

-----  
Mauna Loa Solar Observatory Observer's Log  
-----

Tue Oct 19 16:00:30 GMT 2021

Year: 21 Doy: 292

Observer: berkey

GENERAL COMMENT BY lisapg: Tue Oct 19 16:46:45 GMT 2021

Opened windows upstairs

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

GENERAL COMMENT BY lisapg: Tue Oct 19 16:46:50 GMT 2021

PM Blew off Kcor 01

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

GENERAL COMMENT BY lisapg: Tue Oct 19 16:46:56 GMT 2021

PM Blew off UCoMP 01

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

WEATHER COMMENT: lisapg: Tue Oct 19 16:48:14 GMT 2021

Temp: 46.0f with wind speed at about 10-15mph from the Southwest. Sky looks clear.

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

UCoMP COMMENT BY berkey: Tue Oct 19 17:17:47 GMT 2021

UCoMP never rebooted after installing updates last night. Troubleshooting this morning appeared to show an interaction between the megaraid and NI daq board. From what I can tell it seems like there was too much power draw and the booting failed. The main symptom was on boot up the screen would flash a few times over 10-15 seconds before it looked like the system shed power (fans began to slow) before the motherboard apparently rebooted. With either the Raid board or the DAQ board the system was able to fully boot. I am not sure why we were able to startup and run yesterday after installing the megaraid board. I think the rest of the system (motherboard and power supply) was just barely able to work with the new raid board so we just got lucky/unlucky with the startup yesterday.

To recover from this the old Areca board has been installed in the system and the raid set is currently rebuilding. For now, we are taking data on the system disk. We will begin using the raid array once it is ready.

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

Tue Oct 19 17:21:38 GMT 2021 Kcor Focus/alignment program exited

Tue Oct 19 17:23:08 GMT 2021 KCOR Start Synoptic Patrol

Tue Oct 19 17:27:19 GMT 2021 Running UCOMP Cookbook dark\_80ms\_2beam\_16sums\_BOTH.cbk line 0

UCoMP COMMENT BY berkey: Tue Oct 19 17:27:53 GMT 2021

Change the UCoMP focus algorithm to use 1074 instead of 1083, I think this should make alignment a little easier by getting rid of the bright prominence material.

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

Tue Oct 19 17:28:36 GMT 2021 Running UCOMP Cookbook 637\_Scan.cbk line 0

Tue Oct 19 17:31:01 GMT 2021 Running UCOMP Cookbook 656\_Scan.cbk line 0

Tue Oct 19 17:33:02 GMT 2021 Running UCOMP Cookbook 789\_Scan.cbk line 0

Tue Oct 19 17:35:04 GMT 2021 Running UCOMP Cookbook 1074\_Scan.cbk line 0

Tue Oct 19 17:37:07 GMT 2021 Running UCOMP Cookbook 1079\_Scan.cbk line 0

Tue Oct 19 17:39:08 GMT 2021 Running UCOMP Cookbook 1083\_Scan.cbk line 0

Tue Oct 19 17:41:08 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal\_flat.cbk line 0

GENERAL COMMENT BY lisapg: Tue Oct 19 17:45:36 GMT 2021

The new Guider Zero-Point Offset values that I found to work this morning with the new guider was

Y(Dec) -10

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

Tue Oct 19 18:06:16 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal.cbk line 0  
Tue Oct 19 18:09:46 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal.cbk line 1  
Tue Oct 19 18:23:20 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal.cbk line 10  
Tue Oct 19 18:58:10 GMT 2021 KCOR End Patrol  
Tue Oct 19 18:58:22 GMT 2021 KCOR End Patrol

GENERAL COMMENT BY lisapg: Tue Oct 19 18:58:10 GMT 2021

Sky is getting too bright for Kcor but still fine for UCoMP; Kcor idled for now.

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

Tue Oct 19 19:02:19 GMT 2021 KCOR Start Synoptic Patrol  
Tue Oct 19 19:18:33 GMT 2021 Running UCOMP Cookbook dark\_80ms\_2beam\_16sums\_BOTH.cbk line 0  
Tue Oct 19 19:26:56 GMT 2021 Running UCOMP Cookbook dark\_80ms\_2beam\_16sums\_BOTH.cbk line 1  
Tue Oct 19 19:26:57 GMT 2021 UCoMP Paused for clouds  
Tue Oct 19 19:52:23 GMT 2021 Kcor Focus/alignment program exited  
Tue Oct 19 19:53:51 GMT 2021 KCOR Start Synoptic Patrol  
Tue Oct 19 19:54:19 GMT 2021 UCoMP Restarted from pause  
Tue Oct 19 19:55:23 GMT 2021 Running UCOMP Cookbook 637\_Pol\_Calibrate.cbk line 0  
Tue Oct 19 20:00:03 GMT 2021 Running UCOMP Cookbook 656\_Pol\_Calibrate.cbk line 0  
Tue Oct 19 20:04:19 GMT 2021 Running UCOMP Cookbook 789\_Pol\_Calibrate.cbk line 0  
Tue Oct 19 20:08:37 GMT 2021 Running UCOMP Cookbook 1074\_Pol\_Calibrate.cbk line 0  
Tue Oct 19 20:12:56 GMT 2021 Running UCOMP Cookbook 1079\_Pol\_Calibrate.cbk line 0  
Tue Oct 19 20:17:12 GMT 2021 Running UCOMP Cookbook 1083\_Pol\_Calibrate.cbk line 0  
Tue Oct 19 20:19:15 GMT 2021 KCOR End Patrol  
Tue Oct 19 20:19:16 GMT 2021 KCOR Start Calibration script: c:\kcor\mlso-calibration22deg-20171025.ini  
Tue Oct 19 20:21:30 GMT 2021 Running UCOMP Cookbook waves\_1074\_1hour.cbk line 0  
Tue Oct 19 20:34:32 GMT 2021 KCOR End Calibration Script  
Tue Oct 19 20:34:49 GMT 2021 KCOR Start Synoptic Patrol  
Tue Oct 19 20:34:50 GMT 2021 KCOR Start Synoptic Patrol

