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Mauna Loa Solar Observatory Observer's Log  
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Tue Jul 19 16:39:19 GMT 2022

Year: 22 Doy: 200

Observer: mcotter

WEATHER COMMENT: mcotter: Tue Jul 19 16:40:54 GMT 2022

Temp: 45.7f, Humidity: 17%, Pressure: 28.692in, Wind: 12mph from 159deg.

The upper level sky is covered in Cirrostratus clouds. Slightly hazy at lower elevation  
s with the inversion layer located just below Haleakala.

\_\_\_\_end\_\_\_\_

Tue Jul 19 18:01:28 GMT 2022 Kcor Focus/alignment program exited

WEATHER COMMENT: mcotter: Tue Jul 19 18:03:27 GMT 2022

As the Sun has risen it seems like the Cirrostratus cloud coverage reported earlier has  
thinned out.

\_\_\_\_end\_\_\_\_

GENERAL COMMENT BY mcotter: Tue Jul 19 18:05:44 GMT 2022

Opened windows upstairs

\_\_\_\_end\_\_\_\_

GENERAL COMMENT BY mcotter: Tue Jul 19 18:06:13 GMT 2022

PM Blew off UCoMP 01

\_\_\_\_end\_\_\_\_

GENERAL COMMENT BY mcotter: Tue Jul 19 18:06:17 GMT 2022

PM Blew off Kcor 01

\_\_\_\_end\_\_\_\_

KCOR COMMENT BY mcotter: Tue Jul 19 18:06:53 GMT 2022

The Kcor instrument is now on sky and observing.

\_\_\_\_end\_\_\_\_

Tue Jul 19 18:42:29 GMT 2022 Running UCOMP Cookbook all\_wavelength\_coronal\_flat.cbk lin  
e 0

Tue Jul 19 18:44:33 GMT 2022 Running UCOMP Cookbook all\_wavelength\_coronal\_flat.cbk lin  
e 2

Tue Jul 19 18:44:33 GMT 2022 UCoMP Paused for clouds

\*\*UCoMP PROBLEM COMMENT BY mcotter\*\* : Tue Jul 19 18:45:14 GMT 2022

I started Ucomp as usual but it appears to be hung up. When I entered the Center Occul  
ter program it would not close out. I manually closed out the program then when I got t  
o the Ucomp-Controller program it again hung up. I manually exited the Mech-Controller  
program then manually Aborted the Ucomp -Controller as it was unresponsive.

I closed and restarted the Labview program. I again restarted the Ucomp-Controller prog  
ram. When the Mech-Controller program a GUI popped up stating that the "Standa stage: C  
al Ret Rot was not found". The Mech-Controller Status page does not have either the "Oc  
c In" or "Occ Out" LED's illuminated so it appears that the program has lost track of t  
he Occulter position. I tried going to the "Home/Manual move" tab and getting a positio  
n on the Occulter but it is unresponsive when given a command to move or home. I tried  
manually disconnecting the power to the Standa via the rack panels real power outlets,  
waiting 15 seconds then re-energizing but this had no effect and the Mech- Cotroller st  
ill does not know the location status of the Occulter. I thought I would try once more  
to close out all the Ucomp observing programs, then restarting the computer. Stopping a  
ll open Apps then Powering down and Restarting the computer seems to have resolved the  
Standa-Occulter Positioning issues.

\_\_\_\_end\_\_\_\_

UCoMP COMMENT BY mcotter: Tue Jul 19 18:46:51 GMT 2022

The Ucomp software operating issues have been resolved and the instrument is now operat  
ing normally.

\_\_\_\_end\_\_\_\_

WEATHER COMMENT: mcotter: Tue Jul 19 19:03:47 GMT 2022

Unfortunately just as the problems with the Ucomp Instrument were resolved the sky cond  
itions have gotten excessively bright. The brightening of the sky, as it appears in the  
Kcor Level 0 Synoptic images, is from the center of the image outward, saturating firs  
t the area immediately around the corona disk then spreading brightly outward.

