

National Bureau of Standards

AUG 21 1947

IONOSPHERIC DATA ON FILE AT IRPL

This report is a convenient index of all ionospheric data on file in the offices of IRPL as of 1 January 1946. Unless otherwise indicated, solid lines represent daily-hourly tabulations. Broken lines, in general, represent provisional data for which final tabulations are expected. However, when solid and broken lines appear in the same month, the broken lines represent provisional data for which no daily-hourly tabulations are expected. The report can be kept up-to-date by extending the lines on the basis of the ionospheric data presented monthly in the IRPL-F series reports "Ionospheric Data".

Summaries of data on file at IRPL, with few exceptions, consist of average values through December 1944, and of median values wherever that is possible from January 1945 to date. Where values available are averages only, that fact is indicated.

All distances in the muf and M values are in kilometers unless otherwise noted.

The index has been arranged for breaking up into loose-leaf form or into separate sheets for convenient filing. Eight blank pages are included for indexing local data and for keeping additional records.

The following list of stations is covered by the index.

Adak, Alaska	51.9°N, 176.6°W
Alma Ata, U.S.S.R.	43.5°N, 76.5°E
Athens, Greece	38.1°N, 23.9°E
Bad Voeslau, Germany	47.9°N, 16.2°E
Baton Rouge, Louisiana	30.5°N, 91.2°W
Bombay, India	19.0°N, 73.0°E
Boston, Massachusetts	42.4°N, 71.2°W
Brisbane, Australia	27.5°S, 153.0°E
Bukhta Tikhaya, U.S.S.R.	80.3°N, 52.3°E
Burghead, Scotland	57.7°N, 3.5°W
Cairo, Egypt	30.0°N, 31.2°E
Campbell Island	52.5°S, 169.2°E
Canberra, Australia	35.3°S, 149.0°E
Capetown, Union of S. Africa	33.9°S, 18.7°E
Cape York, Australia	11.0°S, 142.4°E
Christchurch, N.Z.	43.5°S, 172.6°E
Christmas Island	1.9°N, 157.3°W

(over)

Chungking, China	29.4°N,	106.8°E
Churchill, Canada	58.8°N,	94.2°W
Clyde, Baffin Island	70.5°N,	68.6°W
Colombo, Ceylon	6.6°N,	80.0°E
Deal, New Jersey	74.0°N,	40.2°W
Delhi, India	28.6°N,	77.2°E
Fairbanks, Alaska	64.9°N,	147.8°W
Great Baddow, England	51.7°N,	0.5°E
Guam Island	13.5°N,	144.8°E
Hobart, Tasmania	43.0°S,	147.3°E
Hollandia, New Guinea	3.0°S,	140.0°E
Honshu, Japan	35.3°N,	135.0°E
Huancayo, Peru	12.0°S,	75.3°W
Kermadec Islands	29.2°S,	177.9°W
Kochel, Germany	47.7°N,	11.4°E
Kwajalein Atoll	9.0°N,	168.0°E
Leningrad, U.S.S.R.	59.7°N,	30.5°E
Leyte, Philippine Islands	11.0°N,	125.0°E
Loshan, China	29.5°N,	103.7°E
Madras, India	13.0°N,	80.2°E
Maui, Hawaii	20.8°N,	156.5°W
Moscow, U.S.S.R.	55.8°N,	37.6°E
Oslo, Norway	59.9°N,	11.0°E
Ottawa, Canada	45.5°N,	75.8°W
Palau Islands	25.0°S,	130.0°W
Peshawar, India	34.0°N,	71.5°E
Pitcairn Island	25.0°S,	130.0°W
Prince Rupert, Canada	54.3°N,	130.3°W
Rarotonga Island	21.4°S,	159.6°W
Reykjavik, Iceland	64.1°N,	21.7°W
St. Johns, Newfoundland	47.7°N,	52.7°W
Sakhalin Island	46.9°N,	143.0°E
San Francisco, California	37.4°N,	122.2°W
San Juan, Puerto Rico	18.4°N,	66.1°W
Slough, England	51.5°N,	0.6°W
Slutsk, U.S.S.R.	59.7°N,	30.5°E
Snainton, England	54.2°N,	0.6°W
Spitsbergen, Norway	78.2°N,	15.6°E
Sverdlovsk, U.S.S.R.	56.7°N,	61.1°E
Syracuse, Sicily	37.1°N,	15.2°E
Tokyo, Japan	35.6°N,	139.6°E
Tomsk, U.S.S.R.	56.4°N,	85.0°E
Trinidad, Brit.W.Indies	10.6°N,	61.2°W
Tromso, Norway	69.6°N,	19.0°E
Victoria Beach, Canada	50.8°N,	96.5°W
Washington, D.C.	39.0°N,	77.5°W
Watheroo, W. Australia	30.3°S,	115.9°E
Wuchang, China	30.6°N,	114.4°E

IONOSPHERIC DATA RECORD

Adak, Alaska
(51.9°N, 176.6°W)

1945

19

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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©Data began Oct. 3, 1945.

IONOSPHERIC DATA RECORD

Alma Ata, U.S.S.R.
(43.5°N, 76.5°E)

1945

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19

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*Monthly averages by mail.

Athens, Greece
(38.1°N, 23.9°E)

IONOSPHERIC DATA RECORD

1943

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1944

19

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*December 1943, 23 to 31 only.
Part of a U.S. Army Intelligence Report.

