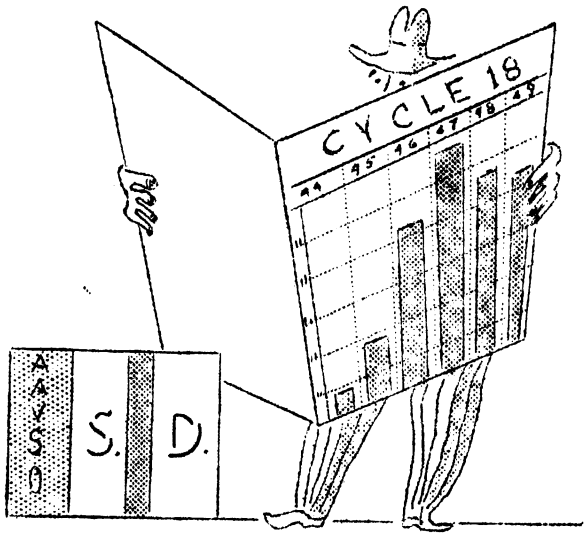
A.A.V.S.O.

SOLAR DIVISION BULLETIN.

Neal J.Heines,Editor.

January 1950.
Number 49. Page 118.

560 Broadway.
Paterson 4,New Jersey .



1950

During the latter part of 1949 we have witnessed the real perceptible decrease in the sunspot activity of the 18th., sunspot cycle.

The February Solar Division Bulletin will, as in previous years, be devoted to the statistics of 1949 as observed here at Solar Division Headquarters.

Some progress has been made in the development of instrumentation for viewing and photographing solar prominences. These instruments are designed after the Pettit Monochrometer; and the Evans type employing quarts filters..It is hoped that by July 1949 the tests will be completed.

Observer Pierson is workin on a spectrohelioscope of the Hale type. B. C. Parmenter, after completion of his new observatory, plans instrumentation of a somewhat similar nature. Mr. Parmenter has made many astronomical instruments and all the better features of those so far tested will be embodied in his new design for both sunspot observations and photography and later the instrument for viewing and photographing solar prominences. Subsequent S. D. Bulletins will announce progress and availability.

If now or during the year you have ideas or suggestions which would improve our S. D. Bulletin we will welcome them.

We need more participants in our additional projects; Solar Granulations and Color in Sunspots; Gleissberg Foreshortening Project; Unusual Activity and Changes in Sunspots; Migratory Birds Project, in Spring and Fall. If your schedule will permit participation kindly contact this office for details.

Suggestions for the improvement of this bulletin are always welcome.

From Dr. Walter O. Roberts, we learn "solar activity has been extremely interesting lately.(written 11-29-49) The red coronal line has

been showing great brightness, and in many cases has been comp.eting in brilliance with the green line, an unusual phenomena."

STATISTICS

The total number of observed groups for the month of November was..39.
The total number of days with sunspots for November was.....30.
Zurich's Provisional Relative Sunspot Number for November was.....139.
Mean(monthly) Sunspot Area (U.S. Naval Observatory) for Oct.....1905.
*The highest sunspot group Number as assigned at Solar Division Headquarters on Dec. 15 was 471. It represented a small single spot group in the North Belt very near the edge of the east limb, and was first seen at 2020 U.T.
*This information is given in order that the Solar Division observers may check their group counting each month.

Predictions of the smoothed monthly Sunspot Numbers for the coming six months are as follows:

(1949)	Dec. 119		Mar. 110
(1950)	Jan. 116		Apr. 107
	Feb. 113		May 104

Prof. M. Waldmeier.
Director Federal Observatory
Zurich, Switzerland.

AAVSO Monthly Aurora Report - November 1949

Time Used EST	Form 1			Brightness 2			Color 3			Elevation	Station
Time of Observ.	G	HA HB	RA RB	R	D	C	PA PS	F	DS		
10/6/49 22-22:30		G	G								Nantucket
10/15/49 21-22:30			GYE Pink							15° - 20°	Vermont
10/27/49 21:30				YEG							Vermont
10/27/49 20 -	G/Y	G III	G		G						Nantucket
10/28/49 2:00											
11/26/49 20:20 - 20:45	G										Maine

Reports from; Cyrus Fernald, Margaret Harwood, Andrew A. Titcomb.

