

## KODAIKANAL SOLAR AND GEOMAGNETIC DATA, JULY-SEPTEMBER 1951

Curves showing (a) Kodaikanal daily relative sunspot numbers, (b) daily areas of calcium prominences and (c) daily areas of H-alpha dark markings are given on page 45. Tables 1 to 4 below summarise the data on solar and geomagnetic phenomena.

TABLE 1

## Prominent sunspot groups

Kodaikanal Serial No. of spotgroup	Mean latitude	Date of central meridian passage		Total area (millionths of the sun's visible hemisphere) at central meridian passage
9714	9°S	July	14	1000 (area measured from the sun plate of 15th)
9727 (a)	7°N	August	10	450
9746	4°S	September	10	350

TABLE 2

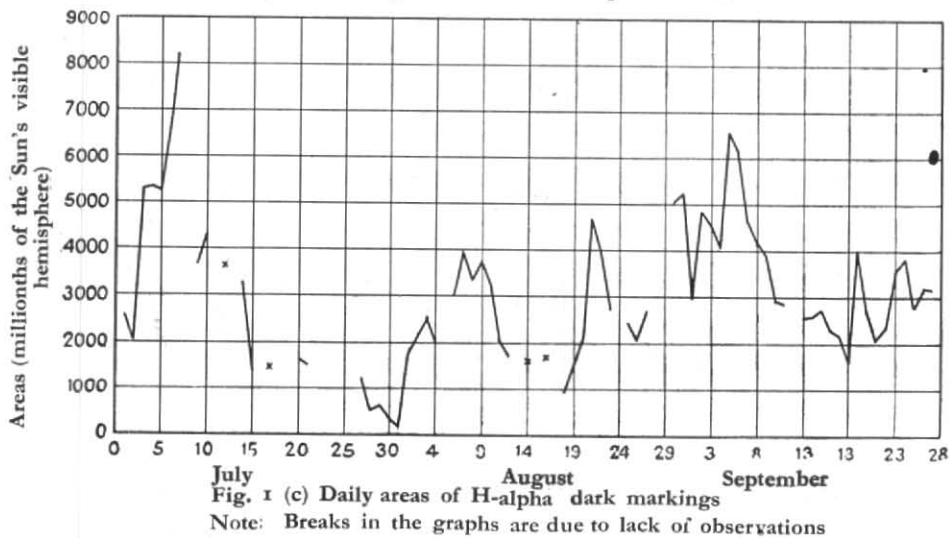
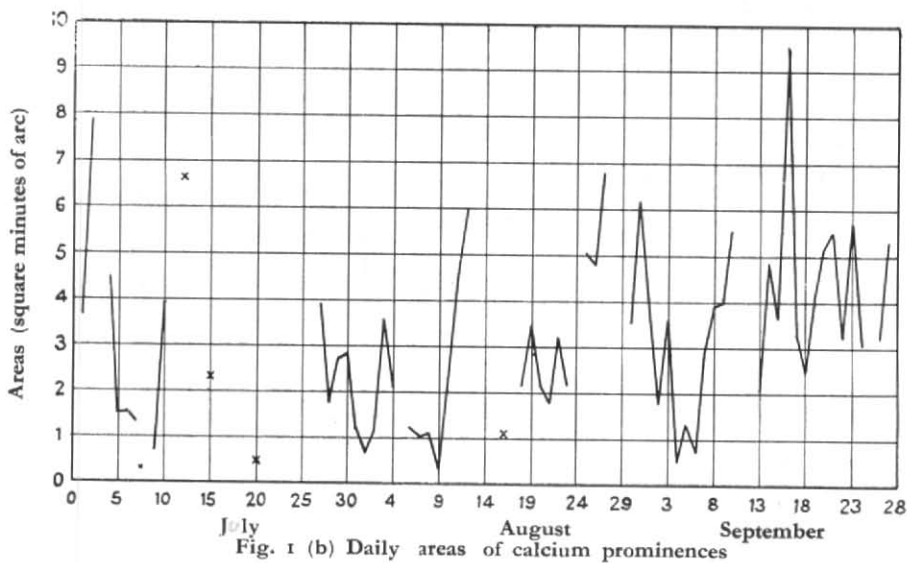
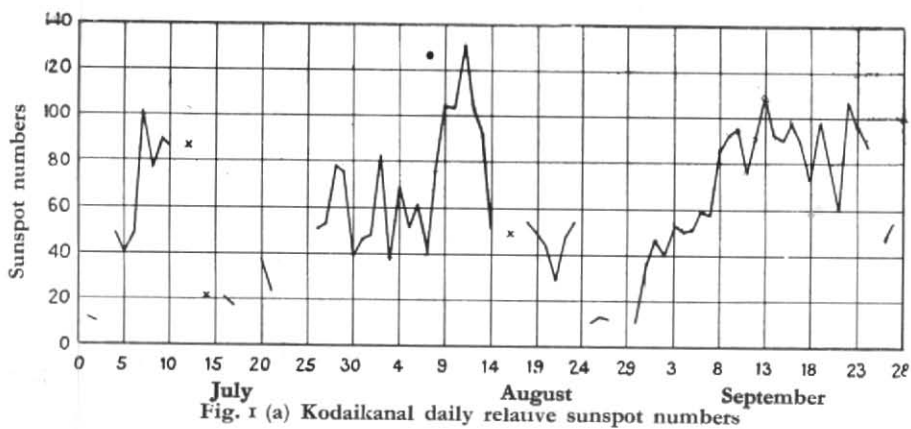
## Solar Flares

