

ION. ANT.—13

**IONOSPHERIC DATA AT SYOWA BASE  
(ANTARCTICA)**

February — July 1969



2828

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Prepared by

**THE RADIO RESEARCH LABORATORIES  
MINISTRY OF POSTS AND TELECOMMUNICATIONS**

**NUKUI-KITAMACHI, KOGANEI-SHI, TOKYO, JAPAN.**



0.7



ION. ANT. — 13

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RADIO RESEARCH LABORATORIES  
NUKUI-KITAMACHI, KOGANEI-SHI, TOKYO, JAPAN

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**MAIN CHARACTERISTICS OF THE IONOSONDE  
USED AT SYOWA BASE**

Item	Specification
Frequency Range	400 kHz ~ 15 MHz
Transmitting power	10 kW (peak value)
Duration of Sweep	30 sec
Transmitted Pulse width	100 $\mu$ sec
Recurrence Frequency of Transmitted Pulse	50 Hz (by power frequency)
Frequency Scale	Every 1 MHz
Height Range	900 km
Height Scale	Every 50 km
Total Receiver Gain	120 dB
Recording Method	35 mm film running
Power Supply	100 Volt AC, 2.5 kVA
Transmitting Antenna	25 m high vertical delta terminated by 600 $\Omega$
Receiving Antenna	25 m high vertical delta terminated by 600 $\Omega$

**SYMBOLS AND TERMINOLOGY**

All symbols and terminology in the table of ionospheric data are used in accordance with the First Report of the Special Committee on World-Wide Ionospheric Soundings (URSI/AGI), Brussels, September 2, 1956, and the Second Report of the Committee, May, 1957, supplementary to the First Report.

**Terminology**

$f_0F2$  } The ordinary-wave critical frequency for the  $F2$ ,  $F1$  and  $E$  layers  
 $f_0F1$  } respectively.  
 $f_0E$  }

$f_0Es$  The ordinary wave top frequency corresponding to highest frequency at which a mainly continuous trace is observed.

$f$ -min That frequency below which no echoes are observed.

$M(3000)F2$  The maximum usable frequency factor for a path of 3000 km for transmission by  $F2$  layer.

$h'F2$  The minimum virtual height of the ordinary wave trace for the highest stable stratification in the  $F$  region.

$h'F$  The natural and most significant  $F$  region virtual height parameter is that for lowest  $F$  region stratification. This will be denoted by  $h'F$ . Thus  $h'F$  is identical with the current  $h'F2$  when  $F$  region stratification is absent, e. g., at night, and with the current  $h'F1$  when  $F1$  stratification is present.

$h'Es$  The lowest virtual height of the trace used to give the  $f_0Es$ .

### a. Descriptive Symbols

Used following the numerical value on monthly tabulation sheets.

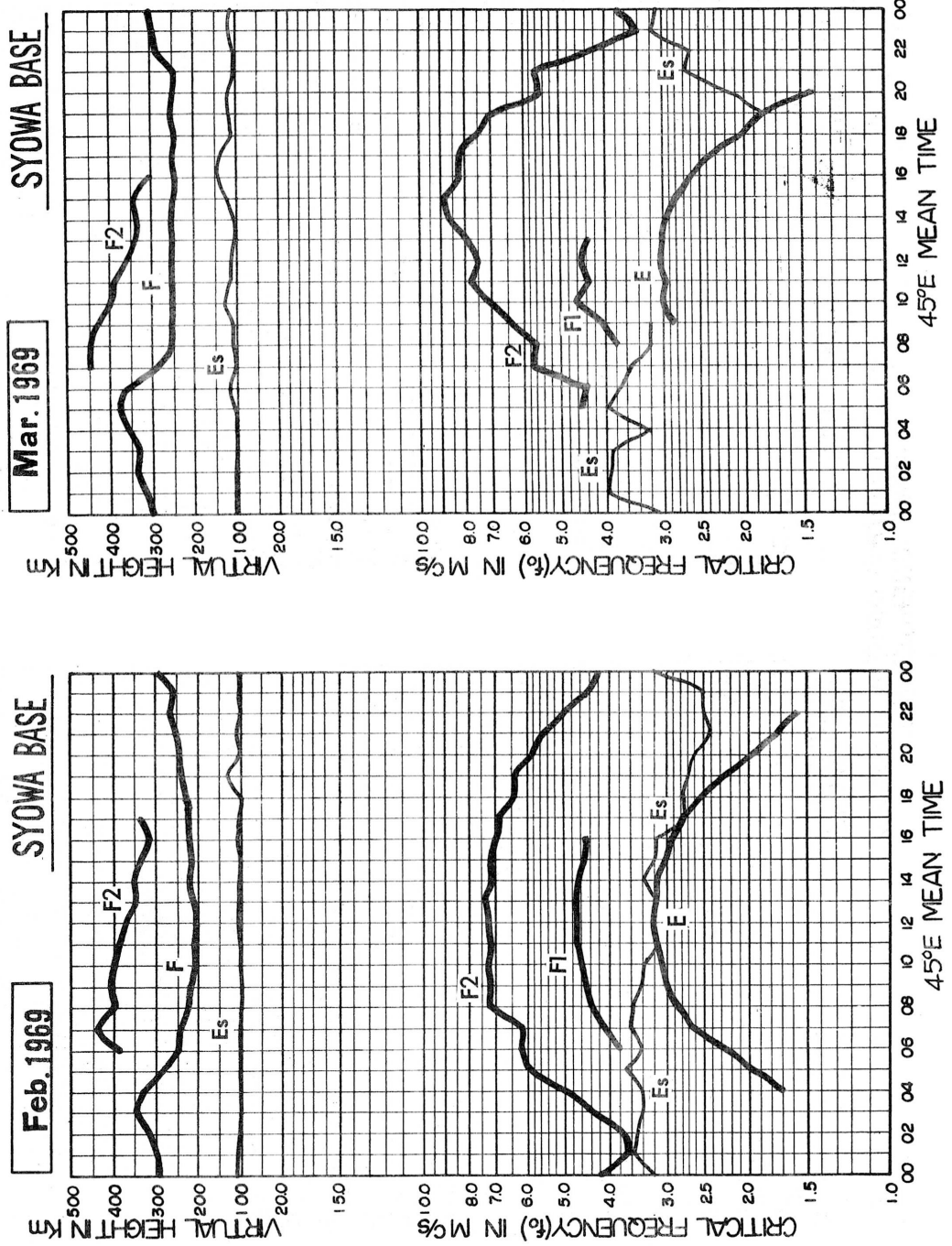
- A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example *E*<sub>s</sub>.
- B Measurement influenced by, or impossible because of, absorption in the vicinity of *f*-min.
- C Measurement influenced by, or impossible because of, any non-ionospheric reason.
- D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range. Used in a qualifying sense, see below.
- E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range. Used in a qualifying sense, see below.
- F Measurement influenced by, or impossible because of, the presence of spread echoes.
- G Measurement influenced or impossible because the ionization density is too small compared with that of a lower thick layer.
- H Measurement influenced by, or impossible because of, the presence of a stratification.
- L Measurement influenced by or impossible because the trace has no sufficiently definite cusp between layers.
- M Measurement questionable because the ordinary and extraordinary components are not distinguishable.
- N Conditions are such that the measurement cannot readily be interpreted, for example, in the presence of oblique echoes.
- O Measurement refers to the ordinary component.
- R Measurement influenced by, or impossible because of, absorption in the vicinity of a critical frequency.
- S Measurement influenced by, or impossible because of, interference or atmospherics.
- V Forked trace which may influence the measurement.
- W Measurement influenced or impossible because the echo lies outside the height range recorded.
- X Measurement refers to the extraordinary component.
- Y Intermittent trace.
- Z Third magneto-ionic component present.

### b. Qualifying Symbols

Used as a preceding symbol on monthly tabulation sheets.

- D *greater than*.....
- E *less than*.....
- I Missing value has been replaced by an interpolated value.
- J Ordinary component characteristic deduced from the extraordinary component.
- T Value determined by a sequence of observations, the actual observation being inconsistent or doubtful.
- U Uncertain or doubtful numerical value.
- Z Measurement deduced from the third magnetoionic component.

IONOSPHERIC DATA  
MONTHLY MEDIAN CHARACTERISTICS



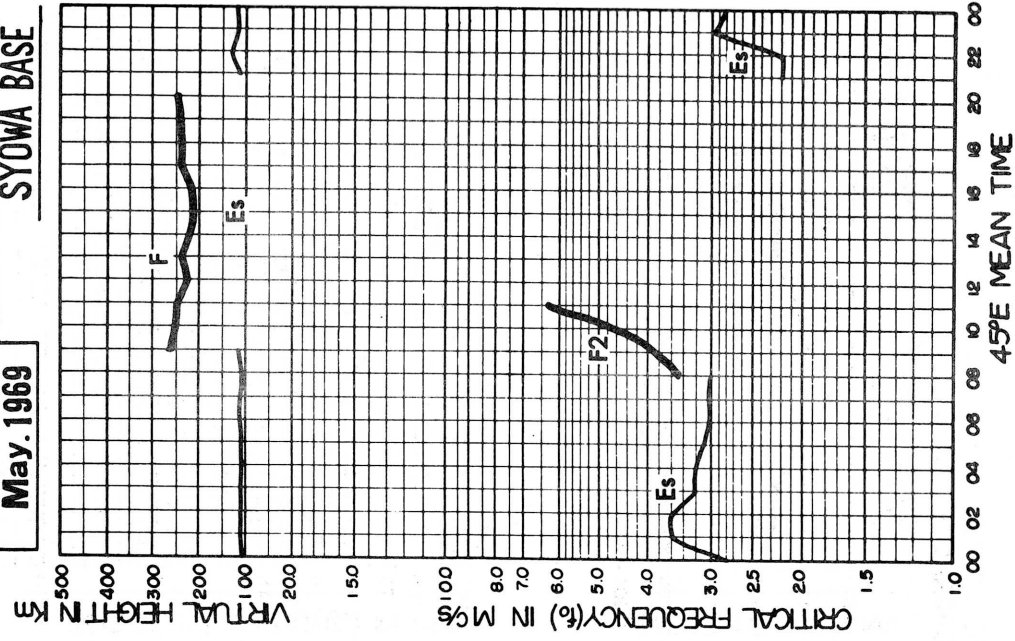
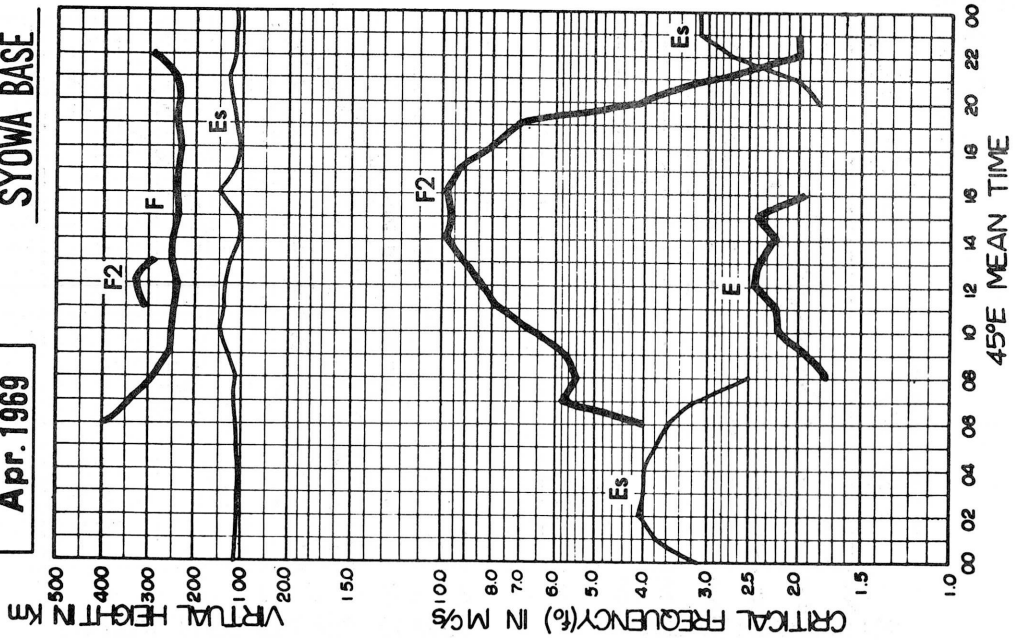
IONOSPHERIC DATA  
MONTHLY MEDIAN CHARACTERISTICS

Apr. 1969

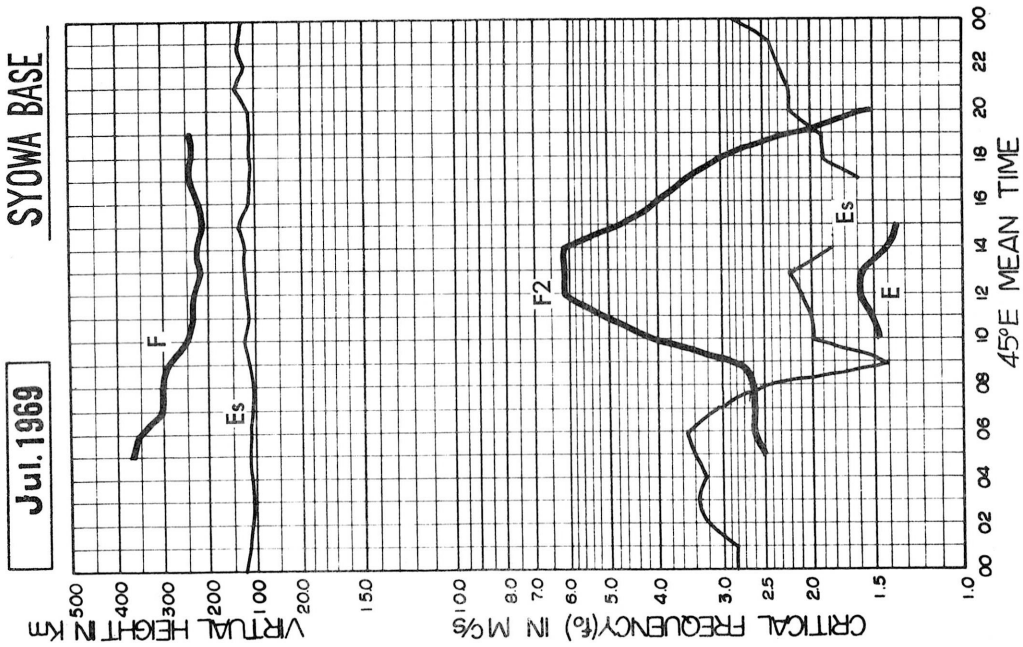
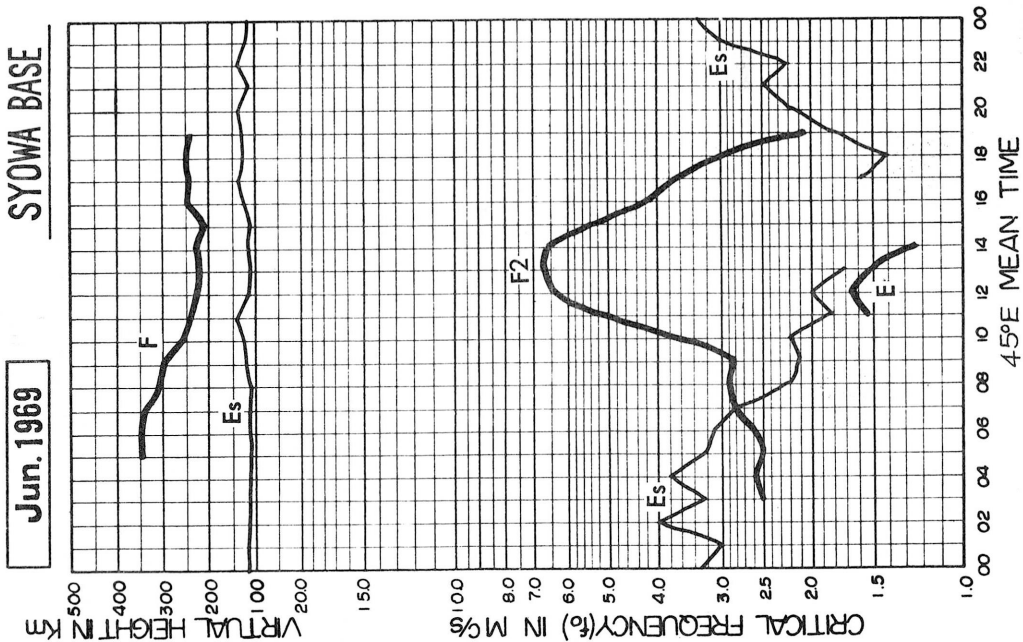
SYOWA BASE

May. 1969

SYOWA BASE



IONOSPHERIC DATA  
MONTHLY MEDIAN CHARACTERISTICS





# IONOSPHERIC DATA

FEB. 1969

FOF2 (0.1 MHz)

45 E Mean Time (G. M. T. + 3 h)

Station **SYOWA BASE** Lat. **69 00 45 S** Long. **39 35 4 E** Sweep **0.4 MHz to 15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	37	J <sub>38</sub>	A	F	44	F	F <sub>61</sub>	F <sub>62</sub>	F	F	74	72	69	70	71	66	61	61	59	56	55	52	U <sub>47</sub>	F
2	42	F <sub>43</sub>	40	44	F <sub>52</sub>	57	F <sub>61</sub>	66	72	77	84	83	81	84	86	80	73	71	72	54	F <sub>57</sub>	A	A	F
3	F	F	F	A	A	A	A	A	A	A	A	B	B	B	B	R	51	R	B	45	47	A	F <sub>40</sub>	A
4	B	A	41	41	F	F <sub>36</sub>	J <sub>51</sub>	F	58	62	64	65	65	57	54	53	53	54	59	54	51	47	42	F <sub>36</sub>
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	62	63	62	61	64	60	60	57	55	55	50	A	40	46
9	A	F	F	F	A	R	R	F	F	F	75	71	63	64	65	71	70	68	67	64	60	57	55	45
10	F	F	F <sub>39</sub>	44	F	A	A	60	74	73	69	71	74	73	70	72	74	65	64	60	54	R	51	F <sub>44</sub>
11	A	A	A	A	F	A	R	F <sub>56</sub>	50	F	B	B	59	F	73	F	R	A	40	35	A	F	F	A
12	A	R	F <sub>29</sub>	A	A	A	A	A	R	R	R	R	R	R	R	R	R	50	48	48	46	46	39	R
13	R	F <sub>33</sub>	A	B	A	B	R	F <sub>58</sub>	A	60	63	F	65	B	65	64	59	60	62	B	60	59	52	F
14	R	A	37	43	47	R	44	A	50	55	56	56	58	59	62	67	66	66	65	64	55	F	36	34
15	F	A	A	A	F	F	F	B	B	F <sub>56</sub>	55	61	59	62	66	67	65	63	64	64	51	31	A	A
16	F	F	A	B	A	A	R	44	49	52	56	62	B	56	55	55	57	55	56	45	40	40	F	F
17	26	F <sub>30</sub>	F <sub>34</sub>	40	F	55	58	F	75	75	J <sub>79</sub>	F <sub>81</sub>	77	75	75	72	72	69	67	64	64	55	50	F <sub>41</sub>
18	F	F	24	F	F	F	69	F	J <sub>82</sub>	J <sub>88</sub>	90	88	86	87	84	78	68	85	63	60	60	59	55	49
19	F	F <sub>34</sub>	R	45	F <sub>51</sub>	64	74	F	F	F	F	F	89	85	80	82	86	91	87	76	59	52	F	F
20	R	F	F	F	F	60	F	F	53	F <sub>63</sub>	66	70	68	70	71	69	74	76	70	68	57	F <sub>37</sub>	F	F
21	A	A	F	44	A	60	F	74	79	F <sub>85</sub>	F	F	F	F	64	64	69	66	67	69	66	57	J <sub>52</sub>	39
22	46	54	F	F <sub>66</sub>	65	70	J <sub>79</sub>	88	95	100	103	100	92	86	84	79	80	80	81	72	F <sub>74</sub>	60	F	F
23	F	F	F	F	F <sub>54</sub>	F	71	86	92	J <sub>97</sub>	90	F <sub>90</sub>	F	F	F	F	84	J <sub>91</sub>	91	U <sub>95</sub>	70	67	F	52
24	R	F	F	45	R	F	F	F	F	F	86	90	91	96	100	J <sub>95</sub>	F <sub>92</sub>	90	83	80	85	81	U <sub>66</sub>	R
25	47	F	F	F	F	B	63	74	F <sub>90</sub>	93	94	91	90	87	U <sub>84</sub>	86	89	86	76	79	73	U <sub>72</sub>	66	52
26	F	F	F	F	F	F	64	B	B	71	F	81	76	U <sub>84</sub>	82	86	J <sub>82</sub>	72	73	71	65	50	R	R
27	R	C	C	F	R <sub>42</sub>	F	B	57	61	C	72	F <sub>72</sub>	76	82	82	80	80	76	56	C	B	A	A	A
28	F	F	F	C	40	B	B	B	63	F <sub>67</sub>	73	70	72	74	69	72	69	69	64	C	B	C	F	F
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	5	6	7	9	8	7	11	11	15	16	19	19	20	19	22	21	23	23	24	22	22	17	14	10
MED	42	F <sub>36</sub>	37	44	49	60	63	62	72	72	73	72	73	74	71	72	70	69	64	64	58	55	50	44
UQ	46	F <sub>43</sub>	40	45	F <sub>53</sub>	62	70	74	80	86	85	86	84	84	82	80	80	78	72	71	65	59	55	49
LQ	37	F <sub>35</sub>	32	43	43	56	60	58	56	61	64	68	64	63	65	66	63	62	59	54	51	47	40	39

FEB. 1969

FOF2 (0.1 MHz)

# IONOSPHERIC DATA

FEB. 1969

FOF1 (0.01 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69° 00' 4" S Long. 39° 35' 4" E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1						360	390	420	430	450	470	480	480	490	460	L	L	L						
2						L	400	520	440	470	470	480	480	500	490	470	480	L	L					
3						A	A	A	A	A	A	B	B	B	B	410	420	400	B					
4							380	400	420	430	450	B	470	470	470	480	450	L	L					
5						C	C	C	C	C	C	C	C	C	C	C	C	C	C					
6						C	C	C	C	C	C	C	C	C	C	C	C	C	C					
7						C	C	C	C	C	C	C	C	C	C	C	C	C	C					
8						C	C	C	C	C	450	460	470	460	490	470	450	L						
9							400	410	450	440	450	L	500	L	470	L	L	L	L					
10						A	410	440	430	470	470	470	480	470	L	L	L	L						
11						A	A	A	410	B	B	B	430	430	420	420	R	A						
12						350	A	A	420	430	440	440	490	450	450	450	450	L						
13							A	A	440	A	450	450	B	B	L	L	L	L	L					
14							A	A	410	430	440	450	450	L	L	L	L	L	L					
15							B	B	420	430	450	490	470	470	L	L	L	L	L					
16							A	A	B	B	480	B	470	440	440	430	L	L	L					
17							A	L	400	430	460	470	470	L	L	L	L	L	L					
18							L	L	L	460	450	L	460	A	L	L	L	L	L					
19								A	450	470	470	470	L	L	L	L	L	L	L					
20						340	L	L	430	460	460	L	500	L	L	L	L	L	L					
21						340	380	400	450	450	A	500	480	L	470	L	L	L	L					
22						L	L	L	450	L	L	480	L	L	L	L	L	L	L					
23							L	L	480	490	L	L	L	L	L	L	L	L	L					
24							370	L	460	L	500	L	L	L	L	L	L	L	L					
25							R	L	450	L	L	L	L	L	L	L	L	L	L					
26							A	B	B	470	470	500	500	L	L	L	L	L	L					
27							B	L	A	C	450	470	C	L	L	L	L	L	L				L	
28							B	B	A	450	L	470	490	L	480	L	L	L	L					
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	7	6	11	18	17	16	18	10	12	7	6	1						
MED						340	380	410	440	445	460	470	470	470	470	450	450	400						
UQ						350	395	420	450	460	470	480	490	490	475	470	450							
LQ						340	375	400	430	430	450	455	460	460	455	430	430							

The Radio Research Laboratories, Japan

FEB. 1969

FOF1 (0.01 MHZ)

