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DET NORSKE INSTITUTT FOR KOSMISK FYSIKK
Nr. 55

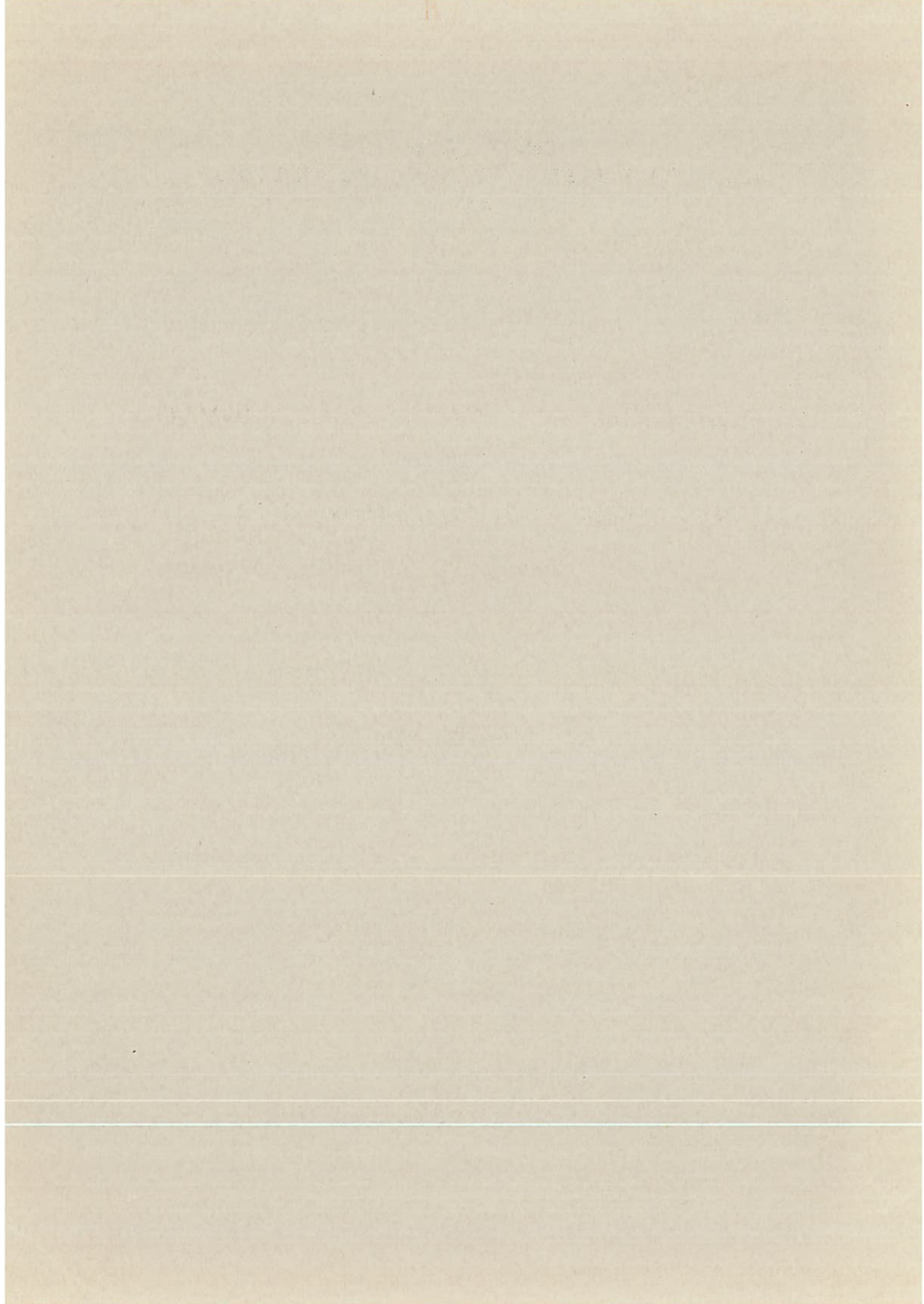
THE AURORAL OBSERVATORY AT TROMSØ

($\varphi = 69^{\circ} 39'.8$ N, $\lambda = 18^{\circ} 56'.9$ E Gr.)

MAGNETIC OBSERVATIONS 1964

1966

A.S JOHN GRIEGS BOKTRYKKERI, BERGEN



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EARTH MAGNETISM, 1964 TROMSØ

GENERAL REMARKS

The instrumental equipment used for the magnetic measurements and registrations is the same as that previously used, a description of which is given in No. 1 and No. 33 of the present series of publications.

The observations were made by S. Berger and the calculation work by Ingegerd Walnum and Karin Bertheussen.