IONOSPHERIC DATA RECORD

Baton Rouge, Louisiana
(30.5°N, 91.2°W)

30.5°N, 91.2°W)						1943												1944												1945											
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* Calculated by IRPL

* July 1943, $\frac{1}{2}$ month only.

August 1944, $\frac{1}{2}$ month only.

June 1945, no data taken.

Bombay, India
(19.0°, 73.0°E)

IONOSPHERIC DATA RECORD

1945

19

19

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Monthly averages only.

IONOSPHERIC DATA RECORD

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* Calculated by IRPL

Brisbane, Australia
(27.5°S, 153.0°E)

IONOSPHERIC DATA RECORD

1943

1944

1945

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f^xE

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Absorption

* Calculated by IRPL

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(30.3°N, 52.8°E)

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Monthly averages only.

Bukhta Tikhaya, U.S.S.R. IONOSPHERIC DATA RECORD
(80.3°N, 52.8°E)

1942

1943

[illegible]

Bukhta Tikhaya, U.S.S.R.
(80.3°N, 52.8°E)

Bukhta Tikhaya, U.S.S.R.
(80.3°N, 52.8°E)

1938

1939

1940

[illegible]

Burghead, Scotland
(57.7°N, 3.5°W)

IONOSPHERIC DATA RECORD

1945

19

19

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Final, monthly averages by mail. Prov., telephone.

IONOSPHERIC DATA RECORD

Burghead, Scotland
(57.7°N, 3.5°W)

1942

1943

1944

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IONOSPHERIC DATA RECORD

Cairo, Egypt
(30.0°N, 31.2°E)

1945

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* Calculated by IRPL

Campbell I.
(52.5°S, 169.0°E)

1945

19

* Calculated by IRPL

IONOSPHERIC DATA RECORD

1945

19

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* Calculated by IRPL																																				

Canberra, Australia
(35.3°S, 149.0°)

1942

1943

[illegible]

IONOSPHERIC DATA RECORD

Capetown, Union of S. Africa
(33.9°S, 18.7°E)

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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* Calculated by IRPL																																				

* July 1944, 21 to 31 only.
August 1944, 1 to 6 only.

IONOSPHERIC DATA RECORD

Cape York, Australia
(11.0°S, 142.4°E)

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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h ^m F ₂																								
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h ^m E																								
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Absorption																								
* Calculated by IRPL																								

Monthly averages only to July 1945.

Christchurch, N. Z.
(43.5°S, 172.6°E)

19

[illegible]

Christchurch, N. Z.
(43.5°S, 172.5°E)

IONOSPHERIC DATA RECORD

1942

1943

1944

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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$f^x F_1$																																				
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f_{min}																																				

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F muf
C muf

M3500

M3000

M

M

M

* F₂ M3000

* F₂ M4000

K F₂

K F₁

K E

K E₂

K E_s

K E_{2s}

h^mF₂

h^mF₁

h^mE

I

Absorption

* Calculated by IRPL

*All data through July 1942, monthly averages.

After July 1942, values from daily-hourly tabulations.

IONOSPHERIC DATA RECORD

Christchurch, N. Z.
(43.5°S, 172.6°E)

1939 *

1940 *

1941 *

		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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Absorption																																					
* Calculated by IRPL																																					

*All data from Jan. 1939 through
July 1942 monthly averages.

Christchurch, N.Z.
(43.5°S, 172.6°E)

1937*

1978年

*All data through July 1942 monthly averages.

Christmas I.
(1.9°N, 157.3°W)

1945

19

[illegible]

IONOSPHERIC DATA RECORD

19

19

* Calculated by IRPL

Churchill, Canada
(58.8°N, 94.2°W)

1945

[illegible]

