

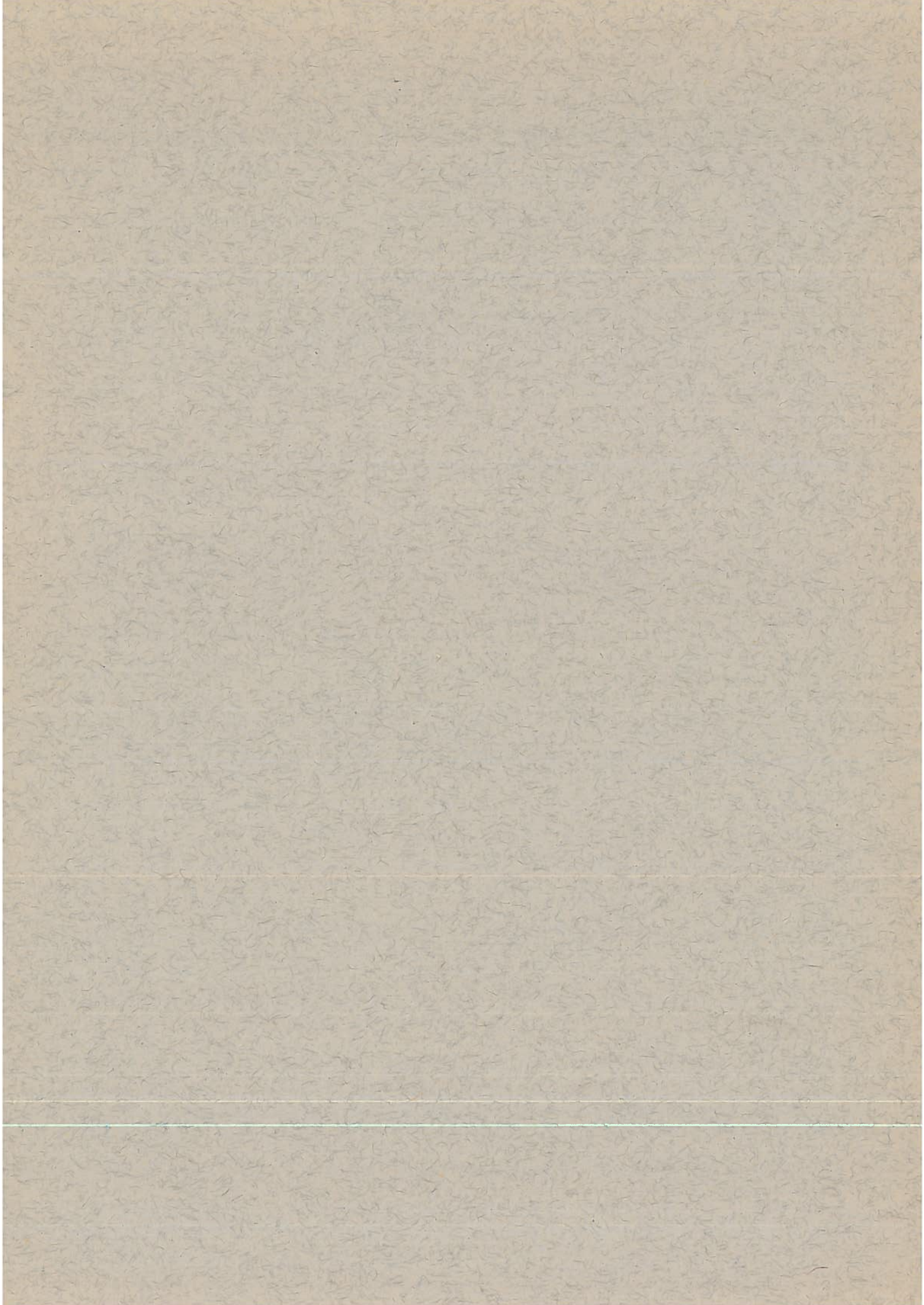
Publikasjoner fra
DET NORSKE INSTITUTT FOR KOSMISK FYSIKK
Nr. 41

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

OBSERVATIONS 1956

1 9 5 8

A.S JOHN GRIEGS BOKTRYKKERI, BERGEN



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Report for 1956 Regarding the Spectroscopy of the Upper Atmospheric Luminescence

Spectroscopic auroral studies were continued by Vegard and collaborators at the Physical institute at Oslo in cooperation with the Auroral Observatory at Tromsø.

At the Auroral Observatory we used two big glass-spectrographs denoted by "V" and "F" and a small one "a". At Oslo the spectrographs "T.L." and a second one "a" practically identical with "a" were used.

The number of spectrograms obtained during 1956 are given in the table:

Numbers of spectrograms

Spectrograph	Tromsø			Oslo	
	"V"	"F"	"a"	"T.L."	"a"
Spring	3	13	6	11	6
Autumn	2	20	1	7	6
Total	5	33	7	18	12

These spectrograms have all been treated and the results are ready for publication in Geof. Publ.

Great attention was e.g. given to the following problems:

- a. Wavelength measurements and reliable interpretation of lines and bands.
- b. Accurate temperature measurements from great altitudes of the ionosphere.
- c. Verification of the consequences of the theory according to which the aurorae are due to bundles of solar electrons produced by X-rays and neutralized by positive ions (mainly protons).
- d. Variation of the relative proton flux with latitude and altitude.
- e. Correlation between proton flux and the spectral composition of the auroral luminescence.
- f. The influence of the neutralized solar bundles on the physical state of the ionosphere.
- g. Formation of the ionospheric layers E and F_2 and the solar corona by soft X-rays.

During 1956 the following papers were published by Vegard:

1. Composition, Variations and Excitation of the Auroral Luminescence Spectra. Geof. Publ. Vol. XIX No. 9, 1956.
2. Phenomena caused by Solar X-rays and Properties of Solar Electric Ray Bundles producing the Aurorae. Paper read at the Meeting of the Mixed Commission on the Ionosphere held in London 22—24. Aug. 1955. Special Suppl. to Atmosph. Terr. Phys., Pergamon Press, London 1956, s. 300.
3. Solar and Terrestrial Phenomena resulting from Photoelectric Effects of Solar X-rays. Paper read at the Conference on Chemical Aeronomy, held at Cambridge, Mass, June 25—28. 1956.
4. Recent progress relating to the study of Aurora and kindred Phenomena. Geofys. Publ. Oslo (in Print).

L. Vegard.

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 1956

Unit 0.001 cm.

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

Day	Mar.			Apr.			May			June			July			Aug.			Sep.		
	M.	N.	R.	M.	N.	R.	M.	N.	R.	M.	N.	R.	M.	N.	R.	M.	N.	R.	M.	N.	R.
1.....	—			—			303	2	8	270	2	5	244	2	7	212	2	5	—		
2.....	—			311	1		299	2	2	277	1		242	2	2	213	1		—		
3.....	—			312	1		304	2	3	—			238	2	1	207	2	1	—		
4.....	—			308	2	2	308	2	0	261	2	1	236	2	1	208	2	4	—		
5.....	—			318	2	1	303	2	5	272	2	2	235	2	2	210	2	0	208	2	1
6.....	—			355	2	1	314	2	7	293	2	8	222	2	0	206	2	6	207	2	2
7.....	—			341	2	2	302	2	4	277	1		218	2	4	217	2	0	196	2	0
8.....	—			359	1		306	2	2	274	1		217	2	7	207	2	2	190	2	2
9.....	—			333	2	8	293	2	3	277	2	8	208	2	1	215	2	5	185	1	
10.....	—			315	2	2	291	2	15	270	1		210	2	2	211	1		175	2	4
11.....	—			284	2	2	275	2	7	280	2	4	203	2	2	218	2	4	172	2	1
12.....	—			—			292	2	11	237	2	8	214	2	5	211	2	0	172	1	
13.....	—			321	2	6	278	2	3	242	2	4	228	2	2	214	2	2	169	2	3
14.....	—			325	1		286	2	3	250	2	3	221	2	4	207	2	4	183	1	
15.....	—			314	2	4	296	2	7	264	1		226	2	9	210	2	4	203	1	
16.....	—			309	2	2	293	2	10	276	2	3	217	1		217	2	6	200	2	4
17.....	—			346	2	15	—			258	1		231	2	11	204	2	1	213	2	14
18.....	—			—			294	1		245	2	5	222	2	1	198	2	1	219	1	
19.....	—			327	2	16	292	1		235	2	0	218	2	18	197	2	8	200	1	
20.....	—			308	1		299	1		244	2	7	217	2	0	200	2	5	196	1	
21.....	—			303	2	0	292	1	2	244	1		225	2	0	200	2	6	194	1	
22.....	—			318	1		266	2	6	242	2	1	221	2	1	210	2	2	180	2	0
23.....	285	1		311	1		257	1		241	2	1	219	2	4	213	2	7	171	2	2
24.....	—			318	2	4	246	1		242	2	2	222	2	3	203	2	1	194	2	7
25.....	—			320	2	1	243	2	5	236	2	1	231	1		215	2	5	190	2	10
26.....	—			307	2	5	253	2	6	239	2	4	214	2	4	215	2	1	205	2	5
27.....	—			290	2	0	239	2	8	243	2	5	212	2	2	—			—		
28.....	297	2	4	320	1		266	2	4	237	1		202	2	5	—			209	2	6
29.....	305	2	5	311	2	3	276	2	6	238	2	3	221	1		—			196	2	9
30.....	297	1		322	2	4	283	1		239	2	1	209	1		—			211	1	
31.....	302	2	5	—			275	2	6	—			217	2	2	—			—		
Mean	—			319			284			255			221			209			194		

TROMSØ

TABLE OF OZONE VALUES 1956

Unit 0.001 cm.

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

Day	Feb.		Mar.		Apr.		May		June		July		Aug.		Sep.		Oct.		
	M.	N.	M.	N.	M.	N.	M.	N.	M.	N.	M.	N.	M.	N.	M.	N.	M.	N.	
1.	250	1	—	—	299	1	280	1	253	2	2	260	1	216	1	233	1	219	2
2.	230	2	270	1	303	1	284	3	264	3	6	242	2	217	2	—	—	213	3
3.	220	2	273	1	306	3	296	2	253	1	1	218	2	225	1	231	1	206	3
4.	270	1	267	1	333	2	288	2	253	3	1	215	2	222	1	—	—	212	3
5.	—	—	290	1	313	2	273	2	260	3	2	—	—	230	1	—	—	207	2
6.	270	1	322	1	328	3	279	1	274	2	4	211	1	241	1	208	1	190	1
7.	—	—	235	1	326	2	273	2	268	2	4	—	—	241	1	—	—	183	2
8.	255	1	258	1	313	1	284	2	289	2	8	208	1	240	2	197	1	175	1
9.	225	1	240	1	306	3	293	2	263	2	2	224	1	245	1	184	1	160	1
10.	220	1	282	1	306	2	268	2	220	1	2	210	2	211	2	—	—	200	1
11.	—	—	—	—	334	2	245	2	215	3	13	210	1	216	2	190	1	211	1
12.	—	—	258	1	326	2	233	2	233	1	—	—	—	203	1	181	2	216	1
13.	250	1	309	1	330	1	247	2	229	3	5	—	—	222	2	188	2	217	1
14.	245	1	352	1	336	3	264	2	266	2	10	199	1	222	2	176	3	—	—
15.	265	1	290	2	333	1	279	2	—	—	—	201	1	210	1	186	1	180	1
16.	230	1	310	1	369	2	258	2	—	—	—	199	2	—	—	198	1	160	1
17.	255	1	295	1	—	—	277	1	—	—	—	205	1	—	—	202	3	140	1
18.	235	1	—	—	357	2	281	2	—	—	—	225	1	—	—	204	1	157	2
19.	230	1	289	2	353	2	290	1	—	—	—	—	—	—	207	1	170	1	
20.	255	1	292	2	310	2	—	—	242	2	8	—	—	—	216	1	182	1	
21.	230	1	282	1	270	2	—	—	252	1	—	—	—	—	193	2	160	1	
22.	235	1	262	2	288	1	—	—	245	2	3	—	—	—	181	2	195	1	
23.	285	1	246	3	303	1	252	3	217	1	—	—	—	—	175	1	205	1	
24.	252	1	269	3	297	3	252	3	250	1	—	—	—	—	188	1	211	2	
25.	270	1	—	—	294	2	251	2	246	2	6	211	1	213	2	182	1	208	1
26.	240	1	282	2	319	2	270	2	246	2	1	207	1	211	1	176	2	215	1
27.	242	1	291	1	312	3	240	1	246	2	5	221	2	227	1	163	1	165	1
28.	235	1	275	2	309	3	245	1	223	1	—	218	1	—	—	176	2	—	—
29.	220	1	242	1	304	1	280	2	240	2	1	217	2	230	1	176	2	—	—
30.	—	—	229	1	277	1	281	3	247	2	7	223	2	221	1	—	—	—	—
31.	—	—	256	1	—	—	250	3	247	2	6	212	2	236	1	—	—	175	1
Mean	245		277		316		268		248		215		224		192		190		

EARTH MAGNETISM 1956, 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 Anne Østvik and Liv Nestvold.

SCALE-VALUES

The following scale-values were determined:

D — curves: 1'.50 or 4.88 γ per mm.
 H — curves: 5.38 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 1956 was calculated to 77° 35'0.

