

ms 7 & file

HIGH ALTITUDE OBSERVATORY

Observing Station:
CLIMAX, COLORADO

Research Center:
UNIVERSITY OF COLORADO
BOULDER, COLORADO

1 November 1963

Please reply to:
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THE CLIMAX - OCTOBER 1963

Coronal sky time was 21% for the month, and the time was well needed for all the activity that appeared. This business of the sun having an eleven year cycle of activity is all a hoax - there is a real surge in active regions going on at the present, and although the regions do not last very long more seem to pop up all the time. There have been a number of larger flares (class II or so), and a lot of small ones. We have not observed any on the limb - partly due to clouds at limb passages - but we have observed some limb active regions. The big region mentioned in the September report came around the east limb a real has-been, with no activity of any kind, but then just when it looked as though we were looking at the blank side of the sun another big region hit the east limb. And so it is still going.

There has been a slight toning down of the routine surveys in order to have a bit more time for other programs. Also the green survey has been placed behind the red in importance to adjust the observations to sunspot minimum conditions where the red yields more data than the green. This has all been worked out with Don Billings. Still, for the month we had 13 green surveys, and 16 red. Limb activity was shot three times with nothing of interest showing on any of them (maybe we should not call them active regions, but just regions). Two scans with the straight slit were made on disk flares, and neither of them showed anything of interest either. We did have a few prominences along with the regions, and the H & K prominence program was shot three times - one was good, and two were partial. A Fine Grain Red program was begun to study small scale doppler shifts in the red line.

After shooting two different tests to compare the triplet lens with the singlet it was decided to retire the triplet from all use except disk work on flares until it can be recemented. Bob and Joe are considering the problems connected with the job now.

Use of the image tube this month seems to indicate a dropping off of the sensitivity the longer the tube is turned on - tests have yet to be run to determine if this is real. It now appears that the more sensitive tube will have to be used even though it has a ring on the phosphor. This tube is presently mounted for the Jupiter observing in the big dome. Some work has been done toward observing Jupiter, and pictures have been taken in the form of exposure tests. The next step is focus tests. The planet has been observed with the tube refrigerated with dry ice at 30 seconds through the Wratten 87C filter, and 2 minutes through the silicon filter.

In the big dome a great deal of time has been spent attempting to tune the Halle filter. Most of this work has centered around

placing the filter in front of the spectrograph of the 5 inch which should give a good positive tune on the temperature and polaroids. Unfortunately, when the filter is placed back on the 16 inch the sun has no contrast in its structure. A possible explanation could be the different heating effects on the first element of the filter when in the two different light beams since the first element in the Halle is the second thickest. I am ready to believe that anyway since I have observed changes in the tuning of the front polaroid after it has been placed on the filter while in front of the spectrograph.

Jerry McCright has made two trips up this month to observe sunspots with the 16 inch. The results so far a meager because of clouds and poor seeing, but he plans more trips in the near future.

For the last four or five months we have been testing the new XR film. This is a three emulsion film that has an exposure range of a million (not an ASA of a million). Color dyes are used with each of the three emulsions, and then by use of suitable color filters when printing from the film the exposure range can be utilized (color filters will also work for visual use of the negative). The men who developed this new film visited Climax last week to stress that they are very interested in working with anyone who might utilize the unusual feature of wide exposure latitude on one film. The film is expensive - about \$80 for 100 feet plus 25¢ per foot for processing (color processing K 22 is required), and its applications are few. However, they are sending us another fresh 100 feet of the film and will process it for us. If anyone thinks they might have an application for it, step forward.

Frank Lowe of the Greenbank Observatory visited Climax also this month to look over the site as a possible location for his proposed 36 foot infr-red mirror project. This project would incorporate a new detector devised by Lowe to observe at several windows in the infra-red that have heretofore been non-observable because nothing was sensitive at those wavelengths. One of these windows is at 1mm. Climax appears to be a good location from the standpoint of low water vapor overhead, but tests are already underway to determine if this is indeed so - water vapor content of the atmosphere is the critical factor in these observations.

The new garage was started and completed this month. It will house the snowplow and be a place where vehicles can be worked on in the winter time. It is only large enough to hold one snowplow at a time (or possibly one Volvo and one Volkswagen).

Bob Eddy left the observatory in October because of his wife's health. He is now working for the Bureau of Standards in Boulder.

October was almost one of the driest months on record, but we got our first snow of the winter on the last day of the month that changed all that (7.6 inches). It was only 4° above zero last night - here we go again.

Keith