# IONOSPHERIC DATA

FEB. 1969

FOE (0.01 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. **69° 00.4' S** Long. **39° 35.4' E** Sweep **0.4 MHz** to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	A	A	A	295	305	320	325	330	325	310	A	A	295	275	245	220	190	165	A
2	125	A	A	A	A	205	230	270	300	325	330	335	A	330	325	A	A	A	270	240	A	A	A	A
3	A	A	A	A	A	A	A	A	A	A	A	B	B	B	B	305	295	B	B	230	190	A	B	A
4	B	B	A	A	170	220	255	A	305	315	320	B	300	A	320	305	A	295	260	245	195	170	A	A
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	325	330	340	335	A	A	300	290	270	A	A	A	A	170
9	A	A	A	A	A	A	A	275	290	300	315	325	330	325	320	290	A	280	A	220	A	A	A	140
10	130	A	A	A	A	A	A	A	A	300	305	315	320	315	B	B	A	280	275	250	220	190	B	A
11	A	A	A	A	A	B	A	A	A	A	B	B	325	310	A	300	R	A	A	250	A	150	A	A
12	A	A	A	A	A	A	A	A	A	300	305	310	335	A	330	310	R	A	270	240	B	180	160	A
13	A	A	A	B	A	B	A	B	A	A	A	350	R	B	B	B	295	275	R	B	B	A	A	140
14	A	A	A	A	A	B	A	A	A	300	305	310	320	315	305	300	260	A	A	A	A	A	A	A
15	A	A	A	A	A	A	A	B	B	A	A	310	320	315	R	B	290	275	A	220	A	A	A	A
16	A	A	A	B	A	A	A	A	370	B	B	A	B	B	325	300	290	260	250	230	200	B	A	A
17	A	A	A	A	165	170	A	A	A	A	A	305	320	310	300	285	280	260	A	240	A	A	B	A
18	A	A	A	A	150	155	215	245	265	275	290	310	315	300	A	A	295	280	A	230	A	A	A	A
19	B	A	A	A	A	200	A	A	A	A	310	315	320	310	A	A	A	A	A	240	A	A	A	A
20	A	A	A	A	A	A	A	A	A	A	310	315	320	315	A	300	285	275	250	205	A	A	A	A
21	A	A	A	A	A	A	A	265	270	305	A	A	325	320	A	A	300	275	250	220	A	A	A	A
22	A	A	A	A	A	A	220	250	280	295	305	310	320	A	A	300	295	275	250	230	180	140	120	A
23	A	A	A	A	A	A	A	A	290	300	A	A	R	325	320	310	295	280	250	A	A	A	A	A
24	A	A	A	A	A	A	A	A	280	300	315	325	330	325	320	R	315	275	230	225	A	A	A	A
25	A	A	A	A	A	B	A	280	280	300	310	330	330	B	B	B	B	B	B	B	B	B	A	A
26	B	A	A	A	A	B	B	B	B	A	325	330	335	B	325	310	300	280	B	225	B	B	A	A
27	A	C	C	A	A	A	B	A	B	C	320	300	C	330	330	320	A	290	A	C	B	B	A	A
28	A	A	A	C	180	B	B	B	A	A	B	B	330	320	315	310	300	280	230	C	B	C	150	A
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2				4	5	4	6	11	13	16	18	19	17	13	14	15	18	13	18	6	6	4	3
MED	128				168	200	225	268	290	300	312	315	325	320	320	302	295	280	250	230	198	175	155	140
UQ					175	205	242	275	298	305	320	330	330	325	325	310	300	280	270	240	220	190	162	155
LQ					158	170	218	250	280	300	305	310	320	315	315	300	290	275	250	225	190	150	135	140

FEB. 1969

FOE (0.01 MHZ)

IONOSPHERIC DATA

FEB. 1969

FOES (0.1 MHZ)

45 E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE Lat. 69 00 .4 S . Long. 39 35 .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	J 40	J 36	J 46	34	33	27	27	J 38	J 62	G	J 46	38	37	J 37	J 33	38	G	G	G	J 40	G	J 24	J 33	
2	20	20	J 22	J 28	J 24	J 45	J 27	J 36	G	38	39	J 40	37	G	G	38	J 41	J 47	30	29	27	J 46	J 70	J 41
3	J 47	J 28	J 33	J 83	J 46	J 69	J 39	J 38	J 32	J 74	J 70	B	B	B	B	33	32	E 35	B	30	24	J 42	25	J 70
4	B	37	J 53	J 33	G	J 27	J 31	30	39	39	G	E 49	32	36	42	33	30	G	31	28	29	J 25	22	J 33
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
8	C	C	C	C	C	C	C	C	C	C	35	35	33	G	J 39	37	34	G	G	J 29	J 22	J 37	J 27	26
9	J 42	J 41	J 35	J 50	J 61	J 36	J 40	35	35	G	G	G	G	38	J 52	J 47	J 46	32	J 34	26	24	20	J 25	J 25
10	20	J 21	J 28	J 42	J 40	J 48	J 52	J 46	31	G	G	G	33	33	E 34	E 34	33	G	G	G	G	E 21	24	
11	J 44	J 74	J 42	J 42	J 65	J 44	J 43	44	J 41	J 37	B	B	G	G	33	G	G	J 54	27	G	J 68	J 22	J 42	J 61
12	J 58	J 42	J 65	J 41	J 46	J 34	J 81	J 84	41	35	32	G	G	28	G	G	G	J 33	29	27	E 25	G	27	30
13	23	J 34	J 53	B	J 48	B	J 35	40	J 112	J 42	J 40	G	G	B	E 51	E 32	34	30	G	B	E 24	26	J 26	J 25
14	J 24	J 70	J 42	J 66	36	J 37	J 31	J 45	J 42	G	G	G	G	34	36	J 38	J 39	J 34	J 30	27	26	J 21	J 32	J 22
15	J 33	J 71	J 52	J 40	J 26	J 23	J 32	B	B	37	33	G	G	G	G	E 36	G	G	29	26	27	24	J 71	J 52
16	J 70	J 36	J 70	B	J 31	J 37	J 37	J 32	J 51	E 44	E 45	34	B	E 33	G	G	G	G	G	G	J 42	E 23	J 24	14
17	16	J 19	J 25	22	26	J 28	44	35	J 32	32	34	32	37	36	34	J 66	32	29	J 32	28	23	26	E 11	J 18
18	24	13	J 24	J 20	G	18	28	G	27	G	34	37	J 41	J 56	J 50	J 32	29	G	J 32	G	J 22	15	J 25	J 37
19	E 10	20	12	13	J 21	G	J 64	J 47	J 38	32	G	G	G	G	J 36	46	J 38	J 51	J 35	28	J 52	J 29	19	J 24
20	J 39	J 37	J 42	J 37	J 27	J 39	J 27	J 52	J 42	J 39	37	J 45	36	G	J 36	33	J 32	G	G	26	J 26	J 28	J 27	J 36
21	J 52	J 37	J 30	J 42	J 47	J 39	J 33	31	33	G	J 37	J 36	34	G	33	31	28	G	G	30	26	17	J 18	15
22	J 25	J 27	J 26	J 24	J 31	J 24	J 25	J 28	34	32	34	36	35	J 69	33	36	G	28	27	24	26	J 25	G	16
23	J 22	J 27	J 38	J 38	J 78	J 40	J 41	32	G	G	J 51	37	38	G	G	G	31	29	J 37	28	J 30	J 41	J 25	J 25
24	J 30	J 29	30	J 32	36	J 42	J 32	27	G	36	.37	38	G	G	G	G	35	37	J 29	28	19	15	J 16	J 25
25	J 32	J 26	J 27	J 31	J 37	B	J 33	J 59	G	J 80	G	G	G	E 41	E 36	E 34	E 52	E 50	E 34	E 27	E 22	E 21	17	J 18
26	E 10	J 41	J 27	J 21	22	E 35	J 41	B	B	34	G	G	G	E 36	G	G	G	G	E 27	G	E 21	E 20	34	37
27	J 42	C	C	J 31	J 38	J 84	B	J 30	J 40	C	G	G	C	G	G	38	33	G	30	C	B	J 75	J 47	J 37
28	J 40	J 51	D	C	23	B	B	B	J 40	35	E 34	E 38	G	G	G	G	G	G	25	C	B	C	18	J 20
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	23	23	21	24	21	22	21	22	23	24	23	22	23	24	25	25	25	24	22	23	24	25	25
MED	J 32	J 36	J 35	J 34	J 34	J 37	J 34	J 36	36	34	34	E 34	E 32	E 28	34	32	32	E 28	28	27	26	24	J 25	J 25
UQ	J 42	J 41	J 49	J 42	J 46	J 42	J 41	J 45	J 41	38	38	37	36	36	36	37	34	33	31	28	28	J 28	J 27	J 37
LQ	22	J 26	J 27	J 28	25	J 27	J 31	31	31	G	G	G	G	G	G	G	G	G	G	G	21	16	18	J 22

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FOES (0.1 MHZ)

# IONOSPHERIC DATA

FEB. 1969

F-MIN (0.1 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station	SYQWA BASE				Lat. 69° 00' .4 5' S				Long. 39° 35' .4 E				Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation												
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	10	12	11	13	8	10	9	11	10	9	10	10	11	11	11	11	12	12	12	8	7	8	6	8	
2	5	9	6	6	5	5	4	10	9	9	9	10	14	12	11	12	17	18	15	10	10	10	18	9	
3	8	5	11	11	10	10	10	9	12	13	10	B	B	B	B	11	10	35	B	21	11	9	22	10	
4	B	28	11	6	5	E	5	11	10	11	11	49	14	21	12	12	12	11	9	10	10	10	6	7	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	C	20	23	13	10	12	11	12	13	10	10	5	10	8	8	
9	10	17	12	13	11	15	12	11	12	10	14	11	9	14	12	12	10	12	10	12	8	12	8	7	
10	7	8	9	13	13	15	15	10	9	8	10	11	12	15	34	34	19	18	22	22	12	15	21	13	
11	9	10	9	10	12	28	22	10	21	22	B	B	21	26	18	17	14	15	11	10	9	9	13	10	
12	22	5	7	25	13	10	16	8	13	13	12	12	11	65	14	11	23	14	8	13	25	10	12	10	
13	13	8	22	B	20	B	21	32	19	12	23	23	24	B	51	32	13	13	22	B	24	22	16	9	
14	10	6	20	13	13	25	13	26	13	10	14	11	13	18	14	12	12	13	23	15	15	10	8	7	
15	8	15	12	18	11	10	10	B	B	16	14	13	11	9	23	36	9	11	13	15	7	10	7	E	
16	E	9	11	B	14	16	21	10	B	44	45	12	B	33	28	28	20	13	23	19	13	23	6	8	
17	8	7	8	5	7	9	12	13	11	12	13	14	10	9	13	19	15	11	11	14	7	14	11	7	
18	5	6	10	7	8	7	12	7	9	10	12	12	12	11	11	11	11	11	10	11	11	11	8	8	
19	10	E	E	6	E	10	10	10	15	10	8	13	13	11	13	11	10	13	8	12	9	12	10	5	
20	9	10	11	10	9	10	8	24	14	13	14	12	13	13	13	9	13	13	13	11	10	10	10	8	
21	5	10	9	14	14	13	10	12	10	11	28	15	12	11	11	11	11	10	10	8	9	9	5	6	
22	5	7	5	5	5	6	9	9	11	12	17	16	18	16	14	10	14	11	11	11	10	9	5	10	
23	6	8	8	10	13	14	12	9	13	12	26	16	12	10	11	13	15	13	10	23	22	13	11	8	
24	9	5	9	10	11	13	11	10	9	12	11	13	14	17	11	24	23	11	10	10	9	8	6	9	
25	10	8	7	9	12	B	13	13	10	12	10	10	14	41	36	34	52	50	34	27	22	21	10	8	
26	10	10	10	10	12	35	28	B	B	31	18	18	15	36	10	15	22	15	27	19	21	20	14	14	
27	14	C	C	16	19	20	B	18	27	C	12	14	6	8	15	12	17	14	12	C	B	35	14	13	
28	13	13	15	C	14	B	B	B	29	26	34	38	24	21	24	16	16	19	19	C	B	C	12	12	
29																									
30																									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	24	23	23	23	24	24	24	24	24	23	25	25	25	25	25	25	25	25	25	23	25	24	25	25	
MED	9	8	10	10	12	13	12	11	12	12	14	13	13	15	13	12	14	13	12	12	10	10	10	8	
UQ	10	10	11	14	13	22	18	21	20	13	20	18	15	26	23	19	17	15	22	19	21	14	13	10	
LQ	6	6	8	8	8	10	10	10	10	10	10	11	12	12	11	11	11	12	11	10	10	9	10	7	7

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F-MIN (0.1 MHZ)

# IONOSPHERIC DATA

FEB. 1969

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. **69 00.4 S** Long. **39 35.4 E** Sweep **0.4 MHz** to **15 MHz** in **30 sec** in **automatic operation**

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	275	F	A	F	250	F	240	255	F	F	255	265	265	265	280	290	285	300	305	305	310	310	UR	F	
2	260	325	275	285	265	235	255	240	250	250	250	255	255	245	255	265	275	255	290	270	300	A	A	F	
3	F	F	F	A	A	A	A	A	A	A	A	B	B	B	B	R	220	R	B	280	285	A	285	A	
4	B	A	245	250	F	295	F	F	225	240	250	240	275	280	250	240	245	255	275	280	315	300	290	280	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	C	260	255	260	245	255	280	285	295	290	285	280	A	340	300	
9	A	F	F	F	A	R	R	F	F	F	265	270	240	245	255	275	275	295	300	310	315	315	310	305	
10	F	F	255	250	F	A	A	255	270	255	250	265	260	255	255	260	285	290	295	295	295	R	300	285	
11	A	A	A	A	F	A	R	245	215	F	B	B	220	F	245	F	R	A	355	345	A	F	F	A	
12	A	R	225	A	A	A	A	A	R	R	R	R	R	R	R	R	R	300	300	315	325	310	310	R	
13	R	240	A	B	A	B	R	240	A	R	240	F	260	B	270	295	290	270	280	B	305	315	310	F	
14	R	A	255	260	275	R	250	A	245	235	245	250	265	270	270	295	315	315	325	315	325	F	295	265	
15	F	A	A	A	F	F	F	B	B	250	250	265	265	270	275	285	290	295	295	315	335	275	A	A	
16	F	F	A	B	A	A	R	225	240	235	250	260	B	265	255	270	275	290	335	310	300	325	F	F	
17	270	275	280	275	F	290	240	F	265	255	F	270	260	265	275	285	290	305	330	315	315	320	300	295	
18	F	F	270	F	F	F	275	F	F	R	265	255	265	285	305	295	310	245	315	335	335	335	325	320	
19	F	295	R	290	285	280	270	F	F	F	F	F	260	270	265	255	255	260	285	315	320	310	F	F	
20	R	F	F	F	F	265	F	F	240	240	260	255	265	280	275	275	280	305	330	320	315	270	F	F	
21	A	A	F	250	A	250	F	250	245	245	F	F	F	F	280	295	320	305	310	320	320	315	R	310	
22	295	270	F	250	255	255	R	250	255	260	260	270	285	325	275	265	290	290	310	300	310	290	F	F	
23	F	F	F	F	260	F	255	245	245	F	235	245	F	F	F	F	285	F	295	UF	315	315	300	F	270
24	R	F	F	250	R	F	F	F	F	F	250	250	275	275	280	F	290	295	290	300	330	295	UF	R	
25	295	F	F	F	F	B	255	250	250	250	250	260	265	265	270	265	285	295	315	315	315	315	310	305	
26	F	F	F	F	F	F	225	B	B	240	F	265	255	UR	270	270	R	280	290	310	310	290	R	R	
27	R	C	C	F	R	F	B	265	225	C	240	235	235	255	255	280	300	270	235	C	B	A	A	A	
28	F	F	F	C	275	B	B	B	240	250	255	270	265	285	275	290	270	305	295	C	B	C	F	F	
29																									
30																									
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	5	5	7	9	7	7	9	11	14	13	18	19	20	19	22	20	22	22	24	22	22	17	13	10	
MED	275	275	255	250	265	265	255	250	245	250	250	260	262	270	270	278	285	295	298	312	315	310	310	298	
UQ	295	295	272	275	275	285	255	252	250	250	260	265	265	278	275	290	290	300	315	315	320	315	310	305	
LQ	270	270	250	250	258	252	240	242	240	240	250	252	258	260	255	265	275	270	290	300	305	295	295	280	

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M(3000)F2 (0.01)

# IONOSPHERIC DATA

FEB. 1969

H<sup>o</sup>F<sub>2</sub> (KM)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1					400	460	450		370	395	335	400	360	390	350	340	L	320						
2					L	415	485		400	400	350	350	370	375	355	325	350	390	310					
3					A	A	A		A	A	A	B	B	B	B	R	600	R	B					
4						R	F		550	490	450	475	355	415	500	555	505	L	355					
5					C	C	C		C	C	C	C	C	C	C	C	C	C	C					
6					C	C	C		C	C	C	C	C	C	C	C	C	C	C					
7					C	C	C		C	C	C	C	C	C	C	C	C	C	C					
8					C	C	C		C	C	455	450	430	455	425	315	350	340						
9					A	465	430	410	370	400	500	L	425	355	355	305	300							
10					A	445	405	375	410	380	375	395	430	L	305	350								
11					A	460	600	560	B	B	585	590	560	580	R	A								
12					A	A	K	R	R	R	R	R	R	R	R	R	480	350						
13						R	A	R	470	425	405	B	380	345	315	375	340							
14					A	A	500	455	475	415	400	360	325	275	250									
15					B	B	450	500	400	450	400	370	310		310									
16						575	520	500	490	425	B	450	450	440	390	L	L							
17					A	425	355	360	395	325	375	350	325	310	300	L								
18						325	L	305	350	310	350	310	290	270	L	L								
19							505	425	360	350	320	310	340	350	315									
20					400	360	450	520	450	420	385	400	350	355	L	L								
21					405	370	365	375	370	400	380	390	L	355	L	280	275							
22					340	345	350	355	340	310	315	300	320	305	325	275								
23							390	370	390	415	L	360	345	325	350									
24					405	L	395	345	350	350	300	315	280											
25					410	390	350	355	350	350	340	L	340	305	290									
26						A	B	B	410	350	350	385	300	350	300	300								
27						B	400	550	C	400	460	C	350	L	310				L					
28						B	B	A	425	400	405	350	320	350	350	365	L							
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						4	8	13	17	20	22	21	21	19	22	18	17	10	4					
MED					400	388	445	400	405	400	385	375	350	355	332	315	330	325						
UQ					402	412	460	520	450	450	425	405	400	425	350	365	350	348						
LQ					370	352	390	370	365	350	350	350	320	340	310	300	305	305						

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H<sup>o</sup>F<sub>2</sub> (KM)

# IONOSPHERIC DATA

FEB. 1969

H<sup>o</sup>F (KM)

☉ E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. 69° 00.4' S Long. 39° 35.4' E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	A	A	A	285	250	250	200	230	215	210	205	215	200	205	210	205	210	220	250	255	290	300	
2	290	255	300	315	225	275	250	230	220	250	225	210	205	200	225	205	225	A	215	240	250	A	A	A	
3	A	225	395	A	A	A	A	A	A	A	A	B	B	B	B	245	250	305	B	270	220	A	275	A	
4	B	B	A	A	330	340	280	250	255	230	230	B	210	220	205	220	210	210	225	240	250	255	280	A	
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
8	C	C	C	C	C	C	C	C	C	C	250	250	240	230	230	215	205	220	225	250	300	A	320	280	
9	A	A	360	A	A	A	A	255	220	210	210	225	225	240	A	A	A	225	215	230	230	245	255	255	
10	305	320	365	A	A	A	A	A	210	200	205	235	225	215	230	230	220	220	220	250	260	270	270	270	
11	A	A	A	A	A	B	A	A	A	A	B	B	250	240	A	A	R	A	205	245	A	A	A	A	
12	A	A	A	A	A	A	A	A	A	250	200	200	220	225	230	220	220	240	230	230	270	250	260	A	
13	A	A	A	B	A	B	A	A	A	270	A	260	250	B	B	250	205	205	250	B	250	250	250	255	
14	A	A	A	380	390	A	A	A	A	210	200	200	215	225	225	205	225	A	215	240	245	250	260	A	345
15	A	A	A	A	400	280	A	B	B	250	240	225	205	210	220	B	220	205	200	250	250	350	A	A	
16	440	400	A	B	A	A	A	A	A	A	B	B	220	B	215	205	200	220	230	250	250	245	250	315	345
17	325	305	A	320	300	250	A	320	245	230	200	200	205	205	200	210	240	200	220	250	240	240	245	250	
18	380	340	300	320	290	250	205	200	220	200	200	210	205	A	200	200	200	200	225	220	240	225	200	210	
19	260	240	205	290	260	265	275	A	A	200	200	200	200	200	200	220	200	280	230	210	240	255	270	270	
20	A	A	A	380	350	350	250	A	A	230	200	200	200	200	200	215	205	210	200	210	250	315	320	A	
21	A	A	310	A	A	A	230	220	205	200	A	265	200	210	200	205	200	210	210	235	230	230	250	225	
22	250	260	275	280	300	280	250	220	200	215	200	210	200	210	200	205	210	215	230	230	215	255	290	250	
23	270	300	400	370	380	400	400	200	220	205	280	230	205	200	200	200	225	225	240	240	240	225	245	300	
24	350	A	A	A	A	A	A	350	250	220	210	200	220	230	220	240	220	220	205	225	230	230	210	240	
25	260	330	300	350	380	B	R	260	210	225	220	220	220	250	225	215	B	250	240	240	240	240	230	225	
26	290	345	320	390	350	400	A	B	B	215	210	200	205	250	240	220	225	245	225	240	245	280	A	A	
27	A	C	C	430	A	350	B	300	A	C	220	245	C	250	245	220	245	250	340	C	B	A	A	A	
28	A	250	A	C	280	B	B	B	A	300	250	250	200	200	240	220	245	250	250	C	B	C	300	265	
29																									
30																									
31																									
Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	11	12	11	11	13	12	10	12	12	20	20	22	22	22	21	22	22	23	24	22	22	19	19	16	
MED	290	302	310	350	330	282	250	250	220	220	210	215	205	215	220	215	220	220	225	240	245	250	270	260	
UQ	338	335	362	380	380	350	280	258	220	240	228	235	220	230	230	220	225	242	240	250	250	258	290	290	
LQ	265	252	300	318	290	270	250	215	208	208	200	200	205	205	200	205	205	210	212	230	240	240	248	245	

The Radio Research Laboratories, Japan

FEB. 1969

H<sup>o</sup>F (KM)



IONOSPHERIC DATA

FEB. 1969

H<sup>o</sup>ES (KM)

45 E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69° 00' .4 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	100	100	105	100	100	105	100	100	110	G	100	100	100	100	110	100	100	G	G	G	100	G	100	125		
2	130	110	115	110	100	100	125	115	G	100	120	105	105	G	G	100	100	100	100	150	110	110	100	100		
3	100	120	100	100	100	100	100	100	100	100	100	B	B	B	B	130	120	B	B	140	125	105	140	100		
4	B	110	100	100	G	100	100	100	100	100	G	B	125	105	130	125	125	G	100	170	100	150	100	105		
5	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
6	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
7	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
8	C	C	C	C	C	C	C	C	C	C	C	C	130	150	150	G	110	110	100	G	G	100	100	110	105	105
9	120	135	110	105	100	105	105	150	130	G	G	G	G	125	115	110	105	120	105	155	100	100	100	130		
10	150	100	125	110	100	100	100	100	100	G	G	G	130	130	B	B	100	G	G	G	G	G	B	140		
11	105	100	100	100	100	120	100	100	105	120	B	B	G	G	100	G	G	105	100	G	100	145	100	100		
12	100	100	100	100	100	100	100	100	100	100	150	G	G	105	G	G	G	100	130	130	B	G	110	110		
13	100	110	100	B	100	B	120	100	100	100	100	G	G	B	B	B	140	160	G	B	B	130	120	145		
14	120	100	125	100	110	105	100	100	100	G	G	G	G	120	105	100	100	100	110	120	130	110	100	100		
15	100	100	100	100	100	100	100	B	B	100	100	G	G	G	G	B	G	G	100	160	120	100	100	100		
16	105	100	100	B	100	100	100	100	100	B	B	100	B	B	G	G	G	G	G	G	100	B	100	145		
17	110	110	100	100	110	100	100	100	100	100	100	120	125	120	105	105	120	110	100	180	125	120	B	105		
18	150	130	100	100	G	125	105	G	130	G	100	100	100	100	100	100	110	G	100	G	100	100	100	100		
19	B	100	100	100	100	G	100	100	100	100	G	G	G	G	100	100	100	100	100	100	100	110	115	100		
20	120	100	120	110	105	100	100	115	100	100	105	100	100	G	100	100	105	G	G	130	100	120	100	100		
21	110	105	100	100	100	100	100	100	115	G	100	120	140	G	100	100	100	G	G	100	100	110	130	100		
22	100	100	100	100	100	100	100	100	110	115	100	100	100	100	100	105	G	125	125	150	180	140	G	100		
23	100	110	100	100	100	110	100	100	G	G	125	100	100	G	G	G	130	140	105	100	100	100	100	100		
24	120	110	110	115	110	100	100	105	G	100	100	105	G	G	G	G	130	105	100	100	100	105	110	110		
25	105	125	100	100	120	B	100	100	G	105	G	G	G	B	B	B	B	B	B	B	B	B	B	100	100	
26	B	135	120	110	145	B	100	B	B	130	G	G	G	B	G	G	G	G	B	G	B	B	110	110		
27	105	C	C	130	105	100	B	100	100	C	G	G	C	G	G	110	105	G	120	C	B	150	105	105		
28	150	100	105	C	100	B	B	B	110	110	B	B	G	G	G	G	G	G	150	C	B	C	150	125		
29																										
30																										
31																										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	21	23	23	21	22	19	22	20	18	15	14	11	11	9	12	14	17	11	15	15	18	18	22	25		
MED	105	105	100	100	100	100	100	100	100	100	100	100	105	105	102	102	105	105	100	130	100	110	100	105		
UQ	120	110	110	110	105	105	100	100	110	108	120	112	128	120	110	110	120	122	115	152	120	130	110	110		
LQ	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	105	100	100		

FEB. 1969

H<sup>o</sup>ES (KM)

IONOSPHERIC DATA

MAR. 1969

FOF2 (0.1 MHZ)

