SOLAR, GEOMAGNETIC, IONOSPHERIC AND OZONE DATA

KODAIKANAL SOLAR, GEOMAGNETIC AND IONOSPHERIC DATA

(JANUARY—MARCH 1962)

Tables 1 to 5 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 6.

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)
12254	6°N	Jan 24	882*
12256	10°N	Jan 29	378*
12264	12°S	Feb 26	1000
12276	10°N	Mar 25	862†

* Area was more after central meridian passage

† Area was more 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	
Jan 3	03	13	03	16	03	20	12°N	75°W	1	1·84	Observed in spectrohelioscope and filtergram
Jan 3	03	35	03	40	03	49	12°N	75°W	1^{+}	2·00	Do.
Jan 20	06	49	06	50	06	52	07°N	50°E	1	1·20	Do.
Jan 24	04	46	04	55	04	59	20°N	07°E	1	1·64	Observed in spectrohelioscope
Feb 1	03	34	03	37	03	51	10°N	29°W	1	1·60	Observed in spectrohelioscope and filtergram

TABLE 2(*contd*)

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	
Feb 1	05	50	05	52	06	00	10°N	33°W	1	2·08	Observed in spectrohelioscope
Feb 1	06	47	06	48	06	52	10°N	33°W	1	1·20	Observed in spectrohelioscope and filtergram
Feb 4	01	58	02	22	02	35	11°N	80°W	2+	4·00	Observed in spectrohelioscope
Feb 4	03	15	03	15	03	17	11°N	80°W	1	1·36	Do.
Feb 21	08	21	08	22	08	33	10°S	60°E	1	—	Observed in filtergram
Feb 22	02	30	02	31	02	40	10°S	48°E	1	1·60	Observed in spectrohelioscope and filtergram
Feb 22	06	12	06	12	06	31	10°S	50°E	1	—	Observed in filtergram
Feb 28	06	50	06	55	07	13	14°S	33°W	2	2·24	Observed in spectrohelioscope and filtergram
Mar 1	03	10	03	24	03	47	13°S	47°W	1	1·76	Do.
Mar 1	10	19	10	36	11	00	13°S	44°W	1	—	Observed in filtergram
Mar 6	03	55	03	58	04	50	13°N	33°E	1+	2·24	Observed in spectrohelioscope and filtergram
Mar20	03	05	03	05	03	30	10°S	55°E	1	2·28	Do.
Mar31	*02	45	02	45	02	49	08°N	70°W	1	1·64	Observed in spectroheliscope

* Beginning of observation and not the beginning of flare

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	25 Mar 1118	18°N	11°W	Actual disintegration not observed. Dark marking was not seen on 26th

TABLE 4

Daily Solar Data

Date	JANUARY 1962			FEBRUARY 1962			MARCH 1962		
	(a)	(b)	(c)	(a)	(b)	(c)	(a)	(b)	(c)
1	35	1969	1	79	2469	7	83	2813	1
2	22	2875	1	50	2031	7	80	1438	6
3	23	2281	2	—	—	—	57	1250	5
4	11	1750	2	45	719	5	46	1813	4
5	25	1594	3	37	1000	1	25	1063	5
6	11	1313	3	15	—	1	32	531	6
7	11	—	—	28	813	3	27	—	5
8	12	1469	2	25	1688	2	25	313	3
9	00	1719	1	15	844	3	22	938	2
10	11	1469	1	14	844	2	11	1063	2
11	00	1438	1	00	844	3	00	1250	4
12	00	1313	1	00	813	2	00	—	4
13	11	1875	1	00	625	4	11	406	3
14	—	—	—	25	1531	5	14	1094	4
15	12	—	2	12	1438	7	16	—	3
16	11	1094	1	14	1438	9	27	—	4
17	11	1406	2	12	1750	5	26	1531	5
18	22	563	3	23	2156	4	27	1750	2
19	16	—	1	24	2281	3	51	1063	3
20	22	1031	4	39	—	—	63	1500	3
21	21	—	—	41	2938	2	59	—	—
22	—	—	—	66	3281	1	70	2969	8
23	—	—	—	61	—	—	65	2281	4
24	54	2563	2	135	—	—	34	2500	2
25	53	2344	3	76	—	—	34	2188	3
26	53	3500	5	64	3125	1	55	1656	3
27	48	3406	3	77	2469	1	48	1813	3
28	50	3500	1	95	1813	2	20	—	3
29	42	2813	1				18	—	0
30	71	—	1				15	—	0
31	50	2313	2				26	—	—

