

Publikasjoner fra  
DET NORSKE INSTITUTT FOR KOSMISK FYSIKK  
Nr. 37

THE AURORAL OBSERVATORY AT TROMSØ

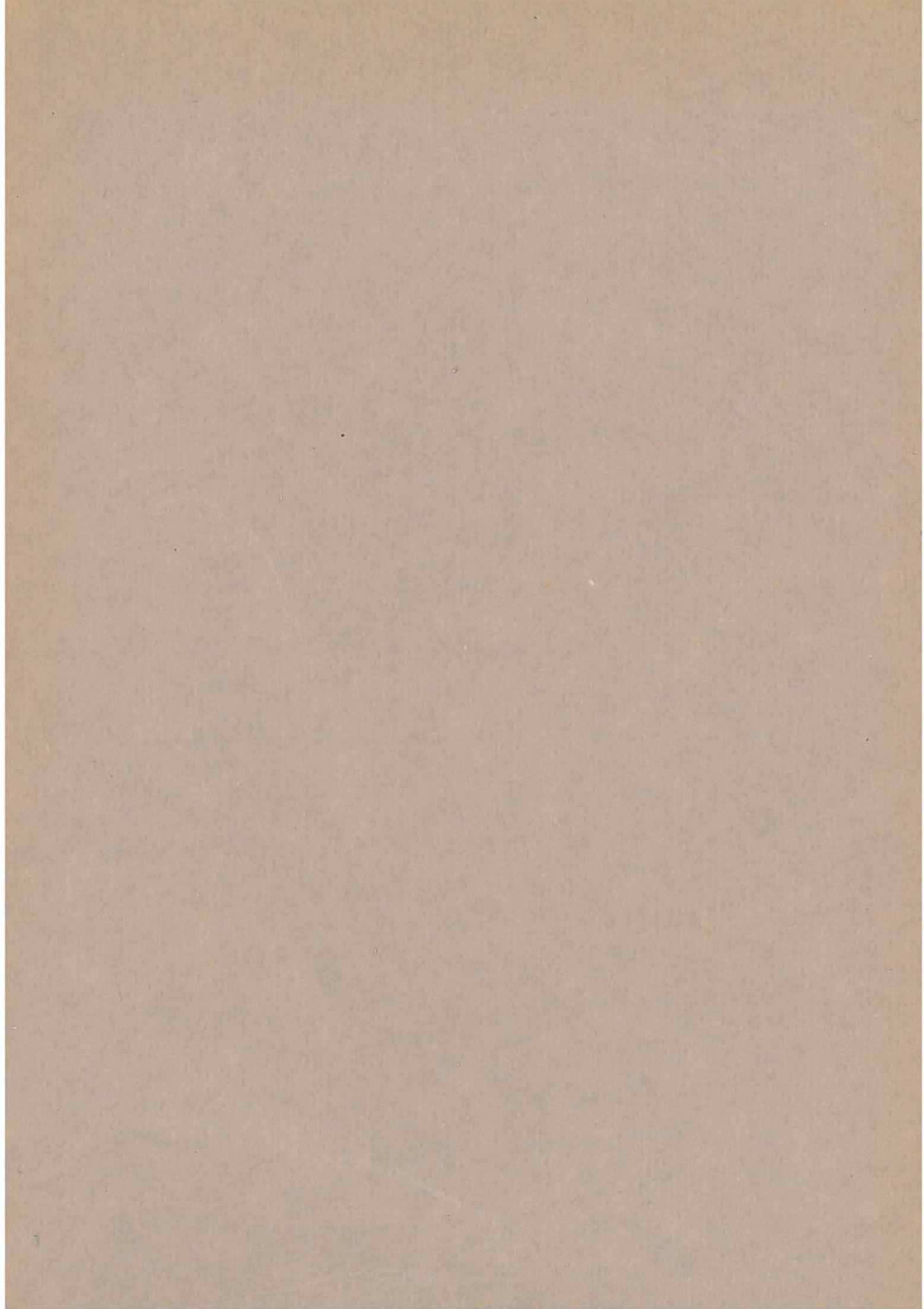
( $\varphi = 69^{\circ} 39'.8$  N,  $\lambda = 18^{\circ} 56'.9$  E. Gr.)

OBSERVATIONS 1953

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1955

A.S JOHN GRIEGS BOKTRYKKERI, BERGEN



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## SPECTROGRAPHIC WORK 1953

The spectrum analysis of the auroral and twilight emission was continued by professor Vegard and collaborators by observations undertaken at the Auroral Observatory and at the Physical Institute at Oslo.

At Tromsø spectrograms were taken with 3 spectrographs. Two big spectrographs built by «Société Générale d'Optique», one denoted by («V») has a light power  $F : 1.2$  and a fairly great dispersion ( $41 \text{ \AA}/\text{mm}$  at  $\lambda = 4000$ ) and the second one («F») has the extremely great light power  $F : 0.65$ , but a smaller dispersion ( $77 \text{ \AA}/\text{mm}$  at  $4000 \text{ \AA}$ ).

For the study of the variation of the intensity of the hydrogen lines with latitude, we took spectrograms at Tromsø and Oslo with two practically identical spectrographs indicated by ( $\alpha$ ) and (a) respectively. They are described in a paper by Vegard, Geof. Publ. Vol. IX, No. 11, 1932, fig. 3 and 4 p. 9.

At Oslo we also used a somewhat bigger spectrograph (C) with a light power  $F : 0.95$ .

In January 1953 Vegard stayed for some weeks at Tromsø. In the winter 1952/53 several successful spectrograms were obtained with three spectrographs («V», «F» and  $\alpha$ ).

During the winter 1953/54 the spectrographic work was continued with the same instruments by Vegard in collaboration with cand. real. A. Omholt.

The experimental material obtained at Tromsø and Oslo during the winters 1952/53 and 1951/52 has been worked up by Vegard and collaborators at Oslo. The results will be published mainly in three papers in the Geof. Publ.

The principal part, containing the results of the auroral spectrograms obtained with spectrograph («V») and («F»), will be published by Vegard. The results obtained from Tromsø and Oslo with spectrographs ( $\alpha$ ) and (a) for the study of the latitude variations of the H-lines, will be published by L. Vegard and G. Kvifte, and a paper dealing with the appearance of the sodium D-line in twilight, airglow and aurorae, will be published by L. Vegard, G. Kvifte, A. Omholt and S. Larsen.

*L. Vegard.*

## OZONE OBSERVATIONS

The table of ozone values of Tromsø covers 9 months and that of Longyear, Svalbard ( $78.2^\circ \text{ N.}$ ) 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 Søren H. H. Larsen and at Longyear by H. Welde.



TROMSØ.

TABLE OF OZONE VALUES 1953.

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	300	1	—		325	1	273	2 2	273	3 6	253	3 5	221	2 0	205	2 5	233	1
2	275	1	—		304	1	312	3 11	271	3 7	242	2 1	227	2 2	210	2 2	206	2 4
3	270	1	331	1	291	1	325	1	261	3 21	242	3 5	231	2 11	200	2 3	198	2 4
4	272	1	270	1	342	1	303	3 7	275	3 7	240	3 16	225	1	212	2 6	198	1
5	245	2 0	335	1	294	1	284	3 7	276	3 3	242	2 3	234	1	214	2 2	205	2 5
6	270	1	348	1	—		300	3 20	271	2 5	245	3 3	237	1	—		180	2 13
7	263	2 16	289	1	318	2 1	270	3 10	269	1	243	3 4	229	1	199	1	179	2 2
8	266	1	245	1	305	1	271	3 13	244	3 3	242	1	223	1	191	2 12	176	1
9	267	1	295	1	321	1	254	3 2	241	3 5	247	1	211	1	180	1	219	1
10	270	1	295	1	334	1	273	1	236	3 6	239	1	215	2 1	188	2 14	250	2 20
11	268	1	286	2 18	305	1	279	3 0	243	3 4	226	1	231	2 1	193	2 3	230	1
12	277	1	240	1	—		277	3 12	243	3 8	229	1	217	2 6	195	2 3	212	2 6
13	264	1	298	1	295	2 6	280	3 3	237	3 4	240	2 5	219	2 0	208	1	215	1
14	309	1	300	2 6	314	1	271	1	230	1	223	3 4	206	1	178	1	246	1
15	—		268	1	291	1	285	3 11	236	3 9	219	2 2	198	1	206	1	—	
16	293	1	278	1	297	2 6	281	3 23	228	3 4	221	2 4	198	1	186	2 0	195	1
17	270	1	267	1	346	2 12	278	1	229	3 6	218	1	203	2 1	176	3 10	162	2 4
18	303	1	312	1	351	2 2	271	3 4	226	3 5	221	2 0	—		180	3 10	185	1
19	311	2 2	285	1	—		281	3 37	225	2 3	216	1	202	2 1	179	2 3	150	1
20	330	1	297	1	308	2 5	256	3 6	219	3 7	223	1	196	2 0	190	1	160	2 7
21	272	1	300	1	279	2 1	286	2 3	224	2 1	211	1	196	2 0	203	3 5	180	1
22	278	1	249	1	286	2 5	271	3 7	232	1	223	2 4	197	2 1	209	3 4	165	1
23	269	1	265	1	288	3 5	273	3 9	215	1	222	3 4	192	1	194	3 4	160	2 12
24	254	2 12	257	1	289	3 6	314	1	203	2 9	223	3 2	206	2 2	190	2 4	170	2 3
25	266	1	269	2 6	296	2 4	287	1	214	3 27	219	3 1	202	2 1	167	2 2	150	1
26	268	1	286	1	278	2 1	295	3 6	205	3 4	211	1	193	2 2	183	1	170	2 4
27	288	1	289	1	281	3 10	280	3 11	200	3 8	209	2 6	200	1	174	2 6	135	2 10
28	308	1	299	1	323	3 12	283	3 19	228	1	—		208	1	178	3 18	150	2 5
29	—		299	1	282	2 5	287	3 3	226	3 5	—		206	2 0	185	2 10	160	2 5
30	—		338	1	268	3 5	287	3 10	215	3 25	232	1	206	1	201	2 2	160	2 2
31	—		335	1	—		281	1	223	2 5	223	2 5	208	2 5	192		160	3 5
Mean	279.		291.		305.		283.		237.		229.		211.		192.		185.	

LONGYEAR, SVALAR D.

TABEL OF OZONE VALUES 1953.

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 .....	297	1		285	2	1	—			278	2	0	228	2	3	218	2	1				No observations
2 .....	—			—			—			276	2	2	228	2	1	208	1					
3 .....	298	1		290	2	21	—			269	1		226	2	5	198	2	0				
4 .....	286	1		293	1		—			278	2	5	215	1		201	2	2				
5 .....	310	1		305	2	3	—			296	2	26	—			201	2	10				
6 .....	293	1		325	2	5	287	2	8	273	2	7	225	1		202	2	3				
7 .....	295	1		312	2	1	275	2	2	261	2	7	226	2	6	218	2	0				
8 .....	260	1		319	2	3	259	2	3	233	2	1	—			206	2	1				
9 .....	278	1		317	2	1	271	1		245	2	1	221	2	2	191	1					
10 .....	310	1		338	1		272	1		241	2	5	221	2	4	201	2	10				
11 .....	312	1		314	1		283	2	6	235	2	1	224	1		212	2	2				
12 .....	253	1		—			276	2	2	237	1		224	2	7	220	2	15				
13 .....	334	1		302	2	3	283	2	7	227	2	2	237	2	0	221	2	4				
14 .....	333	1		300	1		281	1		239	1		239	2	6	222	2	3				
15 .....	335	1		318	2	4	286	2	3	240	1		—			207	2	7				
16 .....	310	1		331	2	1	294	2	7	—			—			214	2	1				
17 .....	—			333	2	6	278	2	5	236	1		216	1		204	2	1				
18 .....	—			318	2	1	278	1		229	2	3	230	2	0	194	2	13				
19 .....	—			299	2	1	274	2	4	230	2	16	231	2	10	198	1					
20 .....	—			314	1		299	2	1	215	2	10	208	2	0	187	2	1				
21 .....	—			329	2	7	292	2	1	222	2	5	207	1		193	2	4				
22 .....	291	1		347	2	3	295	2	11	216	2	2	—			193	2	2				
23 .....	296	1		333	2	2	315	1		265	2	7	207	1		185	2	4				
24 .....	305	1		—			295	1		243	2	4	222	2	10	—						
25 .....	298	2	2	—			294	2	3	211	1		212	2	5	—						
26 .....	282	2	5	—			275	2	4	201	2	4	212	1		—						
27 .....	285	1		—			278	2	4	211	2	2	217	2	2	—						
28 .....	302	1		—			290	2	19	226	2	1	—			—						
29 .....	303	2	3	—			307	2	4	225	2	2	222	1		—						
30 .....	313	2	4	—			296	2	1	236	2	8	220	2	1	—						
31 .....	304	2	2	—			289	2	8	—			227	2	5	—						
Mean .....	300.			315.			285.			241.			222.			204.						