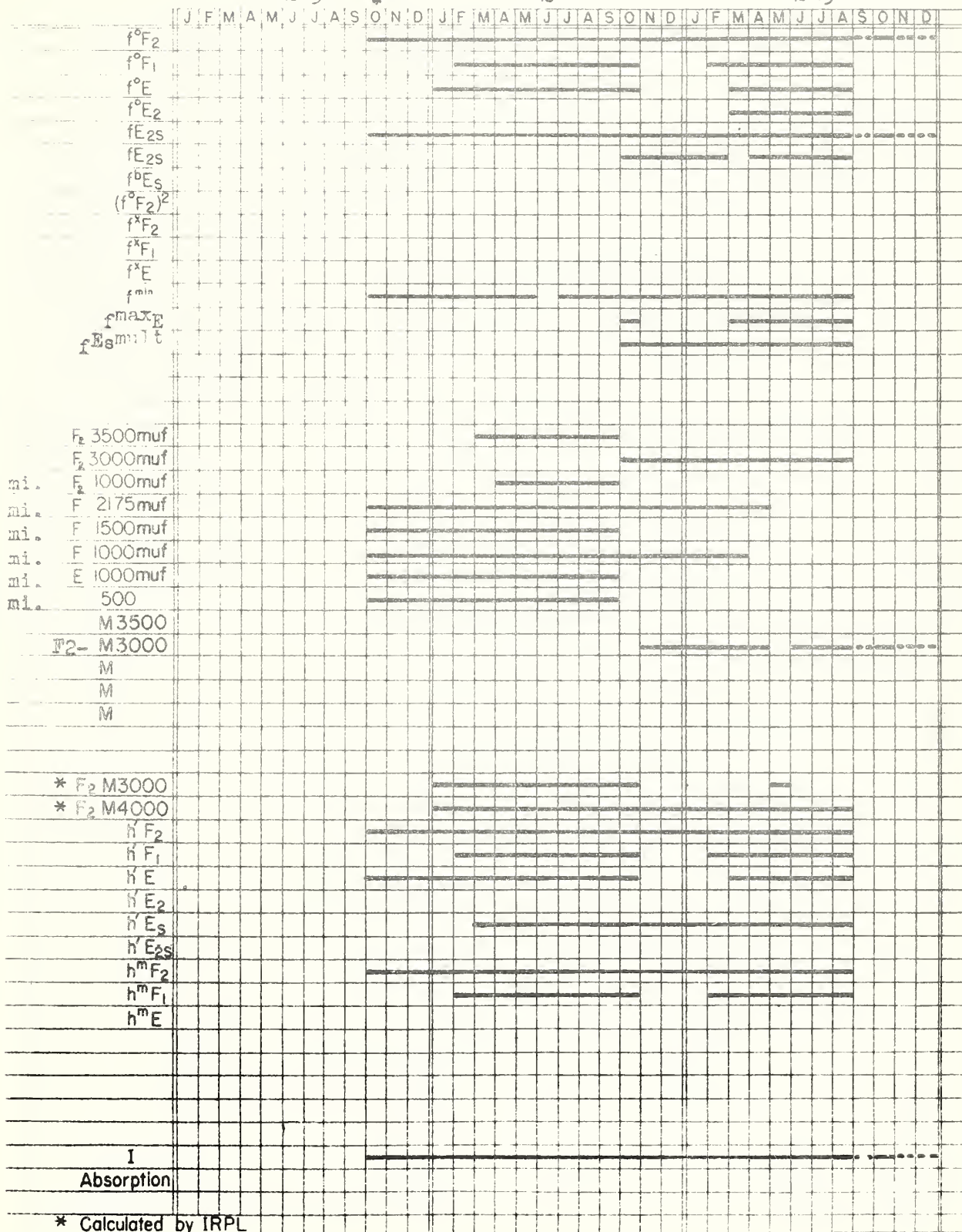
IONOSPHERIC DATA RECORD

Clyde, Basin I.
(70.5°N, 68.6°W)

1943

1944

1945



* Calculated by IRPL

*Oct. 1943, 8 days only.

IONOSPHERIC DATA RECORD

19

[illegible]

Deal, New Jersey
40.2°N, 74°W

19

* Calculated by IRPL

Delhi, India
(28.6°N, 77.2°E)

1942

1943

1944

[illegible]

IONOSPHERIC DATA RECORD

Delhi, India
(28.6°N, 77.2°E)

1945

19

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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*Tabulations f°F₂ and hF₂
June 11 through June 21
July 11 through July 20
Aug. 13 through Aug. 20

Fairbanks, Alaska
(64.9°N, 147.8°W)

1945

19

scattering index

* Calculated by IRPL

Fairbanks, Alaska
(64.9°N, 147.8°W)

1942

1943

[illegible]

Great Baddow, England
(51.7°N, 0.5°E)

IONOSPHERIC DATA RECORD

1943

1944

1945

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
$f^{\circ}F_2$																																				
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Absorption																																				

* Calculated by IRPL

Great Baddow, England
(51.7°N, 0.5°E)

IONOSPHERIC DATA RECORD

1940

1941

1942

		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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Absorption																																					

* Calculated by IRPL

*Nov. 1940 through July 1941, read from graphs.
Monthly averages by mail through Dec. 1941.
Daily-hourly tabulations since Jan. 1942.

IONOSPHERIC DATA RECORD

Guam I.
(13.5°N, 144.8°E)

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																								
f°F ₁																								
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I																								
Absorption																								
* Calculated by IRPL																								

*December 17 through January 6 only. Daily-hourly tabulations.

Hobart, Tasmania
(42.9°S, 147.3°E)

Hobart, Tasmania
(42.9°S, 147.3°E)

19

19

[illegible]

Hollandia, New Guinea
(3.0°N, 140.0°E)

IONOSPHERIC DATA RECORD

1945

19

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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Absorption																																				
* Calculated by IRPL																																				

*April 1 to May 15 only. Daily-hourly tabulations.

Honshu, Japan
(35.3°N, 135.0°E)

19

19

[illegible]

Graphs only.

Huancayo, Peru
(12.0°S, 75.3°W)

IONOSPHERIC DATA RECORD

1943

1944

1945

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																								
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Absorption																								
* Calculated by IRPL																								

To July 1, 1940, Monthly averages only.
From July 1, 1940 daily-hourly tabulations.

Huancayo, Peru
(12.0°S, 75.3°W)

1942

To July 1, 1940, monthly averages only.
Since July 1, 1940, daily-hourly tabulations.

IONOSPHERIC DATA RECORD

Huancayo, Peru
(12.0°S, 75.3°W)

1937

1938

1939

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	
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f ^x E																																					
f _{min}																																					

* Calculated by IRPL

*Nov. 1937, 17 to 30 only.

To July 1, 1940, monthly averages only.

