

電離層觀測記錄

自昭和廿年十月
至昭和廿一年一月

平 磯

27.

3

20

320



Oct. 24th 1945.

番號 37

電離層觀測結果記錄

於電氣試驗所平磯出張所 (東經----140°37'32" 北緯----36°21'58")

昭和20年10月24日

時刻	f_E (kc)	h_E min (km)	$f_{F_1}^0$ (kc)	$f_{F_1}^x$ (kc)	h_{F_1} min (km)	$f_{F_2}^0$ (kc)	$f_{F_2}^x$ (kc)	h_{F_2} min (km)	$h_{0.925}$ (km)	$h_{0.834}$ (km)	$h_{0.648}$ (km)	$Z d'$ (km)	$Z d''$ (km)	備考	
0820						5060 [✓]									
0830						5380 [✓]		230							
0905						5060 [↑]		253							
0940		100						258							Es($\frac{6285}{100}$)
1007		122				5220 [✓]		245							Es($\frac{4890}{122}$)
1036		130						260							Es($\frac{4220}{130}$)
1103						^{f_{min}} 5670		250							
1145						9840 [↑]		233							2F2
¹²⁰⁰ 1230		105				9840 [↑]		²⁸³ 280							Es($\frac{4570}{105}$)
1305		115				9840 [↑]		260							Es($\frac{9840}{9840}$)
1330		125													2Es($\frac{9840}{125}$)
1400		120				9880 [✓]		260							2Es($\frac{9840}{120}$)
1450		120				9880 [✓]		300							2Es($\frac{6440}{120}$)

Oct. 25th 1945.

番號 38

電離層觀測結果記錄

於電氣試驗所平磯出張所 (東經 ---140°37'32" 北緯 ---36°21'58")

昭和 20 年 10 月 25 日

時刻	f_E (kc)	h_E min (km)	$f_{F_1}^0$ (kc)	$f_{F_1}^x$ (kc)	h_{F_1} min (km)	$f_{F_2}^0$ (kc)	$f_{F_2}^x$ (kc)	h_{F_2} min (km)	$h_{0.925}$ (km)	$h_{0.834}$ (km)	$h_{0.648}$ (km)	$Z d'$ (km)	$Z d''$ (km)	備考
0015		140				4111		400						$5E_s(\frac{3570}{140}), 2F, SE, SF^x$
0155		130				2773		500 ^f						$2E_s(\frac{3385}{130}), 2F, SF_{100}^x$
0300		120				2751		300						$2E_s(\frac{3000}{120}), 3F,$
0415						2890		430						$3F, S^{\circ}F_{140}$
0500						2731		462						$3F, S^{\circ}E_{180}$
0531						2890		370						3F
0615		3116				8205 [✓]		275						
0635		123				9880 [↑]		265						3E
0700		3570				9880 [↑]		240						$3F_2, 3E$
0740		120				9090		240						$2F_2, 3E$
0755		5060				9245		280						

fEs

fEs

fEs

Oct. 31st 1945

番號 39

電離層觀測結果記錄

於電氣試驗所平磯出張所 (東經---140°37'32" 北緯---36°21'58")

昭和 20 年 10 月 3 / 日

時刻	f_E (kC)	h_E min (km)	$f_{F_1}^0$ (kC)	$f_{F_1}^x$ (kC)	h_{F_1} min (km)	$f_{F_2}^0$ (kC)	$f_{F_2}^x$ (kC)	h_{F_2} min (km)	$h_{0.925}$ (km)	$h_{0.834}$ (km)	$h_{0.648}$ (km)	$\Sigma d'$ (km)	$\Sigma d''$ (km)	備 考
0802	2845	120				9460		262						$2F_2, h_{E_o}^{\min} = 90 \text{ km}$
0837	3075	140				9770		250						$2F_2, h_{E_o}^{\min} = 90 \text{ km}$
0900	2931	130				9880 [✓]		276						$2F_2, h_{E_o}^{\min} = 100 \text{ km}$
0940	2890	140				9879		295						$2F_2, h_{E_o}^{\min} = 90 \text{ km}$
1005	2990	120				9861		270						"
1033	2931	120				9804		250						"
1100	3040	107				8860		260						"
1130	2990	120				9001		280						$2F_2,$ "
1200	2890	130				9090		280						"
1230	2937	120				8860		280						"
1305	2890	120				9600		260						"
1330	2822	110				9840		270						$h_{E_o}^{\min} = 100 \text{ km}$
1415						9670		279						"

Nov. 8th 1945

番號 42 (翻重復) 電離層觀測結果記錄

於電氣試驗所平磯出張所 (東經---140°37'32" 北緯---36°21'58")

昭和 20 年 // 月 8 日

時刻	f_E (kc)	h_E min (km)	$f_{F_1}^0$ (kc)	$f_{F_1}^x$ (kc)	h_{F_1} min (km)	$f_{F_2}^0$ (kc)	$f_{F_2}^x$ (kc)	h_{F_2} min (km)	$h_{0.925}$ (km)	$h_{0.834}$ (km)	$h_{0.648}$ (km)	$Z d'$ (km)	$Z d''$ (km)	備考
0001		115				3300		315						3F, 2Es 4521
0100		100				3333		270						4F
0200						3318		340						5F
0300		105				3350		300						5F, 2Es 3780
0400		120				3510		320						4F, S_F^0 , Es 2773
0500						3548		242						4F, S_F
0615	2360	108				5520		230						6F
0636						6730		220						3F
0710		112				7190		243						4F, S_E
0749	2773	118				8325 [✓]		250						2F
0800	2890	120				7925 [✓]		260						2F, $E_o(80)$ km
0820	2931	122				8325 [✓]		242						5F, $E_o(80)$ km

D層ラン
キモアリ
相當強勢
(20~80) km

Nov. 21st. 1945

番號 44

電離層觀測結果記錄

於 電氣試驗所平磯出張所 (東經...140° 37' 32")
 (北緯... 36° 21' 58")

昭和 20 年 11 月 21 日

時刻	f_E (kc)	h_E^{min} (km)	$f_{F_1}^o$ (kc)	$f_{F_1}^x$ (kc)	$h_{F_1}^{min}$ (km)	$f_{F_2}^o$ (kc)	$f_{F_2}^x$ (kc)	$h_{F_2}^{min}$ (km)	$h_{o.925}$ (km)	$h_{o.834}$ (km)	$h_{o.648}$ (km)	Zd' (km)	Zd'' (km)	備考
0804	2576	120				7670		270						2F ₂
0832	2773	120				8265		275						4F ₂
0902	3227	130				8940		275						
0930	3570	125				9770		270						
1004	3570	132				9730		256						2D _{F₂}
1040						8580 ^{δ?}	(curve)							
1042-1100	non observation, owing to the stoppage of electric current.													
1100	3581	120				8782 ^δ		250						
1130	3548	114				8782 [✓]		238						
1200	3491	118				8940		240						D echo observed
1230	3436	112				8940		240						2F ₂ , 2E

