
Mauna Loa Solar Observatory Observer's Log

Tue Aug 24 16:44:24 GMT 2021

Year: 21 Doy: 236

Observer: mcotter

WEATHER COMMENT: mcotter: Tue Aug 24 16:45:56 GMT 2021

Temp: 44.8f, Humidity: 70%, Pressure: 28.693in, Wind: 7mph from 132degs, Skies: Overcast skies with rain and fog from Hilo to approximately 7,000' level. Clear but hazy skies overhead. Inversion layer visible on the horizon above Maunakea.

____end____

GENERAL COMMENT BY mcotter: Tue Aug 24 16:54:42 GMT 2021

Opened windows upstairs

____end____

GENERAL COMMENT BY mcotter: Tue Aug 24 16:54:51 GMT 2021

PM Blew off UCoMP O1

____end____

GENERAL COMMENT BY mcotter: Tue Aug 24 16:54:56 GMT 2021

PM Blew off Kcor O1

____end____

Tue Aug 24 17:07:56 GMT 2021 Kcor Focus/alignment program exited

KCOR COMMENT BY mcotter: Tue Aug 24 17:13:58 GMT 2021

Kcor now running.

SGS offsets: X(RA): -135, Y(Dec): 93.

Polarization checked good: Mid, Bright, Dark, Mid.

____end____

Tue Aug 24 17:14:32 GMT 2021 Running UCOMP Cookbook dark_80ms_2beam_16sums_BOTH.ckb

Tue Aug 24 17:14:58 GMT 2021 Running UCOMP Cookbook 530_Scan.ckb

UCoMP COMMENT BY mcotter: Tue Aug 24 17:17:35 GMT 2021

Ben is currently remote running the Ucomp program/instrument and will continue to monitor the system for performance anomalies.

____end____

Tue Aug 24 17:21:41 GMT 2021 Running UCOMP Cookbook 530_Scan.ckb

Tue Aug 24 17:21:41 GMT 2021 Running UCOMP Cookbook 637_Scan.ckb

Tue Aug 24 17:24:50 GMT 2021 Running UCOMP Cookbook 656_Scan.ckb

Tue Aug 24 17:27:47 GMT 2021 Running UCOMP Cookbook 691_Scan.ckb

Tue Aug 24 17:30:45 GMT 2021 Running UCOMP Cookbook 706_Scan.ckb

Tue Aug 24 17:33:42 GMT 2021 Running UCOMP Cookbook 789_Scan.ckb

UCoMP COMMENT BY berkey: Tue Aug 24 17:33:49 GMT 2021

Investigation on the UCoMP morning alignment issue is continuing. At the end of day yesterday after looking at occulter linear stage software feedback and physical stage for any play; the investigation turned out the idea that maybe we were seeing a small motion of the O1 during the morning alignments. A physical check of the O1 showed no apparent motion. But a second piece of shim stock was installed on the east side of the o1 mount down near the spar extension to try and reduce any possible motion not detected by hand. The O1 clamping dogs were also noticed to be slightly loose, so as a temporary solution some tap was installed across the dogs to hold them more snugly against the body of the O1 mount.

In testing this morning. UCoMP was pointed to the sun and put in to center occulter mode. Then assuming the O1 was the issue. (with the shutter closed) we exercised the O1 to the front and back of its range 5 times; and found no apparent change in the position of the sun around the occulter. We then proceeded with observing and took a 530 21 wavelength scan be

fore trying to center the occulter a second time. Over the past few days this would have lead to an occulter misalignment on the sun. However today on the second center occulter the sun looked well centered. At this point we are not sure if the medication yesterday with the O1 mount addresss this issue or we failed to recarete the morning alignment issue by missing some variable. Since this seems like a transient start up issue we will have to try again tomorrow to see which case this was.

____end____

KCOR COMMENT BY mcotter: Tue Aug 24 17:35:59 GMT 2021

When the Kcor NRGF image came up I observed a spot in the image at approximately the 260 deg position. I thought it might be something on the field lens. I checked the field lens and I could see a small particle on the lens surface, located on the eastern side of the lens when the instrument is pointing to zenith. I blew off the lens and it appears to have taken care of the problem, as the spot has disappeared from the NRGF image.

