

### III. ATMOSPHERIC ELECTRICITY

Atmospheric electricity data have been published since 1962. Table I contains the hourly average values of the potential gradient expressed in V/m. Hourly averages have been taken only from hours having a recording period of 30 minutes or more. If values were available only for part of an hour the average is entered in square brackets | |. These data have been used in the determination of the monthly and daily means. Values uncertain for some reason are entered in round brackets ( ) and have not been used in calculating of monthly and daily means. Daily means of each day with 24 hours of recording are entered. However, loss of a maximum of one hour's data out of twelve (for example, on account of instrument maintenance or calibration) has not precluded entering this mean value. In hours marked by S the value of the potential gradient exceeded permanently or several times the measuring limits of the equipment making the determination of an hourly average impossible. The directions of the deviations are marked by signs.

Table II gives the hourly means of the quantities of positive and negative charges transported by point-discharge for each month. The values are expressed in  $10^{-6}$  Asec/hour.

All data are presented in universal time (GMT).

Tables were compiled by F. MÄRCZ. Both the equipments and the methods of measurement of potential gradient and point-discharge have been described in the paper by P. BENCZE and F. MÄRCZ: „Atmosphärisch-elektrische und ionosphärische Messungen im Observatorium bei Nagycenk”, Observatoriumsberichte des Geophysikalischen Forschungslaboratoriums der Ungarischen Akademie der Wissenschaften vom Jahre 1966, Sopron, 1967.

1.

*Hourly means of the potential gradient*

January

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	—	—	—	—	—	—	—	—	70	100	90	90	110
2.	80	90	100	100	100	—	70	90	—	140	100	90	120
3.	70	80	70	110	90	100	140	110	150	130	110	130	140
4.	70	50	10	—10	20	110	20	40	40	+S	+S	+S	220
5.	—50	40	10	30	30	50	100	80	100	100	100	90	140
6.	80	80	—	—	—	—	—	—	—	100	100	50	60
7.	—	—	—	—	—	—	—	—	—	—	—	—	—
8.	—	—	—	—	—	—	—	—	—	—	80	110	130
9.	50	90	100	80	110	90	90	60	30	70	90	50	10
10.	—30	20	40	20	0	50	50	50	50	110	120	150	130
11.	50	50	60	50	50	50	110	90	80	70	70	50	50
12.	80	70	60	80	120	130	130	160	170	180	180	200	140
13.	70	60	70	80	110	130	+S	+S	+S	+S	+S	+S	+S
14.	—70	—140	—260	—180	—310	—270	—120	—110	—170	—70	—110	—40	40
15.	130	120	120	130	120	150	130	120	70	—	20	100	140
16.	60	40	0	20	30	40	30	0	—10	—10	—30	30	30
17.	70	60	60	50	40	50	50	20	0	—80	—110	—110	—90
18.	—40	0	40	20	0	10	—200	—270	—230	(—210)	—170	20	—110
19.	80	60	+S	+S	30	50	20	40	80	150	140	130	150
20.	40	60	20	—140	—60	—90	—90	—170	—170	—40	—60	—40	—90
21.	—90	—10	20	50	60	70	70	60	20	30	—40	—130	—160
22.	—20	—50	20	50	70	100	70	80	—	—	10	100	90
23.	50	110	150	100	70	30	100	—40	—90	—190	—10	—50	+S
24.	30	40	30	30	30	0	40	30	—160	+S	100	20	170
25.	—70	30	30	30	40	60	20	—10	110	—	—	60	—10
26.	—50	—50	30	0	—110	—130	—70	—90	—110	—130	—110	20	40
27.	130	170	70	140	110	150	130	30	—80	—150	—120	—50	—90
28.	10	30	—50	10	30	10	90	130	150	170	160	150	170
29.	10	20	30	50	50	70	80	110	—	—	110	70	70
30.	70	30	30	30	50	—10	30	—40	10	—60	—20	40	20
31.	—60	—100	—130	—10	+S	+S	0	—10	30	30	80	100	80
Means	27	38	28	35	34	40	42	22	6	31	33	51	61
Number of days	28	28	26	26	26	25	26	26	24	21	27	28	28

13	14	15	16	17	18	19	20	21	22	23	Daily means
120	120	100	100	60	100	110	90	80	90	90	—
110	110	150	190	160	120	120	110	130	110	100	—
150	100	60	110	120	100	130	100	100	120	100	109
90	30	-10	0	10	20	-30	10	30	-10	-30	—
120	130	150	100	40	50	70	110	80	70	90	77
110	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
160	150	180	180	180	+S	200	180	170	110	130	—
50	30	50	50	0	30	70	20	20	40	20	54
110	130	120	140	150	160	+S	70	110	80	60	82
40	40	30	50	70	80	80	80	80	70	70	64
150	130	130	130	140	120	130	130	100	80	70	125
80	70	50	-10	-10	130	0	60	80	-40	0	—
80	70	-80	-110	0	0	40	10	-10	20	60	-72
80	90	130	-10	50	60	170	130	50	40	50	95
20	+S	+S	100	-160	100	50	+S	50	+S	+S	21
-60	-110	-100	-50	-80	-60	-80	-80	-80	-50	-130	-36
-50	40	70	70	90	110	70	130	+S	+S	+S	—
180	+S	+S	110	150	200	180	120	70	60	20	—
-90	-130	-130	-270	-110	-90	-140	-140	-140	-200	-50	-97
-170	-130	-130	-170	-210	-80	-50	-170	-10	-90	-60	-55
100	150	110	100	100	140	30	10	100	20	70	—
+S	-210	-350	120	80	30	0	0	30	40	30	—
130	70	+S	210	60	-120	-50	0	-40	-70	-40	23
-40	30	70	40	50	100	20	0	-30	-50	-40	—
-10	-80	-70	-180	-240	-180	-30	40	-10	-150	40	-68
-50	-40	-40	-180	-30	60	-110	-160	-10	0	-50	-7
140	150	170	190	+S	50	10	30	-10	-30	-70	73
100	110	100	60	0	+S	-40	20	100	110	100	—
-100	-220	+S	+S	+S	70	-60	-S	10	20	0	—
90	40	30	20	30	20	-80	-60	-20	-140	-220	—
57	32	32	39	26	49	29	31	37	9	15	
29	27	25	28	27	27	28	27	28	27	27	