1300	3385	118		8650	240		2F ₂
1330	3318	116		8782	250		2F ₂
1400	3099	118		8650	250		5F ₂
1431	2668	116		7575	240		2D ₂ ^o , 3F ₂
1502	2280	125		6930	225		3F ₂
1530			Likely dellinger effect.				
1537	2030	130		6440	230		4F ₂
1606				6280	210		3F ₂
1630				5220	213		3F ₂
1703				4030	250		6F ₂ , E ₂ ($\frac{2773}{170}$)
1731				3669	230		3F ₂ , E ₂ ($\frac{2773}{140}$)
1800				3941	265		3F ₂ , 2E ₂ (160)
1909				3471	245		3F ₂
2009				3385	280		4F, MF, E ₂ ($\frac{2323}{155}$)
2107				2773	260		MF,
2208				2890	280		4F, Es($\frac{2773}{}$)
2302				2931	290		2Es($\frac{2125}{120}$)

Nov. 22nd. 1945

番號 45

電離層觀測結果記錄

於電氣試驗所平磯出張所 (東經 --- 140°37'32" 北緯 --- 36°21'58")

昭和 20 年 11 月 22 日

時刻	f_E (kC)	h_E min (km)	$f_{F_1}^o$ (kC)	$f_{F_1}^x$ (kC)	h_{F_1} min (km)	$f_{F_2}^o$ (kC)	$f_{F_2}^x$ (kC)	h_{F_2} min (km)	$h_{0.925}$ (km)	$h_{0.834}$ (km)	$h_{0.648}$ (km)	$Z d'$ (km)	$Z d''$ (km)	備考
0000						2869		290						2F, Es(²¹⁶⁰ / ₁₂₀), S Es
0106						3285		265						2F
0201						3400		275						3F, Es(²⁰⁸⁵ / ₁₀₅)
0300						3418		230	290 (curve)					5F, 2Es(²⁴²⁴ / ₁₀₀)
0401						3436		280						5F,
0500						3385		290						3F,
0535						3436		260						4F,
0600						4030		240						4F,
0636	2205	110				4705		220						4F ₂
0700		110				6720		215						D echo observed, 2E, 3F ₂ (h=70 km)
0735	2424	120	2822			7670		220						D echo observed 3F ₂ ,
0800	2536	120				7530		210						D echo observed

Nov. 28th 1945

番號 46

電離層觀測結果記錄

於電氣試驗所平磯出張所 (東經-140°37'32", 北緯-36°21'58")

昭和20年11月28日

時刻	f_E (kc)	h_E^{min} (km)	f_{F1}^0 (kc)	f_{F1}^x (kc)	h_{F1}^{min} (km)	f_{F2}^0 (kc)	f_{F2}^x (kc)	h_{F2}^{min} (km)	$h_{0.925}$ (km)	$h_{0.834}$ (km)	$h_{0.648}$ (km)	$z d'$ (km)	$z d''$ (km)	備考
0756	2424	120				7770		240						3F ₂ , E ₂ ($\frac{3419}{150}$)
0830	2773	120				7720		230						3F ₂ , E ₂ ($\frac{3075}{150}$)
0900	2845	125				7106		260						3F ₂ , E ₂ ($\frac{3227}{150}$)
0930	3024	115				9090		260						5F ₂ , E ₂ ($\frac{3360}{190}$)
1001	3189	110				9730		240						4F ₂
1030	3167	120				9871		240						2F ₂
1100	3227	115				9878		220						3F ₂
1130	3300	118				8720		230						3F ₂
1200	3270	105				9245		250						3F ₂
1230	3075	120				8515		260						4F ₂
1302	3075	135				7440		235						3F ₂
1329		115				8035		270						3F ₂
1402	3200	123				8325		270						2F ₂ , 2E

Dec. 6th, 1945

番號 ~~49~~ ⁴⁸

電離層觀測結果記錄

於電氣試驗所平磯出張所 (東經-140° 37' 32", 北緯-36° 21' 58")

昭和 20 年 12 月 6 日

時刻	f_E (kc)	h_E^{min} (km)	f_{F1}^0 (kc)	f_{F1}^x (kc)	h_{F1}^{min} (km)	f_{F2}^0 (kc)	f_{F2}^x (kc)	h_{F2}^{min} (km)	$h_{0.925}$ (km)	$h_{0.834}$ (km)	$h_{0.648}$ (km)	$z d'$ (km)	$z d''$ (km)	備考
0800	2570	120				6240 [⊙]		200						2F ₂ , 2E
0827	2770	110				5890 6300	7100	200						3F ₂
0857	3050	120				5850 [✓]	7550 [✓]	200						2F ₂
0927	2930	110				6800 [✓]	7450 [✓]	200						4F ₂
0950	3000	110	4550		205	7190	7800	275						6F ₂
1033	3100 [✓]	125				7440 [⊙]		200						
1100		120				8300 [✓]	8900	225						2F ₂
1130	3000	110				8500 [✓]	9220 [✓]	220						3F ₂
1158	3020	120				8300 [✓]	9000	200						5F ₂
1226	3090	105				7350	8000 [✓]	220						"
1258	2990	100				7090	7700	220						"
1326	2700	105				6700 [✓]	7400	210						"
1352	2800	105				6100 [✓]	6700	220						

Dec. 12nd, 1945

番號 50

電離層觀測結果記錄

於電氣試驗所平磯出張所 (東經—140°37'32", 北緯—36°21'58")

昭和 20年12月 12 日

時刻	f_E (kc)	h_E^{min} (km)	$f_{F_1}^0$ (kc)	$f_{F_1}^x$ (kc)	$h_{F_1}^{min}$ (km)	$f_{F_2}^0$ (kc)	$f_{F_2}^x$ (kc)	$h_{F_2}^{min}$ (km)	$h_{0.925}$ (km)	$h_{0.834}$ (km)	$h_{0.648}$ (km)	$z d'$ (km)	$z d''$ (km)	備考
0855		113												
0947		123				5750 ^o	6660 ^o	200						
1031						7400 ^o		240 ^v						
1100						7440 ^o								
1130						7485 ^o		240						3F ₂
1200						6860 ^o		275 ^v						2F ₂
1230								280 ^f						
1303		115				7225 ^o								2F ₂
1337						6930 ^o		220						
1340		102				7100 ^o	7670 ^o	260	no.					2F ₂
1437		120				7070 ^o		240						
1500						5750 ^o	6740 ^o	242						
1530						6335 ^o		230						

電離層測定結果

(自昭和 20 年 11 月 14 日
至昭和 20 年 11 月 29 日)

逓信院電氣試験所平磯出張所

茨城縣那珂郡平磯町

(位置—東經 140° 37' 32" 北緯 36° 21' 58")

