

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

I.

*Hourly means of the potential gradient*

January

Hour GMT	0	1	2	3	4	5	6	7	8	9	10	11	12
Day													
1.	-110	-110	-90	-100	10	70	50	-70	-S	+S	±S	±S	±S
2.	140	100	70	170	200	240	+S	+S	+S	130	[130]	200	150
3.	190	150	100	110	130	130	70	60	—	[50]	50	100	100
4.	50	90	30	40	40	50	-90	-90	-170	-80	[110]	[120]	+S
5.	40	20	30	60	60	80	60	50	90	10	100	[100]	160
6.	±S	±S	-240	-S	-170	-30	-90	120	160	200	200	[200]	100
7.	130	140	130	110	10	70	60	10	-60	[-10]	[40]	+S	+S
8.	70	60	40	30	100	100	100	80	—	[60]	120	140	110
9.	±S	±S	±S	50	20	20	40	60	60	[110]	140	160	150
10.	60	100	[70]	—	—	—	—	—	—	—	—	—	[200]
11.	70	10	50	60	50	-130	-200	-160	-70	150	220	120	70
12.	+S	180	170	210	160	+S	+S	+S	+S	+S	[-50]	0	30
13.	20	90	50	+S	160	130	170	+S	+S	+S	+S	+S	+S
14.	100	160	120	80	110	140	170	170	170	[180]	170	170	+S
15.	±S	±S	±S	-S	±S	-S	130	40	70	40	[120]	110	30
16.	70	70	70	60	80	100	120	90	110	120	170	230	170
17.	130	140	90	80	70	70	110	120	[110]	—	230	290	300
18.	200	+S	200	100	70	50	50	100	110	[130]	120	110	90
19.	90	70	40	40	70	60	100	100	120	120	130	[120]	[120]
20.	80	70	70	50	60	70	60	70	80	100	100	100	100
21.	50	100	80	80	80	100	110	100	[100]	100	[120]	130	180
22.	-20	50	+S	220	240	190	+S	+S	—	+S	200	170	150
23.	100	100	110	110	120	130	140	150	120	120	[100]	130	170
24.	150	110	110	110	100	140	180	160	150	100	[-90]	100	230
25.	80	80	90	100	90	90	80	80	[100]	[100]	100	90	80
26.	-20	30	20	20	50	±S	±S	±S	±S	—	+S	[40]	100
27.	100	90	90	100	100	70	-20	-70	80	20	70	[130]	120
28.	+S	0	20	+S	-S	10	40	100	80	70	120	[150]	170
29.	80	50	50	50	70	70	30	[60]	—	—	70	90	110
30.	80	60	60	70	70	70	110	130	180	[220]	280	260	260
31.	100	120	60	-40	-20	110	160	170	130	[140]	[180]	220	220
Means	78	79	60	76	76	81	67	65	82	95	120	140	141
Number of days	26	27	28	26	28	27	26	25	21	23	27	27	26

13	14	15	16	17	18	19	20	21	22	23	Daily means
±S	—S	±S	—S	[230]	230	230	200	130	190	140	—
140	80	70	170	+S	250	190	190	150	170	190	—
100	90	160	160	140	180	170	120	130	10	—40	107
±S	+S	±S	—40	120	120	100	—50	—10	30	0	—
220	100	120	100	150	+S	100	200	200	110	—S	—
140	180	120	140	160	+S	+S	60	140	120	110	—
+S	±S	±S	±S	±S	+S	—	—30	—60	10	50	—
50	60	100	130	90	60	80	160	160	140	±S	93
150	160	170	220	170	150	100	120	70	90	90	—
200	130	80	140	130	140	120	60	80	70	100	—
40	20	70	80	80	120	90	60	170	+S	+S	—
90	100	80	150	170	130	120	140	130	—60	0	—
+S	230	+S	+S	+S	+S	+S	170	190	220	+S	—
+S	±S	±S	±S	±S	±S	±S	±S	±S	±S	±S	—
50	50	90	110	120	190	160	130	80	90	70	—
170	210	180	+S	210	190	130	+S	150	120	130	—
290	270	240	240	250	210	290	+S	260	250	210	193
90	70	90	100	100	100	110	100	90	80	60	101
130	150	120	150	160	190	170	160	160	130	120	118
120	120	130	140	130	130	180	160	120	110	100	102
140	160	170	170	130	100	170	140	—70	—100	140	103
100	150	160	160	180	180	190	200	180	120	100	—
230	260	220	220	200	210	200	230	150	170	180	161
180	140	130	140	160	190	160	160	130	110	100	131
80	±S	±S	±S	—40	60	110	140	130	80	50	—
120	+S	+S	50	+S	100	90	100	100	100	100	—
140	160	150	160	200	200	200	160	170	±S	±S	—
130	160	150	200	160	90	100	100	80	60	80	—
150	150	160	180	200	150	170	130	120	120	110	—
180	160	210	200	+S	300	260	250	260	220	150	176
250	280	290	280	+S	+S	150	150	150	50	10	—
142	146	144	150	150	159	153	133	125	100	94	111
26	25	24	25	24	25	27	28	30	28	25	

February

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	-10	-40	10	-70	10	80	120	190	—	[230]	230	230	250
2.	+S	+S	+S	+S	+S	180	140	140	+S	+S	+S	+S	+S
3.	+S	+S	+S	+S	170	270	230	250	100	100	10	[50]	40
4.	30	10	+S	80	20	80	80	-10	-60	[30]	-90	110	50
5.	150	50	110	140	150	160	120	150	[10]	[70]	100	10	-10
6.	-140	-60	-30	-80	10	30	40	-30	-50	[-30]	-80	90	70
7.	-10	0	-60	-90	-120	-80	-80	-140	-100	-150	-120	[-90]	0
8.	80	120	40	70	10	-90	-120	-150	-40	—	10	-40	-90
9.	-100	-60	-10	30	60	-S	130	250	230	180	[230]	210	170
10.	230	+S	200	50	50	50	180	60	120	170	[170]	150	160
11.	60	60	+S	+S	40	70	90	110	130	150	[170]	190	+S
12.	160	140	100	120	130	130	160	140	[150]	—	20	60	100
13.	10	30	20	60	100	90	100	100	140	[120]	70	20	-10
14.	80	130	120	170	230	+S	200	+S	110	[100]	90	70	[80]
15.	10	60	80	40	-10	20	90	10	0	[20]	70	100	130
16.	190	220	120	-10	-20	40	30	10	-40	[60]	50	100	120
17.	180	150	130	100	120	130	140	190	220	[180]	[160]	130	120
18.	140	170	160	130	160	200	[160]	180	150	160	130	110	80
19.	70	60	60	40	40	50	60	80	100	—	100	90	80
20.	-10	-10	-10	-40	-70	50	40	10	20	[60]	100	130	120
21.	120	70	80	90	110	110	100	100	130	[110]	140	70	90
22.	20	30	50	50	50	50	60	80	[80]	[80]	70	50	70
23.	30	20	40	30	20	40	20	50	90	[100]	110	90	60
24.	70	90	90	100	80	80	70	60	120	[50]	20	10	-20
25.	+S	+S	60	110	120	130	100	+S	40	—	50	110	90
26.	130	60	60	80	80	100	100	120	—	[60]	100	90	100
27.	100	100	120	120	120	130	160	170	190	220	[220]	230	240
28.	160	160	160	170	170	180	190	190	190	150	160	[200]	230
29.	260	+S	+S	250	140	50	180	110	—	0	60	40	—
Means	77	65	71	67	70	86	100	90	81	93	84	93	89
Number of days	26	24	24	26	28	27	29	27	25	24	28	28	26