February

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	-260	-160	-120	-290	-230	-290	-260	10	20	70	-60	10	50
2.	180	140	90	90	100	90	50	80	90	70	90	80	50
3.	-20	-20	-20	0	20	30	60	70	100	50	40	50	80
4.	80	90	70	100	100	110	80	80	80	80	110	110	130
5.	60	70	70	70	50	50	60	70	—	100	110	100	100
6.	180	90	+S	+S	+S	+S	+S	+S	+S	210	140	130	150
7.	40	40	60	70	60	40	60	120	130	+S	150	150	200
8.	120	110	100	110	80	90	110	170	190	120	120	90	150
9.	60	20	0	-20	-120	-60	-20	90	110	40	50	40	30
10.	+S	+S	+S	+S	60	40	170	150	120	150	140	160	120
11.	80	60	60	70	70	70	80	110	100	80	80	70	50
12.	80	70	60	60	90	70	60	80	—	80	10	60	20
13.	70	80	70	100	100	90	80	90	110	110	110	100	110
14.	160	70	10	50	70	120	120	140	210	200	140	90	80
15.	-40	-180	40	160	-10	160	+S	+S	+S	+S	120	70	-40
16.	50	50	60	60	60	50	70	60	40	20	10	-10	10
17.	50	40	50	40	50	80	70	70	70	90	100	120	110
18.	50	50	50	50	70	70	90	110	100	100	110	100	100
19.	40	40	40	40	40	30	50	50	—	100	100	100	100
20.	30	20	20	30	30	70	100	100	70	130	140	120	140
21.	100	80	90	80	30	40	60	10	30	90	80	40	90
22.	60	40	30	70	70	50	60	130	110	60	70	60	40
23.	30	30	30	30	50	60	60	70	100	100	70	70	80
24.	60	70	60	40	50	60	90	100	100	100	100	100	80
25.	90	90	80	80	80	70	80	100	+S	±S	40	70	50
26.	40	40	70	70	80	90	90	100	—	—	90	80	±S
27.	70	70	60	70	50	40	70	70	90	70	60	60	40
28.	80	80	70	50	50	60	60	100	100	100	100	100	110
Means	57	44	46	49	43	51	62	90	99	97	86	83	83
Number of days	27	27	26	26	27	27	26	26	21	24	28	28	27

ATMOSPHERIC ELECTRICITY

13	14	15	16	17	18	19	20	21	22	23	Daily means	
80	40	50	+S	+S	170	220	170	190	210	220	—	
90	40	40	50	80	-110	-110	-100	-100	-70	-20	41	
110	130	160	140	130	110	150	130	150	90	40	74	
130	140	100	60	90	100	100	100	60	70	70	93	
100	90	50	20	50	70	70	50	160	170	230	86	
190	170	160	140	150	140	210	150	110	90	90	—	
150	150	130	200	200	170	220	+S	210	180	160	131	
130	+S	+S	+S	+S	+S	+S	210	150	80	110	—	
70	40	100	50	-10	+S	+S	+S	+S	+S	+S	—	
+S	+S	+S	40	0	-290	+S	50	70	80	80	—	
60	40	50	-S	-S	120	90	100	110	110	100	—	
20	130	130	140	120	120	140	140	100	80	90	85	
110	100	90	100	110	110	120	130	180	130	190	108	
190	190	190	130	+S	120	-120	-200	-70	20	130	89	
-70	90	120	120	100	50	-10	40	50	50	50	—	
40	130	40	50	90	110	50	80	70	50	70	55	
130	130	120	110	90	90	80	80	60	50	50	80	
110	100	80	90	100	110	100	110	90	50	50	85	
100	120	120	150	140	140	120	80	70	50	40	81	
140	110	100	90	110	110	90	90	130	120	110	92	
80	70	90	110	110	120	120	100	80	90	80	78	
40	50	60	60	80	100	90	90	80	50	40	66	
-20	+S	60	90	80	80	60	70	70	40	+S	—	
+S	+S	60	80	90	90	100	80	70	80	80	—	
10	+S	+S	20	30	50	100	100	100	70	50	—	
+S	+S	+S	+S	S $\bar{+}$	110	50	40	20	+S	+S	10	40
-10	30	50	40	20	30	30	20	(60)	(70)	80	—	
120	120	100	100	70	70	90	80	70	60	50	83	
84	100	94	92	87	78	85	78	90	77	88		
25	22	24	25	24	26	25	25	25	26	26		

March

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	40	40	60	70	90	50	30	-90	-40	+S	+S	30	70
2.	70	60	50	60	60	100	100	100	120	130	120	150	170
3.	40	30	-100	-100	-40	-260	-140	30	80	100	80	50	130
4.	10	30	-320	20	70	40	70	10	30	50	40	60	100
5.	80	80	70	60	50	30	30	30	—	0	20	70	100
6.	60	50	40	40	40	50	80	120	130	180	170	150	150
7.	80	100	90	90	70	-200	190	130	120	90	130	-120	60
8.	-S	140	40	10	40	80	120	130	130	140	130	110	130
9.	30	40	70	+S	-70	+S	40	+S	+S	-80	+S	+S	170
10.	130	130	120	130	130	110	120	130	130	100	110	110	110
11.	80	80	80	70	80	100	100	100	90	100	100	110	110
12.	50	70	50	40	30	30	40	70	—	70	80	90	80
13.	60	60	70	60	40	40	70	80	20	10	30	130	160
14.	30	110	40	100	+S	+S	180	90	200	+S	+S	90	30
15.	-30	0	-90	-130	-70	-40	-50	-70	-40	120	20	70	60
16.	50	180	120	120	130	80	40	70	100	70	90	120	110
17.	60	60	60	60	50	70	90	100	100	100	100	110	150
18.	50	50	50	50	50	30	50	50	50	40	60	50	60
19.	30	40	40	50	30	30	+S	+S	—	50	50	30	50
20.	50	20	20	40	40	50	50	30	30	60	90	60	70
21.	50	50	50	50	50	70	70	50	50	90	110	110	120
22.	70	30	30	40	30	50	50	70	90	80	80	70	70
23.	10	10	30	50	50	50	100	150	120	130	110	110	90
24.	10	0	20	40	50	50	80	70	120	130	120	110	100
25.	50	50	50	50	50	50	80	100	90	90	70	70	100
26.	50	50	50	50	50	50	50	60	—	90	150	190	150
27.	40	40	40	40	30	50	50	40	40	30	50	60	50
28.	80	50	60	90	80	110	100	100	100	100	110	100	70
29.	50	40	20	30	30	50	80	+S	150	110	80	70	80
30.	70	80	50	50	50	70	100	130	100	90	110	110	80
31.	50	40	40	50	50	50	60	80	100	100	80	80	90
Means	50	58	32	46	45	36	68	70	85	73	89	85	99
Number of days	30	31	31	30	30	29	30	28	26	29	28	30	31

13	14	15	16	17	18	19	20	21	22	23	Daily means
110	110	100	100	100	110	120	100	90	60	50	—
170	170	160	150	150	180	170	150	130	50	30	117
130	90	150	200	200	170	200	230	70	60	—120	53
80	100	100	120	110	30	30	40	0	30	30	37
140	130	160	150	100	100	110	120	110	120	80	84
150	130	120	50	—70	60	50	20	60	70	80	83
+S	+S	70	130	130	—S	±S	±S	±S	±S	±S	—
140	130	130	140	160	160	170	160	130	140	130	121
190	210	190	150	160	170	200	180	130	130	130	—
100	110	100	110	90	70	70	80	70	70	80	105
130	130	120	100	90	90	100	110	120	90	40	97
80	70	50	50	40	70	100	100	90	70	50	64
80	50	30	10	20	50	—30	—40	—10	—100	—120	32
100	20	—10	—10	—70	—130	—70	30	—100	—30	—40	—
80	110	90	30	0	10	10	0	—10	30	20	—5
100	90	70	50	70	80	80	100	70	60	60	88
160	130	100	50	80	90	90	120	120	90	70	92
50	50	60	70	80	±S	90	70	70	30	30	54
30	±S	±S	±S	±S	10	+S	50	50	50	50	—
90	90	90	100	120	130	150	110	100	70	50	71
130	120	110	100	150	150	130	130	110	80	100	93
60	50	50	50	50	30	0	—70	—10	—10	10	40
80	110	110	80	80	70	70	40	80	70	30	76
90	80	90	70	90	100	90	80	50	50	50	73
110	80	80	70	70	80	80	60	50	50	50	70
110	90	130	120	110	110	100	70	50	50	40	86
60	70	70	60	60	50	70	80	80	90	90	56
70	70	50	50	50	90	90	70	70	60	60	78
90	110	120	110	120	100	130	120	130	100	70	87
80	70	80	60	60	80	60	50	50	50	50	74
100	100	90	90	50	50	30	—10	10	20	—10	58
103	99	95	87	82	81	86	78	65	57	41	
30	29	30	30	30	29	29	30	30	30	30	



