

A. A. V. S. O.

SOLAR DIVISION BULLETIN

Neal J. Heines, Editor

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Page 224

P.O.Box 2353  
Paterson, New Jersey

REPORT OF THE SOLAR DIVISION TO

THE AMERICAN ASSOCIATION OF VARIABLE STAR OBSERVERS

Meeting at the Harvard College Observatory

Cambridge, Massachusetts Oct. 17 - 18

1952

Membership ----- 173; Observers, 86; Research, 87  
Membership Distribution ----- 30 States; 11 Foreign Countries  
Report Blanks Issued ----- 336 Incl. duplicates and Gl. Proj.  
Reports Distributed ----- 326; Solar Div., 242; Gleiss. Proj. 84  
Number of Observations ----- 8317 to 9/1/52; 5879 S.S.; 2438 Gleiss.  
Observations to date ----- 108249 Total  
Communications Sent ----- 948 to 9/1/52 Tot. to date 16,123  
Communications Received ----- 634 to 9/1/52 Tot. to date 12,898  
Number of Solar Division Bulletins Issued; 6 Editions 1115 Copies  
Number of Reductions Reports Distributed for this 5 Mo. Period; 1115 Copies

\* The American and Zurich Relative Sunspot Numbers for this five month period are as follows;

	$R_a$	$R_z$		$R_a$	$R_z$
Apr.	27.3	28.8	Jul.	39.4	39.3
May	22.2	22.9	Aug.	52.3	55.0
June	35.9	36.2			

Range 22.9 to 55.0

\* Determined at A.A.V.S.O Solar Division Headquarters, Paterson, N.J.  
by N.J. Heines and Mrs. D. Macfarlan.

CONDITION OF THE PRESENT SUNSPOT CYCLE

A complete sunspot cycle has an average length of 11.5 years. The rise from the determined minimum of a sunspot cycle, to maximum has a duration of four to five years. The descent from maximum to minimum consumes a period of seven to nine years. Almost five years have passed since the maximum of the present cycle occurred in 1947. It is generally conceded that the last maximum was the second highest of all known cycles. In addition, it is also believed that the past maximum was tertiary. The pattern of the descent of this minimum follows quite closely to that of other high cycles. The most decisive descent has been that of the period following the activity since 1951. During 1952, a gradual decline was in evidence until the month of May. The American Relative Sunspot Numbers declined from 38.6, in January to 22.2 in May.

Since that time there has been a gradual rise, with the peak at 52.3 in Aug. of 1952. The latter value could easily be the peak of the present minimum which is expected in 1954-1955, and predicted to be an unusually short one.

Some statistics from Heines' observations, January 1 to October 1:

Total number of	groups whole disc	-----	520
"	" sunspots	-----	3159
"	" groups central zone	-----	256
"	" sunspots	-----	2023
"	" groups North Belt	-----	266
"	" groups South	-----	247
"	" sunspots North	-----	1353
"	" " South	-----	1784
"	" days with sunspots, Whole disc	-----	230
"	" " without sunspots	-----	23
"	" " Central Zone	-----	72
"	" Solar Observations	-----	493
"	" Observing Days	-----	219
"	" Groups gone	-----	101
"	" New Groups	-----	107
"	" Observations by Heines	-----	14775

#### 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 O. Roberts, High Altitude Observatory, Climax, Colo.; Foreshortening Project, Prof. W. Gleissberg, University Observatory, Bayazyt - Istanbul, Turkey; Migratory Birds; Sunspot Delineation; Sunspot Area Measurements; Solar Division Headquarters.

Increase in the several sections of the Solar Division is again evident. We have passed the 200 mark. The greatest increase was in the Research-Affiliate section. It might be of interest to mention a few fields in which our American Sunspot Numbers are used: Radio Propagation; Radio Astronomy; Meteorology; Aurorae; Aviation Medicine(Blood Studies); Solar Radiation; Cycles in the following fields; Tree Rings, Long and Short range weather cycles, Economics, Solar cycles of various lengths, Lake Levels, Cycles in Game, Fur, Fish. Also Production of Honey and Population Dynamics.