45 E Mean Time (G. M. T. + 3h)

Station	SYOWA BASE				Lat. 69 00.4 S.	Long. 39 35.4 E	Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation																		
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	25	F	A	B	F	51	F	F	76	J <sub>85</sub>	E	83	82	80	77	75	74	72	70	66	61	60	A	C	A
2	C	A	A	42	C	B	B	B	B	J <sub>64</sub>	F	59	61	70	76	87	90	65	92	85	77	70	E	55	55
3	46	F	F	F	F	F	F	F	F	F	F	95	92	91	89	86	88	85	80	71	74	F	F	F	55
4	F	F	F	F	F	J <sub>63</sub>	F	F	95	97	103	100	100	99	99	97	93	F	82	74	F	F	F	A	
5	A	54	F	R	A	F	R	F	88	94	J <sub>105</sub>	103	104	101	96	91	110	96	83	72	68	F	R	F	
6	F	R	A	A	A	A	A	A	53	57	F	69	82	86	89	98	95	F	F	80	R	R	F	28	
7	A	A	A	F	F	41	A	B	B	A	B	F	F	F	59	61	64	63	69	62	F	A	A	A	
8	A	F	F	A	A	A	A	A	B	R	46	52	55	B	58	55	B	56	56	51	51	36	F	F	
9	A	A	A	A	A	A	A	B	A	60	65	66	65	75	79	76	75	89	81	F	F	F	R	F	
10	R	R	R	F	A	F	42	A	43	55	54	57	69	B	78	80	82	79	81	70	U <sub>73</sub>	67	55	F	36
11	37	F	F	31	30	A	A	R	F	J <sub>69</sub>	B	F	63	73	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	60	61	61	59	62	61	65	64	55	41	F	15	
14	A	A	A	F	R	45	A	53	62	61	61	65	74	74	73	72	71	71	71	68	54	F	A	F	19
15	A	A	A	A	A	45	B	B	A	R	B	B	B	61	U <sub>69</sub>	71	75	76	F	F	F	A	A	A	A
16	A	A	A	A	R	A	41	47	B	B	R	B	53	B	B	B	66	73	75	F	F	F	F	35	
17	F	F	F	A	A	B	R	R	53	B	B	R	50	55	65	70	88	88	66	F	A	A	R	A	
18	A	A	A	F	33	A	A	46	49	57	B	F	F	67	B	R	66	67	65	62	J <sub>52</sub>	F	C	C	
19	A	A	A	F	F	A	F	F	F	F	82	85	81	F	F	81	81	74	75	62	60	50	42	34	
20	F	A	A	A	R	R	45	R	50	F	57	B	J <sub>70</sub>	70	72	79	75	69	69	55	R	A	A	A	
21	R	A	A	A	R	A	R	R	R	R	B	B	B	B	B	69	69	71	71	70	F	40	29	A	
22	R	A	A	A	R	A	R	B	R	69	71	69	76	81	87	90	R	106	96	F	29	F	31	A	
23	A	A	A	F	R	F	F	F	F	66	73	80	94	106	115	112	110	F	100	92	82	F	A	F	A
24	F	A	F	A	B	A	F	A	R	A	R	R	R	R	R	F	F	47	52	48	C	C	C	C	
25	C	C	C	C	C	R	F	F	50	63	59	R	58	70	85	90	80	84	73	67	F	F	A	30	
26	A	A	R	52	F	R	F	F	F	72	75	80	86	93	95	107	107	97	91	F	R	C	R	F	
27	F	A	41	F	B	F	R	F	F	F	J <sub>88</sub>	101	102	108	113	113	107	105	95	82	R	65	49	C	
28	F	U <sub>29</sub>	F	F	26	F	F	F	F	F	R	F	F	102	107	108	107	105	96	85	77	F	R	R	
29	A	F	A	30	F	F	F	F	56	60	71	U <sub>77</sub>	89	100	109	111	109	111	78	F	39	F	R	R	
30	F	A	B	B	F	B	47	61	60	65	J <sub>69</sub>	74	79	86	90	94	90	87	79	71	53	R	A	38	
31	R	A	A	A	R	F	B	J <sub>66</sub>	F	70	77	80	87	85	89	93	95	90	F	F	F	A	30	F	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	7	3	2	4	3	6	6	6	13	18	19	18	26	24	24	26	27	28	26	21	13	8	9	10	
MED	F	F	34	36	30	45	44	57	56	64	71	78	75	79	86	89	81	82	75	70	55	56	42	34	
UQ	42	46	47	32	51	47	66	66	66	72	82	92	87	96	96	97	95	94	83	74	68	64	55	38	
LQ	F	F	30	28	41	41	47	50	60	60	66	66	63	70	72	72	70	70	69	62	52	40	31	28	

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FOF2 (0.1 MHZ)

# IONOSPHERIC DATA

MAR. 1969

FOF1 (0.01 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69° 00' .4 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								L	L	440	460	480	L	L	L	L	L							
2								B	B	L	460	430	490	L	L	L	L							
3								L	L	L	L	L	L	L	L									
4											L	L	L	L	L	L								
5								L	L	L	L	L	L	L		L								
6								A	390	410		B	B	L	L	L	L							
7								B	B	A	B	440	420	L	L	L	L	L						
8									B	A	400	410	420	B	450	430	B							
9								B	A	B	470	L	L	B	L	L								
10									350	370	420	410	L	B	B	L								
11									380	400	B	L	B	B	C	C	C							
12								C	C	C	C	C	C	C	C	C	C							
13								C	C	C	C	C	L	450	440	L	L	B						
14								L	L	L	L	H	L	L	L	L								
15								A	R	B	B	B	B	440	B	B	B							
16							A	A	B	B	460	B	450	B	B	B								
17								A	390	B	B	420	440	460	L	L	L							
18								B	B	A	B	450	450	B	B	B								
19									L	L	B	B	B											
20								A	380	L	450	B	L	L	L	L								
21									R	A	B	B	B	B	B	L	B							
22								B	A	L	L	480	B	B	L	L	B	B						
23									L	L	L	L												
24								A	R	340	330	350	R	360	F	400								
25										B	470	450	450	L										
26									L	L	L	L	L	L	L									
27																								
28																								
29											L	L	B											
30								B	A	B	L	L	L	B	B									
31											L	L	L	L										
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									5	5	9	11	8	4	1	2								
MED									380	400	460	430	450	440	450	415								
UQ									390	410	460	450	450	450										
LQ									380	370	420	410	430	400										

MAR. 1969

FOF1 (0.01 MHZ)

IONOSPHERIC DATA

MAR. 1969

FOE (0.01 MHZ)

45 E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	C	A	B	B	A	B	A	250	270	290	305	310	315	A	310	305	290	275	225	160	140	A	C	A
2	C	A	A	A	C	B	B	B	B	A	300	295	320	310	300	295	B	B	B	B	A	125	A	A
3	A	A	A	A	A	A	A	A	250	A	300	A	325	305	300	290	275	A	A	A	150	A	A	A
4	A	A	A	A	A	A	170	225	A	A	295	A	A	A	A	A	280	250	A	180	A	A	A	A
5	A	A	A	A	B	A	B	A	A	270	A	A	A	A	A	280	270	B	210	A	A	A	A	120
6	A	A	A	A	A	A	A	A	A	A	B	B	300	290	205	A	B	B	A	A	A	A	A	A
7	A	A	A	A	A	A	B	B	B	A	B	A	320	315	B	290	265	230	B	B	A	A	A	A
8	A	A	A	A	A	A	A	A	B	A	290	295	300	B	B	285	B	B	B	B	A	A	A	A
9	A	A	A	A	A	A	B	B	A	B	B	A	B	B	B	280	260	240	A	A	A	A	A	A
10	A	A	A	A	A	A	A	A	A	A	A	295	300	B	B	B	B	265	225	185	A	A	A	A
11	A	A	A	A	A	A	A	A	A	A	B	A	B	B	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13		C	C	C	C	C	C	C	C	C	C	C	300	290	280	275	B	B	B	170	120	A	A	
14		A	A	A	A	A	A	A	A	290	300	305	295	300	280	275	B	B	A	180	150	A	A	
15		A	A	A	A	A	B	B	A	A	B	B	B	B	B	B	B	270	A	A	A	A	A	
16		A	B	A	A	A	A	A	B	B	320	B	325	B	B	B	B	B	A	B	A	A	B	
17			A	A	A	B	A	A	A	B	B	300	305	300	320	280	255	220	B	175	A	A		
18			B	A	A	A	A	B	B	A	B	310	B	B	B	B	B	B	A	185	140	A		
19			A	A	A	A	A	280	A	A	280	B	B	B	B	280	270	250	A	A	A	A		
20			B	A	A	A	A	A	300	A	B	B	B	B	B	280	265	240	210	150	A	A		
21			A	A	A	B	B	A	A	A	B	B	B	B	B	280	B	B	B	B	B	110		
22			A	A	A	B	B	B	A	275	R	B	B	B	B	B	B	B	B	B	B	A		
23				B	B	B	A	240	R	280	300	310	320	300	295	280	260	230	200	A	A			
24				A	B	A	A	A	A	A	280	280	315	300	A	A	A	210	A	A	C			
25				C	C	A	A	R	A	B	B	A	300	A	300	280	250	180	160	A	A			
26				A	A	B	250	R	A	260	280	290	310	300	280	275	B	B	200	B	B			
27					B	A	A	A	A	300	295	280	B	B	B	B	245	235	170	A				
28					A	A	A	A	A	A	B	300	290	285	265	260	240	215	170	A				
29					A	A	A	R	R	B	B	B	300	B	B	255	210	200	A	A				
30					A	B	B	A	B	A	A	R	B	B	B	B	B	B	B	B				
31					B	B	B	B	B	B	B	285	B	275	B	B	B	A	B	A	130			
CNT							2	4	2	8	12	13	17	12	11	18	14	15	9	8	6	2	1	
MED							210	245	260	285	298	295	305	300	295	280	262	235	200	178	140	118	120	
UQ							265		295	300	305	320	302	300	285	270	250	210	182	150				
LQ							232		272	285	290	300	290	280	275	250	218	170	165	130				

MAR. 1969

FOE (0.01 MHZ)

# IONOSPHERIC DATA

MAR. 1969

FOES (0.1 MHz)

45 E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. **69 00.4 S** Long. **39 35.4 E** Sweep **0.4 MHz to 15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	J X 20	J X 54	J X 35	B	J X 32	E B 33	30	G	G	G	G	G	G	33	38	G	G	G	G	G	G	J X 38	C	J X 41	
2	C	J X 30	J X 44	J X 43	C	B	B	B	B	34	34	34	34	G	G	G	E B 32	E B 30	E B 27	E B 20	21	G	J X 25	J X 24	
3	J X 23	J X 27	J X 26	J X 24	J X 22	J X 29	22	J X 27	31	29	36	31	38	38	33	35	34	31	J X 28	J X 22	24	J X 42	J X 20	20	
4	J X 22	18	J X 29	J X 23	18	15	18	29	31	34	36	105	J X 46	J X 36	J X 34	J X 39	G	29	J X 30	J X 28	J X 35	J X 35	J X 29	J X 52	
5	J X 36	J X 50	J X 42	J X 34	J X 42	J X 39	36	J X 37	31	J X 34	G	J X 42	J X 33	J X 48	J X 31	36	G	E B 27	G	24	J X 25	J X 30	J X 26	J X 24	
6	J X 24	J X 31	J X 65	J X 44	J X 51	J X 42	J X 51	J X 65	J X 62	J X 32	E B 50	E B 49	G	G	G	30	E B 45	E B 26	27	20	J X 38	J X 37	18	J X 27	
7	J X 41	J X 32	J X 43	J X 32	J X 25	J X 24	J X 47	B	B	J X 47	B	36	G	G	E B 31	G	G	G	E B 23	E B 25	20	J X 88	J X 88	J X 100	
8	J X 39	J X 43	J X 30	J X 40	J X 52	J X 40	J X 37	J X 37	B	J X 31	G	G	G	B	E B 33	30	B	E B 26	E B 25	E B 22	21	15	J X 26	J X 37	
9	J X 29	J X 39	J X 53	J X 40	J X 41	J X 48	J X 52	B	J X 49	E B 51	E B 33	37	E B 34	E B 51	E B 33	G	G	30	25	J X 29	17	J X 30	31	J X 29	
10	J X 25	27	28	30	J X 41	J X 37	J X 39	J X 52	J X 42	32	36	G	G	B	E B 50	E B 30	E B 28	G	G	G	16	J X 22	J X 23	23	
11	J X 24	J X 30	J X 26	J X 25	J X 22	J X 41	J X 62	J X 35	J X 42	J X 42	B	35	E B 52	E B 46	C	C	C	C	C	C	C	C	C	C	
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
13	C	C	C	C	C	C	C	C	C	C	C	C	G	G	30	G	E B 50	E B 25	E B 23	G	G	12	18	E B 13	
14	J X 25	43	J X 33	J X 39	J X 40	J X 41	J X 45	J X 36	J X 43	G	33	G	33	G	G	G	E B 27	E B 24	24	G	J X 25	J X 26	22		
15	J X 85	J X 42	J X 39	J X 50	J X 42	J X 58	B	B	J X 41	35	B	B	B	E B 35	E B 57	E B 57	E B 51	G	J X 38	J X 32	J X 34	J X 51	J X 62	J X 65	
16	J X 61	J X 45	J X 49	J X 46	J X 36	J X 40	J X 34	J X 42	B	B	G	B	G	B	B	B	E B 29	E B 28	26	E B 23	J X 21	21	J X 52	J X 20	
17	J X 22	J X 22	J X 33	J X 65	J X 52	B	J X 46	J X 47	27	B	B	31	G	G	G	G	28	30	E B 41	22	J X 66	J X 47	J X 31	J X 52	
18	J X 47	J X 39	J X 42	24	J X 29	J X 68	44	E B 43	E B 39	J X 33	B	G	E B 35	E B 50	B	E B 57	E B 32	E B 27	22	G	17	19	C	C	
19	J X 31	J X 41	J X 88	J X 38	J X 25	J X 102	J X 48	G	27	28	30	E B 63	E B 55	E B 48	E B 35	G	G	G	22	J X 25	J X 37	14	14	J X 41	
20	J X 40	J X 72	J X 111	J X 79	J X 44	J X 28	J X 29	J X 41	J X 41	J X 39	J X 44	B	E B 33	E B 37	E B 31	G	G	20	24	G	J X 40	J X 85	J X 39	J X 40	
21	J X 36	J X 62	J X 48	J X 39	27	J X 52	34	J X 42	J X 34	J X 43	B	B	B	B	B	G	E B 50	E B 33	E B 25	E B 22	E B 20	G	19	31	
22	J X 37	J X 32	J X 35	J X 38	J X 32	43	J X 44	B	J X 42	G	G	E B 34	E B 50	E B 54	E B 52	E B 35	E B 51	E B 66	E B 33	E B 33	20	J X 19	J X 27	J X 52	
23	J X 36	J X 32	J X 38	J X 36	J X 25	J X 30	J X 32	27	G	G	G	G	G	G	G	G	G	G	G	17	36	38	J X 51	J X 62	
24	J X 58	J X 86	J X 62	J X 128	B	J X 52	J X 41	J X 49	27	J X 69	29	G	G	G	J X 37	J X 33	32	J X 65	J X 36	J X 29	C	C	C	C	
25	C	C	C	C	C	J X 24	24	G	24	E B 41	E B 34	30	G	J X 34	G	G	G	27	J X 21	J X 35	J X 25	J X 23	J X 36	J X 31	
26	J X 45	J X 62	J X 31	J X 44	J X 32	E B 44	33	G	31	29	G	G	G	G	G	G	E B 52	E B 32	G	E B 32	E B 13	C	E B 14	17	
27	22	J X 46	J X 47	J X 45	B	J X 32	J X 41	J X 32	36	J X 40	G	G	E B 37	E B 49	E B 43	E B 50	G	G	G	J X 22	G	J X 24	E B 16	C	
28	J X 21	18	J X 26	J X 25	J X 29	J X 40	J X 37	J X 35	28	28	E B 36	G	G	G	G	G	G	G	20	25	J X 27	17	E B 21	E B 17	
29	J X 27	J X 26	J X 27	J X 22	J X 24	18	17	G	G	E B 28	E B 31	E B 47	G	E B 28	E B 29	G	25	G	17	J X 28	J X 29	J X 27	J X 36	J X 33	
30	J X 32	J X 62	B	B	J X 30	B	32	J X 31	E B 37	31	31	G	E B 57	E B 48	E B 35	E B 33	E B 25	E B 21	E B 19	E B 20	E B 13	J X 36	J X 65	J X 34	
31	J X 25	J X 47	J X 46	J X 47	E B 29	J X 47	B	E B 50	E B 34	E B 30	E B 29	G	E B 30	G	E B 37	E B 50	E B 28	31	E B 22	15	G	J X 35	18	J X 42	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	27	28	27	26	25	26	26	24	25	27	23	25	28	26	26	28	28	29	29	29	29	28	27	26	26
MED	J X 31	J X 40	J X 39	J X 39	J X 32	J X 40	J X 37	J X 35	32	32	E G 31	E G 30	E G 30	E G 34	E G 32	G	E G 28	E G 26	E G 23	U 18	21	J X 27	J X 26	J X 32	
UQ	J X 40	J X 48	J X 48	J X 45	J X 41	J X 47	J X 45	J X 42	J X 41	J X 37	34	34	E B 36	E B 48	E B 37	E B 35	E B 33	E B 30	26	J X 26	J X 32	J X 38	J X 36	J X 42	
LQ	J X 24	J X 30	J X 30	J X 30	J X 25	J X 30	32	27	27	28	G	G	G	G	G	G	G	G	E G 19	E G 17	E G 14	19	18	23	

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FOES (0.1 MHz)

# IONOSPHERIC DATA

MAR. 1969

F-MIN (0.1 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69° 00.4' S. Long. 39° 35.4' E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	E	C	C	B	14	33	22	22	19	15	15	16	22	22	22	15	15	14	13	10	12	14	C	11		
2	C	12	10	9	C	B	B	B	B	12	14	14	14	14	15	20	32	30	27	20	14	10	7	10		
3	8	6	6	10	10	10	14	14	10	13	13	15	10	10	12	11	11	10	11	22	5	E	6	10		
4	15	8	6	5	E	9	6	6	9	10	10	12	11	14	13	11	12	10	13	10	E	6	E	7		
5	14	5	6	E	27	9	20	11	10	10	13	13	12	11	11	11	13	27	10	11	10	8	E	6		
6	5	9	13	15	18	14	14	10	11	16	50	49	18	16	21	18	45	26	11	14	10	5	12	8		
7	13	20	14	9	9	18	27	B	B	14	B	20	22	21	31	19	13	10	23	25	7	11	11	6		
8	19	10	7	13	14	13	12	10	B	15	14	14	14	B	33	19	B	26	25	22	13	9	8	E		
9	10	11	13	11	20	21	22	B	21	51	33	30	34	51	33	22	14	10	15	19	13	7	E	15		
10	12	11	11	10	10	13	15	20	15	15	10	15	12	B	50	30	28	22	20	15	14	13	E	E		
11	E	E	6	8	9	14	20	15	13	11	B	21	52	46	C	C	C	C	C	C	C	C	C	C		
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
13	C	C	C	C	C	C	C	C	C	C	C	C	18	16	11	11	50	25	23	15	9	9	10	13		
14	7	18	23	13	16	18	20	18	17	14	14	15	12	15	17	23	27	24	11	10	12	10	5	9		
15	16	13	14	18	18	15	B	B	15	24	B	B	B	35	57	57	51	24	15	11	11	13	9	13		
16	8	10	20	12	17	13	14	16	B	B	29	B	28	B	B	B	29	28	22	23	14	12	20	13		
17	9	7	8	13	15	B	16	18	17	B	B	23	13	25	23	18	15	15	41	14	13	13	10	12		
18	11	10	22	15	15	16	20	43	39	26	B	22	35	50	B	57	32	27	14	14	9	10	C	C		
19	10	13	12	12	12	14	16	12	11	11	15	63	53	48	35	19	15	13	15	9	9	10	10	17		
20	12	19	17	11	10	19	14	17	14	14	18	B	33	37	31	22	20	15	17	11	10	10	11	10		
21	9	17	10	10	20	30	26	23	28	16	B	B	B	B	B	23	50	33	25	22	20	9	8	23		
22	13	15	13	17	18	33	21	B	26	14	24	34	50	54	52	35	51	66	33	33	17	15	13	23		
23	18	21	22	19	22	23	15	20	21	18	23	26	23	21	20	18	19	20	14	10	14	15	13	14		
24	17	14	14	14	B	16	9	14	20	15	16	16	15	21	17	21	24	19	20	18	C	C	C	C		
25	C	C	C	C	C	7	10	10	14	41	34	21	26	22	24	22	14	14	12	10	10	8	8	9		
26	13	10	23	14	13	44	13	11	12	12	13	10	24	14	13	15	52	32	14	32	13	C	14	13		
27	10	32	15	14	B	14	22	13	27	14	20	14	37	49	43	50	23	14	11	10	12	13	16	C		
28	8	9	8	8	12	13	12	14	14	22	36	27	20	13	20	14	14	13	10	9	13	10	21	17		
29	12	11	10	9	10	10	10	12	16	28	31	47	23	28	29	20	9	11	6	10	11	7	8	9		
30	10	7	B	B	23	B	25	25	37	20	19	22	57	48	35	33	25	21	19	20	13	13	13	13		
31	13	19	18	25	29	27	B	50	34	30	29	25	30	24	37	50	28	21	22	13	9	11	11	13		
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
CNT	27	28	28	28	27	29	29	29	29	29	29	29	30	30	29	29	29	29	29	29	29	29	28	27	26	26
MED	12	11	13	12	15	16	16	17	17	15	23	22	23	24	29	20	24	21	15	14	12	10	10	10	12	12
UQ	14	16	18	15	20	27	22	25	28	24	36	34	35	49	37	30	32	26	22	20	13	13	13	13	13	13
LQ	9	9	9	10	11	13	14	12	14	14	14	15	14	16	17	18	14	14	12	10	10	10	8	7	9	9

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F-MIN (0.1 MHZ)

# IONOSPHERIC DATA

MAR. 1969

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE Lat. 69° 00.4' S Long. 39° 35.4' E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	270	F	A	B	F	265	F	F	245	F	245	250	275	270	275	280	305	295	305	295	285	A	C	A	
2	C	A	A	225	C	B	B	B	B	F	255	260	245	265	240	265	335	285	305	285	310	295	F	275	290
3	300	270	F	F	F	F	F	F	F	F	260	275	270	270	280	285	305	315	315	305	F	F	F	300	310
4	295	F	F	F	F	F	F	F	265	255	260	280	285	285	305	310	300	315	305	310	F	325	F	F	A
5	A	260	F	R	A	F	R	F	250	255	F	270	270	275	270	240	280	315	315	335	320	F	R	F	
6	F	R	A	A	A	A	A	A	245	235	F	245	265	250	260	290	295	F	F	310	R	R	F	285	
7	A	A	A	F	F	270	A	B	B	A	B	F	290	F	270	290	280	270	290	305	F	A	A	A	
8	A	F	F	A	A	A	A	A	B	R	240	250	255	B	275	250	B	300	315	315	320	290	F	F	
9	A	A	A	A	A	A	A	B	A	250	260	260	260	305	305	315	295	290	300	F	F	F	R	F	
10	R	R	R	F	A	F	255	255	A	210	235	245	265	290	B	320	300	315	330	320	365	330	325	325	280
11	275	F	F	260	265	A	A	R	F	F	B	F	300	300	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	280	280	280	305	325	330	330	315	325	320	F	300	
14	A	A	A	F	R	245	A	235	255	260	280	265	295	295	300	305	320	325	325	325	300	F	A	265	
15	A	A	A	A	A	265	B	B	A	R	B	B	B	265	U R	245	245	265	280	F	F	F	A	A	A
16	A	A	A	A	R	A	275	255	B	B	R	B	240	B	B	B	290	300	315	F	F	F	F	290	
17	275	F	F	F	A	A	B	R	R	250	B	B	R	240	235	275	270	260	295	290	F	A	A	R	A
18	A	A	A	F	225	A	A	255	225	235	B	F	270	270	B	R	305	320	335	325	F	F	C	C	
19	A	A	A	F	F	A	F	F	F	F	255	245	260	F	F	290	300	300	315	290	310	310	310	305	
20	F	A	A	A	R	R	215	R	255	235	F	220	B	F	250	245	265	285	290	290	290	R	A	A	A
21	R	A	A	A	R	A	R	R	R	R	B	B	B	B	B	275	290	295	295	305	F	300	295	A	
22	R	A	A	A	R	A	R	B	R	240	240	240	250	270	255	270	R	285	290	F	255	F	325	A	
23	A	A	A	F	R	F	F	F	255	260	275	265	275	290	295	300	300	290	305	300	F	A	F	A	
24	F	A	F	A	B	A	210	F	A	R	A	R	R	R	R	F	F	260	285	290	250	C	C	C	C
25	C	C	C	C	C	R	235	F	F	300	275	230	R	225	245	270	280	265	255	280	265	F	F	A	300
26	A	A	R	235	F	R	F	F	250	F	270	265	265	280	280	275	285	295	300	300	F	R	C	R	F
27	F	A	255	F	B	F	R	F	F	F	F	280	285	280	280	290	300	290	295	300	R	310	310	C	
28	275	U F	270	250	F	230	F	F	F	F	F	R	F	F	270	290	300	300	300	300	275	F	R	R	
29	A	F	A	265	F	F	F	F	275	255	280	U B	265	240	260	265	290	270	280	295	F	255	F	R	R
30	290	F	A	B	B	F	B	230	230	235	245	F	270	265	275	300	310	315	320	315	325	300	R	A	295
31	R	A	A	A	R	F	B	R	F	260	270	275	265	265	270	280	305	280	F	F	F	A	300	F	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	7	3	2	4	3	5	6	5	13	15	16	18	25	24	24	26	27	28	26	21	12	8	9	10	
MED	275	270	252	248	230	265	232	250	250	255	258	265	270	270	275	288	300	295	305	305	305	310	310	292	
UQ	292	270		262	248	265	255	255	255	260	268	270	280	282	292	300	305	315	315	315	320	322	310	300	
LQ	275	265		230	228	255	215	235	245	238	242	250	255	265	268	270	282	285	295	295	280	298	300	285	

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M(3000)F2 (0.01)

# IONOSPHERIC DATA

MAR. 1969

H<sup>o</sup>F2 (KM)

45° E Mean Time (G. M. T. + 3 h)