Since July 1, 1940 daily-hourly tabulations.

IONOSPHERIC DATA RECORD

Huancayo, Peru
(12.0°S, 75.3°W)

1934

1935

1936

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
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f°F ₁																																				
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Absorption																																				

To July 1, 1940, monthly averages only.
Since July 1, 1940, daily-hourly tabulations.

Kermadec Is.
(29.2°S, 177.9°W)

(29.2°S, 177.9°W)

[illegible]

xApril 1943 through July 1943 and Jan. through April 1944, monthly averages only.
 +Nov. and Dec. 1943, and following April 1944, finals are daily-hourly tabulations.

IONOSPHERIC DATA RECORD

194.5

19

Part of a U.S. Army Intelligence Report through March 1945, monthly averages.
August 1945, daily-hourly tabulations.

Kochel, Germany
(47.7°N., 11.4°E)

1942

1943

Part of a U.S. Army Intelligence Report. Monthly Averages.

Kochel, Germany
(47.7°N, 11.4°E)

1938

1939

1940

Part of a U.S. Army Intelligence Report. Monthly averages.

Wajalein Atoll
(9.0°N, 168.0°E)

19

19

¹⁰From 2000 January 10 to 2300 January 27, 1945, daily-hourly tabulations.

IONOSPHERIC DATA RECORD

1945

19

19

Monthly averages.

IONOSPHERIC DATA RECORD

Leyte, Philippine Is.
(11.0°N, 125.0°E)

1945

19

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																								
f°F ₁																								
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Absorption																								
* Calculated by IRPL																								



Madras, India
(13.0°N, 80.2°E)

IONOSPHERIC DATA RECORD

		1944												1945												1946													
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
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F ₂ -M3500																																							
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F ₂ -M1500																																							
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Absorption																																							
* Calculated by IRPL																																							

Monthly averages only.

Maui, Hawaii
(20.8°N, 156.5°W)

IONOSPHERIC DATA RECORD

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																								
f°F ₁																								
f°E																								
f°E ₂																								
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fE _{2s}																								
f ^b E _s																								
(f°F ₂) ²																								
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f ^x F ₁																								
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h' E ₂																								
h' E _s																								
h' E _{2s}																								
h ^m F ₂																								
h ^m F ₁																								
h ^m E																								
I																								
Absorption																								
WWV Signal Strength																								
* Calculated by IRPL																								

Moscow, U.S.S.R.
(55.8°N, 37.6°E)

345

19

Monthly averages only.

Oslo, Norway
(59.9°N, 11.0°E)

IONOSPHERIC DATA RECORD

1945													19																							
	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
1 hourly & hourly f^oF_2																																				
1 hourly & hourly f^oF_1																																				
1 hourly & hourly f^oE																																				
f^oE_2																																				
1 hourly & hourly fE_s																																				
fE_{2s}																																				
f^bE_s																																				
$(f^oF_2)^2$																																				
1 hourly & hourly f^xF_2																																				
f^xF_1																																				
f^xE																																				
f^{min}																																				
F muf																																				
F muf																																				
F muf																																				
F muf																																				
F muf																																				
E muf																																				
M3500																																				
M3000																																				
M																																				
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* F ₂ M3000																																				
* F ₂ M4000																																				
h'F ₂																																				
h'F ₁																																				
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h'E ₂																																				
h'E _s																																				
h'E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

* June 1945, 0000 to 1130 only.
1945, Daily-hourly tabulations.

IONOSPHERIC DATA RECORD

Oslo, Norway
(59.9°N, 11.0°E)

1942

1943

1944

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																				
f°F ₁																																				
f°E																																				
f°E ₂																																				
fE _s																																				
fE _{2s}																																				
f ^b E _s																																				
(f°F ₂) ²																																				
f ^x F ₂																																				
f ^x F ₁																																				
f ^x E																																				
f ^{min}																																				
											</																									

* Calculated by IRPL

Sent. 1943, 16-30 only.
Oct. 1943, 16-31 only.
Nov. 1943, 1-15 only.

Apr. 1944, 1-15 only. Mostly stormy days. No record.
May. 1944, No record.
June 1944, 16-30 only.
Nov. 1944, 1-15 only.

Monthly averages only.

Ottawa, Canada
(45.5°N, 75.8°W)

19

[illegible]

IONOSPHERIC DATA RECORD

1944

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D		
f°F ₂																																						
f°F ₁																																						
f°E																																						
f°E ₂																																						
fE _s																																						
fE _{2s}																																						
f ^b E _s																																						
(f°F ₂) ²																																						
f ^x F ₂																																						
f ^x F ₁																																						
f ^x E																																						
f _{min}																																						

(25.0°S, 130.0°W)

19

*Beginning with June data, station appears to have been moved to some point much farther North. Graphs only.