Looking at the Yawcam Preview image on the "Wahoo" monitor, the general appearance of t  
he sky shows brightening with the very beginning of a small tendril of upper level Cirr  
us starting to move through the observing area.

Exiting the observatory and looking at the sky through polarized sunglasses, while mask  
ing out the Sun with the hand, the immediate area around the Sun shows a small patch of  
the Cirrus in the viewing area.

The overall appearance of the sky is brightening, so it may be likely that the small Ci

rrus cloud patches are beginning to become more prevalent across the sky. Once the Sun has passed through this obvious Cirrus cloud patch observations may be able to be continued, though the sky does remain bright.

\_\_\_\_end\_\_\_\_

GENERAL COMMENT BY mcotter: Tue Jul 19 19:12:03 GMT 2022

An attempt was made to restart the instruments, but the sky remains excessively bright at this time to perform observations.

\_\_\_\_end\_\_\_\_

KCOR COMMENT BY mcotter: Tue Jul 19 19:13:05 GMT 2022

Kcor is paused at this time due to excessively bright sky conditions.

\_\_\_\_end\_\_\_\_

UCOMP COMMENT BY mcotter: Tue Jul 19 19:13:36 GMT 2022

Ucomp is paused at this time due to excessively bright sky conditions.

\_\_\_\_end\_\_\_\_

Tue Jul 19 20:24:55 GMT 2022 UCOMP Restarted from pause

Tue Jul 19 20:38:52 GMT 2022 Running UCOMP Cookbook all\_wavelength\_coronal.cbk line 0

Tue Jul 19 20:41:24 GMT 2022 UCOMP Paused for clouds

GENERAL COMMENT BY mcotter: Tue Jul 19 20:43:53 GMT 2022

Though the sky remains a bit bright it has dimmed so an attempt was made to resume observations, but within a brief time the sky began to get bright again and Cirrostratus clouds appeared.

Instruments are again paused due to very bright skies and Cirrostratus clouds in the viewing area.

\_\_\_\_end\_\_\_\_

Tue Jul 19 21:33:08 GMT 2022 UCOMP Restarted from pause

WEATHER COMMENT: mcotter: Tue Jul 19 21:33:29 GMT 2022

The sky has cleared up nicely and is again good for observing.

\_\_\_\_end\_\_\_\_

UCOMP COMMENT BY mcotter: Tue Jul 19 21:33:50 GMT 2022

The Ucomp instrument is again observing.

\_\_\_\_end\_\_\_\_

Tue Jul 19 21:43:27 GMT 2022 UCOMP Paused for clouds

KCOR COMMENT BY mcotter: Tue Jul 19 22:13:42 GMT 2022

When the Kcor instrument was restarted the Level 0 Synoptic image looked odd as if an object was partly obscuring the instrument viewing area. The lens cover was put into the beam and the the K-cor Stand Alone Image Acquisition program was left running. I went to the dome to confirm that the dome slit was advancing properly and was not clipping the instrument viewing area; we are again approaching the seasonal time of summer observations when the Sun is making it's southerly procession and the dome automatic advancement controls will need to be changed so that the dome slit automatic advancement rotates to the south. The dome slit did not appear to be in the way of the instrument viewing area, but the northern side of the slit was noticeably closer to the instrument body so that the spar and instruments were not quite centered in the slit opening; the dome slit opening was adjusted a small amount to better center the spar and instruments. Returning to the control room the Kcor 01 lens cover was taken out of the beam, but the Level 0 Synoptic images still had the appearance that there may have been something blocking the beam. Also when looking at the Level 0 Synoptic images the occulter image did not look quite right, as if it was a large amount out of center. Looking at the SGS Operation Guider Zero-Point Offset X(RA) & Y(Dec) data fields they were both advancing, but I thought perhaps they were both so far off that the advancement was too slow to reflect any real changes in the Level 0 Synoptic images. Using the mouse cursor, I went to the "Up & Down" position advancement buttons and manually moved the occulter positions rapidly and with a few moments I saw that this corrected the image problem being observed. The occulter position quickly improved and a well shaped, well defined coronal ring was obtained.

