

"And may the cup of hope
be filled once more."

THANKSGIVING

A.A.V.S.O.

SOLAR DIVISION BULLETIN.

Neal J. Heines, Editor.

November 1948.
Number 36. Page 80.

560 Broadway.
Paterson 4, New Jersey.

The fall meeting of the American Association Of Variable Star Observers, held at Harvard College Observatory, October 15th and 16th, was a very interesting one and a goodly number of Solar Division observers were there.

The Council has asked that your Chairman's report, again, be published in the S.D. Bulletin. It is therefore offered as of Sept. 1st;

| | |
|---------------------------------------------------------------------|----------------------------------------------|
| Membership ----- | 126, with Research (580 , Total 184. |
| Membership Distribution ---- | 29 States, 11 Foreign Countries. |
| Report Blanks Issued ----- | 882, Duplicates, Gleissberg Project Incl. |
| Reports Distributed ----- | 281, Bur. Stan. 112 Gleis. Total 393. |
| Number Of Observations --- | 10,374 , Total to 9/1/48, 39,758 (G11) 2245. |
| Communications Sent ----- | 971, " " " 5,898. |
| Communications Received ---- | 651. " " " 4,623. |
| Number Of S.D. Bulletins ---- | 5 Editions, 868 Copies. |
| Number Of Reductions Reports Distributed for this four month period | 629. |

The American Relative Sunspot Numbers* (Preliminary) for this four month period are as follows;

| May | June | July | August |
|-------|-------|-------|--------|
| 194.8 | 203.2 | 184.3 | 205.0 |

*Determined at the National Bureau Of Standards, Washington, D.C.

CONDITION OF THE PRESENT SUNSPOT CYCLE.

Since your chairmans last report rendered at Mount Holyoke College on May 22nd., 1948, sunspot activity continues to slowly wane, as determined by the Three Months Moving Average method. Although June and August were slightly over 200-R the resulting complete curve, when smoothed, will show a very broad maximum, similar, but higher, than that of the previous maximum in 1937.

It is beleived that until about the middle of 1949 we will witness more phenomenal sunspot groups of the "f" and "g" types (Waldmeier Classification). This will apparently result in terrestrial disturbances in 1938 and 1939 with greater pronounced effect.

SOLAR DIVISION ACTIVITY.

We are still actively engaged in the following programs; Sunspot Counts for the National Bureau Of Standards; Observations of the Granular Solar Surface, Dr. James C. Bartlett project; Unusual spot configuration and Colors, Dr. W.O. Roberts project; Foreshortening Of Sunspot Groups, Prof. W. Gleissberg project; Migratory Birds S.D. project; Delineation and sunspot area measurements.

To the above we will soon add a new project; The Measurement Of Ultra Violet Radiation by the nes Neuberger method.

We are studying the possibility of Ozone measurements as another new project.

We wish to acknowlege a gift from A.A.V.S.O. Council Member, our S.D. Observer Mr. Ralph N. Buckstaff from Oshkosh, Wisconsin, namely, the new Waldmeier, "Classifications Of Sunspots", which are to be distributed soon. This is the third time that Mr. Buckstaff has supplied us with these classifications.

Solar Division Placards, as proposed by our Mr. B.C. Parmenter some time ago will also be distributed in the near future. This placard will be sent to those observers whose names appear on the Reductions Report whose constants have been established as well as other observers as soon as their constants have been ascertained by the National Bureau Of Standards also to those who are doing special work for us whose names do not appear on the said report. In addition it will also be distributed to those of the S.D. Research Section who are using our data for Solar Studies. The Placards are printed in three colors, are suitable for framing and will grace any observatory, office or room.

Activity of Monochrometer instrumentation progresses slowly.

Predictions of magnetic activity have again been furnished to Dr. H.L. Yeagley of State College Pa., for his Homing Pigeon studies.

A dinner for the Eastern Section of our Research Group will be held in New York City on October 29th., 1948.

The members of the Solar Division hope to establish a comprehensive Library as an addition to the present Mc Ateer AAVSO Library consist- of Solar Books and Papers, drawings etc., We especially mention the work of James Hillebrand of Detroit and Notre Dame, whose idea it was originally and in addition the efforts put forth by our own observer Dave Rosebrough.

We also wish to express our appreciation for the sincere interest manifested by the observers, for their suggestions and ideas for material in the Solar Division Bulletin.

The pleasant relationship with the AAVSO, its Council and the sourceful Recorder, Pickering Memormial Astronomer, Leon Campbell is deeply appreciated and will long remain a delightful memory.

Respectfully, etc.

