

Publikasjoner fra
DET NORSKE INSTITUTT FOR KOSMISK FYSIKK
Nr. 51

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

OBSERVATIONS 1960

1962
A.S JOHN GRIEGS BOKTRYKKERI, BERGEN

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OZONE OBSERVATIONS

The table of ozone values of Tromsø covers 9 months and that of Longyear, Svalbard (78.2° N.) only 7 months.

Sky-observations are possible at Tromsø the whole year and at Longyear say 10 months, but the evaluation of values during the polar night period is too doubtful to be trusted in.

All observations were taken with Dobson Spectrophotometers, at Tromsø by Steinar Berger and at Longyear by H. Welde.

LONGYEAR, SVALBARD.

TABLE OF OZONE VALUES 1960.

Unit 0.001 cm.

M: diurnal mean. N: number of observations. R: diurnal range.

Day	Mar.			Apr.			May			Jun.			Jul.			Aug.			Sep.		
	M.	N.	R.	M.	N.	R.	M.	N.	R.	M.	N.	R.	M.	N.	R.	M.	N.	R.	M.	N.	R.
1	—	—	—	—	—	—	—	—	—	352	3	7	273	2	7	—	—	—	—	—	—
2	—	—	—	—	—	—	—	—	—	318	1	—	—	—	—	—	—	—	—	—	—
3	—	—	—	—	—	—	—	—	—	306	3	12	277	1	—	—	—	—	—	—	—
4	—	—	—	—	—	—	—	—	—	328	1	—	309	3	12	—	—	—	—	—	—
5	—	—	—	—	—	—	—	—	—	305	1	—	—	—	—	—	—	—	—	—	—
6	—	—	—	—	—	—	—	—	—	301	1	—	284	3	6	—	—	—	—	—	—
7	—	—	—	—	—	—	—	—	—	296	1	—	280	3	3	—	—	—	—	—	—
8	—	—	—	—	—	—	—	—	—	305	1	—	284	1	—	—	—	—	—	—	—
9	—	—	—	—	—	—	—	—	—	311	2	1	282	3	21	—	—	—	—	—	—
10	—	—	—	—	—	—	—	—	—	—	—	—	290	3	8	—	—	—	—	—	—
11	—	—	—	—	—	—	—	—	—	303	3	8	290	3	9	—	—	—	—	—	—
12	—	—	—	—	—	—	—	—	345	1	—	296	1	—	289	3	4	—	—	—	—
13	—	—	—	—	—	—	—	—	347	3	10	325	2	2	279	2	5	—	—	—	—
14	—	—	—	—	—	—	—	—	319	3	5	329	3	4	284	2	4	—	—	—	—
15	—	—	—	—	—	—	—	—	334	2	15	323	2	10	—	—	—	—	—	—	—
16	—	—	—	—	—	—	—	—	341	3	11	312	3	9	—	—	—	—	—	—	—
17	—	—	—	—	—	—	—	—	354	3	10	323	2	15	—	—	—	—	—	—	—
18	—	—	—	—	—	—	—	—	359	2	0	298	1	—	—	—	—	—	—	—	—
19	—	—	—	—	—	—	—	—	354	2	4	297	3	9	—	—	—	—	—	—	—
20	—	—	—	—	—	—	—	—	340	3	2	304	3	3	—	—	—	—	—	—	—
21	—	—	—	—	—	—	—	—	—	—	—	326	2	7	—	—	—	—	—	—	—
22	—	—	—	—	—	—	—	—	—	—	—	319	3	15	—	—	—	—	—	—	—
23	—	—	—	—	—	—	—	—	—	—	—	303	3	9	—	—	—	—	—	—	—
24	—	—	—	—	—	—	—	—	362	2	8	288	3	10	—	—	—	—	—	—	—
25	—	—	—	—	—	—	—	—	299	3	8	298	3	6	—	—	—	—	—	—	—
26	—	—	—	—	—	—	—	—	306	1	—	296	3	12	—	—	—	—	—	—	—
27	—	—	—	—	—	—	—	—	366	2	1	289	3	3	—	—	—	—	—	—	—
28	—	—	—	—	—	—	—	—	336	2	9	305	1	—	—	—	—	—	—	—	—
29	—	—	—	—	—	—	—	—	351	3	20	291	3	8	—	—	—	—	—	—	—
30	—	—	—	—	—	—	—	—	345	2	11	276	3	1	—	—	—	—	—	—	—
31	—	—	—	—	—	—	—	—	—	—	—	268	2	7	—	—	—	—	—	—	—
Mean	—	—	—	—	—	—	—	—	339	—	—	303	—	—	285	—	—	—	—	—	—

TROMSØ
TABLE OF OZONE VALUES 1960.

Unit 0.001 cm.

M: diurnal mean. N: Number of observations. R: Diurnal range.

Day	Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.	
	M.	N. R.	M.	N. R.	M.	N. R.	M.	N. R.	M.	N. R.	M.	N. R.	M.	N. R.	M.	N. R.	M.	N. R.
1.	418	1	—	—	379	2 0	428	1	324	1	330	1	253	1	261	1	250	1
2.	420	1	—	—	367	1	410	1	359	1	—	—	242	1	276	1	268	2 2
3.	389	1	392	1	367	1	408	1	367	1	309	1	248	1	278	2 4	316	1
4.	370	1	447	1	339	1	—	—	362	1	303	1	250	1	275	1	333	1
5.	432	1	431	1	300	1	378	1	374	1	305	1	—	—	276	2 1	291	1
6.	382	1	377	1	343	1	360	2 8	362	1	302	1	—	—	282	2 4	234	1
7.	337	1	333	1	394	1	374	1	347	2 14	318	2 1	—	—	292	1	264	1
8.	366	1	355	1	390	1	363	1	382	1	311	2 4	—	—	290	1	286	1
9.	396	1	333	1	344	2 9	341	1	405	1	309	1	—	—	254	2 3	241	1
10.	382	1	362	2	298	1	367	1	366	1	296	1	—	—	272	1	207	1
11.	371	1	385	1	324	1	—	—	349	2 4	294	2 1	—	—	204	1	228	1
12.	—	—	425	2 6	330	2 4	—	—	345	1	307	2 7	—	—	248	1	189	1
13.	404	1	381	1	366	1	359	1	367	1	345	1	—	—	232	2 2	196	1
14.	—	—	400	1	347	1	367	1	351	1	335	1	—	—	241	1	—	—
15.	369	1	441	1	398	1	—	—	359	1	335	1	290	1	224	1	201	1
16.	397	2 8	412	1	394	1	370	1	359	1	335	1	283	1	239	1	218	1
17.	442	2 14	398	1	352	1	364	1	363	1	321	1	277	1	260	2 4	177	1
18.	476	1	435	1	337	1	385	1	—	—	290	1	280	1	—	—	156	1
19.	444	2 2	446	1	340	1	375	1	340	1	313	2 1	—	—	239	1	190	1
20.	452	2 0	386	1	354	1	419	1	333	1	303	2 14	—	—	273	1	196	1
21.	445	1	412	1	362	1	—	—	341	1	351	1	—	—	290	1	241	1
22.	430	2 4	401	1	—	—	—	—	318	2 7	329	1	—	—	254	1	218	1
23.	438	1	306	1	402	2 7	374	2 0	318	2 9	291	1	—	—	287	1	—	—
24.	395	2 10	320	1	350	1	374	1	326	2 9	294	2 8	—	—	242	1	223	1
25.	394	2 4	371	1	360	1	407	1	299	1	290	1	—	—	309	1	220	1
26.	385	1	398	1	360	1	354	1	288	1	304	2 3	—	—	283	1	170	1
27.	403	1	356	1	378	1	359	2 2	290	1	285	2 6	—	—	282	1	201	1
28.	449	1	359	1	432	1	367	1	320	1	285	2 5	—	—	254	1	242	1
29.	435	1	356	1	435	1	354	1	332	1	278	2 9	—	—	284	2 8	252	1
30.	—	—	331	2 2	446	1	367	1	336	1	263	2 7	—	—	250	1	—	—
31.	—	—	362	1	—	—	320	1	345	1	272	1	294	1	—	—	—	—
Mean	408		383		365		373		344		305		272		263		231	

EARTH MAGNETISM, 1960 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 Inger Hagerup.

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.

BASE-LINE VALUES

The determination of the base-line values resulted in the table given below.

The quiet mean Inclination value for 1959 was calculated to 77° 34'.8.

The temperature coefficient for the H-variometer is 8.7 γ , and for the V-variometer \div 2.3 γ per degree Celcius.