— No observation due to cloudy sky

(a) Relative sunspot number

(b) H-alpha dark markings (Areas in millionths of the sun's visible hemisphere)

(c) Calcium prominence (Areas in square minutes of arc)

TABLE 5

Principal magnetic storms

Greenwich date 1962	Storm-time: GMT of beginning		Storm-time: GMT of ending [1]		Sudden commencement: Type [2]	Sudden commencement: Amplitude [3] D	H	Z	C-figure degree of activity [4]	Maximal activity Greenwich day	Ranges D	H	Z
	h	*m*	*d*	*h*		′	γ	γ			′	γ	γ
Jan 10	02	13	11	09	s.c.	1	29	12	ms	10	8	289	81
Feb 4	09	27	05	05	s.c.	<1	19	10	ms	4	4	233	58
Feb 15	15	54	17	10	...	—	—	—	ms	16	6	268	75
Feb 26	12	31	27	20	s.c.	1	24	14	m	26	4	193	52

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 6

Ionospheric data (Median values)

Kodaikanal (10·2°N, 77·5°E)

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

TABLE 6 *(contd)*

JANUARY 1962

Time	foF2	foF1	foE	foEs	fbEs	f-min	h'F2	h'F	h'E	h'Es	(M3000) F2
0000	5·1			..	..	1·3		230		..	3·35
0100	4·7			..	..	1·3		230		..	3·30
0200	4·2			..	..	1·3		230		..	3·40
0300	3·4			..	..	1·0		225		..	3.40
0400	2·4			..	..	1·1		235		..	3·40
0500	2·0			..	..	E		250		..	3·40
0600	2·8	..	..	..	..	1·1	..	270		..	3·00
0700	6·0	..	2·2	4·8	2·2	1·3	..	230	115	105	3·25
0800	7·4	..	2·6	7·8	2·8	1·5	290	210	110	100	2·95
0900	7·8	4·5	..	9·6	3·2	1·7	320	200	..	100	2·75
1000	7·4	4·6	..	10·6	3·4	2·0	340	200	..	100	2·70
1100	7·4	4·7	..	10·7	3·6	2·2	360	200	..	100	2·60
1200	7·6	4·6	..	10·6	3·6	2·4	355	190	..	100	2·60
1300	7·8	4·6	..	10·6	3·5	2·3	350	185	..	100	2·60
1400	7·8	4·5	3·4	9·8	3·4	2·1	350	180	110	100	2·60
1500	8·0	4·5	3·1	8·4	3·1	2·2	335	200	110	100	2·60
1600	8·1	..	2·8	7·8	2·8	1·8	..	215	110	110	2·75
1700	8·1	..	2·1	4·4	2·3	1·6	..	240	120	110	2·80
1800	7·8	..	..	5·6	2·7	1·5	..	260	..	105	2·85
1900	7·4			3·1	..	1·5		275		..	2·80
2000	7·3			3·7	2·0	1·4		260		110	2·95
2100	6·9			2·8	2·0	1·4		250		115	3·05
2200	6·1			..	..	1·4		240		..	3·25
2300	5·7			2·4	1·5	1·4		230		115	3·30

FEBRUARY 1962

Time	foF2	foF1	foE	foEs	fbEs	f-min	h'F2	h'F	h'E	h'Es	(M3000) F2
0000	6·0			..	..	1·5		240		..	3·30
0100	5·6			..	..	1·5		220		..	3·35
0200	4·9			..	..	1·5		220		..	3·40
0300	3·8			..	..	1·5		230		..	3·40
0400	2·7			..	..	1·4		245		..	3·40
0500	2·8			..	..	1·2		260		..	3·30
0600	3·1	..	..	..	..	1·4	..	280	..	..	3·10
0700	6·3	..	2·2	3·0	2·2	1·6	..	240	120	100	3·10
0800	7·9	..	..	8·5	2·9	1·8	..	220	110	100	2·85
0900	8·3	..	..	9·4	3·2	2·1	320	220	..	100	2·60
1000	8·4	4·6	..	11·4	3·5	2·4	335	200	..	100	2·55
1100	8·4	4·6	..	11·5	3·6	2·6	360	200	..	100	2·55
1200	8·8	..	..	11·2	3·8	2·6	340	200	..	100	2·50
1300	9·0	4·7	..	10·6	3·6	2·6	335	200	..	100	2·60
1400	9·2	..	..	9·9	3·4	2·4	360	200	..	100	2·55
1500	9·3	..	3·1	8·7	3·2	2·4	..	200	115	100	2·50
1600	9·4	..	2·8	8·3	3·0	2·1	..	220	120	100	2·60
1700	9·0	..	..	5·8	2·6	1·9	..	240	120	100	2·60
1800	8·3			..	..	1·7		270		..	2·60
1900	7·3			..	..	1·6		320		..	2·50
2000	8·0			..	..	1·6		310		115	2·55
2100	8·0			..	..	1·6		270		..	2·90
2200	8·6			..	..	1·7		245		..	3·10
2300	7·4			..	..	1·5		240		..	3·20