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 1956

D			H			V		
Date	Observ.	Adopt.	Date	Observ.	Adopt.	Date	Observ.	Adopt.
I 21.	1° 34'.5 W	1° 34'.2 W	I 10.	11223 γ	11225 γ	I 1.	50522 γ	50520 γ
II 13.	34.4	.2	I 20.	29	25	II 22.	21	20
II 15.	34.1	.2	II 13.	25	25	IV 11.	19	20
III 10.	33.9	.2	II 15.	25	25	VI 7.	19	20
III 12.	34.6	.2	III 17.	29	27	IX 13.	19	20
VI 6.	34.0	33.8	III 20.	25	27	XI 22.	22	20
VI 18.	33.5	.8	IV 10.	26	27	XI 23.	21	20
XI 26.	34.2	.8	IV 11.	28	27	XI 27.	20	20
XII 17.	33.7	.8	V 26.	26	27	XII 3.	22	20
			V 28.	28	27	XII 11.	20	20
			VI 8.	26	27			
			VI 18.	27	27			
			VIII 15.	28	27			
			VIII 17.	25	27			
			IX 11.	25	27			
			IX 29.	28	27			
			XI 21.	27	27			
			XI 24.	27	27			
			XII 17.	25	27			
			XII 22.	28	27			

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 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 1956, 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 1956. According to these measurements and the registrations we may give some approximate annual values for 1956

$$D = 2^\circ 21' \text{ E. } H = 9200\gamma. V = 52040\gamma.$$

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

K-INDICES FOR THREE-HOUR INTERVAL 1956

Tromsø

Range 2 000γ for K = 9. Scale values: D = 4.88γ. H = 5.38γ. V = 7.25γ.

Date	Jan. 6	Feb. 3	Mar. 11	Apr. 9	May 7	June 3
1	5331 3556	5533 2465	5433 3367	5543 3335	4534 5432	5545 4532
2	4322 2356	5333 3556	5553 3455	3113 3566	2121 2122	4333 5432
3	4433 1445	5431 2246	7666 7777	5533 4344	3223 3334	5412 3324
4	5332 3366	1232 2145	4543 4533	5333 2253	2012 5532	3213 4332
5	4441 2254	1211 1265	3120 2353	4421 4463	3223 4455	2222 2443
6	6200 3654	6102 2321	4331 3352	2122 5354	1223 4434	2223 5542
7	3200 4555	0100 0023	0000 2233	7423 4334	4322 2153	2222 3223
8	5201 0034	2000 0101	2101 0000	4332 3231	0021 2111	6133 3336
9	3423 4354	3100 0022	0000 0000	0222 3135	1011 0110	4343 3345
10	0323 5665	0000 0142	0212 1367	0023 4422	1011 1100	6322 3446
11	6545 5562	6311 4466	6342 1226	2212 4344	3201 1013	6543 4454
12	2221 3577	6544 2113	4102 3343	5232 4344	6435 5536	5423 2025
13	5321 2331	3012 1113	4423 2226	2312 2221	4553 4525	5424 4446
14	2223 2244	2200 0110	5303 4445	0013 3235	5234 4555	4533 5455
15	0000 1003	0000 1235	5423 2322	1011 2332	7645 5755	6644 4546
16	3100 2022	4421 4764	1011 2234	3322 3454	677- —	6433 4344
17	0001 3235	3221 1111	0010 0002	5623 5455	—5 5434	3211 3535
18	6643 4566	0011 0222	0011 2324	4332 3336	4543 3343	5212 2333
19	6424 6675	2112 3334	2211 3336	4433 4432	2223 3214	3010 2345
20	4231 1113	1000 3321	5311 2111	3312 2254	3336 6336	4122 3235
21	4000 0437	0000 2232	6334 4557	4426 6456	6632 2221	5321 2365
22	7543 2232	4423 3421	7744 4556	6665 2345	3225 5463	5522 3343
23	2320 1364	0001 3342	6752 2200	5522 3133	2013 6547	4213 3255
24	5535 5676	0002 3445	1334 4666	3202 1243	7556 6557	6635 6537
25	6342 1152	0666 6576	6323 3556	4202 2343	6875 5434	7764 3435
26	0000 1003	5213 3034	5414 5356	3335 4257	4422 2245	3334 5535
27	4103 4464	5432 2165	3311 4645	7765 5567	4210 1245	5644 5543
28	6654 3364	5623 3466	4533 3466	7743 3347	6512 3131	3334 3333
29	3332 5665	7544 4666	6543 3546	7645 4324	1101 4356	4225 4345
30	6332 4656		1221 2356	6744 5553	3323 5454	4444 4554
31	5423 3456		5523 4454		3411 0125	
Date	July 0	Aug. 9	Sep. 3	Oct. 2	Nov. 8	Dec. 0
1	4332 5535	5313 3333	4224 3353	2313 4556	6310 3424	3220 2334
2	5133 4443	5113 3334	6786 4453	5333 4555	4112 2324	5322 2454
3	5534 3323	2113 4403	6654 5554	6424 4666	5333 3244	4332 3344
4	3332 2112	3100 2224	3233 4221	5213 2255	4431 1233	5431 1344
5	2223 4333	3221 1003	4421 0111	2232 0243	4120 0134	4320 2432
6	4212 2231	2011 3233	5435 5565	4323 4344	2322 2454	3321 3456
7	0011 2232	3211 0142	6211 3332	4333 4554	5311 1022	4210 1334
8	4333 2235	3321 4454	0125 7764	5443 1255	1000 1021	4333 3154
9	5333 2112	3512 4645	2245 4545	4322 3334	2001 1454	3120 3134
10	1212 1255	5410 4212	5312 2333	3211 1232	7753 6757	3433 4446
11	5532 2345	5344 5654	2323 3322	2200 2013	6664 4576	2110 1111
12	3431 3144	4444 4354	2000 1156	2002 1123	6443 5656	0001 2556
13	6512 3465	1122 3354	6632 2333	4000 0001	6523 2335	3342 4535
14	6232 2265	3202 2024	1000 1001	1100 0011	6654 3567	4321 2233
15	3212 3232	3010 2232	3100 1005	0000 1001	7766 6456	3200 2210
16	3322 3324	1001 3335	4010 3435	0020 1000	7654 3354	2211 0111
17	1101 1133	6443 4322	2002 3321	1011 1000	3222 5554	1102 1000
18	1101 3243	3111 2000	2000 0000	0101 0000	3443 3233	0101 3230
19	4301 3236	0001 0001	0000 0011	0111 2221	3000 1121	0000 0236
20	5422 4353	0000 1000	3422 5544	1443 4556	1011 4444	5101 1123
21	4011 3313	0023 5455	6653 4455	6534 4565	5434 4366	2100 0023
22	3202 1221	5111 3344	5545 3564	5520 4443	6323 5557	2201 3130
23	2102 3354	4524 5466	5333 3304	4432 4555	5343 5553	0000 0125
24	3334 3332	7634 6664	2012 3245	4320 1031	4112 4544	4421 0133
25	4435 5345	5434 5566	5310 3444	0000 0024	4222 6544	3023 3445
26	5554 5536	7543 5454	4433 3232	3221 4677	5300 1012	5433 1102
27	6543 3335	3434 3343	0002 3254	6544 4344	1100 0245	0000 4654
28	5424 4366	5523 4453	4512 3334	4544 5244	5432 1323	5442 4544
29	5343 5633	3113 4435	3000 2333	4322 2454	2110 0354	6432 3234
30	5422 3353	5333 3322	4411 0005	2113 4633	4431 1334	3243 3345
31	2213 4523	1114 5553		2012 2226		3300 1022

K-INDICES FOR THREE-HOUR INTERVAL 1956

Bear Island

Range 2 000γ for K = 9. Scale values: D = 5.7γ. H = 6.1γ. V = 21.3γ.

Date	Jan.	Fen.	Mar.	Apr.	May	June
1	5433 3555	5443 3455	5554 3366	4443 4335	4544 4532	4444 4432
2	3433 2455	5344 3666	5463 3555	3334 4555	2332 3322	3335 4432
3	4544 3445	4533 3256	6566 4556	4544 3432	4434 4334	5424 3434
4	4543 3365	4343 3355	4464 5433	3443 3452	3224 4433	3333 4543
5	4443 3364	2322 2355	3333 3544	4433 4453	3334 5553	2334 4443
6	6333 4665	5333 2532	4343 4464	3334 5335	3234 4432	3334 3445
7	3322 3545	3322 2124	2222 3443	6434 5433	3334 3253	3333 4433
8	5332 2244	4222 3121	3321 2121	3344 3343	3233 3322	6444 4446
9	45— -344	2222 2222	1111 2111	2333 4333	2232 2322	3354 4445
10	2443 5454	1121 1243	1333 2445	2234 4322	3121 2332	4434 3435
11	5534 4463	5633 4365	6353 2235	3323 4452	3313 2334	4564 4455
12	2332 3664	6345 3223	4223 3354	5343 4432	6755 5445	4554 3234
13	4432 3342	2233 3323	3443 3335	2333 3331	5555 4435	4535 4344
14	3334 3345	3322 2211	5424 4324	2223 4334	4446 5644	5644 3445
15	2112 3114	1122 3334	4534 3333	3222 3443	6654 5555	6555 4646
16	4322 3234	3544 4553	3222 3334	4543 4443	5466 5546	6544 5344
17	2233 4345	3332 2222	2222 1122	4534 4424	6345 4434	3333 4545
18	5554 4564	2232 1332	2122 3423	3444 4335	4343 4433	4223 2433
19	6434 6645	3334 4343	3322 3436	4554 4432	3334 4425	3132 2324
20	3333 2343	3222 3321	4211 3222	3323 2254	4446 5444	4222 4355
21	4111 3545	2221 3333	6444 4466	3435 5455	5543 3332	5332 3354
22	5643 2342	3333 3333	5664 4655	6666 3444	3344 4453	5523 4443
23	2331 2365	2223 4543	6662 3321	5533 3232	3235 4436	4224 3355
24	3654 4555	3223 4444	2333 4655	2213 3232	5566 5546	6544 4546
25	5553 3242	3666 5565	5434 4346	3212 3434	4654 5445	6564 4435
26	2222 3212	4334 4233	4334 5335	3444 5457	5533 3354	2345 5535
27	4334 4453	5343 3265	3323 3544	6665 5456	3333 2355	2445 3433
28	4654 4365	5533 3555	4534 4545	6454 3346	5433 3432	3345 4432
29	3444 4463	5544 4555	6554 4666	7654 4443	3223 5355	3336 5354
30	5443 4646		2433 3464	6755 5562	4445 4344	3446 4564
31	4544 4654		5433 4444		3222 2234	
Date	July	Aug.	Sep.	Oct.	Nov.	Dec.
1	4344 4434	— —	2224 3443	3423 5644	5221 3414	2322 2344
2	4323 4443	— 4324	5666 6452	5445 4444	3313 2213	5322 2554
3	5544 4331	3223 3432	3664 5443	5433 4654	5443 2354	3333 2254
4	3442 2223	3221 3334	4234 4332	5323 3333	4533 2244	4432 2335
5	3224 4345	3333 2222	4432 1232	3233 2153	4230 0004	4322 2321
6	4334 3233	3221 3344	4334 6454	2433 4343	2332 2444	2221 3534
7	1113 4333	2421 1143	5222 3321	4443 3553	4322 2034	3421 2543
8	3— -35	3322 4434	1225 6644	3452 2355	3221 2131	2333 3153
9	5443 3343	3425 5554	2335 4443	3433 2333	2112 2435	2222 1234
10	2322 1344	4421 5312	3323 3533	3322 2243	6454 5656	3543 3446
11	4543 3344	4444 4545	2444 3324	3412 2012	6553 3456	3110 0002
12	3552 3253	4455 4434	3211 2245	3211 0135	5344 4656	0002 2434
13	5533 3455	2233 2255	4433 2433	3100 0001	6523 2255	3232 5434
14	6443 3354	3322 2233	2111 2101	2220 0033	5643 3646	4332 2252
15	3323 3233	32— 2253	4201 1105	0000 1102	6556 5435	2222 0111
16	4333 4344	2222 3322	4311 4424	1111 1000	5554 3454	1230 0021
17	2311 3244	5565 3212	2223 3343	1021 1000	3334 4434	1121 0000
18	2211 4421	2221 3201	— 0000	1111 0000	4433 3342	0122 3322
19	3422 4435	1112 0102	0000 0002	0213 3210	2210 2232	0010 1233
20	5423 4353	2210 1210	2543 4554	0343 3335	2122 4432	4222 2333
21	3122 3233	1— 5435	6654 3434	5334 4544	5443 3456	2212 1022
22	3313 2332	3221 3342	4455 3552	4421 —33	5333 4456	2332 4242
23	3212 3443	3435 5445	3434 2413	3442 4435	5433 5432	0001 1023
24	3445 3332	6545 6644	2223 3345	3332 1242	2223 5444	4421 0142
25	3445 6334	4545 4465	4421 3353	1112 0033	3333 6332	3234 3635
26	4— 5555	6564 4454	3433 3330	4332 4445	5310 0043	4553 1103
27	5443 4324	3435 4333	1213 3333	5234 3333	2311 0254	1213 3644
28	3444 3366	6533 5432	2322 2213	2533 5343	4332 2332	5453 4342
29	5355 5634	3333 3334	2110 2341	—3 2343	2132 1352	5443 3254
30	3433 3244	5334 —	4422 2114	2223 6631	2343 2333	2354 2343
31	2234 —	— -433		1013 2425		2323 1032