13	14	15	16	17	18	19	20	21	22	23	Daily means
220	190	160	150	150	140	150	140	160	180	+S	130
+S	+S	+S	+S	+S	+S	+S	+S	+S	+S	+S	—
0	-40	10	40	90	150	90	40	110	80	60	—
130	130	80	90	+S	+S	+S	30	50	+S	30	—
90	90	10	40	-80	-60	-190	-80	-150	-150	-60	32
70	0	-10	-40	-30	10	0	0	-60	-120	-120	-23
0	20	-10	50	100	20	-30	50	10	60	60	-30
30	-60	-40	-100	-210	-50	-60	-30	-40	-140	-150	-46
130	110	140	170	150	160	170	240	240	200	220	141
130	110	130	140	140	130	80	70	70	80	60	119
230	270	200	140	170	230	210	180	200	150	160	—
100	90	30	50	-40	30	40	50	90	40	10	83
100	60	20	10	40	110	160	120	160	110	20	73
100	140	40	110	120	110	120	60	100	70	30	—
130	100	140	140	150	130	60	100	120	150	100	81
120	90	130	140	150	170	170	200	150	130	150	103
170	140	140	130	140	130	150	210	170	200	240	157
80	+S	±S	±S	+S	70	100	90	80	90	100	—
90	100	90	90	90	50	60	40	50	40	20	67
110	110	90	70	80	80	90	90	110	110	140	61
100	70	70	120	140	80	20	30	50	50	20	86
80	100	90	100	80	60	50	60	70	70	50	65
50	50	50	50	50	50	50	70	40	40	60	53
0	-40	10	20	80	80	50	30	80	60	±S	52
130	110	90	110	100	110	30	+S	110	160	80	—
110	110	100	70	120	130	110	110	120	110	100	99
250	+S	+S	250	210	250	250	220	190	170	160	—
260	290	+S	300	+S	+S	+S	250	250	240	260	—
40	50	70	70	60	50	100	70	50	50	60	—
109	92	73	93	82	93	78	90	92	83	72	84
28	26	25	27	25	26	26	27	28	27	26	

March

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	80	50	50	50	50	50	90	100	110	[110]	140	170	130
2.	100	110	120	130	140	140	140	240	180	[190]	[170]	170	140
3.	110	70	50	50	40	30	—	60	80	60	70	100	120
4.	+S	100	30	50	70	50	180	60	[160]	[140]	130	130	±S
5.	50	20	—20	0	40	30	10	20	±S	±S	±S	+S	—10
6.	80	50	50	60	90	50	80	80	100	50	—90	[—170]	—40
7.	210	180	110	80	130	150	140	160	150	[130]	[130]	90	100
8.	110	130	140	130	130	120	130	150	150	[190]	170	170	150
9.	110	130	130	120	100	80	100	130	140	160	180	[150]	150
10.	140	140	110	130	80	50	70	60	120	150	[120]	100	130
11.	±S	+S	±S	±S	±S	+S	60	100	[30]	[200]	+S	+S	±S
12.	—60	—100	±S	+S	—100	30	60	20	70	90	140	180	[120]
13.	90	90	70	70	90	130	170	130	180	[160]	110	110	110
14.	160	170	150	90	70	60	70	90	110	[150]	160	140	160
15.	60	30	30	40	40	30	50	80	[100]	[120]	130	100	100
16.	70	70	60	60	60	110	110	140	150	160	160	150	[100]
17.	100	80	50	60	60	60	80	110	[120]	[130]	120	100	100
18.	60	70	60	80	80	110	110	70	—	[40]	50	100	70
19.	60	80	70	70	70	100	120	140	90	90	50	[90]	50
20.	70	60	50	50	50	50	50	60	[80]	90	70	50	60
21.	90	60	60	60	60	50	80	100	[120]	120	90	110	80
22.	20	10	10	60	40	20	10	—20	—30	—20	—90	20	+S
23.	70	40	40	50	50	60	130	140	140	110	90	100	[80]
24.	70	60	50	50	50	50	70	90	120	90	70	70	[83]
25.	50	50	50	50	50	70	80	100	[120]	—	110	100	90
26.	50	50	60	50	40	60	80	70	100	100	[100]	[80]	80
27.	70	90	110	150	120	100	120	80	40	[60]	70	80	90
28.	60	50	50	50	60	50	60	50	70	[50]	60	60	70
29.	60	60	70	40	40	50	80	60	[50]	[70]	60	60	70
30.	30	30	30	30	30	30	40	[50]	40	30	30	30	30
31.	40	30	30	40	50	60	80	[90]	100	90	90	60	40
Means	76	69	64	67	63	68	88	91	103	107	93	93	88
Number of days	29	30	29	29	30	30	30	31	29	29	29	29	28

13	14	15	16	17	18	19	20	21	22	23	Daily means
130	110	110	130	120	110	170	120	120	100	90	104
150	200	170	160	120	210	190	150	110	100	80	150
110	60	50	30	60	20	40	60	-S	-S	±S	—
±S	+S	+S	-S	-S	+S	+S	±S	+S	70	50	—
0	100	100	+S	+S	+S	+S	70	150	+S	10	—
30	40	40	30	100	+S	120	+S	-10	100	190	—
90	130	160	180	200	190	230	200	200	150	140	151
170	190	150	130	150	100	120	130	90	80	110	137
150	130	130	200	190	220	230	250	200	170	150	154
150	140	130	90	90	120	100	10	90	70	50	102
±S	+S	—	[-20]	50	100	30	90	100	90	-10	—
-S	+S	±S	+S	-30	110	100	90	100	100	90	—
160	200	220	220	250	+S	250	240	200	170	100	153
170	120	110	120	170	100	70	140	90	70	60	117
90	80	90	100	110	120	110	120	100	90	70	83
80	70	90	90	110	120	130	100	100	100	130	105
100	130	140	120	100	100	90	130	130	100	60	99
140	120	160	160	140	170	200	100	80	80	80	101
70	80	80	90	110	110	110	100	80	80	80	86
60	80	90	70	80	100	90	90	90	90	90	72
80	60	60	70	80	80	80	20	10	-30	30	68
±S	50	70	60	80	100	90	120	120	90	110	—
80	110	120	90	80	130	80	110	-70	0	70	79
80	80	80	70	70	70	80	70	40	20	40	68
90	80	60	50	60	60	50	50	60	40	40	68
70	80	80	70	70	60	60	50	50	40	40	66
110	130	120	130	150	100	80	80	80	80	70	96
70	80	70	40	30	60	70	70	50	60	50	58
80	80	80	70	70	70	70	70	60	50	40	63
50	40	60	50	50	60	60	50	60	50	40	42
40	30	—	—	±S	+S	±S	-S	70	80	50	—
96	100	104	96	102	107	111	103	88	79	73	89
27	28	27	27	28	26	28	28	29	29	30	