IONOSPHERIC DATA RECORD

Peshawar, India
(34.0°N, 71.5°E)

1945

19

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f ^o F ₂																																				
f ^o F ₁																																				
f ^o E																																				
f ^o E ₂																																				
fE _s																																				
fE _{2s}																																				
f ^b E _s																																				
(f ^o F ₂) ²																																				
f ^x F ₂																																				
f ^x F ₁																																				
f ^x E																																				
f ^{min}																																				
F muf																																				
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F muf																																				
F muf																																				
E muf																																				
F ₂ -M3500																																				
F ₂ -M3000																																				
F ₂ -M 2500																																				
F ₂ -M 2000																																				
F ₂ -M 1500																																				
F ₂ -M 1000																																				
F ₂ -M 500																																				
* F ₂ M3000																																				
* F ₂ M4000																																				
h'F ₂																																				
h'F ₁																																				
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h'E ₂																																				
h'E _s																																				
h'E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
hF ₂ at .83fF ₂																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

IONOSPHERIC DATA RECORD

Pitcairn I.
(25.0°S, 130.0°W)

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
$f^{\circ}F_2$																																				
$f^{\circ}F_1$																																				
$f^{\circ}E$																																				
$f^{\circ}E_2$																																				
fE_s																																				
fE_{2s}																																				
f^bE_s																																				
$(f^{\circ}F_2)^2$																																				
f^xF_2																																				
f^xF_1																																				
f^xE																																				
f_{min}																																				
F muf																																				
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M3500																																				
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h E ₂																																				
h E _s																																				
h E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				

* Calculated by IRPL

To May 31, 1945, monthly averages.
Since June 1, 1945, monthly medians.
Daily-hourly tabulations to come.

Prince Rupert, Canada
(54.3°N, 130.3°W)

19

19

[illegible]

Rarotonga I.
(21.4°S, 159.6°W)

19

To May 31, 1945, monthly averages.
From June 1, 1945, monthly medians.
Daily-hourly tabulations to come.

Reykjavik, Iceland
(64.1°N, 21.7°W)

IONOSPHERIC DATA RECORD

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																								
f°F ₁																								
f°E																								
f°E ₂																								
fE _s																								
fE _{2s}																								
f ^b E _s																								
(f°F ₂) ²																								
f ^x F ₂																								
f ^x F ₁																								
f ^x E																								
f ^{min}																								
f ₂ 3500 muf																								
f ₂ 3000 muf																								
f ₂ 1500 muf																								
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F muf																								
F muf																								
E muf																								
M3500																								
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* F ₂ M4000																								
h' F ₂																								
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h' E ₂																								
h' E _s																								
h' E _{2s}																								
h ^m F ₂																								
h ^m F ₁																								
h ^m E																								
Blackouts																								
Partial Blackouts																								
I																								
Absorption																								
* Calculated by IRPL																								

St. John's, Newfoundland
(47.7°N, 52.7°W)

19

19

		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂		-----																																			
f°F ₁		-----																																			
f°E		-----																																			
f°E ₂		-----																																			
fE _s		-----																																			
fE _{2s}																																					
f ^b E _s																																					
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f ^x F ₂																																					
f ^x F ₁																																					
f ^x E																																					
f ^{min}																																					
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F	muf																																				
E	muf																																				
M	3500																																				
F2-M	3000	-----																																			
M																																					
F1-M	3000	-----																																			
E M	1500	-----																																			
* F ₂	M3000																																				
* F ₂	M4000	-----																																			
h'F ₂		-----																																			
h'F ₁		-----																																			
h'E		-----																																			
h'E ₂		-----																																			
h'E _s		-----																																			
h'E _{2s}																																					
h ^m F ₂																																					
h ^m F ₁																																					
h ^m E																																					
I																																					
Absorption																																					
Aurora																																					
* Calculated by IRPL																																					

IONOSPHERIC DATA RECORD

Sakhalin I.
(143.0°E, 46.9°N)

1943

19

19

		1943												19												19											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																					
f°F ₁																																					
f°E																																					
f°E ₂																																					
fE _s																																					
fE _{2s}																																					
f ^b E _s																																					
(f°F ₂) ²																																					
f ^x F ₂																																					
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f _{min}																																					
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F	muf																																				
F	muf																																				
F	muf																																				
E	muf																																				
M	3500																																				
M	3000																																				
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* F ₂	M3000																																				
* F ₂	M4000																																				
K	F ₂																																				
K	F ₁																																				
K	E																																				
K	E ₂																																				
K	E _s																																				
K	E _{2s}																																				
h ^m	F ₂																																				
h ^m	F ₁																																				
h ^m	E																																				
I																																					
Absorption																																					

* Calculated by IRPL

• Graphs only.

IONOSPHERIC DATA RECORD

O

中

1944

0-1942, monthly averages.
*-1943 and following, daily tabulations.

IONOSPHERIC DATA RECORD

San Juan, Puerto Rico
(18.4°N, 66.1°W)

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																				
f°F ₁																																				
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f°E ₂																																				
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f ^{min}																																				
F ₂ 3500muf																																				
F ₂ 1500muf																																				
F ₂ 3000muf																																				
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M3500																																				
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h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

*15 min. readings because of eclipse.