Station **SYOWA BASE** Lat. 69° 00' .4 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1								410	340	400	390	390	350	370	L	L	L							
2								B	B	400	440	300	425	340	315	L	L							
3								L	350	340	340	310	310	L	L									
4											335	295	L	L	L	L								
5								390	355	L	325	325	315	L		390								
6								A	500	510	450	415	365	310	L	L								
7								B	B	A	B	475	340	355	L	350	L	350						
8									B	A	585	510	490	B	420	470	B							
9								B	A	B	400	360	L	290	270	L								
10									650	510	490	450	340	B	260	L								
11									500	475	B	425	330	B	C	C	C							
12								C	C	C	C	C	C	C	C	C	C							
13								C	C	C	C	C	390	390	360	L	300							
14									450	L	L	390	325	290	295	L								
15									A	R	B	B	B	430	B	B	350							
16						420	480	B	B	R	B	B	550	B	B	B								
17							A	450	B	B	R	535	540	340	350	345								
18							B	540	605	515	B	460	455	400	B	275								
19									315		390	380	350	300										
20							A	500	500	540	B	405	405	410	L									
21								R	R	B	B	B	B	B	B	340	300							
22							B	A	400	395	455	400	340	L	290	290	300							
23									365	L		L												
24							A	R	A	R	R	R	R	R	R	475								
25									370	500	810	570	460											
26									L	L	L	L	L	L	L									
27																								
28																								
29										L	345	300												
30						500	450	430	L	350	L	350	300											
31									L	L		300	300											
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							2	5	13	10	15	17	20	17	8	8	5	2						
MED						460	450	450	438	395	390	358	340	328	350	300	325							
UQ							480	500	510	470	455	440	400	385	430	345								
LQ							410	355	400	348	325	335	300	282	315	300								

The Radio Research Laboratories, Japan

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H<sup>o</sup>F2 (KM)



# IONOSPHERIC DATA

MAR. 1969

H<sup>o</sup>F (KM)

45° E Mean Time (G. M. T. + 3 h)

Station **SYDWA BASE** Lat. **69 00 .4 S** Long. **39 35 .4 E** Sweep **0.4 MHz** to **15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	365	A	A	B	440	350	A	280	250	240	240	215	220	230	225	240	245	245	245	250	260	A	C	A
2	C	A	A	A	C	B	B	B	B	225	225	245	250	250	240	235	250	250	250	250	235	225	250	250
3	255	315	340	350	340	350	275	270	240	225	220	215	210	205	215	210	240	225	200	240	225	225	245	230
4	260	250	270	250	255	260	260	250	225	250	225	230	250	215	210	210	220	240	235	225	215	230	255	A
5	A	A	A	A	B	A	B	320	230	225	250	250	220	240	230	210	240	245	240	225	235	230	245	290
6	330	A	355	A	A	A	A	A	A	320	B	B	240	250	235	240	250	250	240	245	325	A	340	A
7	A	A	A	A	330	A	B	B	B	A	B	270	240	250	250	235	240	250	265	255	300	A	A	A
8	A	A	A	A	A	A	A	A	B	A	220	230	240	B	255	250	B	200	270	250	250	260	370	A
9	A	A	A	A	A	A	A	B	A	B	250	250	250	B	250	240	230	250	250	280	240	360	A	315
10	A	A	A	A	A	A	A	A	A	290	250	225	250	B	B	235	240	250	240	240	240	230	230	295
11	305	310	330	300	400	A	A	A	300	255	B	265	B	B	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
13	C	C	C	C	C	C	C	C	C	C	C	C	240	240	240	240	B	250	240	240	235	240	290	B
14	A	A	A	A	A	A	A	A	A	240	275	240	250	230	220	240	250	250	240	230	250	350	A	A
15	A	A	A	A	A	A	B	B	A	A	B	B	B	280	B	B	B	B	290	325	A	A	A	A
16	A	A	B	A	A	A	A	A	B	B	280	B	275	B	B	B	250	250	255	250	245	255	300	300
17	340	400	320	A	A	B	A	A	260	B	B	250	250	275	275	250	280	225	B	255	A	A	A	A
18	A	A	A	425	A	A	A	B	B	A	B	250	290	B	B	B	205	225	280	290	220	305	C	C
19	A	A	A	A	A	A	A	330	255	245	250	B	B	B	250	250	250	240	240	220	225	240	250	260
20	250	A	A	A	A	A	A	A	A	300	A	B	290	275	250	250	250	250	255	260	A	A	A	A
21	A	A	A	A	A	B	B	A	A	A	B	B	B	B	B	250	B	280	255	250	265	250	300	B
22	A	A	A	A	A	B	B	B	A	250	255	255	B	B	B	260	B	B	270	270	A	365	290	A
23	A	A	A	A	A	410	410	350	300	265	260	240	250	250	230	225	225	220	245	230	A	A	A	A
24	A	A	A	A	B	A	630	A	A	A	305	275	R	R	250	325	300	305	300	365	C	C	C	C
25	C	C	C	C	C	A	500	275	255	B	B	250	265	300	250	250	250	290	250	260	290	A	A	A
26	A	A	A	A	350	400	340	280	255	210	250	250	250	250	240	250	250	240	240	250	255	C	300	350
27	A	B	A	A	B	A	A	A	B	250	230	240	245	250	255	250	225	220	205	215	230	240	250	C
28	300	325	390	A	A	440	390	350	275	260	280	250	240	240	240	245	235	225	240	240	260	260	290	320
29	345	A	A	A	370	375	330	270	275	250	250	B	250	250	250	245	245	225	240	290	340	A	A	A
30	240	A	B	B	A	B	B	A	B	300	255	250	B	B	250	245	240	230	240	235	240	A	A	A
31	A	A	B	B	B	B	B	B	B	285	260	250	250	240	275	B	240	250	250	240	250	A	350	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	5	6	4	7	7	8	10	12	19	20	22	23	19	23	25	24	28	28	28	23	16	16	9
MED	302	315	335	325	350	375	365	280	255	250	250	250	250	250	250	245	242	248	245	250	245	245	290	295
UQ	340	325	355	388	385	405	455	330	275	275	260	250	250	250	250	250	250	250	255	258	260	282	300	315
LQ	255	310	320	275	335	350	302	270	245	240	235	240	240	240	232	235	238	225	240	238	235	230	250	260

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H<sup>o</sup>F (KM)

IONOSPHERIC DATA

MAR. 1969

H<sup>+</sup>ES (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	150	125	100	B	100	B	125	G	G	G	G	G	G	115	100	G	G	G	G	G	G	100	C	110	
2	C	100	100	100	C	B	B	B	B	115	170	150	140	G	G	G	B	B	B	B	125	G	100	100	
3	100	100	100	105	100	100	130	100	125	105	125	110	115	100	120	130	120	100	100	100	100	100	100	100	
4	105	105	100	100	100	105	140	140	125	100	125	100	100	100	100	100	G	100	100	100	100	100	100	100	
5	100	100	100	100	130	100	125	100	100	100	G	115	100	100	100	125	G	B	G	150	100	100	100	100	
6	100	100	110	100	100	105	100	100	100	100	B	B	G	G	G	110	B	B	100	100	130	100	150	100	
7	125	125	105	100	100	100	100	B	B	100	B	100	G	G	B	G	G	G	B	B	100	100	100	100	
8	110	100	100	100	100	100	100	100	B	100	G	G	G	B	B	115	B	B	B	B	140	140	105	100	
9	110	105	100	100	100	100	115	B	100	B	B	150	B	B	B	G	G	160	150	105	150	105	100	105	
10	130	100	105	100	100	105	115	100	100	105	100	G	G	B	B	B	B	G	G	G	125	140	100	100	
11	100	100	100	105	105	100	100	100	100	100	B	100	B	B	C	C	C	C	C	C	C	C	C	C	
12	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
13	C	C	C	C	C	C	C	C	C	C	C	C	C	G	G	105	G	B	B	B	G	G	140	175	B
14	105	105	110	110	105	105	100	100	105	G	140	G	170	G	G	G	B	B	100	G	G	110	100	140	
15	100	110	100	100	100	125	B	B	110	105	B	B	B	B	B	B	B	G	140	110	110	105	100	105	
16	110	120	100	100	110	110	120	110	B	B	G	B	G	B	B	B	B	B	160	B	150	150	100	115	
17	110	100	115	100	100	B	100	100	120	B	B	160	G	G	G	G	180	145	B	155	120	115	100	110	
18	100	100	155	150	120	105	105	B	B	105	B	G	B	B	B	B	B	B	100	G	100	100	C	C	
19	110	120	100	110	120	105	105	G	100	100	180	B	B	B	B	G	G	G	100	100	100	100	100	110	
20	125	105	100	100	105	110	105	110	105	105	105	B	B	B	B	G	G	155	150	G	110	140	100	100	
21	100	105	110	105	125	120	120	100	100	100	B	B	B	B	B	B	B	B	B	B	B	G	150	150	
22	110	100	100	100	120	120	110	B	105	G	G	B	B	B	B	B	B	B	B	B	100	150	125	150	
23	105	115	105	125	100	140	120	150	G	G	G	G	G	G	G	G	G	G	G	100	120	100	125	110	
24	110	120	175	120	B	125	110	100	105	125	110	G	G	G	115	120	125	130	120	130	C	C	C	C	
25	C	C	C	C	C	105	115	G	150	B	B	120	G	110	G	G	G	160	145	125	120	105	110	115	
26	110	100	100	100	115	B	150	G	100	100	G	G	G	G	G	G	B	B	G	B	B	C	B	140	
27	110	120	100	105	B	120	120	105	125	120	G	G	B	B	B	B	G	G	G	100	G	100	B	C	
28	100	100	100	105	125	120	120	110	125	130	B	G	G	G	G	G	G	G	100	125	100	140	B	B	
29	125	115	110	105	100	125	125	G	G	B	B	B	G	B	B	G	165	G	150	140	120	115	115	105	
30	115	130	B	B	140	B	140	130	B	150	125	G	B	B	B	B	B	B	B	B	B	105	130	120	
31	115	110	105	115	B	140	B	B	B	B	B	G	B	G	B	B	B	130	B	150	G	105	120	110	
CNT	27	28	27	26	24	24	26	17	19	19	9	9	5	5	6	6	4	8	14	15	20	25	23	24	
MED	110	105	100	100	102	105	115	100	105	105	125	115	115	100	102	118	145	138	110	110	115	105	100	108	
UQ	112	118	108	105	120	120	125	110	122	110	140	150	140	110	115	125	172	158	150	135	125	140	122	115	
LQ	100	100	100	100	100	102	105	100	100	100	110	100	100	100	100	110	122	115	100	100	100	100	100	100	

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H<sup>+</sup>ES (KM)

# IONOSPHERIC DATA

APR. 1969

FOF2 (0.1 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. 69° 00' .4 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	F	A	A	F	J <sub>29</sub> F	F <sub>28</sub>	F	B	B	53	F <sub>67</sub>	66	74	82	89	94	100	F	83	71	R	A	A	B	
2	R	R	A	R	F	F	F	R	53	F	F	81	86	88	89	88	91	93	75	F	A	A	A	A	
3	B	A	F	A	A	B	34	B	R	R	63	69	76	81	83	91	93	99	85	F	R	R	A	A	
4	R	R	A	B	B	A	B	B	B	B	70	J <sub>88</sub> F	75	76	85	91	B	B	B	74	F	R	A	R	
5	B	A	R	B	A	A	J <sub>48</sub> F	45	52	53	B	B	R	86	R	U <sub>101</sub> R	F	F	F	73	F	R	F	F <sub>24</sub>	
6	R	R	R	B	A	A	A	B	A	53	59	63	B	F	98	91	90	90	80	64	51	F <sub>30</sub>	R	A	
7	A	30	A	F	R	A	A	A	A	B	B	B	B	65	66	70	83	F	90	F	R	A	36	A	
8	A	R	A	A	B	A	A	A	52	F	60	64	74	75	82	82	76	75	72	F	45	32	20	A	
9	A	A	A	F <sub>29</sub>	F <sub>37</sub>	F <sub>35</sub>	F <sub>40</sub>	A	B	B	B	68	F <sub>79</sub>	F <sub>81</sub>	89	F	F	F	F	A	A	A	A	A	
10	A	A	A	A	A	F <sub>37</sub>	F <sub>40</sub>	F	F	41	B	R	74	85	105	105	105	95	J <sub>91</sub> R	76	R	A	A	A	
11	A	A	A	F	A	A	A	F	R	61	63	67	R	F	F	J <sub>104</sub> R	R	F	F	F	F	45	33	28	
12	31	31	30	26	R	23	26	B	B	52	69	91	107	103	108	91	100	B	75	B	B	B	B	B	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F	R	R	R	F	R	46	B	A	B	
16	B	A	A	A	B	B	A	A	B	B	B	B	R	104	113	114	127	J <sub>127</sub> R	F	F	R	R	40	B	
17	B	A	A	B	B	B	F	A	B	B	B	B	B	B	B	96	101	U <sub>96</sub> R	R	B	32	A	A	A	
18	A	A	A	A	B	B	B	B	A	B	B	B	53	63	71	86	85	74	70	R	35	B	20	R	
19	A	A	A	A	A	B	F	F	J <sub>55</sub> F	61	69	77	90	96	105	103	98	91	78	61	39	32	21	A	
20	A	A	A	A	A	A	43	F	F	60	66	76	90	95	105	100	96	89	F <sub>71</sub>	F	R	F	A	A	
21	A	A	39	B	A	K	F	F	F	F	75	J <sub>85</sub> B	95	107	107	108	101	84	F <sub>72</sub>	54	41	24	18	16	
22	F <sub>17</sub>	F <sub>23</sub>	F	A	A	A	F	F	F	72	49	J <sub>83</sub> F	82	91	102	106	128	120	91	F	F	F	F <sub>22</sub>	F <sub>20</sub>	
23	F <sub>22</sub>	U <sub>32</sub> R	F <sub>34</sub>	F <sub>25</sub>	33	A	41	F	F	J <sub>57</sub> F	J <sub>67</sub> F	F	F	109	109	111	J <sub>101</sub> R	96	J <sub>100</sub> R	R	R	22	17	F <sub>17</sub>	
24	R	A	A	A	F	A	A	58	64	J <sub>61</sub> R	U <sub>70</sub> R	91	87	91	93	93	90	89	71	57	41	F <sub>26</sub>	22	F <sub>25</sub>	
25	F <sub>21</sub>	F	F	A	B	A	F	F	F	F	B	F	90	95	97	96	U <sub>102</sub> R	J <sub>96</sub> R	J <sub>86</sub> R	83	F	B	B	19	
26	R	24	A	A	F	A	B	F	F	F	80	96	96	111	105	94	R	94	R	F	J <sub>54</sub> R	F	19	A	
27	A	A	A	F	F	B	A	62	F <sub>68</sub>	B	74	F <sub>86</sub>	F	110	105	112	112	102	93	96	F	F	20	A	
28	A	A	A	A	F	B	A	F	F	A	B	F	B	F	F <sub>76</sub>	F	F	F <sub>86</sub>	F	F	40	B	R	A	A
29	A	B	A	A	34	A	A	R	R	R	R	R	R	R	R	R	R	R	R	R	R	B	A	A	A
30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	A	A	A
31																									
CNT	4	5	4	3	4	4	7	3	6	11	15	16	16	21	22	23	20	17	17	11	9	7	12	7	
MED	F <sub>22</sub>	30	32	F <sub>26</sub>	34	F <sub>32</sub>	40	58	54	57	67	79	84	91	98	96	99	94	80	71	41	30	20	F <sub>26</sub>	
UQ	26	31	36	28	36	F <sub>36</sub>	42	60	F <sub>64</sub>	61	70	87	90	103	105	104	102	96	90	75	46	32	28	F <sub>24</sub>	
LQ	F <sub>19</sub>	F <sub>24</sub>	28	26	31	26	37	52	52	53	63	68	74	81	85	91	90	89	72	59	39	25	20	18	

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APR. 1969

FOF2 (0.1 MHZ)

IONOSPHERIC DATA

APR. 1969

FOF1 (0.01 MHZ)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE Lat. 69° 00' .4 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									370		L	B	B	L										
2									L		L	L	L	L										
3											L	L	B	L										
4												B	L	B	B	B								
5												B	B	B	B									
6												L	L	B										
7										B	B	B	B											
8											L	L	L	L	L									
9										B	B	B												
10											B													
11										L	L		B	B										
12												B	B	B	B									
13										B	B	B	B	B	B	B								
14										B	B	B	B	B	B	B								
15										B	B	B	B	B										
16										B	B	B												
17											B	B	B	B	B	B								
18											B	B												
19																								
20																								
21																								
22																								
23																								
24																								
25												B												
26																								
27																								
28												B		B										
29																								
30												B	B	B	B	B								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										1														
MED										370														
UQ																								
LQ																								

APR. 1969

FOF1 (0.01 MHZ)

# IONOSPHERIC DATA

APR. 1969

FOE (0.01 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. **69° 00' .4 S** Long. **39° 35' .4 E** Sweep **0.4 MHz** to **15 MHz** in **30 sec** in **automatic operation**

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1					A	190	A	B	B	B	R	B	B	B	B	B	B	B	B	A	A				
2					A	A	A	A	A	A	240	245	275	260	B	240	220	B	B	A	A				
3					B	B	A	B	A	A	250	B	B	B	B	250	B	B	B	B	A				
4					B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B			
5					B	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B			
6					B	B	A	B	A	B	280	B	B	B	250	240	210	180	A	A	A				
7					B	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B			
8					B	B	A	A	A	R	240	B	260	250	240	B	B	B	B	B	B				
9					B	A	A	A	B	B	B	B	B	270	B	240	220	A	A	A	B				
10					B	A	A	A	A	B	B	B	B	B	A	240	B	170	A	B	B				
11					A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B				
12					A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
13					B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
14					B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
15					B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
16					B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
17					B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
18					B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B				
19					B	A	150	B	B	R	250	240	235	230	205	B	A	A	B						
20					B	A	A	175	200	205	225	B	B	A	B	B	B	B	A						
21					B	A	A	175	R	R	220	A	230	A	A	R	B	B	A						
22					A	A	A	195	200	180	220	250	240	200	A	160	B	A	B						
23					A	A	A	140	180	200	B	250	240	220	200	180	B	B	B						
24					A	A	A	A	B	B	A	A	225	215	210	R	A	A	A						
25						A	A	R	B	B	B	230	225	220	A	B	B	A							
26						B	A	150	180	190	210	220	A	190	A	150	B	B							
27						A	B	B	B	B	B	240	225	B	B	B	B	B							
28						B	A	A	B	B	A	B	B	A	B	A	A	A							
29						A	150	A	B	B	B	B	A	B	B	B	B	B							
30						B	B	B	B	B	B	B	B	B	B	B	B	A							
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT						1		2	5	4	8	6	8	10	8	8	6	2							
MED						190		150	175	190	222	222	245	238	220	240	195	175							
UQ									175	200	245	245	255	250	235	240	220								
LQ									150	180	195	220	235	225	208	208	160								

APR. 1969

FOE (0.01 MHZ)

IONOSPHERIC DATA

APR. 1969

FOES (0.1 MHz)

45 E Mean Time (G. M. T. + 3 h)

Station 5Y0WA BASE Lat. 69 00 4 S Long. 39 35 4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	JX36	JX38	JX52	JX50	22	24	JX23	B	B	E37	G	E47	E49	E37	E48	E51	E38	E36	E28	15	JX32	33	JX84	B	
2	JX37	JX43	JX88	JX42	JX22	JX32	JX21	37	JX26	30	28	31	G	G	E27	G	G	E21	E33	15	JX84	JX88	JX51	JX84	
3	B	JX35	JX42	JX67	JX51	B	JX32	B	JX38	JX33	27	E33	E44	E28	E34	G	E37	E26	E16	E14	JX22	17	JX62	33	
4	JX40	JX30	JX42	B	B	JX50	B	B	B	B	E56	E28	E51	E50	E48	E37	B	B	B	E31	E26	E27	JX39	JX27	
5	B	JX36	30	B	JX41	JX38	JX22	JX22	29	E35	B	B	E58	E51	E54	E52	E37	E30	E33	E29	E11	24	16	18	
6	31	31	32	B	JX40	JX37	JX48	B	JX46	E41	G	E36	B	E35	G	G	G	G	JX24	JX22	14	16	JX31	JX48	
7	JX42	JX87	JX40	JX26	JX36	JX39	JX47	JX55	JX66	B	B	B	B	E37	E56	E50	E38	E45	E28	E29	18	JX35	JX61	JX35	
8	31	29	35	JX42	B	JX32	JX52	JX48	JX30	G	G	E27	G	G	G	E29	E21	E44	E31	E15	E14	E14	E13	JX25	
9	JX69	JX39	JX42	JX34	JX37	JX34	JX42	JX47	B	B	B	E51	E29	G	E28	G	24	24	JX32	JX46	JX71	JX53	JX52	JX65	
10	JX36	JX54	32	JX28	JX64	JX26	JX22	JX23	19	E33	B	E51	E51	E44	25	G	E27	G	17	E14	26	JX29	JX40	JX41	
11	JX20	JX38	JX42	JX45	JX55	JX43	JX51	33	40	JX29	JX38	E39	E63	E32	E37	E58	E61	E30	E28	E18	24	E22	18	JX23	
12	JX31	JX22	JX23	JX30	JX27	JX21	E14	B	B	E39	E51	E73	E94	E93	E103	E73	E90	B	E57	B	B	B	B	B	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E87	E90	E37	E87	E53	E59	E33	B	JX27	B	
16	B	JX51	JX41	JX53	B	B	JX39	JX47	B	B	B	B	B	E62	E57	E57	E62	E83	E49	E24	E24	JX32	JX30	JX34	B
17	B	JX41	38	B	B	B	JX30	JX39	B	B	B	B	B	B	B	E48	E47	E52	26	B	JX16	JX67	JX81	42	
18	JX29	JX47	JX62	24	B	B	B	B	JX39	B	B	B	B	E35	E33	E41	E49	E50	E57	E45	E35	E22	B	E14	29
19	JX29	40	JX42	JX38	JX39	B	JX24	G	E16	E22	G	G	G	G	25	G	E22	20	17	E14	E11	16	JX27	JX25	
20	JX36	JX43	JX48	JX41	JX47	JX41	JX42	25	G	G	24	G	E27	E26	25	E22	E19	E14	E11	15	JX21	E9	JX27	JX77	
21	JX84	JX52	JX71	B	42	JX40	JX38	JX31	G	G	G	24	26	25	27	27	G	E13	E13	17	E10	E9	E9	E9	
22	17	JX24	JX65	JX51	JX51	JX51	JX32	26	G	G	25	25	G	29	G	24	G	E13	17	E14	E12	17	17	JX40	
23	17	24	JX26	JX29	JX37	JX45	JX36	JX26	18	G	JX55	E24	G	G	25	21	JX22	E26	E26	19	E18	JX23	24	JX37	
24	JX29	JX32	JX41	JX39	JX40	D	JX47	JX48	JX42	E51	E51	25	JX27	24	G	G	G	17	JX37	23	17	12	11	JX21	
25	JX26	JX31	JX29	42	B	JX46	JX36	21	G	E20	B	E34	G	23	G	20	E18	E28	JX34	E18	E22	B	B	E13	
26	JX30	JX27	JX37	JX65	JX34	JX37	B	24	G	G	23	23	JX31	28	22	22	G	E12	E11	E10	12	E10	JX26	JX32	
27	JX62	JX124	JX42	JX40	JX52	B	JX47	JX42	E35	B	E38	E31	26	G	E22	E34	E20	E13	E23	E29	E21	E16	18	JX26	
28	JX22	JX28	33	JX36	33	B	JX40	JX48	JX42	JX65	B	31	B	E38	28	E21	28	JX60	JX51	JX45	B	28	JX21	30	
29	28	B	30	30	27	JX26	23	G	16	E22	E23	E33	E23	23	E23	E23	E23	E22	E14	E14	B	17	JX34	JX46	
30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	JX35	B	B	JX26	JX37	JX25	
31																									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	22	25	26	21	20	19	23	20	20	19	17	21	22	25	26	27	26	25	27	25	24	24	26	24	
MED	JX31	JX38	JX41	JX40	JX40	JX38	JX36	JX32	U25	E29	E25	E31	E28	E28	E27	E24	E24	E26	E26	E18	U18	U20	JX27	JX31	
UQ	JX37	JX43	JX42	JX45	JX49	JX44	JX44	JX47	JX40	E36	U32	E36	E51	E44	E48	E50	E47	E44	E34	E27	U27	JX30	JX40	JX42	
LQ	JX28	JX30	32	JX30	JX34	JX32	JX24	24	E16	G	G	E25	G	E23	E20	E20	E18	E14	E17	E15	E14	U14	18	JX25	

APR. 1969

FOES (0.1 MHz)

