A.A.V.S.O.

SOLAR DIVISION BULLETIN.

Neal J. Heines, Editor.

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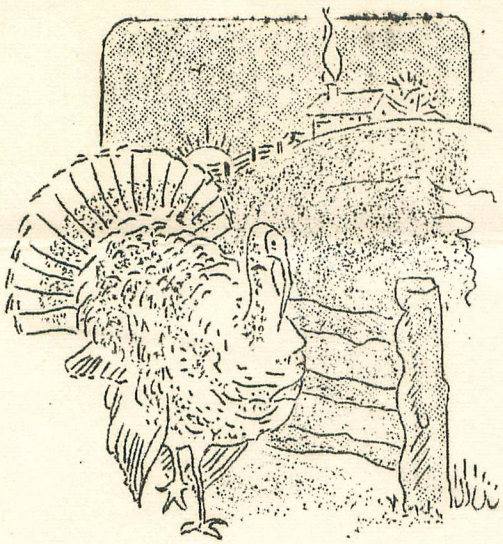
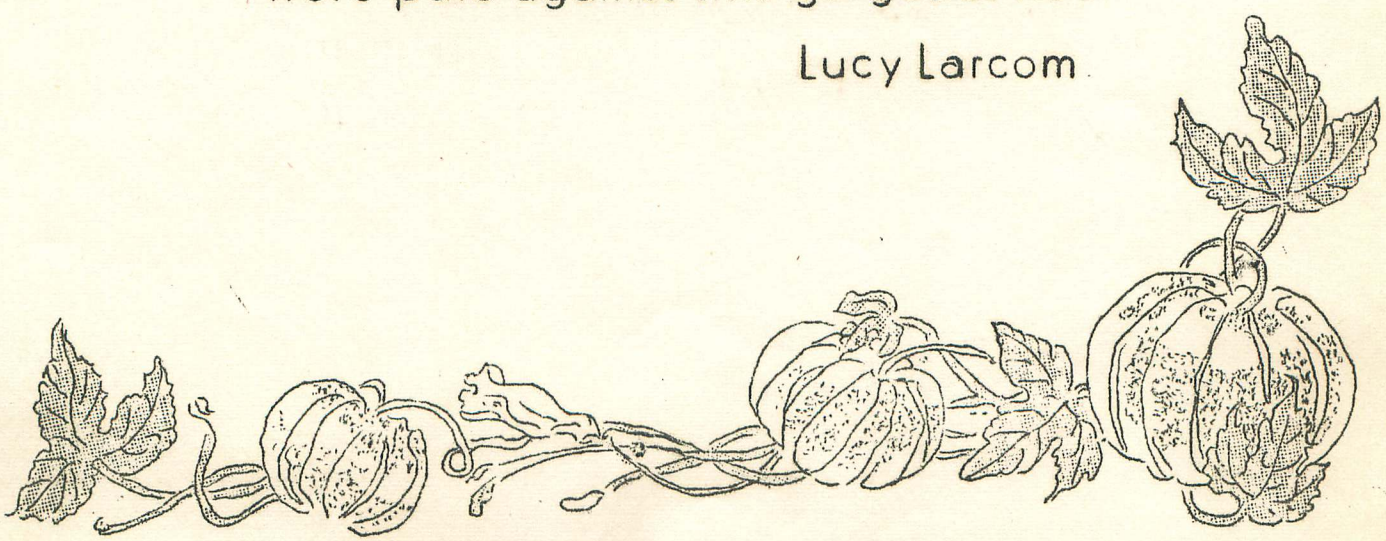


NOVEMBER

This is the month of sunrise skies
Intense with molten mist and flame:
Out of the purple deeps arise
Colors no painter yet could name:
Gold-like lillies and the cardinal flower
Were pale against this gorgeous hour.

Lucy Larcom



The fall meeting of the American Association Of Variable Star Observers was one resplendant in good fellowship and sincere industry. Those who attended, and, those who will read, in SKY AND TELESCOPE, POPULAR ASTRONOMY, AND ,VARIABLE COMMENTS , ETC, will have much to reflect on.

It was the last meeting at which Dr.Leon Campbell officiated as Recorder and Pickering Memorial Astronomer.

Mr.Campbell is succeeded by Mrs.Margret Mayall in both capacities.

Mr.Campbell had been associated with Harvard College Observatory continuously, since January 3,1899. " He made a name for himself as 'THE MOVING FORCE AND ANCHOR" of The American Association Of Variable Star Observers, an organization in which he has been actively interested since 1915. It was founded in 1911 by Prof. Pickering.

Mr Campbell was appointed Pickering Memorial Astronomer in 1931.

Aside from the many Variable Star observers in this country,there are those in seventeen nations who contributed serious data each month.

One of the outstanding tributes to Dr.Campbell was a bound volume which contained a sheath of complimentary letters from all over the world. Some of these were read to him at a dinner in his honor at Hotel Commander, Cambridge , Mass,on Saturday evening, October 15th.

