
Mauna Loa Solar Observatory Observer's Log

Wed Apr 13 15:46:04 GMT 2022

Year: 22 Doy: 103

Observer: lisapg

WEATHER COMMENT: lisapg: Wed Apr 13 16:16:50 GMT 2022

Temp: 35.9f with wind speed at about 5-10mph from the South-Southwest. Bands of cirrus on the Eastern horizon and to the North but so far clear above.

____end____

GENERAL COMMENT BY lisapg: Wed Apr 13 16:31:35 GMT 2022

PM Blew off Kcor 01

____end____

GENERAL COMMENT BY lisapg: Wed Apr 13 16:31:39 GMT 2022

PM Blew off UCOMP 01

____end____

UCOMP COMMENT BY mlso: Wed Apr 13 16:52:36 GMT 2022

Updated ucomp lyot tuning files.

____end____

Wed Apr 13 17:05:41 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal_flat.cbk line 0

GENERAL COMMENT BY lisapg: Wed Apr 13 17:06:26 GMT 2022

Kcor above dome

____end____

Wed Apr 13 17:07:23 GMT 2022 Kcor Focus/alignment program exited

Wed Apr 13 17:09:15 GMT 2022 KCOR Start Synoptic Patrol

Wed Apr 13 17:20:58 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

Wed Apr 13 17:24:10 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal_flat.cbk line 0

UCOMP COMMENT BY lisapg: Wed Apr 13 17:25:47 GMT 2022

UComp crashed trying to open a nonexistent script, restarted UComp GUI and reloaded daily.menu to hopefully fix it.

____end____

Wed Apr 13 17:39:28 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

Wed Apr 13 17:44:44 GMT 2022 KCOR End Patrol

Wed Apr 13 17:44:52 GMT 2022 KCOR End Patrol

GENERAL COMMENT BY lisapg: Wed Apr 13 17:45:08 GMT 2022

Band of cirrus passing through, pushing through it

____end____

Wed Apr 13 17:46:12 GMT 2022 KCOR Start Synoptic Patrol

Wed Apr 13 18:07:36 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

****Possible CME in Progress lisapg**** : Wed Apr 13 18:20:40 GMT 2022

Observers report with medium confidence a CME seen launching between PA 220-235 at UT 17:12:14; event may have already been in progress at start of observing.

____end____

GENERAL COMMENT BY lisapg: Wed Apr 13 18:24:21 GMT 2022

Small band passing, pushing through.

____end____

Wed Apr 13 18:32:06 GMT 2022 KCOR Start Synoptic Patrol

Wed Apr 13 18:35:15 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

GENERAL COMMENT BY lisapg: Wed Apr 13 18:38:32 GMT 2022

Sky is a little bright, still alright to take data

____end____

Wed Apr 13 18:48:13 GMT 2022 KCOR Start Synoptic Patrol

GENERAL COMMENT BY lisapg: Wed Apr 13 18:55:25 GMT 2022

Holding off calibrations for Kcor

____end____

Wed Apr 13 19:03:04 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal_flat.cbk line 0

Wed Apr 13 19:18:21 GMT 2022 Running UCOMP Cookbook waves_1074_1hour.cbk line 0

GENERAL OBSERVATORY COMMENT BY mlso: Wed Apr 13 19:24:09 GMT 2022

At about 18:30UT changed the kcor centroid code to produce smaller updates. This seems to beat down the oscillations. Before this change, we were sending the mean of the last 5 sgs position errors (as calculated by kcor). We are now sending the mean/5.

In the old version, we were overshooting a lot because the position error was sent multiple times.

For example, if we set some initial conditions of the RA being 1 arcsecond too small for the last 5 measurements we would do the following over time.

```
1: mean(1,1,1,1,1) moving RA +1 putting kcor 0 arcsec from centered
2: mean(1,1,1,1,0) moving RA .8 putting kcor -.8 arcsec from centered
3: mean(1,1,1,0,-.8) moving RA +.44 putting kcor -1.24 arcsec from centered
4: mean(1,1,0,-.8,-1.24) move RA -.04 putting kcor -1.28 arcsec from centered
```

Then from where we just oscillate around our desired position which each oscillation increasing in amplitude.

In the new version we are only moving 1/225 of the total error so we instead:

```
1: mean(1,1,1,1,1) moving RA .2 putting kcor .8 arcsec from centered
2: mean(1,1,1,1,.8) moving RA .192 putting kcor -.608 arcsec from centered
3: mean(1,1,1,.8,.6) moving RA .176 putting kcor .432 arcsec from centered
4: mean(1,1,.8,.608,.403) moving RA .15 putting kcor .28 arcsec from centered
5: mean(1,.8,.608,.403,.28) moving RA .123 putting kcor .15 arcsec from centered
6: mean(.8,.608,.403,.28,15) moving RA .08 putting kcor .07 arcsec from centered
```

Which is down into or measurement noise.