# IONOSPHERIC DATA

APR. 1969

F-MIN (0.1 MHz)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE    Lat. 69 00 4 S    Long. 39 35 4 E    Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	12	14	13	13	11	12	10	B	B	37	24	47	49	37	48	51	38	36	20	13	10	11	31	B	
2	13	22	12	12	10	10	12	17	16	22	22	22	23	22	27	20	19	21	33	10	10	12	12	23	
3	B	15	14	32	16	B	18	B	23	26	22	33	44	28	34	15	57	26	16	14	8	11	14	23	
4	24	23	22	B	B	23	B	B	B	B	56	28	51	50	48	37	B	B	B	31	26	27	9	19	
5	B	14	20	B	23	22	13	13	46	35	B	B	58	51	54	52	37	31	37	27	11	15	10	10	
6	12	15	20	B	22	22	20	B	14	41	24	36	B	35	21	21	15	11	8	7	9	11	10	10	
7	24	10	27	13	23	19	16	32	27	B	B	B	B	57	56	50	38	45	28	27	14	10	13	15	
8	14	26	14	12	B	31	19	20	18	18	13	27	19	17	21	29	21	44	31	15	14	14	13	9	
9	19	22	13	12	15	13	13	15	B	B	B	51	29	23	28	21	18	14	14	11	13	12	11	24	
10	22	14	16	22	10	15	10	10	13	33	B	51	51	44	15	13	27	14	12	14	10	23	11	13	
11	12	12	13	9	14	13	12	13	13	18	21	39	63	52	37	58	61	30	38	18	18	22	14	13	
12	13	12	11	12	13	12	14	B	B	39	51	73	94	93	103	73	90	B	57	B	B	B	B	B	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	87	96	97	87	53	59	33	B	21	B	
16	B	23	33	27	B	B	25	35	B	B	B	B	62	57	57	62	83	49	24	24	23	23	22	B	
17	B	34	28	B	B	B	21	23	B	B	B	B	B	B	B	48	47	52	20	B	14	15	15	16	
18	17	15	30	13	B	B	B	B	26	B	B	B	35	33	41	49	50	57	45	35	22	B	14	10	
19	10	16	25	25	28	B	12	13	16	22	18	20	18	18	13	13	22	13	13	14	11	9	9	9	
20	11	13	13	25	20	24	13	12	13	17	17	20	27	26	23	22	19	14	11	10	9	9	9	12	
21	12	11	14	B	33	23	13	10	12	15	14	16	19	17	15	14	13	13	13	10	10	9	9	9	
22	8	10	13	14	17	14	10	11	10	12	13	10	10	15	13	13	13	13	10	14	12	9	10	12	
23	13	11	9	6	10	14	11	10	9	9	16	24	21	21	15	14	7	26	26	14	18	13	12	9	
24	9	10	10	10	9	15	13	14	14	51	51	13	10	14	14	14	13	11	9	10	9	9	9	9	
25	9	9	10	22	B	13	13	11	10	20	B	34	18	14	16	13	18	28	11	18	22	B	B	13	
26	9	8	12	13	12	22	B	13	13	13	15	14	14	14	17	14	10	12	11	10	9	10	10	10	
27	13	11	11	13	13	B	14	33	35	B	38	31	14	14	22	34	20	13	23	29	21	16	11	19	
28	13	11	13	12	14	B	24	17	15	32	B	18	B	38	15	21	20	10	6	19	B	15	12	13	
29	13	B	22	23	13	14	10	11	10	22	23	33	23	21	23	23	23	22	14	14	B	10	14	14	
30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	12	B	B	14	14	12	
31																									
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	
MED	13	14	14	22	21	22	14	18	20	36	51	35	46	34	28	26	25	27	20	16	14	14	12	13	
UQ	B	23	27	B	B	B	25	B	B	B	B	B	B	57	56	52	61	52	37	31	26	23	15	23	
LQ	12	11	13	12	13	14	12	13	13	20	21	22	19	18	16	14	18	13	12	13	10	10	10	10	

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APR. 1969

F-MIN (0.1 MHz)

IONOSPHERIC DATA

APR. 1969

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00 4 S Long. 39 35 4 E Sweep 0.4MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	F	A	A	F	F	250 <sup>E</sup>	F	B	B	215	235 <sup>E</sup>	285	270	260	270	280	275	F	325	315	R	A	A	B	
2	R	R	A	R	F	F	F	R		230	F	F	270	265	275	270	285	295	290	305	F	A	A	A	
3	B	A	F	A	A	B	230	B	R	R	245	245	260	275	265	285	295	320	320	F	R	R	A	A	
4	R	R	A	B	B	A	B	B	B	B	250	F	275	265	270	265	B	B	B	310	F	R	A	R	
5	B	A	R	B	A	A	F	245	250	285	B	B	R	280	R	U R	F	F	F	315	F	R	F	295 <sup>E</sup>	
6	R	R	R	B	A	A	A	B	A	245	275	255	B	F	305	305	300	310	315	300	315	300	R	A	
7	A	300 <sup>F</sup>	A	F	R	A	A	A	A	B	B	B	B	275	290	290	290	F	305	F	R	A	335	A	
8	A	R	A	A	B	A	A	A	260	F	295	285	295	290	295	310	315	320	320	F	320 <sup>F</sup>	340	350	A	
9	A	A	A	240 <sup>F</sup>	245 <sup>F</sup>	235 <sup>F</sup>	F	A	B	B	B	290	290 <sup>F</sup>	285 <sup>F</sup>	270	F	F	F	F	A	A	A	A	A	
10	A	A	A	A	A	250 <sup>F</sup>	250 <sup>F</sup>	F	F	F	270	B	R	310	285	305	305	305	305	R	330	R	A	A	
11	A	A	A	F	A	A	A	F	R	245	255	280	R	F	F	R	R	F	F	F	F	310	305	255	
12	260	245	245	275	R	240	225	B	B	290	305	285	320 <sup>F</sup>	285	305	300	290	B	325	B	B	B	B	B	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F	R	R	R	F	R	310	B	A	B	
16	B	A	A	A	B	B	A	A	B	B	B	B	R	300	290	290	295	R	F	F	R	R	290	B	
17	B	A	A	B	B	B	F	A	B	B	B	B	B	B	B	280	285 <sup>U R</sup>	300 <sup>U R</sup>	R	B	265	A	A	A	
18	A	A	A	A	B	B	B	B	A	B	B	B	310	285	295	325	305	325	330	R	315	B	310	R	
19	A	A	A	A	A	B	F	F	F	300	295	310	310	300	300	320	310	320	335	330	310	330	330	A	
20	A	A	A	A	A	A	235	F	F	285	310	315	310	315	325	330	330	335	325	F	F	R	F	A	
21	A	A	260	B	A	R	F	F	F	F	295	R	295	295	300	325	320	320	335 <sup>F</sup>	315	340	315	315	315	
22	265 <sup>F</sup>	250 <sup>F</sup>	F	A	A	A	F	F	F	280	325	F	305	270	275	250	270	315	310	F	F	F	295 <sup>F</sup>	275 <sup>F</sup>	
23	275 <sup>F</sup>	280 <sup>U R</sup>	250 <sup>F</sup>	260 <sup>F</sup>	225	A	245	F	F	F	F	F	F	315	320	335	R	315	R	R	R	340	295	305 <sup>F</sup>	
24	R	A	A	A	F	A	A	240	235	R	U R	285	300	310	305	300	300	310	315	315	350	330	310	315	250 <sup>F</sup>
25	250 <sup>F</sup>	F	330 <sup>F</sup>	A	B	A	F	F	F	F	B	F	320	325	310	310	U R	R	R	305	F	B	B	270	
26	R	270	A	A	F	A	B	F	F	F	315	330	310	310	310	310	R	315	R	F	R	F	280	A	
27	A	A	A	F	F	B	A	240	F	B	275	295 <sup>F</sup>	F	310	295	305	315	305	310	325	F	F	250	A	
28	A	A	A	A	F	B	A	F	F	A	B	F	B	F	265 <sup>F</sup>	F	250 <sup>F</sup>	F	F	325	B	R	A	A	
29	A	B	A	A	240	A	A	R	R	R	R	R	R	R	R	R	R	R	R	R	R	B	A	A	A
30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	A	A	A	
31																									
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	4	5	4	3	3	4	5	3	4	9	14	13	16	21	22	22	19	15	14	11	8	7	12	7	
MED	262 <sup>F</sup>	270	255	260 <sup>F</sup>	240	245 <sup>F</sup>	235	240	242	280	290	285	308	285	295	302	300	315	320	315	315	315	308	275 <sup>F</sup>	
UQ	270 <sup>F</sup>	280	295	268	242	250 <sup>F</sup>	245	242	255	285	305	300	310	305	305	310	312	320	325	328	325	335	322	300 <sup>F</sup>	
LQ	255	250	248	250 <sup>F</sup>	232	238	230	240	232	245	255	280	282	275	270	285	290	308	310	312	310	310	292	262	

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APR. 1969

M(3000)F2 (0.01)



# IONOSPHERIC DATA

APR. 1969

H<sup>o</sup>F<sub>2</sub> (KM)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69° 00' .4 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									560	465	310	325		L										
2								450			L	300	300	275										
3									420	405	325	280												
4									400	300	<sup>B</sup> 325	<sup>B</sup> 330	300											
5									B	B			325	290										
6											L	L	B											
7									B	B	B	B												
8										250		L	L	L	L									
9									B	B		310												
10											B													
11									410		L		390	280										
12												B	B	B	B									
13									B	B	B	B	B	B	B									
14									B	B	B	B	B	B	B									
15									B	B	B	B	B	B										
16									B	B	B													
17										B	B	B	B	B	B									
18										B	B													
19																								
20																								
21																								
22																								
23																								
24																								
25											B													
26																								
27																								
28											B		B											
29																								
30											B	B	B	B	B									
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1	2	4	5	6	5	1									
MED									450	485	410	310	325	280	300									
UQ											442	310	325	290										
LQ											325	300	325	280										

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APR. 1969

H<sup>o</sup>F<sub>2</sub> (KM)

# IONOSPHERIC DATA

APR. 1969

H\*F (KM)

45° E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. **69° 00' 4" S** Long. **39° 35' 4" E** Sweep **0.4 MHz** to **15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	A	A	B	B	B	275	B	B	B	B	B	250	250	225	240	295	A	A	B
2	A	A	A	A	275	500	445	A	390	300	250	250	250	250	250	240	240	240	250	250	A	A	A	A
3	B	A	A	A	A	B	A	B	A	A	285	300	B	250	265	250	255	235	225	240	350	A	A	B
4	A	A	A	B	B	A	B	B	B	B	B	205	B	B	B	B	B	B	B	250	260	290	A	A
5	B	A	A	B	A	A	400	420	300	320	B	B	B	B	B	B	250	240	250	240	260	340	290	300
6	A	A	A	B	A	A	A	B	A	B	280	290	B	260	245	230	225	235	215	225	220	275	A	A
7	A	310	A	A	350	A	A	A	A	B	B	B	B	B	B	B	290	B	235	250	B	A	300	A
8	A	280	A	A	B	B	A	A	350	260	230	250	250	240	250	250	240	265	250	240	235	240	250	A
9	A	A	A	A	A	420	A	A	B	B	B	B	255	250	250	230	250	250	275	A	A	A	A	A
10	A	A	A	A	A	A	410	370	280	B	B	B	B	B	250	235	230	240	220	230	325	A	A	A
11	A	A	A	A	A	A	A	A	A	340	305	305	B	B	B	B	B	245	250	250	265	280	300	385
12	390	400	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B
16	B	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	240	235	240	A	A	A	B
17	B	B	B	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	310	B	A	A	A	A
18	A	A	A	A	B	B	B	B	A	B	B	B	290	275	270	B	B	B	B	250	270	B	300	A
19	A	A	A	A	A	B	360	300	250	250	250	250	250	250	235	220	215	205	210	215	215	230	250	A
20	A	A	A	A	A	A	A	340	240	255	240	240	240	240	245	220	210	210	200	200	235	230	A	A
21	A	A	A	B	A	A	A	340	275	245	240	240	240	230	215	205	205	205	215	205	220	245	240	290
22	315	A	A	A	A	A	355	315	275	250	240	230	230	250	250	220	205	210	210	215	220	240	340	A
23	400	390	A	A	A	A	465	360	300	260	260	255	235	220	205	215	205	205	225	210	225	290	A	A
24	A	A	A	A	A	A	A	425	A	B	B	260	240	250	240	240	220	215	200	220	220	240	220	320
25	A	A	A	A	B	A	350	300	275	250	B	250	240	225	230	210	210	240	225	240	210	B	B	B
26	A	A	A	A	A	A	B	325	265	240	240	220	210	230	210	205	205	205	210	210	205	235	A	A
27	A	A	A	A	340	B	A	400	340	B	290	250	245	230	215	240	230	225	220	240	225	225	A	A
28	A	A	A	A	405	B	B	A	A	A	B	250	B	250	275	275	270	A	A	275	B	A	A	A
29	A	B	A	A	A	A	A	340	340	290	260	260	240	240	240	220	240	220	205	240	B	A	A	A
30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	A	A	A
31																								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	4			4	2	7	12	13	12	14	17	14	18	20	19	20	20	22	23	18	13	9	4
MED	390	350			345	460	400	340	280	258	255	250	240	250	248	230	230	235	225	240	230	240	290	310
UQ	395	395			378	428	385	340	295	280	260	250	250	250	245	250	240	250	245	265	280	300	352	
LQ	352	295			308	358	320	275	250	240	240	240	230	232	220	210	210	210	218	220	235	250	295	

The Radio Research Laboratories, Japan

APR. 1969

H\*F (KM)

# IONOSPHERIC DATA

APR. 1969

H\*ES (KM)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69° 00' .4 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	110	120	105	125	100	150	100	B	B	B	G	B	B	B	B	B	B	B	B	100	110	110	125	B	
2	100	125	100	100	100	120	125	120	125	140	125	115	G	G	B	G	G	B	B	175	110	110	110	105	
3	B	110	105	100	110	B	120	B	110	120	150	B	B	B	B	G	B	B	B	B	130	170	105	115	
4	115	125	100	B	B	100	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	110	120	
5	B	125	120	B	100	100	115	110	110	B	B	B	B	B	B	B	B	B	B	B	B	150	140	140	
6	115	125	140	B	100	100	105	B	105	B	G	B	B	B	G	G	G	G	100	100	100	170	105	110	
7	140	115	100	125	120	120	125	120	100	B	B	B	B	B	B	B	B	B	B	B	160	100	105	105	
8	110	155	120	105	B	100	105	100	105	G	G	B	G	G	G	B	B	B	B	B	B	B	B	120	
9	130	100	100	100	115	120	110	105	B	B	B	B	B	G	B	G	150	150	155	110	175	105	105	110	
10	100	115	110	145	100	125	145	110	110	B	B	B	B	B	100	G	B	G	130	B	105	125	110	110	
11	105	105	105	100	105	110	105	105	100	120	110	B	B	B	B	B	B	B	B	B	150	B	135	140	
12	125	120	120	125	130	140	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	145	B	
16	B	140	140	150	B	B	105	140	B	B	B	B	B	B	B	B	B	B	B	B	115	125	130	B	
17	B	100	120	B	B	B	125	115	B	B	B	B	B	B	B	B	B	B	B	125	B	125	105	100	105
18	120	120	105	100	B	B	B	B	105	B	B	B	B	B	B	B	B	B	B	B	B	B	B	110	
19	110	110	105	105	120	B	100	G	B	B	G	G	G	G	100	G	B	100	100	B	B	130	110	110	
20	125	105	100	120	100	130	105	130	G	G	160	G	B	B	130	B	B	B	B	145	140	B	115	115	
21	105	100	120	B	150	100	110	115	G	G	G	180	175	150	100	105	G	B	B	100	B	B	B	B	
22	115	100	100	100	100	105	100	115	G	G	150	150	G	165	G	140	G	B	100	B	B	170	150	125	
23	190	140	110	105	110	110	110	120	175	G	110	B	G	G	105	100	100	B	B	150	B	100	100	100	
24	115	110	120	110	110	100	100	100	100	B	B	100	100	100	G	G	G	100	100	100	100	125	120	140	
25	110	110	105	120	B	100	110	120	G	B	B	B	G	110	G	105	B	B	100	B	B	B	B	B	
26	110	115	115	115	110	100	B	105	G	G	160	155	100	105	150	105	G	B	B	B	120	B	130	115	
27	110	110	105	105	105	B	100	140	B	B	B	B	160	G	B	B	B	B	B	B	B	B	150	130	
28	150	110	110	110	105	B	125	110	115	130	B	120	B	B	150	B	150	125	110	125	B	120	120	125	
29	125	B	140	125	135	125	125	G	125	B	B	B	B	140	B	B	B	B	B	B	B	150	115	120	
30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	105	B	B	115	110	120	
31																									
CNT	22	25	26	21	20	19	22	18	13	4	7	6	4	6	7	5	3	4	10	9	13	17	23	22	
MED	115	115	108	110	108	110	110	115	110	125	150	135	130	125	105	105	150	112	102	110	120	125	115	115	
UQ	125	125	120	125	118	122	125	120	115	135	155	155	168	150	140	105	150	138	125	145	140	150	130	125	
LQ	110	110	105	100	100	100	105	105	105	120	118	115	100	105	100	105	125	100	100	100	110	110	108	110	

The Radio Research Laboratories, Japan

APR. 1969

H\*ES (KM)

# IONOSPHERIC DATA

MAY. 1969

FOF2 (0.1 MHz)

45 E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	A	A	A	A
3	C	B	B	B	R	R	B	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	
4	B	A	B	B	B	B	A	A	B	B	R	B	R	R	R	B	B	R	B	B	B	B	A	B
5	R	A	A	B	A	A	A	B	R	R	R	R	B	R	R	R	R	B	B	B	B	B	R	A
6	A	B	A	B	A	A	A	B	B	B	B	B	B	B	B	R	R	B	B	B	B	B	A	A
7	A	B	R	B	B	A	B	A	A	A	J <sub>40</sub>	B	B	B	B	B	B	B	B	B	B	B	B	B
8	R	A	R	R	R	A	A	B	R	B	U <sub>58</sub>	R	B	R	R	R	J <sub>75</sub>	R	57	44	R	U <sub>22</sub>	17	R
9	B	R	A	A	A	R	U <sub>55</sub>	B	B	A	R	R	B	B	B	R	R	U <sub>66</sub>	R	R	R	R	R	A
10	A	A	B	A	R	R	A	B	B	B	B	B	B	B	R	B	B	R	66	R	R	A	B	R
11	Z <sub>29</sub>	27	26	R	A	A	A	A	B	U <sub>39</sub>	R	R	R	R	B	B	R	R	R	37	B	B	R	R
12	A	A	A	A	A	A	A	A	R	R	B	B	R	B	A	R	R	R	U <sub>61</sub>	R	R	R	18	A
13	A	A	A	B	A	B	A	A	A	B	B	B	B	B	B	B	B	R	R	A	A	A	B	A
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	R	B	B	B	B	B	B	B	R	A	A	B	A	A	A
16	B	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
17	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
18	B	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
19	A	A	R	A	A	A	A	F <sub>38</sub>	39	U <sub>42</sub>	R	64	R	R	R	U <sub>96</sub>	S	S	B	R	B	A	A	A
20	R	B	A	A	A	B	B	A	F	B	B	B	B	B	B	B	B	B	R	B	R	B	B	B
21	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	R	B	B	R	A	A
22	A	A	A	A	A	B	A	B	B	B	46	R	R	B	B	B	B	B	B	B	B	15	A	A
23	A	A	A	34	A	A	B	B	B	J <sub>46</sub>	R	B	B	R	B	S	78	B	B	B	B	B	R	A
24	A	A	A	A	A	26	U <sub>31</sub>	R	A	B	B	60	R	R	R	R	R	R	72	R	16	B	B	A
25	A	A	A	B	A	B	B	B	A	R	48	61	R	B	R	R	R	R	R	19	17	B	B	B
26	A	A	A	A	A	A	B	A	A	35	R	66	R	R	R	R	R	B	39	28	R	B	17	18
27	R	A	A	A	A	A	30	32	F <sub>31</sub>	35	J <sub>46</sub>	67	S	S	S	64	R	35	R	B	B	B	B	
28	B	B	14	A	R	R	R	R	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	A	B	A	B	A	A	27	R	35	B	R	R	B	B	R	U <sub>66</sub>	B	R	B	B	A	A	R	R
31	B	A	A	A	B	B	A	B	B	B	B	B	B	B	B	66	B	B	B	B	B	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	1	2	1		1	4	2	3	5	5					4	2	2	5	4	2	2	3	1
MED	Z <sub>29</sub>	27	20	34		26	30	35	35	J <sub>39</sub>	46	64				66	76	50	61	32	16	18	17	18
UQ							U <sub>43</sub>		37	U <sub>42</sub>	48	66				U <sub>81</sub>			66	40			18	
LQ							28		33	35	J <sub>46</sub>	61				65			57	24				17

MAY. 1969

FOF2 (0.1 MHz)

# IONOSPHERIC DATA

MAY, 1969

FOF1 (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE Lat. 69° 00' .4 5 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										B	B	B	B	B	B	B								
2										B	B	B	B	B	B	B	B							
3										B	B	B	B	B	B	B								
4										B		B				B								
5													B											
6										B	B	B	B	B	B									
7												B	B	B	B	B								
8										B			B											
9													B	B	B									
10										B	B	B	B	B		B								
11														B	B	B								
12											B	B		B										
13										B	B	B	B	B	B	B	B							
14										B	B	B	B	B	B	B								
15											B	B	B	B	B	B	B							
16										B	B	B	B	B	B	B	B	B						
17										B	B	B	B	B	B	B	B							
18										B	B	B	B	B	B	B								
19																								
20										B	B	B	B	B	B	B	D							
21										B	B	B	B	B	B	B								
22										B				B	B	B								
23												B	B		B									
24										B	B													
25														B										
26																								
27																								
28										C	C	C	C	C	C	C								
29										C	C	C	C	C	C	C								
30										B			B	B										
31										B	B	B	B	B	B									
CNT																								
MED																								
UQ																								
LQ																								

MAY, 1969

FOF1 (0.01 MHz)

IONOSPHERIC DATA

MAY, 1969

FOE (0.01 MHz)

45 E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									B	B	B	B	B	B	B	B	B	B						
2									B	B	B	B	B	B	B	B	B	B						
3									B	B	B	B	B	B	B	B	B	B						
4									B	B	B	B	B	B	B	B	B	B						
5									B	B	B	B	B	B	B	B	B	B						
6									B	B	B	B	B	B	B	B	B	B						
7									B	B	B	B	B	B	B	B	B	B						
8									B	A	B	B	B	B	B	B	150	145	130					
9									B	B	A	A	B	B	B	B	B	B						
10									B	B	B	B	B	B	B	B	B	B						
11									B	B	A	B	B	B	B	B	B	B						
12									B	A	175	B	B	B	B	B	B	B						
13									B	B	B	B	B	B	B	B	B	B						
14									B	B	B	B	B	B	B	B	B	B						
15									B	B	A	B	B	B	B	B	B	B						
16									B	B	B	B	B	B	B	B	B	B						
17									B	B	B	B	B	B	B	B	B	B						
18									B	B	B	B	B	B	B	B	B	B						
19									B	A	A	175	190	B	B	175	A	B	B					
20									A	A	B	B	B	B	B	B	B	B						
21									A	B	B	B	B	B	B	B	B	B						
22									B	B	A	B	B	B	B	B	B	B						
23									B	155	175	B	B	B	B	B	B	B						
24									A	B	B	B	B	B	B	B	B	B						
25									A	B	B	185	B	B	B	B	B	B						
26									A	B	B	B	B	175	A	B	B	B						
27									B	B	R	180	190	A	A	A	B	B						
28									A	C	C	C	C	C	C	C	C	C						
29									C	C	C	C	C	C	C	C	C	C						
30									B	B	170	B	B	B	B	B	B	B						
31									B	B	B	B	B	B	B	B	B	B						
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT											2	3	3	1	1	1	1	1	1					
MED											165	175	185	190	175	175	150	145	130					
UQ											175	188												
LQ											172	182												

The Radio Research Laboratories, Japan

MAY, 1969

FOE (0.01 MHz)

# IONOSPHERIC DATA

MAY. 1969

FOES (0.1 MHZ)