# EARTH MAGNETISM 1953, 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. The reading of the hourly values was performed by S. Berger and the calculation work by Anne Østvik.

## SCALE-VALUES

The following scale-values were determined:

D-curves: 1'.50 or 4.88 $\gamma$  per mm.  
 H-curves: 5.38 $\gamma$  per mm.  
 V-curves: 7.25 $\gamma$  per mm.

## BASE-LINE VALUES

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

The quiet mean Inclination value for 1953 was calculated to 77° 34'.6.

The temperature coefficient for the H-variometer is 7.3 $\gamma$  and for the V-variometer ÷ 2.3 $\gamma$  per degree Celsius.

OBSERVED AND ADOPTED BASE-LINE VALUES 1953

<i>D</i>			<i>H</i>			<i>V</i>		
Date	Observ.	Adopt.	Date	Observ.	Adopt.	Date	Observ.	Adopt.
I 5	1°50'.7W	1°49'.7W	I 6	11233	11230	I 9	50448	50446
20	49.9	.7	28	29	30	30	48	46
II 4	50.6	.7	II 10	29	30	II 16	46	46
19	49.8	.7	III 11	34	30	III 3	46	46
26	49.7	.7	25	32	30	10	46	46
III 17	30.7	1°31'.0	IV 7	36	35	31	42	46
IV 4	32.1	.0	18	34	35	VI 14	45	46
15	31.3	.0	25	32	35	22	40	46
25	31.1	.0	V 5	34	35	28	45	46
30	30.7	.0	22	35	35	V 18	48	46
V 20	30.6	.0	28	37	35	25	48	46
VI 5	31.1	.0	VI 13	36	35	VI 12	50	46
24	29.8	.0	17	37	35	19	50	46
VIII 18	29.7	.0	25	32	35	VIII 19	48	46
IX 25	31.5	.0	VII 28	33	35	IX 26	39	46
28	30.9	.0	VIII 17	35	35	30	43	46
30	30.6	.0	IX 9	36	35	X 10	44	46
XI 11	32.0	.0	25	37	35	7	41	46
XII 2	31.7	.0	28	37	35	10	44	46
10	31.2	.0	XI 28	35	35			



## 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 the 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 use 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  $400\gamma$ , character number 1 from  $400\gamma$  to  $1200\gamma$  and character number 2 greater than  $1200\gamma$ . 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 1953, BEAR ISLAND

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

Some measurements with QHM 123 and BMZ 57 were taken by S. Berger during an inspection period 1.—14. of July 1952. According to these measurements we can give approximate annual values for 1952.

$$D = 1^\circ 50' \text{ E. } H = 9190\gamma. V = 51\ 950\gamma.$$

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

K-INDICIES FOR THREE-HOUR INTERVAL 1953

Tromsø.

Range 2000γ for K = 9. Scale values: D = 4.88γ H = 5.38γ V = 7.25γ.

Date	Jan. 2	Feb. 4	Mar. 12	Apr. 4	May 4	Jun. 1
1	5533 3455	2110 1045	4233 2265	5223 3433	0001 3301	3201 1342
2	3223 5665	3310 1343	5543 6775	6333 2355	3212 3132	4645 6566
3	4321 4343	4301 1223	4545 3355	5312 3365	0012 2133	6553 5455
4	3200 0442	1102 4430	5311 2332	5533 4465	2102 1123	6634 4454
5	0144 5456	0000 1030	0211 1366	3122 2345	3313 2343	3432 2354
6	2222 4545	0000 0332	0011 2225	4422 2334	6434 5456	4433 3452
7	4121 3434	0000 0002	6332 2353	2000 2224	5455 4336	4222 2233
8	4110 0034	0100 2114	2321 3477	5211 3246	6443 4355	3111 2113
9	5100 0255	4221 2436	5434 3466	5301 2323	5334 4446	0112 2221
10	3200 0025	3000 3455	6653 4445	2123 3336	4122 3344	1232 2364
11	5201 1143	5322 2034	5221 1133	2444 3433	2223 2133	3212 2235
12	3200 1111	2120 2332	4021 1232	4323 4245	1021 1232	2011 2356
13	0100 4353	0000 0034	1000 1005	5323 4442	1112 2000	5523 3355
14	4332 1234	5122 1253	4211 1255	2111 2132	0011 2123	5321 2344
15	1000 1014	4311 2136	3023 3323	3312 3232	2322 5567	3101 2123
16	2000 1213	6211 4532	4421 1145	6543 4577	6655 5577	1001 2331
17	1000 0026	2222 1134	4110 0130	5322 3333	7432 2346	3112 3434
18	2101 4453	0011 2324	0000 1112	3323 2243	6432 4254	3211 0033
19	4653 4554	2311 1345	5412 3365	4534 5537	6436 3266	1001 2102
20	6333 2143	5000 1342	5202 2354	5544 5457	6434 3354	2002 5456
21	3112 1233	6222 1355	6633 2474	4544 4656	3433 3354	3233 3356
22	2210 1014	4111 3466	6433 3467	4433 5466	4422 3364	2234 3344
23	5200 0032	6554 4667	5644 4675	6633 4366	4223 2332	2100 1033
24	2002 3554	6554 4587	7754 5677	3102 2233	1002 2241	2311 1143
25	0014 4357	6554 5466	5643 4666	2222 2344	1001 2225	3212 2232
26	7644 5666	6654 5676	3433 4477	5331 3246	4011 2033	0000 1132
27	6534 4664	4434 447	5534 4356	5312 2334	2454 5434	1001 1114
28	3443 4566	4632 3454	5643 3464	4312 3100	3212 3453	2101 1003
29	5543 4564		5231 1265	2202 4401	0012 3323	3024 6546
30	5443 3653		4432 3363	4311 4453	5101 1214	7654 4455
31	4433 4133		2222 3165		2113 3354	

Date	Jul. 3	Aug. 3	Sep. 10	Oct. 8	Nov. 6	Dec. 1
1	5535 5336	4522 3355	4333 5454	4532 3364	0001 0353	0000 0013
2	6743 4566	4523 2254	5332 3465	4001 2343	0000 0222	2010 0130
3	5333 4465	5221 3222	5223 3877	1112 2222	0010 2334	2200 2333
4	6344 3444	5501 4442	7634 4575	4100 0153	4210 0004	6100 0444
5	3232 2255	3001 1054	7532 2276	2000 0003	4334 4440	3310 0221
6	6322 1226	2001 2424	1133 3155	4000 0022	3111 3122	1000 2344
7	5631 3326	5413 2234	3233 4435	0033 3125	0110 0244	4311 0015
8	6222 2365	5122 2133	6232 3331	3311 4236	0001 2315	2110 1245
9	4211 2255	5321 3365	3310 0033	2321 1014	5110 0012	4000 0263
10	4220 2321	3333 4346	2012 1346	4210 2354	1000 0020	2001 1224
11	2311 1023	6634 3455	7212 3133	3001 4432	0000 2244	4222 5555
12	2100 2366	6655 5555	3123 3245	0100 0042	6201 4566	4442 4555
13	4232 3444	5521 3465	5422 2124	1001 1234	5554 5577	5221 2174
14	2200 2223	4412 2331	1000 0010	1010 0220	5543 5576	1101 1243
15	5332 4332	2122 2266	0123 4563	0001 5666	2345 5465	2001 0065
16	1210 1123	5213 3335	3222 2453	6552 4777	6643 3666	3101 1224
17	1110 1011	3201 3211	5532 3354	6434 4665	4324 3567	2100 0335
18	3201 2103	4300 3203	3120 0347	4544 6676	5543 2344	3000 1434
19	3300 0034	2201 2112	—5 5767	7655 5766	6433 5476	2000 0344
20	3312 2212	2100 1001	6543 —	6644 4577	5533 2367	1100 2343
21	2111 2215	0001 1000	—3 4565	5435 5323	4124 4144	3110 0006
22	1011 1335	0112 1143	7553 3276	3543 3554	3111 1034	3121 1352
23	6535 5546	3425 4566	6554 5465	4533 3332	3025 4364	0000 1343
24	4203 2331	6644 5567	5345 4464	0012 5404	6343 1344	4321 0023
25	1011 2443	6544 5465	4231 4354	2232 2124	4322 2245	3001 1324
26	6533 4455	6533 4467	2222 2255	2011 0044	5211 1223	1000 0035
27	5545 4475	6645 5666	5643 4353	4243 3455	2231 2334	3001 0256
28	5644 4256	6444 4566	3311 2333	4301 1254	4000 0004	3201 2332
29	4644 4475	5554 5576	1100 2220	5211 2245	3211 0101	4000 1325
30	6334 5356	6554 5566	0001 2334	4121 2144	2010 1132	2111 0233
31	5533 4333	5533 5466		6230 1100		0112 0012

K-INDICES FOR THREE-HOUR INTERVAL 1953

**Bear Island.**

Range 2000 $\gamma$  for K = 9. Scale values: D = 6.1 $\gamma$  H = 6.0 $\gamma$  V = 21.7 $\gamma$ .

