A.A.V.S.O.

SOLAR DIVISION BULLETIN.

Neal J.Heines, Editor.

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During the month of August a very interesting question was received from Mr.H.B.Chase, our "Chart Curator", after his having read Dr.A.H.Shapley's article in the August issue of Popular Astronomy, "American Observations Of Relative Sunspot Numbers in 1945 for Application to Ionospheric Predictions".

The question ws, and I quote, " Shapley tells us how to figure the corrected count but it is almost impossible to get the same results because one does not know how the "k" factor has been modified or adjusted to cover the four months, etc., It would seem as though the original unadjusted counts as reported to you by the observers would be of more value to the individual observers by showing them where they have miscounted. The reports issued by DTM/CIW,(Reductions Reports),give a poor observer a larger count than the standard observer in many cases."

Because of the sound thinking, and reasoning,behind the question a first hand answer was obtained from Dr.Shapley.

The subject matter of the answer involves all observers listed in the monthly Reductions Report.It is therefore expedient to place this information in your hands,for study,through the medium of our Bulletin.

It is as follows;

"Mr.Heines has asked me to answer your query addressed to him on observatory constants used in reduction of sunspot-number observations.

You realize, of course, that there is no "correct" sunspot count. All of the published data is corrected,even Zurich, which uses a factor of 0.60. An observer whose constant is 1.50 obtains comparable data as long as his constant remains very close to 1.50. The relative difference between one observer's corrected count and the medians for all observers will be representative of variations of the consistancy of the observer within the month. Longer term variations can be dertermined by reverting to the original observations (dividing the daily numbers given in the monthly summaries by the value of k listed) of an observer and of the secondary standard, and deriving the constant for these data alone. For example if the month's constant is below the "k" listed in the summary, then the observer tended to record a higher count during this month than was his custom over a longer period of time. If this is the case the majority of the observers corrected observations in the monthly summary may be above the medians for all observers, not because he actually counted more spots than the others, but because he counted more than he ussually did. For instance he may have changed his method of grouping, or had unusually good weather, or reconditioned his telescope. We depend on our standard observers not to change methods very much,and when they do,the other observers tend to counteract the change.

I trust I have made it clear thatvrelative rather than actual sunspot counts determine the quality of an observer's report and thus publication of actual observations would not help the evaluation. If desired the reduction proceedure may be reversed and the actual observations determined from the data given in the mo monyhly summary, and from there the monthly constant evaluated. This last might also be given in the summary, though I had thought that the listing of one month

k together with a four month's k would be confusing. However this could undoubtedly be done if several observers found it useful. Incidently, I have looked up your individual monthly constants for 1946, so far they are as follows: Jan.1.48; Feb. 1.24; Marl.02; Apr. 1.20; May 2.01; June 1.63; July 1.53. Thus in February and March your count was higherythan usual (therefore a lower constant was required to revert to the standard scale), and in May it was lower. The above figures include all adjustments to the standard scale; in some cases the fihal adjustment could not be made before compilation of the monthly summary.

Perhaps this will help clarify a subject which, I admit, is sometimes very hard to understand. I am not sure thatbthe methods of reduction and reporting that were adopted as war time expedients will prove most appropriate in the long run. And so I appreciate very much hearing your comments ".

If there are any other comments or suggestions amongst the observers of the AAVSO Solar Division we shall be very happy to review and consider same for possible improvement of our recording data. We ask also for comments and suggesstions from those who are engaged in research and are at present receiving our Reductions Reports. It will all be greatly appreciated.

Your chairman sincerely regrets that an error was made in the last Bulletin. Kindly correct the second page of same to read page 21 instead of page 22. Ypur posent issue begins with page 22.

There will be no Bulletin for the month of October because of the attending details and reports connected with the AAVSO meeting at Harvard Observatory on October 11th., and 12th. We hope the Solar Division will be well popresented. A goodly number were present at the spring meeting held at Smith College so we look forward to a great deal of pleasure this fall.

This month we highly reccomend to you to read "The Sun And The Atmosphere" by Dr.Harlan T.Stetson. Cosmic Observatory, 31 Bird Street, Needham 92, Mass. This is an excellent Reprint and will help us all to know more about that which we are observing. Postage should be included, it is about six cents.

A very nice note was received from Mr.R.L.Williams of Greene N.Y. this month. He writes, " Never mind the long letter, your Bulletins answer many of the matters I have in mind. I can see that your position as chairman of the Solar Division has developed into quite a job". Mr. Williams is quite an understanding soul and his note provided an oppertunity to explain the penciled notes you receive in your monthly mail from the Chairman. This does not excuse you however from asking clarification at any time on any matter that is not clear to you for your question may possibly help another observer who has a similar problem. <u>Write your chairman always.if there is doubt in your mind concerniny your problems. We are here to help you to be a better sunspot observer.</u>

Observers who have recently come into the organization are invited to become members of the A.A.V.S.O. Dues are three dollars a year. Applications for membership will be gladly sent on request.

The fall Migration of high flying birds has already started. We would sincerely appreciate more reports on this project. Review Bulletin No.6 of March 1946. If you do not have this Bulletin it will be sent upon request.