April

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	-10	20	20	40	20	50	50	30	40	60	90	100	110
2.	50	50	50	50	50	50	60	40	—	30	60	70	60
3.	-70	0	+S	±S	±S	±S	-120	40	90	90	40	50	40
4.	50	40	50	50	60	80	90	80	50	110	60	30	60
5.	80	80	90	90	80	80	80	100	120	—	140	130	140
6.	60	50	40	50	50	40	60	60	80	80	70	90	90
7.	40	30	60	0	50	40	-90	-200	+S	±S	±S	100	130
8.	60	50	60	50	40	50	70	100	100	100	100	80	110
9.	20	30	40	20	-20	-30	20	10	—	100	130	70	100
10.	80	100	10	60	-10	0	-30	40	70	130	-10	-S	0
11.	50	40	20	10	30	60	40	70	80	80	—	50	70
12.	50	10	-40	20	30	50	60	80	50	70	+S	+S	-70
13.	40	20	50	50	30	40	40	0	-30	20	+S	+S	±S
14.	±S	+S	-S	—	+S	+S	±S	±S	±S	±S	+S	+S	±S
15.	20	70	0	-170	-120	0	-30	-30	10	50	60	70	100
16.	-120	-40	+S	±S	±S	-120	-S	40	70	140	130	120	130
17.	60	60	60	60	80	100	90	80	—	(90)	90	90	80
18.	40	30	30	50	70	70	110	140	+S	+S	40	50	50
19.	30	0	-S	20	30	0	50	70	50	40	40	30	40
20.	±S	+S	+S	±S	±S	±S	±S	±S	-S	+S	-S	-120	-110
21.	10	-20	-260	(±S)	(±S)	±S	±S	±S	±S	±S	±S	±S	±S
22.	60	50	30	50	50	70	60	90	80	50	50	100	70
23.	60	70	90	110	140	120	120	130	130	—	110	90	80
24.	60	70	80	80	80	90	100	100	—	110	120	120	80
25.	40	30	30	10	60	40	10	-10	50	60	80	80	50
26.	70	50	60	60	70	90	110	130	170	140	130	120	110
27.	40	30	30	30	40	50	50	50	40	40	30	20	10
28.	40	50	60	60	70	70	90	100	—	—	—	(10)	20
29.	50	50	50	50	50	50	60	90	100	90	80	60	70
30.	60	80	70	60	60	80	80	90	100	100	100	100	100
Means	36	39	31	38	44	47	47	56	73	80	79	71	64
Number of days	28	28	25	25	25	26	26	27	20	21	22	24	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
110	80	80	50	50	60	80	70	50	50	50	56
60	50	50	60	60	60	60	60	30	20	-20	48
30	50	50	60	70	60	60	60	50	50	50	—
30	-20	40	50	100	120	120	130	140	130	100	73
150	160	160	150	200	180	160	160	150	130	100	127
90	70	70	60	50	60	60	70	70	60	50	64
100	60	90	-S	±S	±S	±S	±S	-S	±S	20	—
50	70	60	70	60	50	40	30	10	10	10	60
60	60	100	100	70	170	150	140	90	90	60	69
-50	-S	40	60	70	80	80	60	70	110	60	46
70	40	30	-40	20	80	50	70	100	50	20	47
100	+S	+S	-S	-30	20	±S	+S	60	50	50	—
+S	+S	+S	±S	±S	+S	-150	0	+S	+S	+S	—
+S	±S	±S	+S	±S	(+S)	-130	(10)	-S	(-S)	-10	—
90	80	90	80	100	+S	+S	+S	+S	+S	-70	—
120	120	110	100	100	100	110	90	80	60	70	—
70	+S	50	20	90	100	±S	±S	70	+S	50	—
30	70	50	50	40	-30	-20	-20	20	40	40	—
50	50	±S	±S	±S	±S	±S	±S	±S	±S	±S	—
40	30	60	70	60	30	-20	0	-120	0	60	—
+S	+S	+S	+S	110	130	60	50	50	40	30	—
80	80	70	70	70	50	50	60	60	70	50	63
80	80	80	60	50	40	50	50	40	40	50	81
50	50	70	-10	0	40	50	30	40	60	60	67
70	100	140	150	70	70	90	80	60	50	50	61
120	110	120	130	130	140	110	100	70	80	50	103
20	30	50	50	50	50	0	10	20	40	40	34
30	40	40	30	30	50	60	70	50	50	40	—
100	100	100	110	100	80	90	80	70	70	70	76
100	100	70	60	70	70	70	70	60	40	50	77
69	69	75	66	69	74	51	63	56	58	42	
27	24	25	24	26	25	25	24	25	24	28	

