move")
        return azimuth, current_el

    n_steps = int(np.ceil(np.abs(current_el - target_el) / step_size))

    for el in np.linspace(current_el, target_el, n_steps):
        print(f"Moving elevation to {el:.2f} deg")
        await mtcs.rem.mtmount.cmd_moveToTarget.set_start(azimuth=azimuth, elev
        time.sleep(time_sleep)

    return azimuth, el
```

Slew Sequence

Exercise the telescope on elevation between 86.5° and 82.5° with 4 slews. **No tracking is needed**

target_1 -> az = 180.0^o, el = 86.5^o
target_2 -> az = 180.0^o, el = 85.0^o
target_3 -> az = 180.0^o, el = 83.5^o
target_4 -> az = 180.0^o, el = 82.0^o

In [ ]:
```
caution = False

if not caution:
    print("Slew 1: el=86.5")
    await mtcs.point_azel(az=180.0, el=86.5)
```

```
    print("Slew 2: el=85.0")
    await mtcs.point_azel(az=180.0, el=85.0)

    print("Slew 3: el=83.5")
    await mtcs.point_azel(az=180.0, el=83.5)

    print("Slew 4: el=82.0")
    await mtcs.point_azel(az=180.0, el=82.0)

# await mtcs.stop_tracking()
```

In [16]:
```
await moveMountInElevationSteps(90., azimuth=190)
```

```
Moving elevation to 85.40 deg
Moving elevation to 85.66 deg
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
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MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 10 of 100 elements
Moving elevation to 85.91 deg
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
Moving elevation to 86.17 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
```

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MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 42 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
Moving elevation to 86.42 deg
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 20 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 51 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
```

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MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 10 of
100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 10 of 100 elements
Moving elevation to 86.68 deg
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
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MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 19 of 100 e
lements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 51 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 51 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
Moving elevation to 86.93 deg
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
```

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MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
Moving elevation to 87.19 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 10 of
100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 42 of 100 el
ements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
```

```
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 51 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 14 of 100 elements
Moving elevation to 87.44 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 20 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 14 of 100 elements
Moving elevation to 87.70 deg
```

```
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 20 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 50 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 42 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 51 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
Moving elevation to 87.96 deg
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
```

```
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
Moving elevation to 88.21 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 51 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 50 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
```

```
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
Moving elevation to 88.47 deg
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 20 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 19 of 100 e
lements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 10 of
100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
```

```
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 16 of 100 elements
Moving elevation to 88.72 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
8 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 42 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
```

```
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 28 of 100 elements
Moving elevation to 88.98 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 42 of 100 el
ements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 51 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 24 of 100 elements
Moving elevation to 89.23 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
```

```
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
Moving elevation to 89.49 deg
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
```

```
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 51 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
Moving elevation to 89.74 deg
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 51 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
```

```
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 19 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is filling: 51 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue is filling: 20 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 elements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queue is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read queue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is filling: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is filling: 53 of 100 elements
Moving elevation to 90.00 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 20 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filling: 51 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 20 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is filling: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 10 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling: 51 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 20 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is filling: 52 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue is filling: 20 of 100 elements
```

```
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
```

Out[16]: (190, 90.0)

```
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 50 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 51 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
```

```
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 22 of 100 elements
```

In [19]:
```
await mtcs.set_state(
    state=salobj.State.ENABLED,
    components=["mtm1m3"],
    overrides = {"mtm1m3": 'Default'}
    )
```

```
MTM1M3.logevent_ilcWarning WARNING: evt_ilcWarning DDS read queue is fillin
g: 13 of 100 elements
MTM1M3.logevent_ilcWarning WARNING: evt_ilcWarning DDS read queue is fillin
g: 56 of 100 elements
MTM1M3.logevent_logMessage WARNING: evt_logMessage DDS read queue is fillin
g: 10 of 100 elements
MTM1M3.logevent_forceActuatorForceWarning WARNING: evt_forceActuatorForceWa
rning DDS read queue is filling: 17 of 100 elements
MTM1M3.logevent_forceActuatorForceWarning ERROR: evt_forceActuatorForceWarn
ing DDS read queue is full (100 elements); data may be lost
setup.MTCS DEBUG: [mtm1m3]::[<State.FAULT: 3>, <State.STANDBY: 5>, <State.D
ISABLED: 1>, <State.ENABLED: 2>]
setup.MTCS INFO: All components in <State.ENABLED: 2>.
```