OBSERVED AND ADOPTED BASE-LINE VALUES 1960

<i>D</i>			<i>H</i>			<i>V</i>		
Date	Observ.	Adopt.	Date	Observ.	Adopt.	Date	Observ.	Adopt.
II 1.	1°32'.3 W	1°32'.3 W	II 1.	11212	11213	I 10.	50503	50503
III 14.	32.3	32.3	III 11.	16	15	IV 23.	03	03
IV 20.	31.7	31.8	III 14.	14	15	IV 25.	04	03
IV 21.	31.6	31.8	IV 11.	15	15	V 30.	05	05
VI 1.	31.5	31.5	IV 20.	14	15	VI 22.	06	07
VI 7.	31.5	31.5	VI 11.	17	15	VI 24.	08	07
VII 28.	31.4	31.5	VI 17.	14	15	VII 27.	05	05
XI 10.	32.1	32.0	VII 22.	16	15	VII 28.	05	05
XI 19.	31.9	32.0	IX 16.	14	15	XII 22.	08	07
XII 20.	32.4	32.3	IX 17.	16	15			
			XI 11.	14	15			
			XI 12.	16	15			
			XII 20.	14	13			
			XII 21.	12	13			

EXPLANATION OF THE TABLES

For each of the components D , H and V two series of tables are given. One series gives, in the usual way, the hourly mean values centered at half hours Gr. M. T. In these tables the column headed M gives the ordinary diurnal means. R designates the range, i. e. the difference between the maximum and minimum value measured on the magnetogram. The horizontal line marked M gives the monthly means of the hourly values, and the line marked QM gives the monthly means of the *quiet* hourly values.

The second series of tables gives the hourly values of the Storminess ("average perturbing force" or "activity"). As to definition of the storminess and the method for separating it, we refer to No. 2 and 4 in the present series of publications. In the storminess tables the column headed M gives the diurnal means. The columns headed PS , NS and AS give the diurnal sum of the positive, negative and absolute storminess respectively. The column headed CH gives the magnetic character numbers. We consider the diurnal sum of the absolute storminess as the best expression for the magnetic activity during a day, and we will that quantity for defining the character numbers. Only the strongest perturbed component, the Horizontal Intensity, is used in characterisation. Character number 0 comprises diurnal sum of absolute storminess (AS) up to 400γ , character number 1 from 400γ to 1200γ and character number 2 greater than 1200γ . The horizontal line marked M contains the monthly means of the hourly values, and the two lines marked MPS and MNS give the monthly means of the positive and negative storminess respectively.

In D the storminess is reckoned positive towards magnetic west, in H positive towards magnetic north, and in V positive downwards.

In addition to the main tables, resuming tables, figures and vector diagrams are given at the end of the year-book.

EARTH MAGNETISM 1960, BEAR ISLAND

$$(\varphi = 74.5^\circ \text{ N.}, \lambda = 19.2^\circ \text{ E})$$

Some measurements with QHM and BMZ were taken by S. Berger during an inspection period in June 1960. According to these measurements and the registrations we may give some approximate annual values for 1960.

$$D = 2^\circ 35' \text{ E. } H = 9215\gamma. V = 52200\gamma.$$

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

K-INDICES FOR THREE-HOUR INTERVAL 1960

Tromsø

Range 2000y for K = 9. Scale values: D = 4.73y. H = 5.27y. V = 7.25y.

Date	Jan.		Feb.		Mar.		Apr.		May		Jun.	
1	2110	0022	0112	3331	4423	3364	7656	7777	7643	3246	6644	5333
2	1000	0234	1102	3445	6433	4456	6664	4334	4533	4343	2001	3220
3	4210	3233	3322	3455	5433	4555	6554	3322	2223	3233	0012	2345
4	3212	4424	4433	2354	4222	5546	2322	3456	1001	2245	5654	5443
5	5433	4436	2024	4535	4332	3345	5532	5643	3222	2155	7755	5453
6	3420	1223	3533	2433	4332	2353	2222	2356	5335	4767	6745	5343
7	2111	1243	2320	0021	3002	1132	5420	3555	5534	6555	6534	4333
8	2101	0034	0112	3432	1123	3424	5533	3433	5767	7746	4633	4361
9	1110	0012	4300	0000	4122	3233	5432	1221	4333	4443	2114	3456
10	2144	6777	0221	1011	1223	3453	3323	4566	2223	4456	6432	3344
11	4445	6645	0001	0354	3445	5554	5533	3455	5563	3425	5312	2120
12	5332	3356	5311	1000	4222	3225	6742	4346	3454	4334	1121	2231
13	3313	2356	0011	0045	4120	1244	4542	3343	4322	3355	3221	2332
14	6544	3247	4522	5475	1012	2200	5323	3335	4333	3434	3224	6343
15	6633	2343	3110	4543	0011	3456	5652	3324	1224	4322	3134	3443
16	2210	1315	5432	5525	6742	3466	4423	6666	3022	4665	3331	2222
17	3331	4322	4343	3446	4433	3464	6534	3355	4233	4422	4100	3434
18	2233	4234	5543	3455	3442	3205	6433	3334	3221	3223	4423	5332
19	5200	2231	4343	3577	3113	5422	3321	2100	5122	2122	5534	5444
20	3213	2443	6532	3335	2201	1101	0010	2000	0211	1101	5523	3443
21	6545	6576	5533	4454	2112	4211	0001	2113	2122	3221	4534	3444
22	4434	3345	2322	2265	1112	3113	3012	2221	0101	2121	3423	3234
23	3343	4465	2221	2333	3000	1005	1222	1336	1022	5465	6322	3443
24	5433	3454	0110	0012	4411	1453	6643	5556	5444	4466	4323	4364
25	3322	2423	2001	0014	0012	2125	7544	5756	5433	5344	5323	3556
26	3322	1222	1002	1324	5112	2110	6533	4455	6633	4445	6576	3346
27	4422	2102	5543	4344	1113	2010	5212	4457	5622	2244	7653	2445
28	2101	1133	4112	0102	0113	2465	7665	5654	4211	2245	4435	4455
29	2321	2203	5232	4335	4533	2326	7665	5456	7532	4545	5542	2347
30	2001	0000			6112	3455	7754	7775	3234	5534	7734	3555
31	0211	0002			6546	6757			4222	2224		
Date	Jul.		Aug.		Sep.		Oct.		Nov.		Dec.	
1	5543	5453	4433	4235	1001	1103	6554	4667	4432	3345	4444	4566
2	6334	4233	5434	3346	0012	5446	5564	5756	5533	4255	3432	2223
3	3523	2444	5213	2333	6543	4343	5333	3334	6315	3365	2010	2433
4	6433	5443	4333	2122	5455	6757	4022	5676	6754	6665	3221	3333
5	5634	4345	2001	1131	7656	5567	5433	4437	4433	4222	1211	3333
6	6423	3322	2112	2223	6543	3257	7766	7777	1122	3153	1211	3333
7	1111	2113	5412	3220	5434	5465	7775	7767	3422	1100	3322	3376
8	2112	1122	1233	4555	6433	4333	6534	3476	0110	1034	4552	2112
9	0012	1113	6554	4342	5533	4235	6643	4576	4222	2123	3434	4465
10	3422	3334	5325	3353	5223	4444	5431	1355	0021	2222	4321	2254
11	5322	3325	4624	4432	6521	3346	4333	5455	2323	2325	1121	2354
12	4333	4423	5335	4444	3322	4443	3012	0145	5011	4777	3333	2576
13	4323	4455	2322	4324	6533	3255	1000	1002	7879	8787	5542	3122
14	3325	4444	3312	4453	6322	2222	1001	0001	6443	3465	0011	1222
15	4336	6777	4422	1321	0001	2231	0123	4555	5454	6768	3225	6657
16	7755	4655	3112	6664	1001	2111	3211	3105	7865	6665	6753	4334
17	6543	3534	7754	4756	1101	2365	5111	3234	5343	3564	1111	1133
18	4433	5533	3333	3233	4422	3234	4533	4565	4321	1100	4554	5565
19	2336	5466	3222	3456	3221	2100	4332	2345	0222	2112	5233	3355
20	6334	3456	3464	3345	1011	1215	2212	4425	2223	3233	5444	4376
21	4522	4335	5433	4445	5001	3255	4112	1246	3454	5666	6322	4556
22	5333	3234	5423	2344	5210	2355	1000	0010	5543	4435	5443	2345
23	6321	2223	4321	2331	6523	1216	1000	0044	3332	3345	5333	4444
24	4223	3334	3223	2331	5633	2354	2001	3543	5321	2246	3222	4456
25	2111	1133	0101	2221	1110	0143	2254	5876	5744	4666	4211	1024
26	1102	3245	0010	1234	3222	1256	6544	6566	3533	3244	6432	2233
27	4121	2100	5322	2463	6432	1243	6545	5666	5233	3666	2445	5766
28	1123	3124	5512	4332	2113	3333	6555	5765	7433	4125	6334	4453
29	5552	4543	6763	4465	1013	4456	7344	5565	5121	2134	5443	3544
30	6534	4333	7744	4544	5533	4455	4544	5566	3311	1255	4323	3554
31	7555	5535	4433	3435			7543	4565			3434	3663

K-INDICES FOR THREE-HOUR INTERVAL 1960.