Time : 75·0°E

Sweep : 1 to 25 Mc. in 27 seconds

TABLE 6 (*contd*)

MARCH 1962

Time	foF2	foF1	foE	foEs	fbEs	f-min	h'F2	h'F	h'E	h'Es	(M3000) F2
0000	8·5			..	..	1·6		240		..	3·20
0100	7·9			3·6	2·0	1·6		240		120	3·30
0200	6·8			..	..	1·6		230		..	3·35
0300	4·7			..	..	1·6		240		..	3·30
0400	4·0			..	..	1·5		240		..	3·35
0500	2·8			..	..	1·3		250		..	3·30
0600	4·0	..		..	..	1·6	..	270		..	3·20
0700	7·2	..	2·4	4·5	2·4	1·6	..	240	120	105	3·20
0800	8·8	..	3·0	9·0	3·0	1·8	300	220	110	100	2·80
0900	9·4	4·5	..	11·4	3·4	2·3	300	210	..	100	2·50
1000	8·7	4·5	..	12·1	3·6	2·6	325	200	..	100	2·50
1100	8·6	4·8	..	12·4	3·8	2·7	340	200	..	100	2·50
1200	8·6	4·7	..	12·6	3·9	2·7	340	200	..	100	2·50
1300	8·6	4·7	..	12·2	3·8	2·7	335	195	..	100	2·50
1400	9·0	4·5	..	11·6	3·6	2·6	325	195	..	100	2·50
1500	9·6	4·6	..	9·8	3·4	2·5	320	200	115	100	2·60
1600	10·2	..	..	8·8	3·1	2·3	..	220	120	100	2·60
1700	10·5	..	..	8·1	2·9	2·0	..	250	..	100	2·70
1800	10·2			5·6	2·5	2·1	..	280	..	105	2·70
1900	9·2			..	..	1·7		320		105	2·45
2000	8·9			..	..	2·0		300		..	2·60
2100	9·2			..	..	1·8		270		120	2·85
2200	9·0			3·4	..	1·8		260		120	3·10
2300	9·0			4·7	2·4	1·7		240		..	3·20

Time : 75·0°E

Sweep : 1 to 25 Mc. in 27 seconds

Astrophysical Observatory, Kodaikanal
1 May 1962

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The symbols and terminology used are in accordance with the recommendations of the Special Committee on World-wide Ionospheric Soundings to the U.R.S.I./A.G.I. in its first report (Brussels, September 1956) and second report (Lindau—Tokyo, May 1957)

MAGNETIC OBSERVATORY, ALIBAG (BOMBAY)

Three-hourly indices of Geomagnetic Activity

(K 9=300 γ)

(Scale values of variometers in γ/mm: D=11·3, H=4·4, Z=3·0)