Roy A. Seely
969 Park Ave.
New York, 28, N.Y.

PUBLICATIONS

"The Energy Source In the Interior Of the Sun". Martin Schwarzschild. Leaflet No. 249 Astronomical Society of the Pacific.

This is a follow-up article of Dr. Schwarzschild's article in Leaflet No. 248, referenced in the December S.D. Bulletin, "The Interior of the Sun". Again, here is another study of great importance to all interested in things solar. Step by step the physicists proceed with this problem, but steps still remain behind. Brilliant minds are occupied hereim more nearly towards the solution.

"1948-1949 Among the Variable Star Observers" Charles A. Federer. Sky and Telescope Vol. IX, No. 2, pp. 34-35.

Here is your report on the October Meeting of the AAVSO.

In POPULAR ASTRONOMY Vol. LVII No. 9, Nov. 1949 pp.460-463

We find Dr. Leon Campbell's final report to the AAVSO. Reading this in addition to the one in SKY & TELESCOPE (above) will bring you up to date with activities of the 38th Meeting of the American Association of Variable Star Observers.

"Progress In Radio Astronomy" Otto Struve
POPULAR ASTRONOMY same issue as above. This is No. 1 in a series of two articles on this subject. Very interesting to solar people.

"Tracks of Total Solar Eclipses In 1952-1953-1954
U.S. Naval Observatory Circular No. 1.

Reports of Observations"
Astronomical Journal Vol. 54, No. 1180. October
Keep abreast of what is being done in the science of Astronomy.

"Rhythms in Nature" A.S. Pearse
Foundation Report No. 30
Foundation For the Study of Cycles
Riverside, Conn. Price $1.00

"Solar Eruption of May 10, 1949 A.H. Shapley and R.M. Davis, Jr.
An outstanding solar flare and effects on the ionosphere.
Reprints from National Bureau of Standards
(C.R.P.L.) Washington, 25, D.C.

"Correlation of Coronal & Geomagnetic Observations
1944-1946" J.V. Lincoln - A.H. Shapley
Available as abbve from N.B.S.