April

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	50	40	50	40	30	60	90	120	—	—	60	80	80
2.	40	40	50	70	60	60	70	80	[80]	[40]	50	90	40
3.	60	50	50	50	40	50	90	90	[90]	110	90	60	30
4.	40	30	30	20	30	40	80	100	60	80	80	[60]	50
5.	20	—70	—90	—20	30	—160	—90	—70	—80	—110	—40	[—310]	[—130]
6.	60	70	80	30	40	50	60	30	—70	0	—30	—40	[40]
7.	100	100	110	100	100	100	180	190	180	170	100	[90]	190
8.	50	50	—20	—	—	—50	—50	—30	—	[—20]	30	—10	—20
9.	70	60	70	80	80	80	90	90	100	[100]	[90]	80	90
10.	40	30	30	30	70	40	40	60	70	90	70	[80]	70
11.	50	50	50	60	50	60	80	80	90	[80]	80	90	100
12.	70	50	60	60	80	90	130	100	90	[110]	120	70	70
13.	40	60	60	60	70	60	90	100	100	[100]	80	40	50
14.	50	40	50	50	60	50	50	50	[60]	50	60	60	60
15.	50	50	60	60	60	50	60	50	70	80	50	[60]	70
16.	50	50	40	60	90	60	60	70	—	—	120	90	80
17.	50	30	40	50	40	40	40	—10	30	30	30	[110]	110
18.	—10	—30	—30	—20	—70	—80	—70	—20	—10	[40]	50	50	60
19.	50	50	40	50	50	50	70	70	70	[70]	[50]	50	70
20.	50	50	50	50	50	70	[90]	90	90	60	60	70	80
21.	50	50	50	60	50	50	[60]	70	90	60	50	80	80
22.	50	50	50	50	40	50	70	50	—	—	40	50	30
23.	60	50	50	50	50	60	70	100	120	100	70	80	80
24.	60	60	50	70	60	70	70	80	100	100	70	60	60
25.	80	70	60	60	60	70	90	120	150	[140]	[150]	140	130
26.	50	40	50	50	60	90	120	100	100	80	70	60	50
27.	70	60	50	50	60	70	90	90	90	70	[70]	±S	80
28.	80	70	70	50	60	50	—	120	110	120	100	80	90
29.	50	60	60	70	70	110	90	110	—	[50]	70	50	20
30.	50	40	60	70	60	80	120	100	80	[100]	100	70	±S
Means	53	45	44	50	53	49	67	73	74	70	66	53	62
Number of days	30	30	30	29	29	30	29	30	25	27	30	29	29

13	14	15	16	17	18	19	20	21	22	23	Daily means
60	40	40	60	70	30	-10	10	20	30	30	—
100	120	90	140	180	110	140	140	110	90	70	86
-10	20	-S	-S	-S	±S	±S	30	±S	±S	±S	—
60	50	60	70	60	60	50	60	50	50	50	55
[0]	—	—	[70]	90	80	80	80	80	80	80	—
10	20	+S	+S	140	140	170	160	160	120	100	—
190	160	160	150	190	160	90	+S	10	±S	—	—
-20	10	30	20	50	20	30	60	80	80	70	—
40	20	90	90	90	110	140	110	90	60	50	82
50	60	60	70	40	50	100	70	60	60	40	58
100	110	130	110	110	120	130	100	100	100	110	89
80	100	80	70	50	80	80	80	60	50	40	78
50	60	60	50	60	70	60	60	50	50	40	63
60	70	60	50	40	40	50	60	40	30	50	52
70	70	70	60	40	60	80	90	80	60	50	63
50	50	50	50	70	30	40	30	20	30	50	—
120	120	80	80	80	90	100	70	70	60	60	63
60	70	80	70	60	60	70	60	70	50	50	23
80	70	70	70	80	90	70	60	60	50	50	62
80	80	60	60	80	100	110	90	60	70	60	71
80	80	90	80	50	70	60	50	60	50	50	63
40	60	70	80	80	70	70	70	60	60	60	—
80	80	80	70	90	100	80	80	80	70	70	76
60	70	70	90	90	80	80	70	80	100	70	74
130	120	140	150	120	70	70	60	70	60	60	99
40	40	30	30	40	30	50	40	70	70	70	60
30	70	60	50	40	±S	±S	+S	100	70	90	—
90	70	30	20	-S	50	40	60	60	70	60	70
40	30	0	50	80	80	70	70	70	70	60	62
±S	±S	±S	20	20	±S	±S	±S	±S	±S	+S	—
63	69	71	71	78	76	78	71	69	64	61	64
29	28	26	28	28	27	27	27	28	27	27	

May

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	40	30	40	50	40	50	70	120	[80]	[90]	70	20	50
2.	30	30	40	40	60	70	80	70	80	[70]	60	70	70
3.	90	110	70	50	50	20	70	70	80	[120]	+S	30	60
4.	120	80	70	60	40	60	80	60	60	40	50	[50]	[50]
5.	40	50	60	70	30	70	70	—S	70	60	[60]	50	30
6.	40	40	40	60	50	50	60	70	70	—	—	—220	—130
7.	60	50	60	60	90	140	$\pm$ S	30	30	+S	$\pm$ S	+S	130
8.	40	40	40	$\pm$ S	$\pm$ S	$\pm$ S	$\pm$ S	+S	110	100	100	[90]	100
9.	50	40	40	40	50	60	90	100	[100]	70	60	60	60
10.	40	50	60	60	60	60	70	100	80	60	30	[40]	50
11.	80	70	70	80	90	80	110	110	120	[90]	90	80	70
12.	50	50	70	90	90	90	100	120	100	80	70	60	60
13.	—30	10	60	30	20	10	30	40	20	[140]	30	30	70
14.	30	30	30	30	40	60	60	80	70	70	[60]	60	60
15.	60	50	50	50	40	50	60	90	100	100	[90]	90	100
16.	20	20	20	40	50	60	80	100	[100]	[100]	100	100	90
17.	40	40	50	40	+S	10	40	20	50	—S	20	30	10
18.	60	50	50	60	50	60	60	60	40	40	[10]	20	40
19.	60	30	30	30	30	30	0	20	40	40	20	—S	—S
20.	20	20	30	40	20	30	40	40	—	[20]	20	20	20
21.	50	50	30	30	40	80	100	120	[120]	70	70	50	40
22.	100	60	40	0	20	30	110	+S	120	120	90	80	[70]
23.	70	60	40	60	50	100	100	100	[100]	[90]	100	90	100
24.	80	90	70	80	60	70	70	70	50	70	80	[60]	[60]
25.	40	20	10	40	50	50	80	80	[90]	100	100	70	50
26.	70	70	40	70	50	70	70	50	60	70	70	[110]	[80]
27.	$\pm$ S	$\pm$ S	40	10	—20	10	40	30	—	0	—10	30	20
28.	40	40	40	40	30	50	50	40	40	[30]	[30]	40	40
29.	40	40	50	50	50	60	70	70	[60]	[50]	50	50	40
30.	50	50	50	50	50	60	80	120	110	100	80	100	60
31.	50	50	20	10	10	0	40	50	30	50	[30]	50	50
Means	51	47	45	47	44	55	68	73	75	73	58	49	53
Number of days	30	30	31	30	29	30	29	28	29	28	28	29	30

13	14	15	16	17	18	19	20	21	22	23	Daily means
50	0	30	70	70	70	70	70	70	50	40	56
70	70	70	60	70	70	70	70	70	70	60	63
50	+S	±S	±S	+S	70	100	80	70	80	110	—
50	40	50	40	70	80	90	90	10	20	0	57
40	40	50	60	70	70	70	80	60	60	50	57
-300	-140	-30	-20	40	100	100	80	70	60	60	—
[70]	60	30	40	40	50	40	40	40	40	30	—
110	110	100	70	60	60	80	80	60	60	50	—
70	70	70	80	80	80	80	70	70	60	50	67
60	60	90	80	70	100	130	100	100	90	70	71
60	60	70	80	70	90	100	110	100	90	70	85
70	70	60	70	[10]	40	60	50	20	20	30	64
30	40	60	30	50	40	50	50	40	40	20	38
70	80	70	60	60	60	60	60	60	60	70	58
100	120	140	160	180	140	100	90	70	70	50	90
80	80	80	70	60	100	70	60	60	50	40	68
30	-40	±S	±S	±S	±S	±S	±S	-S	20	40	—
30	60	50	60	+S	±S	40	60	20	30	40	—
±S	±S	±S	+S	0	20	20	20	20	20	20	—
20	20	40	40	40	40	40	30	50	40	50	32
30	30	70	60	±S	±S	±S	±S	+S	-10	80	—
[80]	120	70	+S	40	50	20	40	60	60	70	66
100	90	60	40	60	70	20	10	40	70	70	70
50	70	70	50	60	40	50	40	40	30	40	60
70	70	70	70	80	110	120	120	100	110	70	74
80	70	70	60	30	40	40	+S	±S	±S	±S	—
50	60	50	50	50	50	60	50	50	50	40	—
50	40	50	50	60	60	60	50	40	30	40	43
40	50	50	50	50	50	50	50	50	50	50	51
50	[70]	50	80	60	50	50	50	50	40	50	65
50	30	50	50	50	50	50	60	50	60	70	42
47	52	60	60	59	66	65	63	55	51	51	57
30	29	28	27	27	28	29	28	28	30	30	

