KODAIKANAL SOLAR, GEOMAGNETIC AND IONOSPHERIC DATA

(OCTOBER—DECEMBER 1958)

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 226. Tables 1 to 4 below summarise the data on solar and geomagnetic phenomena. The hourly median values of critical frequency and virtual height for the ionospheric layers are given in Table 5.

TABLE 1

Prominent sunspot groups

Kodaikanal serial No. of spotgroup	Mean latitude	Date of central meridian passage	Total area (milionths of the Sun's visible hemisphere at central meridian passage)
11192	5°S	Oct 20	1134
11195	12°S	Oct 22	1134
11224	17°S	Nov 3	801*
11265	17°S	Nov 30	1671
11283	03°S	Dec 12	832**
11301	17°S	Dec 28	852†

*It became larger after central meridian passage

**As measured on 13 December

†It was larger before central meridian passage

TABLE 2

Solar Flares

Date	Time in GMT						Co-ordinates		Importance	H-alpha line width	Remarks
	Beg.		Max.		End.		Mean Latitude	Mean Longitude			
	h	*m*	*h*	*m*	*h*	*m*				Å	
Oct 23(*i*)	02	25	02	34	02	52	09°S	20°W	1	2·0	Observed in spectrohelioscope
Oct 23(*ii*)	02	34	02	52	03	05	05°S	40°W	2	1·6	Do.
Nov 27	06	30	..		06	37	22°N	12°W	1	1·3	Observed in spectrohelioscope through passing clouds
Dec 1	06	14*	..		06	25	19°S	18°W	Probably 1	1·2	Do.
Dec 8	09	07*	..		09	15	04°S	48°E	Probably 1	1·6	Do.
Dec 16	02	30*	..		02	36	24°N	08°E	1	2·8	Observed in spectrohelioscope

*Beginning of the observation of flare and not the time of flare itself

TABLE 3

Sudden disappearance of prominences and H-alpha dark markings

Phenomenon	Date and time (GMT) of phenomenon when last seen	Co-ordinates of phenomenon		Remarks
		Mean latitude	Mean longitude	
Dark marking	Nov 11 0500	10° N	30° W	Disappeared between 11th and 12th
Prominence	Nov 28 0546	18° N	90° E	Disappeared between 28th and 29th
Dark marking	Dec 1 0850	13° S	22° W	Major portion of the marking disappeared between 1st and 2nd
Prominence	Dec 6 0530	46° N	90° E	Disappeared between 6th and 7th
Dark marking	Dec 29 1030	14° N	32° N	Disappeared between 29th and 30th

TABLE 4

Principal magnetic storms

Greenwich date 1958	Storm-time				Sudden commencement				C-figure degree of activity[4]	Maximal activity Greenwich day	Ranges		
	GMT of beginning		GMT of ending[1]		Type[2]	Amplitude[3]							
						D	*H*	*Z*			*D*	*H*	*Z*
	h	*m*	*d*	*h*		′	γ	γ			′	γ	γ
Oct 22	03	14	24	01	s.c.	2	109	23	ms	22	8	328	81
Oct 24	07	28	25	13	s.c.	2	113	21	ms	24	8	389	69
Oct 28	06	49	29	08	s.c.	1	77	12	m	28	4	249	51
Nov 28	01	08	29	12	s.c.	1	25	7	m	28	6	179	40
Dec 4	00	35	5	18	s.c.	1	29	12	ms	4	8	348	69
Dec 13	00	07	14	23	s.c.	1	24	13	ms	13	5	290	58
Dec 17	18	18	19	10	s.c.	1	40	16	m	18	4	187	40

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 less than 250γ)

   ms—for moderately severe (when range is between 251γ and 400γ)

   s—for severe (when range is above 400γ)

TABLE 5

Beginning from January 1952, systematic ionospheric observations are being made at Kodaikanal with the Automatic Multi-frequency Ionosphere Recorder (Type C-3) made by the National Bureau of Standards, U.S.A. The general electrical characteristics of the instruments are given below—