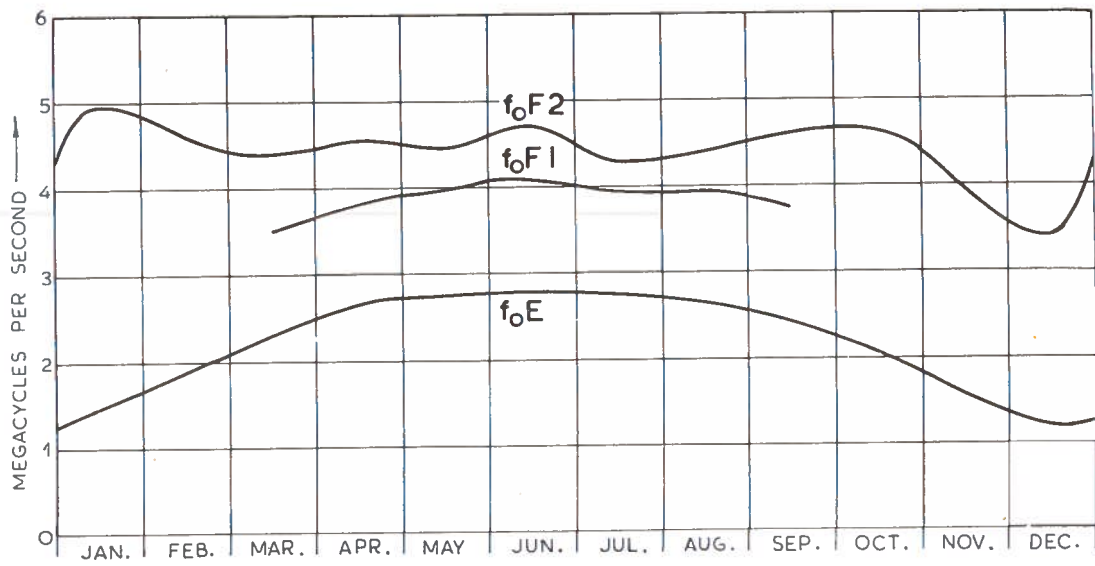
Date	Jan.	Feb.	Mar.	Apr.	May	Jun.
1	4544 3455	3332 22—	4443 3256	4434 3432	21— 4321	4422 2353
2	4334 4665	— —	5554 —	6443 3455	531— 2243	3566 6564
3	4432 4454	— —	— 4264	2123 3—44	5444 4452	6554 5353
4	3211 2322	— —	5423 35—	4644 4464	3322 2234	4554 4433
5	— —	— —	— 2—52	3333 3355	4433 43—	43— —463
6	—2 3653	1001 2443	1— 2333	3433 2433	6—45 5445	5544 3533
7	3222 4434	2111 1221	5432 —	21— 3343	3555 3444	3334 3332
8	5422 1144	2211 2224	— 4566	4423 3235	4543 4364	3322 3323
9	4112 2255	4333 3535	5434 4355	4422 2331	5444 4555	3323 4332
10	3322 2235	3212 3344	5554 5435	2334 3326	4333 3434	3444 3354
11	5423 2255	4333 3245	4332 2144	3544 4533	3333 3333	3333 3346
12	3322 3221	2332 3534	4122 2232	3434 4344	2242 3323	3232 3355
13	2213 4344	1001 1225	2111 2215	5434 44—2	3222 2211	6634 3255
14	4433 2344	4323 2253	2322 2245	3333 3242	2222 3222	4432 4454
15	3112 2124	4432 3245	2234 3432	3433 3332	3433 5466	3212 2124
16	3111 3323	6323 4642	4432 2246	5553 4666	5655 6566	3112 3333
17	3211 1255	2333 2324	3221 22—2	4323 3333	5532 2354	3222 4334
18	3223 4553	2123 3345	2212 2211	3344 3243	5544 4355	4422 2334
19	3443 4355	3443 3354	4524 4455	4544 4536	5546 4255	2113 321—
20	5443 3154	4122 2352	4213 2245	4454 4456	5544 3354	— —
21	3223 3345	5352 2345	6553 2464	4544 3665	5544 3454	— 4455
22	3222 2114	4422 3456	5543 4456	4534 5455	4433 3464	3434 3345
23	5421 1152	5554 7755	3554 5675	5675 4455	3323 2342	3310 213—
24	2223 4543	6654 46—	6654 5676	4322 3332	2113 3342	— 4444
25	1124 5365	—4 5675	5544 5564	3223 3354	2122 3333	2233 3354
26	5654 4666	5555 5555	3534 4566	3443 4335	3212 3233	1010 1433
27	5544 4664	4455 3436	5555 4365	4433 3453	4555 5432	3222 2223
28	4454 5766	4653 3664	5654 4564	4533 3211	3423 4453	2200 2123
29	6544 4564	— —	4342 2253	3323 —2	2223 5323	2145 5543
30	4444 4655	— —	4533 4463	4522 3553	4322 2324	6555 4455
31	4543 3344	— —	3433 3255	— —	3223 3363	— —
Date	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
1	3544 4345	3543 4645	4444 4352	3543 4454	1112 3352	1101 2114
2	3444 4655	3543 3353	4443 4555	3212 3542	2221 2321	3222 2231
3	5444 4452	4332 4342	3324 4567	3333 3211	2122 3544	3322 2432
4	6544 3443	4522 4353	7553 4554	3212 2253	4422 2124	6332 1555
5	3343 3354	3213 2264	5433 3356	3211 1222	4443 3331	4432 2332
6	4432 3335	3222 2432	2244 4254	4222 2442	2223 3211	3112 4354
7	4662 3324	3423 2323	3344 4624	2133 2315	23— 2145	4432 1123
8	6334 3454	3333 3244	4444 4342	3333 3315	2002 3325	2332 3256
9	3333 14—	— —	3322 2333	2442 2224	5321 1122	5211 2364
10	2442 4431	— —	2213 3445	5321 3363	2111 1131	3122 2325
11	2423 3232	— —	5323 3252	2113 5552	2111 3243	3444 5456
12	1232 3366	— —	4224 3355	2322 1162	5227 4356	4553 4455
13	3343 4434	— —	5434 2245	2322 2333	6655 5665	5333 3353
14	3311 3323	— —	3122 2233	2121 2331	4644 6665	3313 3353
15	4533 4543	— —	1324 3364	1113 5555	3355 5663	2123 1265
16	3322 3234	— —	3323 2654	5553 4666	5654 3665	3313 2234
17	3222 2232	— —	3433 3364	6444 4565	4434 3666	3211 2435
18	3321 3212	— —	2332 2346	4444 6665	4543 3554	3212 3533
19	5521 2145	— —	7555 6766	6554 556—	6444 5366	3212 2454
20	3433 4322	— —	3544 6466	—54 5566	5544 4465	2312 3352
21	4233 2325	— —	5554 4644	4445 4212	3343 3164	2221 1225
22	3103 2334	3343 —	6663 3355	4553 3654	3232 3244	4242 3464
23	5545 6535	4535 5556	5554 5664	4544 4653	4245 4354	2111 2354
24	4213 3433	5644 5665	4344 5464	2124 5323	4443 2433	3442 1144
25	1213 3443	6545 5544	3333 4452	2443 3323	4443 3355	3292 4445
26	5443 4355	4434 4646	3333 4456	3222 2154	5433 2343	3201 1255
27	4545 4463	4444 5555	3333 4456	4343 4445	4443 2543	2213 2135
28	4645 5456	5444 3535	4332 3443	4422 2354	4221 1105	5322 334—
29	4545 4443	5444 4655	1322 3222	4332 3135	4422 1111	— 2436
30	4444 3456	5564 5564	1222 3443	3322 3153	3122 2235	2333 1243
31	5543 4343	5544 5455	— —	5332 2211	— —	2342 1133

DAILY SUM OF K-INDICES 1953.

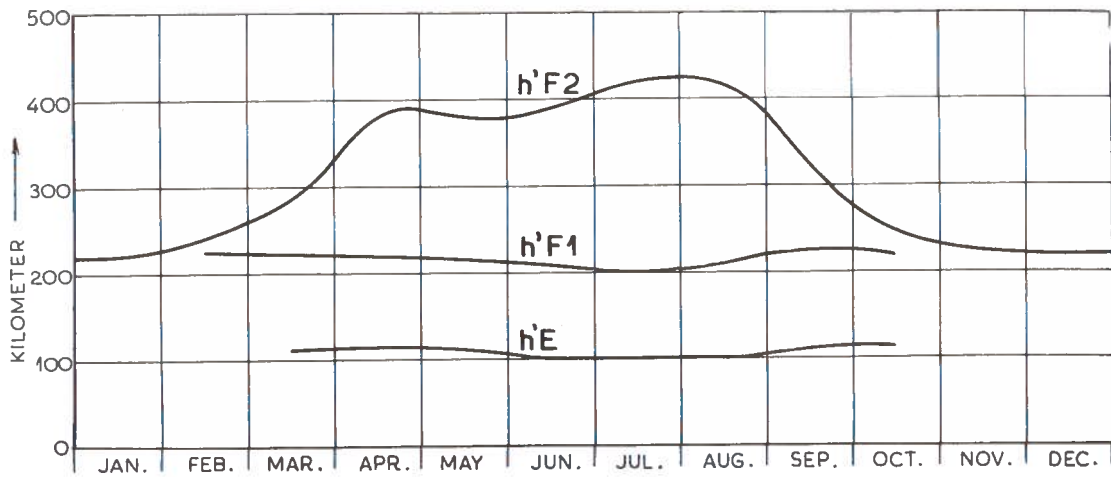
Tr. means Tromsø. B. I. means Bear Island.

Date	Jan.		Feb.		Mar.		Apr.		May		Jun.		Jul.		Aug.		Sep.		Oct.		Nov.		Dec.	
	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.	Tr.	Bl.
1	33	34	14	—	27	31	25	27	8	13	16	25	35	32	29	34	31	30	30	30	12	18	4	11
2	32	35	18	—	42	—	30	34	16	20	42	41	41	36	27	29	31	34	17	22	6	15	7	17
3	24	30	16	—	34	—	28	30	12	—	38	36	33	32	19	25	37	34	13	19	13	23	15	21
4	15	16	15	—	20	—	35	36	12	21	36	32	32	33	25	28	41	38	14	20	11	21	19	30
5	29	—	4	—	20	—	22	28	22	—	26	—	24	28	14	23	34	32	5	14	26	25	12	23
6	26	—	8	15	13	—	24	25	37	—	28	32	24	27	15	20	22	27	8	19	14	16	14	23
7	22	24	2	11	27	—	12	16	35	33	20	24	29	30	24	22	27	30	17	20	12	17	15	20
8	16	23	9	16	29	—	24	26	34	33	13	21	28	32	13	25	23	29	23	24	12	17	16	26
9	18	22	24	29	35	33	19	21	33	36	11	23	22	—	28	—	13	21	14	21	10	17	15	24
10	12	22	20	22	37	36	23	26	23	27	23	30	16	14	29	—	19	24	21	26	3	11	12	20
11	17	28	21	27	18	23	27	31	18	24	20	28	13	21	36	—	22	25	17	24	12	17	30	35
12	9	18	15	27	15	18	27	29	12	21	20	26	20	26	42	—	23	28	7	19	30	31	33	35
13	16	23	7	12	7	15	27	—	7	15	31	24	26	28	31	—	22	29	12	20	43	44	24	28
14	22	27	21	24	21	22	13	23	10	17	24	30	13	19	20	—	2	18	6	15	40	41	13	24
15	7	16	21	27	19	23	19	24	32	34	13	17	25	31	23	—	24	26	24	26	34	36	14	22
16	9	17	24	30	22	27	41	40	46	44	11	19	11	22	25	—	23	28	43	40	40	40	14	21
17	9	20	17	22	10	—	24	24	31	29	21	23	6	18	13	—	30	29	38	38	34	36	14	21
18	20	27	13	23	5	13	22	26	30	35	13	24	12	17	15	—	20	25	42	39	30	33	15	22
19	36	31	20	29	29	33	36	35	36	35	7	—	13	25	11	—	—	47	47	—	38	38	13	23
20	25	29	15	21	23	23	39	36	32	33	24	—	16	24	5	—	—	38	43	—	34	37	14	21
21	16	25	26	29	35	35	38	37	28	34	28	—	15	23	2	—	—	37	30	26	24	27	11	17
22	11	17	26	31	36	36	35	35	28	31	25	29	15	19	13	—	38	37	32	34	14	23	18	29
23	12	21	43	40	41	40	37	37	21	22	10	—	39	38	35	38	40	40	26	35	27	31	11	19
24	21	25	43	—	48	45	16	22	12	19	16	—	18	23	43	41	35	35	16	22	28	27	15	23
25	24	27	41	27	40	38	21	25	13	19	17	25	16	21	39	38	26	27	18	24	24	31	14	28
26	44	42	45	40	35	36	27	29	14	19	7	13	35	33	38	35	22	31	12	21	17	27	9	19
27	38	38	—	34	35	38	23	29	31	33	9	18	39	35	44	36	33	32	30	31	20	29	16	19
28	35	41	31	37	35	39	14	32	23	28	8	12	36	39	39	33	19	26	20	24	8	16	16	22
29	36	38	—	—	25	25	15	13	14	21	30	29	38	33	42	37	8	17	22	24	9	16	15	15
30	33	36	—	—	28	32	25	29	15	22	40	39	35	43	42	40	13	21	19	22	10	20	13	21
31	25	30	—	—	23	28	23	25	22	25	29	29	29	31	37	37	42	21	13	19	13	19	7	19





Monthly Median Noon-Values (12<sup>h</sup> meet) 1953 for the Critical Frequencies and the Virtual Heights for the E-Layer, F1-Layer and F2-Layer.







Tromsø. Declination, D = 1° W + Tabular Quantities expressed in Tenths of Minutes. G. M. T.

JANUARY 1953

HOURLY MEAN VALUES

Table for January 1953 showing magnetic observations. Columns include DAY (1-31), hours (1-24), and summary rows M and QM.

FEBRUARY 1953

Table for February 1953 showing magnetic observations. Columns include DAY (1-28), hours (1-24), and summary rows M and QM.

MARCH 1953

Table for March 1953 showing magnetic observations. Columns include DAY (1-31), hours (1-24), and summary rows M and QM.



Tromsø.

Declination. Storminess. (+ W) Unit Gamma.

Gr. M. T.

Table for JANUARY 1953 showing hourly mean values for declination, storminess, and unit gamma. Columns include DAY, 1-25, M, PS, NS, AS.

