

## KODAIKANAL SOLAR AND GEOMAGNETIC DATA, APRIL—JUNE 1952

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 298. Tables 1 to 4 below summarise the data on solar and geomagnetic phenomena.

TABLE 1  
Prominent sunspot groups

Kodaikanal Serial No. of spot group	Mean latitude	Date of central meridian passage	Total area (millionths of the Sun's visible hemisphere) at central meridian passage
9851	5° N	April 8	210
9863	3° S	May 28	240
9876	10° S	June 29	470 Area measured from plate of June 30

TABLE 2  
Solar Flares

Date	Time in GMT			Co-ordinates		Estimated maximum intensity	Maximum width of H-alpha line observed Å
	Peg. m	Max. h m	End. h m	Mean latitude	Mean longitude		
April 21	04 15	—	04 28	5°S	67°E	1	—
June 23	02 45	—	04 15	17°N	45°E	1	1.3
June 28	09 34	—	—	10°S	10°E	1	—

TABLE 3

Sudden disappearance of prominences and H-alpha dark markings

Nature of phenomenon	Date and time (GMT) of phenomenon when last seen		Co-ordinates of phenomenon		Remarks
			Mean latitude	Mean longitude	
Dark marking	May 1	0206	7°S	57°E	Disappeared next day

TABLE 4

Principal magnetic storms

Greenwich date 1952	Storm-time				Sudden commencement				Degree of activity <sup>4</sup>	Maximal activity Greenwich day	Ranges		
	GMT of begin.		GMT of ending <sup>1</sup>		Type <sup>2</sup>	Amplitude <sup>3</sup>					D	H	Z
	h	m	d	h		D	H	Z					
April 1	00	56	6	11	...	...	...	...	m	3	4	157	63
April 21	11	48	22	11	s.c.	...	+28	+11	ms	21	2	286	97
April 29	02	30	02	19	...	...	...	...	m	30	4	168	64
May 7	01	56	8	16	...	...	...	...	m	7	4	190	66
May 26	05	54	27	11	...	...	...	...	m	27	5	224	64
June 29	19	26	30	20	s.c.	...	+20	+11	m	30	3	228	71

The following symbols and conventions have been used according to recognised practice—

1. Approximate time of ending of storm construed as the time of cessation of reasonably marked disturbance movements in the traces
2. s.c. = Sudden commencement      ... = Gradual commencement
3. Signs of amplitudes of *D* and *Z* taken algebraically ;  
(*D*—reckoned negative being westerly)  
(*Z*—reckoned positive being vertically downwards)
4. Storm described by three degrees of activity :  
m—for moderate (when range is between 150 $\gamma$  and 250 $\gamma$ ) ;  
ms—for moderately severe (when range is between 251 $\gamma$  and 400 $\gamma$ ) ;  
s—for severe (when range is above 400 $\gamma$ ).

Kodaikanal  
4 August 1952

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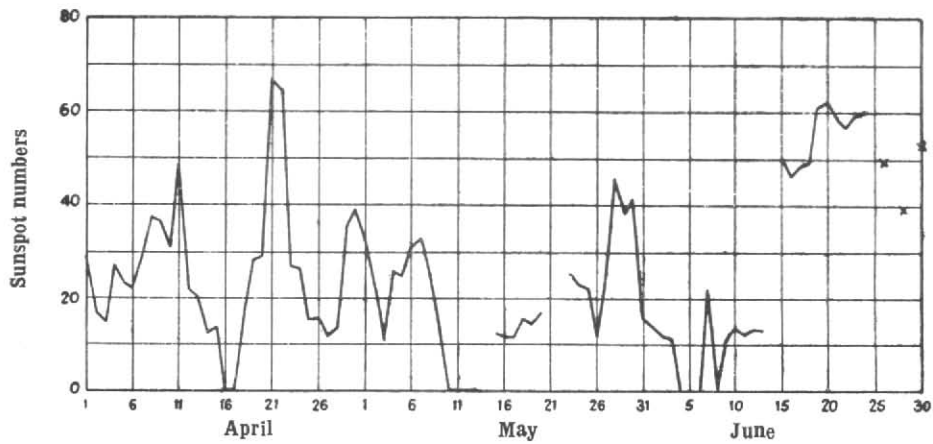


