```
Mauna Loa Solar Observatory Observer's Log
 ______
      Tue Sep 7 16:42:19 GMT 2021
Year: 21 Doy: 250
Observer: mlso
GENERAL COMMENT BY mcotter: Tue Sep 07 16:50:45 GMT 2021
Opened windows upstairs
end
GENERAL COMMENT BY mcotter: Tue Sep 07 16:51:01 GMT 2021
PM Blew off Kcor O1
 end
GENERAL COMMENT BY mcotter: Tue Sep 07 16:51:09 GMT 2021
PM Blew off UCoMP 01
end
WEATHER COMMENT: mcotter: Tue Sep 07 16:52:37 GMT 2021
Temp: 42.2f, Humidity: 12%, Pressure: 28.739in, Wind: 6mph from 188degs, Skies: Relatively clear skies but the sky is slig
htly hazy with an inversion layer visible on the horizon above Haleakala.
end
Tue Sep 07 16:54:36 GMT 2021 Running UCOMP Cookbook dark_80ms_2beam_16sums_BOTH.ckb line 0
UCOMP COMMENT BY mcotter: Tue Sep 07 16:54:58 GMT 2021
Ucomp instrument now running.
end
Tue Sep 07 16:56:01 GMT 2021 Running UCOMP Cookbook 530 Scan.ckb line 0
Tue Sep 07 16:59:35 GMT 2021 Running UCOMP Cookbook 637 Scan.ckb line 0
Tue Sep 07 17:02:34 GMT 2021 Running UCOMP Cookbook 656_Scan.ckb line 0
Tue Sep 07 17:05:32 GMT 2021 Running UCOMP Cookbook 691 Scan.ckb line 0
Tue Sep 07 17:08:29 GMT 2021 Running UCOMP Cookbook 706 Scan.ckb line 0
Tue Sep 07 17:11:26 GMT 2021 Running UCOMP Cookbook 789_Scan.ckb line 0
Tue Sep 07 17:13:48 GMT 2021 Kcor Focus/alignment program exited
Tue Sep 07 17:14:24 GMT 2021 Running UCOMP Cookbook 1074 Scan.ckb line 0
KCOR COMMENT BY mcotter: Tue Sep 07 17:16:36 GMT 2021
Kcor instrument now running.
SGS offsets: X(RA): -133. Y(Dec): 92.
Polarization checked good: Mid, Bright, Dark, Mid.
Tue Sep 07 17:17:23 GMT 2021 Running UCOMP Cookbook 1079 Scan.ckb line 0
Tue Sep 07 17:20:20 GMT 2021 Running UCOMP Cookbook 1083_Scan.ckb line 0
Tue Sep 07 17:23:17 GMT 2021 Running UCOMP Cookbook all coronal 7 flats.ckb line 0
Tue Sep 07 17:46:54 GMT 2021 Running UCOMP Cookbook all coronal 7.ckb line 0
Tue Sep 07 18:10:38 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb line 0
Tue Sep 07 18:16:50 GMT 2021 UCoMP Paused for clouds
Tue Sep 07 18:20:26 GMT 2021 UCoMP Restarted from pause
Tue Sep 07 18:20:54 GMT 2021 Kcor Focus/alignment program exited
Tue Sep 07 18:23:21 GMT 2021 Running UCOMP Cookbook all coronal 7.ckb line 11
Tue Sep 07 18:39:10 GMT 2021 Running UCOMP Cookbook dark 80ms 2beam 16sums BOTH.ckb line 0
Tue Sep 07 18:40:33 GMT 2021 Running UCOMP Cookbook 530 Pol Calibrate.ckb line 0
Tue Sep 07 18:45:15 GMT 2021 Running UCOMP Cookbook 637 Pol Calibrate.ckb line 0
```

```
Tue Sep 07 18:49:36 GMT 2021 Running UCOMP Cookbook 656 Pol Calibrate.ckb line 0
Tue Sep 07 18:53:56 GMT 2021 Running UCOMP Cookbook 691_Pol_Calibrate.ckb line 0
Tue Sep 07 18:58:25 GMT 2021 Running UCOMP Cookbook 706 Pol Calibrate.ckb line 0
Tue Sep 07 19:02:45 GMT 2021 Running UCOMP Cookbook 789 Pol Calibrate.ckb line 0
Tue Sep 07 19:07:05 GMT 2021 Running UCOMP Cookbook 1074 Pol Calibrate.ckb line 0
Tue Sep 07 19:11:27 GMT 2021 Running UCOMP Cookbook 1079 Pol Calibrate.ckb line 0
Tue Sep 07 19:15:48 GMT 2021 Running UCOMP Cookbook 1083 Pol Calibrate.ckb line 0
Tue Sep 07 19:20:07 GMT 2021 Running UCOMP Cookbook sumtest-1074.ckb line 0
Tue Sep 07 19:25:07 GMT 2021 Running UCOMP Cookbook waves_1074_1hour.ckb line 0
Tue Sep 07 19:32:40 GMT 2021 Running UCOMP Cookbook waves 1074 1hour.ckb line 12
Tue Sep 07 19:48:54 GMT 2021 Running UCOMP Cookbook waves_1074_1hour.ckb line 40
Tue Sep 07 19:53:44 GMT 2021 Running UCOMP Cookbook waves 1074 1hour.ckb line 46
Tue Sep 07 20:08:11 GMT 2021 KCOR Start Calibration script: c:\kcor\mlso-calibration22deg-20171025.ini
Tue Sep 07 20:23:27 GMT 2021 KCOR End Calibration Script
Tue Sep 07 20:35:21 GMT 2021 Running UCOMP Cookbook dark 200 200 1sums 80ms.ckb line 0
Tue Sep 07 20:40:26 GMT 2021 Running UCOMP Cookbook all coronal 7 flats.ckb line 0
Tue Sep 07 21:04:13 GMT 2021 Running UCOMP Cookbook all coronal 7.ckb line 0
Tue Sep 07 21:27:55 GMT 2021 Running UCOMP Cookbook all coronal 7.ckb line 0
Tue Sep 07 21:51:17 GMT 2021 Running UCOMP Cookbook all coronal 7.ckb line 0
Tue Sep 07 22:14:42 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb line 0
GENERAL COMMENT BY mcotter: Tue Sep 07 22:27:11 GMT 2021
The Pointing Error Estimate GUI shows a graph that typically is round in appearance, as it is being continuously updated w
ith pointing error feedback estimates from the RA & Dec amplifiers in real time. Currently the graph is showing just a s
traight line, up & down, of the RA feedback. The voltage scales for the estimates update automatically, so the feed back f
rom the Dec must be significantly smaller than that of the RA causing the graticules of the RA to be of a larger value giv
ing the appearance of a line to appear straight up and down. The RA may be physically slipping, or perhaps the rollers nee
d to be cleaned. So far the data from Kcor and Ucomp is coming in good so I do not feel there is a need to pause the spar
to check or make adjustment to the RA mechanism at this time. If clouds come in and I need to pause observing I will make
an inspection of the RA and adjust as necessary.
 end
WEATHER COMMENT: mcotter: Tue Sep 07 22:33:03 GMT 2021
Temp: 52.3f, Humidity: 74%, Pressure: 28.698in, Wind: 7mph from 339degs, Skies: Orthographic clouds have moved into the ob
serving area from the west. Altocumulus clouds are beginning to form above the observatory.
  end
KCOR COMMENT BY mcotter: Tue Sep 07 22:33:33 GMT 2021
Kcor has been paused at this time due to cloud coverage.
  end
```