May

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	50	40	40	10	50	80	90	100	100	90	90	90	90
2.	50	50	50	60	60	110	100	100	100	100	100	130	100
3.	40	40	50	30	30	40	50	100	90	100	110	90	80
4.	50	50	20	30	20	50	70	90	100	110	90	80	80
5.	60	80	60	60	50	60	70	60	80	90	90	90	90
6.	90	60	60	60	50	50	50	70	100	120	100	100	120
7.	120	40	30	50	40	60	30	10	—	70	70	80	80
8.	30	30	40	40	50	70	70	90	90	70	60	+S	—S
9.	40	40	50	40	40	50	—	—	—	—	—	—	—
10.	30	30	30	20	30	40	40	50	60	50	60	60	70
11.	70	50	40	30	20	50	70	100	100	70	60	70	70
12.	20	20	20	20	30	40	80	130	110	110	80	80	100
13.	20	20	20	20	20	20	50	70	70	70	60	50	60
14.	20	20	20	20	20	20	30	30	—	40	40	50	40
15.	20	20	20	—S	—S	—S	0	60	70	—S	50	40	50
16.	50	40	50	30	30	40	60	60	60	60	60	50	60
17.	—S	20	20	30	40	50	60	90	110	100	90	90	80
18.	20	20	20	20	30	30	40	50	20	20	10	20	20
19.	—20	—20	0	0	20	20	20	20	30	30	40	30	30
20.	30	30	30	30	40	60	60	70	60	70	70	70	50
21.	20	20	20	10	0	10	40	40	—	30	60	40	50
22.	30	20	20	10	20	40	50	60	60	40	30	50	50
23.	0	10	10	20	30	30	30	40	60	50	20	20	50
24.	30	30	20	30	30	30	30	30	30	30	40	40	50
25.	30	30	30	30	30	40	50	50	50	—20	±S	20	+S
26.	30	30	30	30	30	30	40	40	50	50	50	40	30
27.	70	60	60	50	50	50	60	90	80	70	70	70	80
28.	30	30	20	20	20	30	40	50	70	70	80	80	70
29.	30	30	30	10	30	40	50	60	80	90	90	80	80
30.	10	0	0	0	20	30	40	50	(70)	—	60	90	±S
31.	10	20	20	10	10	30	30	30	40	60	70	40	50
Means	36	31	30	27	31	43	50	63	72	66	66	63	66
Number of days	30	31	31	30	30	30	30	30	26	28	29	29	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
80	70	60	70	70	80	60	60	60	50	50	68
80	70	70	60	60	70	70	60	60	70	60	77
70	50	—	—	—	60	40	50	60	50	50	—
80	80	80	80	70	60	50	50	50	50	40	64
90	100	100	100	90	100	100	90	100	90	100	83
130	120	100	100	100	90	70	60	40	40	50	80
70	70	110	110	90	60	70	50	40	30	30	61
+S	—S	+S	±S	40	+S	60	60	70	70	50	—
(40)	60	50	50	50	50	60	50	40	40	30	—
70	70	70	70	50	50	40	50	60	60	70	51
60	70	40	40	50	30	30	40	40	20	20	52
90	90	80	80	80	90	80	50	40	40	30	66
60	60	60	60	40	40	30	30	30	20	20	42
40	40	30	30	40	30	40	30	20	20	20	30
90	130	60	30	30	20	30	50	50	40	40	—
60	60	70	60	70	50	50	30	30	30	40	50
90	90	90	90	80	60	50	50	30	20	20	63
30	30	30	30	30	40	30	30	20	10	0	25
40	40	50	40	40	50	50	50	50	40	40	29
60	60	60	60	50	30	30	30	20	20	20	46
50	30	30	20	20	30	30	30	30	20	30	29
50	80	90	100	60	30	20	20	10	10	10	40
50	50	60	70	70	70	70	50	—80	—20	—70	29
50	50	50	60	50	50	40	40	30	30	30	38
+S	30	30	30	30	30	30	30	20	30	30	—
40	40	40	30	30	30	40	50	50	50	70	40
70	60	80	80	70	80	70	60	40	40	30	64
70	80	90	80	70	70	60	40	30	30	40	53
80	80	80	80	70	30	20	20	20	0	10	50
±S	—100	30	40	30	20	20	20	20	30	20	—
50	30	40	50	40	40	30	30	30	30	30	34
67	60	63	62	56	51	47	44	36	34	33	
27	30	29	29	30	30	31	31	31	31	31	

June

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	20	0	10	0	10	30	0	20	20	20	20	30	30
2.	10	0	-20	-10	-10	0	30	60	80	80	80	80	50
3.	60	50	60	50	40	40	70	60	90	110	130	120	130
4.	+S	+S	50	70	30	30	60	40	—	10	20	10	10
5.	40	30	30	30	50	70	100	130	160	180	130	100	100
6.	—	—	—	—	—	—	—	—	—	—	—	—	—
7.	—	—	—	—	—	—	—	—	—	—	—	—	—
8.	—	—	—	—	—	—	—	—	—	—	—	—	—
9.	—	—	—	—	—	—	—	—	—	—	—	—	—
10.	—	—	—	—	—	—	—	—	—	—	—	—	—
11.	—	—	—	—	—	—	—	—	—	—	—	—	—
12.	—	—	—	—	—	—	—	—	—	—	—	—	—
13.	—	—	—	—	—	—	—	—	—	—	—	—	—
14.	—	—	—	—	—	—	—	—	—	120	80	70	60
15.	40	40	50	50	70	110	130	130	130	120	100	80	70
16.	10	20	10	60	100	90	120	130	130	130	120	110	90
17.	40	40	40	30	50	50	70	100	90	90	80	90	90
18.	0	0	0	20	30	50	40	30	—	0	20	+S	100
19.	0	30	-10	-10	30	100	100	90	60	120	120	120	120
20.	-30	-50	-50	-50	-40	40	50	60	60	60	50	50	60
21.	-40	-50	-50	-50	-10	30	40	50	+S	+S	-20	-50	—
22.	—	—	—	—	—	—	—	—	—	—	—	—	—
23.	—	—	—	—	—	—	—	—	—	—	—	—	—
24.	—	—	—	—	—	—	—	—	—	—	—	—	—
25.	—	—	—	—	—	—	—	—	—	—	—	—	—
26.	—	—	—	—	—	—	—	—	—	—	—	—	—
27.	—	—	—	—	—	—	—	—	—	—	—	10	60
28.	60	50	40	40	40	30	40	20	20	10	30	30	50
29.	130	100	80	90	120	170	140	160	160	-10	'50'	110	+S
30.	90	-10	60	60	+S	0	130	160	180	+S	70	110	110
Means	31	18	20	25	36	56	75	83	98	74	68	67	75
Number of days	14	14	15	15	14	15	15	15	15	12	14	16	15

13	14	15	16	17	18	19	20	21	22	23	Daily means
30	30	30	30	30	30	30	30	20	30	20	22
70	90	60	80	60	60	70	70	70	-20	40	45
120	110	110	140	120	100	70	50	-S	+S	+S	—
10	20	40	40	40	40	30	50	50	40	30	—
100	90	100	80	70	40	30	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
50	+S	40	-10	-20	0	50	60	20	10	40	—
50	50	50	50	60	100	140	220	160	50	20	86
110	100	80	80	50	50	50	50	50	50	50	77
100	80	80	100	100	80	80	60	50	30	20	68
80	80	80	80	70	70	50	10	0	-10	-10	—
100	80	60	50	60	50	50	50	40	20	0	60
60	70	70	70	60	40	40	40	30	10	-10	28
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
70	80	80	90	100	90	70	70	70	80	60	—
+S	+S	+S	+S	90	130	120	130	130	110	120	—
40	10	+S	+S	-S	50	50	60	50	60	110	—
70	80	70	60	90	100	100	90	80	70	80	—
71	69	68	67	65	64	64	69	58	38	41	
15	14	14	14	15	16	16	15	14	14	14	

July

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	60	90	100	120	80	70	70	80	80	100	90	70	90
2.	90	90	80	70	90	90	80	100	—	110	90	110	100
3.	50	60	70	70	70	70	70	80	100	90	90	70	90
4.	90	60	20	50	50	50	70	80	100	110	80	70	70
5.	50	40	60	50	60	60	70	90	130	120	80	40	100
6.	30	40	30	30	40	110	90	90	100	100	70	90	±S
7.	80	60	70	90	+S	±S	±S	±S	±S	±S	+S	+S	160
8.	30	20	-40	10	20	20	20	50	50	60	70	90	90
9.	50	50	50	50	50	50	60	90	—	—	90	80	80
10.	50	50	50	40	50	60	70	80	80	100	100	90	90
11.	60	70	60	50	50	70	70	90	110	100	110	110	110
12.	40	30	20	20	30	60	60	60	60	60	±S	±S	±S
13.	10	20	10	20	10	50	70	60	30	30	50	60	60
14.	20	10	10	10	20	40	60	60	60	50	60	50	40
15.	40	40	40	30	50	50	30	40	40	50	40	40	40
16.	40	50	50	60	70	40	50	50	—	90	110	110	100
17.	10	20	10	20	30	40	40	70	100	80	—	60	70
18.	±S	+S	40	90	80	50	50	40	70	60	40	60	60
19.	40	30	40	40	40	50	70	70	70	60	40	40	40
20.	10	10	10	20	20	30	50	60	50	+S	100	70	50
21.	20	30	30	30	30	60	50	50	60	40	30	40	50
22.	40	20	0	10	40	60	30	50	40	-S	-10	40	100
23.	—	—	—	—	—	—	—	—	—	40	70	80	40
24.	40	50	50	60	50	+S	+S	+S	50	80	130	130	60
25.	20	10	10	10	10	50	90	110	80	50	50	40	40
26.	40	30	30	30	30	40	50	50	50	40	50	50	50
27.	50	40	50	50	50	60	50	50	50	40	40	30	40
28.	50	50	50	40	40	50	60	50	50	50	30	0	10
29.	10	10	10	10	20	10	10	10	40	50	60	50	40
30.	60	70	60	50	60	70	70	70	—	100	80	70	70
31.	30	30	30	30	30	40	60	80	120	120	90	80	60
Means	42	41	37	42	44	54	58	66	71	73	69	66	69
Number of days	29	29	30	30	29	28	28	28	25	27	28	29	29