GONG COMMENT BY lisapg: Tue Oct 19 20:57:14 GMT 2021

Went down to the GONG shelter and adjusted the H-alpha target as per Detricks request.

The Horizontal knob was rotated clockwise four times exactly and the Vertical knob was rotated clockwise 3/4 times to move the image of the Sun into the solar reticle.

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

Tue Oct 19 21:19:11 GMT 2021 Running UCOMP Cookbook dark\_200\_1sums\_80ms.cbk line 0  
Tue Oct 19 21:24:16 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal\_flat.cbk line 0  
Tue Oct 19 21:49:44 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal.cbk line 0  
Tue Oct 19 21:49:58 GMT 2021 UCoMP Paused for clouds  
Tue Oct 19 21:50:05 GMT 2021 KCOR End Patrol  
Tue Oct 19 23:33:38 GMT 2021 KCOR Start Synoptic Patrol  
Tue Oct 19 23:34:06 GMT 2021 UCoMP Restarted from pause

GENERAL COMMENT BY berkey: Tue Oct 19 23:56:04 GMT 2021

Performed a SGS PID tuning.

Found new values:

RA\_KC=18 (was 40.5 and 70 before April)

RA\_Ti=.006 (was .008)

Dec\_KC= 250 (was 300)  
DEC\_Ti=.0059 (was .0058)

Initial tuning showed we could get into a violent noisy 1.4 Hz RA oscillation when we de-tuned to find its oscillation frequency. With an intervention in the RA the new 2.7Hz oscillation amplitudes were considerable smaller and no longer made enough noise to be heard from the dome floor.

Due to the loud 1.4Hz oscillation, we ran a test to check for bulk motion of the RA assembly when changing directions rapidly from +5 to -5V, but we saw no bulk motion.

However when moving east we did hear a high pitch noise coming from the worm gear. After a bit of inspection including loosening the stops that prevent the RA assembly with motor from moving in RA around the drive rollers. It was found that the noise seemed to be related to tooth engagement at the very end of the worm gear (farthest from the motor). It seemed like the worm gear was mostly engaging with the planetary gear at the worm tip and part of the worm cover may have been dragging against the planetary gear. With the worm gear tipped up slightly we appeared to get good meshing toward the middle of the gear but no more noise/dragging. With ~3mm of shims placed between the RA motor and the dog house we found we could maintain this good position, while maintaining gear meshing.

It looks like we had a small degradation in sky conditions while during this work with more aerosols in the sky. But based on a couple spot checks before and after the work the RA Mean standard deviation has gone from ~.003 to .002 so I think we should see an improvement in star pointing.

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

Wed Oct 20 00:41:28 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal.cbk line 0

Wed Oct 20 01:36:27 GMT 2021 UCOMP Paused for clouds

Wed Oct 20 01:44:05 GMT 2021 UCOMP Restarted from pause

Wed Oct 20 01:48:59 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal.cbk line 28

GENERAL COMMENT BY berkey: Wed Oct 20 01:52:05 GMT 2021

The new guider location seems to perform well mid-day. But as we get near the horizon (morning and evening) the new guider location seems to have a quicker departure from ucomp/kcor than what we saw with the old guider position.

probably worth a few more days or testing but right now the old guider position looks better.

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

Wed Oct 20 02:15:52 GMT 2021 Running UCOMP Cookbook dark\_80ms\_2beam\_16sums\_BOTH.cbk line 0

Wed Oct 20 02:17:09 GMT 2021 Running UCOMP Cookbook 1074\_Pol\_Calibrate.cbk line 0

Wed Oct 20 02:21:52 GMT 2021 Running UCOMP Cookbook all\_wavelength\_coronal\_flat.cbk line 0

GENERAL COMMENT BY berkey: Wed Oct 20 02:22:19 GMT 2021

Kcor/Ucomp to guider offset seems to have settled down. And we are seeing a slower variation with time. Seems like we must have passed from one regime to the other around 2:00UTC.

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

Wed Oct 20 02:29:32 GMT 2021 KCOR End Patrol

ONSITE STAFF: berkey, lisapg