A.A.V.S.O.

SOLAR DIVISION BULLETIN.

Neal J. Heines, Editor.

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Number 68. Page 184. Paterson 4, New Jersey.

THE GRAY NOVEMBER STREAM IS STILL:
THE RUSSET WOODS YOU USED TO KNOW
AWAIT UPON THEIR TRANQUILL HILL
THE SILENT PROMISE OF THE SNOW.

E.E.Hale

The fall meeting of the AAVSO was again a grand success , thanks to the splendid work of the committee of arrangements and the ever watchful eye of our Recorder Mrs.M. Mayall. A more complete coverage will be found in Sky And Telescope, and Popular Astronomy, later.

As per our usual custom , the report to the AAVSO, by the Solar Division follows.

Membership---------- 163, Observers 76, Research Afilliates 87.
Membership Distribution-- 33 States and 12 Foreign Countries.
Report Blanks Issued----- 354, Incl. Duplicates and Gleissberg Project.
Reports Distributed------ 349, 260 Bureau Of Standards 89 " ".
Number of Observations---6938, to 9-1-51 91,321. B.S.4826.G1.1843.Rad269
Communications sent------ 974 " to Date 14,020
Communications Received-- 823 " to date 11,288.
Number of Solar Division Bulletins Issued; 5 Editions, 854 Copies.
Number of Reductions Summaries Distributed for this 5 month period, 676.

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* The American Relative Sunspot Numbers For The Present Period.

Jan. -- 53.8	Apr. -- 89.6
Feb. -- 56.3	May. -- **
Mar. -- 49.0	June -- **

The above numbers are based on the new Consensus Plan, explained in

in the Supplement to S.D. Bulletin Number 67, for October 1951.
* Determined at the National Bureau Of Standards, Central Radio Propa-a gation Laboratory, at Washington D.C.
** Will be rported in the next issue of this Bulletin.

Since our May report, rendered at Georgetown College Observatory, in Washington D.C. solar activity has been variable although the recession towards minimum is still gradual on a percentage basis. Two major groups made their appearance during May and June with the usual terrestrial disturbances following. The only spotless day during this period occured on July 27th.

With reference to spotless days, we must remember that we observe and record data only for the visible solar hemisphere. It is still possible that during the average amount of sunspot activity that there could be spots on the invisible hemisphere.

The mean monthly values of Sunspot Areas as released by the U.S.Naval Observatory, reflect the activity as mentioned above, is given below;

Dec.	900 (1950)	Mar.	943
Jan.	943 (1951)	Apr.	1611
Feb.	737	May.	2887.

Heines observations for the period from May 1st., to September 1st., reveal the following;

Sunspot Groups	Whole Disk	439
"	Central Zone	200
Sunspots	Whole Disk	4126
"	Central Zone	3587
Sunspot Groups	North Belt	238
"	South Belt	201
Sunspots	North Belt	2308
"	South Belt	1818
Spotless days	Whole Disk	1

Since the major groups of May and June, activity declined rather sharply. Worthy of note was the increase of activity in the north belt early in September. Comparatively few higher Latitude spots have been in evidence during this period.

SOLAR DIVISION ACTIVITY.

The Solar Division is still actively engaged in the following projects; The Sunspot Counts for the Central Radio Propagation Laboratory, National Bureau Of Standards; Granular Surface and Color in Sunspots, Dr. James C.Bartlett Jr.; Unusual Configuration and Colors in Sunspots, Dr. Walter Oor Roberts, High Altitude Observatory, Climax ,Colorado; Foreshortening Project, Prof. W. Gleissberg, University Observatory, Bayazyt - Istanbul, Turkey; Migratory Birds; Sunspot Delineation; Sunspot Area Measurements; Solar Division Headquarters. Solar Radiation, Heines.

Membership in both the Observing and Research Afilliate sections remain at relatively the same level.

The Foreshortening Project will continue untill 1955, it will be supplemented, however, conjunctively, with a study in sunspot Asymmetry. A Paper concerning this is currently offered in this issue of the Solar Division Bulletin, as a supplement to it.

Dr.Edison Pettit,of Mount Wilson Observatory,has contributed one of the most important studies in sunspot statistics. He reveals that the sunspot with longest life is that (qoute) , "It is evident that the longest acceptible period of duration for the sunspot-group of 1840-41, heretofore decalred as eighteen months, is 121 days. The longest actually observed lifetime, is 134 days for the group of 1919. (Relaesed August 1951) Leaflet Number 269, September 1951, Published by the Astronomical Society Of The Pacific..

One of our Observers has established a Solsr Division record for consecutive sunspot observations. Mr.T.P.Maher of Heppner,Oregon, reported 143 consecutive sunspot observations up to September 18, 1951. Mr.Frank Trathen of Napa, California held the previous record with 119 days.

We gratefully acknowledge the activity of the Naked-Eye Sunspot Observing group of the Montreal Centre who forward their reports to Solar Division Headquartwes each month.

The Central Radio Propagation Laboratory, of the National Bureau of Standards have agin asked me to convey to the observers of the Solar Division Their sincere appreciation and thanks for thier contributions to the solar program.

In closing, The Executive committee join me in thanking you, the observers for another period of fine observing and continued interest. There is still much evidence of increasing interest due to the plans of the Astronomical League and others.

Thanks also for the hearty co-operation of the AAVSO Recorder and her office.

