A.A.V.S.O.

SOLAR DIVISION BULLETIN.

Neal J.Heines,Editor.

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In the September 5th.,issue of the NEW YORK HERALD TRIBUNE, the Science column of John J.O'Neill, we find a very interseting item concerning one of our observers in California. Title in part; " Amateur Makes Discovery About Saturn ". "------ Amateur Astronomers Glimpse ", Efforts were made to observe Mars, Jupiter abd Saturn. ---------- Thomas Cragg, 1908 S.Burlington, Los Angeles,California, an amateur astronomer, a member of the Association of Lunar and Planetary Observers, with headquarters at the University of New Mexico, was able to take advantage of an instant of good seeing while examining the planet Saturn under 700-fold magnification and to make close observation of its rings.

Under low telescope powers Saturn appears to have a single disklike ring nearly three times the diameter of the planet. Under higher powers the ring is seen to extend further inward and outward,and to have brighter and darker rings in the disk. Still higher powers reveal dark rings that divide the disk into concentric sections, and appear to be empty areas. Six or perhaps seven of these rings have been observed.

The 200-inch telescope reveals that insted of seven empty rings or space gaps there are only three, Cragg reports in the "Strolling Astronomer". The other four are filled with ring material but apparently of a darker kind that reflects much less sunlight than other parts of the disk or perhaps is present in smaller amounts.

Cassini's division between the outer and middle ring is a real space gap. There was no space gap between the middle and inner ring at the point known as the Fifth Division Cragg reports, but hte third and fourth divisions in the inner part of the middle ring are real space gaps.

Further observations will be required to confirm these findings." ----------.

CONGRATULATIONS "TOMMY".

Last year Mr.George Warren RFD 2,Westchester,Pa.,built a SOLAR - RFT,(see SKY AND TELESCOPE FEB.L(Feb. 1947,p 18) and later found that he had horizon trouble at certain times of the year. He found a good location on his property and then made plans for an observatory.

Here is his story,"----- I hope you did not expect to see a dome on a ball-bearing track. A 16" square consrete pier carries the instrument and a seven foot square platform (mounted on uprights, with proper braces , the uprights are aprox 12 feet long) with a good rail around it. The platform carries me and and my stool - the two units are not in contact at any point so that a restless visitor does not ruin the seeing. The whole construction is very solid and the rail can be safely sat on. A small mast has a 15 watt lamp on it controlled by a pull switch and string. ------- The whole arrangement gives me a complete horizon not more than a few degrees down.

I can recommend this type of outdoor observatory as extremely convenient and comfortable in a location where trees interfere. It is amazing what ten or 12 feet up will do for your horizon if you choose just the right spot. I had to bulldose one apple tree that was close to my meridian and I have not lived that down by a long way yet. We have 53 more apple trees ,but, of course,the best one of all just ruined my prospect.so it had to be sacrificed on the alter of science.

We feel sure that Mr.Warren will be glad to communicate with other observers who have a similar problem, and will be happy to make helpful s ggestions.

This past mont we received from Dr.A.E.Covington (National Research Council Of Canada,Ottawa,Canada) a Reprint of"Solar Noise Observations On 10.7 Centimeters". The date of the reprint was April 1948. In the reprint was a graph on which the American Relative Sunspot Numbers were used for comaprison purposes with Daily Variations of Solar Noise. We are still a very young organization but we feel that our observers will be pleased to learn occasionally to just what use their data is place aside from the regular Radio and Cycle phase predictions,Granulations,Gleisberg,Roberts Projects.

One finds our Monthly Sunspot Numbers in the Bulletin of the American Meteorology Society also.

Special Instructions To Observers.

It is very important That the Heading of the Monthly Repoort Form be filled out in correct detail with respect to ; Date.Instrument,Method ND NAME AND ADDRESS. Include opp'site INSTRUMENT the aperature as well as the type; After Method Give the complete details, as Projection, or Visual,Willson Filter,(or Other) Solar Prism,one underneath the other . Then be sure to total your report on the line indicated by Sigma. Also enter the Relative numbers in the new R column. Most of the observers are doing this but a few have not started as yet. It is importnat also to inform this office if a change is made with respect to eyepieces. Always count spots with the same eyepiece in order that your constant will not be disturbed.