There are probably improvements we can make from here with better filtering but the system seems fairly stable over the last hour of testing.

____end____

GENERAL OBSERVATORY COMMENT BY mlso: Wed Apr 13 20:14:56 GMT 2022

To further follow up on the guiding changes.

Starting April 12 we send pointing error signals from kcor; where previously we sent pointing targets.

Feb 2->April 11th. Kcor would calculate that it wanted RA+1 then add that target value to the RA zero point value it looked up from the guider.

Such that if at time 1 the guider had a zero point offset of 10 for the last few minutes, but wanted to be at 11 the calculation would go:

```
1: mean(11,11,11,11,11) kcor would send a new zero point target of 11.
2: mean(11,11,11,11,11) kcor would send a target of 11 (which was the old target)
```

____end____

GENERAL COMMENT BY lisapg: Wed Apr 13 20:26:08 GMT 2022

Sky starting to get bright.

____end____

Wed Apr 13 20:27:49 GMT 2022 Running UCOMP Cookbook no-occultor-flat.cbk line 0

Wed Apr 13 20:34:17 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

Wed Apr 13 20:47:22 GMT 2022 KCOR End Patrol

Wed Apr 13 20:47:31 GMT 2022 KCOR End Patrol

Wed Apr 13 20:47:38 GMT 2022 UCOMP Paused for clouds

GENERAL COMMENT BY lisapg: Wed Apr 13 20:47:48 GMT 2022

Sky has gotten very bright, KCor and UComp idled for now

____end____

Wed Apr 13 20:57:22 GMT 2022 KCOR Start Synoptic Patrol

Wed Apr 13 20:57:24 GMT 2022 UCOMP Restarted from pause

KCOR COMMENT BY lisapg: Wed Apr 13 21:03:23 GMT 2022

Kcor seemed to hang up briefly when I tried to take the cover out of the beam. It seemed to crash the pop up that comes up when putting in/taking out anything in beam and then nothing responded on K-Cor MC4U Controller for a bit. Then it kicked in with pulling the cover out of beam. Not too sure what happened.

____end____

Wed Apr 13 21:11:42 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal_flat.cbk line 0

Wed Apr 13 21:12:08 GMT 2022 KCOR End Patrol

Wed Apr 13 21:12:16 GMT 2022 KCOR End Patrol

Wed Apr 13 21:13:58 GMT 2022 KCOR Start Synoptic Patrol

GENERAL COMMENT BY lisapg: Wed Apr 13 21:14:23 GMT 2022

PM Blew off Kcor Field Lens to address artifact that appears in the Northwest.

____end____

Wed Apr 13 21:26:59 GMT 2022 Running UCOMP Cookbook all_wavelength_coronal.cbk line 0

Wed Apr 13 21:29:18 GMT 2022 KCOR End Patrol

Wed Apr 13 21:29:26 GMT 2022 UCOMP Paused for clouds

Wed Apr 13 21:29:30 GMT 2022 KCOR End Patrol

GENERAL COMMENT BY lisapg: Wed Apr 13 21:30:38 GMT 2022

Cirrus band crossing, instruments stopped for a bit

____end____

KCOR COMMENT BY lisapg: Wed Apr 13 21:31:26 GMT 2022

KCor MC4U controller wasn't responding again. Shutting down lab view and restarting it to see if this fixes the mini crashes

____end____

GENERAL COMMENT BY lisapg: Wed Apr 13 21:36:34 GMT 2022

Sky too bright at present to take data.

____end____

Wed Apr 13 21:38:37 GMT 2022 Kcor Focus/alignment program exited

Wed Apr 13 21:39:32 GMT 2022 UCoMP Restarted from pause

Wed Apr 13 21:39:57 GMT 2022 KCOR Start Synoptic Patrol

Wed Apr 13 21:49:04 GMT 2022 KCOR End Patrol

Wed Apr 13 21:49:16 GMT 2022 KCOR End Patrol

GENERAL COMMENT BY lisapg: Wed Apr 13 21:49:22 GMT 2022

Sky getting very bright at present

____end____

Wed Apr 13 21:49:55 GMT 2022 UCoMP Paused for clouds

GENERAL COMMENT BY lisapg: Wed Apr 13 22:04:08 GMT 2022

Sky too bright to take data at present

____end____

GENERAL COMMENT BY lisapg: Wed Apr 13 23:31:21 GMT 2022

Low looking clouds, dome closed just in case

____end____

Thu Apr 14 00:08:45 GMT 2022 UCoMP Restarted from pause

GENERAL COMMENT BY lisapg: Thu Apr 14 00:15:23 GMT 2022

In fog

____end____

GENERAL COMMENT BY lisapg: Thu Apr 14 00:27:37 GMT 2022

A fair amount of data this morning; unfortunately no data this afternoon. Hope tomorrow is better.

____end____

ONSITE STAFF: lisapg