13	14	15	16	17	18	19	20	21	22	23	Daily means
10	80	90	100	100	100	100	100	100	110	110	88
80	80	70	70	70	70	80	80	80	60	60	83
90	90	80	90	90	90	100	90	90	110	100	83
80	80	90	90	80	90	70	60	50	40	40	70
±S	80	±S	+S	100	70	80	90	90	60	40	—
±S	—	—	—	—	—	30	30	10	20	30	—
110	90	90	+S	-70	10	60	50	50	50	50	—
90	110	110	120	120	110	90	80	70	60	60	63
90	100	100	100	100	80	70	70	50	30	60	—
80	100	110	110	110	110	110	120	90	70	60	83
110	110	120	140	100	60	70	60	60	50	40	83
±S	90	80	80	±S	+S	±S	±S	-20	20	30	—
40	70	100	110	90	80	60	50	20	20	20	48
50	40	40	30	30	40	60	50	40	30	50	40
40	40	40	30	40	50	50	50	40	50	40	42
80	80	40	50	60	60	60	50	40	40	10	60
60	20	30	20	30	40	50	60	40	30	±S	42
40	50	80	90	80	60	70	70	60	70	50	—
50	40	10	0	20	40	60	50	40	30	30	42
40	40	70	70	50	50	30	30	30	20	10	40
40	50	±S	±S	±S	0	50	50	60	40	50	—
60	40	50	40	80	50	40	40	30	—	—	—
50	+S	±S	±S	60	60	50	10	+S	+S	40	—
+S	±S	+S	50	50	50	50	60	50	50	20	—
50	50	70	80	70	60	50	50	40	30	30	48
50	40	50	50	40	40	50	60	50	40	40	44
40	40	50	50	50	50	60	50	50	50	50	48
50	20	20	30	40	30	60	50	40	20	20	38
50	50	40	50	50	50	20	80	60	60	70	38
70	70	60	10	40	70	50	50	50	50	40	60
80	90	90	90	80	40	30	20	10	0	20	56
62	66	68	67	63	58	60	59	49	45	44	
27	28	26	26	28	29	30	30	30	29	29	



													August	
Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12	
1.	10	10	0	0	0	30	40	50	60	—	—	—	—	
2.	—	—	—	—	—	—	—	—	—	—	—	—	—	
3.	—	—	—	—	—	—	—	—	—	—	—	—	—	
4.	—	—	—	—	—	—	—	—	—	—	—	—	—	
5.	—	—	—	—	—	—	—	—	—	—	—	—	—	
6.	—	—	—	—	—	—	—	—	—	—	—	—	—	
7.	—	—	—	—	—	—	—	—	—	—	—	—	—	
8.	—	—	—	—	—	—	—	—	—	—	—	—	—	
9.	—	—	—	—	—	—	—	—	—	—	—	—	—	
10.	—	—	—	—	—	—	—	—	—	—	—	—	—	
11.	—	—	—	—	—	—	—	—	—	—	—	—	—	
12.	—	—	—	—	—	—	—	—	—	—	—	—	—	
13.	—	—	—	—	—	—	—	—	—	—	40	80	70	
14.	60	60	40	40	40	60	70	80	110	120	110	100	100	
15.	100	80	60	40	60	70	70	80	30	20	110	100	120	
16.	40	40	40	40	40	70	70	70	110	140	160	140	140	
17.	30	30	30	10	10	60	80	100	+S	—	—	—	130	
18.	10	10	10	10	10	20	40	70	100	100	100	100	100	
19.	30	20	20	20	10	30	40	70	80	80	80	100	100	
20.	0	0	0	0	20	60	—	—	80	80	80	80	90	
21.	30	60	80	60	60	70	100	70	—	—20	90	120	120	
22.	—20	—60	0	—10	0	0	40	70	80	110	90	100	110	
23.	110	100	110	110	130	140	110	130	—	+S	+S	+S	100	
24.	30	20	10	10	20	30	30	30	—	10	40	50	50	
25.	50	50	40	40	50	40	50	60	50	100	100	110	110	
26.	50	50	50	50	50	50	50	50	80	70	70	90	90	
27.	50	50	50	50	50	60	90	110	—	60	60	80	80	
28.	40	70	40	60	80	80	70	80	80	70	60	60	70	
29.	40	10	—30	10	40	60	60	10	70	80	20	+S	+S	
30.	20	0	10	0	30	10	30	40	80	+S	+S	170	140	
31.	70	60	40	70	80	70	100	100	100	90	100	70	100	
Means	39	35	32	32	41	53	63	72	79	74	82	97	101	
Number of days	19	19	19	19	19	19	18	18	14	15	16	16	18	

13	14	15	16	17	18	19	20	21	22	23	Daily means
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
40	60	60	80	80	90	100	110	100	80	60	—
80	70	80	90	100	90	80	90	90	90	90	81
120	120	120	120	90	60	70	80	70	70	60	80
140	130	140	150	100	80	40	30	30	20	20	83
120	130	120	100	70	60	30	20	20	20	10	—
100	110	110	110	90	40	40	30	30	20	20	58
100	100	100	80	60	40	60	40	20	20	10	55
+S	+S	±S	30	60	40	40	40	30	30	30	—
140	150	140	70	90	60	70	70	60	10	0	74
110	110	120	120	90	80	90	80	100	100	100	67
110	110	100	90	90	80	80	80	70	70	60	—
50	50	50	+S	±S	±S	+S	120	120	60	60	—
120	120	120	120	100	80	50	50	50	60	70	75
100	100	100	110	120	120	90	70	60	60	50	75
60	70	90	80	90	90	60	60	40	30	40	65
60	40	60	40	70	60	+S	+S	80	80	10	—
60	30	30	40	20	20	40	60	70	40	30	37
120	100	100	70	60	30	40	40	20	40	70	—
30	20	30	-10	-S	+S	20	-60	-90	60	70	—
92	90	93	83	81	66	59	56	51	50	45	—
18	18	18	18	17	17	17	18	19	19	19	—