FEBRUARY 1953

Table for FEBRUARY 1953 showing hourly mean values for declination, storminess, and unit gamma. Columns include DAY, 1-25, M, PS, NS, AS.

MARCH 1953

Table for MARCH 1953 showing hourly mean values for declination, storminess, and unit gamma. Columns include DAY, 1-25, M, PS, NS, AS.

Tromsø. APRIL 1953

Declination, D = 1° W + Tabular Quantities expressed in Tenths of Minutes.

Gr. M. I.

HOURLY MEAN VALUES

Table for April 1953 showing hourly mean values for declination. Columns include Day (1-30), M, and R. Rows contain numerical data for each hour.

MAY 1953

Table for May 1953 showing hourly mean values for declination. Columns include Day (1-31), M, and R. Rows contain numerical data for each hour.

JUNE 1953

Table for June 1953 showing hourly mean values for declination. Columns include Day (1-30), M, and R. Rows contain numerical data for each hour.



Tromsø.

Declination. Storminess. (+ W) Unit Gamma.

Gr. M. T.

APRIL 1953

HOURLY MEAN VALUES

Table for April 1953 showing hourly mean values for declination, storminess, and unit gamma. Columns include Day (1-30), 25 hourly values, M, PS, NS, AS, MPS, and MNS.

MAY 1953

Table for May 1953 showing hourly mean values for declination, storminess, and unit gamma. Columns include Day (1-31), 25 hourly values, M, PS, NS, AS, MPS, and MNS.

JUNE 1953

Table for June 1953 showing hourly mean values for declination, storminess, and unit gamma. Columns include Day (1-30), 25 hourly values, M, PS, NS, AS, MPS, and MNS.

Tromsø. Declination. D = 1° W + Tabular Quantities expressed in Tenths of Minutes.

Gr. M. T.

Table for July 1953 showing hourly mean values for days 1 through 31. Columns include Day, hours 1-24, M, and R. Data values range from approximately 125 to 625.

Table for August 1953 showing hourly mean values for days 1 through 31. Columns include Day, hours 1-24, M, and R. Data values range from approximately 139 to 625.

Table for September 1953 showing hourly mean values for days 1 through 30. Columns include Day, hours 1-24, M, and R. Data values range from approximately 139 to 625.



Tromsø.

Declination. Storminess. (+ W) Unit Gamma.

Gr. M. T.

JULY 1953

HOURLY MEAN VALUES

Table for July 1953 showing hourly magnetic observations. Columns include Day (1-31), 24 hours of declination/storminess values, and summary statistics (M, PS, NS, AS).

AUGUST 1953

Table for August 1953 showing hourly magnetic observations. Columns include Day (1-31), 24 hours of declination/storminess values, and summary statistics (M, PS, NS, AS).

SEPTEMBER 1953

Table for September 1953 showing hourly magnetic observations. Columns include Day (1-30), 24 hours of declination/storminess values, and summary statistics (M, PS, NS, AS).

Tromsø. Declination. D = 1° W + Tabular Quantities expressed in Tenths of Minutes.

Gr. M. T.

Table for October 1953 showing hourly mean values for days 1 to 31. Columns include Day, hours 1-24, M, and R. Values range from approximately 222 to 359.

Table for November 1953 showing hourly mean values for days 1 to 30. Columns include Day, hours 1-24, M, and R. Values range from approximately 274 to 350.

Table for December 1953 showing hourly mean values for days 1 to 31. Columns include Day, hours 1-24, M, and R. Values range from approximately 286 to 355.



Tromsø.

Declination. Storminess. (+ W) Unit Gamma.

Gr. M. T.

OCTOBER 1953

HOURLY MEAN VALUES

Table with columns: DAY, 1-23, M, PS, NS, AS. Data for October 1953 showing magnetic observations and storminess indices.

NOVEMBER 1953

Table with columns: DAY, 1-23, M, PS, NS, AS. Data for November 1953 showing magnetic observations and storminess indices.

DECEMBER 1953

Table with columns: DAY, 1-23, M, PS, NS, AS. Data for December 1953 showing magnetic observations and storminess indices.

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

Gr. M. T.

JANUARY 1953

HOURLY MEAN VALUES

Table for January 1953 showing hourly mean values for days 1-31. Columns include Day, hours 1-23, M, and R. Values range from approximately -200 to 300.

FEBRUARY 1953

Table for February 1953 showing hourly mean values for days 1-28. Columns include Day, hours 1-23, M, and R. Values range from approximately -250 to 150.

MARCH 1953

Table for March 1953 showing hourly mean values for days 1-31. Columns include Day, hours 1-23, M, and R. Values range from approximately -250 to 150.



Tromsø.

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

Gr. M. T

JANUARY 1953

HOURLY MEAN VALUES

Table for January 1953 showing magnetic observations. Columns include DAY (1-31), 24 hourly values (1-24), M, PS, NS, AS, and CH. Data values range from -275 to 114.

FEBRUARY 1953

Table for February 1953 showing magnetic observations. Columns include DAY (1-28), 24 hourly values (1-24), M, PS, NS, AS, and CH. Data values range from -283 to 112.

MARCH 1953

Table for March 1953 showing magnetic observations. Columns include DAY (1-31), 24 hourly values (1-24), M, PS, NS, AS, and CH. Data values range from -200 to 125.

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

Gr. M. T.

APRIL 1953

HOURLY MEAN VALUES

Table for April 1953 showing hourly mean values for horizontal intensity. Columns include Day (1-30), hours (1-23), and monthly totals (M, R). Values range from -140 to 285.

MAY 1953

Table for May 1953 showing hourly mean values for horizontal intensity. Columns include Day (1-31), hours (1-23), and monthly totals (M, R). Values range from -700 to 300.

JUNE 1953

Table for June 1953 showing hourly mean values for horizontal intensity. Columns include Day (1-30), hours (1-23), and monthly totals (M, R). Values range from -35 to 300.



Tromsø.  
APRIL 1953

Horizontal Intensity. Storminess (+ N). Unit Gamma.  
HOURLY MEAN VALUES

Gr. M. T.

Table for April 1953 showing magnetic observations. Columns include DAY (1-30), 24 hourly values (1-24), M, PS, NS, AS, CH. Data includes values like -222, -83, -27, etc., and summary rows for M, MPS, and MNS.

MAY 1953

Table for May 1953 showing magnetic observations. Columns include DAY (1-31), 24 hourly values (1-24), M, PS, NS, AS, CH. Data includes values like 0, -30, -97, etc., and summary rows for M, MPS, and MNS.

JUNE 1953

Table for June 1953 showing magnetic observations. Columns include DAY (1-30), 24 hourly values (1-24), M, PS, NS, AS, CH. Data includes values like -113, -90, -50, etc., and summary rows for M, MPS, and MNS.

Tromsø. Horizontal Intensity. H = 11100 + Tabular Quantities expressed in Gamma. JULY 1953

Gr. M. T.

Table with columns DAY, 1-23, M, R for July 1953. Contains hourly mean values for horizontal intensity.

AUGUST 1953

Table with columns DAY, 1-23, M, R for August 1953. Contains hourly mean values for horizontal intensity.

SEPTEMBER 1953

Table with columns DAY, 1-23, M, R for September 1953. Contains hourly mean values for horizontal intensity.



Tromsø.

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

Gr. M. I.

JULY 1953

HOURLY MEAN VALUES

Table for July 1953 showing magnetic observations. Columns include DAY (1-31), 23 hourly values (1-23), M, PS, NS, AS, CH. Values range from -432 to 150.

AUGUST 1953

Table for August 1953 showing magnetic observations. Columns include DAY (1-31), 23 hourly values (1-23), M, PS, NS, AS, CH. Values range from -320 to 150.

SEPTEMBER 1953

Table for September 1953 showing magnetic observations. Columns include DAY (1-30), 23 hourly values (1-23), M, PS, NS, AS, CH. Values range from -220 to 150.

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

Gr. M. I.

Table for October 1953 showing hourly mean values for horizontal intensity. Columns include Day (1-31), hours (1-24), and monthly totals (M, R). Values range from approximately -320 to 190 Gamma.

Table for November 1953 showing hourly mean values for horizontal intensity. Columns include Day (1-30), hours (1-24), and monthly totals (M, R). Values range from approximately -260 to 150 Gamma.

Table for December 1953 showing hourly mean values for horizontal intensity. Columns include Day (1-31), hours (1-24), and monthly totals (M, R). Values range from approximately -135 to 190 Gamma.



Tromsø.

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

Gr. M. F.

OCTOBER 1953

HOURLY MEAN VALUES

Table for October 1953 showing hourly magnetic observations. Columns include Day (1-31), 24 hours of intensity values, and summary statistics (M, PS, NS, AS, CH). Summary row M: -121 -119 -74 -43 -21 -3 2 7 11 26 19 29 42 53 37 32 26 -2 -48 -76 -127 -162 -153 -145.

NOVEMBER 1953

Table for November 1953 showing hourly magnetic observations. Columns include Day (1-30), 24 hours of intensity values, and summary statistics (M, PS, NS, AS, CH). Summary row M: -92 -49 -60 -39 -9 -6 0 6 8 13 18 34 42 42 34 30 34 21 -2 -29 -83 -112 -102 -90.

DECEMBER 1953

Table for December 1953 showing hourly magnetic observations. Columns include Day (1-31), 24 hours of intensity values, and summary statistics (M, PS, NS, AS, CH). Summary row M: -46 -24 -15 -4 -2 -3 -2 -1 -1 0 0 1 5 11 14 16 21 22 22 3 -16 -52 -73 -56.

Tromsø. Vertical Intensity.  $V = 50600 +$  Tabular Quantities expressed in Gamma.

Gr. M. T.

Table for January 1953. Columns: DAY (1-31), 1-23, M, R. Rows: Daily magnetic intensity observations and monthly/quarterly means.

Table for February 1953. Columns: DAY (1-28), 1-23, M, R. Rows: Daily magnetic intensity observations and monthly/quarterly means.

Table for March 1953. Columns: DAY (1-31), 1-23, M, R. Rows: Daily magnetic intensity observations and monthly/quarterly means.



Tromsø.

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

Gr. M. T.

JANUARY 1953

HOURLY MEAN VALUES

Table with columns DAY, 1-23, M, PS, NS, AS for January 1953. Data includes hourly magnetic intensity readings and summary statistics.

FEBRUARY 1953

Table with columns DAY, 1-23, M, PS, NS, AS for February 1953. Data includes hourly magnetic intensity readings and summary statistics.

MARCH 1953

Table with columns DAY, 1-23, M, PS, NS, AS for March 1953. Data includes hourly magnetic intensity readings and summary statistics.

Tromsø. Vertical Intensity. V = 50600 + Tabular Quantities expressed in Gamma.

Gr. M. T.

APRIL 1953

HOURLY MEAN VALUES

Table for April 1953 showing hourly mean values for vertical intensity. Columns include Day (1-30), hours (1-24), and monthly totals (M, R). Values range from approximately 80 to 370 Gamma.

MAY 1953

Table for May 1953 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-24), and monthly totals (M, R). Values range from approximately 80 to 370 Gamma.

JUNE 1953

Table for June 1953 showing hourly mean values for vertical intensity. Columns include Day (1-30), hours (1-24), and monthly totals (M, R). Values range from approximately 80 to 370 Gamma.

Tromsø.

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

Gr. M. I.