(*a*) Supply voltage—90 to 260 volts AC single phase

(*b*) Supply frequency—50 to 60 cps

(*c*) Power load—approximately 30 amperes at 115 volts

(*d*) Pulse recurrence frequency—from 10 to 90 pps

(*e*) Frequency sweep time—7½, 15 or 30 seconds and 30, 60 or 120 seconds

(*f*) Frequency sweep range—1 to 25 megacycles

(*g*) Frequency sweep interval—5, 15, 30 or 60 minutes

(*h*) Height ranges—0–500, 0–1000, 0–4000 kilometres

(*i*) Peak-pulse power—approximately 10 kilowatts

Ionospheric data (Median values)

Kodaikanal (10·2°N,77·5°E) October 1958

Time (hrs)	h'F2	foF2	h'F	foF1	h'E	foE	foEs	M(3000) F2
00		U11·7	260				..	U2·75
01		11·4	250				..	2·80
02		10·4	250				..	2·85
03		9·7	240				..	2·90
04		8·8	235				..	3·00
05		7·7	230				..	3·10
06		8·5	270		..	..	..	2·90
07	..	12·0	250	..	120	3·0	..	2·80
08	..	13·6	240	..	110	..	9·8	2·55
09	..	14·2	225	..	110	..	10·5	2·30
10	..	13·5	220	..	..	..	11·4	2·20
11	..	12·8	220	..	..	..	11·6	2·15
12	..	12·5	220	..	..	..	11·3	2·10
13	..	12·5	220	..	..	..	11·2	2·10
14	..	12·8	230	..	115	..	11·0	2·10
15	..	12·8	240	..	110	..	10·6	2·10
16	..	12·8	250	..	120	..	8·2	2·10
17	..	12·3	280	..	..	..	7·0	2·05
18		U11·6	370				..	U2·00
19		U 9·6	500				..	U1·95
20		9·3	420				..	2·10
21		U11.3	325				..	U2·30
22		U10·9	320				3·6	U2·40
23		U11·2	275				5·6	U2·50

Ionospheric data (Median values)

Kodaiknal (10·2°N, 77·5°E) November 1958

Time (hrs)	h'F2	foF2	h'F	foF1	h'E	foE	foEs	M(3000) F2
00		11·4	260				..	2·75
01		11·1	240				4·6	2·80
02		10·2	230				..	2·90
03		9·0	230				..	3·00
04		7·8	230				..	3·10
05		6·4	225				..	3·15
06		8·0	275				..	2·90
07	..	11·4	245	..	110	2·9	7·0	2·70
08	..	12·8	235	..	110	..	9·0	2·50
09	..	13·6	225	..	110	..	10·0	2·40
10	..	13·6	220	..	110	..	11·0	2·30
11	..	13·3	220	..	110	..	11·0	2·20
12	..	13·0	220	..	110	..	10·9	2·15
13	..	12·9	220	..	110	..	10·4	2·10
14	..	12·8	220	..	110	..	10·1	2·10
15	..	12·6	230	..	110	..	9·9	2·10
16	..	12·1	250	..	115	3·0	8·0	2·10
17		11·7	280		..	..	6·8	2·05
18		11·0	370				..	2·00
19		9·2	440				..	1·95
20		9·5	U400				..	2·05
21		U10·8	U400				..	U2·20
22		U10·4	325				..	U2·40
23		U10·8	300				..	U2·50