DAILY SUM OF K-INDICES 1956

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

Date	Jan.		Feb.		Mar.		Apr.		May		June		July		Aug.		Sep.		Oct.		Nov.		Dec.	
	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.	Tr.	B.I.
1.....	31	33	33	33	34	37	31	30	30	31	33	29	30	30	24	26	24	29	29	31	23	22	24	22
2.....	27	29	33	37	35	36	28	32	13	20	27	27	27	27	23	43	40	33	34	34	19	20	27	28
3.....	28	33	27	31	53	43	31	29	23	29	24	29	28	29	18	40	35	38	34	34	27	30	26	25
4.....	31	33	20	30	31	33	26	28	20	25	21	28	17	22	15	21	20	25	25	25	21	27	25	26
5.....	26	31	19	24	19	24	28	30	28	31	21	27	22	27	12	14	21	18	22	15	13	20	19	
6.....	26	36	17	26	24	32	24	29	23	23	25	29	17	25	15	22	33	27	26	24	24	24	27	22
7.....	24	27	6	19	10	22	30	32	22	26	18	26	11	19	14	18	21	20	31	31	15	20	18	24
8.....	15	25	4	17	4	15	21	27	8	21	28	36	25	—	26	25	32	30	28	29	5	15	26	23
9.....	28	—	8	16	0	9	18	24	5	18	29	32	20	29	30	33	32	28	24	24	17	20	17	18
10.....	30	31	7	15	22	25	17	22	5	17	30	30	19	21	19	22	22	25	15	21	47	41	31	32
11.....	38	34	31	35	26	29	22	26	11	22	35	37	29	30	36	34	20	26	10	15	44	37	8	7
12.....	27	29	26	28	20	26	27	28	37	41	24	30	23	28	32	33	15	20	11	16	39	37	19	15
13.....	20	25	12	21	25	28	15	21	33	36	33	32	32	33	21	24	28	26	5	5	29	30	29	26
14.....	21	28	6	16	28	28	17	23	33	37	34	35	28	32	15	20	3	9	4	12	42	37	20	23
15.....	4	15	11	19	23	28	13	23	44	41	39	41	18	22	13	10	16	2	4	47	39	10	11	
16.....	10	23	32	33	14	22	26	31	—	41	31	35	22	28	16	18	20	23	3	5	37	35	9	9
17.....	14	26	12	19	3	14	35	30	—	33	23	30	11	20	28	29	13	22	4	5	28	28	5	5
18.....	40	38	8	18	13	19	26	30	29	28	21	23	15	17	8	13	2	—	2	4	25	26	10	15
19.....	40	38	19	27	21	26	27	31	19	28	18	20	22	27	2	8	2	—	10	12	8	14	11	10
20.....	16	24	10	18	15	17	22	24	33	35	22	27	28	29	1	29	32	32	24	19	20	14	21	21
21.....	18	24	9	19	37	38	37	34	24	28	27	28	16	19	24	38	35	38	32	35	34	8	12	12
22.....	28	29	23	24	42	41	37	39	30	30	27	30	13	20	22	20	37	33	27	—	36	33	12	22
23.....	21	25	13	25	24	29	24	26	28	30	25	28	20	22	36	33	24	24	32	29	33	29	8	7
24.....	42	37	18	26	33	31	17	18	46	42	39	38	24	27	42	40	19	24	14	20	25	26	18	18
25.....	24	29	42	42	33	33	20	22	42	37	39	37	33	32	38	37	24	25	6	11	29	26	24	29
26.....	4	16	21	26	33	50	32	36	25	31	31	32	38	—	37	38	24	22	32	29	12	16	19	22
27.....	26	30	28	31	27	27	48	43	19	26	36	29	32	29	27	28	16	19	23	26	13	18	19	24
28.....	37	37	35	34	34	34	39	35	22	27	25	28	34	33	31	31	25	17	32	28	23	22	32	30
29.....	33	32	42	37	36	42	36	37	21	28	29	32	32	36	24	25	14	14	26	—	16	19	27	30
30.....	35	36	22	29	22	29	39	41	29	32	34	36	27	26	24	15	20	23	25	23	23	23	27	26
31.....	32	36	32	36	32	31	39	41	17	20	20	36	22	—	25	—	17	20	23	18	23	23	27	26

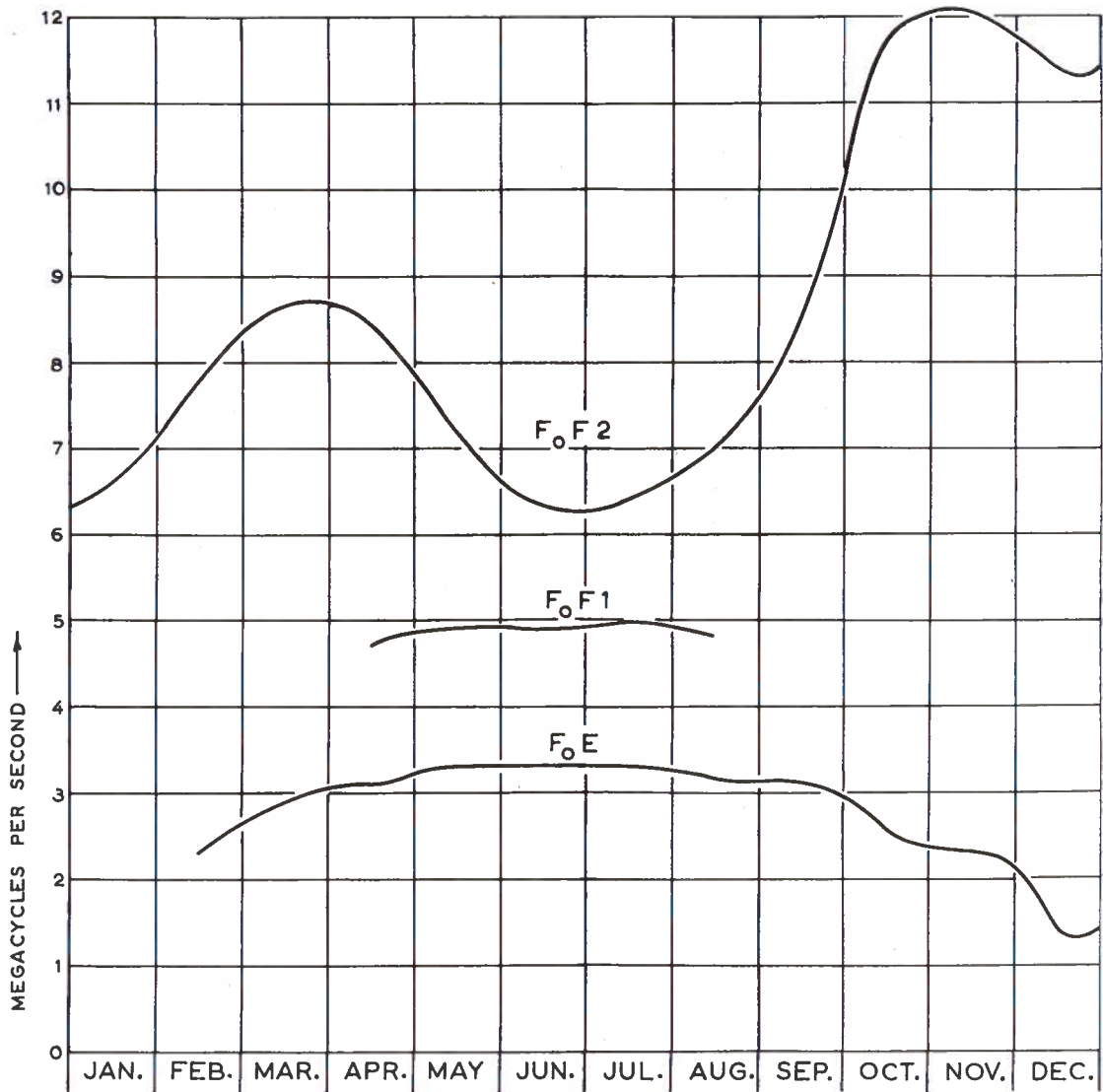
MONTHLY AND ANNUAL MEAN VALUES OF THE MAGNETIC ELEMENTS 1956

Tromsø

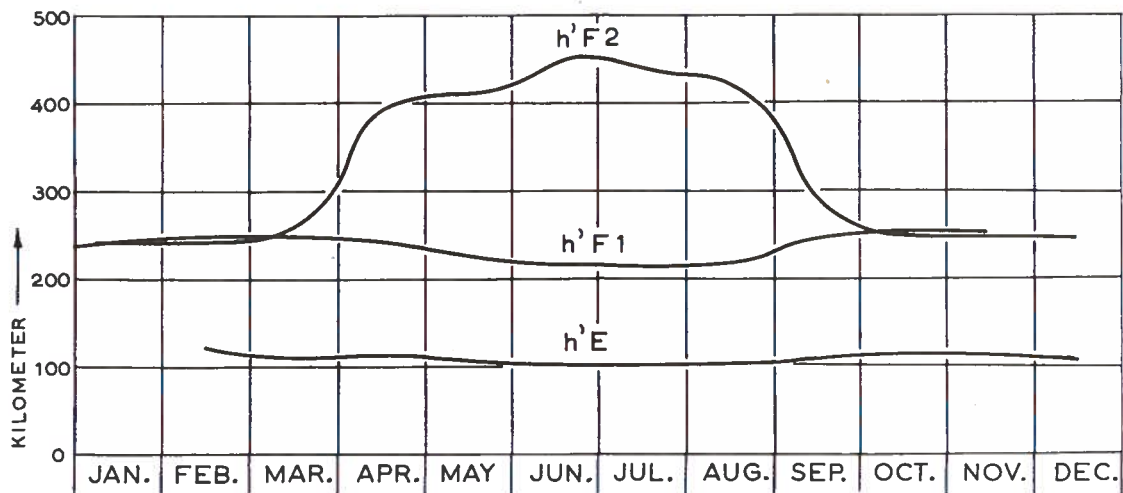
Month	All days			Five Quiet			Five Disturbed		
	D	H	V	D	H	V	D	H	V
	0°W +	11100γ +	50700γ +	0°W +	11100γ +	50700γ +	0°W +	11100γ +	50700γ +
Jan.	20'.0	64	88	21'.1	83	98	20'.4	42	88
Feb.	19.4	68	97	21.3	85	93	16.4	33	95
Mar.	18.1	55	122	20.4	83	118	13.7	31	100
Apr.	18.4	59	136	21.6	82	121	12.5	2	187
May	18.4	82	133	20.3	88	118	12.2	12	102
June	19.0	79	134	20.2	89	120	18.4	66	160
July	19.4	84	131	20.5	97	120	19.5	85	148
Aug.	19.4	86	126	18.7	89	113	18.4	64	146
Sep.	16.6	74	133	17.8	84	127	12.6	69	137
Oct.	16.9	73	132	23.7	85	119	15.7	45	156
Nov.	14.2	65	139	15.9	81	132	5.2	7	169
Dec.	17.2	86	128	17.0	85	131	18.6	93	123
Year	18'.1	73	125	19'.9	86	118	15'.3	46	134

ANNUAL MEANS OF THE MAGNETIC ELEMENTS
1930—1956

Year	D	H	V
1930	4° 7'.7 W	115 67γ	—
31	3° 59.6	49	501 98γ
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
1956	18.1	73	508 25



MONTHLY MEDIAN NOON-VALUES (12^h MET) FOR THE CRITICAL FREQUENCIES AND THE VIRTUEL HEIGHTS FOR THE E-LAYER, F1-LAYER AND F2-LAYER.



RADIO ECHO OBSERVATIONS.