In [20]:
```
await mtcs.raise_m1m3()
```

```
setup.MTCS DEBUG: M1M3 current detailed state {<DetailedState.PARKEDENGINEE
RING: 9>, <DetailedState.PARKED: 5>}, executing command...
MTM1M3.logevent_logMessage WARNING: evt_logMessage DDS read queue is fillin
g: 15 of 100 elements
setup.MTCS DEBUG: process as completed...
setup.MTCS DEBUG: M1M3 detailed state 6
setup.MTCS DEBUG: mtm1m3: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm1m3: <State.ENABLED: 2>
setup.MTCS DEBUG: M1M3 detailed state 7
```

In [21]:
```
await mtcs.enable_m1m3_balance_system()
```

```
setup.MTCS DEBUG: Enabling hardpoint corrections.
```

In [22]:
```
await mtcs.reset_m1m3_forces()
```

In [23]:
```
await moveMountInElevationSteps(85.5, azimuth=190)
```

```
Moving elevation to 90.00 deg
Moving elevation to 89.74 deg
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 20 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
```

```
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 53 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 53 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 54 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 29 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 63 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 69 of 100 elements
```

```
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 70 of 100 elements
Moving elevation to 89.47 deg
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 11 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 44 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 33 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 62 of 100 elements
```

```
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 63 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 69 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 71 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 72 of 100 elements
Moving elevation to 89.21 deg
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 53 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 44 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
```

```
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 28 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 63 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 69 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 70 of 100 elements
Moving elevation to 88.94 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 51 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 50 of 100 el
ements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
```

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MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 20 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue is filling: 21 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is filling: 53 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 44 of 100 elements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queue is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read queue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is filling: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is filling: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS read queue is filling: 33 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS read queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces DDS read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DDS read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticForces DDS read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForces DDS read queue is filling: 69 of 100 elements
Moving elevation to 88.68 deg
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filling: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is filling: 10 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 50 of 100 elements
```

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MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 28 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 59 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 61 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 68 of 100 elements
Moving elevation to 88.41 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
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MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 10 of
100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 22 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 59 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 62 of 100 elements
```

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MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 68 of 100 elements
Moving elevation to 88.15 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
```

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MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 29 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 62 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 67 of 100 elements
Moving elevation to 87.88 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
1 of 100 elements
```

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MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 53 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 44 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 26 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 62 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 69 of 100 elements
Moving elevation to 87.62 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 51 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 50 of 100 el
ements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
```

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MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 53 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 44 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 52 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 30 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 62 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 69 of 100 elements
Moving elevation to 87.35 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
```

```
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
1 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 50 of 100 el
ements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 25 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 59 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 61 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 64 of 100 elements
```

```
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 68 of 100 elements
Moving elevation to 87.09 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
```

```
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 37 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 62 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 69 of 100 elements
Moving elevation to 86.82 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 21 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 21
 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
```

```
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 37 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 65 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 69 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 71 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 72 of 100 elements
Moving elevation to 86.56 deg
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 20 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
```

```
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 44 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 33 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 62 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 69 of 100 elements
Moving elevation to 86.29 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 51 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
```

```
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 50 of 100 el
ements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 10 of
100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 53 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 44 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 30 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 62 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 63 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 66 of 100 elements
```

```
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 67 of 100 elements
Moving elevation to 86.03 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 50 of 100 el
ements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
9 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 52 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 21 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 58 of 100 elements
```

```
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 58 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 59 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 65 of 100 elements
Moving elevation to 85.76 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of
100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
```

```
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queue is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read queue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is filling: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is filling: 54 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS read queue is filling: 32 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS read queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces DDS read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DDS read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS read queue is filling: 68 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticForces DDS read queue is filling: 69 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForces DDS read queue is filling: 70 of 100 elements
Moving elevation to 85.50 deg
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20 of 100 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filling: 50 of 100 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 18 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 10 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 20 of 100 elements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 19 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20 of 100 elements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 19 of 100 elements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is filling: 10 of 100 elements
```

```
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 20 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 43 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 52 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 37 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 64 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 69 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 70 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 71 of 100 elements
```