Kodaikanal (10·2°N, 77·5°E) December 1958

Time (hrs)	h'F2	foF2	h'F	foF1	h'E	foE	foEs	M(3000) F2
00		9·8	260				..	2·60
01		U9·6	270				..	2·65
02		9·0	260				..	2·70
03		8·6	245				..	2·80
04		8·1	235				..	3·00
05		6·8	225				..	3·15
06		7·0	265				..	2·90
07	..	10·4	255	..	120	2·7	G	2·90
08	..	12·4	240	..	110	3·4	8·2	2·70
09	..	13·0	230	..	110	..	9·8	2·45
10	..	12·7	220	..	..	..	11·0	2·20
11	..	11·8	220	..	110	..	11·0	2·15
12	..	11·8	220	..	110	..	11·0	2·15
13	..	11·8	220	..	110	..	11·0	2·10
14	..	11·6	220	..	110	..	10·8	2·10
15	..	11·7	235	..	110	3·6	10·0	2·10
16	..	11·6	250	..	110	..	8·4	2·10
17	..	11·1	280		120	..	5·6	2·10
18		10·7	335				..	2·10
19		10·0	420				..	2·00
20		U9·5	405				..	U2·05
21		9·5	355				..	2·15
22		U10·2	305				..	U2·40
23		U9·8	280				..	U2·50

Time: 75·0°E
Sweep: 1·0 Mc to 25·0 Mc. in 27 seconds

Kodaikanal Observatory, Kodaikanal
30 January 1959

A. K. DAS
Deputy Director General of Observatories

The symbols and terminology used are in accordance with the recommendations of the Special Committee on World-wide Ionospheric soundings to U.R.S.I./A.G.I. in its first report (Brussels, 2 September 1956)