GENERAL REMARKS.													Critical Frequency for the E-layer, foE. Quantities Expressed in Mc/s.												
The instrumental equipment used for the measurements is the Mark II NPL-recorder described in the Proc. I E E, Vol. 98, Part III, p. 11, 1951. Assistant REIDULF LARSEN was responsible for the maintenance and processing of the films. The reading of the hourly values and the calculation work has been performed by Mr. SIGBJØRN SKRIHELAND, head of the Radio Wave Propagation Bureau of the Norwegian Defence Research Establishment at Kjeller.													MONTHLY MEDIAN VALUES FOR EACH HOUR MET												
													HOURL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
													0	-	-	-	-	-	-	-	-	-	-	-	-
													1	-	-	-	-	-	-	-	-	-	-	-	-
													2	-	-	-	-	-	-	-	-	-	-	-	-
													3	-	-	-	-	-	-	-	-	-	-	-	-
													4	-	-	-	-	2.20	2.65	2.40	-	-	-	-	-
													5	-	-	-	-	1.85	2.50	2.80	2.70	2.46	-	-	-
													6	-	-	-	-	2.15	2.80	2.90	2.95	2.60	1.90	-	-
													7	-	-	-	-	2.65	3.00	3.05	3.00	2.90	2.45	1.60	-
													8	-	-	2.30	2.90	3.10	3.20	3.20	3.00	2.60	2.20	-	-
													9	-	-	2.55	2.90	3.20	3.30	3.25	3.10	2.90	2.40	-	-
													10	-	2.10	2.70	3.10	3.30	3.30	3.30	3.20	3.00	2.55	-	1.30
													11	-	2.30	2.75	3.10	3.30	3.50	3.30	3.20	3.10	2.60	-	-
													12	-	2.30	2.90	3.10	3.30	3.30	3.30	3.15	3.10	2.55	2.30	1.40
													13	-	2.30	2.80	3.10	3.25	3.30	3.30	3.20	3.00	2.50	2.00	1.35
													14	-	2.10	2.60	3.05	3.15	3.30	3.30	3.20	3.00	2.35	1.90	-
													15	-	1.80	2.60	3.00	3.10	3.20	3.25	3.10	2.80	2.05	-	-
													16	-	-	2.30	2.80	3.00	3.10	3.20	3.00	2.50	-	-	-
													17	-	-	-	2.60	2.85	3.00	3.00	2.60	2.35	-	-	-
													18	-	-	-	2.35	2.60	2.80	2.80	2.60	2.00	-	-	-
													19	-	-	-	-	2.25	2.40	2.65	2.20	-	-	-	-
													20	-	-	-	-	-	-	-	-	-	-	-	-
													21	-	-	-	-	-	-	-	-	-	-	-	-
													22	-	-	-	-	-	-	-	-	-	-	-	-
													23	-	-	-	-	-	-	-	-	-	-	-	-

EXPLANATION OF TABLES.													Critical Frequency for the F1-layer, foF1. Quantities Expressed in Mc/s.												
Monthly median values are given for the following quantities for each hour MET: foE, foF1, foF2 (critical penetration frequencies for the E-, F1- and F2-layers) h'E, h'F1, h'F2 (virtual heights for the E-, F1- and F2-layers) and (M3000) F2-factor.													MONTHLY MEDIAN VALUES FOR EACH HOUR MET												
													HOURL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
													0	-	-	-	-	-	-	-	-	-	-	-	-
													1	-	-	-	-	-	-	-	-	-	-	-	-
													2	-	-	-	-	-	-	-	-	-	-	-	-
													3	-	-	-	-	-	-	-	-	-	-	-	-
													4	-	-	-	3.75	3.80	3.70	-	-	-	-	-	-
													5	-	-	-	4.00	4.10	4.00	-	-	-	-	-	-
													6	-	-	-	4.20	4.25	4.30	4.20	-	-	-	-	-
													7	-	-	-	4.45	4.50	4.50	4.50	-	-	-	-	-
													8	-	-	-	4.60	4.65	4.70	4.75	-	-	-	-	-
													9	-	-	-	4.70	4.70	4.75	4.90	-	-	-	-	-
													10	-	-	5.00	4.80	4.85	4.95	4.90	-	-	-	-	-
													11	-	-	4.80	4.90	4.95	4.95	4.95	-	-	-	-	-
													12	-	-	-	4.70	4.90	4.95	4.80	-	-	-	-	-
													13	-	-	-	4.70	4.90	4.85	4.95	-	-	-	-	-
													14	-	-	-	4.55	4.75	4.70	4.80	4.90	-	-	-	-
													15	-	-	-	4.70	4.60	4.70	-	-	-	-	-	-
													16	-	-	-	4.55	4.60	4.70	4.40	-	-	-	-	-
													17	-	-	-	-	4.40	4.50	-	-	-	-	-	-
													18	-	-	-	-	-	-	-	-	-	-	-	-
													19	-	-	-	-	-	-	-	-	-	-	-	-
													20	-	-	-	-	-	-	-	-	-	-	-	-
													21	-	-	-	-	-	-	-	-	-	-	-	-
													22	-	-	-	-	-	-	-	-	-	-	-	-
													23	-	-	-	-	-	-	-	-	-	-	-	-

Virtual Height for the E-layer, h'E. Quantities Expressed in Kilometers.													Critical Frequency for the F2-layer, foF2. Quantities Expressed in Mc/s.												
MONTHLY MEDIAN VALUES FOR EACH HOUR MET													MONTHLY MEDIAN FOR EACH HOUR MET												
													HOURL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
													0	-	-	-	-	-	-	-	-	-	-	-	-
													1	-	-	-	-	-	-	-	-	-	-	-	-
													2	-	-	-	-	-	-	-	-	-	-	-	-
													3	-	-	-	-	-	-	-	-	-	-	-	-
													4	-	-	-	105	100	100	-	-	-	-	-	-
													5	-	-	-	105	100	105	100	-	-	-	-	-
													6	-	-	-	115	105	100	100	110	-	-	-	-
													7	-	-	-	110	105	100	100	125	-	-	-	-
													8	-	-	-	110	105	100	100	100	110	110	-	-
													9	-	-	-	115	105	100	100	105	105	-	-	-
													10	-	-	-	115	105	100	100	105	105	-	-	-
													11	-	110	110	105	100	100	100	105	105	-	-	-
													12	-	120	110	110	105	100	100	105	110	-	105	-
													13	-	-	115	105	105	100	100	105	110	-	-	-
													14	-	-	110	105	105	100	100	105	105	-	-	-
													15	-	-	105	110	105	100	100	105	115	-	-	-
													16	-	120	110	105	100	100	100	110	-	-	-	-
													17	-	110	110	105	100	100	100	140	-	-	-	-
													18	-	-	115	105	105	100	105	105	-	-	-	-
													19	-	-	-	105	105	105	105	-	-	-	-	-
													20	-	-	-	110	105	105	105	-	-	-	-	-
													21	-	-	-	-	105	-	-	-	-	-	-	-
													22	-	-	-	-	-	-	-	-	-	-	-	-
													23	-	-	-	-	-	-	-	-	-	-	-	-

Virtual Height for the F2-layer, h'F2. Quantities Expressed in Kilometers.													M3000 F2-layer Transmission Factor.												
MONTHLY MEDIAN VALUES FOR EACH HOUR MET													MONTHLY MEDIAN VALUES FOR EACH HOUR MET												
													HOURL	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
													0	-	-	-	-	-	-	-	-	-	-	-	-
													1	-	-	-	-	-	(360)	(290)	U345	U305	U345	-	-
													2	-	-	-	-	-	(325)	(300)	U330	U285	U350	U295	-
													3	-	(290)	(305)	(340)	(340)	-	(360)	(295)	U310	295	U290	U300
													4	-	280	300	(300)	(385)	405	(400)	(295)	300	265	U300	265
													5	(280)	280	280	-	(380)	445	420	(355)	280	295	285	270
													6	(275)	275	280	-	390	450	420	(405)	260	275	260	265
													7	(255)	255	255	(450)	415	415	440	(440)	255	250	250	270
													8	270	250	(280)	(445)	400	420	420	390	U255	250	255	280
													9	260	245	(245)	-	420	435	435	395	U200	250	255	260
													10	245	240	(250)	(380)	445	410	420	350	U270	250	250	250
													11	245	240	255	350	405	420	405	430	U270	250	245	250
													12	240	240	255	390	410	445	440	(420)	U290	250	245	245
													13	240	240	255	400	400	450	395	(450)	U250	245	240	245
													14	240	250	250	365	(430)	490	415	(405)	U250	245	240	240
													15	240	250	245	(380)	(370)	470	400	-	U250	245	245	245
													16	249	250	250	(280)	(410)	425	(360)	(460)	250	240	240	245
													17	(250)	250	245	(260)	-	390	(435)	-	250	240	250	250
													18	-	250	(250)	(260)	-	-	-	-	255	240	U250	250
													19	-	(260)	(275)	280	(260)	-	-	(265)	255	240	U280	U260
													20	-	-	(280)	(295)	(255)	-	-	280	270	250	-	-
													21	-	-	-	(300)	(290)	-	(295)	(270)	275	U245	-	-
													22	-	-	(260)	-	(295)	-	(300)	(280)	U295	U290	-	-
													23	-	-	-	-	-	-	-	(280)	U845	U310	-	-

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

Gr. M. T.

JANUARY 1956

HOURLY MEAN VALUES

Table for January 1956 showing magnetic observations. Columns include DAY (1-31), M, and R. Rows contain numerical values for each hour of the day.

FEBRUARY 1956

Table for February 1956 showing magnetic observations. Columns include DAY (1-29), M, and R. Rows contain numerical values for each hour of the day.

MARCH 1956

Table for March 1956 showing magnetic observations. Columns include DAY (1-31), M, and R. Rows contain numerical values for each hour of the day.

Tromsø.

Declination. Storminess. (+ W). Unit Gamma.

Gr. M. T.

JANUARY 1956.

HOURLY MEAN VALUES

Table for January 1956 showing hourly mean values for declination, storminess, and unit gamma. Columns include Day (1-31), M, PS, NS, AS.

FEBRUARY 1956

Table for February 1956 showing hourly mean values for declination, storminess, and unit gamma. Columns include Day (1-29), M, PS, NS, AS.

MARCH 1956

Table for March 1956 showing hourly mean values for declination, storminess, and unit gamma. Columns include Day (1-31), M, PS, NS, AS.

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

Table for APRIL 1956 showing hourly mean values for days 1-30. Columns include Day, hours 1-24, M, and R. Values range from -99 to 492.

Table for MAY 1956 showing hourly mean values for days 1-31. Columns include Day, hours 1-24, M, and R. Values range from -424 to 829.

Table for JUNE 1956 showing hourly mean values for days 1-30. Columns include Day, hours 1-24, M, and R. Values range from -246 to 565.

Tromsø.

Declination. Storminess. (+ W). Unit Gamma.

Gr. M. T.

APRIL 1956

HOURLY MEAN VALUES

Table with 26 columns (DAY 1-25, M, PS, NS, AS) and 31 rows (days 1-30) showing magnetic observation data for April 1956.

MAY 1956

Table with 26 columns (DAY 1-23, M, PS, NS, AS) and 31 rows (days 1-31) showing magnetic observation data for May 1956.

JUNE 1956

Table with 26 columns (DAY 1-23, M, PS, NS, AS) and 31 rows (days 1-31) showing magnetic observation data for June 1956.

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

Gr. M. T.

Table for July 1956 showing hourly mean values (DAY, 1-24, M, R) with columns for days and values ranging from 40 to 310.

AUGUST 1956

Table for August 1956 showing hourly mean values (DAY, 1-24, M, R) with columns for days and values ranging from 85 to 304.

SEPTEMBER 1956

Table for September 1956 showing hourly mean values (DAY, 1-24, M, R) with columns for days and values ranging from 92 to 306.

Tromsø.

Declination, Storminess. (+ W). Unit Gamma.

Gr. M. T.

JULY 1956

HOURLY MEAN VALUES

Table for July 1956 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.

AUGUST 1956

Table for August 1956 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.

SEPTEMBER 1956

Table for September 1956 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 = 0° W + Tabular Quantities expressed in Tenths of Minutes.

Gr. M. T.

Table for October 1956 showing hourly magnetic values (M, R) for days 1 to 31. Includes sub-headers for DAY, HOUR, and MONTH.

Table for November 1956 showing hourly magnetic values (M, R) for days 1 to 30. Includes sub-headers for DAY, HOUR, and MONTH.

Table for December 1956 showing hourly magnetic values (M, R) for days 1 to 31. Includes sub-headers for DAY, HOUR, and MONTH.

Tromsø.

Declination. Storminess. (+ W). Unit Gamma.

Gr. M. T.

OCTOBER 1956

HOURLY MEAN VALUES

Table with columns: DAY, 1-25, M, PS, NS, AS. Contains hourly mean values for October 1956.

NOVEMBER 1956

Table with columns: DAY, 1-25, M, PS, NS, AS. Contains hourly mean values for November 1956.

DECEMBER 1956

Table with columns: DAY, 1-25, M, PS, NS, AS. Contains hourly mean values for December 1956.

Tromsø.

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

Gr. M. T.

JANUARY 1956

HOURLY MEAN VALUES

Table for January 1956 showing hourly mean values for magnetic intensity, storminess, and other parameters (M, PS, NS, AS, CH) from day 1 to 31.

FEBRUARY 1956

Table for February 1956 showing hourly mean values for magnetic intensity, storminess, and other parameters (M, PS, NS, AS, CH) from day 1 to 29.

MARCH 1956

Table for March 1956 showing hourly mean values for magnetic intensity, storminess, and other parameters (M, PS, NS, AS, CH) from day 1 to 31.

Tromsø.

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

Gr. M. T.

APRIL 1956

HOURLY MEAN VALUES

Table for April 1956 showing hourly mean values for horizontal intensity (M and R) from day 1 to 30. The table includes columns for days of the month, hourly values, and monthly averages (M and R).

MAY 1956

Table for May 1956 showing hourly mean values for horizontal intensity (M and R) from day 1 to 31. The table includes columns for days of the month, hourly values, and monthly averages (M and R).

JUNE 1956

Table for June 1956 showing hourly mean values for horizontal intensity (M and R) from day 1 to 30. The table includes columns for days of the month, hourly values, and monthly averages (M and R).

Tromsø.

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

Gr. M. T.

APRIL 1956

HOURLY MEAN VALUES

Table for April 1956 showing hourly magnetic intensity values (M, PS, NS, AS, CH) for days 1 to 30. Includes summary rows for M, MPS, and MNS.

MAY 1956

Table for May 1956 showing hourly magnetic intensity values (M, PS, NS, AS, CH) for days 1 to 31. Includes summary rows for M, MPS, and MNS.

JUNE 1956

Table for June 1956 showing hourly magnetic intensity values (M, PS, NS, AS, CH) for days 1 to 30. Includes summary rows for M, MPS, and MNS.

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

Gr. M. T.

Table for July 1956 showing hourly mean values for days 1-31. Columns include Day, hours 1-24, M, and R. Values range from approximately -37 to 532.