APRIL 1953																								M	PS	NS	AS		
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23						
1	190	-20	-19	-18	0	3	0	17	11	22	13	14	50	33	20	33	30	-12	-25	13	15	2	8	40	18	514	94	608	
2	160	30	-72	-113	-70	-57	-27	-2	23	-63	27	19	8	7	20	33	20	26	7	25	37	-90	0	65	1	507	494	1001	
3	30	27	-12	-70	-40	-17	10	5	6	3	2	-3	3	18	28	47	32	26	-35	-115	-26	45	130	210	13	622	318	940	
4	200	265	178	-13	-92	-60	-38	-22	0	5	13	7	30	-5	-18	-25	55	-7	-5	55	87	90	115	-18	33	1100	303	1403	
5	-7	-5	15	12	11	10	10	13	0	17	7	12	17	13	10	40	37	35	23	-5	-23	-82	-85	-35	2	292	242	534	
6	-32	10	-32	-83	-60	-42	-2	10	11	8	18	15	8	33	47	52	42	23	-15	-17	-3	20	20	-28	-1	317	334	651	
7	-18	0	0	0	0	0	0	0	0	0	0	0	0	0	25	25	25	17	0	0	-15	27	52	6	171	11	33	204	
8	-10	-32	8	5	-12	-40	-23	-13	-7	-12	-2	10	17	35	33	20	-3	0	5	-28	12	180	-40	-40	3	325	362	587	
9	70	-55	-72	-48	-30	-20	0	0	0	0	4	0	15	7	10	20	-2	8	12	0	7	15	43	-1	211	227	438		
10	-10	-8	0	-10	27	32	25	-17	-12	2	8	54	45	23	12	57	10	-15	-10	-25	-5	50	-105	-82	2	345	299	644	
11	-30	-17	-15	-13	-42	-27	-27	-7	40	30	27	2	22	10	18	10	-33	-60	-20	0	29	50	90	70	4	398	291	689	
12	50	60	-7	-21	-15	-12	-5	2	10	18	13	59	5	32	23	22	18	15	7	13	-45	-10	-25	-57	6	347	195	542	
13	-40	40	-119	-63	-24	-8	0	0	0	25	22	11	-10	15	5	40	15	-57	-35	-95	-98	-20	0	-10	-17	173	579	752	
14	0	-3	-8	0	0	0	0	0	0	0	0	-8	-3	13	8	10	15	12	5	7	-8	-30	-20	-37	-32	70	147	217	
15	-22	-38	-39	-25	-17	-2	-5	-2	-5	3	8	15	8	30	25	17	18	11	-12	8	9	12	20	0	1	184	167	351	
16	-10	30	-102	7	48	-108	-57	-33	-2	5	20	15	12	-10	-110	-210	-195	-22	5	12	147	-100	40	58	-23	399	959	1358	
17	210	190	-32	-48	-14	-15	-8	0	0	-2	-7	2	10	47	47	12	13	0	8	13	12	-20	-23	33	15	564	202	766	
18	-8	3	3	5	-2	-8	-7	2	-12	-6	12	9	-5	7	25	7	10	8	7	-28	-18	45	80	0	5	218	98	316	
19	-70	-87	-67	-43	-82	-68	-27	3	10	13	10	-15	-37	20	0	-190	-90	45	10	-3	52	120	-200	-40	-31	283	1019	1302	
20	63	65	26	-23	-27	-7	-20	-38	28	-10	5	20	-10	-5	-15	20	35	-2	-38	-53	62	220	-185	70	7	604	433	1037	
21	240	10	23	-3	-70	-55	-83	18	23	25	23	20	30	20	30	22	-5	-15	-32	-95	-63	15	180	130	-55	12	796	416	1222
22	-28	50	8	-5	-15	-18	10	18	23	33	52	35	23	-15	-10	-70	-162	-9	-35	-55	-18	100	150	160	9	662	440	1102	
23	5	-100	-49	-18	-197	-160	-77	-15	3	15	45	27	13	13	15	20	3	-75	-110	-26	-35	60	90	90	-23	322	662	1194	
24	47	30	0	0	0	0	0	0	0	0	0	-6	10	3	7	18	12	25	2	-5	15	27	27	25	10	248	11	258	
25	0	0	0	0	0	0	0	0	0	-7	-5	12	32	30	10	0	30	38	-5	-35	35	50	100	180	19	517	52	569	
26	55	-50	0	12	18	-3	-10	0	0	-5	-2	4	15	23	35	53	13	28	3	15	14	0	180	-70	14	468	140	608	
27	-50	50	-38	-43	-12	0	0	6	15	-8	4	0	13	35	17	10	11	-23	-27	5	10	20	100	4	496	201	497		
28	-40	-32	-54	-85	-45	-7	-3	-2	-5	-8	0	0	15	15	0	0	0	0	0	0	0	0	0	0	-10	40	283	321	
29	2	6	-10	-30	-24	-10	-2	-9	0	0	0	0	5	15	8	8	32	33	15	5	0	0	0	0	0	2	139	80	224
30	5	-5	-55	-95	-87	-23	-12	0	0	0	0	0	10	15	25	-10	-110	-44	15	-27	22	-12	-30	0	-18	90	510	600	
M	32	13	-18	-28	-30	-24	-11	-2	6	4	10	13	11	15	12	3	-3	2	-11	-18	9	26	16	22	2	374	323	697	
MPS	44	29	9	1	3	2	2	3	6	8	11	13	13	16	17	20	17	11	4	6	19	40	40	39					
MNS	13	15	27	29	33	26	12	5	1	4	1	4	1	2	1	5	17	20	9	14	23	10	13	24	17				

MAY 1953

MAY 1953																								M	PS	NS	AS	
DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23					
1	2	0	-2	-2	0	2	3	3	4	3	10	3	8	0	49	38	5	0	0	0	0	0	0	0	5	133	4	137
2	-5	-47	-80	-55	-25	0	0	0	0	0	0	-5	21	2	17	0	0	-4	-12	-25	-12	0	0	-9	49	275	396	
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-3	-2	10	13	8	-22	-88	-52	-45	-7	47	215	262	
4	-45	-34	-28	-33	-31	-25	-10	2	13	-3	-8	-12	-12	-8	-11	0	3	-5	-8	-5	-26	-22	-27	-15	18	375	393	
5	-28	-34	-23	-37	-88	-78	-37	-12	9	8	4	25	18	73	65	54	8	2	-27	-85	-30	15	53	135	0	469	479	948
6	870	373	-80	-155	-117	-95	-75	-32	-6	18	57	85	32	-2	-15	-18	-12	-15	-15	-25	23	105	120	205	30	1303	587	1890
7	110	153	80	-58	-10	-3	5	-15	25	19	45	50	10	37	7	16	13	10	12	35	78	190	30	37	937	54	926	
8	-25	33	-113	-127	-70	-35	12	-7	-5	6	37	20	5	-4	25	2	-25	-37	-140	-50	33	235	185	65	1	658	638	1296
9	65	43	-30	-12	-17	-8	10	17	17	13	57	25	32	30	10	-36	8	-25	-70	-5	23	-5	195	-55	12	545	263	808
10	-128	-50	-27	-8	-2	4	8	5	15	28	40	45	13	31	43	9	13	12	10	33	10	5	-20	4	4	337	236	572
11	-2	8	0	3	-22	-13	-8	-5	10	30	19	18	33	20	35	29	15	13	15	-10	-4	-17	-12	7	7	255	93	348
12	13	10	0	0	3	9	16	8	7	0	0	0	0	0	8	0	0	5	10	-5	-20	-23	2	2	2	101	48	149
13	-7	0	0	0	0	0	0	0	0	0	0	0	-3	-5	0	0	0	-5	-7	0	0	0	0	-1	0	27	27	
14	0	0	0	0	0	0	0	0	0	0	0	0	0	8	13	8	8	0	0	0	-5	-13	-3	-38	-1	29	64	83
15	-52	-10	-5	-17	-48	-58	-30	-18	-11	-8	0	-13	-20	-132	-225	-243	-169	-150	-115	40	193	125	327	-115	-31	683	1419	2108
16	-25	123	250	-80	-160	-18	-75	-45	17	8	-23	-225	-380	-362	-405	-278	-287	-55	170	80	93	495	675	255	-8	2186	2418	4584
17	295	273	210	-25	-35	7	7	-3	7																			



Tromsø. Vertical Intensity. V = 50600 + Tabular Quantities expressed in Gamma.

Gr. M. T.

JULY 1953

HOURLY MEAN VALUES

Table for July 1953 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-24), and monthly totals (M, R). Values range from approximately 100 to 300 Gamma.

AUGUST 1953

Table for August 1953 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-24), and monthly totals (M, R). Values range from approximately 100 to 300 Gamma.

SEPTEMBER 1953

Table for September 1953 showing hourly mean values for vertical intensity. Columns include Day (1-30), hours (1-24), and monthly totals (M, R). Values range from approximately 100 to 300 Gamma.

Tromsø.  
JULY 1953

Vertical Intensity, Storminess (+ Down). Unit Gamma.  
HOURLY MEAN VALUES

Gr. M. I.

Table with columns DAY, 1-23, M, PS, NS, AS. Contains magnetic observation data for July 1953.

AUGUST 1953

Table with columns DAY, 1-23, M, PS, NS, AS. Contains magnetic observation data for August 1953.

SEPTEMBER 1953

Table with columns DAY, 1-23, M, PS, NS, AS. Contains magnetic observation data for September 1953.



Tromsø. Vertical Intensity. V = 50600 + Tabular Quantities expressed in Gamma.

Gr. M. T.

Table for October 1953 showing magnetic intensity data for days 1-31. Columns include DAY, 1-23, M, and R. Values range from approximately 137 to 3422.

Table for November 1953 showing magnetic intensity data for days 1-30. Columns include DAY, 1-23, M, and R. Values range from approximately 145 to 877.

Table for December 1953 showing magnetic intensity data for days 1-31. Columns include DAY, 1-23, M, and R. Values range from approximately 145 to 877.



Tromsø.

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

Gr. M. T.

.OCTOBER 1953

HOURLY MEAN VALUES

Table for October 1953 showing magnetic observations. Columns include DAY (1-31), hours (1-24), and summary statistics (M, PS, NS, AS). Values range from -148 to 158.

NOVEMBER 1953

Table for November 1953 showing magnetic observations. Columns include DAY (1-30), hours (1-24), and summary statistics (M, PS, NS, AS). Values range from -193 to 157.

DECEMBER 1953

Table for December 1953 showing magnetic observations. Columns include DAY (1-31), hours (1-24), and summary statistics (M, PS, NS, AS). Values range from -102 to 157.

Resuming Tables.

Diurnal Variation.  
QUIET VALUES.

Tromsø.

Declination. Unit Gamma. + West.

1953	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	-5	-4	-3	-2	0	3	5	6	5	4	3	2	2	3	4	3	2	0	-3	-4	
FEBRUARY	-4	-5	-6	-6	-6	-5	-4	-3	-1	2	5	7	8	7	4	3	3	3	2	0	-2	-3	-4	-5
MARCH	-8	-9	-10	-11	-11	-11	-10	-8	-5	1	6	15	18	16	12	9	6	5	4	3	0	-3	-5	-7
APRIL	-13	-14	-15	-16	-17	-17	-16	-13	-9	-1	10	18	22	22	19	17	16	14	11	7	1	-5	-9	-12
MAY	-10	-13	-17	-20	-22	-23	-21	-16	-7	3	13	20	24	23	17	13	10	9	8	7	4	0	-3	-7
JUNE	-17	-20	-23	-25	-26	-24	-20	-15	-8	1	12	20	23	23	20	18	17	17	16	13	7	0	-7	-13
JULY	-15	-22	-25	-27	-27	-25	-22	-16	-8	3	14	20	23	24	22	18	15	14	14	13	10	4	-2	-9
AUGUST	-11	-14	-17	-20	-22	-22	-19	-14	-3	9	18	23	23	20	13	9	7	7	7	6	3	-1	-4	-7
SEPTEMBER	-8	-9	-10	-11	-12	-12	-11	-7	0	6	12	16	16	15	12	9	7	5	3	2	0	-3	-5	-7
OCTOBER	-10	-9	-8	-7	-7	-7	-6	-4	-1	5	10	12	11	9	7	6	6	7	6	3	-1	-5	-8	-10
NOVEMBER	-4	-4	-5	-5	-5	-5	-4	-3	0	3	6	8	7	4	2	2	2	3	1	-1	-2	-3	-4	-4
DECEMBER	-2	-3	-3	-3	-3	-3	-2	0	2	4	5	6	5	4	2	1	0	0	1	0	-1	-1	-2	-2
MEAN	-9	-11	-12	-13	-14	-13	-11	-8	-3	4	10	14	15	14	11	9	8	7	6	5	2	-2	-5	-7

Horizontal Intensity. Unit Gamma.