Out[23]: (190, 85.5)

```
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 50 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 10
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 19 of 1
00 elements
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 19 of 1
00 elements
```

```
MTHexapod.application WARNING: tel_application DDS read queue is filling: 2
0 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
0 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 20 of 100 e
lements
MTMount.cameraCableWrap WARNING: tel_cameraCableWrap DDS read queue is fill
ing: 10 of 100 elements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 51 of 100 el
ements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 2
0 of 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 20
 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 20 of 100 e
lements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 20 of
100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 52 of 100 elements
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 21 of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 52 of 100 elements
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 44 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 53 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 53 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 53 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 55 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 32 of 100 elements
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 63 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 65 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 66 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 67 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 69 of 100 elements
```

```
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 70 of 100 elements
```

Slew to target 1:

In [26]:
```
await mtcs.stop_tracking()
```

```
setup.MTCS DEBUG: Stop tracking.
```

In [27]:
```
target = mtcs.radec_from_azel(az=180., el=85.4)
await mtcs.slew_icrs(ra=target.ra, dec=target.dec, rot_type=RotType.Physical, r
```

```
WARNING: AstropyDeprecationWarning: Transforming a frame instance to a frame c
lass (as opposed to another frame instance) will not be supported in the futur
e.  Either explicitly instantiate the target frame, or first convert the sourc
e frame instance to a `astropy.coordinates.SkyCoord` and use its `transform_to
()` method. [astropy.coordinates.baseframe]
astroquery WARNING: AstropyDeprecationWarning: Transforming a frame instanc
e to a frame class (as opposed to another frame instance) will not be suppo
rted in the future.  Either explicitly instantiate the target frame, or fir
st convert the source frame instance to a `astropy.coordinates.SkyCoord` an
d use its `transform_to()` method.
setup.MTCS DEBUG: Setting rotator to physical fixed position 0.0 deg. Rotat
or will not track.
setup.MTCS DEBUG: Wait 5.0s for rotator to settle down.
setup.MTCS DEBUG: Workaround for rotator trajectory problem. Moving rotator
to its current position: 0.10
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
setup.MTCS INFO: MTRotator in position: False.
setup.MTCS INFO: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 5.0s
setup.MTCS DEBUG: Sending slew command.
setup.MTCS DEBUG: Scheduling check coroutines
setup.MTCS DEBUG: process as completed...
setup.MTCS DEBUG: Monitor position started.
setup.MTCS DEBUG: Waiting for Target event from mtmount.
setup.MTCS DEBUG: mtmount: <State.ENABLED: 2>
setup.MTCS DEBUG: mtptg: <State.ENABLED: 2>
setup.MTCS DEBUG: mtaos: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm1m3: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm2: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_1: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_2: <State.ENABLED: 2>
setup.MTCS DEBUG: mtrotator: <State.ENABLED: 2>
setup.MTCS DEBUG: mtdome: <State.ENABLED: 2>
setup.MTCS DEBUG: mtdometrajectory: <State.ENABLED: 2>
setup.MTCS DEBUG: Wait for mtmount in position events.
setup.MTCS DEBUG: Wait for dome in position event.
```

```
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
setup.MTCS DEBUG: Wait for MTMount elevation in position event.
setup.MTCS DEBUG: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation already in position. Handling potential
race condition.
setup.MTCS DEBUG: Wait for MTMount azimuth in position event.
setup.MTCS DEBUG: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth already in position. Handling potential r
ace condition.
setup.MTCS DEBUG: Mount target: private_revCode: bdcb00ba, private_sndStam
p: 1655783269.5630202, private_rcvStamp: 1655783269.5632925, private_seqNu
m: 46507, private_identity: MTMount, private_origin: 44621, elevation: 85.4
0068390544292, elevationVelocity: -4.34194543365824e-05, azimuth: 180.68829
327140654, azimuthVelocity: 0.042749584645432735, taiTime: 1655783269.62225
56, trackId: 4, tracksys: SIDEREAL, radesys: ICRS, priority: 0
setup.MTCS INFO: MTMount elevation in position: False.
setup.MTCS INFO: MTMount azimuth in position: False.
setup.MTCS INFO: MTRotator in position: False.
setup.MTCS INFO: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation in position True. Waiting settle time
 3.0s
setup.MTCS INFO: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 3.0s
setup.MTCS DEBUG: [Tel]: Az = +189.996[  -9.3]; El = +085.498[  -0.1] [Ro
t]: +000.099[  -0.0] [Dome] Az = +000.000; El = +000.000
setup.MTCS DEBUG: Dome azimuth in position.
setup.MTCS DEBUG: Dome elevation in position.
setup.MTCS INFO: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth in position True. Waiting settle time 3.0
s
```