STATISTICS.

The total number of observed groups,here for the month of August was 54 (same as July)

The total number of days with sunspots was 30.

Zurich's Provisional Relative Sunspot Number for August was 155.4 .

Mean (monthly) Sunspot Area for July was 1935.

*The highest sunspot group number as assigned at Solar Division Headquarters on September 16th was 387. It was a small A type spot (Waldmeier Classification) in the North Belt two days in from the East limb of the sun preceeded by faculae.

* This information is give in order that Solar Division Observers may check their group counting each month.

SOLAR DIVISION LIBRARY.

Mr.James Hillebrand sent us the following summary of Questionaires received. Twenty one replies were received. Ninteen favored the Library,with two suggesting we use the established AAVSO Library. The consensus was that it should be in the east. A percentage of about 35 said that they would contribute. One month was the time period selected by more than the majority. The average price suggested for rental was

35 cents. The answer to #6 was a unanimous yes. The suggested mode of packing was the same as the Book-Of-The-Month-Club. All were in favor of Reprints being included. Only one person had any lantern slides. The only other Library we might be able to get any volumns that were suggested was that of Columbia University. Most of the replies received said they would aid the project financially.

Mr Hillebrand has been in communication with the Acting President of the AAVSO, Mr.David Rosebrough, 87 Fern Circle, Waterbury,Conn., who will take this matter to the AAVSO Meetings on October 15-16 at Harvbard Observatory where the Fall meetings of the AAVSO will be held. The results will be forthcoming in the November Bulletin.

PUBLICATIONS.

POPULAR ASTRONOMY August Issue, Vol LVI, No 7, Had the folling contributions.

Terrestrial Cycles ---------- H.Helm Clayton.
This paper was prepared by Mr.Clayton's daughter Frances Mr.Clayton was formerly a member of the Solar Division Executive Committee, He passed away on Oct.26,1946. This paper is very interesting and well worth procuring for future reference to any one interested in sunspots and various cycles. pp.360-370.

SOME FURTHER FACTS SUGGESTING THAT OUR SUN IS A VARIABLE STAR.
By H.L.Willis
A good paper for SUN readers. pp.370-378.

A PRELIMINARY FORECAST OF SOLAR ACTIVITY ------Prof.W.Gleissberg.

You need this information for the approach to the coming sunspot minimum. p.399 .

SYMPOSIUM ON PROBLEMS OF EARTH'S GASEOUS ENVELOPE.
Menzel and others.
Scientific Monthly ------ September 1948.
Clear and concise information as to the structure and activity of the upper atmosphere.

THE BEHAVIOR OF BAROMETRIC PRESSURE DURING AND AFTER SOLAR PARTICLE INVASIONS AND SOLAR ULTRA VIOLET INVASIONS.
By B.Duell and G.Duell.
Authors are new to America but have a rich background of investigations and research in things Solar. This should be in your possesion.
Procurement .
Smithsonian Miscellaneous Collections. Vol 110,No.8 .
A Roebling Fund Contribution,Publication 3942,
August 5th , 1948.
The Smithsonian Institution, Washingto D.C.
Price about 35 cents,(Inquire)

Supplement To October Bulletin.

VARIATION OF RELATIVE SUNSPOT NUMBERS WITH SEEING CONDITIONS.

