

SOLAR DIVISION BULLETIN.

Neal J. Heines, Editor.

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Paterson 4, N.J.

Early in November 1950, the "The Transactions Of The International Astronomical Union", Volumn VII, 1950, was received. In it was found a series of items concerning sunspots which are of interest to the readers of this bulletin. We regret that we cannot publish these items verbatim. A synopsis of the pertinent items follow;

Periodicity of Sunspot Activity

The long period already established by R. Wolf in 1862 has again been investigated by W. Gleissberg with the result that the period amounts to approximately 70 years.

Prediction of Sunspot Activity

For the first time, thanks to the outburst hypothesis established by M. Waldmeier in 1935, it has been possible to predict the whole course of a new cycle at its beginning. The essential point of that hypothesis brings out the fact that the totality of the individual sunspot cycles form a family of curves depending on chiefly one parameter. Later on, different analytical formulae have been suggested for these curves by Stewart and Panofsky and by W. Gleissberg. These formulae, have, however, proved less adequate for prediction, because they contain as parameter the Sun's activity at its maximum, so that they only can be used after the maximum has been reached. M. Waldmeier's prediction having proved successful, a new prediction with the help of the same method was set up at the beginning of the current cycle according to which the maximum should be extremely intensive and should take place in 1947.6. As far as can be judged from the observations at the present stage, this prediction was fully successful too. W. Gleissberg predicted the present sunspot cycle as follows; With a probability of 95% it can be predicted that the maximum will take place before May 1948 and will be greater than that of 1937. (Ed. note: see supplement to S.D. Bulletin No. 21, Aug. 1947).

Distribution of the Sunspot Groups on the Sun's Disk

An investigation of the latitude of the spot zone during seven cycles by M. Waldmeier has led to the result that, contrary to the frequency variation, the latitude variation is very regular; as a further consequence the average latitude of the spotzone during very intensive, that is to say premature maxima, is greater than during weak and thus late maxima. W. Gleissberg has come to the same conclusion.

The east-west asymetry has been examined by W. Gleissberg, M. G. Minnaert and M. Waldmeier. ---- the excess of originating sunspots on the eastern side as compared to the western side is explained by the variable visibility of sunspots dependent on the distance from the centre of the Sun's disk, in connection with the Sun's rotation. If this theory proves to be correct, there must be a corresponding excess on the western hemisphere as compared to the eastern one for the dissolution of sunspots. --- This leads to the result that the points, at which sunspots are seen for the last time, show a distribution conforming exactly to what had to be expected from the theory. Concerning the visibility of spot groups it has been found that not only a geometrical foreshortening had to be taken into account, but that there exists a physical foreshortening too.

A further east-west asymetry, suspected by Maunder, according to which the groups appearing on the eastern limb are more numerous than those disappearing on the western limb, has already been put into doubt by M. Waldmeier --- and refuted by W. Gleissberg.

A third east-west assymetry maintains that the area occupied by the spots on the eastern side of the sun is greater than that occupied on the western side. This effect has been confirmed by Gleissberg.

Waldmeier has pointed out a relation between the northern and southern hemispheres. Recent, not yet published research work shows that more often than should be expected from mere chance, a spot not only possesses a corresponding spot in the same longitude and symetric to the equator, but that there often exists a corresponding pair of spots on the meridian 180 degrees away from the one considered.

We will continue these items in our next bulletin.

STATISTICS

The total number of observed groups for the month of Oct. was---20.

The total number of days with sunspots for Month of Oct. was ---31.

Zurich's Provisional Relative Sunspot Number for Oct. was-----61.2

Mean (monthly) Sunspot Area (U.S Naval Obs.) for Aug.- Not released

*The highest sunspot group number as assigned at Solar Division Headquarters was 258. It was observed on Thursday, November 16th and represent a group in the north belt and was about one day from the central solar meridian.

*Group counting reference.

Predictions of the smoothed monthly sunspot numbers for the coming six months are as follows;

Nov.	76	Feb.	61
Dec.	70	Mar.	57
Jan.	66	Apr.	53

Predictions released by M. Waldmeier, Director, Swiss Federal Obs. Transmitted by Swiss Broadcasting Corp., Zurich, Switzerland.

PUBLICATIONS

The Astronomical Journal Vol. 55 Oct. 1950 No. 1186

This issue contains "Reports of Observatories" 1949-1950.

Very interesting reading material.

Scientific American November 1950

In Mr. Albert G. Ingalls section, beginning on p. 60, of this issue there is a very interesting and useful article on optics for solar work by John M. Holeman of Richland, Washington.

Astronomical Society of the Pacific Leaflet No. 259 Nov. 1950

Galactic Radio Waves Grote Reber

An historic resume of the subject so far.