45 E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. **69 00.4 S** Long. **39 35.4 E** Sweep **0.4 MHz to 15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E <sub>25</sub>	B	B	J <sub>35</sub>	J <sub>22</sub>	J <sub>47</sub>	J <sub>53</sub>
3	C	B	B	B	29	35	B	J <sub>32</sub>	B	B	B	B	B	B	B	B	B	B	B	J <sub>22</sub>	J <sub>31</sub>	J <sub>21</sub>	J <sub>34</sub>	30
4	B	J <sub>41</sub>	B	B	B	B	J <sub>30</sub>	J <sub>31</sub>	B	B	E <sub>26</sub>	B	E <sub>50</sub>	E <sub>23</sub>	E <sub>26</sub>	B	B	E <sub>15</sub>	B	B	B	B	J <sub>32</sub>	B
5	22	31	32	B	J <sub>26</sub>	J <sub>29</sub>	J <sub>31</sub>	B	E <sub>23</sub>	E <sub>19</sub>	E <sub>24</sub>	E <sub>33</sub>	B	E <sub>25</sub>	E <sub>22</sub>	E <sub>20</sub>	E <sub>26</sub>	B	B	B	B	B	J <sub>17</sub>	31
6	J <sub>27</sub>	B	J <sub>36</sub>	B	J <sub>31</sub>	J <sub>30</sub>	J <sub>25</sub>	B	B	B	B	B	B	B	B	E <sub>25</sub>	E <sub>21</sub>	B	B	B	B	B	J <sub>22</sub>	J <sub>23</sub>
7	J <sub>28</sub>	B	32	B	B	J <sub>31</sub>	B	J <sub>27</sub>	J <sub>30</sub>	J <sub>30</sub>	E <sub>31</sub>	B	B	B	B	B	B	B	B	B	B	B	B	B
8	19	J <sub>21</sub>	20	27	J <sub>21</sub>	J <sub>32</sub>	J <sub>30</sub>	B	28	B	E <sub>23</sub>	E <sub>44</sub>	B	E <sub>49</sub>	E <sub>22</sub>	G	G	G	E <sub>10</sub>	E <sub>13</sub>	E <sub>15</sub>	E <sub>10</sub>	J <sub>18</sub>	18
9	B	24	J <sub>61</sub>	J <sub>32</sub>	J <sub>35</sub>	J <sub>31</sub>	J <sub>25</sub>	B	B	J <sub>26</sub>	J <sub>21</sub>	E <sub>25</sub>	B	B	B	E <sub>23</sub>	E <sub>19</sub>	E <sub>24</sub>	E <sub>25</sub>	E <sub>27</sub>	E <sub>17</sub>	E <sub>13</sub>	E <sub>14</sub>	31
10	J <sub>27</sub>	J <sub>69</sub>	B	J <sub>28</sub>	J <sub>31</sub>	J <sub>30</sub>	J <sub>36</sub>	B	B	B	B	B	B	B	E <sub>23</sub>	B	B	E <sub>24</sub>	E <sub>23</sub>	E <sub>16</sub>	E <sub>15</sub>	J <sub>21</sub>	B	J <sub>21</sub>
11	J <sub>17</sub>	J <sub>18</sub>	21	20	25	J <sub>32</sub>	J <sub>32</sub>	30	B	21	E <sub>27</sub>	28	E <sub>25</sub>	B	B	B	E <sub>56</sub>	E <sub>22</sub>	E <sub>26</sub>	E <sub>18</sub>	B	B	J <sub>22</sub>	J <sub>18</sub>
12	J <sub>25</sub>	J <sub>25</sub>	J <sub>21</sub>	J <sub>21</sub>	J <sub>30</sub>	J <sub>21</sub>	J <sub>33</sub>	J <sub>30</sub>	21	G	B	B	E <sub>27</sub>	B	J <sub>32</sub>	E <sub>21</sub>	E <sub>16</sub>	E <sub>20</sub>	E <sub>14</sub>	E <sub>14</sub>	E <sub>13</sub>	E <sub>13</sub>	E <sub>15</sub>	J <sub>42</sub>
13	J <sub>41</sub>	J <sub>73</sub>	J <sub>53</sub>	B	J <sub>68</sub>	B	31	J <sub>29</sub>	33	B	B	B	B	B	B	B	B	E <sub>26</sub>	27	J <sub>35</sub>	J <sub>31</sub>	J <sub>33</sub>	B	J <sub>65</sub>
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E <sub>24</sub>	B	B	B	B
15	B	B	B	B	B	B	B	B	B	29	B	B	B	B	B	B	B	E <sub>10</sub>	J <sub>36</sub>	J <sub>37</sub>	B	J <sub>45</sub>	J <sub>36</sub>	J <sub>30</sub>
16	J <sub>82</sub>	J <sub>36</sub>	J <sub>47</sub>	J <sub>28</sub>	B	J <sub>25</sub>	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	J <sub>44</sub>
17	J <sub>26</sub>	J <sub>32</sub>	J <sub>36</sub>	J <sub>22</sub>	J <sub>27</sub>	J <sub>44</sub>	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	J <sub>21</sub>	31
18	B	J <sub>32</sub>	J <sub>55</sub>	J <sub>43</sub>	B	J <sub>30</sub>	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	J <sub>36</sub>	J <sub>97</sub>	J <sub>41</sub>
19	J <sub>34</sub>	36	J <sub>24</sub>	J <sub>35</sub>	J <sub>46</sub>	J <sub>42</sub>	J <sub>41</sub>	27	36	30	G	G	E <sub>22</sub>	E <sub>27</sub>	G	20	E <sub>15</sub>	E <sub>22</sub>	B	E <sub>23</sub>	B	27	J <sub>19</sub>	30
20	J <sub>24</sub>	J <sub>69</sub>	J <sub>68</sub>	J <sub>47</sub>	44	B	B	30	J <sub>26</sub>	B	B	B	B	B	B	B	B	B	E <sub>21</sub>	B	E <sub>23</sub>	B	B	B
21	J <sub>28</sub>	J <sub>41</sub>	J <sub>36</sub>	J <sub>40</sub>	J <sub>39</sub>	B	B	B	J <sub>37</sub>	B	B	B	B	B	B	B	B	B	E <sub>28</sub>	B	B	26	J <sub>24</sub>	J <sub>29</sub>
22	J <sub>57</sub>	J <sub>42</sub>	J <sub>34</sub>	J <sub>31</sub>	J <sub>32</sub>	B	J <sub>53</sub>	B	B	24	E <sub>52</sub>	E <sub>27</sub>	B	B	B	B	B	B	B	B	B	E <sub>11</sub>	J <sub>25</sub>	29
23	J <sub>31</sub>	J <sub>34</sub>	J <sub>30</sub>	J <sub>34</sub>	J <sub>56</sub>	J <sub>31</sub>	B	B	B	G	G	B	B	E <sub>53</sub>	B	E <sub>54</sub>	E <sub>26</sub>	B	B	B	B	B	B	J <sub>26</sub>
24	J <sub>32</sub>	J <sub>38</sub>	J <sub>32</sub>	J <sub>32</sub>	J <sub>31</sub>	J <sub>20</sub>	22	E <sub>18</sub>	J <sub>39</sub>	B	B	E <sub>27</sub>	E <sub>25</sub>	E <sub>18</sub>	E <sub>23</sub>	E <sub>18</sub>	E <sub>14</sub>	E <sub>23</sub>	E <sub>12</sub>	E <sub>15</sub>	E <sub>14</sub>	B	B	J <sub>31</sub>
25	J <sub>34</sub>	J <sub>36</sub>	J <sub>46</sub>	B	J <sub>79</sub>	B	B	B	J <sub>29</sub>	E <sub>21</sub>	E <sub>19</sub>	G	E <sub>21</sub>	B	E <sub>18</sub>	E <sub>22</sub>	E <sub>17</sub>	E <sub>16</sub>	E <sub>16</sub>	E <sub>15</sub>	E <sub>13</sub>	B	B	B
26	J <sub>27</sub>	J <sub>30</sub>	J <sub>36</sub>	J <sub>42</sub>	33	J <sub>37</sub>	B	30	30	E <sub>22</sub>	E <sub>25</sub>	E <sub>24</sub>	E <sub>21</sub>	G	22	E <sub>19</sub>	E <sub>22</sub>	B	E <sub>24</sub>	E <sub>12</sub>	E <sub>11</sub>	B	E <sub>10</sub>	18
27	J <sub>25</sub>	J <sub>37</sub>	J <sub>34</sub>	33	J <sub>42</sub>	J <sub>35</sub>	J <sub>22</sub>	14	E <sub>11</sub>	E <sub>13</sub>	G	G	G	20	16	14	E <sub>11</sub>	E <sub>11</sub>	E <sub>23</sub>	B	B	B	B	B
28	B	B	16	23	30	17	E <sub>14</sub>	15	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	J <sub>48</sub>	B	J <sub>46</sub>	B	J <sub>35</sub>	J <sub>46</sub>	J <sub>26</sub>	30	E <sub>33</sub>	B	22	E <sub>21</sub>	B	B	E <sub>61</sub>	E <sub>20</sub>	B	E <sub>22</sub>	B	B	J <sub>27</sub>	31	18	26
31	B	J <sub>41</sub>	J <sub>48</sub>	J <sub>33</sub>	B	B	J <sub>32</sub>	B	B	B	B	B	B	B	B	E <sub>21</sub>	B	B	B	B	B	B	B	J <sub>34</sub>
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	21	23	18	21	19	16	13	13	11	13	11	9	8	11	13	12	14	14	12	12	13	19	22
MED	J <sub>28</sub>	J <sub>36</sub>	J <sub>36</sub>	J <sub>32</sub>	J <sub>32</sub>	J <sub>31</sub>	J <sub>30</sub>	30	30	E <sub>21</sub>	E <sub>23</sub>	E <sub>25</sub>	E <sub>25</sub>	E <sub>24</sub>	E <sub>22</sub>	E <sub>20</sub>	E <sub>18</sub>	E <sub>22</sub>	E <sub>24</sub>	E <sub>17</sub>	E <sub>16</sub>	22	J <sub>22</sub>	J <sub>30</sub>
UQ	J <sub>34</sub>	J <sub>41</sub>	J <sub>46</sub>	J <sub>35</sub>	J <sub>42</sub>	J <sub>35</sub>	J <sub>32</sub>	30	33	28	E <sub>25</sub>	E <sub>30</sub>	E <sub>27</sub>	E <sub>38</sub>	E <sub>24</sub>	E <sub>22</sub>	E <sub>24</sub>	E <sub>24</sub>	E <sub>26</sub>	24	J <sub>29</sub>	J <sub>31</sub>	J <sub>32</sub>	J <sub>34</sub>
LQ	J <sub>25</sub>	J <sub>31</sub>	J <sub>31</sub>	J <sub>27</sub>	J <sub>30</sub>	J <sub>30</sub>	J <sub>25</sub>	27	26	E <sub>19</sub>	E <sub>21</sub>	E <sub>21</sub>	E <sub>19</sub>	E <sub>14</sub>	E <sub>15</sub>	E <sub>16</sub>	E <sub>14</sub>	E <sub>15</sub>	E <sub>16</sub>	E <sub>14</sub>	E <sub>14</sub>	E <sub>13</sub>	18	J <sub>26</sub>

MAY. 1969

FOES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1969

F-MIN (0.1 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S, Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	25	B	B	14	14	10	15
3	C	B	B	B	26	27	B	22	B	B	B	B	B	B	B	B	B	B	B	13	14	14	11	11
4	B	15	B	B	B	B	13	16	B	B	26	B	50	23	26	B	B	15	B	B	B	B	11	B
5	12	15	23	B	13	23	15	B	23	19	24	33	B	25	22	20	26	B	B	B	B	B	11	12
6	13	B	33	B	23	20	23	B	B	B	B	B	B	B	B	25	21	B	B	B	B	B	10	10
7	12	B	25	B	B	23	B	22	22	25	31	B	B	B	B	B	B	B	B	B	B	B	B	B
8	11	11	12	10	12	22	28	B	23	B	23	44	B	49	22	18	12	11	10	13	15	10	10	10
9	B	13	11	26	14	13	13	B	B	22	17	25	B	B	B	23	19	24	25	27	17	13	14	11
10	10	30	B	25	22	23	23	B	B	B	B	B	B	B	23	B	B	24	23	16	15	10	B	12
11	12	9	10	12	13	15	13	12	B	13	27	26	25	B	B	B	56	22	26	18	B	B	15	10
12	10	13	13	14	19	16	14	14	14	13	B	B	27	B	27	21	16	20	14	14	13	13	15	13
13	13	15	15	B	15	B	20	18	25	B	B	B	B	B	B	B	B	26	24	11	11	13	B	12
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	24	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	12	B	B	B	B	B	B	B	10	11	10	B	13	21	12
16	59	24	13	12	B	17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	23
17	15	23	16	14	17	28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	13	12
18	B	11	15	13	B	23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	11	13	11
19	14	15	11	14	18	16	16	13	13	15	11	14	22	27	15	13	15	22	B	23	B	13	11	10
20	12	58	15	23	37	B	B	23	13	B	B	B	B	B	B	B	B	B	21	B	23	B	B	B
21	11	11	10	14	22	B	B	B	20	B	B	B	B	B	B	B	B	B	28	B	B	17	14	11
22	13	15	23	16	23	B	22	B	B	B	14	52	27	B	B	B	B	B	B	B	B	11	11	13
23	13	10	13	11	12	22	B	B	B	14	15	B	B	53	B	54	26	B	B	B	B	12	11	11
24	10	13	15	15	13	11	11	18	22	B	B	27	25	18	23	18	14	23	12	15	14	B	B	11
25	11	17	17	B	15	B	B	B	13	21	19	15	21	B	18	22	17	16	16	15	13	B	B	B
26	10	15	11	15	15	23	B	23	23	22	25	24	21	14	13	19	22	B	24	12	11	B	10	11
27	6	17	12	12	18	13	11	10	11	13	11	11	14	11	11	11	11	11	23	B	B	B	B	B
28	B	B	13	11	11	10	14	11	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	11	B	23	B	20	14	13	11	33	B	14	21	B	B	61	20	B	22	B	B	13	22	15	14
31	B	18	15	22	B	B	23	B	B	B	B	B	B	B	B	21	B	B	B	B	B	B	B	11
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	30	30	30	30	30	30	30	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
MED	13	17	15	22	21	23	26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	15	12
UQ	B	B	33	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23
LQ	11	13	13	14	15	16	14	18	22	21	23	27	27	53	23	21	21	22	23	15	14	13	11	11

The Radio Research Laboratories, Japan

MAY. 1969

F-MIN (0.1 MHZ)



# IONOSPHERIC DATA

MAY. 1969

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. **69 00.4 S**, Long. **39 35.4 E** Sweep **0.4 MHz** to **15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
2	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	A	A	A	A	
3	C	B	B	B	R	R	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	
4	B	A	B	B	B	B	A	A	B	B	R	B	R	R	R	B	B	R	B	B	B	B	A	B	
5	R	A	A	B	A	A	A	B	R	R	R	R	B	R	R	R	R	B	B	B	B	B	R	A	
6	A	B	A	B	A	A	A	B	B	B	B	B	B	B	B	R	R	B	B	B	B	B	A	A	
7	A	B	R	B	B	A	B	A	A	A	R	B	B	B	B	B	B	B	B	B	B	B	B	B	
8	R	A	R	R	R	A	A	B	R	B	U R 315	R	B	R	R	R	R	R	350	350	R	U R 320	290	R	
9	B	R	A	A	A	R	U R 265	B	B	A	R	R	B	B	B	R	R	R	R	R	R	R	R	A	
10	A	A	B	A	R	R	A	B	B	B	B	B	B	B	R	B	B	R	285	R	R	A	B	R	
11	310	305	310	R	A	A	A	A	B	U R 310	R	R	R	B	B	B	R	R	R	345	B	B	R	R	
12	A	A	A	A	A	A	A	A	R	R	B	B	R	B	A	R	R	R	U R 330	R	R	R	290	A	
13	A	A	A	B	A	B	A	A	A	B	B	B	B	B	B	B	B	B	R	R	A	A	A	B	A
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	R	A	A	B	A	A	
16	B	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	
17	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	
18	B	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	
19	A	A	R	A	A	A	A	260	260	U R 285	R	310	R	R	R	U R 290	S	S	B	R	B	A	A	A	
20	R	B	A	A	A	B	B	A	F	B	B	B	B	B	B	B	B	B	R	B	R	B	B	B	
21	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	R	B	B	R	A	A	
22	A	A	A	A	A	B	A	B	B	B	325	R	R	B	B	B	B	B	B	B	B	355	A	A	
23	A	A	A	280	A	A	B	B	B	U R 290	R	B	B	R	B	S	310	B	B	B	B	B	R	A	
24	A	A	A	A	A	250	U R 260	R	A	B	B	315	R	R	R	R	R	R	320	R	345	B	B	A	
25	A	A	A	B	A	B	B	B	A	R	340	320	R	B	R	R	R	R	R	335	340	B	B	B	
26	A	A	A	A	A	A	B	A	A	315	R	320	R	R	R	R	R	B	335	355	R	B	360	345	
27	R	A	A	A	A	A	275	280	305	F 295	R	300	S	S	S	315	R	290	R	B	B	B	B		
28	B	B	355	A	R	R	R	R	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
30	A	B	A	B	A	A	265	R	260	B	R	R	B	B	R	U R 270	B	R	B	B	A	A	R	R	
31	B	A	A	A	B	B	A	B	B	B	B	B	B	B	B	325	B	B	B	B	B	B	B	A	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	1	1	2	1		1	4	2	3	5	3	5				4	1	1	5	4	2	2	3	1	
MED	310	305	332	280		250	265	270	260	U R 295	325	315				302	310	290	330	348	342	338	290	345	
UQ							270		282	310	332	320				320			335	352			325		
LQ						262		260	U R 290	320	310					U R 280			320	340			290		

MAY. 1969

M(3000)F2 (0.01)

IONOSPHERIC DATA

MAY. 1969

H\*F2 (KM)

45° E Mean Time (G. M. T. + 3h)

Station	SYOWA BASE				Lat. 69 00 .4 S				Long. 39 35 .4 E				Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation											
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										B	B	B	B	B	B									
2										B	B	B	B	B	B	B								
3										B	B	B	B	B	B	B								
4										B		B				B								
5													B											
6										B	B	B	B	B	B									
7												B	B	B	B	B								
8										B			B											
9													B	B	B									
10										B	B	B	B	B		B								
11														B	B	B								
12											B	B		B										
13										B	B	B	B	B	B	B	B							
14										B	B	B	B	B	B	B								
15											B	B	B	B	B	B	B							
16										B	B	B	B	B	B	B	B							
17										B	B	B	B	B	B	B	B							
18										B	B	B	B	B	B	B	B							
19																								
20										B	B	B	B	B	B	B								
21										B	B	B	B	B	B	B								
22										B				B	B	B								
23												B	B		B									
24										B	B													
25														B										
26																								
27																								
28										C	C	C	C	C	C	C								
29										C	C	C	C	C	C	C								
30										B			B	B										
31										B	B	B	B	B	B									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

MAY. 1969

H\*F2 (KM)

# IONOSPHERIC DATA

MAY, 1969

H<sup>o</sup>F (KM)

45 E Mean Time (G. M. T. + 3h)

Station **SYDWA BASE** Lat. **69 00.4 S** Long. **39 35.4 E** Sweep **0.4 MHz** to **15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
2	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	280	B	B	A	A	A	A
3	C	B	B	B	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
4	B	A	B	B	B	B	A	A	B	B	270	B	B	250	240	B	B	225	B	B	B	B	A	B
5	A	A	A	B	A	A	A	B	B	255	250	250	B	240	240	215	210	B	B	B	B	B	A	A
6	A	B	B	B	A	A	A	B	B	B	B	B	B	B	B	215	220	B	B	B	B	B	A	A
7	A	B	A	B	B	A	B	A	A	A	280	B	B	B	B	B	B	B	B	B	B	B	B	B
8	A	A	A	A	A	A	A	B	A	B	250	250	B	250	220	210	205	240	225	220	225	255	A	A
9	B	295	A	A	A	A	370	A	B	B	A	245	240	B	B	225	215	215	250	260	265	265	B	A
10	A	A	B	A	A	A	A	B	B	B	B	B	B	B	220	B	B	240	230	240	240	A	B	A
11	300	A	320	A	A	A	A	A	B	280	260	B	220	B	B	B	250	240	225	240	B	B	A	290
12	A	A	A	A	A	A	A	A	335	255	B	B	225	B	A	200	215	230	205	225	250	280	B	A
13	A	A	A	B	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B	A
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	280	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	350	A	A	B	A	A	A
16	B	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A
17	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
18	B	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
19	A	A	200	A	A	A	A	A	350	320	245	205	225	245	240	240	215	260	B	245	B	A	A	A
20	A	B	A	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	250	B	275	B	B	B
21	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	240	B	B	A	A	A
22	A	A	A	A	A	B	A	B	B	B	255	B	250	B	B	B	B	B	B	B	B	200	A	A
23	A	A	A	A	A	A	B	B	B	300	250	B	B	B	B	B	250	B	B	B	B	B	A	A
24	A	A	A	A	A	A	390	350	A	B	B	255	220	240	210	220	255	250	225	210	B	B	B	A
25	A	A	A	B	A	B	B	B	A	275	245	225	210	B	200	200	205	240	240	240	265	B	B	B
26	A	A	A	A	A	A	B	A	A	255	250	250	230	215	215	205	210	B	250	230	240	B	B	B
27	A	A	A	A	A	A	A	300	260	250	230	225	220	200	220	200	200	195	250	B	B	B	B	
28	B	B	B	A	A	325	300	340	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
30	A	B	A	B	A	A	A	A	B	B	270	250	B	B	B	200	B	290	B	B	A	A	A	A
31	B	A	A	A	B	B	A	B	B	B	B	B	B	B	B	220	B	B	B	B	B	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	1	2			2	3	3	3	8	13	9	8	7	9	12	12	14	12	9	7	4		1
MED	300	295	260			362	370	340	335	265	250	250	222	240	220	212	214	240	240	240	250	260		290
UQ						380	345	342	290	260	250	228	245	240	220	226	280	250	240	265	272			
LQ						335	320	298	255	245	225	220	228	215	200	208	230	225	225	240	228			

MAY, 1969

H<sup>o</sup>F (KM)

# IONOSPHERIC DATA

MAY, 1969

H°ES (KM)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
2	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	120	115	130	115	
3	C	B	B	B	140	110	B	110	B	B	B	B	B	B	B	B	B	B	B	120	110	120	120	120	
4	B	135	B	B	B	B	110	110	B	B	B	B	B	B	B	B	B	B	B	B	B	B	120	B	
5	150	115	110	B	120	105	120	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	120	130	
6	120	B	125	B	105	115	125	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	125	120	
7	150	B	130	B	B	105	B	105	105	120	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
8	110	110	120	110	115	115	120	B	150	B	B	B	B	B	B	G	G	G	B	B	B	B	150	175	
9	B	130	150	105	120	130	115	B	B	120	125	B	B	B	B	B	B	B	B	B	B	B	B	120	
10	120	140	B	125	140	125	140	B	B	B	B	B	B	B	B	B	B	B	B	B	B	130	B	125	
11	120	125	130	125	115	110	105	110	B	120	B	150	B	B	B	B	B	B	B	B	B	B	140	125	
12	125	125	125	125	125	115	105	110	145	G	B	B	B	B	120	B	B	B	B	B	B	B	B	120	
13	125	105	105	B	125	B	125	130	120	B	B	B	B	B	B	B	B	B	B	140	110	105	115	115	
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	125	B	B	B	B	B	B	B	B	B	110	125	B	125	120	
16	105	100	100	125	B	120	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	140	130	
17	110	115	120	125	120	135	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	135	115	
18	B	120	110	115	B	115	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	115	115	110	
19	110	115	125	115	110	110	115	125	105	110	G	G	B	B	G	100	B	B	B	B	B	120	120	120	
20	140	110	115	110	155	B	B	110	115	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
21	115	125	110	100	100	B	B	B	100	B	B	B	B	B	B	B	B	B	B	B	B	150	140	110	
22	120	110	110	120	125	B	115	B	B	B	130	B	B	B	B	B	B	B	B	B	B	B	120	110	
23	110	110	110	120	105	100	B	B	B	G	G	B	B	B	B	B	B	B	B	B	B	B	150	110	
24	115	105	120	105	115	100	100	B	105	B	B	B	B	B	B	B	B	B	B	B	B	B	B	115	
25	110	110	110	B	105	B	B	B	105	B	B	G	B	B	B	B	B	B	B	B	B	B	B	B	
26	115	110	110	115	110	105	B	140	125	B	B	B	B	G	105	B	B	B	B	B	B	B	B	150	
27	115	115	120	115	110	115	110	150	B	B	G	G	G	105	105	110	B	B	B	B	B	B	B	B	
28	B	B	125	115	140	125	B	130	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
29	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
30	120	B	115	B	105	105	115	110	B	B	120	B	B	B	B	B	B	B	B	B	B	135	135	160	115
31	B	125	115	110	B	B	105	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	105	
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	20	21	23	18	21	19	15	12	10	5	3	1		1	3	2			2	3	4	9	16	22	
MED	118	115	115	115	115	115	115	110	110	120	125	150		105	105	105			125	120	115	120	128	120	
UQ	122	125	125	125	125	118	120	130	125	120	128				112					122	128	130	140	125	
LQ	110	110	110	110	110	105	108	110	105	120	122				105						115	108	115	120	115

The Radio Research Laboratories, Japan

MAY, 1969

H°ES (KM)

# IONOSPHERIC DATA

JUN. 1969

FOF2 (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE Lat. 69° 00.4' S Long. 39° 35.4' E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	B	B	A	A	B	B	B	B	A	R	R	R	R	43	R	R	B	B	B	R	A	32
2	32	A	27	F 25	F 23	22	23	B	B	A	B	B	B	B	B	B	B	B	B	B	B	R	A	B
3	A	A	A	A	B	A	A	A	36	35	42	61	R	R	R	R	R	R	R	B	B	A	B	B
4	A	B	A	A	A	A	A	A	A	A	39	B	B	B	R	R	B	B	B	B	B	B	A	A
5	A	A	A	A	A	A	B	A	32	39	R 42	R	75	R	R	R	R	B	30	R 21	B	B	B	R
6	A	A	A	A	A	25	26	A	A	R	R	60	F	R	UR 61	JR 54	58	57	UR 45	19	19	B	B	A
7	A	A	A	B	R	A	A	A	B	A	R	R	UR 66	R	R	R	R	B	B	B	A	A	A	A
8	36	R	A	A	B	B	B	B	R	A	R	R	B	B	B	B	B	B	B	B	C	B	B	B
9	B	B	B	B	B	B	B	B	B	B	R	B	B	R	R	R	R	63	B	B	B	B	B	B
10	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11	B	B	B	C	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	A	B	A
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B	B
14	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	B	B	A	B	B	B	B	B	B	B	B	B	B	JR 68	UR 70	B	F	52	40	B	A	A	A
17	A	A	A	A	A	A	B	B	A	40	B	B	R	B	B	B	R	UR 60	R	15	B	A	A	A
18	A	A	A	A	A	A	A	28	31	33	42	R	70	JR 85	UR 77	UR 52	UR 41	R	JR 40	24	16	14	17	17
19	B	R	21	23	F	F	F 26	25	A	F	34	R	R	71	75	B	54	B	R	A	A	B	B	C
20	B	A	A	A	A	B	A	A	B	B	A	R	B	B	B	B	B	R	B	B	B	B	B	B
21	B	C	C	A	B	A	A	R	27	B	B	B	61	UR 66	B	B	38	B	B	B	B	B	B	B
22	A	A	27	26	A	27	27	30	25	28	A	A	JR 52	B	R	R	UR 37	29	17	B	B	B	B	
23	A	25	A	F 27	F 29	F 26	F 28	JF 26	F 26	F 27	F 40	JR 52	61	73	F	R	UR 40	32	27	22	16	15	A	A
24	A	A	A	A	A	A	B	B	A	B	B	B	B	B	77	57	B	B	37	B	A	A	B	A
25	A	A	B	A	A	A	B	32	35	28	37	46	66	B	B	R	47	B	B	B	A	A	A	A
26	A	B	A	A	A	A	A	A	B	B	36	52	R	60	R	B	B	B	R	B	B	A	A	A
27	A	A	A	A	A	A	B	B	A	27	30	B	R	R	64	54	B	B	B	A	B	B	B	B
28	A	B	A	A	A	A	33	JF 35	31	F 25	32	UR 48	60	60	58	37	30	24	26	A	R	A	R	A
29	A	A	A	18	A	22	22	R	18	23	31	R	R	R	R	46	A	R	A	A	A	B	A	A
30	A	32	A	A	A	A	F	27	25	F	JR 35	B	R	JR 67	JR 62	R	R	25	23	R	B	B	B	B
31																								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	2	3	5	2	5	7	7	10	10	12	6	8	7	8	8	7	7	9	7	3	2	1	2
MED	34	28	27	25	F 26	25	26	28	29	28	36	52	64	67	66	53	41	37	30	21	16	14	17	24
UQ			27	F 26		26	28	31	32	35	41	60	68	72	76	56	50	58	40	23	18			
LQ			24	23		22	24	26	25	27	33	48	60	63	62	44	39	28	27	18	16			