													September	
Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12	
1.	70	70	70	90	80	70	60	130	130	120	130	120	100	
2.	60	40	60	60	60	80	110	120	130	110	120	140	140	
3.	60	40	40	40	40	100	130	130	—	120	110	110	70	
4.	20	0	0	—10	—10	20	50	50	50	80	70	70	60	
5.	40	40	30	40	60	60	80	80	50	50	40	30	40	
6.	20	30	30	20	30	30	40	50	50	60	50	50	50	
7.	20	20	0	0	20	40	50	50	60	80	90	110	110	
8.	50	50	40	30	40	40	50	60	100	110	110	110	120	
9.	20	10	20	30	30	40	70	60	50	40	40	50	60	
10.	50	50	50	40	50	50	50	50	—	±S	±S	±S	±S	
11.	70	60	60	60	70	70	80	110	120	120	120	110	90	
12.	40	50	50	40	50	60	90	140	—	—	170	160	140	
13.	50	60	60	50	60	90	100	90	130	140	140	120	170	
14.	50	50	50	50	50	50	50	50	50	50	60	80	70	
15.	50	50	60	50	50	60	90	90	100	70	50	70	70	
16.	50	50	50	50	50	60	70	70	60	70	70	80	90	
17.	70	70	70	80	90	70	80	110	—	±S	±S	70	110	
18.	70	100	150	±S	±S	±S	±S	±S	±S	180	110	80	60	
19.	60	60	60	40	50	±S	±S	—10	30	70	10	—20	20	
20.	0	—40	—30	20	30	40	40	30	40	50	70	80	70	
21.	40	40	30	30	10	0	0	—10	—30	—	70	70	70	
22.	—40	±S	±S	±S	±S	50	10	70	80	±S	±S	±S	90	
23.	60	50	20	40	50	50	110	90	70	70	80	90	90	
24.	80	100	70	90	60	100	±S	±S	—	±S	±S	±S	±S	
25.	±S	±S	±S	±S	±S	±S	±S	±S	80	±S	±S	±S	±S	
26.	50	80	70	80	90	140	120	±S	±S	±S	±S	±S	±S	
27.	—40	0	±S	40	0	—30	—90	—110	50	—10	10	40	40	
28.	70	70	80	70	90	100	100	100	—	120	130	140	170	
29.	60	70	70	40	40	50	70	80	100	110	130	120	110	
30.	110	140	80	50	60	40	30	—20	—10	0	0	20	30	
Means	45	50	50	45	48	57	63	64	68	82	83	84	82	
Number of days	29	28	27	27	27	27	26	26	22	22	24	25	26	

ATMOSPHERIC ELECTRICITY

13	14	15	16	17	18	19	20	21	22	23	Daily means
100	110	120	130	120	140	130	110	120	120	80	105
160	120	120	100	100	90	70	100	90	60	40	95
50	70	70	70	60	50	50	70	50	40	10	69
60	70	70	50	40	30	20	20	30	40	30	38
40	50	50	40	50	50	50	50	40	30	30	47
50	50	50	40	50	40	80	50	10	30	10	40
110	90	90	80	60	50	50	50	50	40	40	57
130	130	110	60	50	50	50	50	30	40	50	69
70	70	70	60	70	60	50	50	50	50	50	49
50	70	90	±S	±S	60	50	150	100	120	100	—
100	110	120	110	90	80	100	110	80	60	50	90
140	150	130	100	110	100	80	60	80	70	60	—
140	140	130	120	110	120	100	120	100	80	60	103
70	80	80	80	60	70	80	80	70	60	60	63
70	60	60	70	80	100	90	80	70	70	60	70
100	100	100	90	90	90	90	80	70	60	80	74
130	70	70	70	110	70	70	±S	80	90	100	—
70	40	40	40	30	40	40	40	40	40	50	—
20	20	10	-10	-10	70	50	10	10	50	20	—
80	90	90	90	90	80	70	70	70	30	20	49
70	70	70	60	60	70	90	60	40	40	20	42
130	90	70	50	50	70	70	60	50	50	60	—
100	110	70	70	50	70	80	80	80	80	70	72
±S	80	150	80	±S	±S	±S	±S	±S	±S	±S	—
-80	±S	±S	-10	±S	-110	10	±S	-20	30	-150	—
90	90	50	70	40	80	50	20	-10	-70	-10	—
70	-200	±S	±S	-160	-70	50	70	60	40	60	—
200	200	160	110	100	80	110	70	70	60	50	106
100	100	80	70	70	70	50	70	50	30	60	75
60	60	50	60	80	80	30	±S	20	50	50	47
86	78	85	70	61	61	66	68	54	51	42	
29	29	28	28	27	29	29	26	29	29	29	

October

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	40	30	30	20	10	50	100	100	—	70	60	90	80
2.	40	80	80	70	100	80	100	90	60	50	50	70	130
3.	60	60	70	70	80	110	170	170	130	140	130	130	120
4.	80	60	50	90	80	50	50	50	50	40	20	60	80
5.	40	40	60	50	80	20	0	—10	20	50	90	100	100
6.	70	50	40	40	40	60	50	40	40	50	70	70	60
7.	30	40	30	20	50	50	60	80	80	80	80	80	80
8.	40	40	50	40	40	50	80	120	—	140	120	100	130
9.	40	50	60	70	30	40	70	50	30	20	40	70	70
10.	50	70	70	70	50	30	60	40	90	100	90	70	70
11.	100	130	130	130	110	130	+S	+S	+S	150	150	110	110
12.	50	40	20	30	20	+S	+S	70	+S	±S	±S	±S	90
13.	100	100	100	90	30	70	70	90	80	70	80	70	70
14.	—60	—50	—20	0	—10	—40	—40	0	0	—40	—40	—20	—20
15.	50	50	70	70	90	70	110	70	—	90	100	100	80
16.	50	40	40	30	40	50	80	100	70	40	50	50	—40
17.	40	20	30	20	40	60	110	150	200	200	140	140	160
18.	—20	110	100	—160	±S	+S	+S	±S	±S	±S	±S	±S	±S
19.	50	50	50	40	50	50	50	60	80	90	80	80	80
20.	70	70	—70	50	90	120	170	120	110	140	110	60	100
21.	60	50	50	50	50	70	90	70	50	20	—20	—20	—40
22.	20	30	50	50	20	50	40	90	—	70	50	30	40
23.	70	70	50	40	50	40	60	70	90	90	70	50	40
24.	—70	—10	—10	10	60	70	100	70	70	90	80	90	90
25.	100	100	70	90	80	70	110	150	210	220	190	190	200
26.	130	120	70	100	100	100	130	+S	+S	150	120	110	140
27.	60	50	50	70	70	120	170	220	170	140	80	110	110
28.	110	110	100	80	60	50	100	90	70	70	110	130	140
29.	70	90	140	130	140	140	120	110	—	—	130	140	130
30.	50	60	60	80	70	70	40	70	40	90	90	90	120
31.	20	30	20	30	100	120	180	140	120	130	140	140	150
Means	50	57	53	51	61	67	87	88	85	91	85	86	89
Number of days	31	31	31	31	30	29	28	28	22	28	29	29	30