記 號 說 明

—○—	-----	寫眞記録ニヨル測定値
—○—	-----	目視ニ依ル測定値
—●—	-----	異常波ヨリノ推定値
—○—	-----	推 定 値
↑ ○	-----	記録寫眞ヨリ高(低)ク且ツ推定不可能
↑ ○	-----	突發 E 層出現範圍(矢印ハ最高周波數ヲ示ス)
EsM ₄ (4Es)		突發 E 層多重反射(4回)ノ存在
F ₂ M ₅ (5F ₂)		F ₂ 層ノ多重反射(5回)ノ存在
M _{F2}		F ₂ 層ノ M 型反射存在
S _{F2} ^o , S _{F2} ^x , S _{F2} ^{ox}		臨界周波數附近ニ於テ散亂ス (正常波ノミ, 異常波ノミ, 正異共ニ)
S ₁₀₀ ^F , S ₂₀ ^E		F 層, E 層全域ニ亘リ散亂ス (數字ハ層ノ見掛ノ大体ノ厚サヲ示ス)
2D _{F2} ^o , 3D _{F2} ^x		F ₂ 層ノ正常波(異常波)ガ 2 (3) 本ニ分裂ス
-----		測定中止(空襲, 停電, 測定機故障ノ爲)
不明		反射波不明(混信, E _s 反射強勢, 寫眞不鮮明等ノ 原因ニヨル)

AN OBSERVATION OF THE IONOSPHERE

(Nov. 14, 1945 ~ Nov. 29, 1945)

Hiraiso Branch Electrotechnical Laboratory
Department of Communications

Hiraiso-machi Naka-gun Ibaragi-ken Japan

(Location- 140° 37' 32" E, 36° 21' 58" N)

AN ILLUSTRATION

An observation with the photographic record.

An observation without the photographic record.

Deductive value from the extraordinary ray.

Deductive value.

From this value upwards(downwards),but can not presume.

The frequency range the existence of sporadic E echo(E_s).
(showing the upper limiting frequency with the arrow)

The multiple echos (4) of sporadic E layer exist.

The multiple echos (5) of F layer exist.

The M type echo caused by F and E layer exist.

The scattering F(E) echos are recognized about the critical
(ordinary ray only, extraordinary ray only, and both) frequency bounds.

The scattering F(E) echos cover all frequency bounds.
(The number of foot shows the apparent thickness of the scattering layer.)

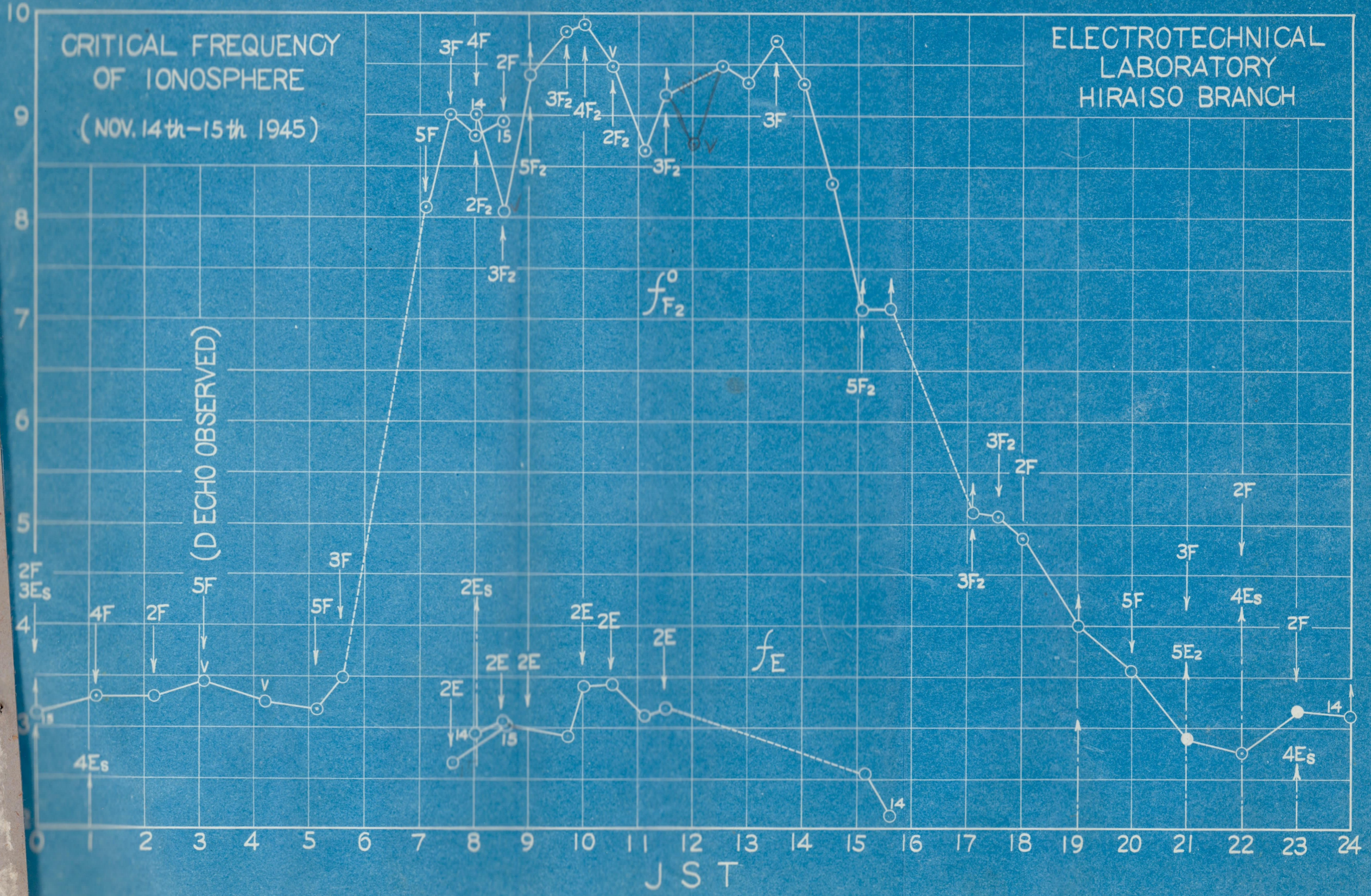
The ordinary(extraordinary) echo splits to the two(three)
brunchs at neighbourhood of critical frequency bounds.