To this report we would like to add that arrangements have been completed with The AAVSO for the Library addition. All those who have Solar Books or Papers, Reprints, Drawings etc., that they wish to contribute please send same to Mr. Leon Campbell, Harvard College Observatory, Cambridge 38, Massachusetts. Those who wish to contribute cash towards this library, kindly mail same to Neal J. Heines, 560 Broadway, Paterson 4, New Jersey who has been authorized by the AAVSO to purchase new volumes. The Worcester Aldrich Astronomical Society has donated \$5.00 towards this. Books so far received are listed as follows; Sunspots and Civilisation-Huntington donated by Mrs. Huntington; Solar Relations - Clayton donated by Mr. D. Rosebrough; (the Clayton Books are in two volumes); Man Weather and Sun-Peterson, donated by Heines. As additions are made, notices placed in the S.D. Bulletin in the future. There are no rental charges. Those who wish to draw books from the McAteer Library simply pay postage involved both ways. The rental period is two weeks, address Mr. Leon Campbell.

A new complete list of the McAteer Library AAVSO Library is to be prepared soon by Mr. Campbell and will be distributed from his office along with other AAVSO material. Observers of the Solar Division who are not members of the AAVSO have the loan privilege also. Let us do all within our power to make this an outstanding Solar Library. Books of all other astronomical subject matter can be drawn also if listed.

Statistics.

The total number of observed groups, here, for the month of September was 48.

The total number of days with sunspots was 30.

Zurich's Provisional Relative Sunspot Number for Sept. was 143.2. Mean (monthly) sunspot area, U.S. Naval Observatory for August, 2189.

* The highest sunspot group number as assigned at Solar Division Headquarters on October 20th was 444. It was a small umbral spot in a small irregular area of faculae in the south belt very near the east limb. A somewhat larger spot of the same type Number 443 was also observed in the north belt near the east limb. On this same date there were four new groups, the remaining two were both in the north belt one west of C.Z. and one in the Central Zone.

* This information is given in order that Solar Division observers may check their group counting each month.

PUBLICATIONS.

"SUN IS HISSING AT US"----- (worth while) - Science News Letter Oct. 9th.
"Bursts of Solar Noise at 45 Mc Accompanying the Large Sunspots of 1947" . Dr. Harlan T. Stetson ----- Science Weekly 10/1.

"ASTRONOMY CHARTED"

Here are a series of charts that every amateur should own. They are of a convenient size, are punched for a standard three ring binder. Charts are $8\frac{1}{2}$ x 11 inches. Some of the headings read as follows; TWO OF KEPLER'S LAWS CHARTED, HOW BIG HOW FAR, MATHEMATICS FINDS A PLANET, THE EARTH AND MARS IN OPPOSITION 1941 - 1988, ATMOSPHERIC REFRACTION, etc., etc.. All details can be had concerning these charts by writing to Mr. Ralph A. Wright, 4 Mason Street, Worcester, Massachusetts.

October 20th., 1948.

Supplement To November Bulletin.

ITEM ONE.

A " MOVING PROJECTION

SCREEN.

For almost a year, now, I have been observing the sun using the PROJECTION METHOD. A brief outline of the method I use follows below.

My telescope is an old one (1893) and now has only one eyepiece, which gives a power of 60. Using an aperture of 4.25 inches the projected image is 10 inches in diameter at approximately 24 inches back of the eyepiece. The screen and frame itself is a simple, but rather bulky affair which provides a surface on which to project the image, and at the same time shields the image from direct sunlight. On the screen is drawn a 10 inch circle, the circle being further divided into $1\frac{1}{4}$ inch squares, using two perpendicular diameters for reference lines.

By allowing a group to trail along one diameter the east-west direction of the image with respect to the earth, is established. The groups can be plotted on graph paper ruled off in a similar manner. The position of the sun's meridian and equator are added to the daily chart, at the end of the month, using the tables found in THE AMERICAN EPHEMERIS AND NAUTICAL ALMANAC.

This method of recording groups is simple but not entirely fool-proof, however, I think that it gives accurate enough results for the Gleissberg Foreshortening Project.

The groups show up well enough on a stationary screen for plotting but I have found that the individual spots in each group show up better if a moving screen is used. My "moving" screen is nothing more than a hand held piece of paper moved back and forth over the screen attached to the telescope.

In using a stationary screen, the texture of the surface, dirt, in fact any marking on the screen stand out just as plainly as small details actually on the sun, hence much solar detail is lost. However, when a moving screen is employed one sees only detail actually on the sun. The reason for this is simple. The screen and every detail on it is in constant motion, and if moved fast enough, the eye does not have enough time to form a distinct image of any part of the screen. But the sun's image remains in one position with respect to the eye, and is remarkably distinct in detail.