San Juan, Puerto Rico
(18.4°N, 66.1°W)

IONOSPHERIC DATA RECORD

1941

1942

1943

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f^oF_2																																				
f^oF_1																																				
f^oE																																				
fE_2																																				
fE_s																																				
fE_{2s}																																				
f^bE_s																																				
$(f^oF_2)^2$																																				
f^xF_2																																				
f^xF_1																																				
f^xE																																				
f_{min}																																				
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$F_2 1500muf$																																				
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F M1500																																				
F M3000																																				
F M4000																																				
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h' E _s																																				
h' E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

Slough, England
(51.5°N, 0.6°W)

IONOSPHERIC DATA RECORD

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																				
f°F ₁																																				
f°E																																				
f°E ₂																																				
fE _s																																				
fE _{2s}																																				
f ^b E _s																																				
(f°F ₂) ²																																				
f ^x F ₂																																				
f ^x F ₁																																				
f ^x E																																				
f _{min}																																				
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F muf																																				
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F muf																																				
E muf																																				
M3500																																				
+ F ₂ -M3000																																				
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* F ₂ M3000																																				
* F ₂ M4000																																				
h'F ₂																																				
h'F ₁																																				
h'E																																				
h'E ₂																																				
h'E _s																																				
h'E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

* Monthly averages only.

Slon. A, England
(51.50°N, 0.6°W)

19

* Calculated by IRPL

IONOSPHERIC DATA RECORD

NOON VALUES

1943

1944

[illegible]

Slough, England
(51.5°N, 1.6°W)

IONOSPHERIC DATA RECORD NOON VALUES

1939

1940

1941

		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f ^o F ₂																																					
f ^o F ₁																																					
f ^o E																																					
f ^o E ₂																																					
fE _s																																					
fE _{2s}																																					
fbE _s																																					
(f ^o F ₂) _{min}																																					
f ^x F																																					
f ^x F ₁																																					
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f ^{min}																																					
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M3500																																					
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h ^m F ₂																																					
h ^m F ₁																																					
h ^m E																																					
I																																					
Absorption																																					
* Calculated by IRPL																																					

Slutsk, U.S.S.R.
(59.7°N, 30.5°E)

1940

1941

22)

Snainton, England
(54.2°N, 0.6°W)

19

107

*Telephone data only.

Spitsbergen, Norway
(78.2°N, 15.6°E)

19

79

Monthly averages only.

Sverdlovsk, U.S.S.R.
(56.7°N, 61.1°E)

IONOSPHERIC DATA RECORD

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f^oF_2			0																					
f^oF_1																								
f^oE																								
f^oE_2																								
fE_s																								
fE_{2s}																								
f^bE_s																								
$(f^oF_2)^2$																								
f^xF_2																								
f^xF_1																								
f^xE																								
f_{min}																								
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E muf																								
M3500																								
M3000																								
M																								
M																								
M _i																								
* F ₂ M3000																								
* F ₂ M4000																								
h'F ₂																								
h'F ₁																								
h'E																								
h'E ₂																								
h'E _s																								
h'E _{2s}																								
h ^m F ₂																								
h ^m F ₁																								
h ^m E																								
I																								
Absorption																								
* Calculated by IRPL																								

* For all months f^oF_2 daily-hourly tabulations. Others monthly averages.
01 April 1944, noon f^oF_2 and min f^oF_2 for 20 days only.

Syracuse, Sicily
(37.1°N, 15.2°E)

19

* Calculated by IRPL

May 1943, 16-31 only.

Tolson, J. W.
(S. O., 100.00E)

IONOSPHERIC DATA RECORD

1936

1937

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																								
f°F ₁																								
f°E																								
f°E ₂																								
fE _s																								
fE _{2s}																								
f ^b E _s																								
(f°F ₂) ²																								
f ^x F ₂																								
f ^x F ₁																								
f ^x E																								
f _{min}																								

F muf
F muf
F muf
F muf
F muf
F muf
E muf

M3500

M3000

M

M

M

* F₂ M3000

* F₂ M4000

h'F₂

h'F₁

h'E

h'E₂

h'E_s

h'E_{2s}

h^mF₂

h^mF₁

h^mE

I

Absorption

* Calculated by IRPL

Monthly averages only.

IONOSPHERIC DATA RECORD

Tomsk, U.S.S.R.
(56.4°N, 85.0°E)

1943

1944

1944

1945

daily pre-sunrise

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																				
f°F ₁																																				
f°E																																				
f°E ₂																																				
fE _s																																				
fE _{2s}																																				
f ^b E _s																																				
(f°F ₂) ²																																				
f ^x F ₂																																				
f ^x F ₁																																				
f ^x E																																				
f _{min}																																				
f _{max} F ₂																																				
F muf																																				
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F muf																																				
F muf																																				
E muf																																				
M3500																																				
M3000																																				
M																																				
M																																				
M																																				
* F ₂ M3000																																				
* F ₂ M4000																																				
K ^x F ₂																																				
K ^x F ₁																																				
K ^x E																																				
K ^x E ₂																																				
K ^x E _s																																				
K ^x E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

*Jan. through June 1944, daily-hourly tabulations f°F₂.
Other values, monthly averages.