Fig. 1 (a) Kodakkaral daily relative sunspot numbers

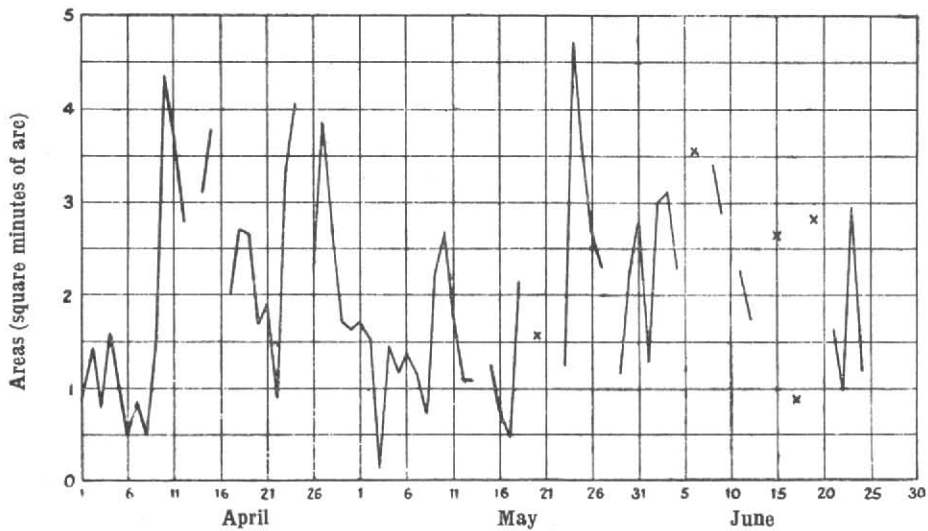


Fig. 1 (b) Daily areas of calcium prominences

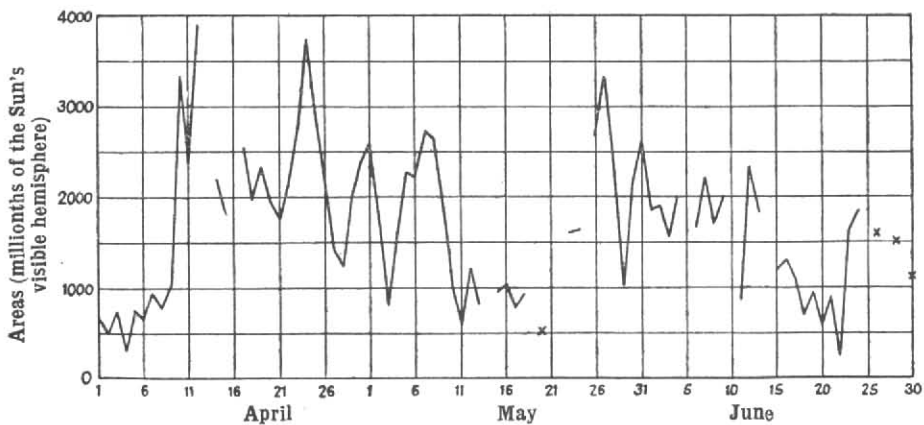


Fig. 1 (c) Daily areas of H-alpha dark markings

Note : Breaks in the graphs are due to lack of observations

## 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=2.5)(K9=300 $\gamma$ )

Greenwich Day	APRIL 1952				MAY 1952				JUNE 1952			
	K-indices	Sum	Character of the day*		K indices	Sum	Character of the day*		K-indices	Sum	Character of the day*	
1	3443 4522	27	Sa		4244 4443	29	Sa		1222 1111	11	Ca	
2	4336 4343	30	Sa		4224 4343	26	Sa		1321 2211	13	Ca	
3	4345 4644	34	Sa		4432 3453	28	Sa		1211 1221	11	Ca	
4	3353 4443	29	Sa		4223 4434	26	Sa		2111 1121	10	Ca	
5	2353 4542	28	Sa		2334 4323	24	Sa		1211 1311	11	Ca	
6	3245 3542	28	Sa		2443 1212	19	S		2111 1111	9	Ca	
7	2343 3243	24	Sa		2454 5436	33	M		1111 1121	9	Ca	
8	3322 4233	22	Sa		3233 4321	21	Sa		2243 2433	23	S	
9	3233 3433	24	Sa		0110 1011	5	C		3323 4422	23	Sa	
10	4233 2122	19	S		3211 2110	11	Ca		2222 3233	19	S	
11	2333 2111	16	S		0222 4432	19	S		2332 2323	20	S	
12	3212 2122	15	Ca		2321 1221	14	Ca		2221 1222	14	Ca	
13	3322 2142	19	S		2222 4333	21	S		1111 1132	11	Ca	
14	1123 1323	16	S		2322 1111	13	Ca		1233 5444	26	S	
15	2324 4331	22	S		1111 2211	10	Ca		2323 3222	19	S	
16	1342 3332	21	S		1111 0111	7	Ca		2432 3321	20	S	
17	2433 1121	17	S		0011 1133	10	Ca		2333 2221	18	S	
18	1112 4443	20	S		5335 3532	29	M		2212 2223	16	S	
19	2321 5444	25	Sa		3544 3221	24	S		1211 2121	11	Ca	
20	2211 2223	15	Ca		2323 2312	18	Ca		1111 1112	9	Ca	
21	2225 8754	35	VG		2223 2221	16	Ca		1112 2221	12	Ca	
22	3444 2222	23	Sa		1221 1101	9	Ca		1243 3443	24	S	
23	2333 2221	18	S		0123 2232	15	S		3343 4324	26	Sa	
24	2222 1424	19	S		2222 3223	18	S		4233 3221	20	S	
25	2213 1111	12	Ca		4232 2311	18	S		1223 3243	20	S	
26	2111 1332	14	S		1144 3556	29	Ma		3333 4211	20	S	
27	2211 1113	12	Ca		5432 3453	29	M		2232 2432	20	S	
28	4324 4332	25	Sa		3223 3432	22	Sa		2112 2111	11	Ca	
29	2454 3454	31	Sa		3433 2532	25	Sa		0111 1144	13	M	
30	4435 4544	33	Sa		2223 2231	17	Sa		5754 2222	29	G	
31					2321 2222	16	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 variations 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 } Ca }	0	M } Ma }	2
S } Sa }	1	G } VG }	2

Colaba, Bombay  
16 August 1952

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