JUN. 1969

FOF2 (0.1 MHz)

# IONOSPHERIC DATA

JUN. 1969

FOF1 (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE Lat. 69° 00' .4" S Long. 39° 35' .4" E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2											B	B	B	B	B									
3																								
4												B	B	B										
5																								
6																								
7																								
8													B	B	B									
9												B	B											
10											B	B	B	B	B									
11											C	C	C	C	C									
12											C	B	B	B	B									
13											B	B	B	B	B									
14											B	B	B	B	B									
15											B	B	B	B	B									
16											B	B	B	B										
17											B	B	B	B	B									
18																								
19																								
20													B	B	B									
21											B	B			B									
22														B										
23																								
24											B	B	B	B										
25														B	B									
26																								
27												B												
28																								
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

The Radio Research Laboratories, Japan

JUN. 1969

FOF1 (0.01 MHz)

# IONOSPHERIC DATA

JUN. 1969

FOE (0.01 MHz)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE    Lat. 69° 00.4' S. Long. 39° 35.4' E    Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1									B	B	B	B	B	A	B	B	B							
2									B	B	B	B	B	B	B	B	B							
3									B	A	A	A	A	A	B	A	B							
4									B	B	A	B	B	B	B	B								
5									B	B	A	A	A	A	B	B	B							
6									B	A	B	B	175	170	120		B	B						
7									B	B	A	155	R	165	120		B	B						
8									B	B	B	B	B	B	B	B	B							
9									B	B	B	B	B	B	B	B	B							
10									B	B	B	B	B	B	B	B	B							
11									B	C	C	C	C	C	C	C	C							
12									C	C	C	B	B	B	B	B	B							
13									B	B	B	B	B	B	B	B	B							
14									B	B	B	B	B	B	B	B	B							
15									B	B	B	B	B	B	B	B	B							
16									B	B	B	B	B	B	B	B	B							
17									B	A	B	B	B	B	B	B	B							
18									A	A	A	150	A	150	125		B	B						
19									B	A	B	B	B	B	B	B	B							
20									B	B	B	B	B	B	B	B	B							
21									B	B	B	B	A	A	B	B	B							
22									A	A	A	A	A	B	B	B	B							
23									A	A	A	A	160	145		A	A	B						
24									B	B	B	B	B	B	B	B	B							
25									A	140	A	145	B	B	B	B	B							
26									B	B	A	150	B	150		A	B	B						
27										A	180	B	B	150	130		B	B						
28									A	140	120		A	A	150		A	A	A					
29									B	A	A	A	A	B	B	B	B							
30									A	A	A	B	A	A	A	A	B							
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										2	2	4	2	7	4									
MED										140	150	150	168	150	122									
UQ												152		158	128									
LQ												148		150	120									

JUN. 1969

FOE (0.01 MHz)

IONOSPHERIC DATA

JUN. 1969

FOES (0.1 MHz)

45 E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	J <sub>36</sub> X	J <sub>38</sub> X	B	B	J <sub>37</sub> X	28	B	B	B	B	31	E <sub>26</sub> B	E <sub>22</sub> B	20	E <sub>17</sub> B	E <sub>15</sub> B	E <sub>22</sub> B	E <sub>25</sub> B	B	B	B	14	J <sub>32</sub> X	J <sub>32</sub> X	
2	J <sub>31</sub> X	J <sub>25</sub> X	J <sub>21</sub> X	16	16	13	13	B	B	J <sub>22</sub> X	B	B	B	B	B	B	B	B	B	B	B	B	14	25	B
3	J <sub>19</sub> X	J <sub>30</sub> X	J <sub>40</sub> X	J <sub>32</sub> X	B	J <sub>34</sub> X	J <sub>49</sub> X	38	J <sub>23</sub> X	21	22	17	18	J <sub>21</sub> X	E <sub>22</sub> B	22	E <sub>14</sub> B	E <sub>16</sub> B	E <sub>17</sub> B	B	B	B	26	B	B
4	J <sub>31</sub> X	B	J <sub>44</sub> X	J <sub>40</sub> X	J <sub>40</sub> X	J <sub>41</sub> X	J <sub>46</sub> X	J <sub>47</sub> X	J <sub>45</sub> X	J <sub>38</sub> X	23	B	B	B	E <sub>29</sub> B	E <sub>25</sub> B	B	B	B	B	B	B	B	18	J <sub>30</sub> X
5	J <sub>25</sub> X	29	J <sub>31</sub> X	J <sub>30</sub> X	J <sub>35</sub> X	J <sub>34</sub> X	B	J <sub>21</sub> X	20	E <sub>19</sub> B	22	19	17	17	E <sub>15</sub> B	E <sub>15</sub> B	E <sub>23</sub> B	B	E <sub>14</sub> B	E <sub>13</sub> B	B	B	B	18	
6	J <sub>29</sub> X	J <sub>28</sub> X	J <sub>31</sub> X	J <sub>33</sub> X	J <sub>22</sub> X	E <sub>14</sub> B	E <sub>15</sub> B	J <sub>31</sub> X	J <sub>35</sub> X	J <sub>21</sub> X	26	E <sub>20</sub> B	G	G	G	E <sub>15</sub> B	14	20	17	E <sub>10</sub> B	E <sub>11</sub> B	B	B	J <sub>21</sub> X	
7	J <sub>24</sub> X	J <sub>46</sub> X	J <sub>33</sub> X	B	J <sub>24</sub> X	J <sub>32</sub> X	J <sub>47</sub> X	J <sub>47</sub> X	B	32	J <sub>24</sub> X	G	G	G	G	E <sub>15</sub> B	E <sub>22</sub> B	B	B	B	31	J <sub>25</sub> X	J <sub>25</sub> X	32	
8	J <sub>33</sub> X	J <sub>34</sub> X	J <sub>63</sub> X	J <sub>41</sub> X	38	B	B	B	E <sub>22</sub> B	J <sub>31</sub> X	26	E <sub>29</sub> B	B	B	B	B	B	B	B	B	B	C	B	B	B
9	B	B	B	B	B	B	B	B	B	B	E <sub>27</sub> B	B	B	E <sub>28</sub> B	E <sub>22</sub> B	E <sub>14</sub> B	E <sub>23</sub> B	E <sub>22</sub> B	B	B	B	B	B	B	B
10	B	B	B	B	B	B	B	B	J <sub>30</sub> X	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11	B	B	B	C	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	26	B	26
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	J <sub>23</sub> X	26	B	B
14	J <sub>21</sub> X	26	26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	B	B	27	B	B	B	B	B	B	B	B	B	B	E <sub>28</sub> B	E <sub>21</sub> B	B	J <sub>21</sub> X	E <sub>11</sub> B	E <sub>29</sub> B	B	J <sub>27</sub> X	27	J <sub>39</sub> X	
17	34	J <sub>42</sub> X	J <sub>71</sub> X	J <sub>34</sub> X	J <sub>65</sub> X	J <sub>32</sub> X	B	B	J <sub>32</sub> X	21	B	B	E <sub>50</sub> B	B	B	B	E <sub>25</sub> B	14	E <sub>22</sub> B	E <sub>7</sub> B	B	J <sub>25</sub> X	31	J <sub>35</sub> X	
18	33	31	33	28	J <sub>42</sub> X	J <sub>40</sub> X	J <sub>30</sub> X	J <sub>20</sub> X	J <sub>16</sub> X	17	20	20	30	18	G	E <sub>20</sub> B	E <sub>14</sub> B	E <sub>15</sub> B	11	14	21	E <sub>10</sub> B	E <sub>13</sub> B	E <sub>14</sub> B	
19	B	17	12	15	15	16	16	J <sub>33</sub> X	J <sub>54</sub> X	J <sub>65</sub> X	E <sub>14</sub> B	E <sub>17</sub> B	E <sub>26</sub> B	E <sub>56</sub> B	E <sub>20</sub> B	B	E <sub>15</sub> B	B	E <sub>19</sub> B	J <sub>34</sub> X	30	B	B	C	
20	B	J <sub>21</sub> X	J <sub>40</sub> X	J <sub>37</sub> X	J <sub>43</sub> X	B	J <sub>30</sub> X	J <sub>41</sub> X	B	B	27	23	B	B	B	B	B	E <sub>56</sub> B	B	B	B	B	B	B	B
21	B	C	C	28	B	J <sub>26</sub> X	J <sub>31</sub> X	J <sub>21</sub> X	15	B	B	B	22	17	B	B	E <sub>22</sub> B	B	B	B	B	B	B	B	B
22	J <sub>42</sub> X	J <sub>30</sub> X	17	22	J <sub>47</sub> X	J <sub>25</sub> X	J <sub>42</sub> X	J <sub>26</sub> X	J <sub>25</sub> X	J <sub>26</sub> X	J <sub>41</sub> X	J <sub>99</sub> X	J <sub>65</sub> X	B	E <sub>21</sub> B	E <sub>16</sub> B	E <sub>16</sub> B	E <sub>19</sub> B	J <sub>17</sub> X	J <sub>30</sub> X	B	B	B	B	
23	J <sub>34</sub> X	J <sub>21</sub> X	J <sub>66</sub> X	J <sub>34</sub> X	J <sub>41</sub> X	J <sub>21</sub> X	7	J <sub>20</sub> X	10	10	12	16	J <sub>32</sub> X	J <sub>22</sub> X	J <sub>24</sub> X	J <sub>20</sub> X	18	J <sub>33</sub> X	17	16	J <sub>21</sub> X	10	J <sub>17</sub> X	30	
24	J <sub>39</sub> X	J <sub>32</sub> X	J <sub>52</sub> X	J <sub>31</sub> X	J <sub>33</sub> X	J <sub>25</sub> X	B	B	45	B	B	B	B	B	E <sub>30</sub> B	E <sub>22</sub> B	B	B	E <sub>22</sub> B	B	27	J <sub>35</sub> X	B	J <sub>36</sub> X	
25	J <sub>40</sub> X	J <sub>30</sub> X	B	J <sub>31</sub> X	J <sub>28</sub> X	J <sub>36</sub> X	B	J <sub>39</sub> X	J <sub>21</sub> X	G	14	17	E <sub>25</sub> B	B	B	E <sub>27</sub> B	17	B	B	B	18	J <sub>93</sub> X	J <sub>37</sub> X	J <sub>42</sub> X	
26	J <sub>34</sub> X	B	44	J <sub>32</sub> X	33	32	J <sub>44</sub> X	J <sub>38</sub> X	B	B	J <sub>24</sub> X	G	E <sub>20</sub> B	G	19	B	B	B	E <sub>25</sub> B	B	B	B	14	J <sub>24</sub> X	
27	27	J <sub>45</sub> X	J <sub>39</sub> X	J <sub>46</sub> X	J <sub>34</sub> X	J <sub>35</sub> X	B	B	J <sub>39</sub> X	21	20	B	26	G	G	21	B	B	B	31	B	B	B	B	
28	J <sub>47</sub> X	E <sub>55</sub> B	J <sub>42</sub> X	J <sub>40</sub> X	J <sub>42</sub> X	J <sub>42</sub> X	J <sub>24</sub> X	13	13	G	14	20	17	16	J <sub>29</sub> X	17	14	18	J <sub>27</sub> X	J <sub>46</sub> X	16	J <sub>20</sub> X	12	J <sub>25</sub> X	
29	J <sub>31</sub> X	J <sub>28</sub> X	J <sub>32</sub> X	J <sub>24</sub> X	J <sub>46</sub> X	18	J <sub>35</sub> X	J <sub>24</sub> X	E <sub>12</sub> B	J <sub>21</sub> X	18	J <sub>17</sub> X	19	E <sub>26</sub> B	E <sub>26</sub> B	J <sub>31</sub> X	J <sub>32</sub> X	J <sub>19</sub> X	J <sub>29</sub> X	J <sub>45</sub> X	J <sub>79</sub> X	B	13	J <sub>24</sub> X	
30	J <sub>35</sub> X	J <sub>71</sub> X	J <sub>41</sub> X	J <sub>63</sub> X	J <sub>47</sub> X	J <sub>72</sub> X	J <sub>32</sub> X	J <sub>21</sub> X	J <sub>22</sub> X	J <sub>27</sub> X	13	B	J <sub>27</sub> X	J <sub>21</sub> X	J <sub>34</sub> X	J <sub>23</sub> X	E <sub>19</sub> B	13	15	13	B	B	B	B	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	20	20	20	21	20	20	15	16	18	17	19	15	17	15	18	17	16	13	14	12	10	13	12	15	
MED	J <sub>33</sub> X	J <sub>30</sub> X	J <sub>40</sub> X	J <sub>32</sub> X	J <sub>38</sub> X	J <sub>32</sub> X	J <sub>31</sub> X	J <sub>28</sub> X	J <sub>22</sub> X	21	22	18	U <sub>20</sub>	17	E <sub>22</sub> B	E <sub>20</sub> B	E <sub>18</sub> B	U <sub>16</sub>	U <sub>14</sub>	U <sub>18</sub>	22	25	22	J <sub>30</sub> X	
UQ	J <sub>36</sub> X	J <sub>38</sub> X	J <sub>44</sub> X	J <sub>37</sub> X	J <sub>42</sub> X	J <sub>36</sub> X	J <sub>43</sub> X	J <sub>38</sub> X	J <sub>35</sub> X	J <sub>27</sub> X	26	21	26	20	E <sub>28</sub> B	21	E <sub>22</sub> B	20	E <sub>22</sub> B	J <sub>32</sub> X	30	J <sub>26</sub> X	29	J <sub>34</sub> X	
LQ	J <sub>28</sub> X	J <sub>27</sub> X	J <sub>31</sub> X	28	J <sub>30</sub> X	23	20	J <sub>21</sub> X	16	19	16	17	18	E <sub>16</sub> B	E <sub>15</sub> B	E <sub>15</sub> B	14	14	U <sub>13</sub>	13	18	14	14	24	

The Radio Research Laboratories, Japan

JUN. 1969

FOES (0.1 MHz)



# IONOSPHERIC DATA

JUN. 1969

F-MIN (0.1 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE    Lat. 69° 00' 4" S    Long. 39° 35' 4" E    Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	14	19	B	B	26	20	B	B	B	B	23	26	22	14	17	15	22	25	B	B	B	9	7	9	
2	13	13	11	10	11	12	10	B	B	23	B	B	B	B	B	B	B	B	B	B	B	13	11	B	
3	14	11	18	23	B	20	20	31	14	12	12	14	14	12	22	13	14	16	17	B	B	11	B	B	
4	11	B	29	23	23	17	17	17	16	16	11	B	B	B	29	25	B	B	B	B	B	B	14	11	
5	14	15	13	26	23	23	B	20	14	19	14	13	14	13	15	15	23	B	14	13	B	B	B	13	
6	11	13	13	11	13	14	15	24	14	14	22	20	14	14	11	15	11	10	11	10	11	B	B	9	
7	15	13	23	B	15	24	14	14	B	23	16	13	16	11	11	15	22	B	B	B	15	13	10	11	
8	12	14	13	16	33	B	B	B	22	26	20	29	B	B	B	B	B	B	B	B	C	B	B	B	
9	B	B	B	B	B	B	B	B	B	B	27	B	B	28	22	14	23	22	B	B	B	B	B	B	
10	B	B	B	B	B	B	B	B	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
11	B	B	B	C	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
12	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	18	B	23	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	18	23	B	B
14	17	23	22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
16	B	B	B	22	B	B	B	B	B	B	B	B	B	B	28	21	B	13	11	29	B	11	11	18	
17	14	9	50	22	14	29	B	B	13	13	B	B	50	B	B	B	25	12	22	7	B	7	9	10	
18	12	11	22	24	22	15	11	11	11	11	11	9	12	14	11	20	14	15	9	9	9	10	13	14	
19	B	11	9	9	6	7	8	9	10	9	14	17	26	56	20	B	15	B	19	13	22	B	B	C	
20	B	9	7	11	19	B	16	16	B	B	25	17	B	B	B	B	B	56	B	B	B	B	B	B	
21	B	C	C	10	B	19	14	12	13	B	B	B	13	13	B	B	22	B	B	B	B	B	B	B	
22	12	9	10	9	10	12	10	9	10	9	10	12	12	B	21	16	16	19	11	11	B	B	B	B	
23	10	6	6	6	6	5	6	5	6	7	6	8	8	11	12	12	11	12	12	E	11	5	5	5	
24	15	12	26	22	26	22	B	B	15	B	B	B	B	B	30	22	B	B	22	B	17	9	B	12	
25	23	11	B	23	14	15	B	13	11	12	10	7	25	B	B	27	15	B	B	B	9	10	11	12	
26	29	B	36	26	24	24	18	16	B	B	17	13	20	13	11	B	B	B	25	B	B	B	11	15	
27	10	11	17	13	13	11	B	B	15	13	15	B	18	13	11	14	B	B	B	23	B	B	B	B	
28	8	55	15	14	23	14	7	7	8	10	7	7	10	8	9	6	9	9	10	10	12	9	7	7	
29	6	7	6	6	6	7	7	11	12	9	11	10	15	26	26	14	16	15	15	14	14	B	6	5	
30	5	5	7	11	10	10	8	7	8	7	9	B	15	11	7	11	19	11	10	11	B	B	B	B	
31																									
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	29	28	28	28	29	29	29	29	29	28	28	29	29	29	29	29	29	29	29	29	28	29	29	28	
MED	14	13	22	22	23	20	20	24	15	21	18	29	25	56	26	22	23	B	B	B	B	B	B	20	
UQ	B	B	B	D, B 26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
LQ	12	11	12	11	13	14	11	12	12	12	11	13	14	13	12	15	16	15	14	13	16	11	11	11	

The Radio Research Laboratories, Japan

JUN. 1969

F-MIN (0.1 MHz)

IONOSPHERIC DATA

JUN. 1969

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3h)

Station SY0WA BASE Lat. 69 00.4 S Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23		
1	A	A	B	B	A	A	B	B	B	B	A	R	R	R	R	335	R	R	B	B	B	R	A	295		
2	350	A	320	320	F	F	275	270	B	B	A	B	B	B	B	B	B	B	B	B	B	B	R	A	B	
3	A	A	A	A	B	A	A	A	285	285	310	320	R	R	R	R	R	R	R	B	B	A	B	B		
4	A	B	A	A	A	A	A	A	A	A	310	B	B	B	R	R	B	B	B	B	B	B	A	A		
5	A	A	A	A	A	A	B	A	260	280	305	R	305	R	R	R	R	B	335	335	R	B	B	B	R	
6	A	A	A	A	A	270	260	A	A	R	R	300	F	R	U R	R	295	315	U R	330	315	315	B	B	A	
7	A	A	A	B	R	A	A	A	B	A	R	R	U R	R	R	R	R	B	B	B	B	A	A	A	A	
8	305	R	A	A	B	B	B	B	R	A	R	R	B	B	B	B	B	B	B	B	B	C	B	B	B	
9	B	B	B	B	B	B	B	B	B	B	R	B	B	R	R	R	R	315	B	B	B	B	B	B	B	
10	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
11	B	B	B	C	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
12	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	A	B	A	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B	B	
14	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	
16	B	B	B	A	B	B	B	B	B	B	B	B	B	B	R	U R	B	F	290	270	B	A	A	A	A	
17	A	A	A	A	A	A	B	B	A	275	B	B	R	B	B	B	R	U R	R	335	B	A	A	A	A	
18	A	A	A	A	A	A	A	260	285	295	305	R	305	R	U R	U R	U R	R	R	335	315	285	295	300		
19	B	R	250	290	F	F	260	250	A	F	295	R	R	320	325	B	300	B	R	A	A	B	B	C		
20	B	A	A	A	A	B	A	A	B	B	A	R	B	B	B	B	B	R	B	B	B	B	B	B	B	
21	B	C	C	A	B	A	A	R	305	B	B	B	325	U R	B	B	305	B	B	B	B	B	B	B	B	
22	A	A	275	290	A	265	275	250	265	300	A	A	J A	B	R	R	R	U R	340	345	A	B	B	B	B	
23	A	320	A	290	F	F	F	F	280	F	F	275	R	335	325	F	R	U R	325	340	340	355	330	280	A	A
24	A	A	A	A	A	A	B	B	A	B	B	B	B	B	355	305	B	B	270	B	A	A	B	A	A	
25	A	A	B	A	A	B	B	265	280	285	305	350	335	B	B	R	300	B	B	B	A	A	A	A	A	
26	A	B	A	A	A	A	A	A	B	B	290	330	R	335	R	B	B	B	R	B	B	B	A	A	A	
27	A	A	A	A	A	A	B	B	A	295	310	B	R	R	330	325	B	B	B	A	B	B	B	B	B	
28	A	B	A	A	A	A	275	F	295	290	315	U R	335	350	335	335	350	330	F	365	345	A	R	A	R	A
29	A	A	A	270	A	260	275	R	265	305	325	R	R	R	R	320	A	R	A	A	A	B	B	A	A	
30	A	295	A	A	A	A	F	280	285	F	R	B	R	R	R	R	R	320	355	R	B	B	B	B	B	
31																										
00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
CNT	2	2	3	5	2	5	6	5	10	10	11	5	8	5	6	7	7	7	8	6	3	2	1	2		
MED	328	308	275	290	265	270	272	260	282	292	305	330	335	325	330	325	300	340	338	335	315	282	295	298		
UQ			298	290		275	275	265	285	295	310	335	335	335	335	340	315	342	345	335	322					
LQ			262	290		265	260	250	265	285	300	320	315	325	325	312	298	318	310	315	315					

JUN. 1969

M(3000)F2 (0.01)

# IONOSPHERIC DATA

JUN. 1969

H<sup>o</sup>F<sub>2</sub> (KM)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69° 00.4' S Long. 39° 35.4' E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1																								
2											B	B	B	B	B									
3																								
4												B	B	B										
5																								
6																								
7																								
8													B	B	B									
9												B	B											
10											B	B	B	B	B									
11											C	C	C	C	C									
12											C	B	B	B	B									
13											B	B	B	B	B									
14											B	B	B	B	B									
15											B	B	B	B	B									
16											B	B	B	B										
17											B	B	B	B	B									
18																								
19																								
20													B	B	B									
21											B	B			B									
22															B									
23																								
24											B	B	B	B										
25															B	B								
26																								
27												B												
28																								
29																								
30																								
31																								
Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

JUN. 1969

H<sup>o</sup>F<sub>2</sub> (KM)

IONOSPHERIC DATA

JUN. 1969

H·F (KM)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69° 00.4' S Long. 39° 35.4' E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	B	B	A	A	B	B	B	B	A	250	225	220	220	200	250	250	B	B	B	A	A	A
2	A	A	300	300	350	345	325	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	B
3	A	A	A	A	B	A	A	B	345	300	250	240	215	225	205	205	240	245	225	B	B	A	B	B
4	A	B	B	A	B	A	A	A	A	A	300	B	B	B	245	225	B	B	B	B	B	B	B	A
5	A	A	A	B	B	B	B	B	340	300	275	250	230	220	210	200	240	B	250	250	B	B	B	A
6	A	A	A	A	A	B	B	B	A	325	A	240	240	215	230	200	250	240	250	200	250	B	B	A
7	A	A	B	B	A	B	A	A	B	B	295	225	215	240	240	230	280	B	B	B	A	A	A	A
8	260	A	A	A	B	B	B	B	310	B	A	255	B	B	B	B	B	B	B	B	C	B	B	B
9	B	B	B	B	B	B	B	B	B	B	290	B	B	215	245	205	260	250	B	B	B	B	B	B
10	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11	B	B	B	C	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	B	A	B	B
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	B
14	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	B	B	B	B	B	B	B	B	B	B	B	B	B	240	240	B	265	265	340	B	A	A	A
17	A	A	B	A	A	B	B	B	A	300	B	B	B	B	B	B	240	215	250	200	B	A	A	A
18	A	A	A	B	B	A	A	410	350	300	240	220	240	235	210	210	250	245	210	245	A	B	320	B
19	B	A	350	340	350	330	340	345	A	260	250	240	245	B	230	B	240	B	250	A	B	B	B	C
20	B	A	A	A	A	B	A	A	B	B	B	255	B	B	B	B	B	B	B	B	B	B	B	B
21	B	C	C	A	B	A	A	340	290	B	B	B	215	240	B	B	255	B	B	B	B	B	B	B
22	A	A	A	350	A	380	355	325	300	250	A	240	260	B	205	200	250	240	210	A	B	B	B	B
23	A	280	A	300	310	330	335	300	250	225	230	240	220	220	200	200	210	225	225	230	A	275	A	A
24	A	A	B	B	B	B	B	B	A	B	B	B	B	B	240	205	B	B	320	B	B	A	B	A
25	A	A	B	B	A	A	B	390	310	300	270	250	250	B	B	265	250	B	B	B	A	A	A	A
26	B	B	B	B	B	B	A	A	B	B	340	225	210	200	245	B	B	B	275	B	B	B	B	B
27	A	A	A	A	A	A	B	B	A	300	270	B	225	200	245	200	B	B	B	B	B	B	B	B
28	A	B	A	A	B	A	B	270	250	290	240	235	225	250	220	200	200	240	245	A	B	A	A	A
29	A	A	A	A	A	A	350	A	340	275	250	225	220	235	225	225	A	290	A	A	A	B	A	A
30	A	240	A	A	A	A	E 400	360	320	A	220	B	230	205	205	200	215	255	240	270	B	B	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	2	2	4	3	5	7	8	11	12	14	15	16	14	18	17	15	12	13	7	1	2	1	
MED	260	260	325	320	350	345	345	342	310	300	260	240	225	220	228	205	250	245	250	245	250	312	320	
UQ				345	350	380	362	375	340	300	290	250	240	235	240	225	250	252	250	260				
LQ				300	330	330	338	312	295	268	240	230	218	215	210	200	240	240	225	215				