JANUARY	0	0	0	1	2	2	1	0	-1	-2	-3	-3	-3	-2	-1	0	1	2	2	3	4	3	2	1
FEBRUARY	-2	-1	0	1	2	2	1	0	-1	-2	-3	-2	-1	0	1	2	3	4	3	2	0	-2	-3	-3
MARCH	1	2	3	4	5	4	2	-1	-5	-8	-9	-8	-6	-3	0	3	7	9	8	4	1	-1	-1	0
APRIL	9	10	11	11	8	4	-2	-8	-13	-17	-18	-17	-14	-11	-7	-3	2	8	13	13	8	5	5	7
MAY	4	6	6	4	1	-3	-8	-14	-18	-19	-17	-14	-9	-4	1	7	12	14	14	11	7	4	2	2
JUNE	0	2	4	2	0	-3	-8	-15	-20	-21	-18	-13	-6	2	7	12	15	15	14	12	9	5	0	-1
JULY	0	1	3	6	6	2	-5	-13	-21	-25	-25	-20	-12	-3	5	11	15	17	17	15	11	8	4	1
AUGUST	0	1	2	2	1	-1	-5	-11	-16	-19	-19	-15	-8	-1	5	9	11	13	13	12	9	5	3	1
SEPTEMBER	2	3	3	3	2	0	-3	-7	-14	-21	-20	-15	-9	-3	3	8	11	12	12	10	8	5	3	2
OCTOBER	0	0	1	2	3	2	-1	-5	-10	-15	-16	-13	-8	-4	0	3	7	9	11	12	11	8	4	1
NOVEMBER	-2	-1	0	1	2	2	1	-2	-5	-6	-6	-4	-2	0	2	3	4	5	5	4	2	-1	-3	-3
DECEMBER	-3	-4	-4	-3	-2	0	0	-1	-2	-3	-2	-1	-1	-1	0	1	2	3	5	6	5	3	1	-1
MEAN	1	2	2	3	3	1	-2	-6	-11	-13	-13	-10	-7	-3	1	5	8	9	10	9	6	4	1	1

Vertical Intensity. Unit Gamma.

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

Monthly Means.

DECLINATION	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
DIRECT VALUES D = 0° W + . . . . .	39.7	38.4	36.2	37.8	36.9	37.8	36.9	35.0	33.8	33.5	33.2	33.5	36.0
QUIET VALUES D = 0° W + . . . . .	41.2	41.7	40.6	40.3	38.4	38.4	39.0	37.8	36.2	35.9	35.0	34.1	39.0
RANGE ( UNIT MINUTES )	96	89	125	96	89	66	97	107	116	96	82	21	90
QUIET RANGE ( UNIT' )	11	14	29	39	47	49	51	45	28	22	13	9	30
STORMINESS. MEAN ( UNIT' )	-5	-9	-13	-7	-5	-1	-6	-8	-8	-9	-6	-2	-7
DIURNAL SUM PS ( UNIT' )	112	98	129	106	155	120	147	152	143	128	97	71	122
NS	238	303	433	283	274	151	294	344	335	305	240	128	277
AS	350	401	562	389	429	271	441	496	478	433	337	199	399
HORIZONTAL INTENSITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
DIRECT VALUES H = 11100 f + . . . . .	61	49	31	51	50	67	58	45	41	45	61	76	53
QUIET VALUES H = 11100 f + . . . . .	75	75	70	73	74	78	82	80	77	78	79	84	77
RANGE ( UNIT' )	589	567	744	581	519	452	583	666	675	555	476	373	57
QUIET RANGE ( UNIT' )	7	7	18	31	33	36	42	32	33	28	11	9	24
STORMINESS. MEAN ( UNIT' )	-15	-26	-40	-23	-23	-12	-23	-35	-36	-34	-16	-7	-12
DIURNAL SUM PS ( UNIT' )	392	326	462	549	456	380	537	560	488	349	363	178	420
NS	748	951	1432	1098	1016	673	1092	1403	1354	1162	753	358	1003
AS	1140	1277	1894	1647	1471	1053	1629	1962	1842	1511	1116	563	1423
VERTICAL INTENSITY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	MEAN
DIRECT VALUES V = 50600 f + . . . . .	108	111	126	126	132	131	137	144	153	148	138	136	124
QUIET VALUES V = 50600 f + . . . . .	118	117	123	124	128	132	137	137	145	147	145	143	133
RANGE ( UNIT' )	343	365	472	354	346	260	351	408	477	374	341	259	363
QUIET RANGE ( UNIT' )	16	19	21	12	16	15	15	18	20	17	13	16	17
STORMINESS. MEAN ( UNIT' )	-9	-6	4	2	3	-2	1	7	3	-6	-7	0	0
DIURNAL SUM PS ( UNIT' )	205	243	507	374	423	243	366	516	538	434	216	102	347
NS	416	388	403	323	358	286	343	353	359	368	269	352	352
AS	621	631	910	697	781	529	709	869	897	793	584	371	698

Resuming Tables.

Storminess.

Tromsø.

Declination. Unit Gamma. + West.

1953		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
JAN	MPS	0	3	2	1	1	2	4	4	4	2	2	4	7	10	13	10	10	8	4	6	2	5	4	2
FEB	MPS	1	3	0	0	0	2	4	4	3	6	4	5	4	7	9	8	7	6	5	5	7	5	3	0
MAR	MPS	0	0	0	0	0	2	5	5	5	3	3	4	5	9	11	15	14	14	10	6	6	5	0	3
APR	MPS	0	0	0	0	3	4	3	5	4	3	1	1	3	5	8	8	9	9	9	13	9	2	2	1
MAY	MPS	0	0	0	1	4	3	3	3	2	3	4	5	6	10	12	15	20	20	15	13	8	6	0	3
JUN	MPS	1	1	1	0	0	1	2	2	2	3	3	5	7	5	7	8	12	17	17	14	9	3	2	0
JUL	MPS	1	0	0	0	3	6	5	7	2	1	1	2	4	6	6	10	15	19	21	16	9	7	3	1
AUG	MPS	2	0	0	2	3	4	4	5	2	2	3	3	5	10	16	16	17	16	18	17	5	2	0	0
SEP	MPS	0	0	0	1	3	5	7	7	7	4	4	4	7	9	9	13	16	19	14	7	2	3	1	1
OCT	MPS	0	0	0	0	1	3	4	4	3	3	2	3	5	9	10	6	12	10	4	6	5	3	1	1
NOV	MPS	1	1	1	0	5	4	7	6	2	2	1	4	7	8	10	9	6	4	6	6	6	3	0	0
DEC	MPS	1	1	1	0	1	2	3	4	2	2	2	2	4	5	4	6	6	6	3	5	3	3	0	4
MEAN		1	1	0	0	2	3	4	5	3	3	2	4	5	8	10	10	12	12	11	10	6	4	2	1
JAN	MNS	31	20	19	19	10	2	0	1	2	3	5	4	1	1	0	5	7	9	20	16	19	10	16	15
FEB	MNS	40	32	40	32	21	7	2	1	1	1	1	0	2	1	2	3	9	9	13	17	8	14	20	29
MAR	MNS	42	57	53	46	25	7	2	2	3	5	2	3	3	3	4	6	4	3	13	27	32	31	23	39
APR	MNS	35	39	37	33	15	5	2	2	2	2	3	3	4	2	4	4	2	5	6	5	7	11	23	31
MAY	MNS	50	39	30	12	7	8	5	3	5	4	5	4	2	0	0	1	1	1	3	2	8	12	37	33
JUN	MNS	18	19	20	13	5	4	2	4	2	4	2	3	1	1	2	1	0	0	1	1	6	11	15	16
JUL	MNS	40	46	42	26	9	5	1	0	4	7	9	9	5	2	2	5	2	0	0	1	5	14	27	31
AUG	MNS	44	47	52	32	15	12	6	2	3	8	6	4	1	2	1	2	1	2	1	5	9	17	28	41
SEP	MNS	42	49	50	29	9	3	2	1	2	0	3	2	4	1	3	5	2	5	5	10	8	24	29	58
OCT	MNS	36	32	19	18	5	2	1	1	2	5	4	3	3	3	6	9	3	10	6	8	27	30	32	41
NOV	MNS	22	23	22	14	4	1	0	0	2	2	2	4	3	3	3	7	7	9	9	12	18	18	25	29
DEC	MNS	17	10	5	3	1	1	0	0	1	2	1	1	0	1	0	1	1	2	9	14	8	13	20	17
MEAN		35	34	32	23	11	5	2	1	2	4	4	3	2	2	2	4	3	5	7	10	13	17	25	31
JAN	MPS + MNS	-31	-17	-17	-19	-9	0	4	3	2	-1	-3	0	6	9	13	5	3	-1	-16	-10	-17	-5	-13	-13
FEB	MPS + MNS	-39	-28	-40	-32	-21	-5	2	4	2	5	2	5	1	6	7	5	-2	-3	-7	-12	-1	-9	-17	-29
MAR	MPS + MNS	-42	-57	-52	-45	-24	-5	3	3	3	-2	1	2	7	7	9	10	12	-3	-21	-26	-26	-23	-56	
APR	MPS + MNS	-35	-39	-37	-33	-12	-1	1	2	2	1	-1	-2	-1	3	4	3	7	4	2	7	1	-8	-21	-3
MAY	MPS + MNS	-50	-39	-30	-12	-3	-5	-3	0	-2	0	-1	0	3	9	12	14	19	19	12	11	0	-6	-37	-30
JUN	MPS + MNS	-18	-18	-19	-12	-5	-3	0	-2	0	-1	1	1	5	4	5	7	12	17	16	13	3	-8	-13	-16
JUL	MPS + MNS	-39	-45	-41	-25	-5	1	4	6	-3	-6	-8	-6	-1	4	5	13	19	21	16	4	-7	-24	-30	
AUG	MPS + MNS	-42	-46	-52	-30	-12	-8	-2	3	-1	-5	-3	-1	4	8	15	14	15	14	17	12	-4	-15	-28	-41
SEP	MPS + MNS	-42	-49	-50	-28	-6	2	5	5	5	4	0	2	1	6	6	4	11	12	14	4	-1	-22	-26	-54
OCT	MPS + MNS	-36	-32	-19	-18	-5	1	3	3	1	-2	-2	1	2	6	4	-2	9	0	-1	-2	-22	-27	-31	-40
NOV	MPS + MNS	-21	-22	-21	-13	0	3	7	5	0	0	0	0	3	5	7	2	-1	-5	-3	-7	-13	-15	-25	-28
DEC	MPS + MNS	-17	-9	-4	-2	0	2	2	3	1	0	1	1	4	5	4	5	5	3	-6	-9	-5	-10	-20	-13
MEAN		-34	-33	-31	-22	-9	-2	2	3	1	-1	-1	0	2	6	7	6	8	7	0	0	-7	-13	-23	-28

Horizontal Intensity. Unit Gamma.