June

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	70	60	60	50	50	50	70	90	80	60	60	50	60
2.	50	40	40	50	40	60	90	100	70	[60]	50	30	50
3.	70	50	50	70	160	220	240	90	—	[70]	50	20	30
4.	40	30	30	30	30	60	90	120	140	150	[120]	90	90
5.	$\pm S$	70	70	70	60	170	140	110	[90]	30	10	30	30
6.	60	50	50	60	70	100	100	[90]	120	[100]	[60]	50	60
7.	60	70	70	80	80	100	80	140	70	100	120	130	130
8.	60	40	40	60	70	70	70	70	40	-30	$\pm S$	$\pm S$	[60]
9.	$+S$	$\pm S$	20	30	50	60	$+S$	$+S$	-80	50	140	-20	-10
10.	30	-20	50	60	10	—	—	—	—	—	—	—	—
11.	40	20	20	-60	-120	-60	110	110	[120]	—	130	130	90
12.	100	90	50	50	50	90	110	130	130	[130]	100	120	110
13.	110	90	80	80	130	130	120	130	200	—	140	130	130
14.	60	60	60	70	120	170	150	170	[200]	200	170	150	150
15.	70	60	60	70	80	90	50	70	[50]	50	40	20	20
16.	50	40	40	40	40	70	60	50	80	70	60	-S	-S
17.	50	60	50	70	60	80	80	80	—	60	30	20	40
18.	20	30	20	20	40	100	120	[120]	[90]	80	40	20	40
19.	40	40	40	50	60	70	60	40	30	40	40	20	40
20.	50	40	30	50	60	60	70	60	60	70	$+S$	$\pm S$	$\pm S$
21.	40	50	50	40	70	110	60	$+S$	$\pm S$	20	$\pm S$	$\pm S$	$\pm S$
22.	50	60	60	70	80	120	220	$+S$	160	120	[80]	70	70
23.	70	60	50	60	70	70	70	70	[50]	40	20	10	—
24.	—	—	—	—	—	—	—	—	—	—	—	—	—
25.	—	—	—	—	—	—	—	—	—	—	—	—	—
26.	50	50	40	60	50	60	50	[70]	70	80	80	80	80
27.	50	70	80	50	60	70	100	140	160	[100]	70	50	30
28.	70	60	50	70	80	100	80	90	90	80	100	120	[80]
29.	60	50	30	30	30	30	$\pm S$	$\pm S$	[-30]	[80]	30	$\pm S$	40
30.	80	70	80	60	80	90	100	110	110	130	120	110	[110]
Means	58	51	49	51	59	87	100	98	88	78	78	65	67
Number of days	26	27	28	28	28	27	25	23	24	25	24	22	23

13	14	15	16	17	18	19	20	21	22	23	Daily means
50	[50]	60	70	60	50	50	50	50	50	50	58
±S	—S	60	50	60	80	80	50	60	80	80	—
40	60	60	70	60	60	40	40	50	40	30	73
100	100	70	±S	±S	±S	0	40	40	80	+S	—
30	40	40	50	60	70	80	80	60	60	80	67
50	50	60	80	50	70	80	70	60	60	60	69
[150]	140	120	140	140	120	120	110	80	70	60	103
+S	+S	80	40	90	±S	±S	±S	±S	+S	±S	—
150	100	30	—200	—80	—10	—20	10	20	—20	30	—
—	—	60	80	80	40	60	—30	90	—100	20	—
50	70	130	100	100	110	100	130	120	100	90	71
110	130	130	160	150	140	170	130	130	170	160	118
100	100	100	90	130	120	90	90	120	120	80	113
100	90	50	120	100	90	80	80	80	80	70	111
20	20	30	30	50	50	30	50	60	50	60	49
70	50	40	20	20	50	50	50	50	50	50	—
40	40	60	50	30	±S	±S	±S	40	40	30	—
40	40	40	40	40	40	40	40	40	30	40	49
40	50	50	70	70	70	70	70	70	70	60	53
±S	—S	—10	—10	—10	10	10	20	10	10	20	—
±S	—S	80	80	20	50	50	30	20	40	60	—
70	70	70	60	50	50	70	70	60	40	60	80
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
100	90	90	100	100	120	120	100	70	50	50	—
70	60	60	60	60	60	50	70	100	80	60	65
40	50	70	70	70	70	60	70	80	70	80	73
20	—S	±S	±S	60	50	50	60	50	50	50	—
30	50	60	50	50	90	130	130	90	80	80	—
[110]	110	120	130	150	140	150	80	50	50	70	100
69	71	67	62	65	72	70	65	65	56	61	69
23	22	27	26	27	25	26	26	27	27	26	