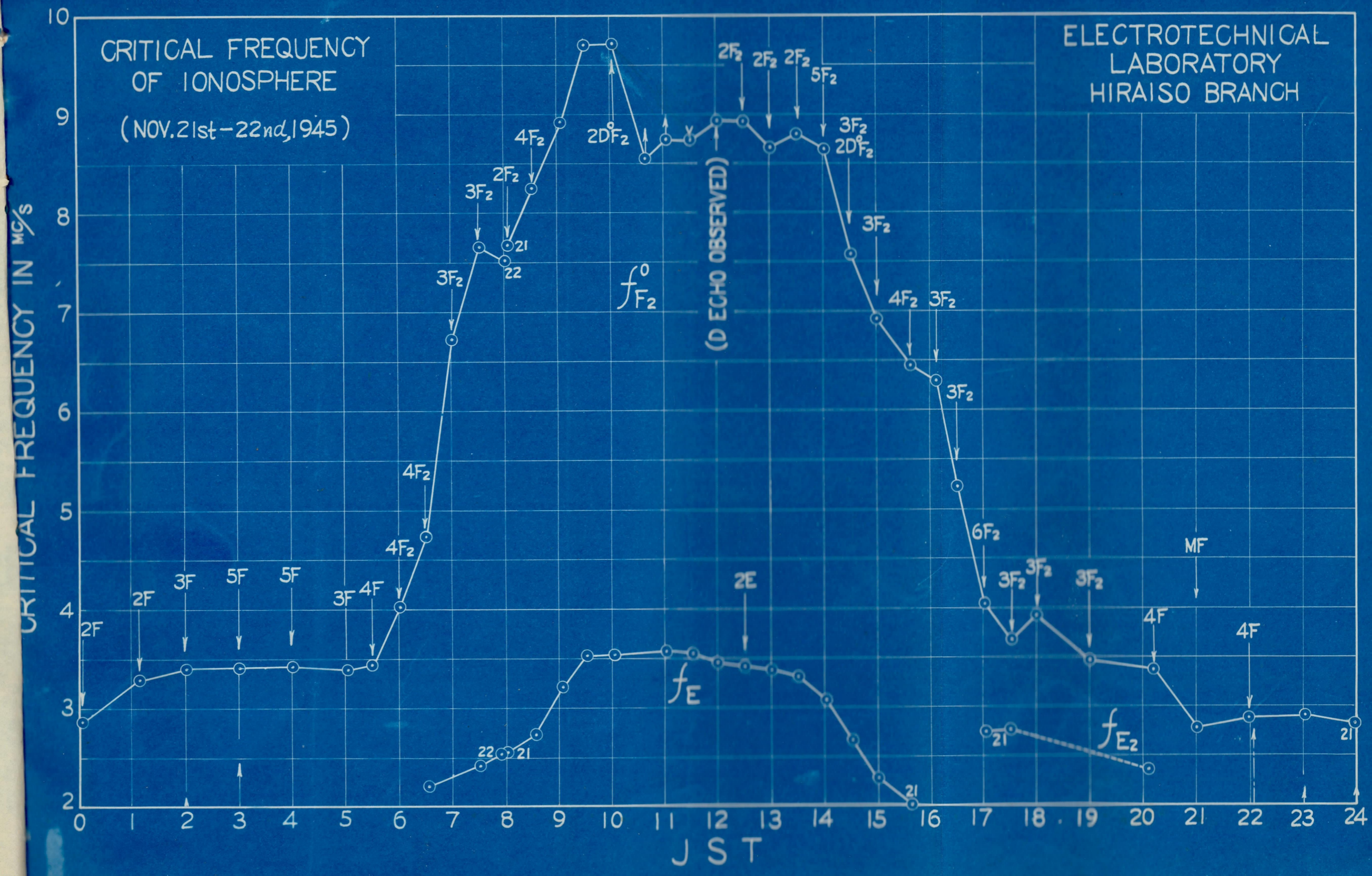
Non observation,(owing to air raid, stoppage of electric current
and anyother accidents.)

An echo indistinct,(owing to confusion of signal, strong E_s
echo, and obscure photograph.)

CRITICAL FREQUENCY
OF IONOSPHERE
(NOV. 14th-15th 1945)

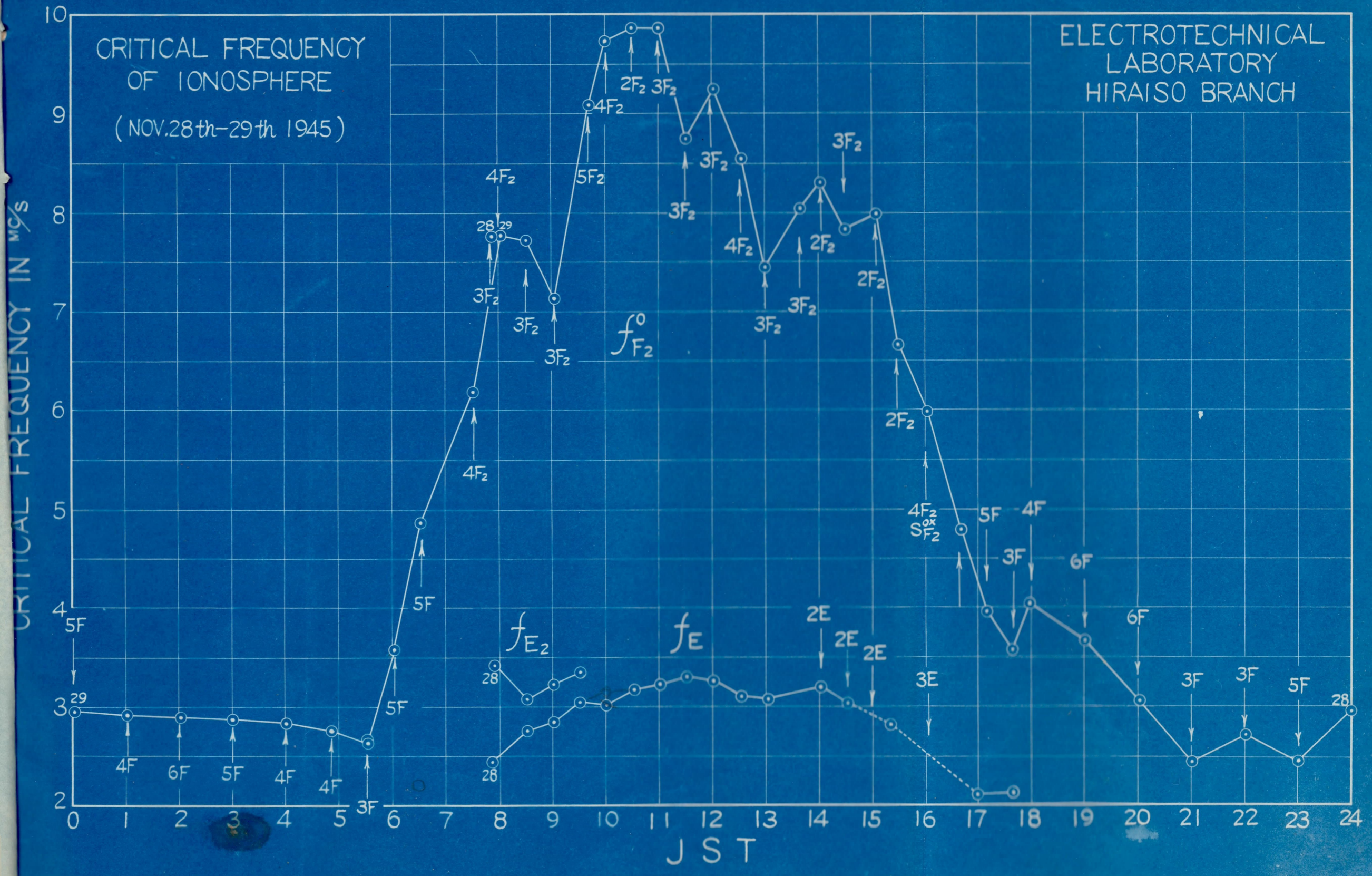
ELECTROTECHNICAL
LABORATORY
HIRAISO BRANCH