1953		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
JAN	MPS	0	0	1	3	1	5	7	6	5	7	10	25	39	46	54	65	46	36	17	8	8	1	1	1
FEB	MPS	1	1	2	2	2	4	5	3	6	13	10	14	23	27	38	42	47	32	26	15	8	4	3	0
MAR	MPS	0	0	1	2	2	7	6	6	7	17	30	41	45	41	53	55	55	51	21	11	7	3	0	1
APR	MPS	0	0	0	0	2	3	2	4	7	11	16	26	47	68	85	87	77	58	36	14	4	1	1	0
MAY	MPS	0	1	1	1	3	2	2	5	11	13	35	45	43	56	66	60	51	33	23	6	1	0	0	0
JUN	MPS	4	5	3	2	4	6	4	6	10	6	11	20	22	46	57	43	36	47	32	9	2	0	0	5
JUL	MPS	0	1	1	1	1	2	3	6	10	14	38	50	57	50	63	54	65	56	39	10	11	2	3	0
AUG	MPS	0	1	0	1	3	2	3	7	12	15	27	43	55	75	78	73	76	48	24	7	0	0	0	10
SEP	MPS	0	0	1	2	2	6	2	3	6	20	31	41	67	71	71	56	42	29	11	5	1	1	0	1
OCT	MPS	0	1	3	2	3	4	6	9	13	27	20	29	42	53	37	35	28	15	7	3	1	0	7	2
NOV	MPS	1	5	1	2	3	2	5	7	9	14	19	34	44	42	34	30	35	29	18	12	7	6	3	1
DEC	MPS	3	2	2	2	2	2	2	2	2	1	1	2	5	11	15	17	21	23	26	19	14	3	1	2
MEAN		1	1	1	2	2	4	4	5	8	13	21	31	41	45	54	47	48	37	23	10	5	2	2	2
JAN	MNS	117	74	57	40	24	12	7	6	2	1	0	0	0	0	0	0	0	8	41	36	63	70	105	83
FEB	MNS	129	115	87	50	29	18	8	5	1	0	1	0	0	0	0	0	2	24	53	76	107	117	128	
MAR	MNS	125	141	122	101	44	13	8	7	3	2	1	0	0	4	0	2	14	9	57	111	182	200	158	130
APR	MNS	123	125	116	74	41	30	14	11	5	3	2	1	0	0	0	0	2	12	45	60	115	151	162	
MAY	MNS	149	121	66	49	43	26	13	5	1	4	2	1	1	0	0	0	2	12	23	58	122	166	153	
JUN	MNS	54	82	73	38	20	12	10	6	4	3	3	3	1	2	2	2	0	2	24	61	104	105	64	
JUL	MNS	158	153	123	99	43	31	10	7	3	3	1	1	0	1	1	1	0	1	2	23	24	122	123	130



JUL	MNS	158	153	123	99	43	31	10	7	3	3	1	1	0	1	1	1	0	1	2	23	24	122	123	130
AUG	MNS	142	139	150	123	71	42	19	3	5	2	2	1	1	0	0	0	0	4	9	62	133	155	150	188
SEP	MNS	178	135	106	52	26	20	16	6	4	1	1	0	0	0	0	1	10	31	58	87	123	161	161	170
OCT	MNS	121	120	77	45	24	7	4	3	2	2	1	0	0	0	1	3	2	17	55	79	128	162	160	147
NOV	MNS	94	54	62	41	11	7	5	1	1	1	1	0	2	0	0	1	0	8	20	41	90	118	105	91
DEC	MNS	49	26	17	6	4	5	3	3	4	1	1	1	0	0	1	0	0	1	4	16	29	55	75	58
MEAN		120	107	88	60	32	19	10	5	3	2	1	1	0	1	0	1	2	7	25	50	86	124	131	125
JAN	MPS + MNS	-116	-74	-57	-37	-23	-8	1	1	2	6	10	25	39	46	54	65	46	28	-24	-28	-55	-70	-105	-82
FEB	MPS + MNS	-128	-114	-85	-48	-27	-13	-2	-3	5	12	9	14	23	27	38	42	47	30	1	-38	-68	-103	-114	-128
MAR	MPS + MNS	-125	-141	-121	-98	-42	-6	-1	-1	4	16	29	40	45	37	52	53	42	42	-36	-100	-175	-197	-158	-129
APR	MPS + MNS	-123	-125	-116	-74	-40	-27	-14	-7	2	8	13	25	47	68	85	87	77	56	24	-31	-56	-115	-151	-162
MAY	MPS + MNS	-149	-121	-65	-47	-40	-24	-10	1	9	9	33	44	42	56	66	60	50	30	12	-17	-57	-121	-166	-153
JUN	MPS + MNS	-50	-76	-70	-36	-16	-6	-6	1	6	3	8	18	21	45	54	41	36	46	30	-15	-59	-103	-105	-58
JUL	MPS + MNS	-158	-153	-122	-99	-43	-29	-7	-1	6	12	36	49	56	49	63	53	65	55	37	-12	-13	-120	-120	-129
AUG	MPS + MNS	-142	-137	-149	-122	-68	-40	-16	4	7	13	25	42	54	74	78	73	75	44	15	-55	-133	-155	-150	-178
SEP	MPS + MNS	-177	-135	-105	-51	-25	-14	-15	-3	2	18	31	42	68	73	72	66	33	-2	-47	-82	-122	-160	-161	-169
OCT	MPS + MNS	-121	-119	-74	-43	-21	-3	2	7	11	25	19	29	42	53	37	32	26	-2	-48	-76	-127	-162	-153	-145
NOV	MPS + MNS	-92	-49	-60	-39	-9	-6	0	6	8	13	18	34	42	42	34	30	34	21	-2	-29	-83	-112	-102	-90
DEC	MPS + MNS	-46	-24	-15	-4	-2	-3	-2	-1	-1	0	0	1	5	11	14	16	21	22	22	3	-16	-52	-73	-56
MEAN		-119	-106	-87	-58	-30	-15	-6	0	5	11	19	30	40	48	54	51	46	31	-1	-40	-80	-123	-130	-123

Vertical Intensity. Unit Gamma.

1953		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
JAN	MPS	21	7	7	7	2	3	3	3	7	8	12	12	15	13	16	9	6	5	3	5	5	6	14	12
FEB	MPS	39	29	11	3	0	0	1	3	5	3	6	6	7	9	14	10	10	8	3	1	12	15	11	40
MAR	MPS	70	52	19	10	1	1	1	5	6	8	10	12	15	15	11	9	10	3	14	35	47	63	40	52
APR	MPS	44	29	9	1	3	2	2	3	8	8	11	13	13	16	17	20	17	11	4	6	19	40	40	39
MAY	MPS	35	37	17	0	0	1	3	4	8	11	12	17	14	19	20	13	10	6	11	7	22	49	69	38
JUN	MPS	18	19	4	2	0	1	2	3	7	11	14	14	11	11	11	12	6	2	2	9	15	22	32	15
JUL	MPS	52	31	16	4	1	0	2	4	12	16	16	19	13	15	13	12	7	5	1	6	26	31	33	33
AUG	MPS	58	54	29	1	3	3	2	8	12	15	18	17	15	15	13	11	6	6	5	21	25	33	65	80
SEP	MPS	56	53	30	6	1	2	5	9	11	16	16	16	22	18	15	13	7	3	14	11	33	54	75	51
OCT	MPS	34	22	6	7	1	2	2	5	9	14	14	18	18	18	18	14	10	4	21	19	35	49	44	48
NOV	MPS	14	4	6	1	1	1	1	7	11	9	12	9	8	10	12	12	10	6	4	8	19	21	13	19
DEC	MPS	3	1	1	1	0	1	1	1	2	3	3	3	4	6	11	12	13	9	3	1	3	9	4	9
MEAN		37	28	15	4	1	1	2	5	8	10	11	13	13	14	14	12	9	5	7	11	22	33	37	36
JAN	MNS	14	15	15	10	18	13	7	2	1	1	6	14	9	8	11	24	23	24	36	44	39	33	22	26
FEB	MNS	20	19	24	29	26	27	18	9	2	2	1	1	3	0	1	1	14	29	31	32	33	24	21	18
MAR	MNS	6	9	22	36	43	34	14	5	1	3	3	6	2	11	19	21	26	22	20	20	19	19	24	16
APR	MNS	13	15	27	29	33	26	12	5	1	4	1	1	2	1	5	17	20	9	14	23	10	13	24	17
MAY	MNS	14	21	27	33	28	19	11	6	2	1	3	9	14	17	21	20	11	17	15	12	15	6	14	14
JUN	MNS	17	13	26	31	24	13	7	5	2	1	1	1	2	3	12	4	9	16	20	22	18	7	17	18
JUL	MNS	11	18	36	36	42	28	13	8	3	1	1	1	2	7	10	11	12	18	21	12	11	12	12	18
AUG	MNS	10	19	26	40	36	23	13	6	2	1	2	1	2	5	14	21	23	23	23	15	10	17	15	6
SEP	MNS	15	13	16	33	35	20	9	5	1	1	2	2	4	11	23	16	19	28	23	24	19	16	16	9
OCT	MNS	19	24	28	25	24	15	5	3	1	1	1	1	7	10	13	35	34	25	18	19	20	10	12	11
NOV	MNS	24	28	22	34	31	17	5	1	0	0	0	0	6	15	10	9	11	23	31	17	17	17	29	23
DEC	MNS	30	20	14	9	4	3	2	1	1	1	1	1	1	6	1	0	1	8	19	26	32	23	34	33
MEAN		16	18	24	30	29	20	10	5	1	1	2	3	5	8	12	15	18	20	23	21	20	17	19	17
JAN	MPS + MNS	8	-8	-9	-3	-15	-10	-4	1	7	8	6	-2	6	5	5	-15	-17	-20	-32	-39	-34	-27	-8	-14
FEB	MPS + MNS	18	10	-13	-26	-26	-27	-17	-6	4	1	5	5	3	9	12	10	-4	-23	-28	-30	-22	-10	-11	22
MAR	MPS + MNS	64	43	-4	-26	-42	-34	-13	-1	5	5	6	6	13	3	-9	-12	-16	-19	-6	15	28	44	16	36
APR	MPS + MNS	32	13	-18	-28	-30	-24	-11	-2	6	4	10	13	11	15	12	3	-3	2	-11	-18	9	26	16	22
MAY	MPS + MNS	21	15	-10	-33	-28	-17	-8	-2	6	10	9	8	0	2	-1	-9	-10	-5	-6	-8	10	34	63	24
JUN	MPS + MNS	2	5	-22	-29	-24	-13	-5	-1	5	11	13	13	10	8	0	8	-2	-14	-18	-14	-2	15	14	-3
JUL	MPS + MNS	40	12	-20	-32	-42	-28	-11	-4	9	14	14	18	11	8	4	2	-5	-13	-20	-7	15	19	21	15
AUG	MPS + MNS	48	35	3	-39	-33	-20	-11	2	10	14	14	16	13	11	-1	-10	-17	-16	-18	6	15	16	50	74
SEP	MPS + MNS	41	40	14	-26	-34	-17	-4	4	10	15	13	13	18	7	-8	-3	-12	-25	-9	-13	14	37	59	41
OCT	MPS + MNS	16	-2	-22	-17	-23	-13	-3	2	8	13	13	18	12	8	5	-21	-24	-21	3	0	14	39	32	37
NOV	MPS + MNS	-10	-24	-16	-33	-31	-16	-4	6	11	-8	11	9	2	2	-5	2	-2	-18	-26	-10	2	4	-18	-4
DEC	MPS + MNS	-28	-19	-14	-9	-4	-2	-1	0	1	2	2	1	3	0	10	12	12	1	-16	-25	-29	-14	-30	-23
MEAN		21	10	-11	-25	-28	-18	-8	0	7	8	10	10	9	7	1	-3	-8	-14	-16	-12	2	15	17	11

