

Solar Division Bulletin.

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560 Broadway,
Paterson 4, New Jersey.

This is the second issue of the "S.D. Bulletin" which is designed to keep the division posted on the activities within the division, new developments, the clarification of technical problems, discussions on current activity involving solar observations. The extension of the program into new fields of observation of other solar phenomena is already under way. Lastly to endeavor to develop to a finer degree the Human Relations within the division.

Bulletins are to be issued monthly with additional supplements when necessary and will be edited by the chairman of the solar division committee. The editor will greatly appreciate suggestions and criticisms of the contents as well as suggestions for its improvement.

It has been planned to maintain a standard size of 8 1/2 x 11 for all paperwork of the division so that the issued material can be placed in standard three ring binders, or covers, for ready reference and later filing. Issue number 1 was not punched for this purpose, but subsequent issues will be.

There has been considerable demand for the clarification of the "k" factor in the reductions of the observations, for the determination of the Relative Sun-spot number. In order that all observers of the division may familiarize themselves with this we give the following:

Sun-spot periodicity was exhaustively studied by Wolf at Zurich, who represented the spottedness by a system now called "Wolf's sun-spot relative numbers". These are computed by the formula:

$$r = k(10g + f),$$

in which r is Wolf's number, g the number of groups and single spots observed, f the total number of spots which can be counted in these groups and single spots combined, and k the multiplier which depends upon the condition of observation and the telescopes employed. Wolf took k as unity for himself when observing with a three inch telescope with a power of 64. A less favored or less assiduous observer would receive k greater than unity, and one with a larger telescope and good opportunities for observing would receive a fractional value of k . Wolf's numbers seem arbitrary, but are found by photographic comparisons to be closely proportional to the spotted areas on the sun. One hundred as a sun-spot number corresponds to about 1/500 of the sun's visible disk covered by spots, including umbras and pen-umbras.

For those who would extend the scope of their observations, the division offers opportunity to participate in a special program under the direction of Dr. James C. Bartlett of the American International Academy in Maryland.

Dr. Bartlett has, for the past ten years, been making a study of the visible granular surface on the sun and its relation to other solar phenomena. It is desired to supplement his observations and findings with those of others for the sake of comparison and possible

ambatanation of his conclusions.

Additional accessories are needed for these observations but these are entirely within the scope of your own workbench or shop. Dr. Bartlett will furnish instructions for all that is involved. Two observers of the division are now submitting data to Dr. Bartlett.

If you are interested the chairman will gladly put you in touch with Dr. Bartlett.

Enclosed is a circular that should interest observers of sun-spots. It is suggested that you prepare the booklet beforehand to conform with the headings as found on the Monthly Report Form of the Solar Division. On the first line on the left-hand side of each page the letters b, c and d are grouped, followed on the next line and so on by e, f, g, h, i; j k grouped, l m grouped, followed by n and o. This arrangement serves as an excellent medium for recording observed data at the telescope for later posting on the Monthly Report form and other records. Below this, there is sufficient room for remarks and the placement of a circle about the size of a twenty-five cent piece to represent the disk of the sun on which is delineated the approximate position of the sun-spot groups and the number of each group. In addition, the box in which these booklets are contained is dated and serves as a file where reference is necessary. The set is highly recommended by the chairman who has used them for years. They are generally ready for delivery in November of each year. Kindly mention that you are a member of the Solar Division if a purchase is made.

A little over one-half of the observers of the Solar Division have submitted observer-and-telescope photos as requested in one of the earlier circulars distributed. The purpose of this is, as you perhaps remember, to familiarize each other with our equipment and ourselves. When all the photos are in they will be suitably mounted and arranged for mailing, and then sent around from one observer to another until the whole division has been covered. Kindly send yours as soon as possible so this can be accomplished. This will help us to promote interest in each other as well as to develop the Human Relations angle.

As stated before this was Mr. Raymond Williams' idea and we think it a very good one.

In the August issue of the American Association For The Advancement of Science, Dr. Moulton has this to say:

- - - - - "Dr. Jno. A. Fleming, Director of the Department Of Terrestrial Magnetism, has commended the Solar Division for its valuable contribution to a field of scientific endeavor which has assumed critical importance in solving problems of wartime communications."

The A.A.V.S.O. and the Solar Division Committee wishes to take this opportunity to thank all of you who have co-operated so wholeheartedly in this program and who have given, unselfishly, so much of their valuable time when there was so little of it.

There is much work to be done in additional fields and the October meeting of the A.A.V.S.O. at Harvard College Observatory in Cambridge, Mass., will no doubt, reveal some important disclosure. These will be passed along as soon as they are made known.

Neal J. Heines.
(chairman)