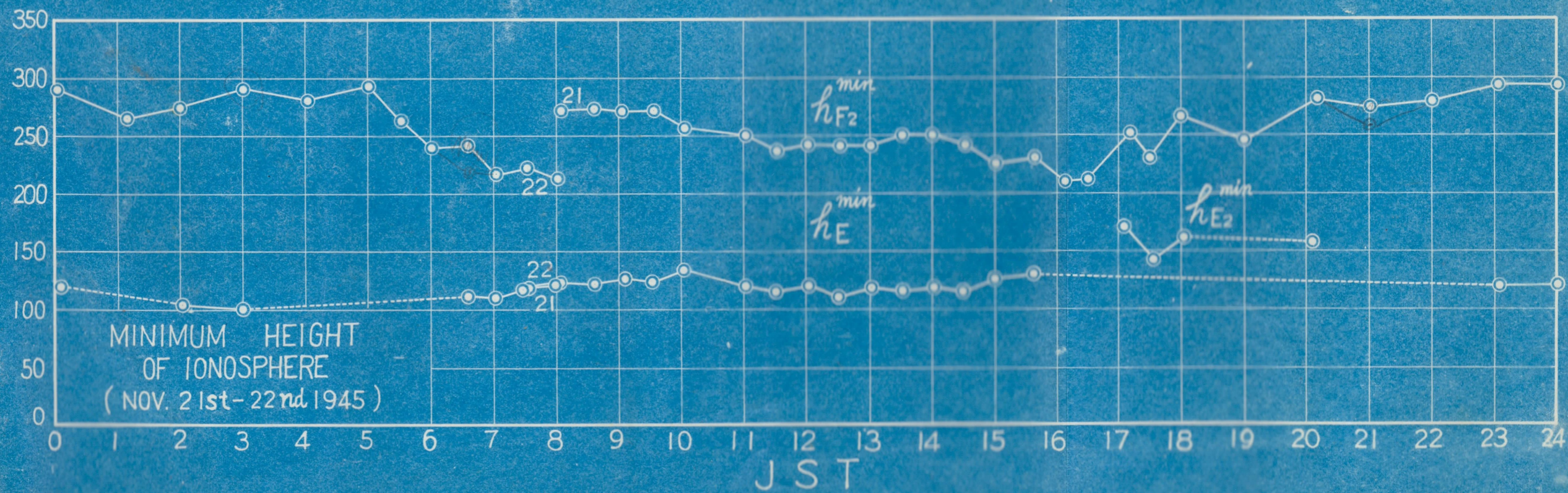
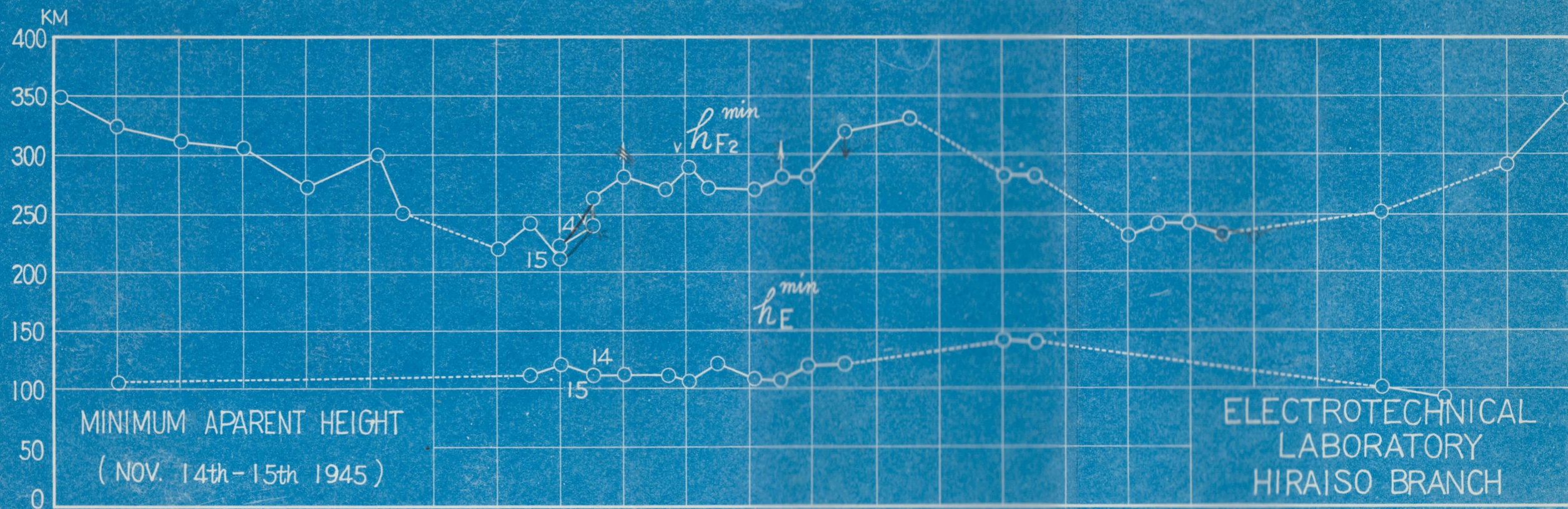