Respectfully submitted.

STATISTICS.

The total number of Observed groups for the month of Sept. was--- 28
The total Number of days with spots for the month of Sept. was--- 30
Zurich's Provisional Sunspot Number for September was---------- 83.0
Monthly mean Sunspot Area(US Naval Observatory) not released in time.
The highest sunspot number as assigned at Solar Division Headquarters was 197 it represented a small group of three spots in the north belt located one day from the central solar meridian. (given here, to furnish a counting reference for observers)

Predictions of smoothed Monthly Sunspot Numbers for the next six months are as follows;

Oct. 65	Jan. 57
Nov. 63	Feb. 54
Dec. 60	Mar. 52

Released by Prof. Waldmeier, Director,Federal Observatory, Zurich, Switzerland, and transmitted by the Swiss Broadcasting Corporation.

October 20,1951.

On the Apparent Asymetry in the Distribution od Sunspots.

By W.Gleissberg.

In his "Third Report on the Solar Foreshortening Observations of the AAVSO" (published as No.39 of the Publications of the Istanbul University Observatory and distributed to the cooperating Members of the AAVSO Solar Division) Mr.Hotinli stated that the following asymmetry in the distribution of sunspots was observed during the years of 1948 and 1949 : on the western half of the Sun's disc the total number of spots observed by all the observers cooperating in the Foreshortening Project was considerably greater than on its eastern half. Since it depends only on the position of the earth, which part of the sun's surface lies on the western or on the eastern half of the Sun's visible hemisphere, one should not expect any preponderence of spots on one half of the Sun's Disc. Nevertheless, observations have shown for a long time that this unexpected preponderance really exists. But the results obtained by different observers are not consistant with one another.

While Mrs. Maunder, in 1907, stated an eastern excess in the number and total area of spots for the period of 1889-1901, Archenold, in 1941 came to the conclusion that in the following three sunspot cycles,i.e. from 1902 to 1935, only the numbers of sunspot groups gave a persistant eastern excessm whereas the total areas of sunspots showed a preponderance on the western half of the Sun's disc during the same period Now, as stated above, the observations in the Foreshortening Project seem to indicate that during the present sunspot cycle also the numbers of spots show a western excess. But no definite conclusion can be drawn, from only the observations of the four-year period from 1948 - 1951. A longer series of observations is needed for this purpose. The continuance of the observations in the same manner as in the Foreshortening Project would help to obtain a better insight into the behavior of the asymmetry in the present sunspot cycle. Perhaps an influance of the size of the telescope may be revealed from these observations; for it seems possible that the asymmetry is not the same for the large spots as for the small ones.

Besides the asymmetry in the number of spots, there exists another, more pronounced, asymmetry in the formation of sunspots. Observations have shown consistantly that the formation of many more sunspot groups are observed on the eastern half of the Sun's Disc than on its western half. The existance of this asymmetry, which was discovered in 1907 by Mrs. Maunder, was confirmed in later years by many other observers. In 1937, I gave an explanation for thisasymmetry. According to this explanation the asymmetry in the formation of sunspot groups is only an apparent phenomenon and arises from the fact that a new formed sunspot group cannot be detected at the moment of its birth, but only at a later time when it has become large enough to be observed. I therefore have supposed that merely the interval between birth and detection of the spot groups is responsible for the apparent eastern excess in the formation of spot groups. If this supposition is correct, then the eastern excess in the formation of spot groups must depend on the size of the telescope; for the smaller the telescope the later the detection of a growing spot group. As the telescopes used by the members of the AAVSO Solar Division are of different sizes, this dependenc could be easily investigated by means of their observations.

Moreover, the special report form used for the Foreshortening Project is very suitable for this investigation. On this report form, which has been drawn by Mr.Neal J.Heines in accordance with the valuable suggestions of Mr.George Warren of Westchester Pa., and which is in use since January 1, 1949, the entrances for each spot group on consecutive days occupy a sequence of diagonally arranged squares running downwards from left to right. From the vertical column in which such a series begins, it can easily be seen whether this spot group was first observed on the eastern or on the western half of the suns disc.

It is evident, therefor, that the observations which are being made in the Foreshortening Project, can be used also for two other problems, viz.

1.- for clearing up the behaviour of the asymmetry in the number of spots during the present cycle,

2. for investigating the supposed dependence of the apparent eastern excess in the formation of spot groups with the size of the telescope.

But whereas the observations of four years have proved to be sufficient for the Foreshortening Project, these two problems demand a longer series of observations. I thus propose to these Members of the AAVSO Solar Division who have taken part in this project, to participate in the new Asymmetry Project by continuing their observations in the same manner as heretofore, and I invite other members to participate in this new project.

I beleive the observations in the Asymmetry Project should continue at least until the coming minimum of spot activity, which is expected to occur in 1955. As stated above, the report form to be used for the Asymetry Project will be the same as that being used in the Foreshortening Project since the beginning of 1949. Although the Asymmetry Project will start only on January 1st., of 1952, all the observations which have been made in the Foreshortening Project, will, of course, be used also for the Asymmetry Project. Thus, when the Asymmetry Project ends, i.e. on December 31st., 1955, observations covering a period of eight years will be available for the investigation of the two asymmetry problems mentioned above.

Note.

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AAVSO-Solar Division. U.S.A.