July

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	80	80	50	60	100	130	140	160	—	—	140	130	130
2.	120	150	120	120	140	130	150	130	140	140	160	160	[150]
3.	60	70	90	80	70	100	100	120	130	[120]	120	120	100
4.	50	60	60	50	50	70	70	50	50	60	70	80	80
5.	20	20	20	40	30	50	60	50	30	[20]	20	20	20
6.	30	30	30	30	40	40	30	20	-20	-40	[-50]	-50	-50
7.	30	30	50	30	40	50	60	90	90	120	110	[80]	50
8.	30	30	30	40	40	40	50	40	—	[80]	60	[60]	50
9.	50	50	20	40	80	110	[180]	(210)	160	[130]	110	100	100
10.	60	40	-80	10	20	170	190	180	150	140	130	110	[70]
11.	50	40	50	50	60	50	60	70	[60]	40	40	30	0
12.	$\pm S$	$\pm S$	$\pm S$	50	100	90	100	70	70	80	100	100	100
13.	60	60	60	60	60	110	60	40	50	30	40	40	[40]
14.	60	50	30	40	40	60	70	60	50	60	60	[60]	[60]
15.	30	30	20	30	50	+S	+S	90	—	—	60	40	40
16.	30	40	60	60	50	60	+S	+S	160	100	90	60	[80]
17.	60	60	50	40	20	50	20	50	40	80	30	-10	10
18.	100	150	60	40	70	170	80	50	160	-40	50	-10	-S
19.	60	50	50	40	50	60	80	100	140	[100]	90	100	+S
20.	30	20	20	20	30	50	60	60	80	40	[60]	60	50
21.	50	40	40	20	30	120	70	60	20	30	30	40	[70]
22.	70	60	70	60	60	70	80	90	—	[50]	120	-S	$\pm S$
23.	90	70	50	50	40	50	70	60	60	[60]	60	60	60
24.	100	60	40	50	50	160	+S	200	[160]	—	110	120	100
25.	40	60	30	20	60	50	+S	+S	+S	+S	100	100	70
26.	30	30	30	30	20	60	$\pm S$	$\pm S$	$\pm S$	$\pm S$	20	60	—
27.	20	20	30	$\pm S$	30	30	50	40	50	50	$\pm S$	+S	60
28.	50	40	50	40	40	20	20	30	40	20	10	10	30
29.	50	50	30	40	40	50	60	80	[90]	—	100	80	80
30.	70	60	60	50	50	70	70	70	90	[130]	120	80	80
31.	60	50	40	50	60	70	90	160	[190]	130	90	70	80
Means	55	53	42	45	52	78	80	82	90	69	75	66	63
Number of days	30	30	30	30	31	30	26	27	25	25	30	29	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
130	120	140	150	160	170	180	170	200	130	120	—
200	190	180	180	170	190	170	140	120	120	100	149
90	90	110	130	160	150	120	80	70	70	60	100
70	70	40	40	40	50	60	50	60	50	40	57
30	20	30	30	50	60	60	50	50	40	30	35
-50	-40	-20	10	20	50	50	70	50	30	30	10
20	30	30	40	40	40	30	30	40	30	30	50
50	-S	±S	±S	±S	±S	40	50	60	50	50	—
80	70	60	70	-S	±S	±S	±S	±S	±S	30	—
60	60	60	60	50	60	60	60	70	70	70	78
±S	±S	20	30	-30	20	±S	±S	±S	±S	±S	—
[100]	[100]	120	140	130	100	90	120	90	80	60	—
30	30	-30	±S	±S	60	70	90	100	100	70	—
(180)	(150)	60	60	50	60	60	50	60	+S	40	—
+S	±S	±S	±S	±S	±S	60	90	80	30	20	—
70	70	60	60	60	40	40	50	40	60	60	—
50	80	60	+S	±S	10	150	+S	±S	±S	-S	—
-30	50	10	30	50	0	-150	-150	0	10	30	32
70	50	60	60	70	80	90	100	70	70	50	73
30	40	40	50	60	60	90	60	60	50	50	49
[60]	40	40	10	+S	±S	-S	100	50	70	80	—
±S	±S	±S	+S	100	100	100	110	90	100	100	—
60	60	70	60	60	60	±S	±S	110	140	140	—
100	110	80	60	-S	±S	±S	40	20	60	40	—
60	60	70	80	60	70	60	60	60	50	30	—
90	70	60	60	60	60	70	80	40	40	30	—
70	50	±S	±S	30	40	±S	-S	90	80	70	—
[20]	±S	±S	+S	140	90	-20	20	30	40	40	—
50	50	60	90	60	80	80	70	90	90	70	67
70	80	70	130	120	90	100	90	80	70	50	81
80	80	100	100	90	80	80	70	60	60	40	82
61	65	61	72	75	72	70	67	69	66	56	66
27	25	26	24	24	26	25	26	28	27	29	



August

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	40	30	30	30	40	30	60	70	[70]	60	50	60	50
2.	30	30	40	40	50	70	60	50	50	50	40	[40]	[40]
3.	70	$\pm S$	$\pm S$	$+S$	20	$+S$	20	$+S$	130	$+S$	$+S$	30	70
4.	30	20	20	40	50	70	[90]	[90]	90	90	70	70	[70]
5.	90	80	70	60	60	80	100	100	100	—	70	70	70
6.	30	20	30	40	30	50	[60]	—	—	—	—	—	[30]
7.	40	40	10	-40	70	120	100	$\pm S$	$\pm S$	90	$+S$	$+S$	$\pm S$
8.	30	60	70	40	70	60	100	$+S$	$+S$	$+S$	90	90	80
9.	50	50	40	60	70	90	80	80	80	—	$+S$	$+S$	$+S$
10.	60	30	20	20	20	60	$\pm S$	80	$+S$	$+S$	$+S$	80	70
11.	70	60	50	40	40	50	40	60	50	[20]	50	60	80
12.	50	40	40	40	40	60	70	70	[60]	[70]	60	60	60
13.	50	40	40	50	50	50	50	50	[60]	70	80	80	70
14.	50	40	50	50	60	70	80	70	60	60	70	50	50
15.	200	110	70	50	70	70	100	$+S$	80	110	80	60	80
16.	40	40	40	30	30	40	$+S$	70	80	70	70	50	60
17.	80	90	80	70	70	120	$+S$	90	[70]	—	—	70	70
18.	10	$\pm S$	$-S$	-50	60	10	$+S$	50	70	70	60	[70]	[70]
19.	70	70	70	60	60	70	80	70	70	80	70	40	40
20.	90	70	70	70	70	80	80	90	120	130	120	[110]	80
21.	50	50	40	30	30	50	110	80	[80]	90	110	120	120
22.	40	0	$\pm S$	30	30	120	80	70	—	100	90	20	60
23.	20	20	30	90	180	220	$+S$	190	100	80	[100]	100	80
24.	80	80	80	80	90	130	140	100	100	90	80	100	70
25.	50	50	60	60	60	60	70	60	90	[100]	80	90	100
26.	60	70	60	60	60	70	90	90	—	—	110	100	120
27.	90	90	90	70	70	80	120	120	110	[80]	90	70	90
28.	70	70	80	100	80	70	100	140	110	[70]	60	60	50
29.	50	50	60	60	60	80	70	70	70	[60]	[70]	70	50
30.	70	70	60	50	50	60	70	70	70	50	20	-10	-30
31.	110	60	60	60	70	70	100	70	70	60	70	[80]	$+S$
Means	60	53	52	46	58	75	82	83	82	76	74	68	66
Number of days	31	29	28	30	31	30	26	26	25	23	25	28	28

13	14	15	16	17	18	19	20	21	22	23	Daily means
60	+S	60	60	40	60	50	40	50	50	50	50
30	30	30	50	±S	±S	±S	±S	60	40	40	—
110	90	10	30	10	+S	+S	60	30	50	30	—
80	130	110	120	120	110	120	90	90	90	80	81
60	60	30	50	50	50	50	60	60	40	40	65
40	-S	±S	±S	-S	±S	±S	±S	±S	±S	+S	—
±S	±S	±S	-40	60	80	70	90	70	40	50	—
80	80	70	70	70	70	90	90	70	90	70	—
+S	±S	±S	+S	±S	±S	±S	±S	±S	50	10	—
50	[50]	60	70	90	50	70	80	70	70	70	—
70	70	70	70	80	70	70	70	70	50	60	59
—	80	70	70	60	70	80	70	80	80	70	63
70	60	70	70	70	70	60	70	60	50	50	60
50	50	50	50	±S	±S	±S	±S	±S	40	+S	—
120	70	60	70	80	110	70	70	70	60	60	83
60	70	70	70	70	80	80	100	110	100	70	65
50	40	60	70	60	[70]	[50]	+S	+S	+S	±S	—
50	70	50	70	-90	110	120	130	120	120	90	—
[60]	-10	-70	40	70	90	80	80	80	80	80	60
70	70	90	80	80	70	70	80	70	70	60	83
100	120	110	120	110	90	90	80	70	80	60	83
60	+S	±S	±S	±S	+S	-30	120	140	100	80	—
70	70	50	20	60	100	110	120	110	110	100	93
[60]	70	70	60	60	80	-50	60	50	40	40	73
100	90	80	90	100	100	100	100	90	80	60	80
110	120	+S	+S	120	120	110	90	100	90	80	—
60	70	20	80	80	70	70	80	70	60	70	79
60	60	60	60	50	[70]	[50]	60	60	60	60	71
60	60	60	60	70	80	70	70	70	50	70	64
40	60	100	80	70	70	40	70	70	30	130	57
+S	60	70	+S	-S	±S	50	60	80	40	80	—
68	69	58	63	66	81	67	80	77	66	65	68
27	26	26	26	25	24	26	26	27	29	28	