13	14	15	16	17	18	19	20	21	22	23	Daily means
60	80	80	80	100	90	50	-40	-30	50	30	53
90	110	140	70	130	140	+S	80	80	80	80	87
130	140	150	110	100	110	110	20	60	80	70	105
90	100	80	100	110	100	+S	80	50	50	40	68
110	120	90	110	100	90	100	90	80	80	80	70
60	60	60	70	80	50	50	50	40	30	20	52
80	90	80	60	70	60	60	80	40	30	30	60
110	100	70	50	20	70	60	50	50	40	40	70
80	100	110	120	130	120	70	40	30	40	40	63
70	70	80	90	40	30	60	70	30	60	70	64
120	110	110	120	130	150	140	120	120	120	70	—
80	90	100	140	150	180	150	130	120	120	110	—
70	90	90	60	60	50	20	20	0	-40	-40	58
10	40	70	40	60	50	30	40	80	0	-10	3
100	70	20	120	+S	+S	60	90	70	80	60	—
+S	40	60	140	60	±S	±S	±S	50	40	40	—
+S	80	±S	+S	+S	0	+S	±S	±S	±S	±S	—
±S	±S	±S	-70	100	100	110	120	70	70	60	—
90	90	70	80	90	100	100	100	80	100	90	75
110	110	110	110	50	60	80	90	90	70	70	87
20	40	80	110	20	90	110	110	90	70	60	53
-10	60	80	70	90	110	110	120	130	90	70	63
-S	±S	-S	±S	40	20	20	50	+S	+S	-90	—
100	120	160	180	+S	+S	180	170	120	120	90	—
220	+S	200	150	180	170	110	100	110	110	120	141
120	120	120	120	100	120	110	120	70	70	80	—
100	120	100	140	170	150	100	120	110	70	70	111
170	140	150	150	80	110	110	110	100	100	90	105
120	130	130	150	150	130	120	100	60	60	80	—
80	100	70	20	10	-30	-30	10	0	20	30	50
160	190	+S	+S	+S	170	220	+S	180	+S	+S	—
94	97	99	96	90	93	89	80	72	65	53	
27	28	27	28	27	28	27	28	29	28	29	

November

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	180	150	110	100	110	120	120	120	170	160	140	160	150
2.	60	50	60	20	40	80	70	60	20	40	70	110	120
3.	120	120	120	100	120	120	120	80	150	150	140	160	150
4.	30	10	20	10	0	20	20	50	70	80	90	100	120
5.	80	90	100	120	120	120	130	70	—	140	110	110	80
6.	70	90	70	80	70	90	110	110	130	80	40	100	70
7.	50	50	60	40	50	50	70	60	50	70	80	120	120
8.	70	70	50	60	70	80	70	80	70	90	100	90	80
9.	20	30	40	40	30	50	30	20	10	—	50	40	30
10.	20	20	20	40	40	40	70	70	80	110	90	100	90
11.	110	30	+S	+S	+S	+S	+S	+S	+S	+S	+S	+S	+S
12.	130	100	100	70	50	80	100	130	—	100	100	110	110
13.	50	70	50	50	50	50	40	0	—90	20	60	70	50
14.	50	50	50	40	70	60	70	70	60	90	—S	90	+S
15.	±S	±S	40	50	50	50	30	+S	+S	—10	10	30	40
16.	30	40	40	30	60	50	60	100	110	110	120	130	110
17.	30	30	70	70	70	100	100	100	100	80	80	80	80
18.	30	30	40	30	40	50	60	80	100	110	130	140	100
19.	—30	—30	0	0	—10	—10	—10	30	—	50	100	110	120
20.	—20	50	—20	50	—	—	—	100	110	110	100	130	130
21.	70	60	40	10	20	20	20	50	60	70	70	80	110
22.	70	60	50	50	60	50	50	60	70	50	50	110	120
23.	130	110	110	190	70	70	50	70	70	100	70	50	40
24.	10	30	40	30	20	40	90	120	130	40	80	140	130
25.	120	80	90	80	80	70	60	20	—20	—10	30	10	—10
26.	—10	—80	—140	—S	—S	—140	10	0	—	—	90	100	80
27.	70	30	30	30	60	40	60	70	90	100	110	100	90
28.	50	30	0	40	50	60	60	100	80	60	80	30	±S
29.	20	0	10	20	30	30	10	10	10	—30	—50	—50	—40
30.	—20	20	60	60	50	70	80	80	—	—	—	—	—
Means	55	48	45	54	54	54	63	68	71	75	79	91	87
Number of days	29	29	29	28	27	28	28	28	23	26	27	28	26

13	14	15	16	17	18	19	20	21	22	23	Daily means
160	140	140	120	110	150	140	100	80	70	70	128
120	80	90	100	90	90	100	70	90	120	120	78
120	120	120	140	140	120	110	60	80	60	30	115
130	120	110	100	90	90	90	120	100	80	70	72
70	70	70	70	70	120	200	170	140	110	80	106
70	10	90	40	20	±S	±S	±S	40	50	50	—
100	90	90	100	110	140	140	110	90	70	60	82
70	60	+S	+S	20	+S	20	-10	+S	0	10	—
50	-10	-10	20	40	50	50	60	140	100	70	41
90	90	70	70	50	40	50	30	20	70	100	61
+S	80	120	70	70	+S	+S	170	90	100	170	—
140	140	80	50	40	30	40	50	40	40	40	81
90	+S	-S	-90	0	-40	20	40	20	20	50	—
30	30	50	70	100	90	100	100	+S	40	-S	—
0	-10	20	30	50	0	+S	+S	50	40	50	—
80	+S	-S	-70	-90	0	20	10	-40	60	+S	—
90	100	110	130	150	120	100	110	80	70	30	87
70	50	40	20	10	-20	20	0	-20	10	-20	46
120	130	130	130	160	150	160	+S	+S	70	+S	—
110	120	120	130	120	120	120	130	120	100	90	—
110	120	100	100	120	110	120	150	100	110	70	79
130	120	120	130	90	120	110	120	120	130	80	88
90	90	110	80	-10	0	0	-10	-10	0	10	62
90	80	130	70	100	120	110	120	110	90	90	84
-10	0	10	20	40	50	50	50	40	40	30	38
100	120	140	100	-S	-20	30	100	90	70	70	—
100	110	160	110	120	100	100	90	80	80	80	84
±S	±S	0	70	110	100	100	110	80	80	30	—
20	60	70	80	180	100	60	30	0	-10	-10	23
—	—	—	—	—	—	—	—	—	—	—	—
87	81	88	71	75	74	83	80	67	64	58	
27	26	26	28	28	26	26	26	26	29	26	