Out[27]:
```
(<ICRS Coordinate: (ra, dec) in deg
    (254.93970278, -34.81058148)>,
 <Angle 0. deg>)
```

Slew to target_2:

In [28]:
```
target = mtcs.radec_from_azel(az=180., el=85.2)
await mtcs.slew_icrs(ra=target.ra, dec=target.dec, rot_type=RotType.Physical, r
```

```
setup.MTCS DEBUG: Setting rotator to physical fixed position 0.0 deg. Rotat
or will not track.
setup.MTCS DEBUG: Wait 5.0s for rotator to settle down.
setup.MTCS DEBUG: Workaround for rotator trajectory problem. Moving rotator
to its current position: -0.10
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
```

```
setup.MTCS INFO: MTRotator in position: False.
setup.MTCS INFO: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 5.0s
setup.MTCS DEBUG: Sending slew command.
setup.MTCS DEBUG: Scheduling check coroutines
setup.MTCS DEBUG: process as completed...
setup.MTCS DEBUG: Monitor position started.
setup.MTCS DEBUG: Waiting for Target event from mtmount.
setup.MTCS DEBUG: mtmount: <State.ENABLED: 2>
setup.MTCS DEBUG: mtptg: <State.ENABLED: 2>
setup.MTCS DEBUG: mtaos: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm1m3: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm2: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_1: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_2: <State.ENABLED: 2>
setup.MTCS DEBUG: mtrotator: <State.ENABLED: 2>
setup.MTCS DEBUG: mtdome: <State.ENABLED: 2>
setup.MTCS DEBUG: mtdometrajectory: <State.ENABLED: 2>
setup.MTCS DEBUG: Wait for mtmount in position events.
setup.MTCS DEBUG: Wait for dome in position event.
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
setup.MTCS DEBUG: Wait for MTMount elevation in position event.
setup.MTCS DEBUG: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation already in position. Handling potential
race condition.
setup.MTCS DEBUG: Wait for MTMount azimuth in position event.
setup.MTCS DEBUG: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth already in position. Handling potential r
ace condition.
setup.MTCS INFO: MTMount elevation in position: False.
setup.MTCS INFO: MTMount azimuth in position: False.
setup.MTCS DEBUG: Mount target: private_revCode: bdcb00ba, private_sndStam
p: 1655783298.849779, private_rcvStamp: 1655783298.8500066, private_seqNum:
47092, private_identity: MTMount, private_origin: 44621, elevation: 85.2009
3603667985, elevationVelocity: -2.6878010889153094e-05, azimuth: 180.425688
99251285, azimuthVelocity: 0.04087635660773606, taiTime: 1655783298.908900
3, trackId: 5, tracksys: SIDEREAL, radesys: ICRS, priority: 0
setup.MTCS INFO: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation in position True. Waiting settle time
 3.0s
setup.MTCS DEBUG: [Tel]: Az = +181.934[  -1.5]; El = +085.396[  -0.2] [Ro
t]: -000.100[  -0.0] [Dome] Az = +000.000; El = +000.000
setup.MTCS DEBUG: Dome azimuth in position.
setup.MTCS DEBUG: Dome elevation in position.
setup.MTCS INFO: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth in position True. Waiting settle time 3.0
s
```

```
setup.MTCS DEBUG: No new in position event in the last 3.0s. Assuming MTRot
ator in position.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 3.0s
```

Out[28]:
```
(<ICRS Coordinate: (ra, dec) in deg
     (255.08511934, -35.01088867)>,
 <Angle 0. deg>)
```