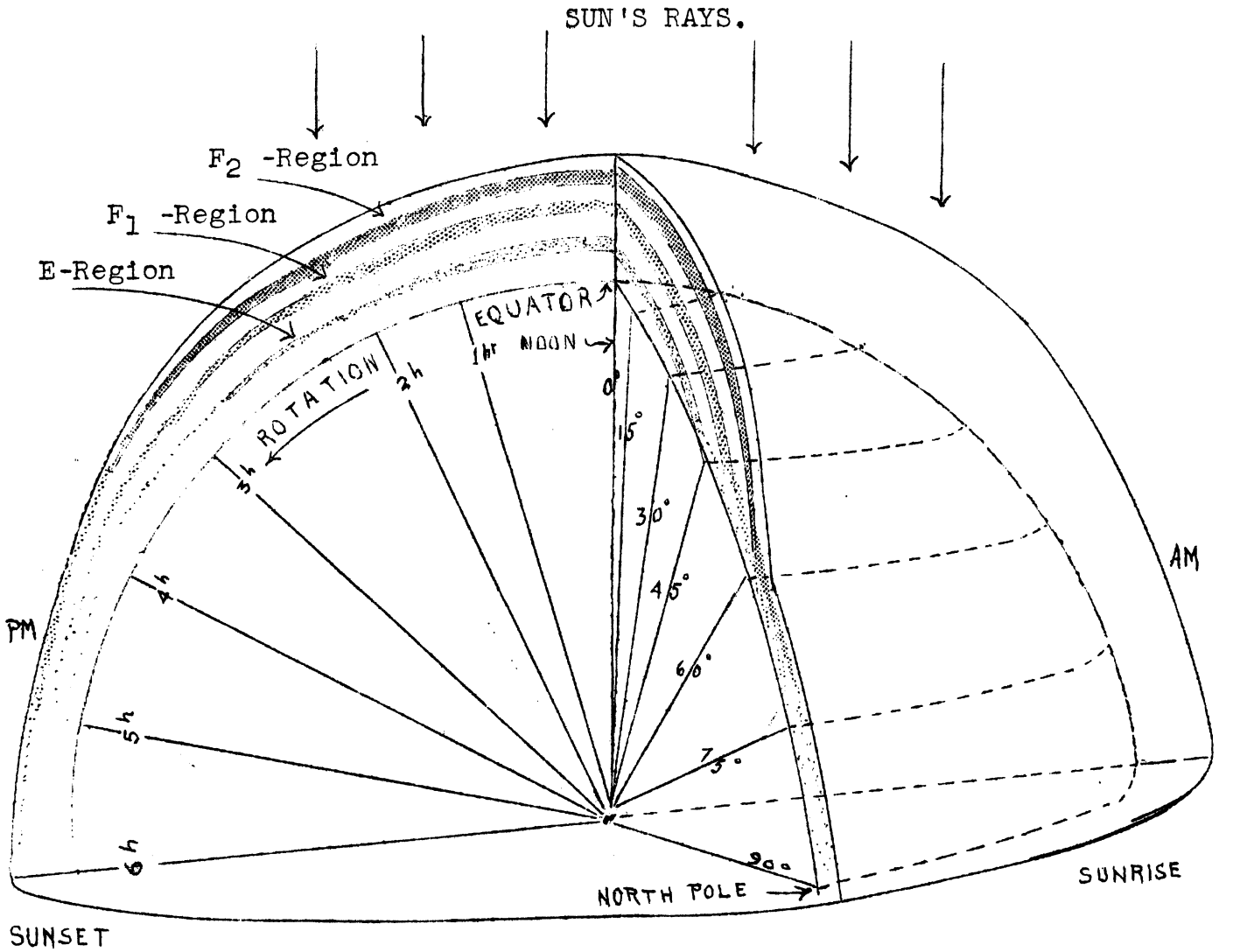
"Prediction of Sunspot Numbers" A.G. McNish - J.V. Lincoln
Available as above N.B.S.

"Duration & Intensity of Sunshine" Frank Benford.
G.E. Laboratory Reprint. (Solar Radiation)
Available on loan only, from Solar Division Headquarters.

"Some Solar & Related Meteorological Periods" H.W. Clough
POPULAR ASTRONOMY Vol. LVII No. 10. Dec. '49 pp 495-500.

Dr. Clough has contributed numerous Solar Papers and this interesting paper is one of his latest. The last sentence reads, "Although the solar periods are of variable lengths, their variations are systematic a and orderly, and therein lies the possibility of their prediction and that of the meteorological phenomena which are corrolated with solar phenomena."

SUPPLEMENT TO JANUARY BULLETIN



Ion-distribution in sunlit hemisphere in the ionosphere.

Above is a rough drawing of ion-distribution in the upper atmosphere, taken from, "TERRESTRIAL MAGNETISM & ELECTRICITY" by J.A. Fleming., as found in the series of publication "PHYSICS OF THE EARTH-" Vol. V111, p. 451.

The General Nature of the Ionosphere

We find that the ionosphere is not a simple region of ionization, as was first thought. The originall experiments of Breit and Tuve indicated a complicated structure, and early experiments of Appleton showed that two regions must exist. Now we know that it consists of two and, under some conditions, three principal regions of ionization. The lower of these regions, technically known as the E-region, is around 100 km (about 60 miles) above the Earth's surface, while the upper regions, technically known as the F_1 and F_2 regions, are around 210 km (about 130 miles) and 300 km (about 185 miles) overhead, respectively. These are average daytime values, as the heights vary a good deal under different conditions.

We plan to give you more of these drawings during 1950.