Greenwich Day	JANUARY 1962 K-indices		Sum	Character of the day*	FEBRUARY 1962 K-indices		Sum	Character of the day*	MARCH 1962 K-indices		Sum	Character of the day*
1	1212	1112	11	Ca	0211	1122	10	Ca	1232	2323	18	S
2	1332	2222	17	S	2211	1122	12	Ca	2322	3232	19	S
3	1222	2111	12	Ca	1222	1222	14	Ca	2222	4322	19	S
4	1322	2111	13	Ca	2225	7444	30	G	2222	2221	15	Ca
5	0222	1111	10	Ca	3412	3322	20	S	1243	5432	24	Sa
6	2222	2121	14	Ca	2221	2223	16	S	2233	5432	24	Sa
7	1222	2322	16	Ca	3333	2321	20	Sa	1222	2211	13	Ca
8	2222	3221	16	Ca	0012	1112	8	Ca	1220	0001	6	Ca
9	2221	2232	16	S	2121	2111	11	Ca	1111	1222	11	Ca
10	4558	4562	39	VG	1120	1110	7	C	2223	3323	20	S
11	2322	2322	18	S	0113	2243	16	S	2223	2231	17	S
12	1222	1111	11	Ca	3332	2242	21	S	1223	3533	22	Sa
13	1222	2211	13	Ca	1222	3223	17	S	2323	2111	15	Ca
14	1233	3434	23	Sa	2211	2345	20	Sa	1122	2221	13	Ca
15	3322	1223	18	S	3322	2452	23	M	2223	2223	18	S
16	2232	3332	20	S	3546	5553	36	G	1232	2122	15	Ca
17	1232	1221	14	Ca	2343	3232	22	S	2322	2211	15	Ca
18	0121	1211	9	Ca	0233	2232	17	S	2233	3232	20	S
19	3343	5531	27	M	0322	1100	9	Ca	2223	4432	22	Sa
20	2221	1131	13	Ca	0232	2122	14	Ca	2233	2332	20	S
21	2231	2212	15	S	2222	2321	16	Ca	2332	3344	24	Sa
22	1211	0000	5	Ca	4233	3311	20	S	1221	1113	12	Ca
23	0111	2110	7	Ca	2223	3222	18	S	0123	2111	11	Ca
24	0110	1111	6	Ca	1222	2332	17	S	2111	2212	12	Ca
25	1232	1212	14	S	1121	1233	14	S	2332	3212	18	S
26	4222	3321	19	S	1124	4643	25	Ma	2111	2111	10	C
27	2233	2122	17	S	3454	4422	28	M	1222	2220	13	Ca
28	1122	1121	11	Ca	1232	2111	13	S	0110	2222	10	Ca
29	1222	3212	15	S					2222	2111	13	Ca
30	2222	2322	17	Ca					2221	1121	12	Ca
31	2231	0000	8	Ca					2332	2222	18	S

*At Bombay, since 1883, a day is classified as (*i*) a quiet day or (*ii*) Small (*iii*) Moderate, (*iv*) Great or (*v*) 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 of over 225γ in the variations of the horizontal force during the first 24 hours after its commencement is classed as "Very Great". It is "Great" if the range is between 150γ and 225 γ, "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 in 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 July 1962

P. R. PISHAROTY
Director, Colaba and Alibag Observatories

DAILY OZONE DATA—INDIA

(From direct sun observations on 3112/3322 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	JANUARY 1962			FEBRUARY 1962			MARCH 1962		
	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	1448	0·271	Clear	No observation			1626	0·275	*Ci* 1
2	1459	0·267	,,	1540	0·310	*Ac* 5	1626	0·270	*As* 3
3	1519	0·246	*Ci* T, sl. hazy	1541	0·306	Clear	1626	0·271	*As* 3
4	0924	0·283	Clear	0955	0·305	,,	1623	0·285	*Cu* 3, *Cb* 1
5	1505	Zenith obsn.	*Sc* 6, *Ci* 3	1523	0·295	*Cu* 3	1625	0·299	*Cu* 2
6	1453	0·282	*Ci* 6	1547	0·307	Sl. hazy	0844	0·294	Sl. hazy
7	1537	0·275	Clear	0910	0·311	*Ac* 8	1615	0·286	*Ci* 2
8	1505	0·286	Hazy	No observation			1608	0·309	*Ci* 6
9	1447	0·291	Sl. hazy	1546	0·290	*Ci* 3	1633	0·301	*Ci* 1
10	1448	0·295	Clear	1539	0·266	*Ci*, hazy	1632	0·293	Clear
11	1506	0·286	,,	No observation			1637	0·298	,,
12	1508	0·285	,,		,,		1619	0·294	*Cc* 1
13	1459	0·293	,,	1523	0·277	*Ac* 1	1620	0·278	
14	1503	0·285	,,	1528	0·293	*Cs* T	1614	0·267	Sl. hazy
15	1597	0·283	,,	Zenith obsn.			1637	0·274	(*Ci*, *Cs*) 3
16	1516	0·283	,,	0906	0·283	(*Sc*, *Ac*) 6	1619	0·271	(*Ci*, *Cs*) 5
17	1529	0·271	Hazy	1537	0·299	*Cu* 4	0836	0·309	*Ac* 3
18	1500	0·297	Clear	1546	0·350	*Cu* 5	1634	0·294	*Cu* 4
19	1503	0·317	,,	1539	0·330	*Cu* 4	1635	0·289	*Cu* 2, *Sc* 1
20	1512	0·283	,,	1539	0·318	*Cu* 2	1633	0·294	*Cu* 1
21	1517	0·290	Hazy	1550	0·285	*Cu* T	0817	0·306	*Ci* 3
22	1517	0·287	,,	1554	0·270	Clear	1639	0·297	(*Cu*, *Ci*) 2
23	1503	0·271	Clear	1605	0·277	*Ac* 4, *Ci* 2	1637	0·298	*Cu* 2
24	1516	0·273	Hazy	0906	—	*Ci* 1, very hazy	1623	0·301	Clear
25	0919	0·273	*Cu* 3	1538	0·297	*Cu* 1	1636	0·344	*Ci* T, hazy
26	No observation		Raining	Zenith obsn.			1629	0·291	*Cu* 2
27		,,	Overcast, drizzle	1559	0·270	Clear	0813	0·286	Clear
28	1520	0·282	(*Sc*, *Cu*)4	1552	0·297	,,	1633	0·289	*Ci* 1
29	1529	0·285	Clear				1637	0·286	(*Ci*, *Cs*) 5
30	1533	0·278	,,				1645	0·275	*As* 4 ,(*Ci*, *Cs*) 3
31	1524	0·291	*Cs* 5				1647	0·269	Hazy