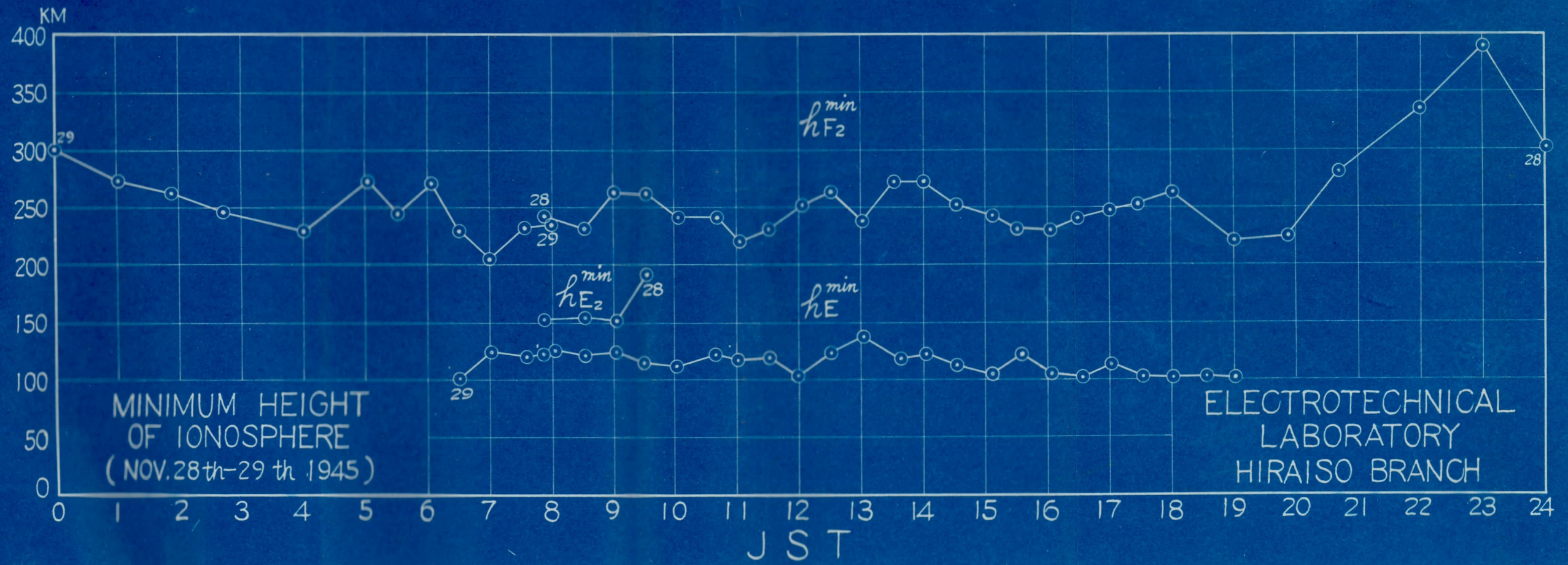


CRITICAL FREQUENCY OF IONOSPHERE
(NOV.28th-29th 1945)

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LABORATORY
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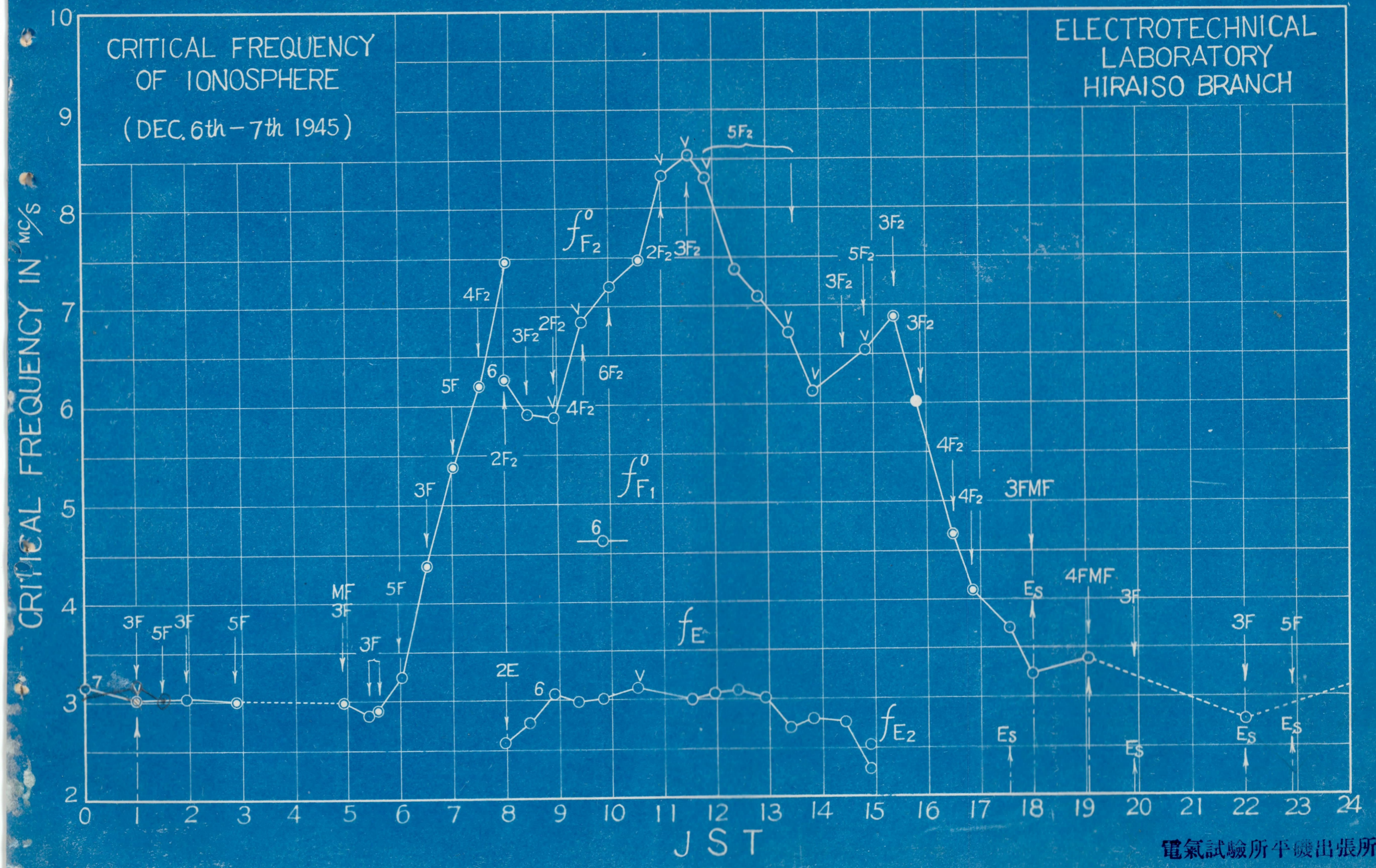


