

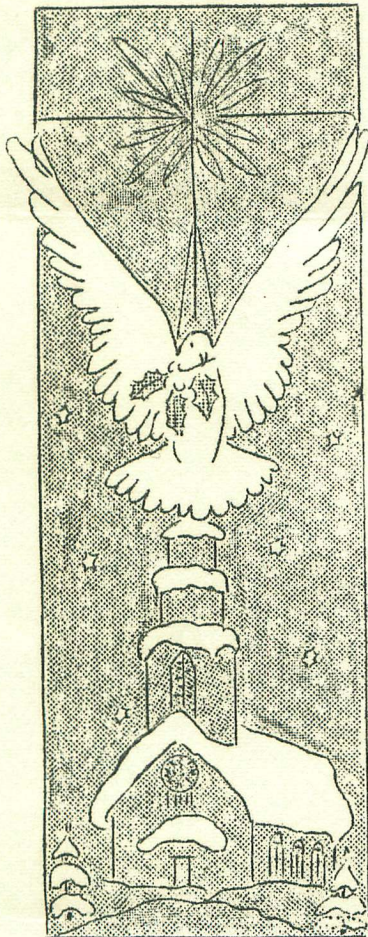
A.A.V.S.O.

SOLAR DIVISION BULLETIN.

Neal J. Heines, Editor.

December 1949
Number 48. Page 114.

560 Broadway.
Paterson. 4, New Jersey .



Good Will to all MANKIND

Again we approach the time on our calendar when families get together around the festive-board to celebrate Christmas and the closing of the present year and opening of the new one. Always at times, such as these, previous experiences are brought to mind, along with many pleasantries.

So too with our Solar Division. We welcome this occasion for it gives us an opportunity to voice again our appreciation and thanks for another's year's work by our observers. Faithfully contributed and accompanied by steady improvement.

To our Research affiliates also we extend heartiest greetings and thanks for their continued co-operation with the AAVSO Solar Division. Many fine contributions have been forthcoming and pleasant associations formed.

To those who are not already members of the American Association of Variable Star Observers (AAVSO) we invite membership. The annual fee is \$3.00. Applications can be obtained by writing this office.

Observers wishing a set of Annual Record forms should apply at once to this address.

We acknowledge the kindness of observer, Mr. H.B. Chase for bringing the Solar Division Photo Album up to date. Those of you who have additional prints of yourself and equipment, or, those who have not sent in photos, please do so at your earliest convenience and mail direct to Mr. Chase at 40 Hummock Road, Quincy, Massachusetts. Upon completion of the entries the Album will again be placed in the S. D. Library and will be available for exhibition at convention meetings and society gatherings. The only charge will be postage both ways.

We also gratefully acknowledge a gift of two volumes, "Bibliography of Radio Astronomy" by Miss Martha Stahr, for the S.D. Library. These are available under the same conditions as the Album. Send requests to Mrs. Margaret Mayall, Recorder, AAVSO, Harvard Obsvty., Cambridge, Mass.

As a supplement to this issue we add to our Seeing Conditions Project the report of Mr. Harold Leinbach. He is now doing post-graduate work at "Cal-Tech". This report covers the period for seeing conditions at Brookings, South Dakota, November '48 through August '49.

Remarks by Mr. Leinbach concerning this report follow:

"The significant fact about these figures is that they are all lower than my values for the period Jan. '48 to Oct. '48 (see supplement to Feb. 1949 Bulletin.) by no less than 4.8% (for fair seeing) and with a greatest difference of 10.4% (good seeing). It looks as if the drop is a real one, to which we could perhaps assign some significance. I am personally of the opinion that the drop may be due to a personal factor. That is to say, after making my first report, I became more "seeing condition" conscious. As I look back, I think that I can safely say that I tended to put any given day into the best possible seeing condition. This would, of course, tend to lower the %'s obtained, assuming that I called, for example, a day of good seeing excellent seeing, etc. This probably wouldn't have to happen for too many days before it would become significant.

I do not attach too much significance to the fact that my observing constant was changed as of Jan. '49 to 1.07, instead of 1.23, as it had been during '48. This change, since it would have been based on at least, the last months of '48, means that I was gradually "improving" my abilities throughout '48. I cannot see how this could materially raise my '48 5's above the '49 %'s.

I have added to the enclosed seeing-condition chart the total No. of days of a given seeing condition for the periods Nov. '47-Aug. '48 and Nov. '48-Aug. '49. From this one concludes that the first period had an edge on the second. This is especially true with regard to the months of Nov., Dec., and Jan. in the respective periods. Not only were the total No. of days lower in the months of Nov. '48 and Jan. '49, then for the corresponding months in '47 and '48, but there were no days of good seeing reported in the months of Nov., Dec. '48, and Jan. '49, as against the 6 days for the corresponding months in the earlier period."

Mr. T.P. Maher uses a prepared sheet of 16 circles containing both axes and central zone. Circles are $1\frac{1}{2}$ " in diameter. In these circles he draws the groups. He suggests that perhaps other observers might find such prepared sheets useful. If a sufficient number of observers request such material, this office will mimeograph same and distribute. Requests should be in by January 1st.

STATISTICS

The total number of observed groups for the month of Oct. was-----48.
The total number of days with sunspots for Oct. was----- 31.
Zurich's Provisional Relative Sunspot Number for October was----131.9.
Mean (Monthly) Sunspot Area (U.S. Naval Observatory Sept. was----2.295.
*The highest sunspot group number as assigned at Solar Division on Nov. 16th was 432. It represented a group in West Central Zone, North Belt of sudden development.

*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:

November	117	February	107
December	114	March	104
January	110	April	100

Professor M. Waldmeir
Director, Federal Observatory
Zurich, Switzerland

ERRATA: Bulletin No. 48; page 113; line 4; change Sept. to Aug.