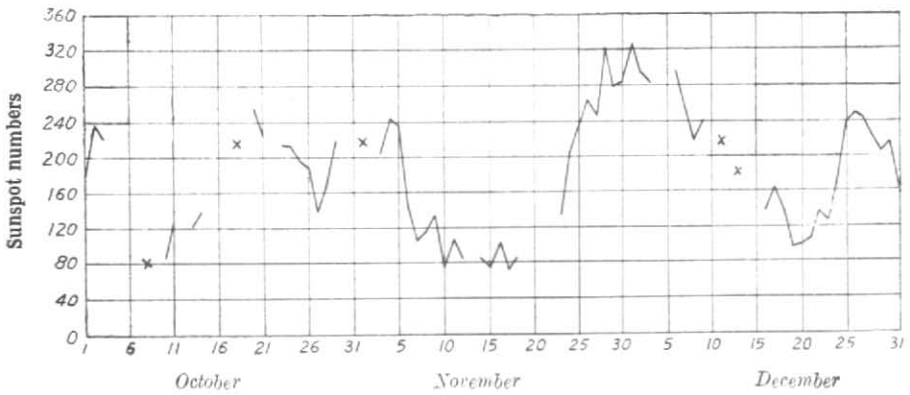

Fig. 1 (a). Kodaikanal daily relative sunspot numbers

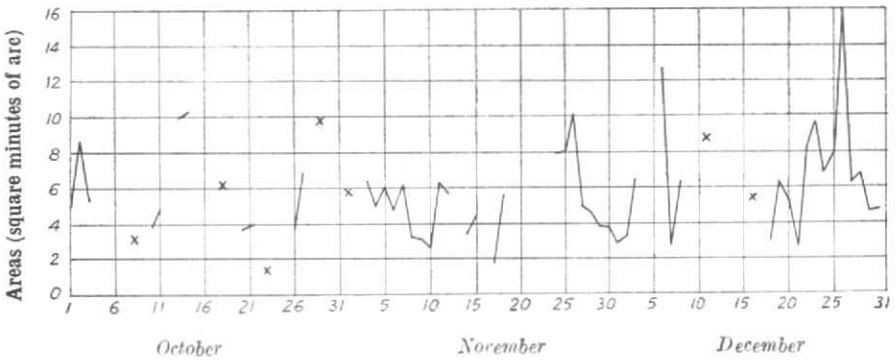

Fig. 1(b). Daily areas of calcium prominences

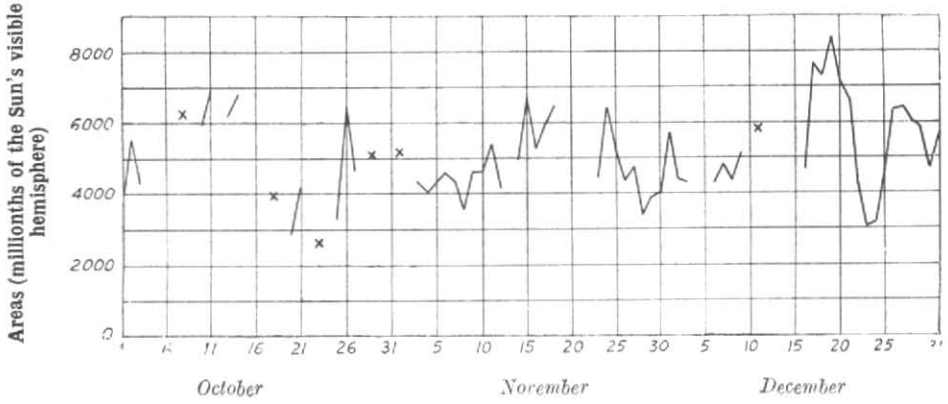

Fig. 1 (c). Daily areas of H-alpha dark markings

NOTE—Breaks in the graphs are due to lack of observations

MAGNETIC OBSERVATORY, ALIBAG (BOMBAY)
Three-hourly indices of Geomagnetic Activity

(K9=300γ)

(Scale of values of variometers in γ/mm
D=11·3; H=4·4; Z=2.5)

Greenwich day	OCTOBER 1958				NOVEMBER 1958				DECEMBER 1958			
	K-indices		Sum	Character of the day*	K-indices		Sum	Character of the day*	K-indices		Sum	Character of the day*
1	3442	1123	20	S	1333	3422	21	S	1211	1111	9	Ca
2	3212	1113	14	Ca	2223	5652	27	M	2246	5445	32	M
3	2233	3431	21	Sa	3522	4232	23	S	3322	1222	17	Ca
4	2211	3112	13	Ca	2231	3122	16	Ca	4456	6565	41	G
5	3342	2233	22	S	2222	1111	12	Ca	5323	2222	21	Sa
6	2322	3232	19	S	1222	2223	16	Ca	3334	3333	25	S
7	2322	2423	20	S	1223	3322	18	Ca	1332	2121	15	S
8	3322	2112	16	S	1221	2211	12	C	1222	3442	20	S
9	2223	2112	15	Ca	0222	2122	13	Ca	3353	3211	21	Sa
10	2122	2221	14	Ca	2245	3542	27	M	1221	1111	10	C
11	1222	2122	14	Ca	4323	2221	19	S	1222	2224	17	S
12	1221	2221	13	Ca	2223	2232	18	S	3222	2222	17	Ca
13	1223	2221	15	Ca	2323	2211	16	S	4333	7555	35	Ma
14	3323	2211	17	S	2323	2113	17	Ca	4532	5333	28	Sa
15	2232	2232	18	S	2242	2112	16	S	2324	2433	23	Sa
16	2322	1222	16	Ca	3434	3312	23	S	5544	4331	29	M
17	2322	1222	16	Ca	2333	2212	18	S	2233	2454	25	M
18	3321	1212	15	Ca	1223	2222	16	S	5443	4212	25	Sa
19	2232	3431	20	S	2222	3321	17	Ca	3334	4342	26	Sa
20	3212	1223	16	Ca	0213	2211	12	Ca	2222	3332	19	Sa
21	3323	2222	19	Ca	1222	1212	13	Ca	2332	2231	18	S
22	2565	3453	33	M	2223	1111	13	Ca	1222	2233	17	S
23	2344	4254	28	M	2225	4321	21	S	2353	4443	28	Sa
24	3266	6654	38	G	2243	3222	20	S	2212	3222	16	Ca
25	2332	1112	15	S	3323	5444	28	Sa	1112	1124	13	S
26	2322	2442	21	Sa	2223	2232	18	Ca	4222	3433	23	Sa
27	2222	2564	25	M	2224	3432	22	S	1324	4222	20	Sa
28	2364	4543	31	M	3445	5333	30	M	3223	2332	20	S
29	3322	2243	21	S	2334	3422	23	Sa	1221	2233	16	S
30	2222	3435	23	Sa	2122	2211	13	Ca	2222	4332	20	Sa
31	3433	3422	24	Sa					2222	3221	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 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 225γ 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 150γ and 225γ, 'Moderate' if the range is between 65γ and 150γ, 'Small' if the range is less than 65γ. 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
5 February 1959

