
Mauna Loa Solar Observatory Observer's Log

Fri Nov 13 15:58:29 GMT 2020

Year: 20 Doy: 318

Observer: lisapg

WEATHER COMMENT: lisapg: Fri Nov 13 16:45:17 GMT 2020

Temp: 38.0f with windspeed at about 16-21mph from the Southeast. Sky looks clear.

____end____

GENERAL COMMENT BY berkey: Fri Nov 13 19:00:17 GMT 2020

PM Washed Kcor O1

____end____

GENERAL COMMENT BY berkey: Fri Nov 13 19:00:35 GMT 2020

PM Blew off Kcor O1

____end____

Fri Nov 13 19:00:56 GMT 2020 Kcor Focus/alignment program exited

Fri Nov 13 19:03:03 GMT 2020 KCOR Start Synoptic Patrol

GENERAL COMMENT BY berkey: Fri Nov 13 19:06:20 GMT 2020

Opened windows upstairs

____end____

Fri Nov 13 19:20:02 GMT 2020 KCOR End Patrol

Fri Nov 13 19:28:55 GMT 2020 KCOR Start Synoptic Patrol

Fri Nov 13 19:36:40 GMT 2020 KCOR End Patrol

KCOR PROBLEM COMMENT BY lisapg : Fri Nov 13 19:41:15 GMT 2020

Currently trying to figure out why the data looks the way it does. It's like a mix between a bad polarization state and light leak. In the Synoptic images, it looks like there is a half ring around the center with what looks like jets that can be seen.

Removing yesterdays calibration didn't seem to work, restarting Kcor Socketcam didn't help, the cameras started up in the correct state twice but the darks had a cross hatch look to them. Ben has pulled the O1 again to do an inspection.

____end____

Fri Nov 13 21:22:14 GMT 2020 Kcor Focus/alignment program exited

Fri Nov 13 21:24:12 GMT 2020 KCOR Start Synoptic Patrol

GPS COMMENT by MLSO: Fri Nov 13 21:45:11 GMT 2020

Successfully logged in to system

Good disk mount

GPS software running

Last 5 GPS data files are:

/mnt/usb/dataoutiq_2020_314_1713.bin 2147483647

/mnt/usb/dataoutiq_2020_315_1713.bin 2147483647

/mnt/usb/dataoutiq_2020_316_1713.bin 2147483647

/mnt/usb/dataoutiq_2020_317_1713.bin 2147483647

/mnt/usb/dataoutiq_2020_318_1713.bin 661294080

Disk usage: /dev/sdal 916.9G 228.0G 642.3G 26% /mnt/usb

____end____

Fri Nov 13 22:43:50 GMT 2020 Kcor Focus/alignment program exited

Fri Nov 13 22:45:28 GMT 2020 KCOR Start Synoptic Patrol

Fri Nov 13 23:23:41 GMT 2020 KCOR End Patrol

Fri Nov 13 23:34:02 GMT 2020 Kcor Focus/alignment program exited
Fri Nov 13 23:59:39 GMT 2020 Kcor Focus/alignment program exited
Sat Nov 14 00:01:24 GMT 2020 KCOR Start Synoptic Patrol
Sat Nov 14 00:42:59 GMT 2020 KCOR End Patrol
Sat Nov 14 00:48:08 GMT 2020 Kcor Focus/alignment program exited
Sat Nov 14 01:18:21 GMT 2020 Kcor Focus/alignment program exited
Sat Nov 14 01:20:38 GMT 2020 KCOR Start Synoptic Patrol
Sat Nov 14 01:23:05 GMT 2020 KCOR End Patrol
Sat Nov 14 01:23:06 GMT 2020 KCOR Start Calibration script: c:\kcor\mlso-calibration22deg-20171025.ini
Sat Nov 14 01:38:21 GMT 2020 KCOR End Calibration Script
Sat Nov 14 01:38:37 GMT 2020 KCOR Start Synoptic Patrol
Sat Nov 14 01:38:38 GMT 2020 KCOR Start Synoptic Patrol
KCOR PROBLEM COMMENT BY berkey : Sat Nov 14 02:19:55 GMT 2020
We may have a major issue with the Kcor o1-2

There is a new feature within about 1 inch of the center of the lens. This feature is about 3mm long 1/2mm wide and appears to be a set of parallel scratches in the glass. I am not sure how to verify (with the tools on site) that this is in fact a scratch in the glass and not some contamination on the glass, but when DI water is run across this feature it sticks to it in a way that seems like defects not contamination. Assuming it might be something on the glass I have found that it did not move or change its appearance when rinsed with water, soap, isopropanol or acetone.

I believe this glass feature is the source of the dominate fringe pattern we have been seeing for most of the day. If this is the case I am out of ideas about how to attempt to clean the lens or otherwise mitigate the feature.

Timeline:

EOD yesterday First contact material was applied to the Kcor O1 front and back and left to dry over night because it didn't seem to cure after a few hours of drying.

Early this morning polymer was unsuccessfully removed due to some of the material remaining uncured. Acetone, soap and water were used to remove the excess polymer and wash the lens. It was at this time the feature in the glass was noticed.

(~19:30UT) On installation of the lens in Kcor as strong X polarization pattern was observed in the data, suggesting the mount was too tight and we were pinching the glass.

The lens was then removed from the telescope and the mount was inspected and cleaned

(~21:30UT) Lens reinstalled bad fringe pattern now dominates

Soap and water cleaning attempted

(~22:30UT) Lens reinstalled no change in pattern.

Attempted to mask out the lens defect, but found too much light scattering to even check if this changed the fringe pattern. Rewashed the lens focusing on the new feature. Rotated the lens cell ~90 degrees on its mount.

(~00:00UT) No overall change in fringing intensity but now the fringe isn't oriented in the equatorial plane which I hope is better.

I am not sure what are the next steps to move forward. We could try to clean the lens again and hope to remove some of the other features in the data, but if the big fringe is coming from a scratch we may need to take the lens to an optics lab

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____end____

Sat Nov 14 02:50:12 GMT 2020 KCOR End Patrol

ONSITE STAFF: berkey, lisapg