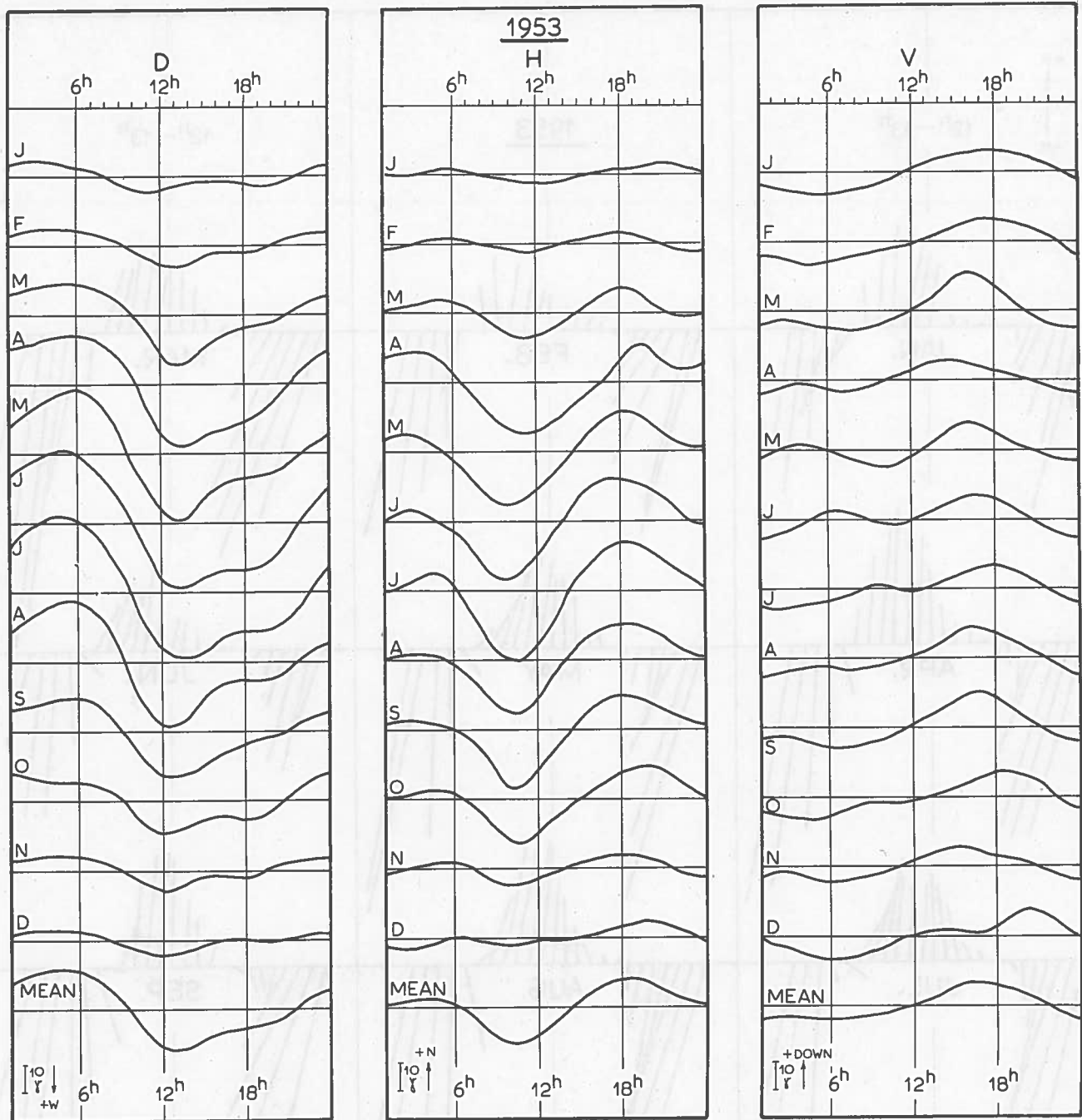


Fig. 1. The Quiet Diurnal Variation, smoothed Values.

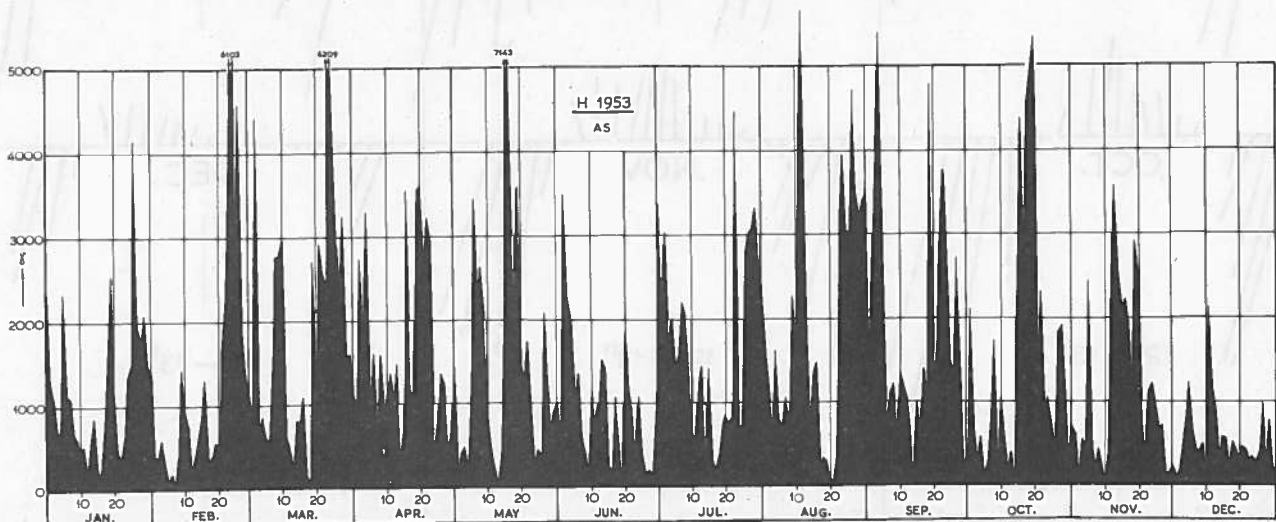


Fig. 2. The Diurnal Sum of the Absolute Storminess of H.

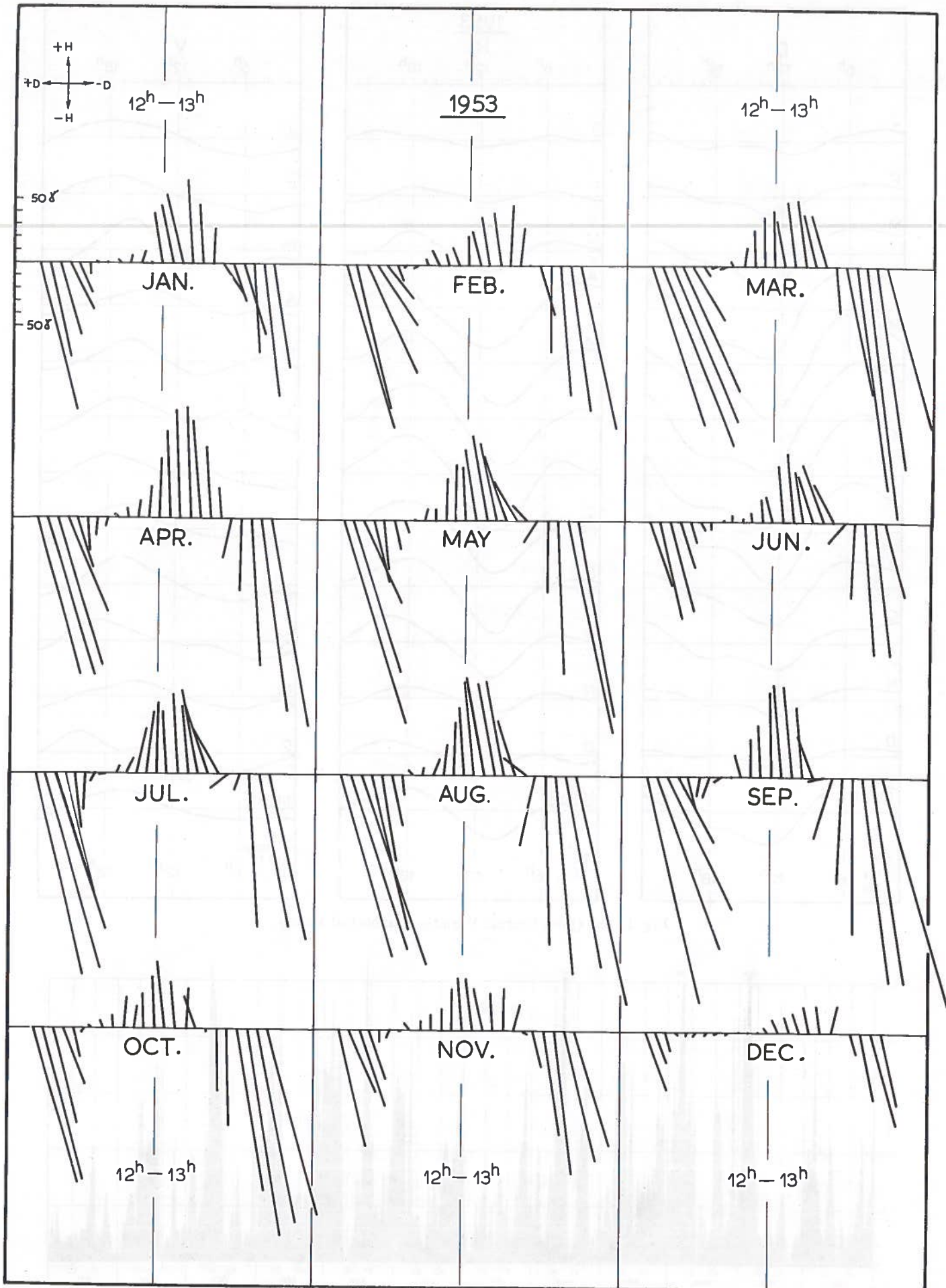


Fig. 3. Diagrams of the Monthly Mean Values ( $M$ ) of the Storminess in the Horizontal Plane.



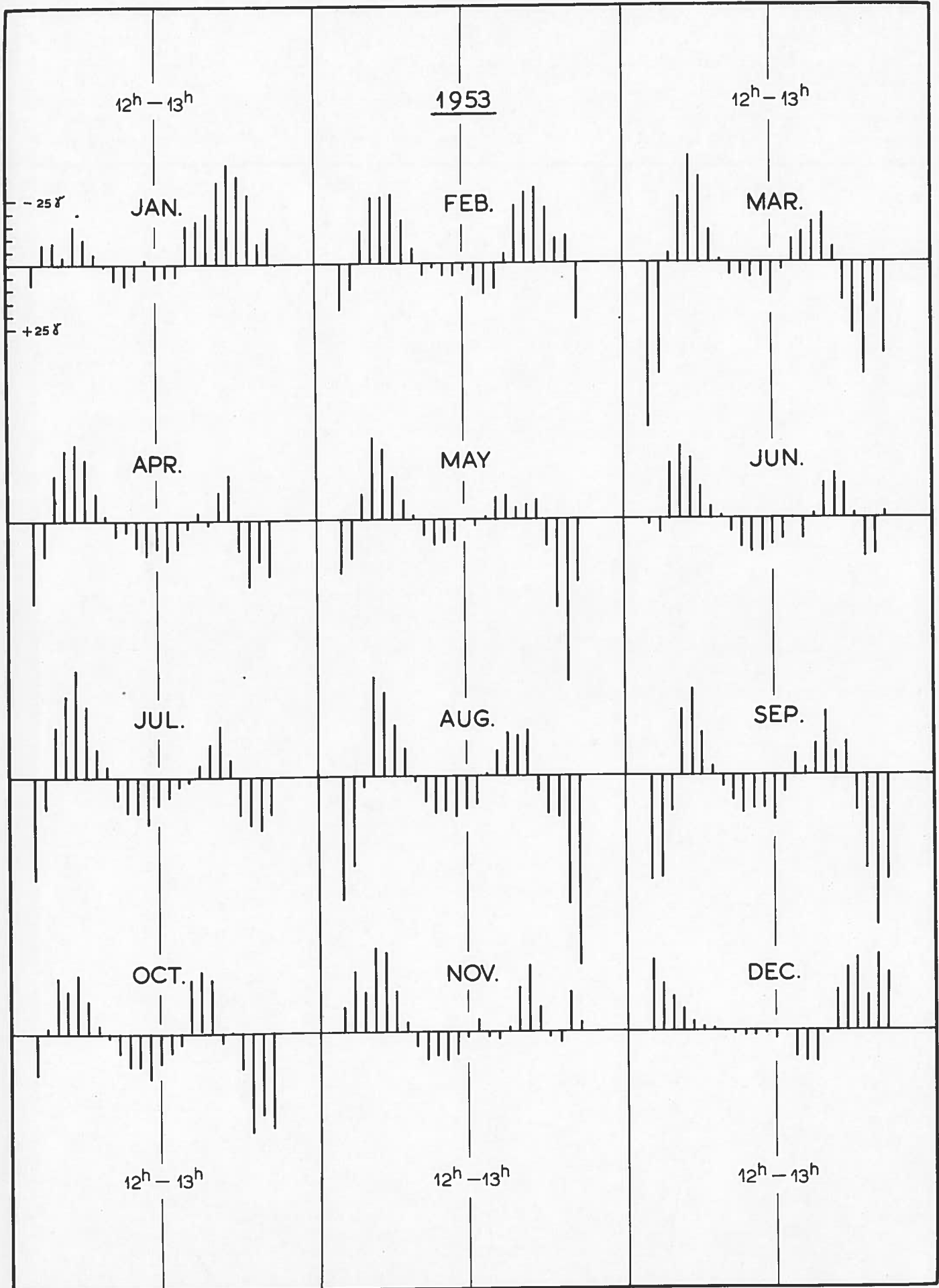


Fig. 4. Diagrams of the Monthly Mean Values (*M*) of the Storminess of the Vertical Intensity.