S. L. MALURKAR
Director, Colaba and Alibag Observatories

DAILY OZONE DATA—INDIA

(From direct sun observations on 3112/3323 Å and 4536/3323 Å)

Assumed α (3112)=1·233 and α' (3323)=0·071

NEW DELHI

(Lat. 28°35′N, Long. 77°12′E)

Date	OCTOBER 1958			NOVEMBER 1958			DECEMBER 1958		
	Hours (IST)	Ozone amount (cm-atmos)	State of sky	Hours (IST)	Ozone amount (cm-atmos)	State of sky	Hours (IST)	Ozone amount cm-atmos)	State of sky
1	No observation		Bad weather	15	0·242	Clear	15	0·254	Hazy
2	,,		,,	15	0·251	,,	15	0·258	*Ci* 2
3	,,		,,	15	0·235	,,	14	0·265	(*Ci, Cs*) 5
4	16	0·250	(*Sc, Cu*) 2	15	0·237	,,	14	0·261	Clear
5	16	0·235	Clear	15	0·229	,,	15	0·265	Hazy
6	17	0·239	(*Sc, Cu*) 1	15	0·234	,,	14	0·250	Clear
7	16	0·235	(*Sc, Cu*) 3	15	0·227	,,	15	0·255	,,
8	16	0·241	(*Sc, Cu*) 4	15	0·238	Hazy	15	0·246	,,
9	16	0·269	*Cu* 2, (*Ci, Cs*) 2	15	0·233	Clear	15	0·262	,,
10	16	0·243	Clear	15	0·249	(*Ci, Cs*) 6	15	0·265	Hazy
11	16	0·263	*Cu* 2, (*Ci, Cs*)3	15	0·242	(*Sc, Cu*) 3	15	0·258	*Sc* 2
12	15	0·249	Clear	15	0·235	*Cu* 3, Ac 2	15	0·254	*Sc* 3, *Ac* 2
13	16	0·243	,,	15	0·239	Clear	10	0·266	*Cu* 2, (*Ac, As*) 2 (*Ci, Cs*) 4
14	15	0·243	*Ac* 5	15	0·250	,,	14	0·278	(*Ci, Cs*) 5
15	16	0·257	(*Ci, Cs*) 3	15	0·254	,,	14	0·282	*Sc* 2, *Ac* 2
16	15	0·243	(*Ac, As*) 6	15	0·253	(*Ci, Cs*) 5	14	0·277	(*Ci, Cs, Cc*) 5
17	15	0·237	*Sc* T, *Ac* 2	15	0·261	*Ci* 2	14	0·274	(*Ci, Cs*) 6
18	15	0·238	Clear	15	0·257	Clear	15	0·270	*Ac* 2, (*Ci, Cs*) 2
19	15	0·239	*Ac* 1, *Cc* 2	15	0·238	,,	14	0·261	(*Ci, Cs*) 4
20	15	0·239	*Cu* 2	15	0·246	,,	15	0·265	(*Ac, As*) 3
21	16	0·238	Clear	15	0·241	,,	No observation		Bad weather
22	15	0·250	,,	15	0·243	,,	15	0·271	*Sc* 2, *Ac* 2
23	16	0·239	,,	15	0·243	,,	15	0·273	Hazy
24	15	0·253	,,	15	0·229	,,	15	0·271	Clear
25	15	0·243	,,	15	0·242	Hazy	15	0·266	,,
26	15	0·263	,,	16	0·234	(*Ci, Cs*) 3	10	0·273	(*Ci, Cs*) 8
27	15	0·237	,,	15	0·251	*Sc* 3, *Ac* 3	10	0·286	*Cu* 2
28	15	0·253	,,	No observation		Bad weather	15	0·281	*As* 2, (*Ci, Cs*) 3
29	15	0·243	,,	15	0·253	Clear	15	0·286	Clear
30	16	0·254	,,	15	0·257	,,	15	0·281	*Sc* 3, *Ac* 4
31	15	0·241	,,				15	0·282	(*Ci, Cs*) 3