Students' Observatory, Berkeley, California.
6 inch Fauth Refractor

1947	Poor			Fair			Good			Excellent		
Jan	3	180	285	11	1601	1578	11	1076	1104	5	711	635
Mar	1	112	141	4	365	354	9	1431	1375	4	560	532
May	3	720	806	7	1161	1358	16	2869	3079	3	723	645
July	0	0	0	7	1020	1097	21	3338	3487	2	472	398
Sept	1	104	100	14	2537	2467	9	2343	1935	3	472	398
Nov	0	0	0	7	1004	840	15	2637	2186	3	620	497
1948												
Jan	3	268	369	6	677	795	14	1867	1757	1	80	69
Mar	0	0	0	8	847	837	10	1173	1113	3	515	392
May	1	151	180	10	2009	2133	14	2995	2887	0	0	0
	12	1535	1861	74	11221	11495	119	19729	18923	24	4072	3510
Mine % Average		82.5%			97.8%			104%			116%	

Total Number of days: 229 over nine months selected from eighteen.

% of total number of days in each catagory :

5.2% 32.3% 51.9% 10.5%

Mean number of days per month on which observations were obtained

25.3

The columns in each group represent (1) The number of days in each category (2) The sum of my relative counts for those days (3) The sum of the American Relative Sunspot numbers for those days.

Miss Elizabeth Roemer.
Alemeda, California.
August 31, 1948.

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SUPPLEMENT TO OCTOBER BULLETIN

Descriptinn of Auroral Forms

The descriptions given below are from the works of Prof. Carl Stormer, Prof. Vegard, and others and follow the terminology developed by Prof. Stormer and generally used in this work. The standard abbreviation precedes the descriptive words and should be used in all tabulations.

G GLOW. A faint glow near the horizon, resembling the dawn, usually white or greenish color but sometimes red. This is often the upper part of an arc whose lower border is below th horizon.

HA HOMOGENEOUS ARC. The arc is usually diffuse above and sharply defined below. I may be near the horizon or quite isolated high in the sky. Sometimes several parallel arcs occur and may be connected at one end by a sharp curve. The color is usually greenish yellow or nearly white. The arc often gradually climbs up the sky and may later have a very luminous irregular lower border and soon after break into rays (type RA). The arc is usually set almost at right angles to the magnetic meridian. Often only parts of arc are visible.

HB HOMOGENEOUS BAND. This band has a more irregular form than the hogeneous arc. It may vary from narrow to very wide. The lower bo border is often irregular and sharply defined. It may sometimes consist of a segment of approximately semicircular shape which may move across the sky in the direction of the usual arcs HA. The band may have folds and resemble a large curtain. These usually change into bands with ray structure (typeRB). The coloris usually bluish white.

PA PULSATING ARC. Arc, or parts of them, may flash up and disappear rhythmically with a period of 10 to 30 seconds. The color is usually bluish green.

DS DIFFUSE SURFACE. A diffuse veil or glow, often over large parts of the sky. They may resemble clouds and often appear after rays or curtains. The color may may range from violet white to an intense red.

PS PULSATING SURFACE. A diffuse patc or surface which appears and disappears rhythmically. Near the zenith the boundary may be sharper. Often appears with or as part of, a flaming aurora (type F).

RA RAYED ARC. An arc with ray structure. A quiet homogeneous arc often becomes very luminous and then breaks into rays. The rays may be short or long and may vary in brightness along their lengths.

RB RAYED BAND. A band with ray structure. Resemble the bands type HB but composed of rays. The rays may be close together or scattered along the band. Several parallel bands may appear. Near the Magnetic zenith the bands may form a corona.

D DRAPERIES. When bundles of rays become long the band often assumes the form of a curtain or drapery. The lower border is often more luminous. Near the zenith they have a fanlike form or partial corona.

R RAYS. Rays resemble searchlight beams in a dusty atmosphere. The rays may appear isolated or in great bundles. They are usually greenish yellow but may be red. Rays often appear with other auroral forms.

OVER

AURORAL FORMS (continued)

C CORONA. When rays approach the magnetic zenith they seem to converge to a point because of perspective. The corona may be formed by long or short rays, by bands or by draperies.

F FLAMING AURORA. A quick moving form consisting of waves of luminosity moving toward the zenith or of invisible waves which cause parts of arcs, bands or patches to appear and disappear rhythmically. Often appears after strong displays of rays and curtains and is often followed by the formation of a corona.