In [29]:
```
target = mtcs.radec_from_azel(az=180., el=84.9)
await mtcs.slew_icrs(ra=target.ra, dec=target.dec, rot_type=RotType.Physical, r
```

```
setup.MTCS DEBUG: Setting rotator to physical fixed position 0.0 deg. Rotat
or will not track.
setup.MTCS DEBUG: Wait 5.0s for rotator to settle down.
setup.MTCS DEBUG: Workaround for rotator trajectory problem. Moving rotator
to its current position: 0.00
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
setup.MTCS INFO: MTRotator in position: False.
setup.MTCS INFO: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 5.0s
setup.MTCS DEBUG: Sending slew command.
setup.MTCS DEBUG: Scheduling check coroutines
setup.MTCS DEBUG: process as completed...
setup.MTCS DEBUG: Monitor position started.
setup.MTCS DEBUG: Waiting for Target event from mtmount.
setup.MTCS DEBUG: mtmount: <State.ENABLED: 2>
setup.MTCS DEBUG: mtptg: <State.ENABLED: 2>
setup.MTCS DEBUG: mtaos: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm1m3: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm2: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_1: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_2: <State.ENABLED: 2>
setup.MTCS DEBUG: mtrotator: <State.ENABLED: 2>
setup.MTCS DEBUG: mtdome: <State.ENABLED: 2>
setup.MTCS DEBUG: mtdometrajectory: <State.ENABLED: 2>
setup.MTCS DEBUG: Wait for mtmount in position events.
setup.MTCS DEBUG: Wait for dome in position event.
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
setup.MTCS DEBUG: Wait for MTMount elevation in position event.
setup.MTCS DEBUG: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation already in position. Handling potential
race condition.
setup.MTCS DEBUG: Wait for MTMount azimuth in position event.
setup.MTCS DEBUG: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth already in position. Handling potential r
ace condition.
```

```
setup.MTCS DEBUG: Mount target: private_revCode: bdcb00ba, private_sndStam
p: 1655783346.9106123, private_rcvStamp: 1655783346.9108613, private_seqNu
m: 48052, private_identity: MTMount, private_origin: 44621, elevation: 84.9
0099052571415, elevationVelocity: -2.691428035035626e-05, azimuth: 180.4263
280886415, azimuthVelocity: 0.03833579494328047, taiTime: 1655783346.969687
5, trackId: 6, tracksys: SIDEREAL, radesys: ICRS, priority: 0
setup.MTCS INFO: MTMount elevation in position: False.
setup.MTCS INFO: MTMount azimuth in position: False.
setup.MTCS INFO: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation in position True. Waiting settle time
 3.0s
setup.MTCS DEBUG: [Tel]: Az = +182.388[  -2.0]; El = +085.196[  -0.3] [Ro
t]: +000.000[  -0.0] [Dome] Az = +000.000; El = +000.000
setup.MTCS DEBUG: Dome azimuth in position.
setup.MTCS DEBUG: Dome elevation in position.
setup.MTCS INFO: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth in position True. Waiting settle time 3.0
s
setup.MTCS DEBUG: No new in position event in the last 3.0s. Assuming MTRot
ator in position.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 3.0s
```

Out[29]:
```
(<ICRS Coordinate: (ra, dec) in deg
    (255.28192252, -35.31130445)>,
 <Angle 0. deg>)
```

Slew to target_3

In [30]:
```
await mtcs.point_azel(az=180.0, el=84.5)
```

```
setup.MTCS DEBUG: Stop tracking.
setup.MTCS DEBUG: Wait 5.0s for rotator to settle down.
setup.MTCS DEBUG: Workaround for rotator trajectory problem. Moving rotator
to its current position: -0.10
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
setup.MTCS INFO: MTRotator in position: False.
setup.MTCS INFO: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 5.0s
setup.MTCS DEBUG: Sending slew command.
setup.MTCS DEBUG: Scheduling check coroutines
setup.MTCS DEBUG: process as completed...
setup.MTCS DEBUG: Monitor position started.
setup.MTCS DEBUG: Waiting for Target event from mtmount.
setup.MTCS DEBUG: mtmount: <State.ENABLED: 2>
setup.MTCS DEBUG: mtptg: <State.ENABLED: 2>
setup.MTCS DEBUG: mtaos: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm1m3: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm2: <State.ENABLED: 2>
```

```
setup.MTCS DEBUG: mthexapod_1: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_2: <State.ENABLED: 2>
setup.MTCS DEBUG: mtrotator: <State.ENABLED: 2>
setup.MTCS DEBUG: Wait for mtmount in position events.
setup.MTCS DEBUG: Wait for dome in position event.
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
setup.MTCS DEBUG: Wait for MTMount elevation in position event.
setup.MTCS DEBUG: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation already in position. Handling potential
race condition.
setup.MTCS DEBUG: Wait for MTMount azimuth in position event.
setup.MTCS DEBUG: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth already in position. Handling potential r
ace condition.
setup.MTCS DEBUG: Mount target: private_revCode: bdcb00ba, private_sndStam
p: 1655783384.006785, private_rcvStamp: 1655783384.0070655, private_seqNum:
48479, private_identity: MTMount, private_origin: 44621, elevation: 84.5, e
levationVelocity: 0.0, azimuth: 180.0, azimuthVelocity: 0.0, taiTime: 16557
83384.0658584, trackId: 7, tracksys: LOCAL, radesys: , priority: 0
setup.MTCS INFO: MTMount elevation in position: False.
setup.MTCS INFO: MTMount azimuth in position: False.
setup.MTCS INFO: MTRotator in position: False.
setup.MTCS INFO: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 3.0s
setup.MTCS INFO: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation in position True. Waiting settle time
 3.0s
setup.MTCS INFO: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth in position True. Waiting settle time 3.0
s
setup.MTCS DEBUG: [Tel]: Az = +181.236[  -1.2]; El = +084.896[  -0.4] [Ro
t]: -000.100[  -0.0] [Dome] Az = +000.000; El = +000.000
setup.MTCS DEBUG: Dome azimuth in position.
setup.MTCS DEBUG: Dome elevation in position.
```