Leaflets can be purchased by writing to A.S.P. , 129 24th Av., San Francisco, 21, Calif.

Astronomical Society of the Pacific Publications Vol. 62 No. 368

Solar Flares and Moderate Geomagnetic Activity Wulf & Nicholson

There appears to be considerable evidence that an improved solar index of moderate geomagnetic activity can be prepared by combining all known solar features leading to changes in the intensity of ultra-violet radiation.

Observation of Chromospheric Opacity

W.O. Roberts

Same issue as above.

"The bright small prominence lay beyond the limb of the sun, so that the limb cut off our view of the prominence somewhere above its base."

This chromospheric relationship may prove to be very important later.

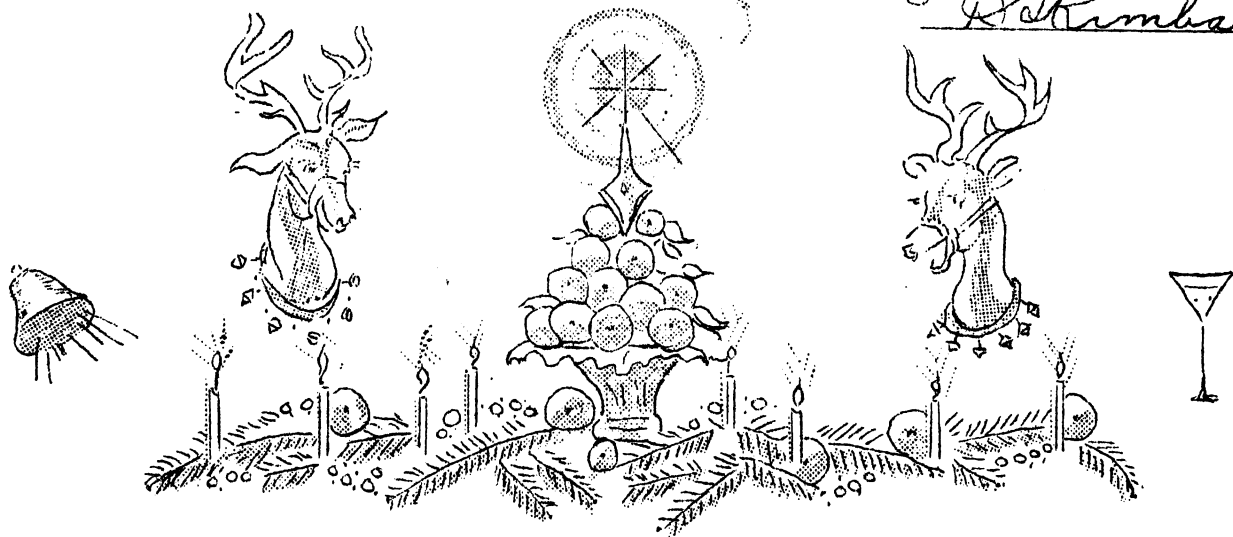
MONTHLY SUMMARY OF A.A.V.S.O. AURORA REPORTS.

Month of October 1950.

DATE	TIME USED E.S.T.	RECEIVED IN OCTOBER										ELEVATION AND DIRECTION	GENERAL OBSERVATIONS	STATION
1950	TIME OF OBSERVATION	G	HA HB	RA RB	R	D	C	PA PS	F	DS OR				
9/4	0:00 0:30 19:25 20:35				II VB							45° N N W		SPRINGFIELD VT.
5	20:40				G							45° N		WILTON MAINE
5	20:40				II			II PS				50° N	RED AND GREEN NEAR HORIZON IN P.S.	WATERBURY CONN.
↓	22:15 24:00				III			III R				60° N	FLASHING RED CLOUDS	SPRINGFIELD VT.
6	19:50 20:50 21:05		II										ENDS OF BRIGHT ARC IN EAST + WEST	↓
7	21:50 22:50		III					III				50° N		WILTON MAINE
↓	22:50 23:25				II									
16	1:30 1:55	II												
↓	1:55 2:30			II										
17	19:45 20:25				II									
19	19:35 20:15				II									
30	22:00 22:40			III VB								40° W - NE	ENDS OF BRIGHT RAYS AT EAST + WEST POINTS	↓
10/1	18:50 19:05		G									15°	DIFFUSED AND ILL DEFINED	SPRINGFIELD VT.
2	19:10 19:20		II									N W		LIMEROCK CONN.
27	22:45				I							40° N - NW	BRIGHT MOONLIGHT	SPRINGFIELD VT.

Reports received from - M. Beardsley - C. Fernald - D. Rosebrough.

R. Kimball.



MERRY CHRISTMAS

HAPPY NEW YEAR