Also of interest would be knowledge concerning the various types of occupation in which some of our observers are engaged: Advertising - Housewife - Students - Tax Clerk - Tool Maker - Machine Designer - Electrical Research Engineer - Civil Engineer - School Teacher - Hotel Manager - Mathematics Professor - Window Cleaner - Farmer - Research Engineer - Erosion Control Engineer - U.S.A.F. Electronics Officer - Public Utility Manager - Professional Astronomers - Optics and Instrument Maker - Estimator - Mechanical Engineer - Accountant - Musician Clerk - Minister - Cereals Maker - Retired - Past Master - Civil Servant. Age Range; 16 - 79 years.

One of our projects, Color in Sunspots, which has been jointly supervised by Dr. Walter O. Roberts and Dr. J.C. Bartlett, begins to show some promise. There seems to be an apparent relationship between observed color in sunspots and, some other phenomena not as yet fully determined.

Dr. Roberts has this to say, "I am quite convinced, because of a number of fairly detailed checks, that penumbral colors do not show up in coincidence with large chromospheric flares. There must be some other phenomena involved. It is very tempting to interpret it as subjective but fairly close coincidence of the independently observed cases seems to suggest that there may be something real to the phenomenon." (Letter to Nelson May 30, 1952)

In another letter to J.E. Thrussell, July 30, 1952, Dr. Roberts mentions the fact of duplicate observations of color in spots by Thrussell, in England, Dr. Miller and Mr. Franklin, RCA Laboratories, Long Island, N.Y., indicating a completely independent confirmation, and further states, "I am quite convinced in the reality of the phenomenon."

The principle observers cooperating are Bartlett, Thrussell, Parmenter, Dr. Miller, Mr. Franklin.

We need more serious observers in this project and invite participation. Please write this office for details. A Paper by Dr. Roberts will be presented later during these sessions.

Interest in optical development continues. Observers Warren and Parmenter have provided two Eyepieces which show great promise. The outstanding work in optics has been performed by Mr. Henry E. Paul of Norwich, New York, who has completed a few sets of Quartz-Poloroid filters. Papers on these will be read during these sessions, to be followed by Abstracts provided by the A.A.V.S.O. later.

One phase of activity, Solar Radiation lies dormant. The reason for this is a broken G.E. Radiation Meter by Heines. There is a possibility of continuing this project on a higher plane, namely, a 10 c.m. Solar Noise Instrument of the Radio Astronomy type.

The Central Radio Propagation Laboratory of the National Bureau of Standards, the AAVSO and you Director express their gratitude for the fine spirit of cooperation manifested by all the participants during the year 1952.

We especially appreciate the work of the Montreal Centre Group on the Naked-Eye Sunspot observing program.

The Astronomical League has again brought us new participants for which we are grateful.

In closing, the Executive Committee, the Council of the AAVSO join me in thanking you for another period of good work.

#### STATISTICS

The total number of groups for the month of September was 9.

Zurich's Provisional Sunspot Number for the month of Sept. was 27.0.

The mean monthly sunspot area (U.S. Naval Obsvty.) not released.

\* The highest sunspot group Number as assigned at Solar Division Headquarters on October 4th was 107; it represented a medium sized group in the North Belt, as coming from the invisible solar hemisphere.

\* Group counting reference for observers.

Predictions of smoothed monthly sunspot-numbers for the next six months are as follows:

Oct.	37	Jan.	32
Nov.	35	Feb.	30
Dec.	33	Mar.	28

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

#### PUBLICATIONS

The Origin of the Earth  
Scientific American Vol. 187, No. 4 pp. 53 - 60  
Chemical history of our planet

Prof. H.C. Urey

The Birth and Death of the Sun  
Science Newsletter 9-27-52  
Book published by Viking Press  
Another good work by this famous author

Gamow

#### "AN AUTUM SONG."

There is something in the Autumn  
that is native to my blood  
Touch of manner, hint of mood;  
And my heart is like a rhyme,  
With the yellow and the purple and the  
crimson keeping time.

The scarlet of the maples can shake me  
like a cry  
Of bugles going by.  
And my lonely spirit thrills  
To see the frosty asters like smoke  
upon the hills.

There is something in October sets the  
gypsy blood astir;  
We must follow her,  
When from every hill aflame,  
She calls and calls each vagabond by  
name.

Bliss Carman.

YOUR SOLE CONTRIBUTION TO THE SUM OF THINGS IS YOURSELF. -- Frank Crane.