I find that a circular or elliptical motion is perhaps the easiest to use in moving the paper. The rate of motion need not be too fast, and a little experimentation will soon show the proper speed to use. The important thing is to move the paper with fairly uniform motion and fast enough that defects on it are no longer evident.

When using my "moving" screen on a day of excellent seeing, detail on the sun's disk becomes endless. In fact so many faint markings appear that it becomes a problem to decide which, if any, are to be classified as A type groups. Faculae are plainly evident at the east and west limbs of the sun. Large groups, such as the one that made its appearance on the twelfth of September are a sight to behold.

I feel that anyone using a moving screen need not envy his brother observer using a solar eyepiece. I will be glad to correspond with

anyone having questions or comments on this method of Projection. Perhaps there are those observers who have the means to compare results obtained by using a moving screen and a solar eyepiece. If there are, I would be especially glad to hear from them

Mr. Harold Leinbach.
929 Tenth Street,
Brookings, South Dakota.

ITEM TWO.

"WHAT GEORGE SAYS".

Some time ago Mr. George Warren, RFD #2, Westchester, Penna; wrote me concerning sunspot observations "with Modest Equipment". It was so interesting that I asked for a short article, here it is;

Dear M. Heines :

Here is the graph that I mentioned in my letter. The solid line shows the RA MONTHLY MEAN and the superimposed dotted curve is my own monthly average multiplied by my "K" factor of 1.42 and goes back 14 months to the time when I got my Willson Filters and made my compound eyepiece since which time I have not changed anything and use a power of 64 which just about fills my field.

The way that the curves hug each other is, to me, very gratifying especially as I am perfectly aware that my "optics" are run-of-the-mill quality rather than the hand figured variety, (They are all from war surplus supplies).

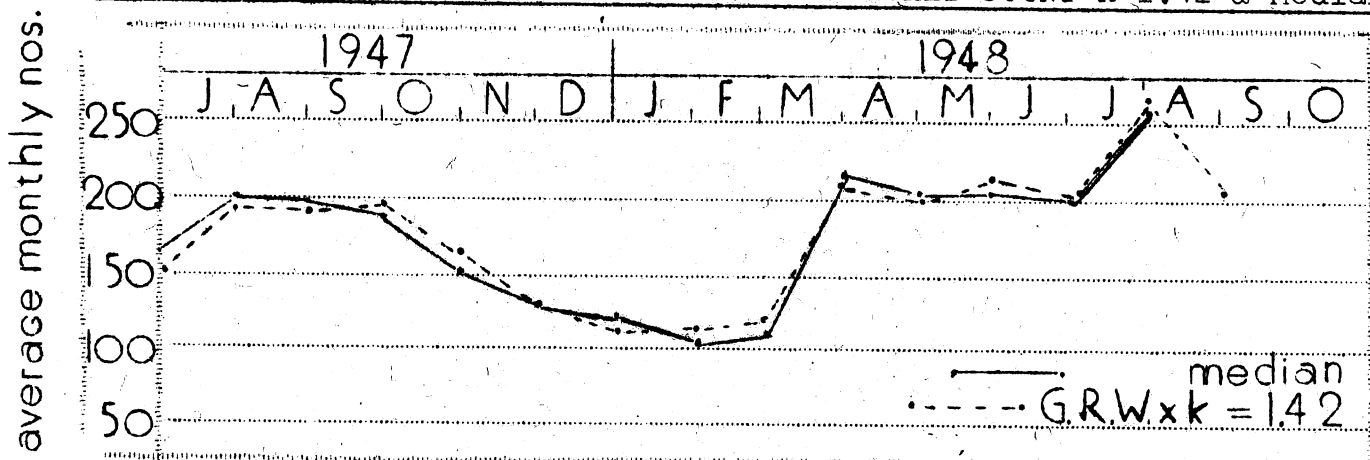
This brings up a rather significant point : that good useful sunspot work is dependent on consistent and continuous data which can be obtained with modest equipment combined with sustained interest and careful observing.

This should be encouraging to any one who wants to get into sunspot work but feels that he cannot afford the equipment. I am definitely one who "cannot afford the equipment", never the less I have a wonderful time counting the sunspots and my graph shows that my modest equipment is at least reliable and consistent.

While I admit the desirability of the best equipment possible, maybe too much stress has been laid on the opinion that nothing but the finest equipment available is of any use for astronomical work.

Maybe the opinions of some of the other observers who cannot afford the finest available would be enlightening " " .

CURVES SHOWING Geo. R. Warren's AVERAGE MONTHLY COUNT x 1.42 & Median.



3" Refractor; F-5 Objective (Achromat); Solar Prism; Willson Filter
Compound Eyepiece (Achromat) Power x 64.