AUGUST 1956

Table for August 1956 showing hourly mean values for days 1-31. Columns include Day, hours 1-24, M, and R. Values range from approximately -37 to 518.

SEPTEMBER 1956

Table for September 1956 showing hourly mean values for days 1-30. Columns include Day, hours 1-24, M, and R. Values range from approximately -60 to 581.

Tromsø.

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

Gr. M. T.

JULY 1956

HOURLY MEAN VALUES

Table for July 1956 showing magnetic observations. Columns include DAY (1-31), hours (1-24), and summary statistics (M, PS, NS, AS, CH). Values range from -119 to 152.

AUGUST 1956

Table for August 1956 showing magnetic observations. Columns include DAY (1-31), hours (1-24), and summary statistics (M, PS, NS, AS, CH). Values range from -136 to 250.

SEPTEMBER 1956

Table for September 1956 showing magnetic observations. Columns include DAY (1-30), hours (1-24), and summary statistics (M, PS, NS, AS, CH). Values range from -100 to 223.

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

Gr. M. T.

Table for OCTOBER 1956. Columns include DAY (1-31), M, and R, with values ranging from -32 to 313 and -26 to 443.

NOVEMBER 1956

Table for NOVEMBER 1956. Columns include DAY (1-30), M, and R, with values ranging from -155 to 313 and -76 to 594.

DECEMBER 1956

Table for DECEMBER 1956. Columns include DAY (1-31), M, and R, with values ranging from 72 to 313 and 33 to 374.

Tromsø.

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

Gr. M. T.

OCTOBER 1956.

HOURLY MEAN VALUES

Table for October 1956 showing hourly mean values for magnetic intensity, storminess, and other parameters (M, PS, NS, AS, CH) across 31 days.

NOVEMBER 1956

Table for November 1956 showing hourly mean values for magnetic intensity, storminess, and other parameters (M, PS, NS, AS, CH) across 30 days.

DECEMBER 1956

Table for December 1956 showing hourly mean values for magnetic intensity, storminess, and other parameters (M, PS, NS, AS, CH) across 31 days.

Tromsø. Vertical Intensity. V = 50700 + Tabular Quantities expressed in Gamma.

Gr. M. T.

JANUARY 1956

HOURLY MEAN VALUES

Table with columns DAY, 1-23, M, R. Data for January 1956 showing hourly mean values for vertical intensity.

FEBRUARY 1956

Table with columns DAY, 1-23, M, R. Data for February 1956 showing hourly mean values for vertical intensity.

MARCH 1956

Table with columns DAY, 1-23, M, R. Data for March 1956 showing hourly mean values for vertical intensity.

Tromsø.

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

Gr. M. T.

JANUARY 1956

HOURLY MEAN VALUES

Table for January 1956 showing hourly mean values for vertical intensity, storminess, and other magnetic parameters. Columns include Day, hours 1-25, M, PS, NS, AS, MPS, and MNS.

FEBRUARY 1956

Table for February 1956 showing hourly mean values for vertical intensity, storminess, and other magnetic parameters. Columns include Day, hours 1-25, M, PS, NS, AS, MPS, and MNS.

MARCH 1956

Table for March 1956 showing hourly mean values for vertical intensity, storminess, and other magnetic parameters. Columns include Day, hours 1-25, M, PS, NS, AS, MPS, and MNS.

Tromsø.
APRIL 1956

Vertical Intensity. $V = 50700 +$ Tabular Quantities expressed in Gamma.

Gr. M. T.

HOURLY MEAN VALUES

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	M	R		
1	160	182	45	50	78	83	28	100	87	110	137	138	132	117	145	158	132	130	158	187	132	120	185	129	118	319	
2	158	100	85	93	110	112	115	120	117	110	118	132	158	120	145	150	15	85	157	258	415	400	195	272	153	798	
3	265	235	145	220	97	15	69	103	113	122	123	145	129	145	148	130	127	145	110	75	158	88	87	100	115	457	
4	127	118	172	83	103	95	92	100	113	142	123	120	145	148	130	127	145	110	75	158	88	87	100	115	117	254	
5	120	142	77	60	87	100	110	133	132	117	117	123	115	127	148	127	173	128	107	152	113	132	132	125	120	534	
6	115	113	108	112	112	115	113	112	113	112	113	117	167	218	130	177	150	125	117	110	130	125	178	165	151	239	
7	530	305	10	60	92	102	107	112	123	125	128	138	150	122	70	150	165	127	138	153	135	147	123	88	141	892	
8	127	110	112	115	120	122	118	113	123	119	153	143	133	169	170	152	147	130	107	95	93	98	108	108	125	87	
9	113	113	118	117	113	112	108	115	105	140	117	113	120	157	163	142	130	123	102	133	133	233	112	82	125	225	
10	113	120	120	120	120	120	118	133	145	142	150	172	178	178	138	125	167	138	122	108	103	112	108	107	132	167	
11	112	105	98	107	100	95	110	118	118	117	112	117	123	130	127	163	138	90	100	152	255	192	160	172	150	421	
12	167	75	10	58	15	100	108	115	118	115	122	112	130	150	178	148	120	133	115	100	97	98	125	97	103	111	297
13	125	118	112	83	82	97	100	113	118	112	125	127	115	120	128	128	135	128	128	115	105	102	103	103	113	80	
14	107	112	112	110	110	107	107	112	113	112	110	118	132	150	118	113	117	143	130	113	95	85	58	68	110	158	
15	93	98	107	110	107	100	103	108	113	110	115	112	112	118	123	132	137	128	98	83	135	138	158	158	116	203	
16	77	100	110	100	75	5	60	107	113	120	118	118	140	145	168	103	10	78	10	162	237	267	255	348	126	457	
17	360	393	330	290	278	30	85	87	97	113	130	130	153	140	160	123	132	160	112	168	278	115	120	165	638		
18	142	98	80	83	80	32	65	100	67	98	122	143	145	123	123	143	145	122	122	122	122	137	173	212	111	283	
19	242	123	150	108	70	-7	30	88	117	118	107	128	160	127	137	92	65	127	150	132	132	130	112	95	113	599	
20	95	97	113	93	95	107	107	117	118	122	118	128	120	132	148	132	123	115	93	82	127	167	160	215	121	225	
21	165	95	100	77	48	88	97	105	122	123	90	-15	97	112	150	155	120	97	28	107	228	285	517	512	137	848	
22	345	380	555	258	390	570	243	98	7	-15	150	175	178	150	155	127	97	85	113	95	125	250	160	125	957		
23	130	143	267	82	110	135	140	140	138	132	133	140	148	150	143	147	143	140	133	128	117	162	202	143	144	297	
24	113	117	130	138	125	108	112	115	118	118	122	132	152	148	157	160	143	142	132	102	125	93	170	207	133	218	
25	183	198	95	88	102	113	118	118	115	113	113	110	102	125	138	170	153	137	117	123	168	202	165	125	134	181	
26	147	110	107	83	92	78	92	112	100	102	120	128	158	178	163	155	143	113	78	83	173	448	338	248	146	660	
27	395	810	295	650	600	400	490	362	250	185	-10	-280	-185	-105	-60	-135	-20	160	115	190	632	442	475	269	1196		
28	450	390	625	442	195	43	90	112	110	127	127	160	150	143	148	147	168	143	130	95	52	48	55	280	184	950	
29	60	195	278	-8	0	10	112	138	160	195	185	193	152	170	168	162	162	150	143	127	132	130	132	173	139	711	
30	250	93	13	-100	88	-30	132	135	148	147	160	172	178	187	90	8	5	-28	140	198	227	252	345	238	127	595	
M	186	180	155	130	129	100	127	126	121	121	116	118	128	138	129	128	117	109	111	128	148	183	169	188	136	451	
GM	107	112	112	110	106	105	107	110	113	117	120	122	122	122	120	117	115	112	110	107	105	102	102	103	112		

MAY 1956

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	M	R	
1	187	158	178	118	170	140	150	157	180	165	150	165	168	145	185	190	168	100	98	140	147	145	147	147	154	196
2	117	125	130	132	135	130	128	127	127	150	132	137	138	145	147	147	150	137	127	118	117	118	123	111	29	
3	125	118	92	95	110	115	115	118	117	117	120	123	128	135	148	148	145	128	128	118	120	187	190	107	131	174
4	120	127	118	108	112	107	107	113	120	125	128	123	115	127	120	127	128	118	110	113	130	158	125	138	118	210
5	168	145	97	100	103	110	115	110	112	123	137	182	180	165	133	133	115	100	87	170	235	230	148	93	137	334
6	118	132	132	125	127	118	120	108	115	150	145	153	137	180	147	117	132	125	130	123	113	122	98	152	127	116
7	90	75	90	82	77	93	107	122	123	128	137	145	167	186	143	143	130	123	117	63	25	68	110	123	109	189
8	117	118	118	115	115	112	112	115	107	117	117	123	122	143	137	135	135	125	122	112	113	110	107	119	61	
9	97	110	117	112	112	112	110	110	112	110	103	105	103	108	115	127	127	123	112	110	110	110	119	112	112	29
10	112	113	112	117	110	110	110	108	103	97	93	103	103	107	115	113	112	113	108	112	110	110	110	112	109	22
11	108	100	75	87	107	117	113	112	112	112	110	112	138	142	162	160	142	130	127	127	120	115	108	88	118	58
12	77	63	140	148	147	20	27	63	100	115	108	147	113	98	-52	-105	-70	120	142	107	120	225	210	50	88	638
13	78	113	120	120	-18	20	58	100	990	140	155	135	148	82	70	78	147	200	153	140	138	150	122	232	127	399
14	152	98	122	132	132	117	127	132	160	110	122	140	93	110	60	27	90	180	87	160	167	285	113	95	123	616
15	240	222	118	-55	-3	75	85	130	137	140	95	-22	-52	-165	-80	-155	-20	257	230	252	320	405	372	193	114	906
16	395	390	580	397	275	450	495	492	13																	
17	120	70	92	120	72	100	108	103	142	149	158	160	143	145	165	167	162	162	155	158	133	133	148	178	132	254
18	145	140	118	113	117	123	117	122	127	160	200	190	132	125	120	165	160	152	137	122	133	100	67	107	153	247
19	120	117	113	88	78	110	130	150	128	113	98	-170	40	127	142	158	177	105	118	88	105	228	360	492	133	950
21	405	210	220	5	48	83	113	122	130	137	135	148	142	140	140	147	132	128	112	123	140	145	138	142	142	682
22	147	120	97	85	110	113	118	122	132	135	137	138	138	100	150	167	85	13	178	190	148	117	167	148	130	355
23	128	130	128	123	122	122	122	123	130	147	158	182	205	198	10	-68	130	92	123	132	137	240	395	430	152	856
24	600	630	490	348	250	11																				

Tromsø.

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

Gr. M. T.

APRIL 1956

HOURLY MEAN VALUES

Table for April 1956 showing magnetic observations. Columns include DAY (1-25), 26 columns of hourly values, M, PS, NS, AS. Includes summary rows for M, MPS, and MNS.

MAY 1956

Table for May 1956 showing magnetic observations. Columns include DAY (1-31), 26 columns of hourly values, M, PS, NS, AS. Includes summary rows for M, MPS, and MNS.

JUNE 1956

Table for June 1956 showing magnetic observations. Columns include DAY (1-30), 26 columns of hourly values, M, PS, NS, AS. Includes summary rows for M, MPS, and MNS.

Tromsø.

Vertical Intensity. $V = 50700 +$ Tabular Quantities expressed in Gamma.

Gr. M. T.