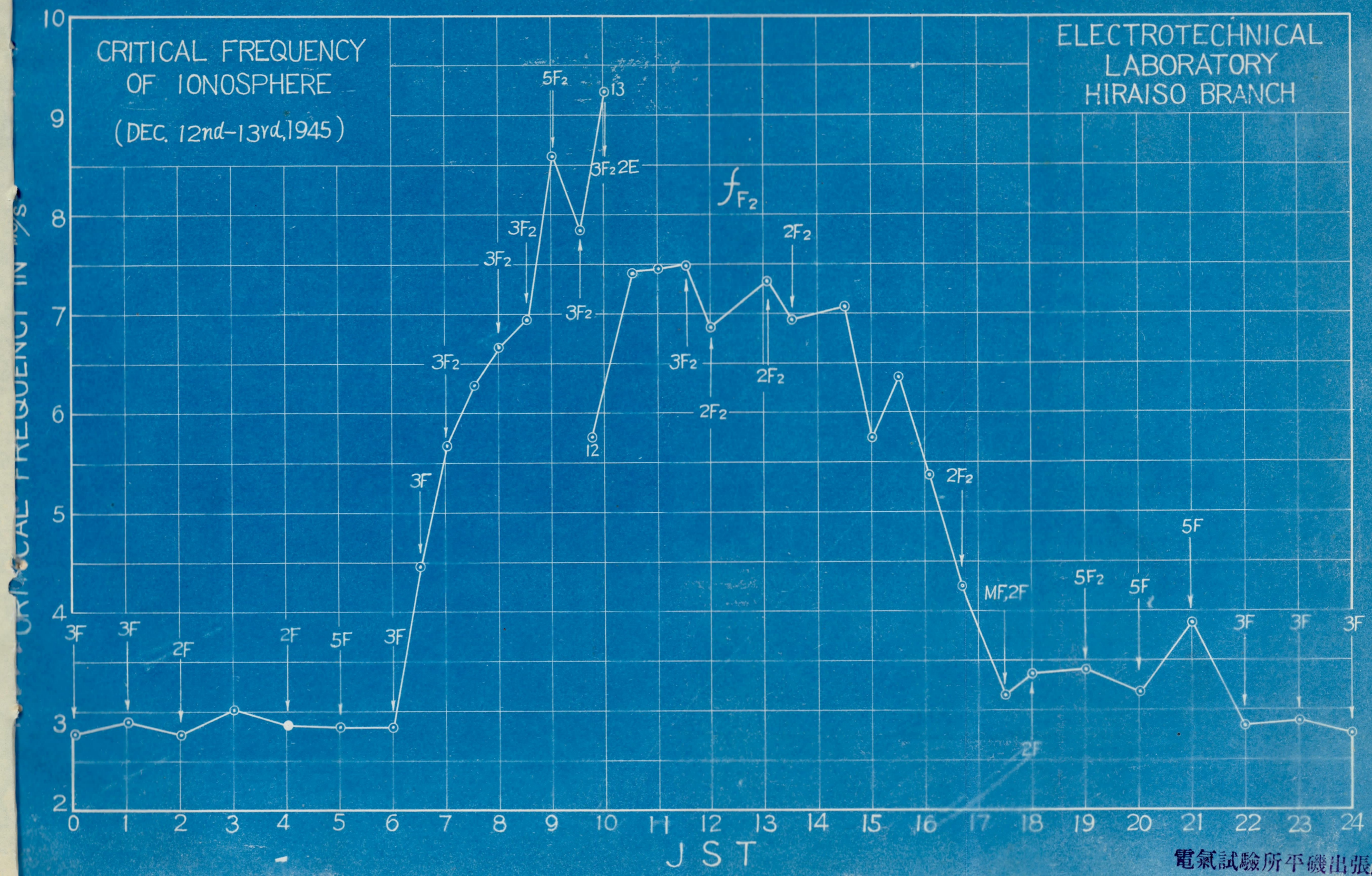


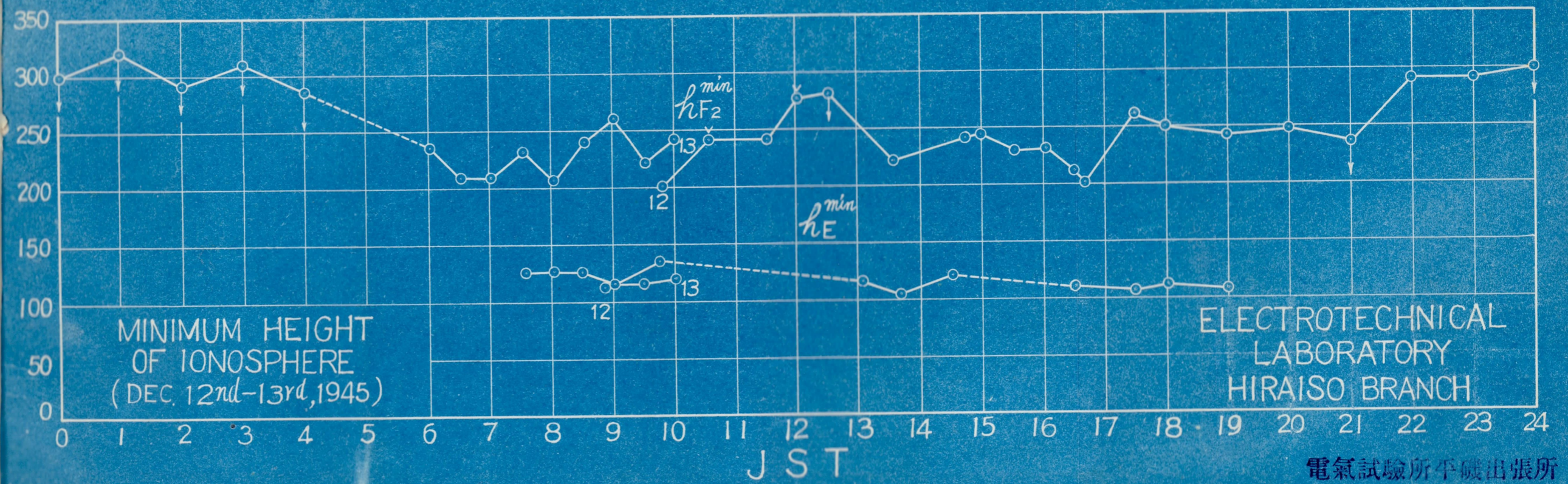
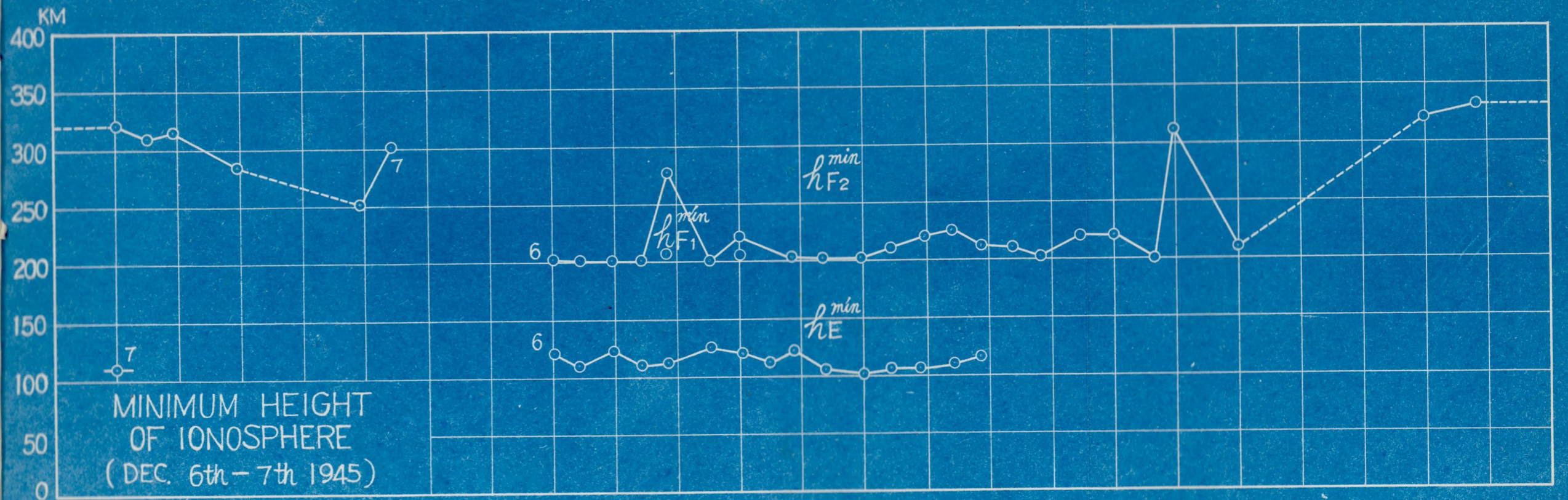


CRITICAL FREQUENCY OF IONOSPHERE
(DEC. 6th - 7th 1945)

ELECTROTECHNICAL
LABORATORY
HIRAISO BRANCH







電離層測定結果

(自昭和 20年 12月 19日
至昭和 21年 1月 10日)