Date	Time in GMT			Co-ordinates		Estimated maximum intensity	Maximum width of H-alpha line observed $\text{\AA}$
	Beg. h m	Max. h m	End. h m	Mean latitude	Mean longitude		
July 30	04 00	04 10	04 15	6°S	32°W	1	1.0
August 11	—	02 11	02 30	15°S	35°E	1	—
August 30	03 00	03 15	03 35	7°N	90°E	2	1.8
September 23	02 42	02 55	03 40	15°N	5°W	1	2.0

TABLE 3

## Sudden disappearance of prominences and H-alpha dark markings

Nature of phenomenon	Date and time of phenomenon when last seen		Co-ordinates of phenomenon		Remarks
			Mean latitude	Mean longitude	
Prominence	August 3	0308 UT	20°S	90°E	Disappeared next day
H-alpha dark markings:	August 6	0400 UT	16°S	central meridian	Do.
	August 18	0845 UT	5°N	35°E	Do.



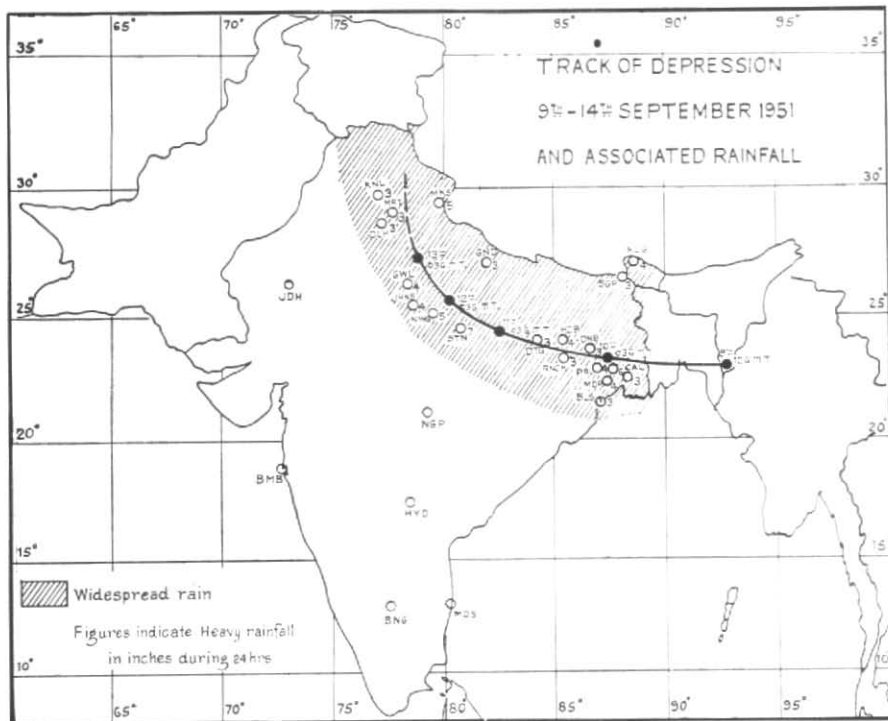


Fig. 1

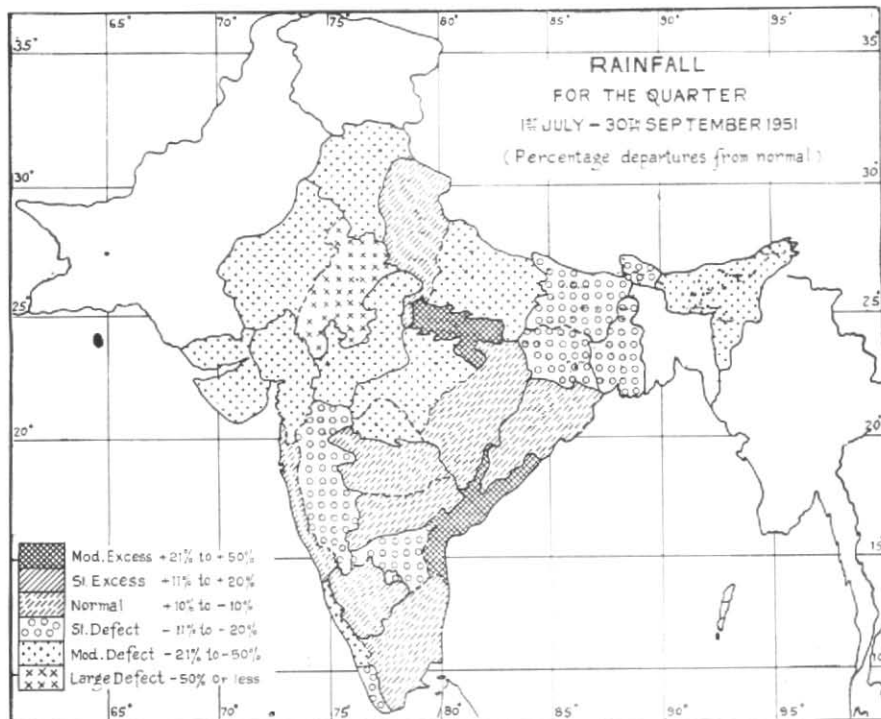


Fig. 2



MAGNETIC OBSERVATORY, ALIBAG (BOMBAY)