SCALE-VALUES

The following scale-values were determined:

- D — curves: 1'.45 or 4.73 γ per mm.
- H — curves: 5.27 γ per mm.
- V — curves: 7.25 γ per mm.

EXPLANATION OF THE TABLES

The hourly mean values of the components are centered at half hours Gr. M. T. The column headed *M* gives the diurnal means. *R* designates the range, i. e. the difference between the maximum and minimum value measured on the magnetogram. The horizontal line *M* gives the monthly means of the hourly values, and the line marked *QM* gives the monthly means of estimated quiet hourly values. In addition to the main tables, resuming tabels and figures are given at the end of the year-book.

The "Storminess" tables earlier given have been omitted.

EARTH MAGNETISM 1964 BEAR ISLAND

$$\varphi = 74,5^{\circ}\text{N. } \lambda = 19,2\text{E.}$$

Absolute measurements were made by S. Berger in June.

By means of the registrations we may give some approximate annual values for 1964.

$$D = 2^{\circ}43'\text{E, } H = 9240\gamma, V = 52330\gamma.$$

For comparison we print the *K* indices of Bear Island and Tromsø side by side.

K-INDICES FOR THREE-HOUR INTERVAL 1964

Tromsø

Range 2000 γ for K = 9. Scale values: D = 4,73 γ . H = 5,27 γ . V = 7,25 γ .

Date	Jan.	Feb.	Mar.	Apr.	May	Jun.
1	1001 1222	4322 2255	2001 1120	0002 4667	5443 4334	1100 2213
2	1556 6565	5121 3310	0000 0002	5433 3565	4323 3334	1110 2133
3	5333 3466	0000 1013	2011 1136	5523 2225	4302 1123	1112 1000
4	4533 3354	0122 4334	6654 5766	4313 2235	1001 1121	0012 2211
5	3221 2344	2210 0336	6543 5566	4211 1215	3222 2110	1000 1111
6	3201 1032	5454 4455	5323 3543	5111 3343	0011 1230	0002 3201
7	0002 3232	2423 2446	5312 2365	3224 3254	1211 1100	0001 1014
8	2000 0255	4201 2457	4523 4255	3224 3254	0000 0000	3122 2132
9	4312 1355	6423 4335	5532 1000	4322 3310	0101 1210	2222 3412
10	6330 3324	4120 1144	0000 2463	1112 2002	2111 5556	5754 4246
11	4312 2233	3100 0003	1022 2232	1214 4454	6632 2223	6444 4355
12	4200 0022	1022 2434	6742 2422	1010 1121	2101 1200	4423 3335
13	2300 0023	5644 4665	3312 2144	2100 1211	0001 5554	3333 3233
14	1000 0011	2312 2234	2021 2253	1011 2101	2322 5533	2222 3124
15	0000 0123	3101 2131	3310 2344	0003 3346	3643 3345	5111 1103
16	3224 4664	1001 1232	5211 2222	5312 2332	5433 4253	3111 1021
17	5433 3133	1000 2340	1233 2223	5533 4355	3122 3425	0111 1111
18	3322 0241	0001 1433	1 1020	0113 4545	4122 2100	0002 3245
19	0000 2344	0000 0000	0000 1112	5324 3376	1211 1222	1000 0245
20	5100 1212	0001 3556	0011 2253	4232 2356	2011 2210	5513 4363
21	1100 0001	4422 2342	5331 1134	6222 3643	0002 2234	6323 2351
22	2000 0220	0101 3554	3112 5566	1011 1112	2011 3233	1101 1334
23	0000 0313	3000 0332	5544 3455	1100 1022	2211 1115	3113 2234
24	2220 4335	0001 2235	3433 4663	0002 1101	5633 3456	4000 0143
25	5121 0265	2212 2584	5432 3375	2013 3345	4134 4555	3422 2111
26	3210 1144	4533 4205	5322 2222	4322 2244	5110 3212	1122 2323
27	2000 0033	5211 2365	2000 0001	3323 5577	4333 3224	1001 2223
28	0110 2044	4343 3432	0000 0000	7445 3346	2212 2334	1112 4333
29	4433 4344	2312 0144	0000 1121	6432 2242	2211 2124	2212 3400
30	4212 2214		1344 4555	1001 2356	3112 2125	0102 1001
31	1003 5655		5000 1022		2211 1101	
Date	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	1100 1110	4301 2125	5532 2436	4232 2322	2221 3556	2111 2233
2	0001 1101	0010 1025	5213 3153	3100 1241	5432 1115	1000 0033
3	2233 4345	4211 2211	5211 2264	1111 4434	4210 1200	1000 1251
4	6332 2113	7553 4335	2113 2145	5544 2666	0211 3125	0000 0320
5	3212 1234	4323 3455	4311 3212	5542 3445	4111 1352	1000 0000
6	3312 2122	4421 1104	2011 2156	4221 3356	2101 1132	0000 0042
7	3412 5356	6432 4324	4224 3467	6432 2255	0000 0002	0000 2445
8	3533 3356	3111 1023	5443 3454	3232 3555	2111 1154	3220 1120
9	5322 2256	2212 3343	3423 3346	5343 2244	5433 3355	0101 0024
10	6433 3321	2010 1012	6311 2244	4011 2120	4321 2032	1000 0010
11	5313 2232	6433 4455	4311 1102	0000 1255	1112 1023	0000 0020
12	2122 2213	5432 3243	1101 0032	1014 4444	3211 2265	0000 0013
13	2213 3222	3212 2245	0001 0032	4312 2333	0211 2201	1000 1352
14	1112 1110	3102 1133	0000 0002	4312 2002	0000 0110	2011 2344
15	0011 0110	3100 0034	1010 0100	3111 1433	0001 5445	3220 0122
16	0211 2224	3111 1130	1112 5553	3100 0234	5343 2234	3212 5134
17	4213 3443	3311 2221	4322 3244	3111 3431	4110 1213	6432 2244
18	6533 3444	2102 2332	3201 2124	1222 5446	0110 0223	4210 0023
19	3223 2246	0012 1334	2010 1100	6332 5665	3110 0011	3100 2353
20	3235 2231	2000 1144	0000 0023	5222 2354	0101 1001	1001 0034
21	3212 2345	0011 2231	1001 0144	3323 3465	0000 1012	2000 0222
22	2223 3454	4413 3134	5632 3344	3211 0100	2001 1235	3000 0003
23	4032 1142	3000 1101	2233 1013	0000 0021	4334 5533	2010 0114
24	1000 0111	0000 0130	2203 2263	0001 0125	3100 1000	0000 0132
25	1002 2222	2210 2443	4100 1112	5110 0003	0000 0013	0000 0044
26	2011 2200	4221 3225	2012 1001	3224 2243	0212 5534	3000 2111
27	0001 1012	4422 3222	0000 1226	2102 3242	3000 0053	0000 0002
28	0000 1010	0000 1122	5433 4664	3101 1253	3322 1442	1000 0043
29	1013 5443	0001 1234	2122 2105	2301 1224	0000 0125	1010 0100
30	5323 4244	1011 0122	4443 4545	4210 1111	5211 1124	2000 0001
31	4222 2224	1133 3255		1000 0003		0000 0020