NOTE—The cloud amounts are in oktas — Data doubtful

DAILY OZONE DATA—INDIA

(Direct sun or zenith sky observation—AD)

α (3055)=1·882 α' (3254)=0·120

α (3176)=0·391 α' (3398)=0·017

AHMEDABAD

(Lat. 23° 04′ N, Long. 72° 38′ E)

Date	JANUARY 1962				FEBRUARY 1962				MARCH 1962			
	Hours (IST)	μ	Ozone amount (cm-atmos)	State of sky	Hours (IST)	μ	Ozone amount (cm-atmos)	State of sky	Hours (IST)	μ	Ozone amount (cm-atmos)	State of sky
1	16	2·57	0·244		17	2·79	0·252	Sl. hazy	09	2·37	0·255	
2	16	2·30	0·248		17	2·54	0·254	Hazy	09	2·00	0·256	
3	16	2·18	0·233	*As* 1, *Ci* 1	17	2·61	0·276	Thick haze	17	3·08	0·256	
4	16	2·47	0·241	*Ac* 1	17	2·53	0·284	*Fc* 4, *Ac*, *Cs* 1	10	1·48	0·255	*Fc* 2, *Ac*
5	16	2·26	0·234		17	2·59	0·279	Hazy	09	2·15	0·250	
6	16	2·43	0·240	Sl. hazy	17	2·43	0·284	(*Ci*, *Cs*) 2	09	2·19	0·255	*Ac* 1
7	No observation				17	2·35	0·269	*Cu* 2, *Ci* T	09	2·14	0·262	*Ac* 2, *Cs* 1
8	16	2·42	0·242	Sl. hazy	17	2·43	0·271		17	3·20	0·260	*Cs* 2
9	16	2·23	0·242		09	2·25	0·275		17	3·08	0·263	
10	16	2·18	0·242		16	1·96	0·279		17	2·61	0·265	
11	No observation				09	2·50	0·286	Sl. hazy	09	1·78	0·264	
12	16	2·21	0·250		09	2·69	0·272	,,	17	3·19	0·271	*Ci* T
13	No observation				17	2·63	0·254	,,	17	2·84	0·264	Sl. hazy
14	10	2·21	0·234	Sl. hazy	09	2·43	0·252	,,	09	2·36	0·257	*Fc* T, *Ac* 2
15	16	2·61	0·229		09	2·32	0·249		17	2·35	0·259	*Sc* 7
16	16	2·26	0·223		09	2·43	0·256		15	1·32	0·261	
17	16	2·32	0·222		09	2·83	0·280		17	2·94	0·270	*Sc* T
18	16	2·35	0·235		10	1·91	0·286	Hazy	10	1·48	0·257	*Cs* 1
19	16	2·55	0·235		09	2·07	0·269	Sl. hazy	17	3·14	0·281	
20	16	2·50	0·250	(*As*, *Cs*) 1	09	2·53	0·272		17	2·44	0·287	
21	10	2·14	0·255		09	2·33	0·269	Hazy	17	2·84	0·274	*Sc* 7
22	16	2·44	0·247		10	1·96	0·266	,,	13	1·09	0·275	
23	09	2·42	0·253		10	1·63	0·269	,,	17	2·62	0·282	
24	16	2·44	0·255		09	2·40	0·267		17	2·31	0·287	
25	16	2·49	0·255	*Cu* 2, sl. hazy	10	1·62	0·273	Thick haze	09	1·67	0·284	
26	10	2·28	0·238	Hazy	09	2·41	0·260	,,	18	3·14	0·287	
27	16	2·03	0·238		09	2·19	0·255	Hazy	13	1·07	0·280	
28	No observation				09	2·23	0·253	Thin *Ci*	13	1·08	0·278	*Sc* 3
29	17	2·62	0·246						17	3·04	0·286	*Cu* 2
30	09	2·34	0·260						18	3·14	0·283	
31	16	2·39	0·255	Sl. hazy					17	2·50	0·272	
Monthly mean			0·242				0·262				0·269	
No. of Days			(27)				(28)				(31)	