Three-hourly Indices of Geomagnetic Activity

(Scale values of variometers in  $\gamma/\text{mm}$ :

D=11.3; H=4.4; Z=2.4)

(K9=300 $\gamma$ )

Greenwich Day	JULY 1951				AUGUST 1951				SEPTEMBER 1951			
	K-indices	Sum	Character of the day*		K-indices	Sum	Character of the day*		K-indices	Sum	Character of the day*	
1	2113	2335	20	M	3323	2553	26	M	1211	1112	10	Ca
2	5455	4422	31	Ma	2432	1322	19	S	2211	1112	11	Ca
3	2324	3333	23	Sa	2213	2112	14	Ca	1122	1112	11	Ca
4	2522	2232	20	Sa	2211	3222	15	Ca	1211	1122	11	Ca
5	2222	2121	14	Ca	2431	1222	17	Ca	1211	1245	15	S
6	1212	2331	15	Ca	1111	3311	12	Ca	3353	1233	23	M
7	1111	1222	11	Ca	1423	1122	16	Ca	2123	2241	17	S
8	1211	1123	12	Ca	2121	1111	10	Ca	2222	2332	18	S
9	2322	2232	18	Ca	1223	3223	18	S	3323	4422	23	S
10	2221	1131	13	Ca	1322	3111	14	S	3444	4321	25	M
11	2223	2322	18	Ca	2213	3332	19	S	3333	3333	26	M
12	2311	1211	12	Ca	2322	2232	18	S	2323	4433	24	Sa
13	1212	1111	10	Ca	2443	5441	27	M	3332	4543	27	M
14	1212	1212	12	Ca	1113	2222	14	Ca	2332	3223	20	Sa
15	1111	2334	16	Sa	2321	2253	20	Sa	3354	4332	27	M
16	2224	4432	23	Sa	2355	2323	25	M	2645	5545	36	G
17	2252	2332	21	Sa	4242	2422	22	Sa	5233	5525	30	Ma
18	2323	4323	22	S	1320	1112	11	S	2222	2442	20	S
19	2223	2211	15	Ca	1322	1332	17	S	1234	5754	31	VG
20	2323	1111	14	S	2533	3353	27	S	2465	5553	35	G
21	1222	1221	13	Ca	3334	4433	27	Sa	3445	5454	34	Ma
22	1254	2233	22	S	5532	4241	26	Sa	4435	5452	32	M
23	3232	2222	18	S	2333	2324	22	Sa	5333	2343	26	S
24	1122	2211	12	Ca	2334	2233	22	S	3424	5331	25	Sa
25	1324	2233	20	Sa	2453	2442	26	Sa	1345	5666	36	G
26	2433	2412	21	Sa	2344	3433	26	Sa	4543	1222	23	M
27	2333	2322	20	S	2333	3444	26	Sa	5466	4333	34	G
28	3334	2342	24	Sa	2333	1243	21	Sa	3221	1112	13	Ca
29	2423	2222	19	S	1223	2322	17	S	2222	5542	24	Ma
30	3224	2243	22	S	1112	2322	14	S	2422	2122	17	Ca
31	3424	5344	29	M	1232	3313	18	S				

\* At Bombay, since 1883, a day is classed as (1) a quiet day, or a day of (2) small, (3) moderate, (4) great or (5) very great disturbance, the letters for distinguishing the respective classes being C, S, M, G, and VG. For representing intermediate conditions of activity of the smaller period movements, sub-classifications Ca, Sa, and Ma are used. Roughly speaking a storm having a range over 225 $\gamma$  in the variation of the horizontal force during the first twentyfour hours after its commencement is classed as "Very Great". It is "Great" if the range is between 150 $\gamma$  and 225 $\gamma$ , "Moderate" if the range is between 65 $\gamma$  and 150 $\gamma$  and "Small" if the range is less than 65 $\gamma$ . The range is however not the only criterion used in assigning the character of a storm. The oscillations in the magnetograms are duly taken into account in determining the class to which a particular storm should belong.

The corresponding international character figures can be determined from the following—

Bombay Character	International Character	Bombay Character	International Character
C	0	M	2
Ca		Ma	
S	1	G	
Sa		VG	

Colaba, Bombay  
20 November 1951

S. L. MALURKAR  
Director, Colaba and Alibag Observatories