Over the last several minutes while I have been typing this comment the clouds have returned and the instruments have again been paused. During this most recent pause I have been watching the SGS Guider Zero Point-Offset X(RA) & Y(Dec) positions and the fields are static and not updating. I am unsure if this is normal. I would believe that the occulter position should be updating continuously, regardless of the observing status of the instrument and as long as the spar is continuing to advance and track the Sun. Ben will need to add insight into this operation as is fundamental within the software operation.

I will continue to monitor and update the comments regarding this matter as necessary.

\_\_\_\_end\_\_\_\_

Wed Jul 20 00:38:58 GMT 2022 UCOMP Restarted from pause

GENERAL COMMENT BY mcotter: Wed Jul 20 00:50:06 GMT 2022

As noted in one of my earlier comments; the instruments have been pause since earlier today and during this time the SGS Guider Zero-Point offsets did not advance or update. Also noted, while the spar was left in "Close Loop", so as to continue tracking the Sun, the automatic dome advance did not keep the dome slit centered on the spar/instruments. The spar followed the Sun's path but if observations were being performed the dome would have obscured the viewing area.

It may be time to change the automatic dome rotation from "CCW" to "CW".

\_\_\_\_end\_\_\_\_

WEATHER COMMENT: mcotter: Wed Jul 20 00:51:38 GMT 2022

The skies are now completely overcast with wide bands of Cirrus and Cirrostratus clouds

\_\_\_\_end\_\_\_\_

\_\_\_\_end\_\_\_\_

GENERAL COMMENT BY mcotter: Wed Jul 20 00:54:43 GMT 2022

Both Kcor and Ucomp instruments have been stopped due to poor sky conditions and these sky conditions are anticipated to continue for the rest of the day.

\_\_\_\_end\_\_\_\_

GENERAL COMMENT BY mcotter: Wed Jul 20 03:55:29 GMT 2022

Since the sky was overcast and we were not observing I took the opportunity to start prepping for the coming observatory refurbishment.

Yesterday Ben and I were in the dome figuring out the best methods for clearing the floor of equipment, so that when the dome floor is being resurfaced the ladders, NEMA boxes, tool box etc. are not in the mechanics way but also so that we may still be able to operate the instruments and observe.

Picking up where we left off yesterday, I organized the cables at the rear of the spar and was able to neatly fit all three NEMA boxes squarely behind the upper pier. The gray ladder and the orange ladder present the biggest challenge as they both take up a large footprint. I believe that it may be possible to hang the gray ladder off the dome sill using hooks securely lagged bolted to the wooden dome sill. Several hooks would be needed to distribute the weight as well as possible. The gray ladder is not very heavy, when compared to the orange ladder, but it is still heavy enough where we will need to be careful and ensure that once mounted it is secure and there is no possibility of it coming loose. The gray ladder has three separate horizontal braces across the back that we may utilize for hooking onto. Once the hook locations are confirmed and installed Ben and I can lift it into place, as we lifted it yesterday when trying different options. When in place there should be adequate room under the ladder for the mechanic to access the floor beneath. If this works as proposed, we will just need to contend with the footprint of the orange ladder as it must remain on the floor. The orange ladder does have four 4" x 4" square pads that may be lowered to raise the orange ladder off the floor. The elevated height of the ladder using these pads should provide enough room for the mechanic to apply the coatings to the floor beneath.

More consideration should be put forward on the plan of action and a consensus reached before deciding, but I am of the opinion that we should be able to operate and observe while the floor is being resurfaced, even if it is in a more limited method.

\_\_\_\_end\_\_\_\_

GENERAL COMMENT BY mcotter: Wed Jul 20 03:57:50 GMT 2022

Bright skies from the start of the day. Brief times of blue sky came through periodically so some observations were accomplished, but for the most part the observations were limited because of bright skies and upper level clouds.

\_\_\_\_end\_\_\_\_

ONSITE STAFF: mcotter