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) = 1·23 and α' (3323) = 0·08

KODAIKANAL

(Lat. 10° 14′N, Long. 77° 28′E)

Date	JANUARY 1962			FEBRUARY 1962			MARCH 1962		
	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	0·239	Hazy	09	0·237	Hazy	09	0·249	Hazy
2	09	0·243	*Ci* 1	09	0·237	,,	09	0·255	*Ci* 2, hazy
3	09	0·246	*Ci* 2	No observation		Overcast, drizzle	08	0·249	*Ci* 2, ,,
4	09	0·242	*Ci* 3	09	0·233	Clear	09	0·253	*Ci* T, ,,
5	09	0·237	*Cu* 1, *Ci* 3	10	0·251	*Cu* 1, *Cs* 6	09	0·249	*Ci* T, ,,
6	09	0·234	Hazy	08	0·234	*Cu* 1, *Ci* 2, *Cs* 3	09	0·250	*Ci* T, ,,
7	No observation		Overcast, drizzle	09	0·238	*Ci* T	09	0·245	*Cs* 6
8	16	0·238	*Cu* 2, *Ci* 1	09	0·245	Hazy	09	0·255	*Ci* 2
9	09	0·235	*Ci* 2	09	0·247	Clear	09	0·257	*Ci* 2
10	09	0·237	*Ci* 4	09	0·245	,,	09	0·259	Hazy
11	09	0·241	*Cs* 3	09	0·243	,,	09	0·259	*Ci* 1, hazy
12	09	0·241	*Ci* 1, hazy	09	0·241	Hazy	09	0·255	*Ci* 1
13	09	0·237	*Cs* 2	09	0·238	Clear	09	0·254	Clear
14	No observation		Overcast, drizzle	09	0·239	,,	09	0·259	*Ci* 4
15	09	0·238	*Cs* 2	09	0·242	,,	No observation		Overcast
16	09	0·241	*Cs* 2	09	0·241	,,	09	0·257	*Cs* 6
17	09	0·243	*Ci* 6	09	0·234	*Cu* 2	09	0·254	*Cs* 2
18	16	0·237	*Cs* 6	09	0·234	*Ci* 1	09	0·255	Clear
19	16	0·233	*Cs* 4	08	0·237	*Ac* 2, *Cs* 4	09	0·257	*Ci* 1, hazy
20	09	0·237	*Cs* 2	No observation		Overcast	09	0·253	*Cu* 1, *Ci* 1
21	17	0·223	*Sc* 2, *Ac* 2	09	0·238	Clear	No observation		Overcast, drizzle
22	No observation		Overcast	09	0·246	*Ac* 4	10	0·266	*Cu* 2, *Cs* 4
23	,,		Overcast, drizzle	No observation		Overcast, drizzle	09	0·265	Clear
24	09	0·235	*Cu* 2	,,		,,	09	0·257	*Sc* 4, *Cs* 2
25	09	0·237	*Ci* 2	,,		,,	17	0·253	*Sc* 2, *Cs* 4
26	09	0·241	*Cu* 1, *Cs* 4	09	0·253	*Ci* 2	09	0·255	*Cs* 3
27	08	0·235	*Cu* 2, *Cs* 2, *Ci* 2	09	0·247	Hazy	09	0·258	*Ci* 1, hazy
28	09	0·245	*Sc* 3, *Cs* 4	08	0·238	,,	08	0·255	*Ci* 2
29	08	0·233	*Cu* 1, *Ci* 1				08	0·249	*Ac* 3, *Cs* 1
30	09	0·238	*Cu* 1, *Sc* 2, *Ac* 2				08	0·255	*Ac* 5, *Cs* 1
31	09	0·238	*Ci* 1				No observation		Overcast

NOTE—The cloud amounts are in oktas