IONOSPHERIC DATA RECORD

Tomsok, U.S.S.R.
(56.4°N, 85.0°E)

1940

1941

1942

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																				
f°F ₁																																				
f°E																																				
f°E ₂																																				
fE _s																																				
fE _{2s}																																				
f ^b E _s																																				
(f°F ₂) ²																																				
f ^H F ₂																																				
f ^H F ₁																																				
f ^H E																																				
f _{min}																																				

* Calculated by IRPL

Tomsk, U.S.S.R.
(56.4°N, 85.0°E)

1938

1939

[illegible]

IONOSPHERIC DATA RECORD

Trinidad, Brit. West Indies
(10.6°N, 61.2°W)

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																				
f°F ₁																																				
f°E																																				
f°E ₂																																				
fE _s																																				
fE _{2s}																																				
fE _s																																				
(f°F ₂) ²																																				
f [*] F ₂																																				
f [*] F ₁																																				
f [*] E																																				
f ^{min}																																				
f°X"layer																																				
h°X"layer																																				
F ₂ 3500muf																																				
F ₂ 3000muf																																				
(mi) F ₂ 1500muf																																				
(mi) F ₂ 1000muf																																				
(mi) F ₂ 500muf																																				
F muf																																				
(mi) E _s 1000muf																																				
F ₂ -M. 3500																																				
F ₂ -M3000																																				
M																																				
(mi) F ₂ -M 1000																																				
M																																				
* F ₂ M3000																																				
* F ₂ M4000																																				
h' F ₂																																				
h' F ₁																																				
h' E																																				
h' E ₂																																				
h' E _s																																				
h' E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

X May 1945, 1 through 15 only.

Tromso, Norway.
(69.6°N, 19.0°E)

IONOSPHERIC DATA RECORD

1944

1945

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																				
f°F ₁																																				
f°E																																				
f°E ₂																																				
fE _s																																				
fE _{2s}																																				
f ^b E _s																																				
(f°F ₂) ²																																				
f ^x F ₂																																				
f ^x F ₁																																				
f ^x E																																				
f ^{min}																																				
F muf																																				
F muf																																				
F muf																																				
F muf																																				
F muf																																				
F muf																																				
E muf																																				
M3500																																				
M3000																																				
M																																				
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M																																				
* F ₂ M3000																																				
* F ₂ M4000																																				
h F ₂																																				
h F ₁																																				
h E																																				
h E ₂																																				
h E _s																																				
h' E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

1944 Part of a U.S. Army Intelligence Report.
All data monthly averages.

Tromsø, Norway.
(69.6°N, 19.0°E)

1942

1943

* Calculated by IRPL

Mar. 1942, 16-31 " "

Aug. 1943, results erratic due to storms

Part of a U.S. Army Intelligence Report (through 1944).

IONOSPHERIC DATA RECORD

Victoria Beach, Canada
(50.8°N, 96.5°W)

1945

19

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂																																				
f°F ₁																																				
f°E																																				
f°E ₂																																				
fE _s																																				
fE _{2s}																																				
f ^b E _s																																				
(f°F ₂) ²																																				
f ^x F ₂																																				
f ^x F ₁																																				
f ^x E																																				
f _{min}																																				
F muf																																				
F muf																																				
F muf																																				
F muf																																				
F muf																																				
F muf																																				
E muf																																				
M3500																																				
M3000																																				
M																																				
M																																				
M _i																																				
* F ₂ M3000																																				
* F ₂ M4000																																				
h' F ₂																																				
h' F ₁																																				
h' E																																				
h' E ₂																																				
h' E _s																																				
h' E _{2s}																																				
h ^m F ₂																																				
h ^m F ₁																																				
h ^m E																																				
I																																				
Absorption																																				
* Calculated by IRPL																																				

Washington, D. C.
(39.0°N, 77.5°W)

1945

19

19

[illegible]

IONOSPHERIC DATA RECORD

1943

1944

(537)

Washington, D. C.
(39.0°N, 77.5°W)

1941

* Calculated by IRPL

Washington, D. C.
(39.0°N, 77.5°W)

Washington, D. C.
(39.0°N, 77.5°W)

1936

1937

1938

1971												1970											
J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
$f^{\circ}F_2$																							
$f^{\circ}F_1$																							
$f^{\circ}E$																							
$f^{\circ}E_2$																							
fE_s																							
fE_{2s}																							
f^bE_s																							
$(f^{\circ}F_2)^2$																							
f^kF_2																							
f^kF_1																							
f^kE																							
f^{min}																							

Washington, D. C.
(39.00N, 77.50W)

IONOSPHERIC DATA RECORD

1933

1934

1935

J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

f^oF_2

f^oF_1

f^oE

f^oE_2

fE_s

fE_{2s}

f^bE_s

$(f^oF_2)^2$

f^xF_2

f^xF_1

f^xE

f_{min}

F muf

F muf

F muf

F muf

F muf

F muf

E muf

M3500

M3000

M

M

M

* F_2 M3000

* F_2 M4000

hF_2

hF_1

hE

hE_2

hE_s

hE_{2s}

h^mF_2

h^mF_1

h^mE

I

Absorption

* Calculated by IRPL

(Lat. 30.3°S , 115.9°E)

19

	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
$f^o F_2$	-----																							
$f^o F_1$	-----																							
$f^o E$	-----																							
$f^o E_2$	-----																							
$f E_s$	-----																							
$f E_{2s}$	-----																							
$f^b E_s$	-----																							
$(f^o F_2)^2$	-----																							
$f^x F_2$	-----																							
$f^x F_1$	-----																							
$f^x E$	-----																							
f^{min}	-----																							
$F_2 3500 muf$	-----																							
$F_2 3000 muf$	-----																							
F muf	-----																							
F muf	-----																							
F muf	-----																							
F muf	-----																							
E muf	-----																							
M3500	-----																							
$F_2 - M3000$	-----																							
M	-----																							
M	-----																							
M	-----																							
* $F_2 M3000$	-----																							
* $F_2 M4000$	-----																							
$h' F_2$	-----																							
$h' F_1$	-----																							
$h' E$	-----																							
$h' E_2$	-----																							
$h' E_s$	-----																							
$h' E_{2s}$	-----																							
$h^m F_2$	-----																							
$h^m F_1$	-----																							
$h^m E$	-----																							
$h F_2$ (upper)	-----																							
$h F_1$ (upper)	-----																							
I	-----																							
Absorption	-----																							
* Calculated by IRPL																								