Because of the traces I saw previously for the Pointing Error Estimates I did a visual inspection of the RA mechanism. The rollers are showing some signs of particulate matter collecting and being adhered to the various roller surfaces of the mechanism. I cleaned as much of the roller surfaces as I was able to reach without disassembling the unit, but I could still see small areas where there is wear and more particles sticking to the rollers. I then adjusted the clutch pad tension and increased the torque very slightly that is required to move against the pad. I moved the spar a few time back and forth by hand and it felt smooth and of course slightly tighter. I then homed the Dec and afterwards realigned on the Sun. The Pointing Error Estimate graph now appears as it normally does; somewhat round in appearance.

UCOMP COMMENT BY mcotter: Tue Sep 07 22:34:09 GMT 2021 Ucomp has been paused at this time due to cloud coverage.

GENERAL PROBLEM COMMENT BY mcotter : Tue Sep 07 23:21:23 GMT 2021

end

I will continue to monitor the RA Mechanism and check it more often to see if more particles are collecting on any of the roller surfaces. I think that if the rollers are kept reasonably clean the unit should continue to operate normally until a more thorough cleaning and assessment of the roller surfaces can be made when the assembly is scheduled to be rebuilt in December 2021. end GENERAL COMMENT BY mcotter: Tue Sep 07 23:22:18 GMT 2021 Clouds have increased dramatically. The dome Shutter doors and windows are now closed. GENERAL COMMENT BY mcotter: Wed Sep 08 00:12:29 GMT 2021 Emptied trash container in control room. GENERAL COMMENT BY mcotter: Wed Sep 08 00:12:52 GMT 2021 Started cleaning the PSPT room. end GENERAL COMMENT BY mcotter: Wed Sep 08 00:26:31 GMT 2021 Beautiful morning with clear skies. Clouds came in around midday and it got progressively worse until the instruments need ed to be stopped and the dome closed. The clouds seem like they are beginning to break up overhead, but they quickly form again and wisp around.

The sky remains too bright to operate the instruments.

ONSITE STAFF: mcotter