Slew to target 4

In [32]:
```
await mtcs.point_azel(az=180.0, el=84)
```

```
setup.MTCS DEBUG: Stop tracking.
setup.MTCS DEBUG: Wait 5.0s for rotator to settle down.
setup.MTCS DEBUG: Workaround for rotator trajectory problem. Moving rotator
to its current position: -0.10
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
```

```
setup.MTCS INFO: MTRotator in position: False.
setup.MTCS INFO: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 5.0s
setup.MTCS DEBUG: Sending slew command.
setup.MTCS DEBUG: Scheduling check coroutines
setup.MTCS DEBUG: process as completed...
setup.MTCS DEBUG: Monitor position started.
setup.MTCS DEBUG: Waiting for Target event from mtmount.
setup.MTCS DEBUG: mtmount: <State.ENABLED: 2>
setup.MTCS DEBUG: mtptg: <State.ENABLED: 2>
setup.MTCS DEBUG: mtaos: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm1m3: <State.ENABLED: 2>
setup.MTCS DEBUG: mtm2: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_1: <State.ENABLED: 2>
setup.MTCS DEBUG: mthexapod_2: <State.ENABLED: 2>
setup.MTCS DEBUG: mtrotator: <State.ENABLED: 2>
setup.MTCS DEBUG: Wait for mtmount in position events.
setup.MTCS DEBUG: Wait for dome in position event.
setup.MTCS DEBUG: Wait for MTRotator in position event.
setup.MTCS DEBUG: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator already in position. Handling potential race co
ndition.
setup.MTCS DEBUG: Wait for MTMount elevation in position event.
setup.MTCS DEBUG: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation already in position. Handling potential
race condition.
setup.MTCS DEBUG: Wait for MTMount azimuth in position event.
setup.MTCS DEBUG: MTMount azimuth in position: True.
setup.MTCS DEBUG: MTMount azimuth already in position. Handling potential r
ace condition.
setup.MTCS DEBUG: Mount target: private_revCode: bdcb00ba, private_sndStam
p: 1655783445.3841221, private_rcvStamp: 1655783445.3843699, private_seqNu
m: 49190, private_identity: MTMount, private_origin: 44621, elevation: 84.
0, elevationVelocity: 0.0, azimuth: 180.0, azimuthVelocity: 0.0, taiTime: 1
655783445.443424, trackId: 8, tracksys: LOCAL, radesys: , priority: 0
setup.MTCS INFO: MTMount elevation in position: False.
setup.MTCS INFO: MTRotator in position: False.
setup.MTCS INFO: MTRotator in position: True.
setup.MTCS DEBUG: MTRotator in position True. Waiting settle time 3.0s
setup.MTCS DEBUG: [Tel]: Az = +180.000[  +0.0]; El = +084.499[  -0.5] [Ro
t]: -000.100[  -0.0] [Dome] Az = +000.000; El = +000.000
setup.MTCS DEBUG: Dome azimuth in position.
setup.MTCS DEBUG: Dome elevation in position.
setup.MTCS INFO: MTMount elevation in position: True.
setup.MTCS DEBUG: MTMount elevation in position True. Waiting settle time
 3.0s
setup.MTCS DEBUG: No new in position event in the last 3.0s. Assuming MTMou
nt azimuth in position.
setup.MTCS DEBUG: MTMount azimuth in position True. Waiting settle time 3.0
s
```

```
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 11 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 12 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 12 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 12 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 13 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 13 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 13 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 13 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 14 of 100 elements
```