NOTE—The cloud amounts are in oktas

DAILY OZONE DATA—INDIA

(From direct sun observations on 3112/3323 Å and 4536/3323 Å)

Assumed α (3112) = 1·233 and α' (3323) = 0·071

MT. ABU

(Lat. 24°36′N, Long. 72°43′E)

Date	OCTOBER 1958			NOVEMBER 1958			DECEMBER 1958		
	Hours (IST)	Ozone amount (cm-atmos)	State of sky	Hours (IST)	Ozone amount (cm-atmos)	State of sky	Hours (IST)	Ozone amount (cm-atmos)	State of sky
1	09	0·241	(*Ci, Cs*) 2, sl. haze	17	0·243	Clear	10	0·235	(*Ac*, Ci) 3
2	17	0·253	Sl. haze	17	0·239	,,	16	0·245	(*Cu, Cs*) 2, hazy
3	16	0·247	Clear	16	0·241	,,	16	0·247	*Cu* 2, hazy
4	17	0·246	Sl. haze	10	0·239	,,	16	0·237	*Cu* 2, *Ci* T
5	17	0·243	Clear	16	0·230	,,	16	0·233	Thin *Ci*
6	No observation			16	0·230	,,	16	0·233	*Cu* 3, *Ci* 2, sl. haze
7	17	0·241	*Ac* 2, *Cs* 2	16	0·238	,,	16	0·230	*Cu* 3, *Ci* 2, haze
8	17	0·233	*Ac* 2, *Ci* 3	16	0·242	,,	16	0·233	(*Cu*, Ci) 3
9	17	0·234	*Cu* 2, Ci, sl. haze	10	0·237	Sl. haze	16	0·234	Sl. haze
10	09	0·227	*Ci* 3, *Ac* 3	17	0·243	Clear	16	0·245	,,
11	No observation		Overcast	16	0·243	,,	16	0·245	,,
12	10	0·238	Mainly overcast	09	0·233	,,	16	0·250	,,
13	17	0·214	Mainly overcast, obsn. through cloud	16	0·233	,,	16	0·261	Overcast with thick *Ci*
14	No observation		Overcast	16	0·233	,,	16	0·261	(*Ac, Ci*) 2
15	09	0·231	*Ac* 2, *Ci* 2	16	0·233	*Ac* 3, (*Ci, Cs*) 2	16	0·250	Clear
16	10	0·227	*Cu* 2, *Ci* 3	16	0·238	*Ac* 2, *Ci* T	09	0·245	Overcast with thin *Ci*
17	10	0·233	Mainly overcast	16	0·237	*Cu* 3, *Cs* 2	16	0·243	(*Cu, Ci*) 2, haze
18	17	0·238	*Cu* 4, *Ci* 4	16	0·226	*Cu, Ci* 2	16	0·242	*Cu* 3
19	16	0·243	*Ac* 2, *Ci* 3	16	0·227	Overcast with thin *Ci*, obsn. through *Ci*	16	0·242	(*Ac, Ci, Cs*) 2
20	16	0·243	(*Cu, Ci*) 3, sl. haze	16	0·223	Thin *Ci*, haze	No observation		Overcast, rain
21	No observation		Ocercast	16	0·226	Thin *Ci*, haze	,,		,,
22	,,		,,	16	0·223	Clear	16	0·241	(*Ci, Cs*) 2
23	,,		,,	16	0·223	Sl. haze	16	0·242	(*Ci, Cs*) 2
24	10	0·234	(*Ac, Ci*) 3	16	0·229	Clear	16	0·233	*Ci* T
25	09	0·234	*Cu* 2, (*Ci, Cs*) 3	16	0·226	*Cu* 4, *Ci* 3	10	0·234	Mainly overcast
26	17	0·237	(*Cu, Cs*) 2	10	0·230	Overcast	16	0·231	(*Cu, Ci*) 3
27	16	0·237	Clear	No observation		Overcast, rain	16	0·245	(*Ac, Ci*) 2
28	17	0·243	(*Ci, Cs*) 3, sl. haze	,,		,,	16	0·241	Sl. haze
29	17	0·243	(*Ci, Cs*) 3, sl haze	10	0·227	*Cu* 2, *Ci* 3	16	0·241	(*Ci, Cs*) 3, obsn. through *Ci*
30	16	0·242	Sl. haze	16	0·234	(*Ac, Ci*) 2	16	0·246	(*Ci*, Cs) 2
31	09	0·238	Clear				10	0·251	Clear