JULY 1956

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	M	R	
1	133	97	112	117	123	123	132	137	165	178	150	140	143	180	168	128	150	140	150	123	105	92	140	225	139	312
2	252	120	100	108	120	120	145	150	153	165	180	132	145	170	148	147	160	152	118	115	97	65	113	187	139	354
3	227	230	50	-35	12	95	118	142	165	192	192	182	202	162	138	137	172	148	133	132	127	125	160	147	142	421
4	153	128	123	118	103	83	96	123	138	133	132	135	130	150	133	130	133	140	138	135	130	108	100	110	124	87
5	125	123	118	110	113	110	113	122	120	123	118	165	143	195	163	143	125	145	128	108	92	90	87	88	123	161
6	123	117	93	95	103	113	117	127	135	132	140	127	147	130	145	168	167	145	137	142	122	127	125	125	129	94
7	125	125	125	125	125	125	125	125	115	110	100	108	127	132	147	172	195	173	148	185	182	137	127	132	132	109
8	125	92	82	80	72	92	95	83	103	117	132	137	155	130	120	120	118	113	130	123	102	93	137	170	114	239
9	105	90	-20	80	92	82	107	120	132	150	145	142	147	187	138	132	137	147	132	127	113	108	105	95	115	268
10	90	98	100	83	97	97	113	110	112	108	95	108	108	110	110	118	115	120	90	130	185	238	160	150	119	363
11	150	158	200	25	78	93	113	138	138	150	145	127	130	147	142	118	117	113	120	137	115	170	180	147	131	370
12	162	120	118	123	117	68	60	98	138	135	122	122	120	165	162	160	130	117	107	85	20	80	110	110	115	203
13	243	0	-40	-75	68	102	110	112	117	123	138	143	135	127	150	85	60	-35	40	175	198	200	183	305	111	500
14	338	38	28	32	95	112	108	115	138	117	125	120	143	132	140	148	147	153	113	125	70	90	80	118	117	573
15	117	120	118	123	110	110	112	112	113	122	125	125	128	152	163	160	135	140	98	118	107	112	117	127	124	65
16	138	62	72	68	87	102	112	110	118	122	132	120	113	138	128	158	165	133	130	122	122	82	82	87	113	109
17	117	122	113	108	98	77	105	113	112	112	117	112	112	117	110	118	112	112	110	93	73	87	100	108	75	108
18	97	98	107	112	107	102	117	115	112	102	105	113	122	165	187	167	123	135	232	175	135	178	145	134	87	127
19	140	95	95	-8	55	97	108	112	105	118	115	123	140	162	148	332	397	405	383	327	330	260	218	365	201	109
20	283	100	28	48	50	78	87	107	113	110	183	143	148	182	140	113	137	118	100	60	78	113	125	145	114	558
21	80	93	112	123	118	118	118	118	118	112	113	113	123	137	162	137	118	112	108	113	112	93	88	95	114	123
22	110	113	88	90	97	112	110	113	112	112	112	112	122	140	185	118	110	112	125	138	150	117	113	112	113	80
23	112	118	113	97	93	95	92	93	88	95	92	90	98	98	98	98	98	98	98	98	98	98	98	98	98	98
24	220	185	135	92	98	113	110	183	198	148	162	163	148	153	140	145	143	147	120	140	152	130	132	130	145	161
25	120	118	178	188	107	95	105	120	140	158	167	160	235	195	198	160	183	135	132	112	173	212	250	328	163	341
26	420	80	110	128	198	95	105	130	210	180	170	203	185	170	130	87	20	87	50	125	150	238	430	220	163	711
27	240	270	220	35	140	115	98	148	163	175	170	178	167	153	128	150	150	135	133	128	160	260	320	117	609	
28	382	260	130	148	97	113	117	117	130	137	175	170	140	158	206	175	143	115	118	80	118	150	370	-5	156	696
29	45	40	88	113	122	115	177	123	127	130	123	127	122	168	172	102	28	40	150	132	160	140	117	117	116	406
30	128	123	178	88	107	112	117	130	133	145	157	147	162	160	143	155	168	142	130	128	185	110	110	127	137	181
31	143	138	127	120	122	122	123	133	130	140	125	140	177	188	118	82	27	188	182	155	137	127	137	157	131	280
M	169	119	114	85	103	103	112	122	133	134	134	137	143	148	163	142	135	128	150	132	131	134	157	158	131	303
QM	115	119	122	125	126	126	125	124	123	121	119	117	115	114	112	112	116	121	124	121	117	113	112	112	119	

AUGUST 1956

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	M	R	
1	155	375	140	27	77	100	113	110	115	125	142	135	145	160	203	192	150	133	117	120	140	132	135	183	145	435
2	233	93	103	117	113	118	117	113	115	112	147	162	185	847	187	143	148	148	112	117	123	143	132	55	138	218
3	90	113	122	122	118	118	120	122	116	140	135	142	177	165	125	128	140	122	117	115	117	115	110	127	138	187
4	87	97	98	97	110	115	122	117	113	117	115	117	125	155	147	167	180	165	137	115	108	137	110	85	127	109
5	97	102	95	107	100	77	87	97	110	112	110	112	108	135	136	130	140	137	132	118	115	117	105	97	113	80
6	100	93	93	112	117	113	108	108	105	102	100	98	108	110	108	142	145	127	125	102	67	103	117	145	111	80
7	105	117	100	93	75	77	105	113	112	110	112	110	117	112	110	117	115	117	117	75	68	102	117	118	106	65
8	115	113	95	80	92	105	112	100	85	95	97	95	87	118	128	15	70	78	100	200	255	137	158	110	355	
9	188	155	47	5	43	87	95	98	97	95	217	208	153	175	65	65	115	135	160	320	350	327	148	551	148	
10	292	292	97	85	87	87	100	122	122	120	118	118	122	117	178	193	163	153	145	137	128	125	130	137	141	355
11	113	118	93	93	95	75	93	98	110	115	135	175	165	147	163	115	87	-72	165	135	182	227	240	115	125	609
12	122	133	145	100	112	117	97	80	118	113	162	167	110	88	97	138	147	130	135	135	105	160	95	117	108	493
13	117	112	117	117	123	128	123	122	115	108	127	135	148	160	165	122	128	127	108	60	85	110	137	122	160	180
14	87	125	76	90	110	117	122	115	113	118	123	132	138	152	167	152	137	132	125	113	118	120	125	105	122	145
15	82	87	102	108	112	112	108	108	107	117	117	117	118	115	127	123	110	108	108	108	43	108	108	110	107	167
16	112	107	112	113	110	105	110	110	113	112	117	115	135	137	168	140	112	135	137	127	115	122	135	152	125	109
17	163	40	15	65	98	80	-50	55	83	95	115	178	183	137	127	155	137	135	115	127	133	133	117	108	493	
18	117	100	103	113	110	108	105	103	105	110	115	118	122	133	135	142	132	120	120	117	113	110	108	110	116	51
19	112	115	117	118	115	110	110	110	110	110	115	110	117	113	120	117	110	108	110	110	108	108	107	110	95	112
20	87	97	97	97	102	105	105	112	113	113	113	113	117	117	127	150	138	135	117	110	108	108	108	112	73	
21	165	110	110	113	117	120	110	115	98	92	87	118	112	33	40	125	93	63	5	70	110	115	197	210	103	297
22	168	115	97																							

Tromsø.
JULY 1956

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

Gr. M. T.

HOURLY MEAN VALUES

Table for July 1956 showing hourly mean values for vertical intensity and storminess. Columns include Day (1-31), hours (1-24), and summary statistics (M, PS, NS, AS). Rows show hourly data with values ranging from -35 to 28.

AUGUST 1956

Table for August 1956 showing hourly mean values for vertical intensity and storminess. Columns include Day (1-31), hours (1-24), and summary statistics (M, PS, NS, AS). Rows show hourly data with values ranging from -23 to 86.

SEPTEMBER 1956

Table for September 1956 showing hourly mean values for vertical intensity and storminess. Columns include Day (1-30), hours (1-24), and summary statistics (M, PS, NS, AS). Rows show hourly data with values ranging from -55 to 127.

Tromsø. Vertical Intensity. V = 50700 + Tabular Quantities expressed in Gamma. Gr. M. T.

Table for October 1956 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-23), and monthly totals (M, R). Values range from approximately 115 to 325 Gamma.

Table for November 1956 showing hourly mean values for vertical intensity. Columns include Day (1-30), hours (1-23), and monthly totals (M, R). Values range from approximately 125 to 350 Gamma.

Table for December 1956 showing hourly mean values for vertical intensity. Columns include Day (1-31), hours (1-23), and monthly totals (M, R). Values range from approximately 115 to 325 Gamma.

Tromsø.

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

Gr. M. T.

OCTOBER 1956

HOURLY MEAN VALUES

Table for October 1956 showing magnetic observations. Columns include DAY (1-31), 24 hourly values (1-24), and summary values (M, PS, NS, AS). Rows show hourly mean values and storminess indices.

NOVEMBER 1956

Table for November 1956 showing magnetic observations. Columns include DAY (1-30), 24 hourly values (1-24), and summary values (M, PS, NS, AS). Rows show hourly mean values and storminess indices.

DECEMBER 1956

Table for December 1956 showing magnetic observations. Columns include DAY (1-31), 24 hourly values (1-24), and summary values (M, PS, NS, AS). Rows show hourly mean values and storminess indices.

Resuming Tables.

Diurnal Variation.
QUIET VALUES.

Tromsø.

Declination. Unit Gamma. + West.

Table with 26 columns (1-25) and 13 rows (JANUARY to MEAN) showing declination values in Unit Gamma. + West for each month and the mean.

Horizontal Intensity. Unit Gamma.

Table with 26 columns (1-25) and 13 rows (JANUARY to MEAN) showing horizontal intensity values in Unit Gamma for each month and the mean.

Vertical Intensity. Unit Gamma.

Table with 26 columns (1-25) and 13 rows (JANUARY to MEAN) showing vertical intensity values in Unit Gamma for each month and the mean.

Monthly Means.

Summary table with 14 columns (DECLINATION, JAN to DEC, MEAN) and 3 main sections: DECLINATION, HORIZONTAL INTENSITY, and VERTICAL INTENSITY, each with sub-rows for direct values, quiet values, range, storminess, and diurnal sum.

Resuming Tables.

Storminess.

Tromsø.

Declination. Unit Gamma. + West.

1956		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	2	1	1	2	2	4	5	6	4	4	7	9	13	13	14	21	19	26	18	7	5	5	4	4
FEB	MPS	1	0	1	1	1	1	3	2	3	2	2	3	6	8	9	13	16	16	8	10	3	4	1	1
MAR	MPS	1	2	0	1	2	2	3	6	6	7	6	10	15	19	25	33	30	26	24	21	13	4	0	1
APR	MPS	1	4	1	1	1	1	2	4	7	6	7	8	13	25	28	28	33	28	29	19	11	5	1	0
MAY	MPS	1	1	1	1	3	4	4	3	3	2	2	2	5	12	26	34	36	33	26	16	17	9	5	3
JUN	MPS	3	1	2	5	4	5	8	9	7	6	3	1	4	11	22	35	31	30	25	25	12	3	2	
JUL	MPS	1	1	0	1	1	2	6	6	6	5	5	4	4	5	9	14	18	19	19	21	19	12	6	5
AUG	MPS	0	1	1	1	1	1	2	2	3	3	5	7	11	20	16	19	26	22	21	14	11	3	2	1
SEP	MPS	1	1	1	0	1	2	3	4	4	9	16	14	13	14	24	25	22	14	14	10	5	4	3	1
OCT	MPS	0	1	0	0	1	3	4	3	2	8	9	9	11	10	9	14	20	16	11	10	7	1	1	0
NOV	MPS	1	2	1	1	1	2	2	2	2	3	4	6	6	7	10	16	25	29	22	18	10	4	5	2
DEC	MPS	0	1	1	2	2	2	3	2	2	3	4	7	7	10	9	13	15	20	20	14	10	7	3	1
MEAN		1	1	1	1	2	2	4	4	4	5	6	7	9	13	17	22	24	23	20	15	11	6	3	2
JAN	MNS	35	32	29	24	12	7	2	1	1	1	1	0	1	0	1	1	8	3	4	24	18	21	15	25
FEB	MNS	35	33	34	24	17	12	8	12	11	7	9	2	2	1	1	1	3	5	2	9	14	13	18	26
MAR	MNS	49	43	59	47	33	20	9	7	3	2	3	4	2	1	1	0	1	1	2	6	4	22	54	52
APR	MNS	44	50	63	57	46	29	30	18	11	12	14	3	2	1	0	0	1	1	1	2	9	18	33	40
MAY	MNS	32	49	47	41	25	18	19	26	24	23	21	27	15	5	3	1	0	1	1	1	2	5	9	24
JUN	MNS	42	45	51	36	23	13	11	5	6	4	7	9	10	2	1	2	0	0	1	1	0	5	18	34
JUL	MNS	39	44	39	20	10	8	4	6	8	3	7	6	5	4	3	1	1	1	1	0	1	3	7	15
AUG	MNS	26	35	35	18	11	12	8	7	4	4	5	4	1	1	2	1	1	5	1	1	3	11	19	13
SEP	MNS	24	29	36	27	23	16	17	12	14	8	6	4	1	1	1	1	2	1	1	1	4	9	19	22
OCT	MNS	41	38	28	20	11	5	3	2	4	1	2	1	0	0	1	1	1	1	2	1	8	16	17	36
NOV	MNS	60	53	49	38	25	19	16	14	15	11	6	3	3	4	2	3	1	2	6	6	8	16	21	59
DEC	MNS	25	26	21	14	6	2	2	2	2	2	1	1	0	1	1	1	0	2	2	2	5	9	13	23
MEAN		38	40	41	31	20	13	11	9	9	6	7	5	4	2	1	1	1	2	2	5	6	12	20	31
JAN	MPS + MNS	-35	-32	-28	-22	-10	-2	4	6	3	3	6	9	13	13	14	20	11	22	13	-17	-14	-16	-11	-21
FEB	MPS + MNS	-35	-33	-34	-23	-17	-12	-6	-10	-9	-6	-7	2	4	8	8	12	14	11	7	2	-12	-9	-17	-25
MAR	MPS + MNS	-48	-42	-59	-47	-32	-19	-6	-1	4	5	3	6	14	19	25	33	30	26	22	16	9	-18	-54	-52
APR	MPS + MNS	-44	-47	-63	-57	-46	-29	-28	-15	-5	-7	-7	5	12	23	28	28	32	28	29	18	2	-13	-33	-40
MAY	MPS + MNS	-32	-48	-46	-40	-23	-15	-16	-23	-22	-20	-19	-26	-10	7	23	24	36	33	26	15	16	4	-5	-22
JUN	MPS + MNS	-40	-44	-50	-32	-20	-9	-3	4	2	3	-5	-8	-6	10	22	32	31	30	25	25	8	-16	-33	
JUL	MPS + MNS	-38	-44	-39	-19	-9	-6	2	-1	-2	2	-2	-3	-2	1	7	13	17	18	19	21	19	9	-1	-11
AUG	MPS + MNS	-26	-35	-35	-18	-10	-11	-6	-5	-1	-1	0	4	10	19	15	18	25	17	21	13	9	-8	-17	-13
SEP	MPS + MNS	-24	-29	-36	-27	-22	-14	-15	-8	-11	1	10	11	13	13	23	25	20	14	13	9	1	-6	-17	-22
OCT	MPS + MNS	-42	-38	-28	-20	-10	-3	1	1	-3	7	8	10	10	8	14	19	15	10	9	-2	-15	-16	-36	
NOV	MPS + MNS	-59	-51	-48	-38	-24	-17	-14	-12	-14	-9	-3	3	3	8	14	24	27	16	12	3	-13	-17	-58	
DEC	MPS + MNS	-25	-25	-19	-13	-4	1	2	0	1	1	3	7	7	10	9	12	15	18	18	12	4	-2	-10	-23
MEAN		-37	-39	-40	-30	-19	-11	-7	-5	-5	-2	-1	2	6	11	16	21	23	22	18	11	5	-7	-18	-30

Horizontal Intensity. Unit Gamma.