AAVSO MONTHLY AURORA REPORT

MONTH - OCTOBER - 1949

	Time Used EST	Form. Brightness & Color										ELEVATION			STATION	
		1			2			3								
		G	HA	RA	HB	RB	R	D	C	PA	PS	F	DS	1		2
9	21:20/2:00	G	G	G									12°			Massena.
25/26	22:05/2:15	G											21°			
26		O														Massena.
10/6	23:00//23:30	P _N	GE				✓				G					Cambridge.
14	22:30						G									Cambridge.
15	22:00															Lakeville Conn.
	23:00						RG									
15/16	19:15/ 3:30								✓							Maine.
16	20:00/ 22:00	P _N														Cambridge.
27/28	22:10/ 23:35						✓									Maine.
27/28	22:40/ 4:05								✓							Massena
27	10- 23:00						✓						40°			Springfield Mass.
TOTALS:		4	2	1	5	0	2	0	1	0						Final total 15

Reports from: D. Rosebrough, Karl A. Wells, Cyrus Fernald, Mrs. M. Beardsley, H.H. Burdick, Elizabeth Keely.

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

Additional observers are invited. Kindly forward reports to Mr. Roy Seely at the above address.

PUBLICATIONS

"The Interior of the Sun"

Dr. M. Schwarzschild

Leaflet No.248. Astronomical Society of the Pacific.

Important study. Useful knowledge for both sections of the S.D.

"Note On the Physical Significance of Stewarts
Sunspot Formula"

Prof. W. Gleissberg

Astrophysical Journal July 1949 Vol. 110 No.1 pp 94-95

The relation of sunspot activity to the spot cycle.

"The Earth's Atmosphere"

Howard E. Roberts

PUBLICATIONS (continued)

Aeronautical Engineering Review Oct. 1949

Contains interesting graphs and charts.

"Sun to Earth Energy Link"

Science Newsletter Nov. 12th '49 p. 307

Declaration of Dr. J. Kaplan, University of California, about the new layer in the earth's atmosphere. It may also perform a vital function in the processing that solar energy undergoes before it reaches the earth.

"Solar Prominence Distribution"

Lewis Larmore

Annals of Harvard College Observatory Vol. 120 No. 1

Text - Graphs and data.

"A Photometer for Measurement of Sky Brightness
Near the Sun"

John W. Evans

Instrument design in detail.

Reprint from Journal of the Optical Society of America

Vol. 38, No. 12 pp. 1083-1095. Dec. '48

"Association of Corona With Prominence"

Dr. Walter Orr Robert

Harvard Reprint No. 317

"Tentative Tables For the Properties of the
Upper Atmosphere"

Calvin W. Warfield.

Technical note No. 1200 N.A.C.A.

"Equatorial Acceleration of Sunspots"

H. Leinbach

Popular Astronomy Vol. LVII No. 9; Nov. 1949; pp. 427-432.

THOUGHTS.

" Somewhere, someone has well said that the expanding area of knowledge is like an expanding circle of light. The wider grows the circle of light the greater is the area of darkness around it.

I am often conscious of this thought in relation to the sun. The more we know about its processes the more there remains to be known. The solution of one mystery is often by way of introduction to a deeper one. At any rate those Alexanders who sigh for more worlds to conquer must either be singularly obtuse or completely blind - for Nature, in every department, displays an endless infinitude.

As Edwin Arnold wrote in his singularly beautiful "LIGHT OF ASIA"; " Veil upon veil must lift, But there will be veil upon veil behind".

Excerpt from a letter of

Dr. J. C. Bartlett, Jr.
American International Academy.
Baltimore - Maryland.

SUPPLEMENT TO DECEMBER BULLETIN

SEEING CONDITIONS - Brookings, South Dakota

4.25" Refractor; Projection, 10" Image

Year-Mo.	POOR			FAIR			GOOD			EXCELLENT		
	Days	ΣR_1	ΣR_a	Days	ΣR_1	ΣR_a	Days	ΣR_1	ΣR_a	Days	ΣR_1	ΣR_a
1948-Nov.	5	582	538	5	537	588	0	0	0	0	0	0
Dec.	8	1141	1462	9	1362	1527	0	0	0	0	0	0
1949-Jan.	7	787	1042	1	92	105	0	0	0	0	0	0
Feb.	11	1795	2515	4	655	801	3	635	663	1	241	297
Mar.	4	665	851	5	875	1033	4	731	819	2	463	398
Apr.	1	133	175	5	821	962	10	1507	1885	5	1196	1198
May	2	215	325	4	393	502	9	1203	1274	2	382	345
Jun.	1	117	175	5	607	643	13	2075	2151	3	589	640
Jul.	1	61	82	3	411	513	6	1049	1106	10	1657	1592
Aug.	0	0	0	3	512	582	13	2022	2187	3	368	350

Totals: POOR

Column 1 -----40
Column 2 -----5496
Column 3 -----7165

FAIR

Column 1 ----- 44
Column 2 -----6265
Column 3 -----7256

GOOD

Column 1 -----58
Column 2 -----9222
Column 3 -----10,085

EXCELLENT

Column 1-----27
Column 2-----4896
Column 3-----4820

%'s POOR 76.7; FAIR 86.3; GOOD 91.5; EXCELLENT 101.1

R_1 - daily sunspot No. of H. Leinbach.

R_a - " average of American observers

PERIOD	POOR	FAIR	GOOD	EXCELLENT	Σ
Nov. '47-Aug. '48	45	62	62	24	193
Nov. '48-Aug. '49	40	44	58	27	169



MERRY CHRISTMAS
HAPPY NEW YEAR!!