K-INDICES FOR THREE-HOUR INTERVAL 1964

Bear Island

Range 2000 for K = 9. Scale values: D = 14,3 γ. H = 17,0 γ. V = 14,9 γ.

Date	Jan.	Feb.	Mar.	Apr.	May	Jun.
1			3221 2143	1122 4667	4455 4425	1211 2233
2	— — -673		0000 1011	4444 3655	3333 3345	2222 2232
3	4444 4665		2123 3316	4544 4655	4424 2234	2112 2222
4	4543 4565	— — 3242	6655 5775	5333 3342	3222 1131	2112 2232
5	4333 2244	3311 0316	5555 6577	3334 3355	3324 4332	2121 2331
6	2313 4443	5554 5466	4444 3653	3321 3233	1122 2231	1112 2223
7	3100 3241	3444 1555	4323 3355	3232 4463	2332 2231	1112 2123
8	3321 — —	3312 3357	5543 3443	32— 433—	0021 2000	3223 2123
9		4344 4545	4544 1223	3433 43—	1121 3321	2222 3422
10		3331 2355	0011 3544	—23 3122	2232 4565	3555 4354
11		3202 2004	2244 2443	112— —2	5543 3211	4434 3344
12		2234 3654	3423 4543	2222 — —	1222 3211	4333 2343
13		2554 5654	— — 3234	— — 2322	0022 4—	3323 3233
14		1334 — —	2233 3464	1122 3212	2334 3332	2323 2233
15		— — 3242	3431 3562	1114 3446	3544 -344	4210 2023
16			5323 3310	6222 3443	5554 5453	3201 2131
17			2344 3320	4654 3252	2234 4244	0111 1111
18			1012 2131	1124 4643	2223 2222	2000 3133
19			0000 0033	4434 4547	2222 2332	1010 0333
20			1123 3353	3343 2566	2122 2231	4412 4341
21			5343 2133	5233 2122	2122 2233	
22			2224 4467	5534 1222	2122 2142	
23			4454 3662	3222 2144	2222 2224	
24			3544 4752	1102 2211	4633 34-4	
25			3543 3564	3124 3354	3225 44-3	
26			4434 3232	4433 2333	4222 -232	
27			1011 1120	4534 3655	4433 2234	
28			1002 1021	7554 4364	3311 2333	
29			0000 3243	6534 4462	-9— — —	
30			3544 2443	2111 3445	2323 2234	
31			1013 5622		3222 2224	
Date	July	Aug.	Sep.	Oct.	Nov.	Dec.
1		3243 2211	4443 3635	4333 — —		
2		2211 2233	4333 4254	— — 2353		
3		3321 3431	4422 4453	2212 — —		
4		4554 4555	3333 3244	— — 3356		
5	4323 2344	4434 3554	3432 3323	6672 3215		
6	4323 2234	4531 1123	3122 4346	3653 — —		
7	2433 4455	5544 4433	4334 4556			
8	3545 4364	1221 2344	4555 3764			
9	4433 2344	4533 4443	4534 2254			
10	4444 4332	3121 2232	3553 2354			
11	4423 4343	5434 3444	4432 2103			
12	3233 3333	4433 4354	2221 1112			
13	4233 4342	3332 3245	2022 1243			
14	1223 3232	4121 2243	2021 1113			
15	2121 1222	3221 1144	2021 1101			
16	2213 2335	3222 3334	2322 4444			
17	4434 3543	4321 3322	3423 3255			
18	5635 5542	3312 3342	3322 3144			
19	3334 3246	0124 3344	3131 3111			
20	4334 3242	3121 3344	1021 1134			
21	3322 3343	2122 2232	2022 2123			
22	2334 4454	2111 3343	4632 2254			
23	3223 2152	5434 2111	3343 2124			
24	2112 3112	1121 1142	2333 3272			
25	3223 3332	3421 3443	3322 0123			
26	2621 3232	4331 3335	2123 1111			
27	1122 2333	4433 3331	1021 2225			
28	3222 1224	1121 2143	4433 5873			
29	4464 4444	3122 3334	3333 3224			
30	4265 3333	3122 2214	4554 3774			
31	3353 4422	2324 3355				