In [33]:
```
from lsst.ts.observatory.control.maintel import MTCS, ComCam
```

In [34]:
```
comcam = ComCam(domain=domain, log=log)
```

```
setup.ComCam DEBUG: cccamera: Adding all resources.
setup.ComCam DEBUG: ccheaderservice: Adding all resources.
setup.ComCam DEBUG: ccoods: Adding all resources.
MTMount.elevation WARNING: tel_elevation DDS read queue is filling: 15 of 1
00 elements
MTHexapod.electrical WARNING: tel_electrical DDS read queue is filling: 16
 of 100 elements
MTRotator.rotation WARNING: tel_rotation DDS read queue is filling: 14 of 1
00 elements
MTM1M3.powerSupplyData WARNING: tel_powerSupplyData DDS read queue is filli
ng: 38 of 100 elements
MTHexapod.application WARNING: tel_application DDS read queue is filling: 1
6 of 100 elements
MTRotator.motors WARNING: tel_motors DDS read queue is filling: 15 of 100 e
lements
MTPtg.mountPosition WARNING: tel_mountPosition DDS read queue is filling: 1
5 of 100 elements
MTMount.azimuth WARNING: tel_azimuth DDS read queue is filling: 16 of 100 e
lements
MTM1M3.pidData WARNING: tel_pidData DDS read queue is filling: 39 of 100 el
ements
MTHexapod.actuators WARNING: tel_actuators DDS read queue is filling: 15 of
100 elements
MTMount.logevent_target WARNING: evt_target DDS read queue is filling: 16 o
f 100 elements
MTRotator.electrical WARNING: tel_electrical DDS read queue is filling: 16
 of 100 elements
MTM1M3.outerLoopData WARNING: tel_outerLoopData DDS read queue is filling:
 39 of 100 elements
```

```
MTRotator.ccwFollowingError WARNING: tel_ccwFollowingError DDS read queue i
s filling: 16 of 100 elements
MTRotator.logevent_target WARNING: evt_target DDS read queue is filling: 16
of 100 elements
MTM1M3.inclinometerData WARNING: tel_inclinometerData DDS read queue is fil
ling: 40 of 100 elements
CCCamera INFO: Read historical data in 0.04 sec
MTM1M3.imsData WARNING: tel_imsData DDS read queue is filling: 34 of 100 el
ements
MTM1M3.hardpointMonitorData WARNING: tel_hardpointMonitorData DDS read queu
e is filling: 47 of 100 elements
MTM1M3.hardpointActuatorData WARNING: tel_hardpointActuatorData DDS read qu
eue is filling: 48 of 100 elements
MTM1M3.forceActuatorData WARNING: tel_forceActuatorData DDS read queue is f
illing: 48 of 100 elements
MTM1M3.accelerometerData WARNING: tel_accelerometerData DDS read queue is f
illing: 50 of 100 elements
MTM1M3.logevent_forceActuatorWarning WARNING: evt_forceActuatorWarning DDS
 read queue is filling: 23 of 100 elements
CCOODS INFO: Read historical data in 0.31 sec
CCHeaderService INFO: Read historical data in 0.32 sec
MTM1M3.logevent_appliedThermalForces WARNING: evt_appliedThermalForces DDS
 read queue is filling: 55 of 100 elements
MTM1M3.logevent_appliedStaticForces WARNING: evt_appliedStaticForces DDS re
ad queue is filling: 57 of 100 elements
MTM1M3.logevent_appliedForces WARNING: evt_appliedForces DDS read queue is
 filling: 58 of 100 elements
MTM1M3.logevent_appliedElevationForces WARNING: evt_appliedElevationForces
 DDS read queue is filling: 59 of 100 elements
MTM1M3.logevent_appliedCylinderForces WARNING: evt_appliedCylinderForces DD
S read queue is filling: 60 of 100 elements
MTM1M3.logevent_appliedBalanceForces WARNING: evt_appliedBalanceForces DDS
 read queue is filling: 61 of 100 elements
MTM1M3.logevent_appliedAzimuthForces WARNING: evt_appliedAzimuthForces DDS
 read queue is filling: 62 of 100 elements
MTM1M3.logevent_appliedActiveOpticForces WARNING: evt_appliedActiveOpticFor
ces DDS read queue is filling: 64 of 100 elements
MTM1M3.logevent_appliedAberrationForces WARNING: evt_appliedAberrationForce
s DDS read queue is filling: 63 of 100 elements
```

