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          Mauna Loa Solar Observatory Observer's Log
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       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 betw
een a bad polarization state and light leak. In the Synoptic images, it looks like ther
e 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/sda1               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-calibration22d
eg-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.
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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 app earance 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 becasue it didnt seem to cure after a few hours of drying.

Early this morning polymer was unsuccessfully removed due to some of the material remai ning 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 patter was obs erver 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 dominate

Soap and water cleaning attempted
(~22:30UT) Lens reinstalled no change in pattern.

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

(~00:00UT) No over all 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.
___end___
Sat Nov 14 02:50:12 GMT 2020 KCOR End Patrol
ONSITE STAFF: berkey, lisapg