NOTE—The cloud amounts are in oktas

DAILY OZONE DATA—INDIA

(From direct observations on 3112/3323 Å and 4536/3323 Å)

Assumed $\alpha(3112) = 1 \cdot 23$ and $\alpha'(3323) = 0 \cdot 08$

KODAIKANAL

(Lat. 10°14′N, Long. 77° 28′E)

Date	OCTOBER 1958			NOVEMBER 1958		
	Hours (IST)	Ozone amount (cm-atmos)	State of sky	Hours (IST)	Ozone amount (cm-atmos)	State of sky
1	No observation		*Cu* 4, *Sc* 2	11	0·236	*Cu* 1, *Sc* 5
2	08	0·243	*Cu* 1, *Ci* 1	No observation		*Cu* 2, *Sc* 4
3	No observation		*Cu* 4, *Sc* 2	08	0·234	*Sc* 1, *Ac* 2
4	,,		Overcast	08	0·234	*Ci* 2
5	,,		,,	08	0·237	*Sc* 3, *Ci* 1
6	,,		,,	08	0·231	*Cu* 1, *Sc* 1
7	,,		*Cu* 2, *St* 5	08	0·238	*Sc* 2
8	08	0·233	*Sc* 2, *Ci* 2	08	0·242	*Cu* 1
9	No observation		Overcast	08	0·240	*Cu* 1
10	09	0·239	*Ac* 2, *Ci* 3	08	0·236	*Cu* 1, *Ci* 5
11	08	0·242	*Cu* 2, *Ac* 1, *Ci* 1	09	0·238	*Cu* 2, *Sc* 2
12	No observation		Overcast	No observation		*Cu* 3, *Sc* 3
13	08	0·237	*Cu* 1, *Ac* 1, *Ci* 2			*Sc* 3, *St* 3, *Ci* 1
14	09	0·234	Thick *Ci*	11	0·238	*Ac* 5, *Cs* 2
15	No observation		Overcast	08	0·241	*Ac* 5, *Ci* 1
16	,,		,,	No observation		*Cu* 3, *Sc* 2
17	,,		*Cu* 4, *Sc* 3	09	0·237	*St* 3, *Ci* 3
18	09	0·239	*Ac* 3	08	0·240	*Ci* 1
19	No observation		Overcast	No observation		Overcast, Rain
20	08	0·238	*Ac* 1, *Ci* 3, *Cs* 2	,,		,,
21	08	0·239	*Cu* 1, *Ci* 1	,,		,,
22	No observation		Overcast	,,		*Cu* 2, *Sc* 5
23	08	0·243	*Cu* 1, *Sc* 1	,,		*Sc* 6
24	No observation		*Cu* 2, *Sc* 2, *Cs* 2	09	0·237	*Ci* 1
25	,,		Overcast	09	0·237	*Cu* 1
26	,,		*Sc* 4, *Cu* 3	08	0·237	*Sc* 2
27	,,		*Sc* 3, *Cu* 2	08	0·238	Clear
28	,,		*Cu* 3, *Sc* 3	08	0·238	*Ci* 1
29	08	0·237	Passing *Sc*	08	0·238	*Ci* 2
30	No observation		Overcast	08	0·237	*Cu* 2
31	,,		,,			

NOTE—The cloud amounts are in oktas