September

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	70	80	80	80	70	80	80	70	60	70	70	70	[60]
2.	50	50	50	40	50	50	70	110	—	150	[150]	140	130
3.	70	70	70	70	70	120	100	80	80	70	70	90	90
4.	60	70	70	50	80	90	180	180	70	60	70	[70]	50
5.	70	+S	±S	+S	70	70	70	50	40	+S	±S	±S	±S
6.	50	40	20	50	30	70	40	60	70	40	[70]	120	130
7.	80	70	[50]	[20]	20	30	30	[40]	[50]	70	80	100	100
8.	90	80	60	60	70	80	100	120	150	150	150	[150]	140
9.	50	60	50	50	50	100	120	40	[50]	[130]	170	120	180
10.	60	40	40	30	20	70	140	140	[130]	[150]	140	150	140
11.	40	20	20	20	80	190	130	10	--30	0	10	10	[30]
12.	-10	20	20	30	20	±S	+S	50	—	-40	-40	-10	-10
13.	0	20	20	20	40	50	60	80	80	80	90	110	120
14.	30	40	50	40	50	70	140	—	—	—	—	—	—
15.	—	—	—	—	—	—	—	—	—	—	—	—	—
16.	—	—	—	—	—	—	—	—	—	[60]	-S	±S	110
17.	70	70	70	60	70	90	80	120	[120]	[140]	140	140	120
18.	30	20	30	30	40	60	70	60	100	100	[80]	80	50
19.	40	30	20	20	30	40	50	40	50	[80]	50	70	40
20.	30	20	30	20	40	40	50	60	[80]	80	50	50	60
21.	60	50	50	60	60	80	70	70	90	80	50	[50]	50
22.	40	40	30	40	10	10	-70	±S	±S	±S	±S	±S	±S
23.	50	50	40	40	40	50	70	[70]	—	80	90	70	80
24.	40	-40	±S	50	±S	±S	±S	±S	[100]	90	80	50	50
25.	40	30	30	-S	+S	60	80	120	70	-50	80	[60]	60
26.	60	50	50	60	50	80	100	110	120	120	120	[120]	130
27.	80	60	60	70	80	110	110	120	150	[120]	110	110	120
28.	50	20	40	40	40	30	50	50	60	50	[50]	—	—
29.	40	40	30	20	40	60	40	20	[20]	10	20	10	20
30.	50	50	+S	40	+S	±S	±S	-S	-S	—	—	[160]	130
Means	50	43	43	43	49	71	78	78	78	76	81	87	87
Number of days	28	27	25	26	25	25	25	24	22	25	24	24	25

13	14	15	16	17	18	19	20	21	22	23	Daily means
60	70	[80]	--	[100]	120	100	80	70	70	60	76
130	140	150	130	100	—	—	—	—	90	90	—
90	80	70	80	90	100	110	90	70	70	60	82
60	60	60	60	70	90	120	60	50	30	40	75
±S	140	[100]	80	70	70	50	40	40	40	10	—
120	130	100	90	110	110	100	80	70	50	100	77
110	110	110	70	70	110	120	120	80	80	90	75
120	130	140	120	80	+S	80	50	70	50	50	100
170	140	130	+S	±S	100	140	120	120	100	80	—
130	120	140	140	120	110	110	70	70	70	40	—
30	[40]	40	50	50	50	10	30	-10	-30	-40	31
—	[40]	-30	10	20	20	10	20	20	20	10	—
90	70	50	50	80	80	50	50	50	40	50	60
—	—	—	—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—	—	—	—
+S	60	80	60	50	130	60	110	100	90	80	—
90	80	90	80	70	70	50	60	50	40	30	83
80	90	70	80	80	80	100	100	80	60	50	67
50	50	50	50	50	50	50	50	50	50	30	45
50	50	60	60	60	50	40	50	50	70	20	49
20	30	50	70	40	50	50	50	50	50	30	55
[110]	80	70	70	60	80	70	70	50	50	50	—
80	80	90	90	100	110	80	80	80	80	60	72
30	50	70	+S	±S	60	80	50	20	20	30	—
70	80	80	100	120	110	100	90	90	70	60	—
160	160	150	120	140	120	100	110	90	80	90	104
120	110	90	100	120	120	120	100	90	70	50	100
—	[40]	50	50	50	40	70	70	60	50	50	—
30	30	40	50	60	80	70	40	50	50	50	38
160	190	160	130	110	100	80	80	80	70	70	—
90	88	84	80	80	85	79	71	63	56	50	70
24	28	28	25	26	26	27	27	27	28	28	

October

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	60	60	-50	-30	±S	-S	-20	50	90	[100]	90	120	90
2.	50	40	20	20	20	10	10	10	20	20	50	[70]	[90]
3.	-30	-50	-20	20	20	-30	-30	-80	10	-40	20	30	70
4.	30	50	80	-20	50	60	100	120	70	110	—	70	50
5.	70	60	40	-10	-20	+S	100	-100	20	[30]	[110]	80	+S
6.	50	50	-30	40	30	80	110	40	[70]	60	70	30	30
7.	130	130	140	70	+S	+S	+S	+S	+S	—	120	80	80
8.	50	40	40	60	80	90	80	140	90	40	50	[50]	[30]
9.	20	30	60	50	100	90	140	110	110	[100]	90	70	±S
10.	40	40	40	50	50	80	130	20	80	150	[130]	[110]	90
11.	60	70	50	70	80	50	60	60	80	[70]	+S	±S	80
12.	110	80	80	80	100	80	80	50	60	110	50	60	120
13.	+S	+S	+S	+S	+S	+S	+S	+S	+S	+S	120	130	—
14.	50	50	40	40	50	70	100	100	—	—	70	70	80
15.	60	40	40	50	30	20	50	140	160	120	[70]	80	110
16.	90	100	80	90	80	90	140	+S	[180]	—	[160]	140	140
17.	90	100	110	80	90	90	110	140	120	140	[130]	110	120
18.	60	60	60	100	100	70	70	100	90	[80]	70	80	60
19.	90	100	80	100	90	90	100	80	70	[60]	[50]	60	60
20.	90	70	60	60	60	60	80	100	120	[100]	100	130	110
21.	30	30	20	30	20	20	10	-30	—	70	100	120	130
22.	110	90	90	110	100	100	70	180	170	—	160	160	150
23.	60	80	120	180	190	120	150	180	150	—	150	180	140
24.	60	60	50	50	40	70	70	120	140	[150]	130	140	140
25.	20	20	20	10	20	20	40	70	70	[70]	60	70	120
26.	+S	+S	+S	190	170	200	190	120	90	[70]	70	60	70
27.	60	60	50	70	70	70	90	80	[110]	[70]	50	90	70
28.	20	40	70	160	200	120	40	160	[120]	—	—	-10	23
29.	-30	-40	-20	-20	-50	-60	-50	-50	-60	[-20]	-20	-40	-20
30.	100	100	70	30	40	50	70	100	[120]	—	110	110	—
31.	—	—	—	—	—	—	—	—	—	[10]	-30	-60	-10
Means	57	56	50	60	67	66	75	74	90	73	83	80	82
Number of days	28	28	28	29	27	26	28	27	26	23	28	30	27