____end____

Tue Aug 24 17:36:40 GMT 2021 Running UCOMP Cookbook 1074_Scan.ckb
Tue Aug 24 17:39:39 GMT 2021 Running UCOMP Cookbook 1079_Scan.ckb
Tue Aug 24 17:42:36 GMT 2021 Running UCOMP Cookbook 1083_Scan.ckb
Tue Aug 24 17:45:32 GMT 2021 Running UCOMP Cookbook all_coronal_7_flats.ckb
Tue Aug 24 18:12:22 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb
Tue Aug 24 18:23:35 GMT 2021 UCOMP Paused for clouds
Tue Aug 24 18:29:45 GMT 2021 Kcor Focus/alignment program exited
Tue Aug 24 18:31:43 GMT 2021 UCOMP Restarted from pause
Tue Aug 24 18:36:21 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb
Tue Aug 24 18:45:36 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb
Tue Aug 24 18:57:02 GMT 2021 UCOMP Paused for clouds
Tue Aug 24 19:23:25 GMT 2021 Kcor Focus/alignment program exited
Tue Aug 24 19:25:06 GMT 2021 UCOMP Restarted from pause
Tue Aug 24 19:27:47 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb
Tue Aug 24 19:36:36 GMT 2021 Running UCOMP Cookbook dark_80ms_2beam_16sums_BOTH.ckb
Tue Aug 24 19:37:00 GMT 2021 Running UCOMP Cookbook 530_Pol_Calibrate.ckb
Tue Aug 24 19:41:24 GMT 2021 Running UCOMP Cookbook 637_Pol_Calibrate.ckb
Tue Aug 24 19:45:38 GMT 2021 Running UCOMP Cookbook 656_Pol_Calibrate.ckb
Tue Aug 24 19:49:52 GMT 2021 Running UCOMP Cookbook 691_Pol_Calibrate.ckb
Tue Aug 24 19:54:04 GMT 2021 Running UCOMP Cookbook 706_Pol_Calibrate.ckb

GENERAL COMMENT BY mcotter: Tue Aug 24 19:54:49 GMT 2021

The SGS RA and Dec traces started to have an oscillation, though the Kcor and Ucomp images looked good. I tried briefly pa using the SGS program but it did not seem to help. I put the SGS program in "Standby", then I stopped Kcor and Paused Ucomp. I physically cycled the spar in and out of the target area, then restarted SGS tracking and restarted Kcor and Ucomp. The RA and Dec traces looked ok for a brief period but again the traces began to oscillate. I stopped both Kcor and Ucomp and then power cycled the SGS computer. After power cycling the SGS computer the image would not come up on the monitor(s). I again power cycled the SGS computer and while the power was off I checked all the connections and wiring in the NEMA console, re-aligning some of the wires and removing and then re-plugging the jacks for the monitor and Ethernet I/O's. Again

I turned the power back on and this time the SGS image came up on the monitor in the control room; I could not get it to come up on the dome monitor. I re-started the SGS program and re-aligned the spar on Sun. I observed the signal outputs for the SGS Voltage and RA & Dec error for a short period of time and the system now seems to be operating properly. I restarted Kcor and ran the focus routine again and a well shaped parabola was obtained. I re-checked polarization and it was good. Ucomp was re-started and I re-aligned the occulter.

The SGS offsets are now as follows: X(RA): -145, Y(Dec): 65.

NOTE

It is worth noting that when I came in this morning and started the SGS tracking on Sun the Voltage trace did not look quite right. Normal readouts when the sky is clear and the Sun is not obscured is in the 6.0V to 6.4V. This morning the SGS Voltage trace readout was in the low 5 volt area, but the trace was rising so I thought that perhaps there was high Altitude Cirrus present that was difficult to see by eye but which the detector of the Guider was able to discern. The trace continued to rise for the rest of the morning until the oscillation began, though very slowly and it never made it out of the 5 volt range. Now the SGS Voltage trace readout is hovering in the 6.14 range and there is no sign of oscillation in the RA & Dec trace readouts.

____end____

WEATHER COMMENT: mcotter: Tue Aug 24 19:57:53 GMT 2021

Temp: 52.9f, Humidity: 69%, Pressure: 28.697in, Wind: 5mph from 355degs, Skies: Altocumulus clouds are increasing in the Saddle Valley. Orthographic clouds are forming on the western slope of Maunaloa and beginning to make their way up over the ridge of the mountain.