December

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	—	—	—	—	—	—	—	—	—	—	—	—	—
2.	—	—	—	—	—	—	—	—	—	—	—	—	—
3.	—	—	—	—	—	—	—	—	—	180	130	120	140
4.	200	170	120	90	110	110	30	70	—	—	—	+S	90
5.	—S	30	+S	—10	—S	40	30	30	30	30	30	30	30
6.	70	70	40	10	30	30	70	90	120	150	140	190	170
7.	+S	10	0	0	40	+S	160	150	+S	+S	170	180	190
8.	50	60	60	0	30	30	—10	0	0	20	20	60	50
9.	40	—S	—40	40	30	70	60	70	+S	100	130	120	130
10.	130	90	90	100	90	100	120	150	—	160	100	100	100
11.	30	30	40	30	30	0	30	110	120	130	140	130	130
12.	—10	20	40	80	110	160	+S	190	190	180	140	140	100
13.	50	0	110	170	+S	+S	60	30	—60	—40	—60	—10	30
14.	100	30	80	70	50	+S	+S	40	40	170	140	130	100
15.	—10	30	+S	50	100	80	100	100	100	90	80	140	80
16.	—40	—80	—10	—60	10	20	40	80	80	100	140	150	120
17.	120	100	100	170	130	160	150	170	—	+S	+S	190	150
18.	50	50	50	50	50	60	60	130	80	100	120	100	100
19.	0	30	0	—10	10	—80	—40	—20	—10	—10	—20	—10	—20
20.	—30	—30	—10	—10	—10	—10	—20	—30	0	80	50	60	70
21.	—10	0	—10	0	0	—10	40	10	—60	—60	—20	—10	—20
22.	10	10	10	10	10	10	0	10	—	180	150	110	100
23.	20	0	—70	—80	—20	—10	—10	0	20	40	40	10	40
24.	—40	—30	—30	—30	—10	—10	10	—10	—20	—20	20	40	60
25.	—10	—30	10	30	80	70	40	40	50	20	—10	—20	120
26.	—10	—10	—10	0	70	130	120	100	120	130	130	130	140
27.	—10	—10	10	20	20	30	10	20	50	60	60	100	110
28.	70	70	50	40	60	80	70	70	100	110	80	110	100
29.	70	50	20	20	40	80	100	120	—	130	140	100	100
30.	—10	—10	—10	—10	—10	—10	—10	—30	—10	—10	—20	—30	—20
31.	—40	—50	—40	—50	—10	—10	0	30	50	70	40	50	30
Means	30	22	23	26	40	45	47	61	47	80	76	86	87
Number of days	26	27	26	28	26	25	26	28	21	26	27	28	29

13	14	15	16	17	18	19	20	21	22	23	Daily means
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
110	60	30	—10	60	150	100	130	150	170	50	—
—30	—30	30	40	70	50	60	50	+S	+S	+S	—
—S	—S	+S	40	150	200	180	170	170	140	100	—
200	170	180	180	40	50	100	80	180	140	30	105
190	210	180	160	160	170	160	150	160	140	100	—
50	10	0	0	0	10	130	60	80	20	—	32
150	120	160	210	180	190	210	190	150	140	170	—
100	120	150	170	130	100	70	70	40	30	10	101
140	130	110	70	20	30	—20	—30	—10	—10	—30	56
120	120	200	+S	100	170	+S	180	200	150	100	—
—20	50	120	110	140	180	+S	180	140	110	110	—
100	130	90	90	140	120	80	100	60	40	+S	—
80	40	0	60	30	50	50	30	—20	—30	0	53
90	100	100	150	170	150	170	150	150	130	150	94
150	210	+S	100	100	+S	120	120	90	50	50	—
80	60	70	100	70	90	130	130	110	100	80	84
—20	—30	—10	—10	—20	—30	—10	—10	—10	—10	—20	—15
80	70	70	70	0	—30	—50	—40	—30	—20	—40	8
—40	0	0	—30	—30	60	50	0	0	40	40	—3
80	100	110	130	110	120	100	110	120	60	30	73
40	10	—50	—50	—10	—10	—50	—20	—40	—20	—60	—12
70	10	10	10	0	—10	0	20	50	50	50	8
70	80	80	0	30	—70	—80	0	10	—30	—30	19
80	50	20	—10	—20	—10	—20	—20	—10	—10	—10	45
130	110	100	120	120	110	100	110	100	70	60	67
100	100	80	100	100	60	80	50	60	70	70	78
100	100	100	70	60	20	—10	—10	—10	—10	—10	60
—50	—80	—80	—60	—60	—70	—80	—60	—30	—50	—50	—36
30	40	30	50	20	0	0	—10	—10	—10	—10	8
78	74	70	66	64	66	58	65	66	52	36	
28	28	27	28	29	28	27	29	28	28	26	

## II. Hourly means of the quantities of positive and negative

Hour GMT		0	1	2	3	4	5	6	7	8	9	10	11
Month													
January	+	0	0	0	0	4	4	0	0	0	0	0	0
	-	0	0	0	0	11	3	0	0	0	0	0	0
February	+	0	0	0	0	0	0	0	0	12	53	0	0
	-	0	0	0	0	0	0	0	0	0	4	0	0
March	+	0	0	0	0	0	0	0	0	0	0	0	1
	-	0	0	0	0	0	0	4	0	2	0	0	0
April	+	0	0	0	5	64	37	44	24	29	6	5	19
	-	0	0	3	8	23	58	68	53	88	30	17	13
May	+	0	0	0	24	1	0	0	0	0	23	0	2
	-	1	0	0	2	0	1	0	0	0	11	5	0
June	+	1	7	13	1	12	0	3	0	0	0	12	0
	-	0	0	0	9	0	0	0	0	0	0	6	0
July	+	9	0	0	0	0	9	15	4	10	0	0	4
	-	30	0	0	0	0	21	23	13	6	0	16	44
August	+	0	0	0	0	0	0	4	0	0	0	0	0
	-	0	0	0	0	0	0	48	6	0	0	0	0
September	+	50	17	4	53	55	21	52	16	10	9	27	53
	-	35	65	53	27	32	26	9	17	63	13	32	24
October	+	0	0	0	0	26	40	36	47	51	58	19	0
	-	0	0	0	3	35	30	67	46	59	52	10	13
November	+	0	0	0	0	0	0	0	0	0	1	0	14
	-	0	0	0	0	1	0	0	0	0	0	1	23
December	+	0	0	25	0	30	4	3	10	7	5	28	0
	-	3	0	14	9	49	1	29	25	0	54	32	0

*charges transported by point-discharge for each month*

12	13	14	15	16	17	18	19	20	21	22	23	Means
0	0	0	0	0	0	2	0	0	0	0	0	0,4
0	0	0	0	0	0	1	0	2	0	0	0	0,7
8	25	8	1	0	0	0	0	0	0	0	0	4,5
16	35	3	5	1	0	0	0	11	1	0	0	3,2
0	0	1	4	2	0	0	0	0	0	1	0	0,4
0	0	3	0	0	0	0	0	0	1	2	0	0,5
8	17	0	0	21	66	13	38	10	3	5	0	17,3
6	0	0	0	11	39	87	30	31	62	31	0	27,4
91	32	0	38	17	0	0	0	0	0	0	0	9,5
30	39	1	0	0	0	0	0	0	0	0	0	3,8
13	0	59	53	27	0	0	0	14	11	19	9	10,6
0	0	0	0	35	4	0	0	0	11	10	6	3,4
11	6	36	3	39	18	7	9	0	4	28	30	10,1
78	19	12	11	46	30	0	17	0	0	0	7	15,5
0	1	1	10	0	1	12	0	5	0	16	10	2,5
0	45	6	45	0	77	10	0	0	0	0	0	9,9
27	3	19	52	0	0	30	40	48	51	11	7	27,3
5	0	0	0	1	0	41	93	61	47	31	64	30,8
31	37	58	12	26	18	13	10	0	14	21	0	21,5
89	86	112	21	57	16	15	21	4	10	16	3	31,9
12	19	14	19	29	52	39	28	25	0	0	10	10,9
12	16	18	32	98	65	93	98	0	0	0	7	19,3
0	13	0	0	1	2	0	0	0	0	2	1	5,5
0	21	0	0	0	0	0	0	0	0	1	0	9,9