In [35]:
```
comcam.set_rem_loglevel(40)
```

In [36]:
```
await comcam.start_task
```

Out[36]:
```
[None, None, None]
```

In [39]:
```
await comcam.standby()
```

```
setup.ComCam DEBUG: [cccamera]::[<State.ENABLED: 2>, <State.DISABLED: 1>, <
State.STANDBY: 5>]
setup.ComCam DEBUG: [ccheaderservice]::[<State.ENABLED: 2>, <State.DISABLE
D: 1>, <State.STANDBY: 5>]
```

```
setup.ComCam DEBUG: [ccoods]::[<State.ENABLED: 2>, <State.DISABLED: 1>, <St
ate.STANDBY: 5>]
setup.ComCam INFO: All components in <State.STANDBY: 5>.
```

In [40]:
```
await comcam.enable()
```

```
setup.ComCam INFO: Enabling all components
setup.ComCam DEBUG: Expand overrides None
setup.ComCam DEBUG: Complete overrides: {'cccamera': '', 'ccheaderservice':
'', 'ccoods': ''}
setup.ComCam DEBUG: [cccamera]::[<State.STANDBY: 5>, <State.DISABLED: 1>, <
State.ENABLED: 2>]
setup.ComCam DEBUG: [ccheaderservice]::[<State.STANDBY: 5>, <State.DISABLE
D: 1>, <State.ENABLED: 2>]
setup.ComCam DEBUG: [ccoods]::[<State.STANDBY: 5>, <State.DISABLED: 1>, <St
ate.ENABLED: 2>]
setup.ComCam INFO: All components in <State.ENABLED: 2>.
```

In [41]:
```
exp1 = await comcam.take_object(15)
print(f"Target 1 exposure: {exp1}")
```

```
setup.ComCam DEBUG: Generating group_id
setup.ComCam DEBUG: imagetype: OBJECT, TCS synchronization not configured.
Target 1 exposure: [2022062000001]
```

Stop tracking to prevent hitting the Rotator soft limit.

In [42]:
```
await mtcs.stop_tracking()
```

```
setup.MTCS DEBUG: Stop tracking.
```

Plot The Results

In [ ]:
```
from lsst_efd_client import EfdClient
```

In [ ]:
```
client = EfdClient("summit_efd")
```

In [ ]:
```
# Fix this plot
end = Time(datetime.now(), scale='utc')
start = end - timedelta(seconds=1000)

dfm = await client.select_time_series('lsst.sal.MTMount.elevation', 'actualPosi
dfm1m3 = await client.select_time_series('lsst.sal.MTM1M3.logevent_appliedEleva
dfm2 = await client.select_time_series('lsst.sal.MTM2.axialForces', 'lutGravity
dfh = await client.select_time_series('lsst.sal.MTHexapod.application', '*', st

idx1=dfh.MTHexapodID==1
dfh1 = dfh[idx1]
idx2=dfh.MTHexapodID==2
dfh2 = dfh[idx2]
```

```
fig, ax = plt.subplots(1,1, figsize=(15,4))
plt.plot(dfm.actualPosition, '--', label='mount elevation')
plt.plot(dfm1m3.zForces0, label='M1M3 elevation y-force 101')
plt.plot(dfm2.lutGravity0, label='M2 elevation force B1')
plt.plot(dfh1.position1, label='Camera hexapod y')
plt.plot(dfh2.position1, label='M2 hexapod y')
plt.grid()
plt.legend()
```

In [ ]:
```
dfm2
```

Wrap Up and Shut Down

This cell is not currently included as part of the test execution, but included here as needed to shutdown the systems

In [ ]:
```
await mtcs.set_state(salobj.State.STANDBY, components=["mtaos"])
```

In [ ]:
```
await mtcs.lower_m1m3()
```

In [ ]:
```
await mtcs.set_state(salobj.State.STANDBY, components=["mtm1m3"])
```

In [ ]:
```
await mtcs.set_state(salobj.State.STANDBY, components=["mtm2"])
```

In [ ]:
```
await mtcs.set_state(salobj.State.STANDBY, components=["mthexapod_1"])
```

In [ ]:
```
await mtcs.set_state(salobj.State.STANDBY, components=["mthexapod_2"])
```

In [ ]:
```
await mtcs.standby()
```

In [ ]:
```

```