____end____

Tue Aug 24 19:58:16 GMT 2021 Running UCOMP Cookbook 789_Pol_Calibrate.ckb

Tue Aug 24 20:02:29 GMT 2021 Running UCOMP Cookbook 1074_Pol_Calibrate.ckb

Tue Aug 24 20:02:44 GMT 2021 KCOR Start Calibration script: c:\kcor\mlso-calibration22deg-20171025.ini

Tue Aug 24 20:06:43 GMT 2021 Running UCOMP Cookbook 1079_Pol_Calibrate.ckb

Tue Aug 24 20:11:04 GMT 2021 Running UCOMP Cookbook 1083_Pol_Calibrate.ckb

Tue Aug 24 20:15:25 GMT 2021 Running UCOMP Cookbook dark_200_200_1sums_80ms.ckb

Tue Aug 24 20:18:00 GMT 2021 KCOR End Calibration Script

Tue Aug 24 20:20:05 GMT 2021 Running UCOMP Cookbook all_coronal_7_flats.ckb

Tue Aug 24 20:46:56 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb

Tue Aug 24 21:08:10 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb

WEATHER COMMENT: mcotter: Tue Aug 24 21:08:59 GMT 2021

Orthographic clouds continue to build on the western slope of Maunaloa and Altocumulus clouds are beginning to form over the summit area of the mountain. So far they are staying away of the observatory area.

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Tue Aug 24 21:23:55 GMT 2021 UCoMP Paused for clouds

Tue Aug 24 21:25:09 GMT 2021 UCoMP Restarted from pause

Tue Aug 24 21:41:10 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb

Tue Aug 24 21:46:06 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb

Tue Aug 24 21:54:07 GMT 2021 UCoMP Paused for clouds

Tue Aug 24 21:56:55 GMT 2021 UCoMP Restarted from pause

Tue Aug 24 22:04:21 GMT 2021 UCoMP Paused for clouds

UCoMP COMMENT BY mcotter: Tue Aug 24 22:08:41 GMT 2021

At approximately 11:25am HST I observed in the Ucomp image that the occulter needed to be centered. When the Occulter GUI came up I waited for the occulter image to appear (it typically can take up to one minute) but the image stayed dark and I could not see the occulter. I tried ending the alignment routine, closing the Occulter GUI and going back to the Ucomp-controller GUI, then again initiating a "Center Occulter" command. Again I waited for more than a minute but the occulter image continued to stay black. I called Ben and asked him if he could look at the Ucomp Occulter GUI remotely and he did. While we were both observing the Occulter GUI every now and then a small crescent of light could be observed on the left side of the image window. At this point Ben went through the Instrument Status command readouts for the Ucomp instrument and saw that it was in a "Low Gain" recipe which was causing the image in the Occulter GUI to be dark. In order to make the image viewable Ben changed the image gain intensity from 8000 to 40, which made the occulter image window less dark and also made the occulter visible. Ben made the adjustments to the Ucomp occulter and then ended the alignment procedure. When the Ucomp-controller GUI came back up the image of the occulter position was observed to be centered.

When centering the Ucomp occulter if the occulter image window stays black a change to the image gain is required in order to make the occulter visible in the image window.

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Tue Aug 24 22:09:20 GMT 2021 UCoMP Restarted from pause

Tue Aug 24 22:14:20 GMT 2021 UCoMP Paused for clouds

GENERAL COMMENT BY mcotter: Tue Aug 24 22:17:16 GMT 2021

Clouds have begun to encroach on the viewing area of the sky. The clouds are sporadic and are forming and dissipating in the viewing area. I have had to pause the instruments a couple of times but now the clouds have become too numerous and the instrument have been stopped.

___end___

GENERAL COMMENT BY mcotter: Wed Aug 25 00:07:23 GMT 2021

The sky is now overcast and the clouds are getting darker.

The dome shutter doors and windows have been closed in the event of precipitation.

___end___

WEATHER COMMENT: mcotter: Wed Aug 25 00:18:09 GMT 2021

Temp: 53.6f, Humidity: 84%, Pressure: 28.628in, Wind: 8mph from 22degs, Skies: Skies are completely overcast with fog, mist and a light drizzle blowing through the science area.

___end___

GENERAL COMMENT BY mcotter: Wed Aug 25 01:42:17 GMT 2021

Emptied trash in the dome and in the control room.

___end___

GENERAL COMMENT BY mcotter: Wed Aug 25 02:12:53 GMT 2021

The day started out clear but hazy. Kcor and Ucomp were able to collect data until approximately 11:00am HST at which time clouds moved into the area and obstructed the viewing area.

___end___

ONSITE STAFF: