SOLAR DIVISION Bulletin

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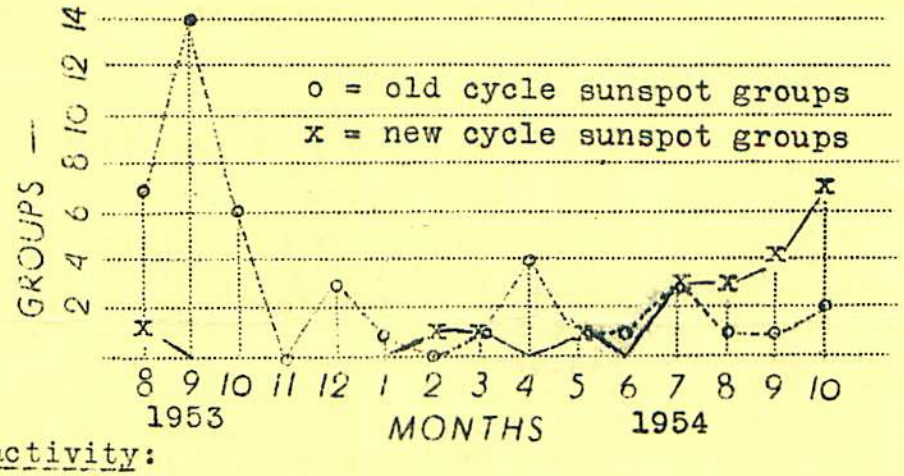
NOVEMBER 1954 Number 99.

SOLAR ACTIVITY- July to September 1954.

Thomas A. Cragg and Harry L. Bondy.

There can be no doubt that the new solar cycle-socalled 19th- has started in earnest. According to Mt. Wilson Observatory records there were four "new cycle" sunspot groups until the end of June including the short lived and rather exceptional high-latitude spot of August 13th 1953. However in July alone there were as many new cycle groups as in the preceding six months. (see graph bellow)



Sunspot activity:

July 3 - small one day NEW cycle group at S22°,E42°(Mt. Wilson No.11180)
July 8 - NEW cycle group formed at N23°,W23°;last seen 7/9 (11181)
July 12 -NEW cycle group formed at N25°,W25°,last seen over West limb 7/16 (11182)
July 14 -old cycle-leader only-for one day at N2°,W35° (11183)
July 16 -small old cycle group formed at N10°,W4°;last seen 7/18;(11184) Polarities at 150' tower telescope showed group 'reversed' as compared with groups of old cycle.
July 23 - small group came over East limb at N8°, persisted in bright plage till July 30 (incl.) (11185).

(Sunspot activity)

August 1 -NEW cycle group came over East limb at N23°; return of plage 11182, but probably not same spot;(associated with two small flares on 8/6-see flare activity-),last seen 8/9 (11186)
August 9 - NEW cycle group formed at S24°,E5°(11187)-very faint towards end, last seen 8/14.
(August12 - faint marking at N29°, W54°and at N25°, W50°)
(August 15-19 inclusive no sunspots observed)
August 20 - NEW cycle group formed around 20:00 UT; first seen at 150' tower telescope at 21:20 at S30°, E 1° (11188); no K_2 plage found at 14:00 UT; last seen on 8/26 over West limb-(two flares occured on 8/22;one on 8/23-associated with this group)
August 26 - small old cycle spot formed at S5°, E46°;last seen 8/27
August 28-31 inclusive no sunspots observed. (11189)

September 4 - a very small spot was observed on 9/4,5 and 6; this group was associated with calcium plage which crossed the central meridian on 9/9 at S25° (11190)
September 15 - another very small spot was observed on 9/15 and 16 at N25°, W5 /respectively W18°/; the disturbed calcium region was first visible on 9/10 near East limb (11191)
September 20 - a minute one day old cycle group was found at N8°,W7° the calcium region associated with this group died out by 9/24 (11192)
A bright patch of faculae and a very small spot (11193) was also observed on 9/20; the region had a CMP near 9/26.
(Note: All sunspots described NEW or old cycle groups were designated thus only when their magnetic polarities have been checked at the 150' tower telescope at Mt. Wilson)

Calcium plages not associated with observed spots:

August 1 -continuation of plage 11185 (N10°, W33°) to West limb.
August 9 - continuation of plage 11186 to West limb.
August 28 - continuation of plage 11189 till Aug.29.
(the above plages were all associated with specified sunspot groups and were observed even after the spots died or due to their greater extent after the spots "set" as in 11185)
September 28 a bright patch of faculae (and Ca-plage) came over the East limb near S28°. T...Cragg observed with his own 4.1" reflector a faint marking in the faculae;15 min. later in a 6" refractor a small spot was seen. There was however no evidence of this marking on the morning plate at the 60' tower telescope nor in the afternoon with the 150' tower telescope.

Prominences: Many minor prominences were observed, a few being rather bright, during August and September. No violently active prominences were found. Possible "tornado" prominence was seen on August 15 at the Eastern limb at S28°

Geomagnetic activity: Apparently a 27-day recurrency in geomagnetic activity occurred in these three months. A very weak disturbance was observed on Mt. Wilson on July 28-29; again on August 24, and considerably stronger on September 20-21. These three storms were of the "mound"type, a gradual rise in activity and a gradual subsidence.

Note: we are glad to announce that starting with this issue we will be able to review coronal activity data not only as published in the IONOSPHERIC DATA -National Bureau of Standards-CRPL-, but also as published directly by the High Altitude Observatory in the weekly PRELIMINARY CHART OF SOLAR ACTIVITY and the quarterly SOLAR ACTIVITY SUMMARY. (the quarterly publication will be reviewed in our next issue)

The great importance of coronal observations for the study of solar-terrestrial relationship lies in the location of specific coronal activity centers which directly affect geophysical conditions. Nearly continuous, i.e. daily, coronal observations are available from Climax and Sacramento Peak and thus fairly reliable heliographic charts of coronal-line-intensities can be prepared. Since centers of coronal activity (emission) are rather long-lived /on the average they last longer than the solar rotation/ East and then West limb passage observations permit the charting of such centers as they "cross" the solar meridian, directly facing the Earth, even though actually such observations cannot be made now.

Coronal activity:

July: Coronal activity was at an extremely low level. Only during the last week of July (CMP 7/29) did a very weak emission region appear; High Altitude Obs./=HCO/ designation: Region 54-Mp. (This region was associated with Mt. Wilson sunspot group 11185)

August: Generally a slight increase in coronal activity, though still at a very low level. Four coronal regions i.e. centers of either bright 5303A -Green-emission or 6374A -Red-emission, were observed. Region 54-Np centered at N20° with a CMP on 8/7 and associated with sunspot group 11186 showed two small flares on 8/6. Two minor regions were 54-Cp and 54-Qp besides the region 54-Mp which appeared in July already. Region 54-Qp was east of group 11188 (S30°; CMP 8/20) and was associated with three minor flares-8/22,23

September: Region 54-Np (formerly associated with sunspot group 11186) returned as did 54-Qp. A new minor region 54-Rp (S25°; CMP 9/9.5) occurred associated with group 11191.

Generally overall coronal activity remained at a very low level with some signs of slight increase. With perhaps the exception of region 54-Mp, all other minor activity regions were associated with the activity of the new cycle.

Flares: The following five flares, all observed at the Mc Math-Hulbert Observatory, were the first flares of the new cycle.

August 6 - two flares of importance 1 were observed at 12:15b-12:45a UT and at 16:00b UT at N28°-E15° (sunspot group 11186)

August 22 - two small flares at 15:25b and again at 21:25-21:40 UT at S31°-W26° (group 11188)

August 23 - small flare at 13:25-14:20 UT at S30°-W33° (group 11188)

Note: b=flare started before this time; a=ended after

No Sudden Ionospheric Disturbances /SID/ were recorded this year yet.

Solar Radio Flux on 2800Mc/s (10.7cm); National Research Council, Ottawa

month	mean flux	highest	date	lowest	date
July	67.2	69.0	7/27	63.8	7/2
Aug.	69.9	73.1	8/10	67.3	8/19
Sep.	71.2	75.6	9/30	67.7	9/7

Outstanding events:
Aug.9 at $21^h54^m25^s$
Aug.23 at 13^h23^m...this burst started 2 min. before observed flare at S30,W33

10th ANNIVERSARY of the SOLAR DIVISION-AAVSO

In November of 1944 POPULAR ASTRONOMY carried on page 29 in the regular AAVSO-Variable Star Notes the following note:

..."After much discussion, the appointment of a solar observing committee under the chairmanship of Mr. Neal J. Heines of Paterson, New Jersey, was approved"...This took place at the 33rd Annual Convention of the AAVSO at Harvard College Observatory, Cambridge, on October 6th 1944. The SOLAR DIVISION was born...

The following are a few highlights from the pages of the Variable Star Notes:

On June 17th 1945 Mr. Neal J. Heines formulated the program of the SOLAR DIVISION: "The purpose of this division is to co-ordinate the interests of sunspot observers, standardize and supply forms, establish a continuity of observations, collect the same and distribute the results to those institutions in need of such data." The original SOLAR DIVISION committee consisted of: Rev. and Mrs. W.M.Kearons; Dr. H.H.Clayton; Mr. H.B.Rumrill, Dr. D.H.Menzel and Mr. Neal J. Heines.

At the Fall Convention (1946) Mr. Heines reported:" Until July of this year /sunspot/ reports were sent to the Dept. of Terrestrial Magnetism of the Carnegie Institution at Washington DC and after that date to the U.S. Bureau of Standards"-furthermore-"sunspot data are now available for each day of the year." By Summer 1948 the "American Relative Sunspot Numbers" began to be published. They were computed back to Dec. 1944.

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To this brief note I wish to add only that most of the credit for the Solar Division is due to Mr. Neal J. Heines. Without Mr. Heines' great ability the Solar Division would have hardly become more than a mere "extracurricular activity" to a few members. (HLB)

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Seven new AAVSO members have joined the Solar Division. WE WELCOME:

WELCOME

Mr. Robert S. EVANS, a long time sunspot-count contributor to the Solar Division(1951);member of RASC and ASP.

Mr. Wendell L. PERRY, student and sunspot-count contributor (Apr.'54

Mr. Franklin C. LOEHDE, head of Edmonton centre of RASC; sunspot-count contributor since May 1954.

Mr. Arthur DALTON, student;sunspot-count contributor (August 1954)

Mr. Leon E. GOLD, sustaining member, cofounder of the N.Y AAA, organizer of the AAA astrophysics seminar.

Miss Florence ROSENBLATT, an active co-worker on the SD Bulletin, also AAA member.

Mr. David D. WARSHAW, long time solar observer, studying the solar-ionospheric relationship for radio communications; also one of the "super"ATM - built his own quartz monochromator (see ATM III.)

AMERICAN RELATIVE SUNSPOT-NUMBERS FOR OCTOBER 1954

DAY	RA'	DAY	RA'	DAY	RA'
1	0	11	3	21	8
2	0	12	5	22	11
3	2	13	7	23	10
4	3	14	12	24	9
5	2	15	19	25	9
6	2	16	15	26	7
7	0	17	1	27	0
8	3	18	2	28	0
9	1	19	8	29	0
10	0	20	8	30	0
				31	0

MEAN RA' 4.7

" " " " " " " " " " " "

ZÜRICH PROVISIONAL SUNSPOT-NUMBERS FOR OCTOBER 1954

Dependent on observations at Zürich Observatory and its stations in Locarno and Arosa.

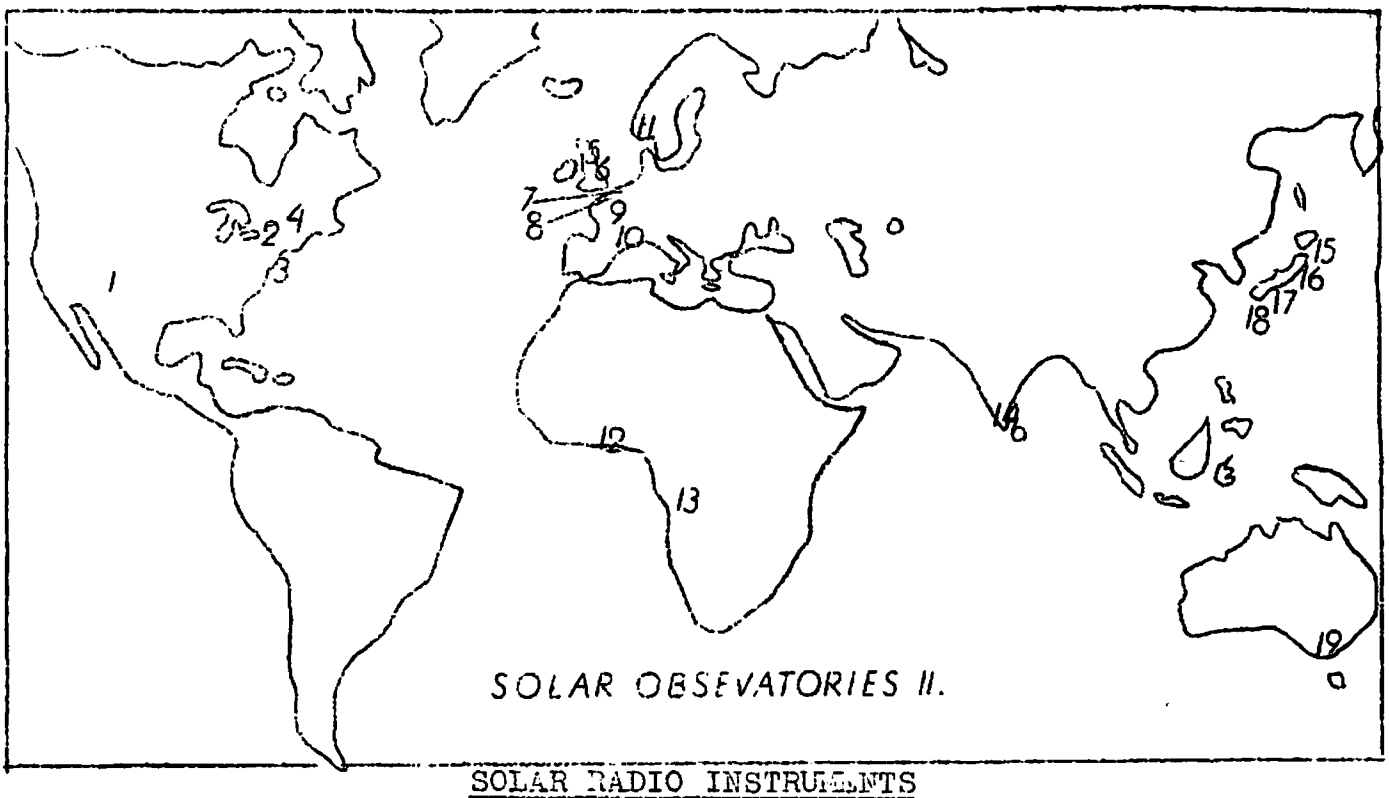
DAY	RZ	DAY	RZ	DAY	RZ
1	0	11	0	21	8
2	7	12	7	22	8
3	14	13	7	23	14
4	8	14	15	24	8
5	7	15	17	25	8
6	0	16	24	26	7
7	0	17	22	27	0
8	0	18	7	28	0
9	0	19	8	29	0
10	0	20	14	30	0
				31	0

MEAN RZ 6.8

" " " " " " " " " " " " "

FROM OUR MAIL: Two of our readors pointed out that the list of SOLAR OBSERVATORIES as published in the S.D. BULLETIN Aug.-Sept. issue was not complete. As stated, our list contained only observatories named by Dr. Coutrez in THE SUN. However, we thankfully add the observatories
named by Mr. Thomas A. Cragg: Royal Greenwich Observatory, Cape Town,
Wellington Observatory, New Zealand,

named by Mr. Issei Yamamoto : Astronomical Obs., National Science Museum, Tokyo
Tanakami Observatory, Shiga-Ken, Japan

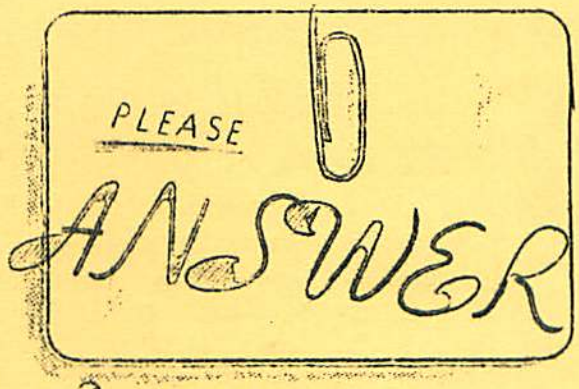


SOLAR RADIO INSTRUMENTS

Compiled by J.P. Wild
Radiophysics Laboratory, Sidney, Australia *)

1) National Bureau of Standards-CRPL- Boulder, Colorado
2) Radio Astronomy Laboratory, Cornell University, Ithaca, N.Y.
3) Naval Research Laboratory, Washington D.C.
4) National Research Council, Ottawa, Canada
5) Cavendish Laboratory, Cambridge, England
6) Jodrell Bank, Experimental Station, Crewe, England
7) Observing Station, Nederhorst den Berg-Radio, Netherlands
8) Observatoire Royal de Belgique, Uccle, Belgium
9) Observatoire de Meudon, Seine et Oise, France
10) Ecole Normal Superieure, Station de Marcoussia, Seine et Oise,Fr.
11) Oslo Solar Observatory, Blinden, Oslo, Norway
12) University College, Achimota, Nr. Accra, Gold Coast
13) Institut p. la Recherche Scient. en Afrique Centr., Belgian Congo
14) Solar Physics Observatory, Kodaikanal, India
15) Hiraiso Observatory, Radio Research Laboratories, Hiraiso, Japan
16) Radio Astronomical Observatory, Osaka City U., Osaka, Japan
17) Tokyo Astronomical Observatory, Mitaka, Tokyo, Japan
18) The Research Inst. of Atmospherics, Nagoya U., Toyokawa, Japan
19) Radiophysics Laboratory, Sydney, Australia

*) from THE SUN, ed.by G.P. Kuiper, where detailed information is given. A similar chart and list giving OPTICAL INSTRUMENTS appeared in the August-September 1954 issue of the Solar Division BULLETIN.



Dear Reader,

As editor of the Solar Division Bulletin I have taken upon myself to edit and publish our journal in a manner that would be informative and pleasing to you – the reader.

However no matter how much I may try, you will admit, there is no substitute for your own opinions, your criticism, your suggestions.

I have a number of ideas for our next year Bulletin. I hope they will interest you. Articles for the beginner in solar astronomy are planned; articles on improving telescopes for solar observations; about a simple prominence telescope, also wouldn't you like to read what other solar sections abroad are doing? Well, these are some of my plans.

But, alas, all this would be like building a house on sand... How about letting me know what YOU think about the Bulletin? How did You like this year's issues so far? What did You not like? And what would You like to have in our Bulletin?

I trust that you will find a few moments to jot down your ideas.

In the meantime, I wish you a Merry X'mas and a Happy New Year,

with best wishes,
yours, Harry L. Bandy