
Mauna Loa Solar Observatory Observer's Log

Thu Apr 7 17:23:25 GMT 2022

Year: 22 Doy: 097

Observer: berkey

WEATHER COMMENT: berkey: Thu Apr 07 17:23:48 GMT 2022

Temp: 39.5f, Humidity: 58%, Pressure: 28.731in, Wind: 2mph from 214degs, Skies: clear a bove, roads and surfaces icy above ~10,000ft.

____end____

Thu Apr 07 17:29:50 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal_flat.cbk line 0

GENERAL COMMENT BY berkey: Thu Apr 07 17:30:00 GMT 2022

PM Blew off Kcor 01

____end____

GENERAL COMMENT BY berkey: Thu Apr 07 17:30:04 GMT 2022

PM Blew off UCOMP 01

____end____

Thu Apr 07 17:33:31 GMT 2022 Kcor Focus/alignment program exited

GENERAL COMMENT BY berkey: Thu Apr 07 17:39:39 GMT 2022

Skies are a little bright.

____end____

Thu Apr 07 17:47:22 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal_flat.cbk line 11

Thu Apr 07 17:47:31 GMT 2022 KCOR Start Synoptic Patrol

Thu Apr 07 17:50:08 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

Thu Apr 07 18:18:16 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

Thu Apr 07 18:45:55 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

Thu Apr 07 19:13:34 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal_flat.cbk line 0

Thu Apr 07 19:28:52 GMT 2022 Running UCOMP Cookbook waves_1074_1hour.cbk line 0

Thu Apr 07 19:37:59 GMT 2022 KCOR End Patrol

Thu Apr 07 19:38:02 GMT 2022 UCOMP Paused for clouds

Thu Apr 07 19:38:07 GMT 2022 KCOR End Patrol

GENERAL COMMENT BY berkey: Thu Apr 07 19:38:42 GMT 2022

Clouds showing up. Might need to shut down soon.

____end____

GENERAL COMMENT BY berkey: Thu Apr 07 19:41:35 GMT 2022

Trying out some new guider code.

____end____

GENERAL COMMENT BY berkey: Thu Apr 07 20:30:06 GMT 2022

New guider mode looks ok/good from what I can tell between clouds, more testing is needed before we can roll it out.

Perviously Kcor calculated new SGS targets based on an offset calculation of how bad the occulter spill was in kcor + the current SGS position. And sent that result to SGS once ever 15.1 seconds.

So if the SGS had a position of RA=40 and Kcor wanted it to move +1. Kcor would send a target of 41 to the guider. On receiving this update the guider would instantly change its pointing target to 41 and start guiding to that location. If the move was big like Old+10 (or something) there could be some jitter in as the guider settled to its new target. (A similar calculation was also sent for the DEC when the RA was sent)

In the new algorithm. Kcor calculates how far it wants to move in RA and Dec based on the same occulter spill algorithm. And then it sends those to vlaues plus its update rate to the guider.

So if it wanted to move the RA+1 and the Dec 0. It would send RA=1, DEC=0, Update=15.17.

The guider on receiving these targets calculates how many pointing updates it would during a kcor update period. Update loop currently opperating at 21.27 Hz *15.17 seconds = ~323 guider updates per kcor update. It then divides the Kcor RA/DEC error signals from kcor by this update ratio. So we now a Kcor RA error of 1 is applied as 1/322 or .003 arcsecond pointing updates, updating ~21 times per second.

Note: This 21Hz rate is about twice as fast as the 80ms UCoMP image rage

Based on testing so far this appears to keep the pointing relatively close; and we have no obvious sign errors that are driving the guider away from target. Updates appear to get applied smoothly in the guider feed back windows. No obvious jumps in the SGS traces. And the NRGF images look ok. With the current clouds getting thicker we might not be able to get any more testing in today.

____end____

Thu Apr 07 22:50:25 GMT 2022 UCoMP Restarted from pause

GENERAL COMMENT BY berkey: Fri Apr 08 01:21:47 GMT 2022

Reverting kcor and sgs communication to send signals every 15 seconds.

____end____

ONSITE STAFF: berkey