逓信院電氣試験所平磯出張所

茨城縣那珂郡平磯町

(位置—東經 140° 37' 32" 北緯 36° 21' 58")

記 號 說 明

- ----- 寫眞記録ニヨル測定値
- ----- 目視ニ依ル測定値
- ----- 異常波ヨリノ推定値
- ----- 推 定 値
- ↑
—○— ----- 記録寫眞ヨリ高(低)ク且ツ推定不可能
- ↑
----- 突發 E層出現範圍(矢印ハ最高周波數ヲ示ス)
- $E_s M_4 (4 E_s)$ 突發 E層多重反射(4回)ノ存在
- $F_2 M_5 (5 F_2)$ F_2 層ノ多重反射(5回)ノ存在
- $M F_2$ F_2 層ノ M型反射存在
- $S_{F_2}^o, S_{F_2}^x, S_{F_2}^{ox}$ 臨界周波數附近ニ於テ散亂ス
(正常波ノミ, 異常波ノミ, 正異共ニ)
- S_{100}^F, S_{20}^E F層, E層全域ニ亘リ散亂ス
(數字ハ層ノ見掛ノ大体ノ厚サヲ示ス)
- $2D_{F_2}^o, 3D_{F_2}^x$ F_2 層ノ正常波(異常波)カ2(3)本ニ分裂ス
- 測定中止(空襲, 停電, 測定機故障ノ爲)
- 不明 反射波不明(混信, E_s 反射強勢, 寫眞不鮮明等ノ原因ニヨル)

AN OBSERVATION OF THE IONOSPHERE

(Dec. 19th. 1945 ~ JAN. 10th. 1946)

Hiraiso Branch Electrotechnical Laboratory
Department of Communications

Hiraiso-machi Naka-gun Ibaragi-ken Japan

(Location- 140° 37' 32" E, 36° 21' 58" N)

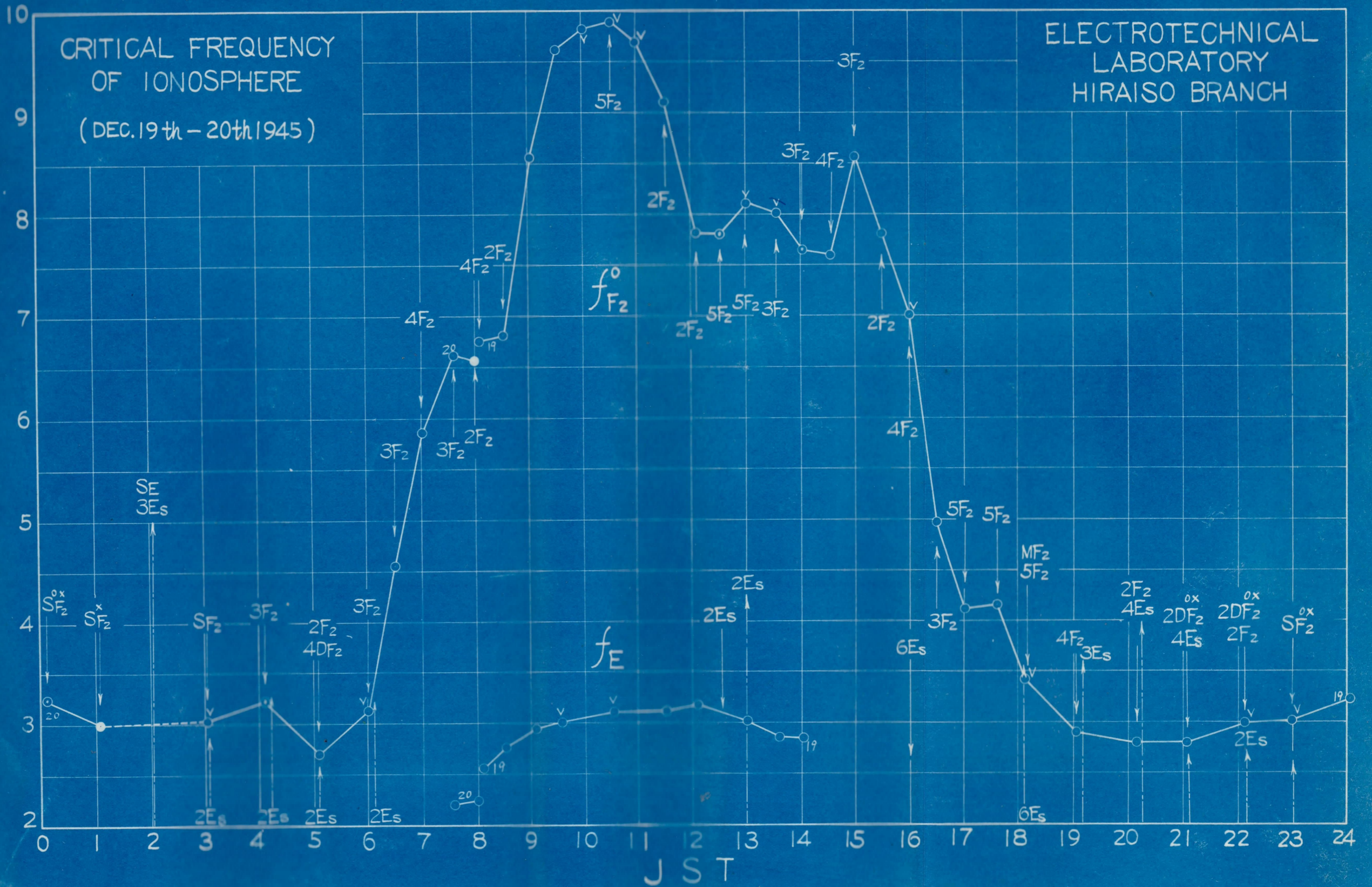
AN ILLUSTRATION

- An observation with the photographic record.
- An observation without the photographic record.
- Deductive value from the extraordinary ray.
- Deductive value.
- From this value upwards(downwards),but can not presume.
- The frequency range the existence of sporadic E echo(E_s).
(showing the upper limiting frequency with the arrow)
- The multiple echos (4) of sporadic E layer exist.
- The multiple echos (5) of F layer exist.
- The M type echo caused by F and E layer exist.
- The scattering F(E) echos are recognized about the critical
(ordinary ray only, extraordinary ray only, and both) frequency bounds.
- The scattering F(E) echos cover all frequency bounds.
(The number of foot shows the apparent thickness of the scattering layer.)
- The ordinary (extraordinary) echo splits to the two (three) branches at neighbourhood of critical frequency bounds.
- Non observation, (owing to air raid, stoppage of electric current and anyother accidents.)
- An echo indistinct, (owing to confusion of signal, strong E_s echo, and obscure photograph.)

CRITICAL FREQUENCY OF IONOSPHERE
(DEC. 19th - 20th 1945)

ELECTROTECHNICAL
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CRITICAL FREQUENCY IN MGS



CRITICAL FREQUENCY
OF IONOSPHERE
(JAN. 9th-10th 1946)

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