OBSERVATIONS 1964

DAILY SUM OF K-INDICES 1964.

Tr. means Tromsø. B.I. means Bear Island.

Date	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sep.		Oct.		Nov.		Dec.	
	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.
1	9	-	25	-	7	18	25	29	30	33	10	15	5	-	16	18	30	32	20	-	26	-	15	-
2	39	-	16	-	2	3	34	35	25	27	12	17	4	-	9	33	23	31	12	-	22	-	7	-
3	33	37	5	-	15	21	32	37	16	25	6	14	26	-	14	20	23	28	19	-	10	-	10	-
4	30	36	19	-	45	46	24	24	7	15	9	15	21	-	35	37	19	25	38	-	15	-	5	-
5	21	25	17	18	40	45	23	29	13	24	5	15	18	-	25	32	17	23	32	-	18	-	1	-
6	12	24	36	40	28	33	18	20	8	14	8	14	16	-	27	20	18	25	26	-	11	-	6	-
7	12	14	27	31	27	28	21	27	7	18	7	14	29	-	28	32	32	34	29	-	2	-	15	-
8	14	-	25	27	30	31	25	-	0	5	16	20	31	-	12	19	30	37	28	-	16	-	9	-
9	24	-	30	33	16	25	18	-	6	14	18	19	27	-	20	30	28	29	27	-	17	-	2	-
10	24	-	17	25	15	18	9	-	26	29	37	34	25	-	7	16	23	31	11	-	17	-	2	-
11	20	-	7	13	14	25	25	-	26	24	35	29	21	-	34	31	13	19	13	-	11	-	2	-
12	10	-	19	30	29	28	7	-	7	14	27	25	15	-	26	30	4	12	22	-	22	-	4	-
13	10	-	40	36	20	-	8	-	20	-	23	22	17	-	21	25	6	16	21	-	9	-	12	-
14	3	-	19	-	17	27	7	14	25	23	18	20	8	-	14	19	2	11	14	-	2	-	17	-
15	6	-	12	-	20	27	19	24	30	30	13	14	4	-	11	18	3	8	17	-	19	-	12	-
16	31	-	10	20	17	20	21	26	29	36	10	13	14	-	21	22	23	28	13	-	26	-	21	-
17	25	-	10	-	18	21	33	31	22	25	7	7	24	-	15	20	24	27	17	-	13	-	27	-
18	17	-	12	14	-	11	23	25	12	17	16	11	32	-	35	21	16	22	26	-	9	-	12	-
19	13	-	0	10	5	6	33	35	12	18	12	11	24	-	28	21	5	14	36	-	7	-	17	-
20	12	-	20	24	14	21	27	32	9	15	30	23	21	-	12	20	5	13	25	-	4	-	9	-
21	3	-	23	32	21	24	27	20	13	16	25	-	22	-	10	12	11	14	29	-	4	-	8	-
22	6	-	19	26	29	31	8	24	15	16	16	-	25	-	23	18	30	28	8	-	14	-	6	-
23	7	-	11	22	35	34	7	20	14	18	19	-	16	-	6	21	15	21	3	-	30	-	9	-
24	21	-	13	15	32	34	5	10	35	27	12	-	4	-	4	13	20	25	9	-	5	-	6	-
25	22	-	26	27	32	33	21	25	31	23	18	-	11	-	21	24	10	17	10	-	3	-	8	-
26	16	-	26	27	20	25	23	25	15	17	16	-	8	-	21	25	7	12	22	-	22	-	8	-
27	8	-	25	32	3	7	35	55	24	25	11	-	5	-	21	24	11	15	16	-	11	-	2	-
28	12	-	17	25	5	12	24	34	15	-	14	-	2	-	6	15	35	37	16	-	21	-	8	-
29	29	-	17	25	0	7	36	38	19	19	18	-	21	-	11	21	15	23	15	-	8	-	3	-
30	18	-	25	25	31	29	18	21	17	21	5	-	27	-	8	16	37	39	11	-	17	-	3	-
31	25	-	-	-	10	20	10	18	9	19	23	-	20	-	23	27	9	39	4	-	23	-	2	-