Complete details of these meetings,will appear,in the near future, in the above mentioned publications.

As a supplement to the present issue of this bulletin you will find the Solar Division Report as submitted to the Association at the morning session, on Saturday,October 15th., by your Chairman.

We greive to make known the death of, Dr.Gilbert Bruce Blair, Associate Professor of Physics and Astronomy at the University of Nevada. Dr.Blair passed away on September 19th., 1949. He was a member of several Learned Societies. The amateuer astronomers throughout this country knew him better as the Editor and Publisher of the ASTRONOMICAL INFORMATION SHEETS, a publication devoted mainly to their various interests, and reported many of their activities.

Mr. Frank Trathen, of Napa,California, one of our Solar Division observers writes; "He was such a fine man,always helping us amateuers; He will be missed a long time; He was so jolly and good natured"

Observers who need Annual Record Sheets for 1950 kindly request same in the next communication with this office.

We have been requested by Dr.James C.Bartlett, in charge of our Solar Granulations Program, to announce to his observers the following.

1) That owing to recent studies, I am making some changes in the Granulations Program which will be announced to all the observers , very shortly;

2) That a new form of resumé will be sent to the observers which will reflect these changes;

3) That for the present all granular observations should continue as before;

4) That owing to studies leading to a modification of the program , plus my losing bout with Hay Fever, I have not had time to communicate with the several observers for which I beg their indulgence.

STATISTICS.

The total Number of observed groups for the month of Sept., was -- 34
The total number of days with sunspots for September was --------- 30
Zurich's Provisional Relative Sunspot Number for Sept.,was----- 151.6
Mean (Monthly) Sunspot Area(U.S.Naval Observatory) Sept.was---- 2,294
*The highest sunspot group number as assigned at Solar Division Headquartres on Octobet 16th., was 395. It represented a small group near the east limb,in the south belt.
* This information is given in order that Solar Division Observers may check their group counting each month.

Predictions of the smoothed monthly Sunspot-Numbers for the coming six months :

October 110	January 100
November107	February 96
December104	March 90.

Prof.M.Waldmeier.

ERRATA.
October Bulletin, Page 109. Under STATISTICS FOR JULY:
In the sentence containing U.S.Naval sun spot areas chnage JULY to JUNE for the 1,627 value.
Under STATISTICS FOR AUGUST.
In the sentence containing U.S.Naval sun spot areas indicate JULY for the 1,736 value.

PUBLICATIONS.

"THE PROBABLE BEHAVIOR OF THE NEXT SUNSPOT CYCLE" Prof.W.Gleissberg.
ASTROPHYSICAL JOURNAL July 1949;pp.90-92.

"Biblioography Of Radio Astronomy" ---------- Miss Martha E.Stahr.
School Of Electrical Engineering,Cornell University ;
Ithaca, New York.

"MORE ON SUNSPOT NUMBERS" ---------- ------J.Hugh Pruett.
SKY AND TELESCOPE (Under Terminology Talks)
October issue 1949 p.305.

"SOME ASPECTS OF EVOLUTION IN SUN-SPOT CYCLES"--Mr.H.B.Rumrill.
POPULAR ASTRONOMY. October 1949.VolLVII No.8 p.378-380.

"THE SUN'S SPOTTEDNESS AS A POSSIBLE FACTOR IN THE FREQUENCY OF ANTICYCLONES IN NORTHWESTERN NORTH AMERICA" ---------- I.I.Shell
(Blue Hill Observatory,Harvard University, Milton Mass.)
BULLETIN AMERICAN METEOROLOGICAL SOCIETY.
October 1949; Vol.30;No.8;pp.292-294.

"ON SEEING,FINE STRUCTURE OF STELLAR IMAGES,AND INVERSION LAYER SPECTRA"---------- ---------- E.Gaviola.
THE ASTRONOMICAL JOURNAL. June 1949 No.1178,pp.155-161.

Miss Doris Hofliet,Harvard Observatory, gave a very interesting discourse on seeing conditions at the Friday evening session of the AAVSO. This paper was referenced and is worth investigation.

SUPPLEMENT TO NOVEMBER BULLETIN

REPORT OF THE SOLAR DIVISION TO
THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS

Membership	-117	with Research (68) Total 185
Membership Distribution	29	States, 12 Foreign Countries.
Report Blanks Issued	712	Duplicates & Gleisberg Proj. Inc.
Reports Distributed	343	Bur. Stan. 90 Gleisberg; Tot. 433.
Number of Observations	7594	Total to 9/1/49; 60,674 (Gleis. 1784)
Communications Sent	743	" " " ; 8,508.
Communications Received	585	" " " ; 6,571.

Number of Solar Division Bulletins Issued, 6 Editions, 888 Copies.
Number of Reduction Reports Distributed for this 4 month period 736.

The American Relative Sunspot Numbers* for this four month period are as follows: May, 147; June, 154.5; July, 153.6; Aug., 163.7.

*Determined at the Bureau of Standards, Washington, D.C.

