A.A.V.S.O.

SOLAR DIVISION BULLETIN.

Neal J.Heines, Editor.

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January, 1947. Paterson.4,N.J.

Tne AAVSO, teh S.D. Executive Committee joins your chairman in thanking you for your splendid co-opreation during the year of 1946. Our list of observers has again increased as well as the number of observations made by the AAVSO Solar Division. The total number of observations for 1946 was well over 8310. (November and December totals not complete because of foreign observations not in)

The chairman wishes to acknowledge the receipt of many cards during the Holiday season as well as other remembrances.

We received a fine letter from one of our observers in the Military Service in Japan, "Tommy" Gregg, who ordinarily resides in Los Angeles,Cal,and spends many of his working hours in the Griffith Observatory there. "Tommy" will be out of the service in March or April and writes that he is very anxious to resume his solar observations. Although he is not able now to make telescopic observations while in the service he is not idle. He is carrying on a special study,for Dr.Seth B.Nicholson of Mount Wilson,on naked eye sunspots. Each day he observes the sun through a filter,determines the visibility of naked eye sunspots and their approximate size.

We acknpwledge the receipt of some very fine Solar Eclipse photographs from our Reverend Kearons. Some of these were published in Sky And Telescope recently.

The 1946 December 7th., issue of Science News Letter contained an article on a new method of determining the speed at which the sun travels in it's orbit around the milky way, by, Dr.Nicholas U.Mayall, associate astronomer at the University of California's Lick Observatory. Dr.Mayall explained that the sun's speed was estimated by observing its position relative to a few of the Globular Clusters. It was assumed in those calculations that the Clusters did not rotate. Those "Island Universes" do rotate slightly. Dr.Mayall found the calculation comes out the same: The sun is traveling in its orbit at from 175 to 185 miles per second *********.

The December issue of this bulletin promised a list of contributions to the knowledge of sunspot activity and related phenomenon by Mr.Walter G.Bowerman. You probably recall the Paper, in the November issue of Popular Astronomy, mentioned in our Dec. Bulletin item 8,p 27. Following is a list od additional studies by Mr. Bowerman;

1. Monthly Sunspot Numbers,and,Note on supposed Annual Period in Sunspots. teh latter by Stetson. Reprint Popular Astronomy Vol.L No 9, November 1942.

2. (a) Residential Mortage Loans and Sunspot Numbers
   (b) Sunspots and the Weather. Reprint Popular Astronomy Vol. LII, Nos.3,4,5, March, April, May, 1944.

3. Cyclical Diseases. An examination of certain Cyclical Diseases in relation to Sunspots and other Periodicity. American Astrological Magazine July,August, September 1944.

4. Sunspots in Review. Sky and Telescope Sept.1944,Vol III No 11.

5. A Sunspot Synopsis. Popular Astronomy, Vol LII, No 10. December 1944.

6. Acute Anterior Anterior Poliomylites. (association with weather and sunspots) Reprint, Archives of Pediatrics, 62: 55-77 February 1945.

7. Actuarial Note. Hendersons Mechanico-Graphic Method Of Graduation. Transactions of the Acturaial Society of America. Vol XXXVIII, Part 1. No 97. May 1937.

8. Suicides. The Spectator October 1946.

9. Three Correlations. A statistical Survey. American Astrology Magazine December 1944.

The above are all studies well worth your time. Those published in Popular Astronomy are accessible to all of us. Others can, perhaps, be procured from the publishers or, Mr. Bowerman.

A new publication which should be in your library is, "A Treasury of Science" edited by, Dr. Harlow Shapley- Samuel Rapport- Helen Wright. For an experience in determination and love of work you must read, Dallas Lore Sharp's, "Turtle Eggs For Agassiz". Publisher Harper Brothers.

AND NOW - - - here is good news. We hve just received word from Dr. Harlan T. Stetson that his new book, "From Sunspots to Radio Waves" will be on the book market early in 1947 -- Some revelations -.

As soon as your reductions of December observations arrive here from Washington we will prepare a graph which will be inserted in the February S.D. Bulletin showing the Sunspot Activity for the year of 1946.

