
Mauna Loa Solar Observatory Observer's Log

Tue Aug 10 16:48:46 GMT 2021

Year: 21 Doy: 222

Observer: berkey

GENERAL COMMENT BY mcotter: Tue Aug 10 16:48:57 GMT 2021

PM Blew off Kcor O1

____end____

GENERAL COMMENT BY mcotter: Tue Aug 10 16:49:02 GMT 2021

PM Blew off UCoMP O1

____end____

GENERAL COMMENT BY mcotter: Tue Aug 10 16:49:06 GMT 2021

Opened windows upstairs

____end____

WEATHER COMMENT: berkey: Tue Aug 10 16:49:21 GMT 2021

Temp: 38.3f, Humidity: 41%, Pressure: 28.842in, Wind: 4mph from 174degs, Skies: Clear

____end____

Tue Aug 10 17:01:49 GMT 2021 Running UCOMP Cookbook dark_80ms_2beam_16sums_BOTH.ckb

Tue Aug 10 17:02:09 GMT 2021 Running UCOMP Cookbook 530_Scan.ckb

Tue Aug 10 17:05:02 GMT 2021 Running UCOMP Cookbook 637_Scan.ckb

Tue Aug 10 17:05:13 GMT 2021 Kcor Focus/alignment program exited

Tue Aug 10 17:07:56 GMT 2021 Running UCOMP Cookbook 656_Scan.ckb

Tue Aug 10 17:10:46 GMT 2021 Running UCOMP Cookbook 691_Scan.ckb

Tue Aug 10 17:13:37 GMT 2021 Running UCOMP Cookbook 706_Scan.ckb

Tue Aug 10 17:16:29 GMT 2021 Running UCOMP Cookbook 789_Scan.ckb

Tue Aug 10 17:19:20 GMT 2021 Running UCOMP Cookbook 1074_Scan.ckb

Tue Aug 10 17:20:23 GMT 2021 KCOR Start Synoptic Patrol

Tue Aug 10 17:22:13 GMT 2021 Running UCOMP Cookbook 1079_Scan.ckb

Tue Aug 10 17:25:04 GMT 2021 Running UCOMP Cookbook 1083_Scan.ckb

Tue Aug 10 17:27:54 GMT 2021 Running UCOMP Cookbook all_coronal_7_flats.ckb

Tue Aug 10 17:31:44 GMT 2021 Running UCOMP Cookbook all_coronal_7_flats.ckb

Tue Aug 10 17:48:16 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb

Tue Aug 10 18:07:15 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb

GENERAL COMMENT BY berkey: Tue Aug 10 18:11:35 GMT 2021

Cirrus coming in.

____end____

Tue Aug 10 18:13:49 GMT 2021 KCOR End Patrol

Tue Aug 10 18:13:59 GMT 2021 UCoMP Paused for clouds

Tue Aug 10 18:14:02 GMT 2021 UCoMP Restarted from pause

Tue Aug 10 18:38:37 GMT 2021 Running UCOMP Cookbook all_coronal_7.ckb

Tue Aug 10 18:49:35 GMT 2021 Running UCOMP Cookbook dark_80ms_2beam_16sums_BOTH.ckb

Tue Aug 10 18:49:55 GMT 2021 Running UCOMP Cookbook 530_Pol_Calibrate.ckb

Tue Aug 10 18:54:37 GMT 2021 Running UCOMP Cookbook 637_Pol_Calibrate.ckb

Tue Aug 10 18:58:55 GMT 2021 Running UCOMP Cookbook 656_Pol_Calibrate.ckb

Tue Aug 10 19:03:11 GMT 2021 Running UCOMP Cookbook 691_Pol_Calibrate.ckb

Tue Aug 10 19:07:27 GMT 2021 Running UCOMP Cookbook 706_Pol_Calibrate.ckb

Tue Aug 10 19:11:36 GMT 2021 UCoMP Paused for clouds

Tue Aug 10 20:17:43 GMT 2021 UCoMP Restarted from pause

UCoMP COMMENT BY berkey: Tue Aug 10 22:53:20 GMT 2021

Installed another layer of reflexics insulation on the long sides and top of the UCoMP optics box. Notches were made to accommodate the lyot and starlight filter wheels.

____end____

UCoMP COMMENT BY berkey: Tue Aug 10 23:49:44 GMT 2021

Changed the number of garbage images we take after an exposure time or frame rate change. To do this we send out a set of camera triggers with lyot filter set at zero volts. The resulting frames from these cycles are simply discarded.

Previously we had things set at 3 modulation cycles (12 images per camera), the number of cycles has been changes to 10 (40 images per camera). And the number is now configurable via the instrument_config.ini keyword "Busy read cycles"

From what I can tell in the code we take the garbage frames after every exposure, frame rate or gain change.

____end____

UCoMP COMMENT BY berkey: Tue Aug 10 23:54:02 GMT 2021

Built a nighttime temperature monitoring vi that should read out the Cropcio and ILX periodically recording the temps with a time stamp into c:\ucomp-configuration\instrumnet_temps.csv

Since this uses the same sub-vis as the observing code we can only run one at a time. So typical operations of this should be to shutdown the observing code at the end of the day wait until it exits then run "night time temp monitor.vi" which can be found on the desktop. Then in the morning use the "stop" button to stop this via and once it exits (might take a minute or so) the ucomp-controller.vi can be run.

____end____

UCoMP COMMENT BY berkey: Wed Aug 11 01:10:26 GMT 2021

The Ucomp camera cooling pump failed earlier this month and an exact replacement was ordered (bayite BYT-7A015 DC 12V). This morning Ben and I removed the failed unit and installed the new pump. The pump mounting configuration was rotated 180 degrees to make it easier to install and route the cooling lines. We refilled and the water that was lost when changing the unit and also made the filler side of the hose longer to assist when refilling the water. The pump was energized and appeared to run as normal. After running approximately 30 to 60 minutes we noted a change in the water color from clear to hazy. We are unsure at this time what accounts for this anomaly but will continue to monitor over the next few weeks to see if it worsens.

****NOTE**** The failure of the pump after only being in service since May is noteworthy (approximately 10 weeks). After removal from the Ucomp instrument I examined and found that the body of the pump was distorted and extended. Upon disassembly I found a component within the potting that appeared to have overheated and failed. The overheating of the component is what caused the physical distortion of the pump body, but it is unlikely that it happened all at once as the potting compound is of a high density and a momentary thermal shock is unlikely to have malformed the materials suddenly. The pump armature seemed to rotate normally, but it was difficult to get an exact feel for the movement as it is of a compact design and I don't know what the normal resistance should be. We should monitor this motor closely over the coming weeks and see if we can detect any abnormal warmth or overheating of the unit. The failed unit could be an anomaly but it also could be an indication that this style pump, or the associated circuitry, needs to be reassessed. Ben is planning on taking some thermal images of the new pump which we can use to create a baseline for the units performance. If we determine the pump is becoming unstable we should be able to readily find an appropriate substitute.

____end____

WEATHER COMMENT: berkey: Wed Aug 11 01:12:33 GMT 2021

Temp: 45.5f, Humidity: 100%, Pressure: 28.796in, Wind: 9mph from 355degs, Skies: Dark gray overcast skies with heavy rain and very dense fog at this time.

___end___

UCOMP COMMENT BY berkey: Wed Aug 11 01:30:53 GMT 2021

After the new pump was installed we noticed that the fitting on the bottom of the pump had a leak. I shut the pump down and re-tightened the fitting(s). I re-energized the pump and have been monitoring it for approximately one hour and cannot see any more leaking.

___end___

ONSITE STAFF: berkey, mcotter