1956		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	1	2	2	2	5	6	6	7	12	17	26	39	48	66	70	55	41	34	12	7	2	1	2
FEB	MPS	1	1	2	2	4	4	5	6	7	11	18	21	22	43	40	40	41	33	24	15	7	3	1	0
MAR	MPS	2	4	1	0	4	3	4	9	11	23	40	46	57	82	82	75	72	49	13	11	2	0	0	0
APR	MPS	2	1	1	3	2	1	2	4	16	24	36	59	56	60	82	88	81	69	38	12	0	1	0	0
MAY	MPS	3	0	0	1	1	1	4	2	8	47	84	95	126	140	131	109	76	53	22	7	1	1	0	1
JUN	MPS	3	9	2	1	5	0	1	7	19	25	46	70	94	108	115	111	86	66	39	9	5	2	1	4
JUL	MPS	1	0	1	2	3	4	4	10	14	24	32	40	50	75	87	84	63	54	33	11	3	1	2	2
AUG	MPS	1	1	2	3	3	4	6	4	8	21	33	49	69	121	122	96	72	41	33	16	2	3	1	3
SEP	MPS	1	1	4	3	3	5	5	3	12	30	60	86	91	90	80	79	61	31	17	7	3	1	1	0
OCT	MPS	0	1	0	0	2	1	2	3	9	13	23	30	55	59	70	64	53	35	16	11	9	7	8	8
NOV	MPS	3	5	3	10	3	5	5	12	21	27	50	48	59	72	73	75	53	35	22	15	8	1	1	1
DEC	MPS	0	2	2	3	3	5	4	3	3	4	5	8	14	23	30	53	50	42	28	19	13	12	6	3
MEAN		1	1	2	3	3	3	4	6	11	22	29	48	61	77	82	70	64	46	27	12	5	3	2	2
JAN	MNS	149	107	87	44	41	33	7	3	2	1	1	0	0	0	0	7	0	19	31	87	111	108	104	136
FEB	MNS	96	76	68	46	42	19	9	7	3	1	2	2	1	0	0	1	5	7	20	39	64	68	80	102
MAR	MNS	127	113	114	84	56	36	22	8	2	1	1	1	0	0	0	8	0	11	34	40	64	143	200	172
APR	MNS	141	161	136	119	98	42	38	15	12	1	3	3	1	2	1	1	0	1	21	30	49	122	116	128
MAY	MNS	185	144	130	126	82	33	23	27	13	0	0	0	14	1	1	1	1	14	10	35	49	67	110	144
JUN	MNS	152	127	133	81	60	46	33	7	3	3	1	1	0	1	17	3	4	5	5	24	40	29	139	144

JUL	MNS	120	120	89	44	32	23	14	11	4	1	1	2	0	0	0	1	3	0	1	20	45	66	91	99
AUG	MNS	137	127	92	55	20	14	9	7	1	2	1	2	0	0	0	0	0	3	11	23	52	95	103	93
SEP	MNS	87	83	89	89	73	33	13	14	2	0	0	0	0	0	0	2	0	4	18	28	63	78	79	91
OCT	MNS	123	99	68	43	23	18	10	7	1	1	0	0	0	1	0	0	1	13	30	50	66	88	80	110
NOV	MNS	174	127	115	86	82	51	25	10	8	3	1	1	0	0	0	1	7	20	32	39	51	80	110	180
DEC	MNS	58	61	51	33	13	11	6	4	2	2	1	1	0	0	0	0	0	4	14	30	49	55	67	
MEAN		124	112	96	69	52	30	27	10	4	1	1	1	1	0	2	2	2	8	18	34	57	83	106	122
JAN	MPS + MNS	-149	-106	-65	-43	-39	-29	-1	3	5	11	16	26	39	48	66	63	54	22	4	-75	-104	-106	-103	-134
FEB	MPS + MNS	-95	-75	-65	-44	-38	-16	-3	-1	4	10	16	19	21	43	39	36	36	26	4	-24	-57	-65	-80	-102
MAR	MPS + MNS	-125	-110	-113	-84	-51	-33	-18	0	9	22	39	45	59	81	82	67	72	38	-20	-29	-62	-143	-200	-172
APR	MPS + MNS	-138	-160	-135	-116	-97	-41	-36	-11	4	23	33	56	55	58	81	88	81	68	17	-18	-49	-121	-116	-129
MAY	MPS + MNS	-122	-144	-129	-125	-81	-32	-19	-24	-4	47	84	95	112	138	130	108	74	39	11	-28	-47	-67	-110	-143
JUN	MPS + MNS	-149	-127	-131	-80	-55	-46	-31	0	16	22	45	69	94	107	98	108	83	61	34	-15	-35	-27	-138	-140
JUL	MPS + MNS	-119	-120	-88	-42	-29	-19	-10	-1	10	23	31	38	50	75	87	83	60	54	32	-9	-42	-65	-89	-97
AUG	MPS + MNS	-136	-126	-90	-32	-17	-10	-3	-3	7	19	32	47	69	121	122	96	72	38	22	-8	-51	-92	-102	-90
SEP	MPS + MNS	-86	-82	-85	-86	-70	-30	-8	-10	10	30	60	86	91	90	80	77	61	27	-1	-21	-60	-77	-78	-91
OCT	MPS + MNS	-123	-98	-68	-43	-21	-17	-8	-4	8	12	23	30	55	58	70	64	52	22	-14	-19	-57	-81	-72	-102
NOV	MPS + MNS	-171	-122	-112	-76	-79	-46	-20	2	13	24	49	47	59	72	73	74	46	15	-9	-24	-43	-79	-109	-179
DEC	MPS + MNS	-58	-59	-49	-30	-10	-6	-3	-1	1	1	4	7	14	23	30	53	50	42	24	5	-17	-37	-49	-64
MEAN		-123	-111	-94	-67	-49	-27	-14	-4	7	20	36	47	60	76	80	77	62	38	9	-22	-52	-80	-104	-120

Vertical Intensity. Unit Gamma.

1956		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	40	16	5	3	0	0	1	2	5	8	5	5	8	10	9	6	5	5	6	25	25	26	37	33	
FEB	MPS	36	8	7	4	1	0	5	8	4	6	5	9	8	13	15	13	7	9	10	12	15	17	30	44	
MAR	MPS	85	59	30	11	7	2	4	7	9	9	9	10	11	14	18	24	22	16	15	16	26	83	92	88	
APR	MPS	82	73	60	45	38	23	32	19	12	11	8	14	18	24	21	23	22	13	15	25	47	84	72	88	
MAY	MPS	73	65	55	32	30	31	34	32	25	28	31	37	31	29	21	23	25	20	18	23	28	45	85	80	
JUN	MPS	58	49	30	14	13	15	12	12	15	25	31	33	39	39	31	26	20	15	8	11	20	59	81	75	
JUL	MPS	60	18	11	3	3	0	3	6	15	17	18	21	29	34	41	33	31	22	17	19	24	29	50	52	
AUG	MPS	60	28	7	4	1	1	2	7	9	13	20	19	24	18	25	26	19	15	11	11	32	54	54	55	
SEP	MPS	31	28	42	14	6	17	7	2	3	6	6	10	16	20	17	15	11	10	13	18	33	44	32	25	
OCT	MPS	47	33	23	9	4	1	1	3	4	6	8	10	11	13	12	13	10	7	7	16	45	52	51	75	
NOV	MPS	59	58	46	24	23	14	10	7	7	8	7	9	13	9	15	9	4	3	5	8	44	53	70	95	
DEC	MPS	12	14	4	6	3	4	3	3	3	3	3	4	5	9	10	15	8	6	3	1	6	14	11	15	
MEAN		54	37	27	14	11	9	10	9	9	12	13	15	18	19	20	19	15	12	11	15	29	47	55	60	
JAN	MNS	25	40	25	28	37	38	25	8	3	5	6	10	8	12	28	44	62	64	42	38	38	34	30	27	
FEB	MNS	13	30	22	16	18	17	9	4	2	3	7	7	10	6	16	18	26	19	18	18	17	16	13	9	
MAR	MNS	9	9	8	21	17	27	22	11	7	4	6	12	15	11	17	17	23	18	18	16	6	6	9	11	
APR	MNS	4	5	18	26	14	28	13	3	5	7	18	18	13	10	12	21	21	16	16	6	4	4	5	3	
MAY	MNS	5	8	7	19	22	13	6	2	4	3	3	20	31	35	43	32	19	10	4	7	5	4	3	4	
JUN	MNS	15	18	27	38	29	17	13	5	2	1	0	1	1	6	13	14	10	13	18	6	14	5	6	7	
JUL	MNS	6	19	29	43	25	22	16	9	5	3	4	2	2	1	1	4	11	14	13	7	10	9	5	7	
AUG	MNS	5	20	25	23	13	11	11	5	6	3	2	1	3	24	21	12	23	18	13	8	8	2	1	5	
SEP	MNS	15	6	13	12	16	22	13	16	13	9	11	14	14	23	20	9	17	14	6	11	7	2	4	9	
OCT	MNS	8	9	17	17	18	14	9	5	3	5	6	6	10	19	20	26	22	18	9	5	8	6	7	7	
NOV	MNS	21	17	9	15	13	19	14	5	4	11	6	6	8	30	39	45	54	43	37	25	8	10	8	8	
DEC	MNS	7	14	19	16	15	11	7	3	2	1	1	2	1	3	11	8	23	33	29	20	15	11	17	12	
MEAN		11	16	18	23	20	20	13	6	5	5	5	8	10	15	20	20	26	23	19	14	12	9	9	9	
JAN	MPS + MNS	16	-23	-20	-25	-37	-38	-24	-6	2	3	2	-5	1	-2	-19	-38	-58	-61	-36	-12	-15	-9	6	7	
FEB	MPS + MNS	23	-22	-16	-13	-17	-16	-5	4	2	3	-2	2	-2	6	-1	-5	-19	-10	-8	-6	-2	1	17	36	
MAR	MPS + MNS	77	50	22	-10	-11	-26	-18	-5	2	5	4	-2	-5	3	2	8	-1	-3	-4	0	21	78	83	76	
APR	MPS + MNS	79	68	43	19	24	-5	20	16	8	4	-4	-4	6	14	9	11	2	-3	1	19	43	81	67	85	
MAY	MPS + MNS	69	57	48	12	7	18	29	30	21	25	28	18	0	-6	-22	-8	6	10	15	16	22	42	82	76	
JUN	MPS + MNS	44	31	3	-24	-16	-2	-2	7	13	25	31	32	38	33	19	12	11	2	-10	5	7	55	76	68	
JUL	MPS + MNS	54	-2	-19	-41	-23	-22	-13	-3	10	15	15	20	27	33	40	30	20	8	4	12	14	21	45	46	
AUG	MPS + MNS	55	9	-18	-20	-12	-10	-9	2	4	10	18	18	22	-7	4	14	-4	-4	-2	3	25	52	53	51	
SEP	MPS + MNS	16	22	29	2	-10	-6	-7	-13	-10	-3	-6	-4	2	-3	-3	7	-5	-4	7	7	26	42	29	16	
OCT	MPS + MNS	40	24	7	-6	-14	-13	-8	-3	1	2	2	5	2	-6	-8	-12	-12	-11	-2	11	38	47	44	69	
NOV	MPS + MNS	39	42	37	9	10	-5	-4	2	3	-3	2	3	4	-21	-25	-37	-51	-40	-32	-17	36	43	63	87	
DEC	MPS + MNS	5	-1	-15	-10	-12	-7	-4	1	1	2	2	2	2	4	6	-1	7	-15	-27	-25	-19	-10	3	-7	3
MEAN		43	21	8	-9	-9	-11	-4	3	5	7	8	7	8	4	0	-1	-11	-12	-8	2	17	36	47	52	