Watheroo, W. Australia
(30.3°S, 115.9°E)

Watheroo, W. Australia
(30.3°S, 115.9°E)

1943

1972												1973											
J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f°F ₂												f°F ₂											
f°F ₁												f°F ₁											
f°E												f°E											
f°E ₂												f°E ₂											
f°E ₃												f°E ₃											
f°E ₂₅												f°E ₂₅											
f°E ₈												f°E ₈											
(f°F ₂) ²												(f°F ₂) ²											
f°F ₂												f°F ₂											
f°F ₁												f°F ₁											
f°E												f°E											
g min												g min											
F ₂ 3500muf												F ₂ 3500muf											
F ₂ 3000muf												F ₂ 3000muf											
(m1) F ₂ 1500muf												(m1) F ₂ 1500muf											
(m1) F ₂ 1000muf												(m1) F ₂ 1000muf											
(m1) F ₂ 500muf												(m1) F ₂ 500muf											
F muf												F muf											
E muf												E muf											
M3500												M3500											
M3000												M3000											
M												M											
M												M											
M												M											
* F ₂ M3000												* F ₂ M3000											
* F ₂ M4000												* F ₂ M4000											
h°F ₂												h°F ₂											
h°F ₁												h°F ₁											
h°E												h°E											
h°E ₂												h°E ₂											
h°E ₃												h°E ₃											
h°E ₂₅												h°E ₂₅											
h ^m F ₂												h ^m F ₂											
h ^m F ₁												h ^m F ₁											
h ^m E												h ^m E											
hF ₂ (upper)												hF ₂ (upper)											
hF ₁ (upper)												hF ₁ (upper)											
I												I											
Absorption												Absorption											

* Calculated by IRPL

Watheroo, W. Australia
(30.3°S, 115.9°E)

Watheroo, W. Australia
(30.3°S, 115.9°E)

1939

1945

[illegible]

To July 1, 1940, monthly averages only.
Since July 1, 1940, daily-hourly tabulations.

Watheroo, W. Australia
(30.3°S, 115.9°E)

IONOSPHERIC DATA RECORD

1935

1936

1937

		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
f ^o F ₂																																					
f ^o F ₁																																					
f ^o E																																					
f ^o E ₂																																					
fE _s																																					
fE ₂₅																																					
f ^b E _s																																					
(f ^o F ₂) ²																																					
f ^h F ₂																																					
f ^h F ₁																																					
f ^h E																																					
f ^{min}																																					
F	muf																																				
F	muf																																				
F	muf																																				
F	muf																																				
F	muf																																				
F	muf																																				
E	muf																																				
M3500																																					
M3000																																					
M																																					
M																																					
M																																					
* F ₂ M3000																																					
* F ₂ M4000																																					
h'F ₂																																					
h'F ₁																																					
h'E																																					
h'E ₂																																					
h'E _s																																					
h'E ₂₅																																					
h ^m F ₂																																					
h ^m F ₁																																					
h ^m E																																					
I																																					
Absorption																																					
* Calculated by IRPL																																					

*To July 1940, monthly averages only.

IONOSPHERIC DATA RECORD

Wuchang, China
(30.6°N, 114.4°E)

1937

1938

1939

[illegible]

*Oct. 4, 1937 through Jan. 23, 1938.
Apr. 25, 1938, through June 16, 1938.

Noon and irregular evening runs.

IONOSPHERIC DATA RECORD

19

19

19

[illegible]

IONOSPHERIC DATA RECORD

19

19

19

[illegible]

STATION _____
 LAT. _____
 LONG. _____

IONOSPHERIC DATA RECORD

19

19

19

J F M A M J J A S O N D J F M A M J J A S O N D J F M A M J J A S O N D

$f^o F_2$

$f^o F_1$

$f^o E$

$f^o E_2$

$f^o E_s$

$f^o E_s$

$(f^o F_2)^2$

$f^x F_2$

$f^x F_1$

$f^x E$

$f^{max} F_2$

$f^{max} F_1$

f^{min}

F_2 muf

F_2 muf

F_2 muf

F_2 muf

F_1 muf

F_1 muf

E muf

F_2 M3500

F_2 M3000

F_2 M1500

F_1 M

F_1 M

$h F_2$

$h F_1$

$h E$

$h E_2$

$h E_s$

$h E_{2s}$

$h^m F_2$

$h^m F_1$

$h^{tan} F_2$

$h^{tan} F_1$

I

Absorption

STATION _____
 LAT. _____
 LONG. _____

IONOSPHERIC DATA RECORD

19

19

19

J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
																													</						

IONOSPHERIC DATA RECORD

19

19

19

[illegible]

STATION _____
LAT. _____
LONG. _____

IONOSPHERIC DATA RECORD

19

19

19

[illegible]

IONOSPHERIC DATA RECORD

19

19

19

[illegible]