MONTHLY AND ANNUAL MEANS OF MAGNETIC ELEMENTS 1964.

Tromsø

Month	All days			Five Quiet			Five disturbed		
	D	H	V	D	H	V	D	H	V
	0°E+	11100+	51000+	0°E+	11100+	51000+	0°E+	11100+	51000+
Jan.	4.0	138	97	2.5	150	105	4.5	115	85
Feb.	3.7	136	95	2.8	148	101	5.0	124	92
Mar.	4.0	122	95	2.4	143	99	4.6	98	91
Apr.	4.2	125	86	1.7	149	82	8.2	98	94
May	3.1	140	89	1.8	152	85	3.6	126	94
Jun.	2.3	149	79	1.6	153	81	5.0	124	83
Jul.	2.8	142	78	2.1	155	77	3.0	131	84
Aug.	3.1	139	77	3.2	149	75	4.8	116	80
Sep.	5.5	130	83	2.8	151	82	7.2	111	83
Oct.	4.3	138	86	4.0	147	85	8.3	120	73
Nov.	3.4	151	90	3.3	154	92	4.4	146	80
Dec.	3.4	155	97	3.1	156	95	4.7	150	91
Year	3.7	139	88	2.5	151	88	5.3	122	86

ANNUAL MEANS OF THE MAGNETIC ELEMENTS

1930—1964

Year	D	H	V
1930	4°7'.7W	115 67	—
31	3°59.6	49	501 98
32	49.0	114 99	95
33	37.3	72	502 03
34	25.9	41	23
35	14.3	07	47
36	4.8	113 79	76
37	2°53.7	50	503 08
38	44.1	25	40
39	35.0	112 97	62
40	26.6	78	81
41	16.6	56	504 17
42	10.6	44	24
43	2.5	22	49
44	1°54.3	13	67
45	45.7	111 99	505 03
46	34.6	79	54
47	26.5	74	85
48	18.4	56	94
49	10.5	53	506 12
50	3.6	52	47
51	0°54.1	43	93
52	43.9	44	507 11
53	36.0	53	24
54	29.1	65	44
55	24.0	72	76
56	18.1	73	508 25
57	15.9	82	68
58	12.7	94	509 02
59	8.1	96	35
1960	3.9	97	80
61	2.1	112 14	510 04
62	-0.1	17	37
63	-3.9	22	65
64	-3.7	39	88

TABLES

Tromsø. Declination. D = 0° E + Tabular Quantities expressed in Tenths of Minutes.

Gr. M. T.

Table for JULY 1964 showing hourly mean values for days 1-31. Columns include Day, 24 hours of values, M, and R.

Table for AUGUST 1964 showing hourly mean values for days 1-31. Columns include Day, 24 hours of values, M, and R.

Table for SEPTEMBER 1964 showing hourly mean values for days 1-30. Columns include Day, 24 hours of values, M, and R.

Tromsø.

Declination, D = 0° E + Tabular Quantities expressed in Tenths of Minutes.

G. M. T.

OCTOBER 1964

HOURLY MEAN VALUES

Table for October 1964 showing hourly mean values for days 1-31. Columns include Day, hours 1-23, M, and R. Values range from approximately -31 to 40.

NOVEMBER 1964

Table for November 1964 showing hourly mean values for days 1-30. Columns include Day, hours 1-23, M, and R. Values range from approximately -31 to 46.

DECEMBER 1964

Table for December 1964 showing hourly mean values for days 1-31. Columns include Day, hours 1-23, M, and R. Values range from approximately -31 to 46.

Tromsø. Horizontal Intensity. H = 11100 + Tabular Quantities expressed in Gamma. Gr. M. T.

JANUARY 1964 HOURLY MEAN VALUES. Table with columns for DAY (1-31) and hours (1-24), plus summary rows M and QM.

FEBRUARY 1964 HOURLY MEAN VALUES. Table with columns for DAY (1-29) and hours (1-24), plus summary rows M and QM.

MARCH 1964 HOURLY MEAN VALUES. Table with columns for DAY (1-31) and hours (1-24), plus summary rows M and QM.

Tromsø.

Vertical Intensity. V = 51000 + Tabular Quantities expressed in Gamma.

Gr. M. T.

APRIL 1964

HOURLY MEAN VALUES

Table for April 1964 showing hourly mean values for vertical intensity. Columns include DAY (1-30), hours (1-24), M, and R. Values range from approximately 88 to 390 gamma.

MAY 1964

Table for May 1964 showing hourly mean values for vertical intensity. Columns include DAY (1-31), hours (1-24), M, and R. Values range from approximately 460 to 310 gamma.

JUNE 1964

Table for June 1964 showing hourly mean values for vertical intensity. Columns include DAY (1-30), hours (1-24), M, and R. Values range from approximately 80 to 380 gamma.

Tromsø.

Vertical Intensity. $V = 51000 +$ Tabular Quantities expressed in Gamma.

Gr. M. T.

OCTOBER 1964

HOURLY MEAN VALUES

Table for October 1964 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-23), and monthly totals (M, R). Values range from approximately -58 to 152.

NOVEMBER 1964

Table for November 1964 showing hourly mean values for vertical intensity. Columns include Day (1-30), hours (1-23), and monthly totals (M, R). Values range from approximately -60 to 348.

DECEMBER 1964

Table for December 1964 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-23), and monthly totals (M, R). Values range from approximately 80 to 174.

Resuming Tables.

Diurnal Variation.
QUIET VALUES.

Declination. Unit Gamma. + East.

1964	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
JANUARY	5	4	2	1	1	1	1	1	0	-2	-4	-6	-7	-7	-5	-4	-3	-3	-3	-1	2	6	6	5
FEBRUARY	3	4	5	6	6	5	4	3	1	-2	-5	-8	-9	-9	-7	-3	-1	1	2	3	3	4	4	3
MARCH	5	7	9	11	13	13	9	4	-1	-5	-8	-9	-10	-9	-7	-4	-1	-1	-4	-4	-3	-1	1	3
APRIL	6	9	12	14	16	17	16	12	4	-4	-11	-16	-15	-12	-8	-5	-4	-6	-8	-8	-5	-1	2	4
MAY	9	13	16	19	19	17	13	7	1	-7	-14	-17	-15	-10	-5	-2	-4	-7	-9	-9	-7	-3	1	5
JUNE	8	13	18	23	26	27	23	16	6	-5	-14	-18	-18	-16	-13	-11	-12	-14	-16	-15	-11	-7	-1	6
JULY	10	14	18	21	23	24	23	18	10	0	-10	-18	-21	-21	-18	-14	-10	-10	-12	-12	-9	-5	0	5
AUGUST	6	9	12	15	17	18	17	13	6	-4	-12	-16	-17	-14	-10	-7	-5	-6	-8	-7	-5	-2	0	3
SEPTEMBER	5	7	9	10	11	12	11	8	3	-2	-8	-12	-14	-14	-11	-8	-4	-3	-4	-3	-2	-1	1	3
OCTOBER	3	4	5	6	6	5	4	2	0	-3	-6	-8	-8	-7	-6	-5	-4	-4	-3	0	2	3	3	3
NOVEMBER	4	5	6	6	5	4	2	0	-1	-2	-3	-4	-5	-4	-3	-2	-2	-1	0	2	3	4	4	4
DECEMBER	5	5	4	2	1	0	0	0	-1	-2	-3	-4	-4	-3	-2	-2	-2	-1	-1	0	2	4	5	5
MEAN	6	8	10	11	12	12	10	7	2	-3	-8	-11	-12	-11	-8	-6	-5	-5	-6	-5	-3	0	2	4

Horizontal Intensity. Unit Gamma.

JANUARY	-4	-4	-2	0	3	4	3	1	-1	-2	-3	-2	0	3	5	4	3	3	3	2	0	-1	-2	-3
FEBRUARY	-1	-1	0	1	2	4	4	2	-1	-3	-5	-5	-2	2	3	2	2	2	1	0	-1	-1	-1	-1
MARCH	3	3	4	5	5	3	-2	-7	-16	-19	-18	-12	-6	-1	3	5	6	7	7	6	5	4	3	3
APRIL	6	7	7	6	4	0	-5	-12	-17	-19	-17	-13	-8	-4	0	4	7	9	10	10	8	5	4	5
MAY	6	7	8	8	5	1	-3	-7	-11	-11	-9	-6	-2	1	5	8	12	15	18	18	14	11	8	7
JUNE	3	4	6	5	2	-2	-7	-12	-17	-18	-16	-12	-7	-2	4	10	14	15	14	11	8	5	3	2
JULY	1	3	4	3	1	-1	-3	-7	-10	-13	-16	-17	-15	-7	-1	6	12	16	17	15	10	3	-2	-1
AUGUST	1	2	3	4	3	0	-5	-10	-14	-16	-15	-10	-3	3	0	11	11	10	8	6	4	3	2	1
SEPTEMBER	1	2	3	4	4	3	0	-5	-10	-14	-15	-13	-8	-4	0	3	6	8	9	9	7	5	3	1
OCTOBER	-1	0	2	4	6	7	5	0	-5	-9	-11	-9	-4	0	3	4	5	5	4	3	1	-1	-2	-2
NOVEMBER	-3	-2	-1	1	3	4	3	0	-3	-4	-4	-2	0	2	3	4	4	3	2	1	0	-1	-2	-3
DECEMBER	-3	-2	-1	0	1	2	3	2	0	-2	-3	-2	-1	0	2	3	3	2	1	0	-1	-2	-3	-4
MEAN	1	2	3	3	3	2	-1	-5	-9	-11	-11	-9	-5	-1	3	5	7	8	8	7	5	3	1	0

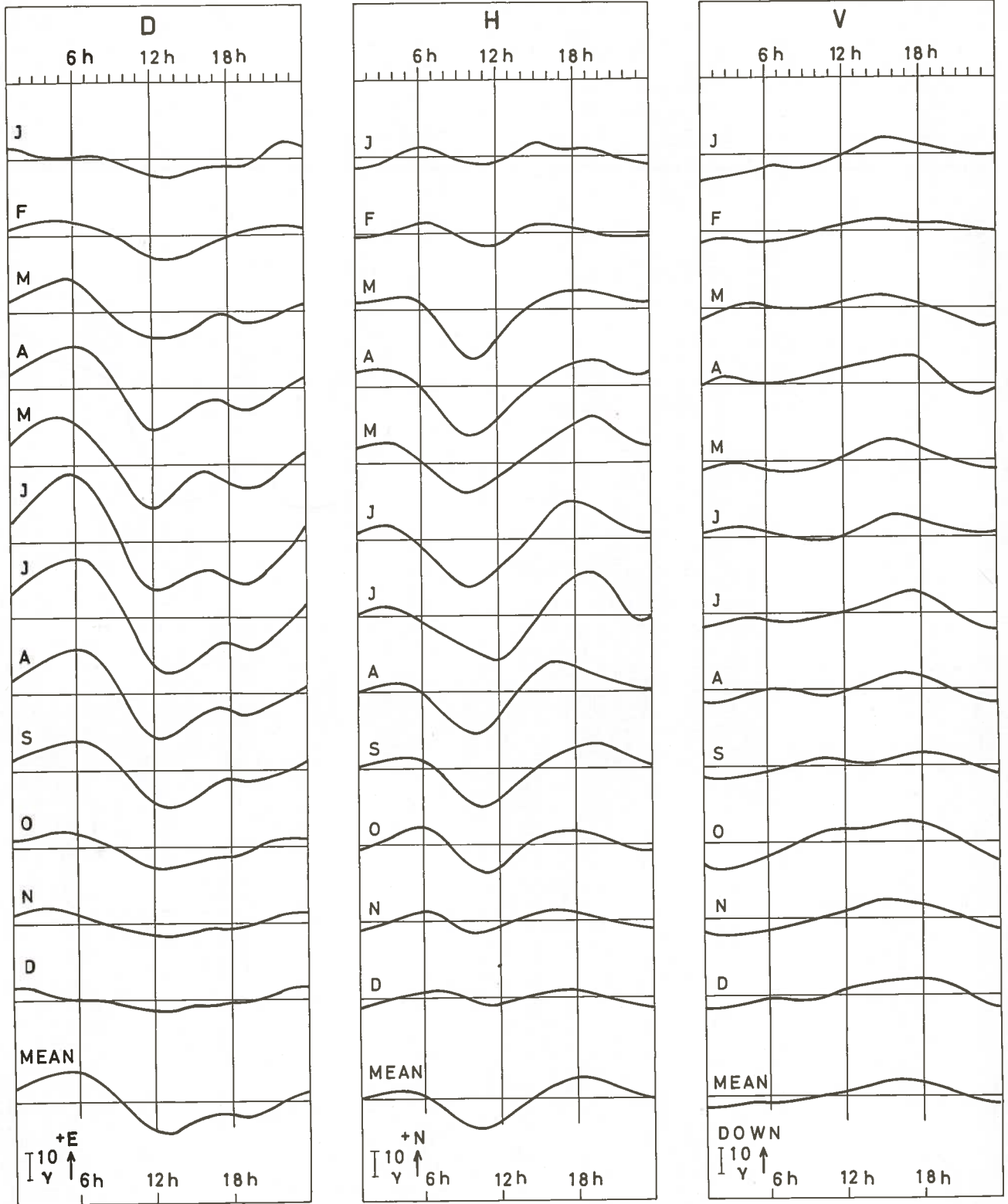
Vertical Intensity. Unit Gamma.

JANUARY	-10	-9	-8	-7	-6	-5	-4	-5	-5	-4	-2	0	2	4	5	5	5	4	3	2	1	0	0	0
FEBRUARY	-4	-3	-3	-3	-4	-4	-3	-2	-1	0	1	2	3	4	4	4	3	3	3	2	1	0	0	0
MARCH	-4	-2	0	1	2	1	0	0	0	0	1	2	3	4	5	4	3	2	0	-2	-4	-6	-7	-6
APRIL	0	2	3	2	1	0	2	3	4	5	6	7	8	9	10	11	10	6	2	-2	-4	-4	-4	-2
MAY	-3	-2	-1	-1	-2	-3	-4	-4	-3	-2	-1	1	3	6	8	9	7	5	3	1	0	-1	-2	-3
JUNE	2	3	4	4	3	2	1	0	-1	-1	-1	0	2	5	8	9	8	7	5	4	3	2	2	2
JULY	-5	-4	-3	-2	-2	-3	-3	-2	-1	0	1	2	3	5	7	9	8	6	3	-1	-2	-5	-6	
AUGUST	-5	-5	-4	-2	-1	0	0	-1	-2	-2	-1	1	3	5	6	6	5	3	1	-1	-3	-4	-5	
SEPTEMBER	-4	-5	-5	-4	-3	-2	-1	0	2	3	3	2	1	1	2	3	4	5	5	4	2	0	-2	-3
OCTOBER	-9	-10	-10	-9	-7	-5	-3	-1	1	3	5	5	5	6	7	8	8	7	5	3	1	-2	-5	-7
NOVEMBER	-5	-6	-6	-6	-5	-4	-3	-2	-1	0	1	3	5	6	7	7	6	5	4	3	1	-1	-3	-4
DECEMBER	-5	-5	-4	-3	-2	-1	-1	-2	-2	-1	1	2	3	4	5	6	6	6	5	4	2	-1	-4	-5
MEAN	-4	-4	-3	-3	-2	-2	-2	-1	-1	0	1	2	3	5	6	6	6	6	4	2	0	-1	-3	-3

Monthly Means.

DECLINATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
DIRECT VALUES $D = 0^\circ E + \dots$	4.0	3.7	4.0	4.2	3.0	2.3	2.8	3.1	5.5	4.3	3.4	3.4	3.7
QUIET VALUES $D = 0^\circ E + \dots$	2.1	1.8	1.2	1.8	2.1	2.1	1.5	2.1	2.5	3.1	2.8	2.8	2.2
RANGE (UNIT MINUTES)	40	63	61	102	64	48	66	51	63	67	52	37	60
QUIET RANGE (UNIT γ)	9	15	23	33	35	45	45	35	26	14	11	9	25
HORIZONTAL INTENSITY													
DIRECT VALUES $H = 11100 \gamma + \dots$	138	136	122	125	140	149	142	139	130	138	151	155	139
QUIET VALUES $H = 11100 \gamma + \dots$	149	146	144	145	142	152	152	150	151	151	155	157	150
RANGE (UNIT γ)	372	468	498	516	388	313	388	347	435	433	310	234	392
QUIET RANGE (UNIT γ)	9	9	9	29	29	36	34	27	24	18	8	7	20
VERTICAL INTENSITY													
DIRECT VALUES $V = 51000 \gamma + \dots$	97	95	95	85	89	79	78	77	83	86	90	97	88
QUIET VALUES $V = 51000 \gamma + \dots$	109	100	105	79	84	75	78	80	83	90	95	99	90
RANGE (UNIT γ)	228	316	300	241	260	179	257	203	274	283	232	164	245
QUIET RANGE (UNIT γ)	15	8	12	15	12	10	15	11	9	18	13	11	12

1964



The Quiet Diurnal Variation, smoothed Values.