Bear Island

Range 2000y for K = 9. Scale values: D = 5.7y. H = 6.0 y. V = 21.2y.

Date	Jan.	Feb.	Mar.	Apr.	May	Jun.
1	3321 1221	1323 3322	3434 3463	7656 5666	6554 4345	5544 5333
2	3121 1331	2312 3434	6344 4455	6545 3224	3434 4344	3222 3322
3	2322 3322	2432 4434	4553 4354	6554 4232	3334 3332	1123 2234
4	4334 4323	4444 2323	4233 6435	3423 3436	2112 3224	5565 5334
5	3553 3335	2222 5425	3343 3333	4543 4633	3223 3233	4445 6333
6	3331 2224	4442 3422	3533 3364	3333 3445	4334 4456	5545 4433
7	2223 2242	2332 1021	2212 3211	3432 3565	3344 5455	4434 4333
8	3322 1144	1232 3441	1334 4333	3434 4521	45xx x553	3655 3354
9	2232 2222	3311 1011	3233 3332	3443 2222	3234 6543	5444 4553
10	3245 4555	1333 1320	2334 3553	3344 4356	3443 4445	2233 3345
11	4444 5443	1001 1555	3344 4552	6334 4444	5665 5424	5433 3332
12	3444 3555	3322 2000	2333 4423	6643 4443	3555 4533	2332 3232
13	2334 3455	1122 1135	2222 3443	3653 3333	3433 4354	4432 4332
14	5444 4244	3533 4465	2333 3311	3334 3354	3454 5433	3345 5444
15	4544 3332	3211 4551	1113 3342	4553 3332	1435 5332	4245 5343
16	3231 2434	4333 5422	6543 4454	3334 5555	3233 5555	4532 3333
17	4333 4233	3455 4355	2333 3453	5544 4445	3334 4432	5321 4434
18	2234 4334	4544 3452	2553 3222	5433 3432	2332 4333	3534 5543
19	4332 3452	3444 3666	3334 3432	3332 3211	4333 3223	4545 4344
20	3433 3424	4443 4443	2322 2312	1121 2111	2322 2222	4444 4343
21	6435 4666	3544 4654	1133 4210	1112 3323	3123 4222	5643 4444
22	4444 4435	2333 3364	1223 3112	3223 3221	1221 2333	3432 3334
23	3454 4566	2333 3533	2212 2214	2312 1345	2233 5555	4422 4322
24	5553 4555	2222 1123	4423 1352	5554 5456	5455 5455	3434 5365
25	4433 3553	2211 2134	1123 3133	6545 5653	4434 5453	4434 5645
26	3333 2334	1113 3423	4212 3322	5553 3433	5544 4454	6654 4345
27	4532 3213	3453 3353	2223 3100	3223 3456	4532 3344	5653 3455
28	3322 2xxx	3323 1211	2253 3355	6464 4443	3232 3355	4545 xxxxx
29	4433 4111	4453 4345	4443 3323	6555 4345	6343 5445	xxxx xxxxx
30	1112 1100		5322 4435	6664 6664	3356 6643	5634 4554
31	1221 2122		6566 6656		4433 3334	
Date	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	4554 5554	3544 4345	1112 2113	5345 5436	4444 3333	xxxx 2646
2	4455 5333	4534 4445	1114 xxxxx	5645 6654	2344 4255	3534 5355
3	4534 4345	4324 3334	xxxx 4353	4443 3444	5434 3255	3333 3343
4	5544 5433	5334 4332	4554 7666	3233 5666	3545 6653	2121 4443
5	5454 4545	2221 2221	7455 6566	4543 4636	3342 3332	3332 2431
6	5434 4322	2223 3224	5544 3456	6766 7656	1123 4143	2234 5433
7	2233 4323	3432 3331	4434 5465	7566 7666	3332 2000	2233 3266
8	3322 2223	2334 5553	5543 3431	5644 5455	0101 2122	4563 2223
9	2122 2222	3445 5433	3444 3345	5444 5645	3333 2124	3433 5464
10	3422 4433	3335 4442	4333 3544	5422 2353	1021 3222	4423 3465
11	5434 43xx	3545 5433	5422 4433	4432 5355	2334 4225	2233 3355
12	xxxx 4453	5554 5533	3343 4343	1113 0145	3223 5776	3444 3554
13	4435 4444	2333 4424	4444 3244	1100 1102	7867 7666	3542 3233
14	3446 5654	3333 4454	5432 2302	1011 0002	6554 5655	2223 2233
15	4466 6656	4333 3332	1222 2220	1314 4543	5454 7666	5433 6644
16	6644 4544	3124 5544	1002 2211	2223 3202	6767 5664	5532 4334
17	4344 4434	6665 5655	3201 3256	3212 3344	3454 4655	1332 2253
18	3434 5453	3444 3432	3332 2332	5544 4344	4322 2111	3544 4454
19	1445 4454	3334 4456	2221 xxxxx	2333 3324	1332 2112	5443 4456
20	5434 4456	3463 3255	xxxx xxxxx	0332 4324	3333 4332	4444 4464
21	4633 4434	5544 4553	xxxx xxxxx	3222 2145	3465 5655	5442 4566
22	4334 3334	4422 2353	xxxx 2344	2000 0000	5644 3433	4454 3556
23	6421 3332	3432 4332	3334 2202	0111 1132	4443 3344	4443 4354
24	3334 3333	3324 1243	5444 2322	1102 3542	3432 3346	2333 4456
25	1221 3223	1001 2343	2111 0154	2244 3766	5555 5656	4332 1044
26	2213 4335	1111 2244	2212 2244	4444 4565	4533 3354	5553 3223
27	4332 3220	5423 3544	5542 2243	5554 4656	4344 3666	2565 4556
28	1224 5113	2531 3432	2223 3332	6544 4663	5542 5212	5444 4563
29	3453 4543	4763 3556	2113 4335	6555 5655	5233 2244	5544 4644
30	5436 6432	4455 5443	2544 4354	4554 5654	3522 xxxxx	4333 4564
31	6665 4534	3543 3435		5454 4663		2343 4555

DAILY SUM OF K-INDICES 1960.

Date	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		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	8	15	14	19	29	30	52	47	35	36	34	32	34	37	28	32	7	12	43	35	28	28	37	18
2	10	15	20	22	35	35	36	36	29	29	10	19	28	32	32	37	22	—	43	41	32	29	31	33
3	18	19	27	26	34	23	30	31	20	24	17	18	27	32	22	26	32	—	27	30	32	31	15	25
4	22	26	28	26	30	20	27	28	15	17	36	36	32	33	20	27	44	43	32	34	45	37	20	21
5	32	30	25	24	27	25	33	32	22	24	41	32	34	36	9	14	47	44	33	35	24	23	17	21
6	17	20	26	26	25	30	24	28	40	33	37	33	25	27	15	20	35	36	54	49	18	19	28	26
7	15	19	10	14	12	14	29	31	38	33	31	28	11	22	19	22	36	35	49	49	13	13	29	27
8	11	20	16	20	20	24	29	26	49	—	30	34	12	19	28	30	29	28	38	38	10	9	22	27
9	6	17	7	11	20	22	20	22	28	30	26	34	9	15	33	31	30	30	41	37	18	21	33	32
10	38	33	8	16	23	28	32	32	28	31	28	25	24	25	29	28	28	29	27	26	11	13	23	31
11	38	32	13	18	35	30	33	32	33	37	16	26	25	—	29	32	30	27	32	31	22	27	19	26
12	30	33	11	12	22	24	36	34	30	33	13	20	26	—	32	35	25	27	16	16	32	35	32	32
13	26	29	11	16	18	21	28	29	27	39	18	25	30	32	22	25	32	29	4	6	61	53	24	25
14	35	31	34	33	8	19	27	28	24	31	27	32	29	37	25	29	21	21	3	5	35	41	10	19
15	30	28	21	22	20	18	30	28	21	26	25	30	43	45	19	24	9	13	25	25	45	43	36	35
16	15	22	31	26	38	35	37	33	29	31	18	26	44	37	29	28	7	9	16	16	49	47	35	29
17	21	25	31	34	31	26	34	35	24	26	19	26	33	30	45	44	19	22	20	22	33	36	12	21
18	23	25	34	31	23	26	29	27	18	23	26	32	30	31	23	27	24	21	35	34	12	16	39	33
19	15	26	36	36	21	25	12	18	17	23	34	33	35	31	27	32	11	—	26	23	12	16	29	35
20	22	26	30	30	8	17	3	10	7	17	29	30	34	35	32	31	12	—	22	21	20	24	37	34
21	44	40	33	35	14	15	8	16	15	19	31	34	28	31	32	35	21	—	21	21	39	59	33	36
22	30	28	24	27	13	15	13	18	8	17	25	25	26	27	27	25	23	—	2	2	33	32	30	36
23	32	35	18	25	9	16	20	21	25	30	27	23	21	24	19	24	26	19	9	10	26	29	30	31
24	31	37	5	15	23	24	40	39	37	38	29	33	24	25	19	22	31	26	18	18	25	28	28	30
25	21	30	8	16	13	17	43	39	31	32	32	35	13	16	9	14	11	15	39	34	42	42	15	21
26	17	24	13	18	13	19	35	31	35	35	38	37	18	23	11	16	23	19	42	36	27	30	25	28
27	17	23	32	29	9	13	30	28	27	28	36	36	11	19	27	30	25	27	43	40	34	36	39	38
28	12	—	11	16	22	28	44	35	21	26	34	—	17	19	25	23	19	20	44	38	29	26	32	35
29	15	22	27	22	28	24	44	37	35	34	32	—	33	31	41	39	24	22	39	42	19	25	32	36
30	3	7	—	—	27	28	27	44	29	36	39	36	31	33	39	38	34	31	39	38	21	—	29	32
31	6	13	—	—	46	46	46	44	20	27	40	39	40	39	29	30	34	31	39	37	37	—	31	31

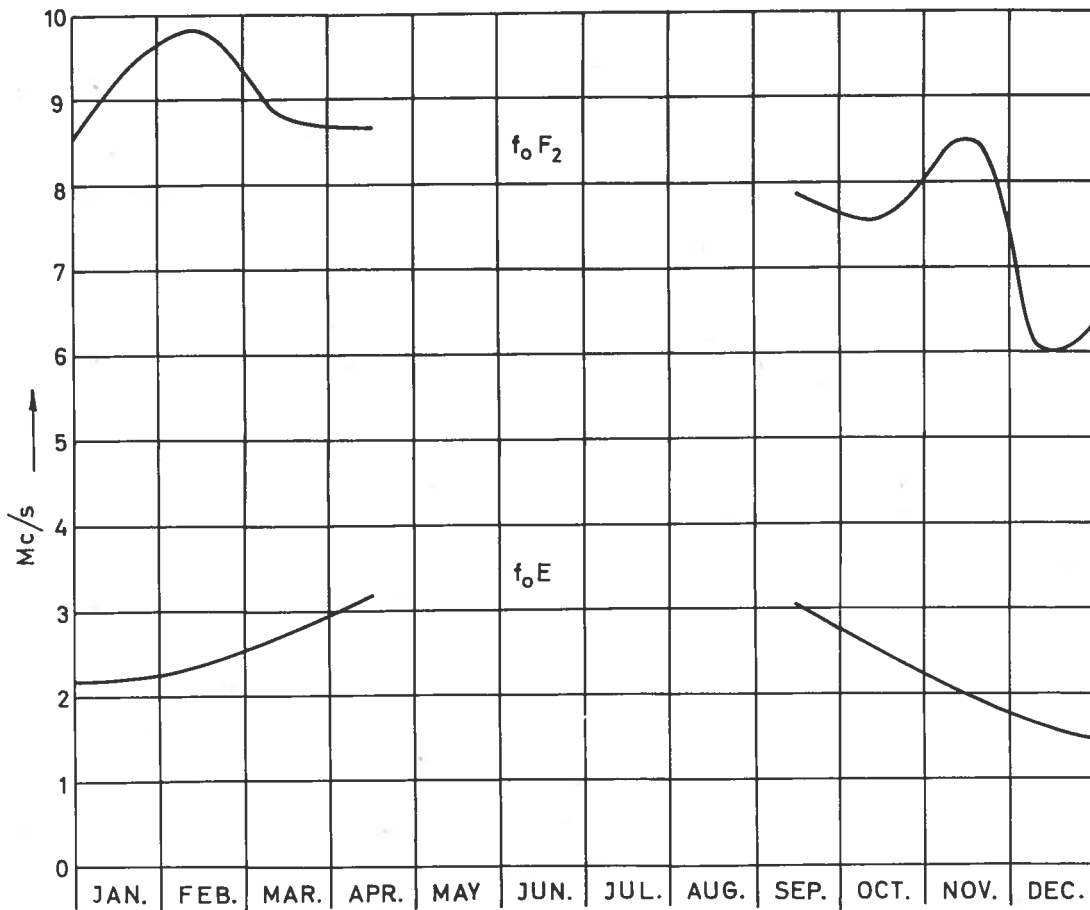
MONTHLY AND ANNUAL MEAN OF THE MAGNETIC ELEMENTS 1960.

Tromsø

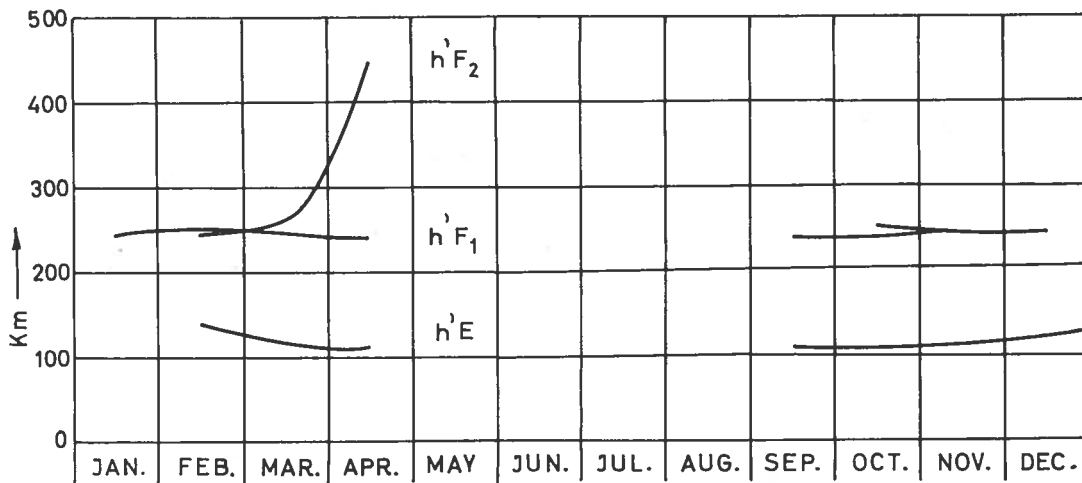
Month	All days			Five Quiet			Five Disturbed		
	D	H	V	D	H	V	D	H	V
	0°W +	11100 +	50800 +	0°W +	11100 +	50800 +	0°W +	11100 +	50800 +
Jan.	7'.0	102	147	8'.1	113	151	5'.1	90	154
Feb.	7.7	107	147	7.8	111	144	7.0	104	152
Mar.	7.7	106	158	8.5	107	151	8.3	78	178
Apr.	3.4	77	186	5.3	107	176	-0.2	41	166
May	4.6	114	176	4.6	115	167	1.9	109	177
Jun.	3.1	99	179	5.3	119	167	0.7	54	203
Jul.	5.5	120	187	5.6	123	166	7.8	150	200
Aug.	5.5	105	190	5.9	118	173	7.8	57	224
Sep.	2.5	93	202	4.7	113	179	-0.4	84	225
Oct.	1.2	66	201	4.7	113	193	-4.5	-36	216
Nov.	0.6	80	202	2.0	104	198	-9.5	2	208
Dec.	2.5	92	187	3.5	117	191	-2.3	200	190
Year	3.9	97	180	5.5	113	171	1.8	78	191

ANNUAL MEANS OF THE MAGNETIC ELEMENTS
1930-1960.

Year	D	H	V
1930	4°7'.7 W	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



MONTHLY MEDIAN NOON-VALUES (12^h MET) FOR THE CRITICAL FREQUENCIES AND THE VIRTUAL HEIGHTS FOR THE E-LAYER, F_1 -LAYER AND F_2 -LAYER.



RADIO ECHO OBSERVATIONS.

Tromsø.

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

Gr. M. T.

JANUARY 1960.

HOURLY MEAN VALUES

Table for January 1960 showing hourly mean values for declination. Columns include Day (1-31), hours (1-23), and monthly totals (M, R).

FEBRUARY 1960.

Table for February 1960 showing hourly mean values for declination. Columns include Day (1-28), hours (1-23), and monthly totals (M, R).

MARCH 1960.

Table for March 1960 showing hourly mean values for declination. Columns include Day (1-31), hours (1-23), and monthly totals (M, R).

Tromsø.

Declination. Storminess (+ W). Unit Gamma.

Gr. M. T.

JANUARY 1960

HOURLY MEAN VALUES

Table for January 1960 showing hourly mean values for declination and storminess. Columns include Day (1-31), 23 hourly values (1-23), M, PS, NS, and AS. Summary rows for M, MPS, and MNS are provided at the bottom.

FEBRUARY 1960

Table for February 1960 showing hourly mean values for declination and storminess. Columns include Day (1-29), 23 hourly values (1-23), M, PS, NS, and AS. Summary rows for M, MPS, and MNS are provided at the bottom.

MARCH 1960

Table for March 1960 showing hourly mean values for declination and storminess. Columns include Day (1-31), 23 hourly values (1-23), M, PS, NS, and AS. Summary rows for M, MPS, and MNS are provided at the bottom.

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

Gr. M. T.

Table for APRIL 1960 showing hourly mean values (M, R) from Day 1 to 30. Includes summary rows M and QM.

Table for MAY 1960 showing hourly mean values (M, R) from Day 1 to 31. Includes summary rows M and QM.

Table for JUNE 1960 showing hourly mean values (M, R) from Day 1 to 30. Includes summary rows M and QM.

Tromsø.

Declination. Storminess (+ W). Unit Gamma.

Gr. M. T.

APRIL 1960.

HOURLY MEAN VALUES

Table for April 1960 showing hourly mean values for declination, storminess, and other parameters. Columns include Day (1-30), 24 hourly values, M, PS, NS, AS, and summary rows for FMS and MNS.

MAY 1960

Table for May 1960 showing hourly mean values for declination, storminess, and other parameters. Columns include Day (1-31), 24 hourly values, M, PS, NS, AS, and summary rows for MFS and MNS.

JUNE 1960

Table for June 1960 showing hourly mean values for declination, storminess, and other parameters. Columns include Day (1-30), 24 hourly values, M, PS, NS, AS, and summary rows for MFS and MNS.

Tromsø.

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

Gr. M. T.

HOURLY MEAN VALUES

JULY 1960

Table for July 1960 showing hourly mean values for days 1-31. Columns include Day, hours 1-23, M, and R. Values range from -49 to 1057.

AUGUST 1960

Table for August 1960 showing hourly mean values for days 1-31. Columns include Day, hours 1-23, M, and R. Values range from -74 to 944.

SEPTEMBER 1960

Table for September 1960 showing hourly mean values for days 1-30. Columns include Day, hours 1-23, M, and R. Values range from -116 to 1800.

Tromsø.

Declination. Storminess (+ W). Unit Gamma.

Gr. M. T.

HOURLY MEAN VALUES

JULY 1960

Table with columns DAY (1-31), 1-25, M, PS, NS, AS. Contains hourly mean values for July 1960.

AUGUST 1960

Table with columns DAY (1-31), 1-23, M, PS, NS, AS. Contains hourly mean values for August 1960.

SEPTEMBER 1960

Table with columns DAY (1-30), 1-23, M, PS, NS, AS. Contains hourly mean values for September 1960.

Tromsø. Declination. D = 0° W + Tabular Quantities expressed in Tenths of Minutes. Gr. M. T.

HOURLY MEAN VALUES OCTOBER 1960. Table with columns for DAY (1-31), 24 hourly values, M, and R. Includes summary rows for M and QM.

HOURLY MEAN VALUES NOVEMBER 1960. Table with columns for DAY (1-30), 24 hourly values, M, and R. Includes summary rows for M and QM.

HOURLY MEAN VALUES DECEMBER 1960. Table with columns for DAY (1-31), 24 hourly values, M, and R. Includes summary rows for M and QM.

Tromsø.

Declination. Storminess (+ W). Unit Gamma.

Gr. M. T.

HOURLY MEAN VALUES

Table for October 1960 showing hourly mean values for declination and storminess. Columns include Day (1-31), hours (1-23), and summary statistics (M, PS, NS, AS). Summary values: M=-59, PS=56, NS=54, AS=44.

Table for November 1960 showing hourly mean values for declination and storminess. Columns include Day (1-30), hours (1-23), and summary statistics (M, PS, NS, AS). Summary values: M=-40, PS=42, NS=38, AS=34.

Table for December 1960 showing hourly mean values for declination and storminess. Columns include Day (1-31), hours (1-23), and summary statistics (M, PS, NS, AS). Summary values: M=-41, PS=46, NS=36, AS=29.

Tromsø.

Horizontal Intensity. $H = 11100 +$ Tabular Quantities expressed in Gamma.

Gr. M. T.

JANUARY 1960

HOURLY MEAN VALUES

Table for January 1960 showing hourly mean values for magnetic intensity. Columns include Day (1-31), hours (1-23), M, and R.

FEBRUARY 1960

Table for February 1960 showing hourly mean values for magnetic intensity. Columns include Day (1-29), hours (1-23), M, and R.

MARCH

Table for March showing hourly mean values for magnetic intensity. Columns include Day (1-31), hours (1-23), M, and R.

Tromsø.

Horizontal Intensity. Storminess (+ N). Unit Gamma.

Gr. M. T.

JANUARY 1960 HOURLY MEAN VALUES

Table with columns for DAY (1-31), M, PS, NS, AS, CH, and rows for hourly magnetic observations for January 1960.

FEBRUARY 1960

Table with columns for DAY (1-29), M, PS, NS, AS, CH, and rows for hourly magnetic observations for February 1960.

MARCH 1960

Table with columns for DAY (1-31), M, PS, NS, AS, CH, and rows for hourly magnetic observations for March 1960.

Tromsø.

Horizontal Intensity. Storminess (+ N). Unit Gamma.

Gr. M. T.

Table for APRIL 1960 showing hourly mean values for days 1-30. Columns include DAY, 1-23, M, PS, NS, AS, CH. Values range from -643 to 5467.

Table for MAY 1960 showing hourly mean values for days 1-31. Columns include DAY, 1-23, M, PS, NS, AS, CH. Values range from -115 to 1064.

Table for JUNE 1960 showing hourly mean values for days 1-30. Columns include DAY, 1-23, M, PS, NS, AS, CH. Values range from -170 to 4064.

Tromsø.

Horizontal Intensity. Storminess (+ N). Unit Gamma.

Gr. M. T.

Table for July 1960 showing hourly mean values for magnetic intensity and storminess. Columns include Day (1-31), hours (1-23), and summary statistics (M, PS, WS, AS, CH).

Table for August 1960 showing hourly mean values for magnetic intensity and storminess. Columns include Day (1-31), hours (1-23), and summary statistics (M, PS, WS, AS, CH).

Table for September 1960 showing hourly mean values for magnetic intensity and storminess. Columns include Day (1-30), hours (1-23), and summary statistics (M, PS, WS, AS, CH).

Tromsø.

Horizontal Intensity, H = 11100 + Tabular Quantities expressed in Gamma.

Gr. M. T.

OCTOBER 1960

HOURLY MEAN VALUES

Table for October 1960 showing hourly mean magnetic intensity values (M and R) for days 1-31. Includes summary rows M and QM.

NOVEMBER 1960

Table for November 1960 showing hourly mean magnetic intensity values (M and R) for days 1-30. Includes summary rows M and QM.

DECEMBER 1960

Table for December 1960 showing hourly mean magnetic intensity values (M and R) for days 1-31. Includes summary rows M and QM.

Fromsø.

Horizontal Intensity. Storminess (+ N). Unit Gamma.

Gr. M. T.

OCTOBER 1960

HOURLY MEAN VALUES

Table for October 1960 showing hourly mean values for magnetic intensity and storminess. Columns include Day (1-31), hours (1-24), and summary statistics (M, PS, NS, AS, OR).

NOVEMBER 1960

Table for November 1960 showing hourly mean values for magnetic intensity and storminess. Columns include Day (1-30), hours (1-24), and summary statistics (M, PS, NS, AS, OR).

DECEMBER 1960

Table for December 1960 showing hourly mean values for magnetic intensity and storminess. Columns include Day (1-31), hours (1-24), and summary statistics (M, PS, NS, AS, OR).

Tromsø.

Vertical Intensity. Storminess (+ Down). Unit Gamma.

Gr. M. T.

JANUARY 1960 HOURLY MEAN VALUES. Table with columns for DAY (1-31), 24 hourly columns (1-24), and summary columns M, PS, NS, AS. Includes MPS and MNS rows at the bottom.

FEBRUARY 1960 HOURLY MEAN VALUES. Table with columns for DAY (1-29), 24 hourly columns (1-24), and summary columns M, PS, NS, AS. Includes MPS and MNS rows at the bottom.

MARCH 1960 HOURLY MEAN VALUES. Table with columns for DAY (1-31), 24 hourly columns (1-24), and summary columns M, PS, NS, AS. Includes MPS and MNS rows at the bottom.

Tromsø.

Vertical Intensity. Storminess (+ Down). Unit Gamma.

Gr. M. T.

APRIL 1960

HOURLY MEAN VALUES

Table for April 1960 showing hourly mean values for vertical intensity, storminess, and unit gamma. Columns include Day (1-30), hours (1-23), M, PS, NS, and AS.

MAY 1960

Table for May 1960 showing hourly mean values for vertical intensity, storminess, and unit gamma. Columns include Day (1-31), hours (1-23), M, PS, NS, and AS.

JUNE 1960

Table for June 1960 showing hourly mean values for vertical intensity, storminess, and unit gamma. Columns include Day (1-30), hours (1-23), M, PS, NS, and AS.

Tromsø.

Vertical Intensity, V = 50800 + Tabular Quantities expressed in Gamma.

Gr. M. T.

HOURLY MEAN VALUES

JULY 1960

Table for July 1960 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-24), and summary rows M and QM.

AUGUST 1960

Table for August 1960 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-24), and summary rows M and QM.

SEPTEMBER 1960

Table for September 1960 showing hourly mean values for vertical intensity. Columns include Day (1-30), hours (1-24), and summary rows M and QM.

Tromsø.

Vertical Intensity. Storminess (+ Down). Unit Gamma.

Gr. M. T.

HOURLY MEAN VALUES

JULY 1960

Table with columns DAY, 1-23, M, PS, NS, AS for July 1960. Rows include daily data and monthly totals.

AUGUST 1960

Table with columns DAY, 1-23, M, PS, NS, AS for August 1960. Rows include daily data and monthly totals.

SEPTEMBER 1960

Table with columns DAY, 1-23, M, PS, NS, AS for September 1960. Rows include daily data and monthly totals.

Tromsø. Vertical Intensity. V = 50800 + Tabular Quantities expressed in Gamma. Gr. M. T.

Table for OCTOBER 1960 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-23), and summary rows M and QM.

Table for NOVEMBER 1960 showing hourly mean values for vertical intensity. Columns include Day (1-30), hours (1-23), and summary rows M and QM.

Table for DECEMBER 1960 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-23), and summary rows M and QM.

Tromsø.

Vertical Intensity. Storminess (+ Down). Unit Gamma.

Gr. M. T.

OCTOBER 1960

HOURLY MEAN VALUES

Table with columns DAY, 1-23, M, PS, NS, AS for October 1960. Contains hourly mean values for vertical intensity and storminess.

NOVEMBER 1960

Table with columns DAY, 1-23, M, PS, NS, AS for November 1960. Contains hourly mean values for vertical intensity and storminess.

DECEMBER 1960

Table with columns DAY, 1-23, M, PS, NS, AS for December 1960. Contains hourly mean values for vertical intensity and storminess.

Resuming Tables.

Diurnal Variation.
QUIET VALUES.

Tromsø.

Declination. Unit Gamma. + West.

1960	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
JANUARY	-4	-5	-5	-4	-3	-2	-3	-4	-4	-3	-1	3	5	6	5	6	6	5	3	2	1	-1	-2	-3
FEBRUARY	-4	-4	-5	-6	-7	-8	-9	-8	-4	0	4	7	9	9	8	7	6	4	2	0	-1	-2	-3	-4
MARCH	-4	-6	-8	-9	-10	-11	-12	-12	-10	-2	7	15	17	16	13	10	8	8	9	7	5	2	0	-2
APRIL	-6	-10	-15	-19	-23	-26	-28	-26	-16	-4	11	21	27	25	20	16	14	12	12	12	10	7	3	-1
MAY	-9	-13	-18	-23	-27	-27	-22	-15	-5	7	15	21	22	18	15	14	15	15	13	10	7	3	-1	-5
JUNE	-12	-18	-23	-28	-30	-30	-28	-23	-16	-7	4	14	23	25	22	20	21	22	21	18	13	9	3	-3
JULY	-16	-22	-27	-31	-33	-32	-29	-22	-12	2	19	28	31	29	25	20	16	15	16	16	11	4	-3	-10
AUGUST	-8	-16	-25	-28	-30	-28	-24	-16	-3	9	20	27	27	24	16	11	8	8	10	11	10	8	4	-3
SEPTEMBER	-16	-19	-22	-25	-27	-27	-25	-22	-13	0	7	12	13	12	8	6	5	6	8	7	3	-2	-7	-11
OCTOBER	-7	-9	-10	-12	-13	-14	-10	-6	-2	2	8	12	15	14	11	9	9	9	6	3	1	-2	-4	-6
NOVEMBER	-6	-5	-4	-4	-4	-4	-3	-1	2	6	10	11	7	3	2	2	2	1	-1	-2	-3	-4	-5	-6
DECEMBER	-6	-5	-4	-4	-3	-1	1	3	4	6	7	8	5	2	1	2	2	1	0	-2	-3	-4	-5	-6
MEAN	-8	-11	-14	-16	-18	-18	-16	-13	-6	1	9	15	17	15	12	10	9	9	8	7	5	2	-2	-5

Horizontal Intensity. Unit Gamma.

JANUARY	-1	0.	2	4	6	7	6	3	-1	-5	-8	-10	-9	-6	-3	1	4	6	6	4	2	0	-1	-1
FEBRUARY	6	11	16	19	19	13	6	-1	-7	-13	-16	-17	-14	-11	-8	-5	-2	1	4	4	2	1	1	3
MARCH	6	11	16	18	18	13	6	-1	-8	-13	-16	-17	-14	-11	-8	-5	-2	1	4	4	2	1	1	3
APRIL	12	13	14	14	11	6	-7	-21	-29	-32	-31	-27	-21	-13	-4	3	9	14	18	19	17	14	13	12
MAY	11	13	13	10	5	-2	-12	-22	-34	-37	-34	-25	-14	-2	10	18	23	25	23	20	15	11	8	9
JUNE	3	6	7	5	1	-4	-10	-17	-25	-30	-28	-20	-10	0	10	16	20	21	20	16	11	5	1	0
JULY	-1	4	7	7	4	-1	-7	-17	-28	-33	-32	-23	-11	-1	8	14	19	22	24	24	19	9	-1	-3
AUGUST	9	14	17	14	6	-3	-13	-23	-31	-36	-34	-26	-14	-3	9	17	23	24	22	17	9	4	2	4
SEPTEMBER	3	5	7	7	5	2	-3	-10	-20	-25	-20	-15	-8	-2	3	8	13	15	17	15	10	3	0	0
OCTOBER	6	7	8	8	7	4	-1	-6	-13	-19	-19	-17	-14	-11	-6	-1	4	8	11	12	10	8	6	5
NOVEMBER	-2	-1	1	3	6	8	7	4	0	-5	-8	-9	-8	-6	-3	0	2	4	4	3	1	-1	-3	-3
DECEMBER	-4	-2	0	2	4	4	2	-1	-4	-4	-2	0	1	1	1	2	4	4	3	1	-2	-4	-5	-5
MEAN	4	7	9	9	8	4	-2	-11	-17	-21	-21	-17	-11	-5	1	6	10	11	13	12	8	4	2	2

Vertical Intensity. Unit Gamma.

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

Monthly Means.

DECLINATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
DIRECT VALUES D = 0°W +	7'.0	7.7	7.7	3.4	4.6	3.1	5.5	5.5	2.5	1.2	0.6	2.5	4'.3
QUIET VALUES D = 0°W +	8'.3	8.5	7.7	4.9	4.6	4.9	5.8	6.1	5.5	4.9	3.4	4.6	5'.9
RANGE (UNIT Γ)	76	78	86	142	97	120	105	94	121	144	126	120	11
QUIET RANGE (UNIT Γ)	11	18	29	55	48	55	61	57	40	29	17	14	36
STORMINESS. MEAN (UNIT Γ)	-5	-3	-1	-5	0	-6	-1	-2	-9	-13	-10	-8	-5
DIURNAL SUM PS (UNIT Γ)	107	160	215	371	275	268	290	238	156	735	205	165	265
NS	218	229	236	498	283	402	303	293	373	220	438	368	322
AS	325	389	451	869	558	670	593	531	529	515	643	533	551
HORIZONTAL INTENSITY													
DIRECT VALUES H = 11100 Γ +	102	107	106	77	114	99	120	105	93	66	80	92	97
QUIET VALUES H = 11100 Γ +	116	119	119	109	117	122	121	116	115	121	118	124	118
RANGE (UNIT Γ)	469	434	484	776	592	682	648	601	629	819	793	669	633
QUIET RANGE (UNIT Γ)	17	35	35	51	62	51	57	60	42	31	17	9	39
STORMINESS. MEAN (UNIT Γ)	-14	-12	-12	-33	-5	-24	0	-11	-22	-55	-38	-32	-21
DIURNAL SUM PS (UNIT Γ)	388	415	492	768	805	794	910	712	631	647	560	493	634
NS	718	705	783	1886	922	1358	928	983	1154	1972	1469	1249	1177
AS	1106	1120	1275	2654	1727	2152	1838	1695	1785	2619	2029	1742	1812
VERTICAL INTENSITY													
DIRECT VALUES V = 50800 Γ +	147	147	158	186	176	179	187	190	202	201	202	187	180
QUIET VALUES V = 50800 Γ +	147	144	151	170	156	158	170	182	191	196	194	168	168
RANGE (UNIT Γ)	304	327	344	690	437	447	445	407	465	718	622	352	463
QUIET RANGE (UNIT Γ)	14	15	24	11	9	16	11	15	13	12	15	13	14
STORMINESS. MEAN (UNIT Γ)	0	4	6	15	20	21	28	20	19	10	6	-5	12
DIURNAL SUM PS (UNIT Γ)	318	359	424	998	719	782	945	731	720	847	729	469	670
NS	295	273	273	637	243	269	261	241	272	616	595	592	381
AS	613	632	697	1635	2962	1051	684	972	992	1463	1324	1061	1174

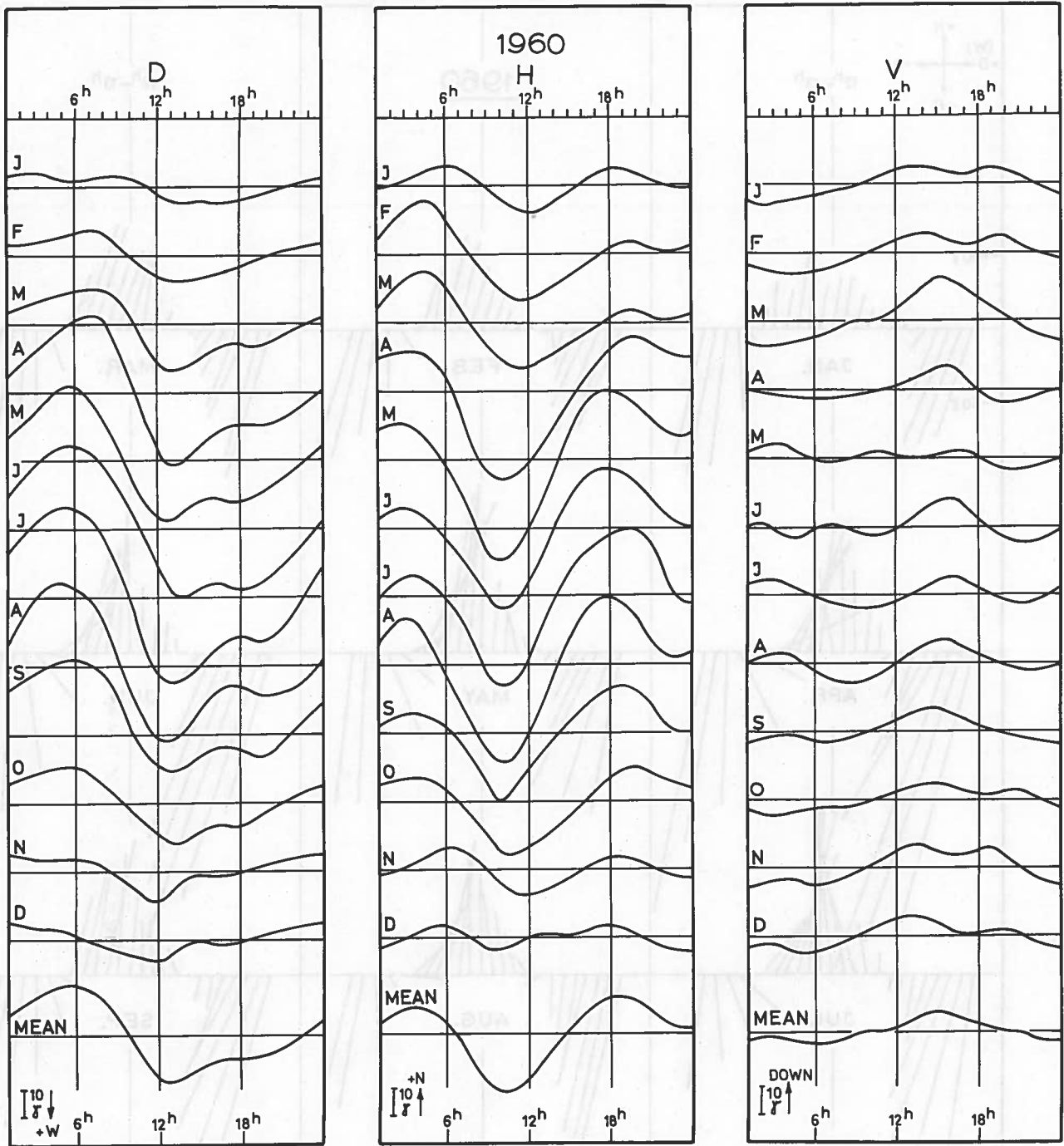


Fig. 1. The Quiet Diurnal Variation, smoothed Values.

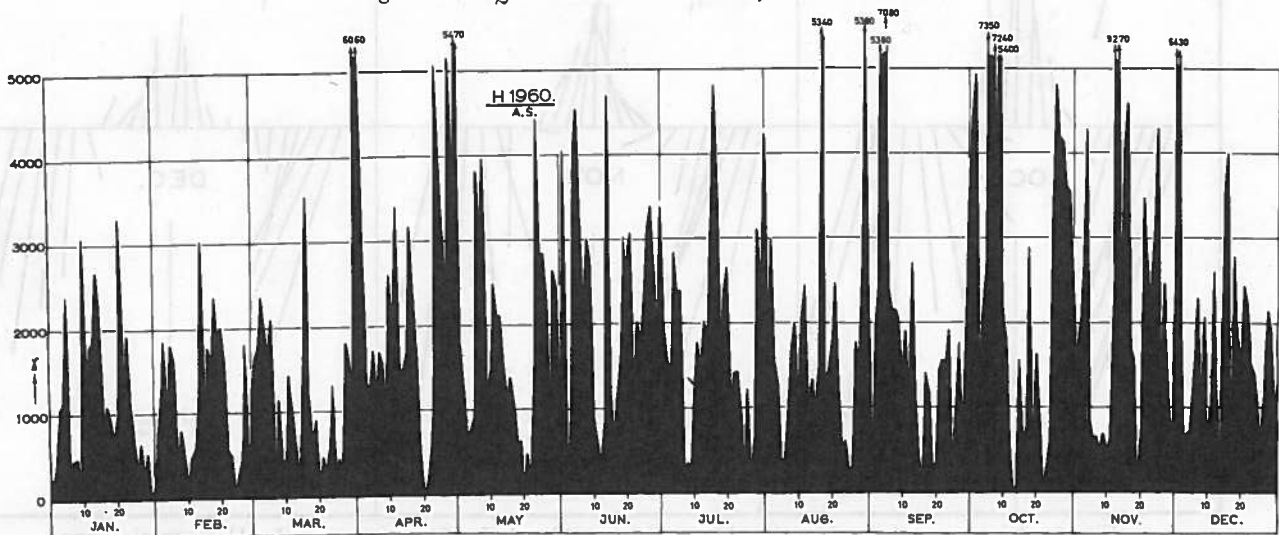


FIG. 2. THE DIURNAL SUM OF THE ABSOLUTE STORMINESS OF H.

Fig. 2. The Diurnal Sum of the Absolute Storminess of H.

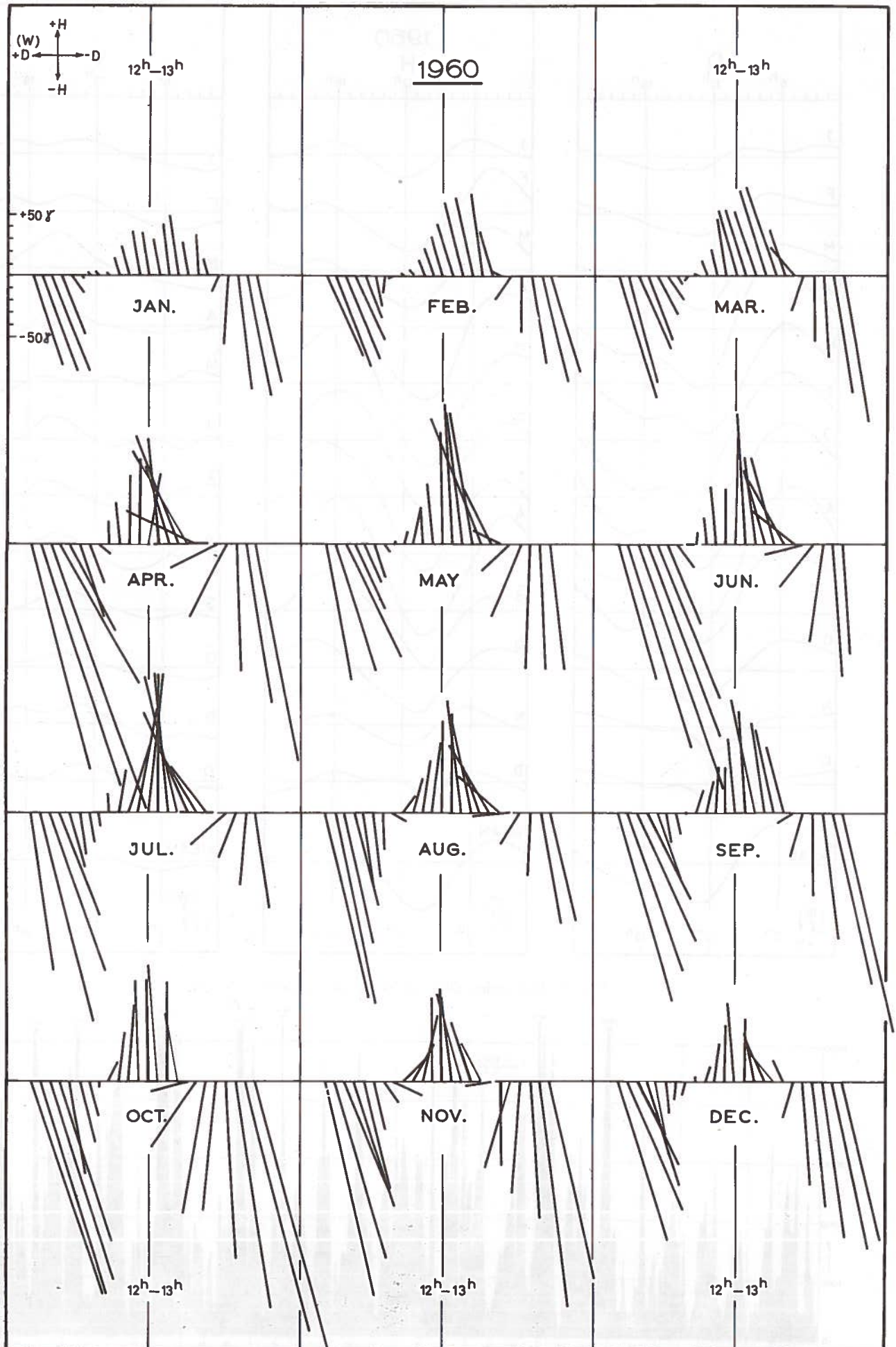


Fig. 3. Diagrams of the Monthly Mean Values (M) of the Storminess in the Horizontal Plane.

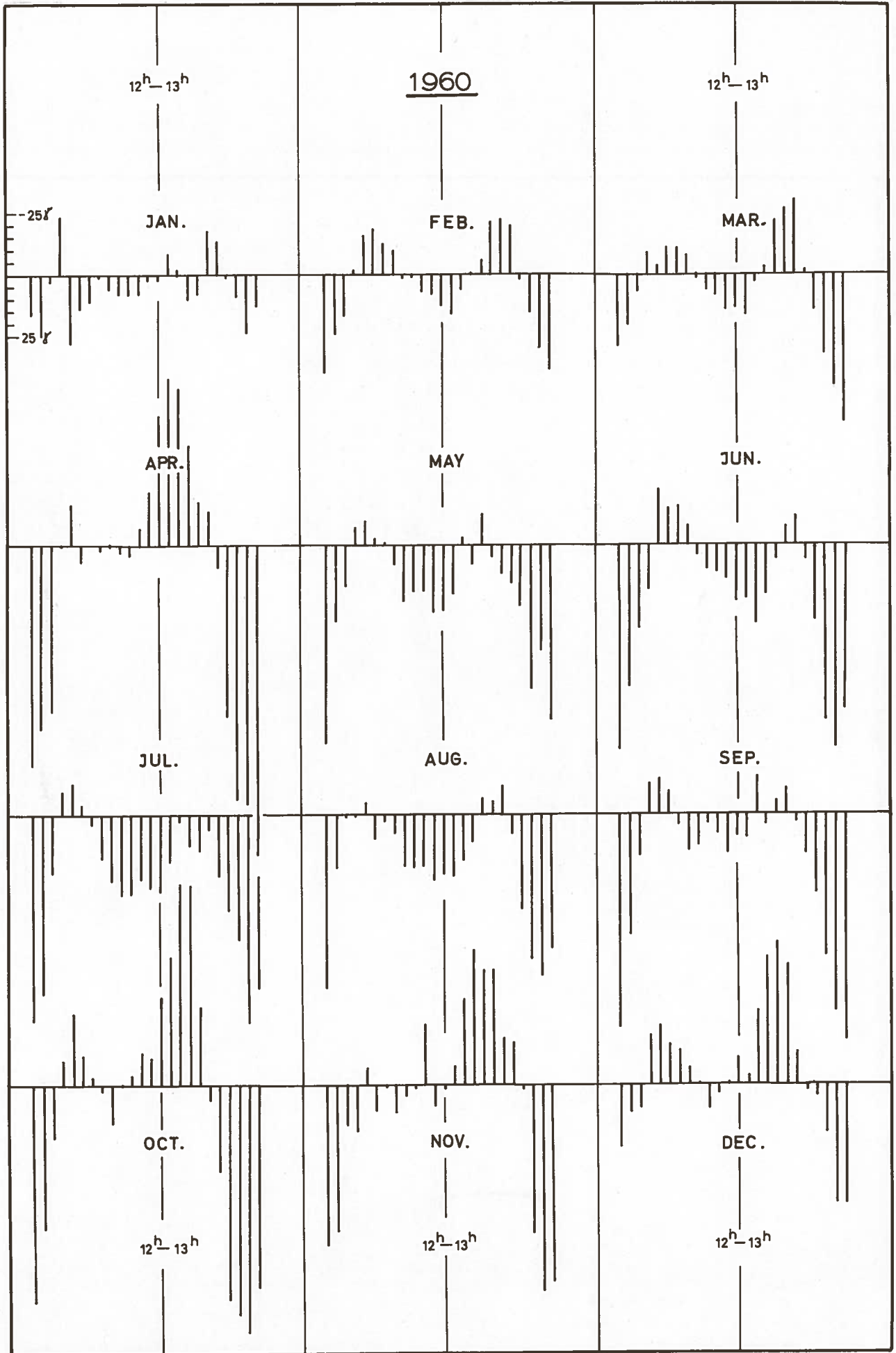


Fig. 4. Diagrams of the Monthly Mean Values (M) of the Storminess of the Vertical Intensity.