13	14	15	16	17	18	19	20	21	22	23	Daily means
110	110	130	120	110	120	80	70	70	66	70	—
80	10	—40	10	—30	0	—90	—100	—100	—70	—80	1
20	—40	90	60	70	+S	10	70	±S	±S	—10	—
70	70	40	50	70	80	90	50	60	70	60	64
+S	90	70	70	70	90	120	80	70	66	40	—
40	40	40	40	70	120	90	110	90	120	130	63
100	70	70	70	80	70	40	+S	+S	50	50	—
60	70	80	100	40	40	60	40	30	50	20	60
+S	±S	±S	—S	110	50	40	50	40	40	40	—
120	130	120	120	90	80	90	+S	+S	90	50	—
—S	30	+S	—S	—30	90	90	110	110	100	110	—
[190]	180	150	190	200	190	160	130	140	160	180	122
140	110	110	110	90	110	90	80	70	60	50	—
100	100	100	70	30	50	60	30	20	20	40	—
120	100	100	110	120	180	220	150	160	140	80	102
150	190	220	130	140	180	190	170	140	130	100	—
140	130	110	100	120	110	90	80	60	50	60	103
40	40	50	90	110	110	160	130	120	60	90	83
80	90	110	110	180	160	110	100	80	80	70	92
120	140	140	140	130	140	100	60	70	70	50	96
150	120	100	90	80	80	50	20	30	40	70	60
120	130	120	120	110	40	50	60	100	90	70	109
120	130	120	130	80	120	120	140	130	90	70	128
160	130	100	40	40	30	30	30	30	20	30	78
120	100	50	100	120	160	160	120	150	120	120	80
70	80	50	100	120	70	70	70	70	50	70	—
80	80	80	70	70	70	70	80	70	40	40	70
10	20	50	20	90	70	110	100	—20	—40	—10	—
—10	20	80	100	130	200	160	100	140	120	110	28
—	—	—	—	—	—	—	—	—	—	—	—
30	60	70	60	50	40	50	60	30	20	50	—
94	87	90	90	89	98	89	78	73	65	61	76
27	29	28	28	30	29	30	28	27	29	30	

November

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	70	110	120	120	60	120	110	30	[120]	[90]	110	80	90
2.	40	20	20	-30	-30	-50	-70	-90	[-90]	[10]	40	60	70
3.	10	-20	60	-10	-70	-60	-20	20	[70]	[-10]	-10	10	10
4.	40	10	0	20	30	40	30	10	—	—	[30]	30	60
5.	50	60	70	+S	-80	+S	10	30	[40]	[70]	70	50	60
6.	-40	0	-30	30	30	50	50	80	[30]	[70]	20	60	100
7.	70	80	100	60	60	90	30	60	20	—	60	90	50
8.	80	60	50	60	100	90	60	30	[30]	30	10	0	10
9.	10	-80	-100	30	-10	-30	-60	-20	-70	-60	-80	-20	80
10.	100	90	60	20	10	-10	-80	-40	-10	30	90	70	[90]
11.	-10	10	30	50	50	70	100	[100]	—	100	60	40	100
12.	130	140	130	110	100	90	130	170	150	160	200	[170]	170
13.	130	110	80	100	140	130	100	100	100	110	150	[130]	170
14.	120	100	50	60	30	30	20	80	+S	100	[110]	[90]	80
15.	90	100	90	30	70	90	90	60	[50]	[60]	50	90	130
16.	+S	+S	+S	170	60	100	40	30	[40]	30	30	-30	-50
17.	100	110	100	110	60	80	90	100	[100]	-10	100	10	40
18.	+S	90	+S	+S	150	+S	160	+S	—	80	50	100	50
19.	90	120	100	50	80	120	130	170	170	[170]	110	120	+S
20.	70	50	50	50	40	60	[50]	0	-20	-30	0	-20	-20
21.	10	50	50	50	50	50	70	80	—	110	110	120	130
22.	70	70	60	60	50	50	60	80	[80]	[70]	70	100	110
23.	120	80	130	140	70	70	140	110	150	[60]	60	90	90
24.	50	10	20	-20	20	-50	10	20	-60	[-10]	-20	+S	+S
25.	90	70	120	140	90	180	90	160	—	[80]	90	100	130
26.	100	90	80	80	100	100	150	200	210	210	[160]	140	160
27.	30	20	40	-10	-40	-10	50	30	-40	[-50]	60	-30	-20
28.	-60	-60	-90	-100	-130	-130	-80	-100	-130	—	-90	-90	-80
29.	10	-50	-110	-130	-130	-80	-130	-70	-70	-70	-50	-90	-80
30.	30	30	50	70	100	70	70	80	[70]	80	100	100	100
Means	57	51	48	47	35	45	47	52	39	55	56	54	65
Number of days	28	29	28	28	30	28	30	29	24	27	30	29	28

13	14	15	16	17	18	19	20	21	22	23	Daily means
120	130	80	80	180	160	150	+S	60	30	50	99
70	70	70	60	40	30	40	20	10	-10	-10	12
30	40	50	70	80	70	60	80	70	70	70	28
80	80	80	60	110	60	100	80	100	80	60	—
50	80	60	40	20	-70	-180	-80	-70	10	-10	—
90	60	60	60	80	60	30	70	50	60	70	50
30	100	130	140	170	120	100	100	70	100	90	83
50	70	90	80	30	30	30	40	100	100	70	54
100	100	110	80	60	120	160	130	120	110	70	31
100	100	110	90	110	120	90	-10	-10	0	0	47
100	110	140	200	190	120	200	230	200	170	150	109
150	160	150	150	200	210	200	200	150	110	150	153
190	150	130	130	140	140	130	140	140	110	130	128
60	100	150	200	210	180	150	80	60	90	80	97
110	110	130	70	90	80	100	90	+S	+S	±S	—
50	20	+S	150	40	30	±S	±S	-S	±S	+S	—
70	30	0	30	-30	10	30	100	80	70	30	59
+S	20	10	20	130	100	40	60	20	80	50	—
+S	+S	70	60	20	50	80	90	100	80	80	—
-10	-10	-10	-10	0	50	40	40	80	90	50	25
110	140	140	140	140	80	80	60	60	80	90	87
140	150	180	220	200	190	210	170	160	150	150	119
100	90	10	120	140	100	60	90	50	30	70	90
120	-S	-S	+S	±S	110	130	120	110	140	80	—
110	110	120	100	130	150	180	200	160	130	100	123
130	100	140	160	140	110	150	140	130	90	60	130
20	10	30	-50	-20	70	10	-230	-100	-80	-70	-16
-70	-80	-60	-50	0	-100	-60	-90	-90	-100	10	-80
-80	-60	-50	-50	-50	-10	40	100	80	40	30	-44
130	140	110	80	90	110	170	160	210	120	100	99
77	76	80	84	91	83	89	78	75	70	64	63
28	28	28	29	29	30	29	28	28	28	28	



December

Hour GMT Day	0	1	2	3	4	5	6	7	8	9	10	11	12
1.	140	110	110	110	120	130	160	120	[150]	130	110	100	110
2.	30	30	60	40	60	40	140	30	—	[120]	50	30	130
3.	—	—	—	—	—	—	—	—	—	—	—	[—70]	—100
4.	—40	—10	—50	—50	—40	—60	—40	—40	—70	—40	—50	[—40]	—100
5.	—10	—40	—20	—40	—50	—50	—20	0	[—40]	—	—	30	—60
6.	—30	—10	10	—10	0	30	—70	—80	—100	—100	[—90]	—140	—110
7.	—80	—80	—80	—70	—80	—80	—70	—80	—90	[—100]	—80	—50	—30
8.	110	100	130	170	110	110	100	90	100	70	70	[60]	60
9.	—60	—50	20	40	60	10	10	10	—	[10]	0	100	60
10.	190	180	190	150	100	80	110	150	+S	+S	310	320	310
11.	140	120	180	220	180	210	120	160	[210]	[290]	270	300	290
12.	160	110	70	140	160	120	100	180	[250]	[210]	220	210	240
13.	120	60	30	100	130	170	170	170	170	[300]	290	270	310
14.	100	110	50	80	20	10	0	60	[0]	[20]	10	0	50
15.	40	—10	—20	10	—40	—80	—40	10	—40	[—40]	30	20	30
16.	—80	—100	—120	—120	—120	—100	—100	—70	—	—	—140	—120	—140
17.	—70	20	40	+S	±S	+S	±S	±S	—S	[20]	[—60]	—100	—100
18.	50	90	130	80	100	10	±S	—S	—S	[—100]	—60	—S	90
19.	10	10	10	10	10	10	100	180	[200]	—	90	+S	+S
20.	50	40	110	130	140	190	190	220	170	—	190	180	170
21.	—70	—10	30	120	130	200	210	[230]	[210]	220	+S	+S	+S
22.	90	80	80	90	70	110	120	120	—	—	160	160	160
23.	—S	—S	+S	+S	110	80	60	+S	+S	±S	±S	+S	—S
24.	80	60	80	±S	80	80	90	120	140	130	60	120	160
25.	100	100	100	110	70	50	50	50	+S	50	50	50	50
26.	50	30	50	90	120	50	30	50	90	110	130	160	160
27.	100	80	50	50	50	50	40	±S	+S	90	90	110	140
28.	70	50	50	[50]	50	60	80	[110]	+S	+S	[150]	90	70
29.	210	190	130	80	110	110	40	20	160	150	—	120	180
30.	—50	50	—20	—70	40	50	0	—10	[20]	10	—60	—70	—100
31.	30	20	30	90	60	50	70	70	10	20	30	70	90
Means	48	46	49	59	60	57	59	72	81	71	68	71	76
Number of days	29	29	29	27	29	29	28	26	19	22	26	27	28

13	14	15	16	17	18	19	20	21	22	23	Daily means
110	90	100	110	90	70	60	20	50	30	70	100
130	70	140	140	200	180	50	50	70	40	-60	78
-80	0	20	60	-10	-10	-60	-10	-20	-10	10	—
-40	-20	-20	-20	-60	-20	-50	30	30	0	-50	-35
10	20	130	140	140	120	100	40	-30	70	-10	—
-40	-40	-70	-70	-50	-50	-60	-60	-70	-90	-80	-58
-40	-50	-50	30	70	80	70	130	80	40	40	-24
60	50	30	20	70	60	10	-10	-60	-40	-30	60
170	140	120	190	250	240	270	210	190	60	100	93
350	300	310	300	300	240	220	140	220	200	180	—
260	220	180	190	290	220	160	120	140	150	160	199
200	200	220	210	240	260	260	240	210	180	190	191
+S	+S	+S	+S	+S	240	210	160	150	180	150	—
-10	60	30	10	0	10	-10	-10	-10	-40	-10	22
10	30	-20	-40	50	-50	-40	-70	-100	-120	-120	-25
-120	-120	-120	-170	-170	-220	-270	-220	-240	-290	-120	—
-100	30	50	140	+S	±S	±S	±S	±S	+S	120	—
-S	-S	-S	-S	-S	-50	-20	-70	-100	30	-20	—
270	+S	+S	+S	+S	0	-100	0	50	30	50	—
180	200	180	190	200	180	190	200	190	210	10	161
+S	+S	140	130	-10	80	10	0	220	+S	110	—
140	160	140	150	+S	160	110	90	70	90	100	—
-S	±S	150	90	100	40	-50	70	110	50	70	—
130	130	130	150	130	150	±S	±S	50	50	100	—
90	160	110	150	200	60	50	50	130	150	140	92
180	150	140	140	150	160	210	130	100	50	60	108
170	130	100	130	90	130	200	210	130	110	90	—
120	130	0	10	110	170	170	200	160	130	140	—
140	140	170	130	160	170	130	90	-30	-10	-60	110
-60	-80	-70	-140	-130	-160	-60	-10	60	90	90	-28
90	140	150	150	150	190	+S	170	150	150	140	92
86	86	85	90	98	88	63	65	63	51	50	68
27	26	28	28	26	30	28	29	30	29	31	

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

Hour GMT	0	1	2	3	4	5	6	7	7	8	9	10	11
Month													
January	+	6	17	10	0	0	0	2	4	137	2	4	0
	-	15	32	13	3	6	0	1	1	8	0	0	1
February	+	1	1	31	33	0	0	0	0	0	0	0	0
	-	0	0	11	17	0	0	0	0	0	0	0	0
March	+	127	0	11	0	2	17	0	0	1	0	0	8
	-	47	0	2	33	10	0	0	0	0	0	8	24
April	+	0	0	0	0	0	0	0	0	0	0	0	0
	-	0	0	0	0	0	0	0	0	0	0	0	0
May	+	1	5	0	0	43	8	0	0	0	2	1	0
	-	11	5	0	7	28	2	0	23	0	0	1	0
June	+	46	1	0	0	0	0	0	0	0	0	62	150
	-	0	34	0	0	0	0	54	10	35	0	55	83
July	+	38	30	8	1	0	1	1	1	1	2	8	0
	-	68	98	25	9	0	0	1	1	1	0	35	0
August	+	0	6	16	0	0	0	1	10	16	0	0	2
	-	0	3	9	0	0	0	1	121	9	0	0	0
September	+	0	0	4	0	48	15	18	38	41	27	34	18
	-	0	0	21	19	1	15	21	13	40	6	90	6
October	+	0	0	0	0	1	0	0	0	0	0	0	0
	-	0	0	0	0	2	0	0	0	0	0	0	0
November	+	0	0	1	0	0	0	0	0	2	26	52	28
	-	0	1	0	0	0	0	0	0	1	10	16	61
December	+	0	0	0	0	2	0	5	19	1	0	3	0
	-	0	0	0	8	0	0	2	15	0	4	2	0

*charges transported by point-discharge for each month*

12	13	14	15	16	17	18	19	20	21	22	23	Means
4	3	8	15	10	17	9	3	0	0	5	6	10,9
0	0	10	4	28	25	8	1	1	5	15	8	7,7
11	9	0	1	58	0	0	0	7	0	0	0	6,3
0	0	0	0	16	0	0	0	0	0	0	0	1,8
51	12	1	11	1	17	0	18	0	0	0	34	13,0
25	16	0	95	0	0	0	0	8	0	0	9	11,5
6	4	4	3	0	0	1	8	25	79	32	63	9,4
16	0	83	98	1	39	8	10	25	32	55	12	15,8
0	6	11	31	53	112	61	31	65	9	16	9	19,3
4	4	35	47	45	48	71	84	46	16	15	19	21,3
78	128	22	2	2	0	35	142	1	10	2	1	28,4
268	87	85	124	28	0	28	110	22	31	0	0	44,1
0	29	3	72	133	15	92	64	48	32	78	73	30,4
0	30	19	118	128	122	50	96	112	105	98	44	48,3
0	4	36	25	29	83	140	161	111	28	12	9	28,7
12	13	67	109	122	97	239	175	110	39	22	4	48,0
8	0	0	0	0	13	0	0	0	0	0	0	11,0
3	0	0	0	0	16	0	0	0	0	0	0	10,5
0	0	28	10	0	0	2	0	0	0	2	0	1,8
0	0	3	12	0	0	0	0	0	0	3	0	0,8
0	2	0	0	0	0	0	0	0	0	0	0	4,6
4	0	0	0	0	0	0	0	0	0	0	0	3,9
0	0	0	0	0	1	22	62	1	0	5	0	5,0
0	5	3	1	11	0	34	47	1	0	4	0	5,7