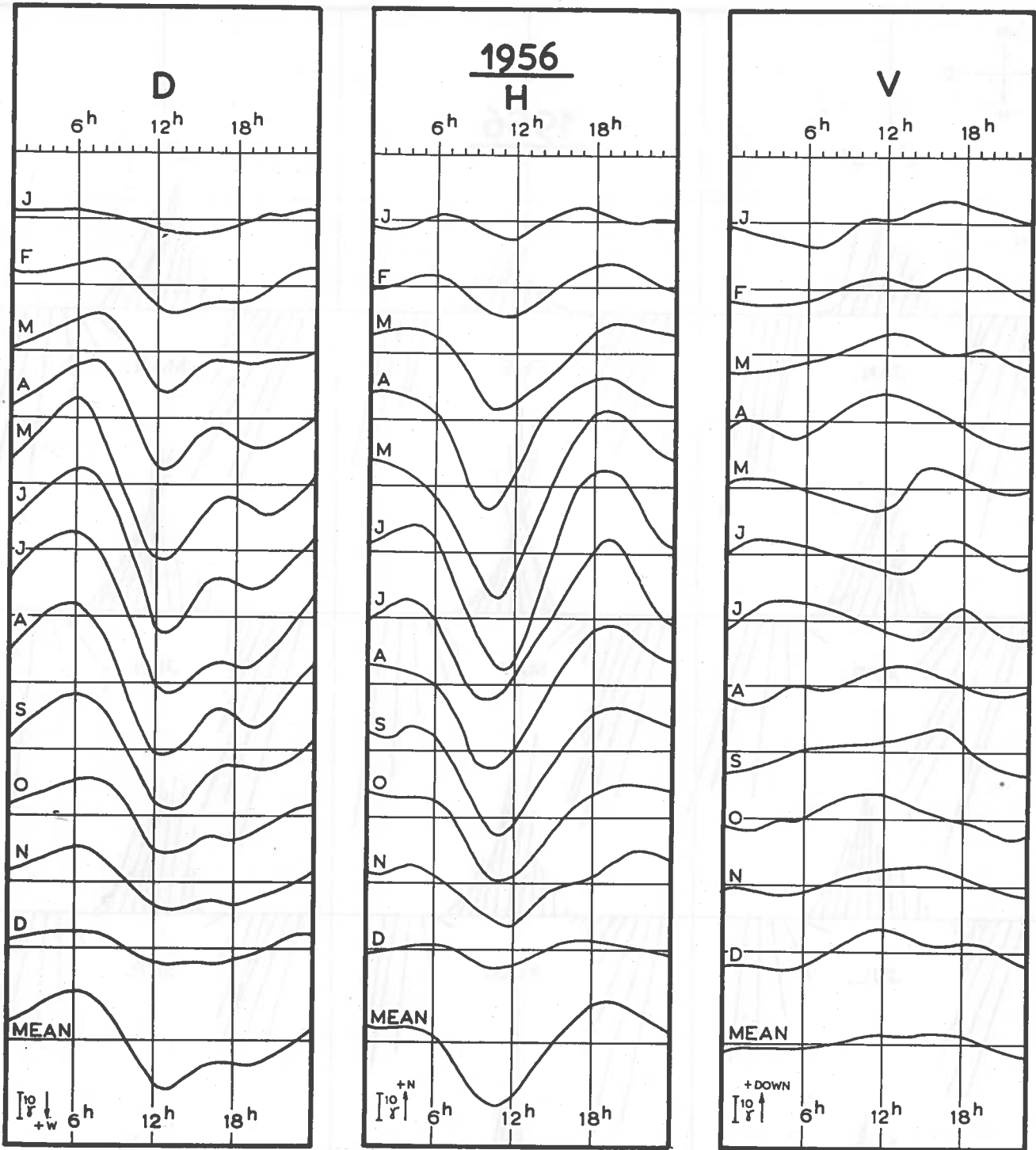


Fig. 1. The Quiet Diurnal Variation, smoothed Values.

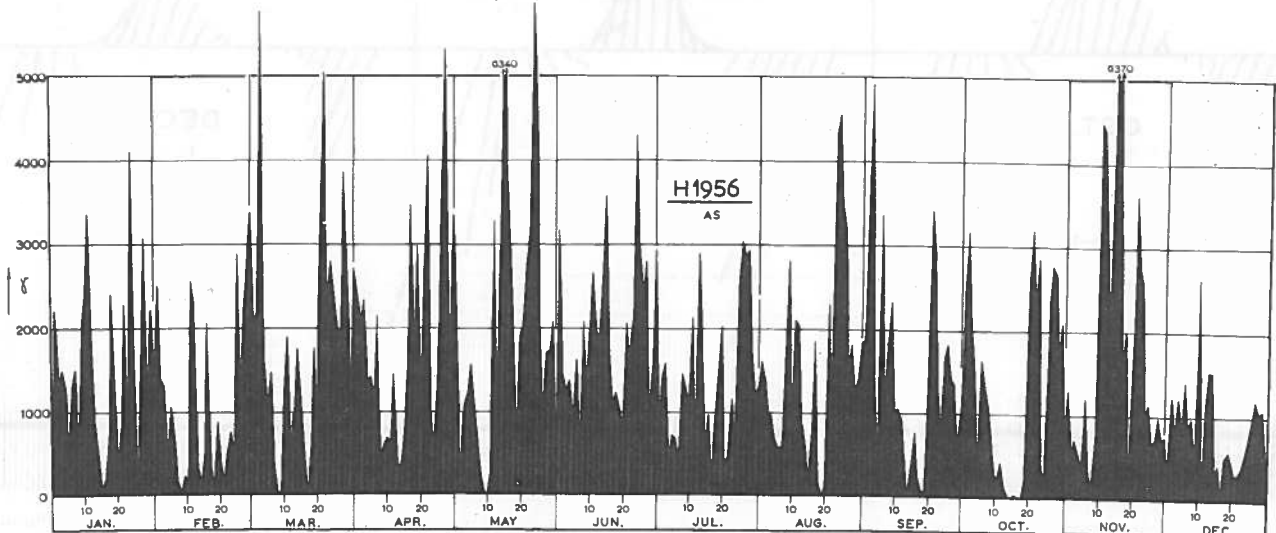


Fig. 2. The Diurnal Sum of the Absolute Storminess of H.

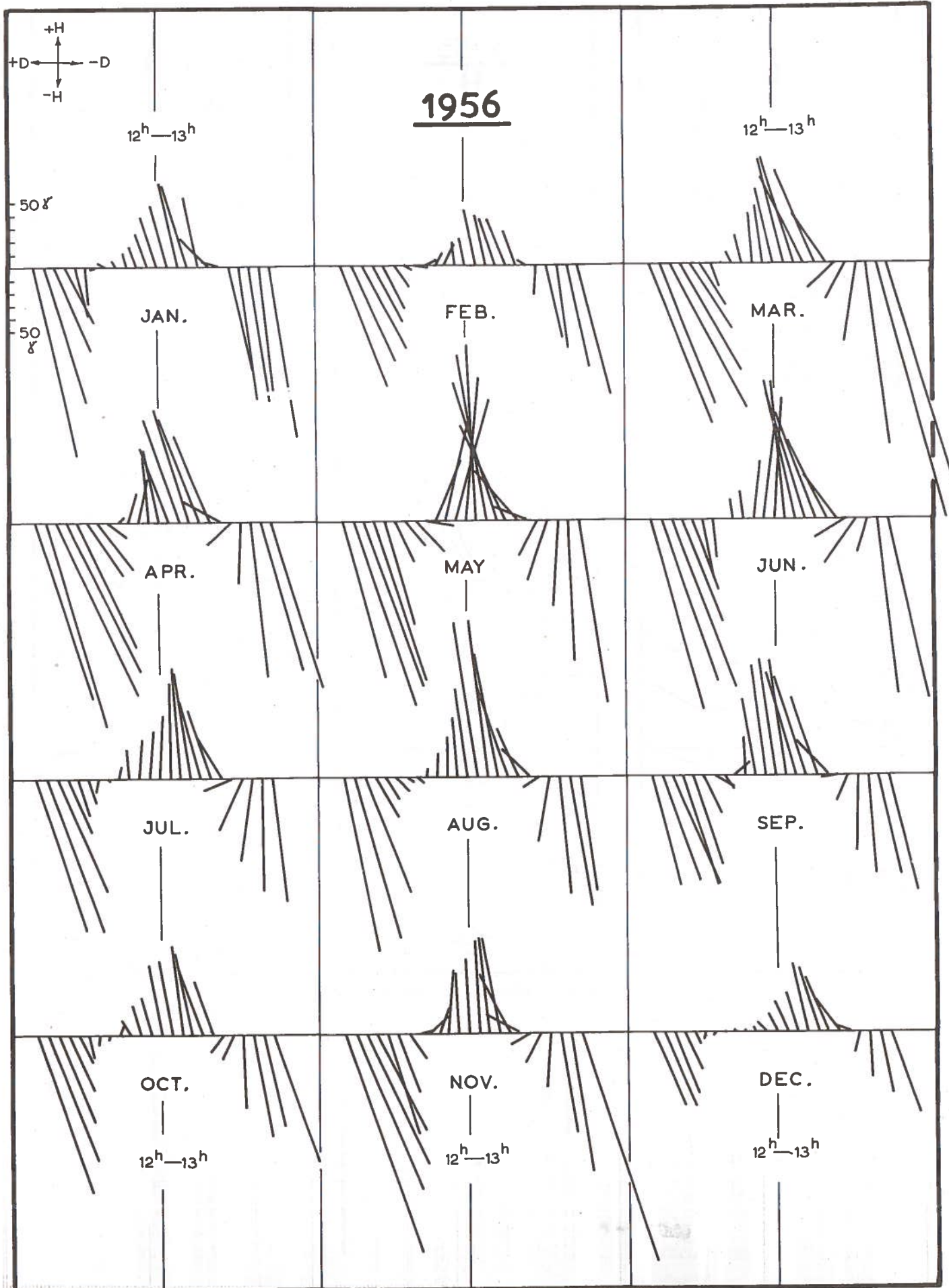


Fig. 3. Diagrams of the Monthly Mean Values (M) of the Storminess in the Horizontal Plane.

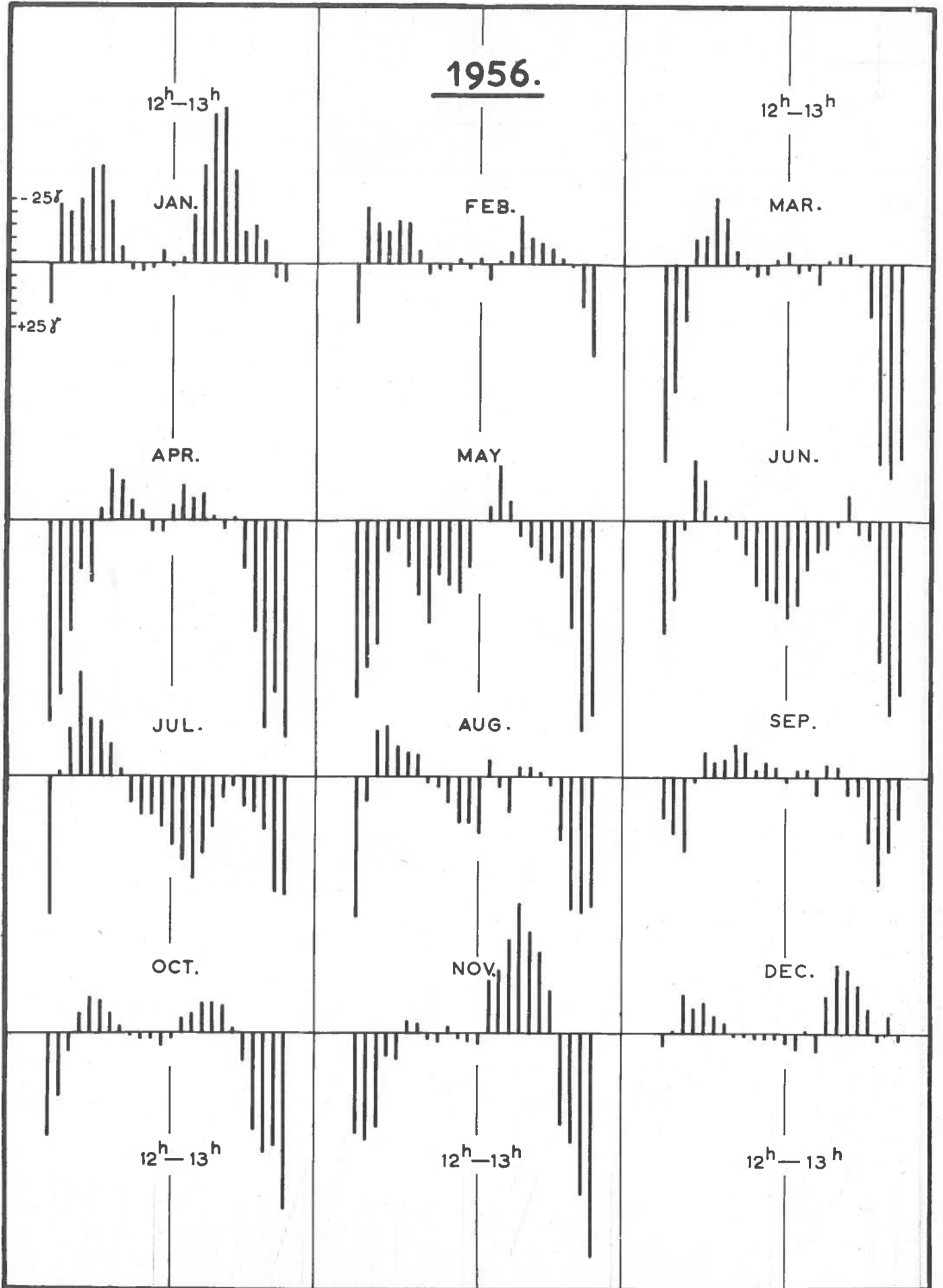


Fig. 4. Diagrams of the Monthly Mean Values (M) of the Storminess of the Vertical Intensity.