The filters, (see supplement to this issue) which we have mentioned several times in the bulletin can be obtained from the Willson Products, Inc., Reading. Pennsylvania. They come in three grades, Light No 10, Medium No 12 and dark No 14. The price of each is 75¢. They are obtainable only in 1¼ inch discs. These can be cut down by the chipping process or by your local optician. Number 12 is most excellent for solar work although you should have one of each as one number 10 and one number 12 can be used together for a grade in between 12 and 14.

There is also a possibility of haveing some news about the filters we referred to earlier in the year, for viewing the prominences on the sun, in a coming issue of our bulletin.

Predictions of Sunspot Maximum were received earlier in the year and incorporated in your chairman's report to the AAVSO however he failed to place them in the S.D. Bulletin inadverdantly. They are as follows.

* Dr. Waldmeier-Zurich- ------	1947.6
Dr. Stewart -Princeton* ----	1947.8
Dr. Stetson * M.I.T.* ------	1948.2
Interservice Radio Propagation Laboratory ---	1948.3
* Heines Estimate ----------	1948.7
H. H. Clayton Method --------	1949.5
Anderson Method ----------	1950.4

Predictions between asterisks are beleived possible. Those of 1949 and 50 are doubtful. Dr. Waldmeier writes that the largest smoothed nimber for maximum could be 139. We await the outcome with great interest.

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SOLAR DIVISION BULLETIN SUPPLEMENT

January 1947.

WILSON FILTER.

The subject of color and absorbtion screens, particularly for solar observation, is one to which I have given a great deal of attention. As a result I have accumulated quite a collection, mostly with optically true surfaces.

You may be interested in knowing that when I attended the Pittsburgh meeting of the American Astronomical Society -I think in 1911-I became aquainted with the late Mr. Petitdider, the Chicago Optician, who showed me some beautiful color screens- the first made by Zeiss as true reproductionsof the spectrum colors red, yellow, blue and green. He made me two sets of these having diameters of ½ inch and 1 inch, optically ground and polished.

A few years later I came into possesion of a Plössl "dialyte" telescope having eyepiece caps of deep yellow-mentioned by by Webb as a German preference- and these define excellently. Then I have a Zeiss wedge screen that borders on yellow, and this serves admirably with its delicacy of absorbtion gradation. I have also some other yellow screens, of rether less absorbtion than those you sent me. The larger of these I had reduced to a diameter of one inch, to fit the cells made for me at the Brasher establishment.

Before touching on the results of using your screens I would like to say something about the so-called "London Smoke" filters. I have many of these, of varying tint and depth, some of them rather bluish, some verging on green, others grayish, and some with a leaning towards a redish-purple. Often variations in absorbtion are secured by the thickness of the glass. I have seen something of red in looking through a gray glass at a sharp angle. Sometimes opticians put two glasses together in making eyepiece caps.

I think we should differentitate between color absorbtion and light absorbtion the latter I take it the function of the neutral tints of "London Smoke". True color absorbtion is related to the nature of the spectrum; some colors permitting more detail to come through than others.

I suppose that for solar observation, the Merz helioscope, with its polarizing property, requiring no shade glass, could be taken as setting a standard of definition, especially as there is such perfect control of light value. However, largely because of its convenience in sparing my neck muscles, I have mostly used the Herschel form of helioscope, with various screens. It has a lerger field than the former and admits an equal range of magnifying powers, there being no disadvantage with the interposition of screens between prism and eyepiece when optically true.

Your yellow (Wilson) screens allow all details to be seen, I think better than any of the others I have used; although it has seemed to me thatbthe neutral tints are somewhat superior for viewing the faculae - why, I do not know, but hope to keep, on experimenting in order to increase my little stock of knowledge on all these points. One thing I have especially noted is the ease with which I Can detect the smaller spots through these new screens (Wilson). This seems to be the crux of filter quality.

Again I wish to thank you for your kindness in introducing the new screens to my attention, as other wise I might never have known of them. ----------.

Personal Letter from,
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