CONDITION OF THE PRESENT SUNSPOT CYCLE

Since our last report, rendered at the Ladd Observatory, Brown University, solar activity is gradually diminishing, with occasional moderately high levels despite the fact that during this period the first zero values have been in evidence. This situation did not involve whole disc values as there has not been a day so far, since 1947 that the sun was void of spots. The zero values occurred in the Central Zone and the Belt Areas From my own records the Central Zone was void of spots on June 10 11th, 19 20 July 7 8 9, Aug. 8 11. The North Belt was void of spots on July 8 9. Sept. 28 30. The South Belt on Aug 7 8 and 10 11th.
Zones of extra activity continue but in a sporadic manner
Graphs delineating the various trends are available at this meeting for your inspection.
Sunspot Areas* for this same period were. May 1415 June 1627; July 1736 Aug 2295. *Determined at the U.S. Naval Observatory. Areas are corrected for foreshortening and expressed in millionths of the Sun's hemisphere and are mean daily areas for thirty days.

SOLAR DIVISION ACTIVITY

We are still actively engaged in the following projects; Sunspot Counts for the National Bureau of Standards, Granular Solar Surface and Color in Sunspots, Dr. J.C. Bartlett; Unusual spot configuration and colors, Dr. W.O. Roberts; Foreshortening of Sunspots, Prof. W. Gleissberg; Migratory Birds Project; Delineation, Sunspot Area Measurements, Solar Radiation, Heines.
We have a tentative date for the delivery of instrumentation for the observation of Solar Prominences in early 1950. The mechanical work is practically complete and the optical work is in progress The design is after Pettit.
Membership in both sections remains at the same advanced level.
Progress also has been made in our study of "SEEING CONDITIONS".
A third revision of our "INSTRUCTIONS LEAFLET" is also in progress
Organization of the Aurorae Project is complete and we are now ready to receive observations from our existing observers. Past President Seely the Assistant Director of the Solar Division, is in charge of the work

SUPPLEMENT TO OCTOBER BULLETIN

Descriptinn of Auroral Forms

The descriptions given below are from the works of Prof. Carl Stormer, Prof. Vegard, and others and follow the terminology developed by Prof. Stormer and generally used in this work. The standard abbreviation precedes the descriptive words and should be used in all tabulations.

G GLOW. A faint glow near the horizon, resembling the dawn, usual ly white or greenish color but sometimes red. This is often the upper part of an arc whose lower border is below th horizon.

HA HOMOGENEOUS ARC. The arc is usually diffuse above and sharply defined below. I may be near the horizon or quite isolated high in the sky. Sometimes several parallel arcs occur and may be connected at one end by a sharp curve. The color is usually greenish yel low or nearly white. The arc often gradually climbs up the sky and may later have a very luminous irregular lower border and soon after break into rays (type RA). The arc is usually set almost at right angles to the magnetic meridian. Often only parts of arc are visible.

HB HOMOGENEOUS BAND. This band has a more irregular form than the hogeneous arc. It may vary from narrow to very wide. The lower bo border is often irregular and sharply defined. It may sometimes consist of a segment of approximately semicircular shape which may move across the sky in the direction of the usual arcs HA. The band may have folds and res emble a large curtain. These usually change into bands with ray structure (typeRB). The coloris usually bluish white.

PA PULSATING ARC. Arc, or parts of them, may flash up and disappear rhythmically with a period of 10 to 30 seconds. The color is usually bluish green.

DS DIFFUSE SURFACE. A diffuse veil or glow, often over large parts of the sky. They may resemble clouds and often appear after rays or curtains. The color may may range from violet white to an intense red.

PS PULSATING SURFACE. A diffuse patc or surface which appears and disappears rhythmically. Near the zenith the boundary may be sharp er. Often appears with or as part of, a flaming aurora (type F).

RA RAYED ARC. An arc with ray struc ture. A quiet homogeneous arc often becomes very luminous and then breaks into rays. The rays may be short or long and may vary in brightness along their lengths.

RB RAYED BAND. A band with ray struc ture. Resemble the bands type HB but composed of rays. The rays may be close together or scatter ed along the band. Several paral el bands may appear. Near the Magnetic zenith the bands may form a corona.

D DRAPERIES. When bundles of rays become long the band often assumes the form of a curtain or drapery. The lower border is often more luminous. Near the zenith they have a fanlike form or partial corona.

R RAYS. Rays resemble searchlight beams in a dusty atmosphere. The rays may appear isolated or in great bundles. They are usually greenish yellow but may be red. Rays often appear with other aur oral forms.

OVER

AURORAL FORMS (continued)

C CORONA. When rays approach the magnetic zenith they seem to converge to a point because of perspective. The corona may be formed by long or short rays, by bands or by draperies.

F FLAMING AURORA. A quick moving form consisting of waves of luminosity moving toward the zenith or of invisible waves which cause parts of arcs, bands or patches to appear and disappear rhythmically. Often appears after strong displays of rays and curtains and is often followed by the formation of a corona.