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H·F (KM)

# IONOSPHERIC DATA

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H<sup>o</sup>ES (KM)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE    Lat. 69° 00' 45" S    Long. 39° 35' 4" E    Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	115	110	B	B	125	115	B	B	B	B	120	B	B	120	B	B	B	B	B	B	B	165	110	115	
2	115	120	115	120	115	180	125	B	B	110	B	B	B	B	B	B	B	B	B	B	B	150	140	B	
3	145	115	115	110	B	100	105	120	115	115	145	120	115	105	B	115	B	B	B	B	B	115	B	B	
4	120	B	125	105	105	110	110	100	100	105	110	B	B	B	B	B	B	B	B	B	B	B	140	115	
5	120	150	125	150	105	110	B	140	125	B	125	120	120	105	B	B	B	B	B	B	B	B	B	150	
6	115	120	110	110	115	B	B	115	105	105	115	B	G	G	G	B	125	140	125	B	B	B	B	140	
7	130	110	120	B	120	110	100	110	B	110	115	G	G	G	G	B	B	B	B	B	115	115	110	115	
8	125	130	125	145	125	B	B	B	B	120	140	B	B	B	B	B	B	B	B	B	B	C	B	B	B
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10	B	B	B	B	B	B	B	B	110	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11	B	B	B	C	B	B	B	B	B	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	C	C	C	C	C	C	C	C	C	C	C	B	B	B	B	B	B	B	B	B	120	B	175	
13	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	130	130	B	B
14	150	125	120	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
16	B	B	B	120	B	B	B	B	B	B	B	B	B	B	B	B	B	130	B	B	B	105	110	110	
17	115	110	120	125	115	130	B	B	105	125	B	B	B	B	B	B	B	140	B	B	B	110	110	115	
18	110	110	120	140	140	105	110	110	120	130	115	110	110	135	G	B	B	B	145	140	115	B	B	B	
19	B	125	120	115	110	140	140	125	110	120	B	B	B	B	B	B	B	B	110	130	B	B	B	C	
20	B	130	110	110	120	B	105	100	B	B	140	140	B	B	B	B	B	B	B	B	B	B	B	B	B
21	B	C	C	105	B	105	100	110	120	B	B	B	100	100	B	B	B	B	B	B	B	B	B	B	B
22	115	110	125	115	110	115	110	110	115	125	110	110	100	B	B	B	B	B	120	115	B	B	B	B	
23	150	135	110	115	120	110	125	100	140	180	155	160	105	110	100	100	105	125	140	125	140	155	150	105	
24	115	105	110	110	115	110	B	B	100	B	B	B	B	B	B	B	B	B	B	B	150	110	B	115	
25	130	125	B	105	110	105	B	120	120	G	150	150	B	B	B	B	150	B	B	B	150	110	110	120	
26	115	B	140	120	130	140	115	110	B	B	120	G	B	G	140	B	B	B	B	B	B	B	140	150	
27	115	125	110	110	110	120	B	B	100	140	120	B	120	G	G	150	B	B	B	140	B	B	B	B	
28	115	B	105	105	125	120	105	125	105	G	120	240	105	140	125	100	150	130	125	110	125	110	150	145	
29	140	125	140	140	110	105	170	120	B	150	145	140	140	B	B	140	110	120	125	125	115	B	150	150	
30	120	110	110	100	100	105	105	100	110	110	120	B	110	110	105	110	B	110	100	125	B	B	B	B	
31																									
CNT	20	19	20	21	20	19	14	16	16	14	17	9	10	8	4	6	5	7	7	8	9	12	11	14	
MED	118	120	120	115	115	110	110	110	110	120	120	140	110	110	115	112	125	130	125	125	130	115	140	118	
UQ	130	125	125	120	122	120	125	120	120	130	140	150	120	128	132	140	150	135	132	132	140	140	145	150	
LQ	115	110	110	110	110	105	105	105	105	110	115	120	105	105	102	100	110	122	122	112	115	110	110	115	

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H<sup>o</sup>ES (KM)

IONOSPHERIC DATA

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FOF2 (0.1 MHz)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00 .4 S Long. 39 35 .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	R	A	28	A	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
2	C	C	C	C	C	A	A	B	A	B	B	B	B	B	55	R	R	35	R	17	A	A	A	A	
3	R	A	A	A	A	F <sub>20</sub>	A	A	F <sub>31</sub>	F	37	47	61	66	R	41	37	31	22	A	A	A	A	A	
4	A	18	A	A	A	A	20	F <sub>24</sub>	25	24	J <sub>R</sub> 37	J <sub>R</sub> 41	61	66	65	46	40	27	25	A	A	A	A	16	
5	17	A	15	A	F	F <sub>36</sub>	38	J <sub>R</sub> 43	J <sub>R</sub> 40	F	J <sub>R</sub> 41	J <sub>R</sub> 51	C	R	R	J <sub>R</sub> 46	38	26	A	A	A	R	R	A	
6	C	R	A	45	F	F	F	C	F	F	39	R	J <sub>R</sub> 66	R	R	R	39	R	40	30	23	B	A	A	
7	A	A	A	A	A	R	R	R	A	A	38	R	R	R	R	R	R	34	30	R	B	A	R	R	
8	A	A	A	A	A	A	41	45	J <sub>F</sub> 37	J <sub>R</sub> 29	45	R	R	U <sub>R</sub> 62	R	U <sub>R</sub> 56	J <sub>R</sub> 44	50	25	18	B	B	R	14	
9	R	30	A	A	A	A	A	A	A	A	38	48	B	B	R	R	60	R	B	15	A	15	A	A	
10	A	A	A	A	A	A	73	A	A	41	J <sub>R</sub> 52	57	58	68	F	U <sub>R</sub> 46	47	U <sub>R</sub> 52	R	B	B	R	A	A	
11	R	A	A	A	A	A	A	33	A	A	41	J <sub>R</sub> 60	F	R	R	F	42	35	36	26	R	R	A	A	
12	A	A	A	A	A	B	A	A	A	A	A	B	B	B	B	R	R	F	36	B	B	B	R	16	
13	R	A	A	A	A	A	A	A	B	A	R	R	B	B	R	R	B	R	30	B	B	15	A	A	
14	A	A	A	A	A	A	A	A	B	B	U <sub>R</sub> 43	B	B	B	R	R	R	B	B	24	B	B	R	A	
15	A	23	A	A	A	A	A	30	F <sub>25</sub>	30	40	54	R	R	78	B	B	B	B	B	B	B	B	B	
16	A	A	A	A	A	A	B	B	45	47	48	59	R	A	B	B	B	B	R	14	U <sub>R</sub> 14	A	A	17	
17	19	A	A	A	A	A	A	A	26	B	A	R	59	J <sub>R</sub> 62	R	48	40	41	R	B	B	B	B	B	
18	R	A	R	15	A	21	21	20	21	27	36	47	63	R	R	R	U <sub>R</sub> 54	R	B	B	B	B	R	A	
19	A	A	A	A	A	29	24	26	27	F	41	R	B	U <sub>R</sub> 67	58	54	33	35	A	A	A	B	R	A	
20	A	15	F	14	F	F <sub>30</sub>	A	R	16	25	B	R	R	R	R	F	36	A	33	28	27	A	15	14	A
21	A	A	R	R	J <sub>A</sub> 34	A	A	A	A	F	J <sub>R</sub> 47	44	64	R	R	41	53	J <sub>R</sub> 46	36	27	15	A	A	A	
22	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
23	R	B	A	A	A	A	A	B	36	30	J <sub>R</sub> 42	J <sub>R</sub> 50	R	62	F	R	R	C	C	C	C	C	C	B	
24	B	B	A	A	A	B	23	25	23	26	35	R	R	55	U <sub>R</sub> 66	R	29	R	R	F	16	15	14	A	A
25	17	A	R	31	21	F	B	A	A	A	B	42	53	63	R	J <sub>R</sub> 57	59	37	31	R	B	B	B	B	
26	C	A	A	A	A	A	B	B	B	R	44	51	R	47	R	J <sub>R</sub> 58	R	J <sub>R</sub> 50	5	R	A	A	A	A	
27	A	F	A	A	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B
28	A	A	A	B	B	A	A	A	A	28	40	B	B	B	65	63	36	44	U <sub>R</sub> 28	B	B	B	B	A	
29	A	R	R	R	J <sub>R</sub> 21	J <sub>R</sub> 20	B	R	B	C	R	B	B	R	R	B	B	B	B	B	B	B	B	B	A
30	A	A	A	A	B	A	A	26	25	28	J <sub>R</sub> 47	R	U <sub>R</sub> 68	R	61	J <sub>R</sub> 64	43	J <sub>R</sub> 51	32	B	16	A	A	A	
31	A	B	A	B	B	A	28	A	32	36	R	R	U <sub>R</sub> 68	R	R	R	R	R	36	22	B	B	B	A	
CNT	3	4	2	4	4	6	8	9	14	13	21	13	10	9	8	14	16	16	13	11	5	4	1	4	
MED	17	20	22	23	24	25	26	26	26	28	41	51	63	62	63	47	40	35	30	22	15	15	14	16	
UQ	18	26	38	30	F	40	33	36	30	44	54	66	66	66	58	46	48	36	26	16	15		16		
LQ	17	16	14	21	20	22	25	25	27	38	47	61	62	58	42	37	32	28	16	15	14		15		

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FOF2 (0.1 MHz)

# IONOSPHERIC DATA

JUL. 1969

FOF1 (0.01 MHz)

45° E Mean Time (G. M. T. + 3 h)

Station SYOWA BASE Lat. 69° 00' 4" S Long. 39° 35' 4" E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1										C	C	C	C	C	C	C								
2										B	B	B	B	B										
3																								
4																								
5													C											
6																								
7																								
8																								
9													B	B										
10																								
11																								
12										A	A	B	B	B	B									
13													B	B										
14												B	B	B										
15																								
16														A	B	B								
17										B	A													
18																								
19													B											
20												B												
21																								
22										C	C	C	C	C	C	C								
23																								
24																								
25										B														
26																								
27										B	B	B	B	B	B	B								
28												B	B	B										
29										C		B	B											
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

JUL. 1969

FOF1 (0.01 MHz)

IONOSPHERIC DATA

JUL. 1969

FOE (0.01 MHZ)

45 E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1								C	C	C	C	C	C	C	C	C	C	C							
2								B	B	B	B	B	B	B	B	B	B	B							
3								B	A	A	125	A	A	A	B	B	B	B							
4								110	A	R	140	A	A	A	A	A	A	A							
5									A	115	125	A	C	130	A	A	115								
6								C	A	A	A	140	160	155	140	125	B	B							
7								B	A	A	A	A	A	A	140	B	B	B							
8								A	A	B	150	B	B	160	B	B	A	B							
9								B	B	B	B	A	B	B	B	A	110	A							
10								B	B	A	A	150	155	150	130	B	A	B							
11								B	B	B	150	A	A	A	120	A	A	B							
12								B	B	B	B	B	B	B	B	B	B	B							
13								B	B	B	B	B	B	B	B	B	B	B							
14								B	B	B	B	B	B	B	B	140	B	B							
15								B	A	140	A	A	A	B	B	B	B	B							
16								B	B	A	A	A	A	A	B	B	B	B							
17								B	A	B	B	A	180	175	155	B	B	A							
18								A	A	A	A	A	160	A	B	B	A	B							
19								A	A	B	B	B	B	B	B	B	B	B							
20								B	B	B	B	B	B	B	B	A	B	B							
21								A	A	A	A	150	A	A	A	A	A	105							
22								C	C	C	C	C	C	C	C	C	C	C							
23								B	B	B	155	160	B	A	A	125	B	C							
24								B	B	A	B	155	A	A	A	140	B	B							
25								B	A	B	B	A	190	A	150	130	A	A							
26								B	B	B	A	A	A	A	A	A	B	B							
27								B	B	B	B	B	B	B	B	B	B	B							
28								A	A	B	150	B	B	B	B	A	B	B							
29								B	B	C	140	B	B	B	B	B	B	B							
30								B	B	B	A	B	B	B	A	B	B	B							
31								B	A	140	A	A	A	175	180	160	R	A							
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT								1		3	8	5	5	6	7	6	2	1							
MED								110		140	145	150	160	158	140	135	112	105							
UQ										140	150	155	180	175	152	140									
LQ										128	132	150	160	150	135	125									

The Radio Research Laboratories, Japan

JUL. 1969

FOE (0.01 MHZ)



# IONOSPHERIC DATA

JUL. 1969

FOES (0.1 MHZ)

45° E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	14	J X 27	J X 27	J X 42	J X 42	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
2	C	C	C	C	C	J X 37	J X 40	B	J X 31	B	B	B	B	B	E B 28	E B 21	E B 24	J X 19	19	17	J X 46	J X 25	J X 17	21	
3	J X 25	J X 55	J X 46	J X 54	J X 46	J X 26	J X 44	J X 32	J X 24	15	16	17	J X 21	J X 65	J X 45	E B 16	E B 11	J X 46	J X 54	J X 47	J X 38	J X 22	J X 23	J X 26	
4	J X 31	J X 25	J X 25	J X 46	J X 32	J X 25	J X 19	13	13	G	G	J X 22	J X 20	J X 20	17	J X 25	J X 21	17	J X 24	J X 32	J X 32	J X 37	J X 22	J X 20	
5	J X 25	J X 18	J X 32	J X 72	J X 24	19	J X 17	14	25	12	G	18	C	19	15	J X 21	G	16	J X 43	J X 56	J X 33	J X 22	12	J X 22	
6	C	13	J X 36	J X 27	J X 47	J X 26	J X 17	C	J X 28	J X 14	J X 20	18	21	22	G	G	E B 11	18	17	J X 22	E B 15	B	J X 26	J X 25	
7	J X 24	J X 45	J X 33	J X 31	J X 27	J X 40	J X 51	J X 26	J X 67	J X 31	J X 63	J X 55	J X 31	J X 37	19	E B 20	E B 19	13	12	17	B	J X 30	17	16	
8	J X 27	34	J X 37	J X 49	J X 48	J X 42	J X 23	15	13	E B 20	20	J X 21	E B 23	G	E B 17	21	13	13	13	15	B	B	J X 20	J X 25	
9	J X 24	J X 36	J X 47	J X 55	J X 58	J X 46	J X 36	J X 41	J X 47	37	27	26	B	B	21	14	12	19	B	J X 36	J X 18	23	J X 33	J X 46	
10	J X 41	J X 32	J X 85	J X 65	J X 47	J X 41	B	J X 31	J X 45	J X 31	21	20	21	22	25	J X 67	J X 32	23	E B 22	B	B	20	J X 23	J X 26	
11	J X 38	J X 37	J X 61	J X 52	J X 32	J X 34	J X 56	J X 47	J X 37	J X 34	J X 32	21	J X 21	J X 22	J X 20	J X 21	19	E B 18	12	12	11	12	J X 28	J X 37	
12	J X 33	J X 46	J X 46	J X 68	28	B	J X 37	J X 42	J X 63	J X 50	J X 42	B	B	B	B	E B 26	E B 22	16	E B 19	B	B	B	20	16	
13	J X 31	J X 53	43	42	J X 41	J X 46	J X 41	J X 32	B	42	31	E B 27	B	B	E B 36	E B 30	B	E B 26	E B 21	B	B	13	J X 65	J X 68	
14	34	33	J X 32	J X 42	39	J X 31	J X 31	J X 31	B	B	J X 22	B	B	B	E B 26	17	E B 18	B	B	14	B	B	23	32	
15	J X 34	J X 22	J X 22	J X 22	J X 35	J X 34	J X 45	J X 34	18	G	J X 18	19	18	E B 55	E B 22	B	B	B	B	B	B	B	B	B	
16	J X 25	J X 45	J X 26	J X 32	29	J X 41	B	B	J X 21	J X 19	J X 21	J X 21	J X 42	J X 55	B	B	B	B	B	23	E B 10	11	17	J X 37	14
17	12	J X 26	J X 35	J X 23	J X 35	J X 34	J X 32	J X 32	J X 27	B	J X 45	18	G	G	G	E B 13	E B 12	17	J X 22	B	B	B	B	B	
18	17	J X 20	17	13	J X 32	J X 41	J X 42	J X 24	J X 26	J X 23	J X 23	J X 64	24	J X 21	E B 19	E B 28	19	E B 26	B	B	B	B	18	J X 21	
19	J X 21	J X 23	J X 26	J X 21	J X 21	J X 24	J X 41	J X 37	12	E B 10	E B 14	E B 15	B	E B 23	E B 17	E B 22	J X 30	30	J X 25	J X 46	J X 34	B	19	J X 24	
20	J X 28	17	J X 22	J X 19	J X 23	25	J X 25	23	E B 11	E B 15	B	E B 31	J X 32	J X 30	J X 21	J X 62	J X 47	17	J X 30	J X 32	J X 24	12	13	J X 17	
21	J X 30	J X 28	J X 18	17	J X 45	J X 50	J X 92	J X 87	J X 134	J X 66	J X 19	G	19	22	J X 31	13	15	G	10	9	J X 20	J X 38	J X 32	J X 31	
22	31	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	J X 28	B	J X 34	J X 33	J X 32	J X 27	J X 34	B	E B 16	E B 14	G	G	E B 21	17	18	14	E B 11	C	C	C	C	C	C	B	
24	B	B	J X 28	J X 32	J X 25	B	E B 15	E B 12	E B 11	13	E B 24	G	25	23	18	G	E B 9	E B 11	20	12	12	12	J X 25	J X 21	
25	J X 30	J X 31	J X 39	J X 45	J X 22	J X 22	B	J X 31	J X 34	B	E B 23	21	21	21	20	G	15	17	E B 15	B	B	B	B	B	
26	C	17	J X 31	J X 33	48	J X 45	B	B	B	E B 26	23	24	18	17	22	23	E B 11	E B 10	19	19	J X 24	27	J X 33	J X 33	
27	J X 37	J X 41	J X 47	J X 94	B	B	J X 87	B	J X 32	B	B	B	B	B	B	B	B	B	B	B	B	B	30	B	B
28	31	J X 27	J X 26	B	B	J X 31	J X 28	J X 25	J X 21	E B 15	G	B	B	B	E B 23	17	E B 22	E B 15	E B 15	B	B	B	B	16	
29	J X 20	J X 25	J X 24	J X 22	J X 31	16	B	E B 22	B	C	17	B	B	23	E B 23	E B 21	B	B	B	B	B	B	B	17	
30	20	16	17	21	B	J X 35	28	18	E B 14	E B 14	16	E B 20	E B 22	E B 26	22	E B 17	E B 11	E B 15	E B 13	B	E B 11	J X 61	J X 31	J X 30	
31	J X 38	B	J X 39	B	B	J X 32	J X 27	J X 26	17	G	J X 22	J X 21	23	G	G	G	G	G	15	J X 25	J X 22	B	B	B	J X 30
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT	27	26	29	27	25	26	24	23	25	23	26	23	19	22	26	26	24	23	22	17	14	16	21	24	
MED	J X 28	J X 28	J X 32	J X 33	J X 32	J X 34	J X 35	J X 31	J X 25	14	20	20	21	22	U 18	E G 20	E G 15	16	19	19	J X 22	22	J X 23	J X 24	
UQ	J X 32	J X 37	J X 39	J X 50	J X 45	J X 41	J X 43	J X 33	J X 34	J X 31	J X 24	22	24	24	22	22	U 20	18	J X 24	J X 32	J X 33	J X 30	J X 31	J X 30	
LQ	J X 24	J X 22	J X 26	J X 22	J X 28	J X 26	J X 26	22	16	E G 14	16	18	20	19	16	E G 14	E B 11	14	14	14	12	15	19	18	

JUL. 1969

FOES (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1969

F-MIN (0.1 MHZ)

45 E. Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	8	7	5	8	11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	13	18	B	22	B	B	B	B	B	28	21	24	11	11	11	8	16	9	7
3	5	6	8	6	7	7	11	11	9	8	7	10	11	13	21	16	11	11	11	11	11	11	7	6
4	5	6	5	12	12	11	10	7	8	7	8	9	7	7	10	8	6	8	8	6	6	6	6	4
5	5	6	6	E <sub>10</sub> <sup>C</sup>	E <sub>10</sub> <sup>C</sup>	E <sub>10</sub> <sup>C</sup>	5	6	7	7	E <sub>10</sub> <sup>C</sup>	E <sub>10</sub> <sup>C</sup>	C	9	8	6	11	12	15	15	12	11	11	10
6	C	10	9	7	5	6	7	C	6	6	7	11	10	11	11	9	11	11	9	13	15	B	8	6
7	10	8	7	7	8	7	6	10	15	13	11	11	11	10	14	20	19	11	11	11	B	8	7	10
8	10	14	25	13	12	12	9	9	7	20	12	23	23	15	17	14	11	12	11	11	B	B	E	5
9	5	8	16	15	9	22	26	17	14	20	16	17	B	B	17	11	9	9	B	11	10	9	8	10
10	10	11	13	14	15	22	B	23	15	11	11	13	13	15	15	20	13	15	22	B	B	11	11	8
11	9	9	14	14	17	15	15	14	15	14	14	12	11	13	8	11	13	10	10	8	8	7	5	8
12	9	10	10	10	23	B	22	28	28	18	20	B	B	B	B	26	22	11	19	B	B	B	12	10
13	9	7	11	13	10	11	21	23	B	34	23	27	B	B	36	30	B	26	21	B	B	10	7	10
14	16	9	11	10	18	24	14	25	B	B	18	B	B	B	26	13	18	B	B	11	B	B	11	18
15	10	11	12	11	11	13	10	12	13	12	11	12	15	55	22	B	B	B	B	B	B	B	B	B
16	14	10	10	11	11	15	B	B	15	12	15	15	14	13	B	B	B	B	13	10	9	10	9	7
17	10	8	8	10	12	23	26	14	10	B	22	13	14	14	13	13	12	10	11	B	B	B	B	8
18	11	11	7	6	7	6	8	8	7	7	11	13	14	14	19	28	14	26	B	B	B	B	11	7
19	7	8	7	8	9	8	8	6	9	10	14	15	B	23	17	22	16	18	15	9	11	B	11	11
20	11	8	7	8	5	8	12	12	11	15	B	31	23	23	23	13	15	12	10	7	7	8	10	10
21	9	8	8	17	11	7	5	6	10	6	7	7	12	12	11	6	5	8	7	5	5	17	7	10
22	10	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	11	B	21	15	23	14	11	B	16	14	13	11	21	14	13	11	11	C	C	C	C	C	C	B
24	B	B	21	17	17	B	15	12	11	10	24	14	16	12	11	10	9	11	9	9	8	8	7	11
25	8	8	9	10	11	8	B	24	11	B	23	14	13	12	12	11	11	15	15	B	B	B	B	B
26	C	10	9	11	11	27	B	B	B	26	12	14	15	15	11	13	11	10	11	12	12	15	10	10
27	10	10	15	14	B	B	17	B	24	B	B	B	B	B	B	B	B	B	B	B	B	15	B	B
28	15	16	17	B	B	24	15	14	13	15	14	B	B	B	23	15	22	15	15	B	B	B	B	10
29	9	10	9	9	11	12	B	22	B	C	12	B	B	19	23	21	B	B	B	B	B	B	B	10
30	10	10	10	10	B	15	12	13	14	14	13	20	22	26	16	17	11	15	13	B	11	15	17	15
31	21	B	10	B	B	19	11	15	10	8	12	15	15	15	15	14	11	10	11	10	B	B	B	6
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	29	29	29	29	29	29	28	29	28	29	29	28	29	29	29	29	28	28	28	28	28	28	29
MED	10	10	10	11	11	13	14	14	13	14	13	14	16	15	17	14	13	12	13	12	D <sub>15</sub>	16	10	10
UQ	11	11	13	14	17	22	22	24	16	23	20	27	B	55	23	21	22	22	22	B	B	B	D <sub>17</sub>	11
LQ	8	8	8	8	10	8	10	10	10	9	11	12	13	13	12	11	11	10	11	10	10	10	7	7

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F-MIN (0.1 MHZ)

# IONOSPHERIC DATA

JUL. 1969

M(3000)F2 (0.01)

45° E Mean Time (G. M. T. + 3h)

Station **SYOWA BASE** Lat. **69° 00.4' S** Long. **39° 35.4' E** Sweep **0.4 MHz to 15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23			
1	R	A	305	A	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C			
2	C	C	C	C	C	A	A	B	A	B	B	B	B	B	315	R	R	320	R	360		A	A	A	A		
3	R	A	A	A	A	F	A	A	F	F	310	320	345	345	R	340	350	350	350	A	A	A	A	A			
4	A	305	A	A	A	A	275	240	F	300	290	R	U R	310	320	325	325	315	335	360	A	A	A	A	280		
5	345	A	285	A	F	F	235	250	R	R	F	R	R	C	R	R	R	335	340	A	A	A	R	R	A		
6	C	R	A	265	F	F	F	C	F	F	295	R	R	R	R	R	300	R	325	340	330	B	A	A			
7	A	A	A	A	A	R	R	R	A	A	295	R	R	R	R	R	R	325	325	R	B	A	R	R			
8	A	A	A	A	A	A	250	280	F	U R	295	290	R	U R	335	R	U R	345	R	315	330	345	B	B	R	320	
9	R	315	A	A	A	A	A	A	A	A	315	315	B	B	R	R	315	R	B	280	A	355	A	A			
10	A	A	A	A	A	A	B	A	A	280	315	325	315	340	F	U R	345	290	U R	310	R	B	B	R	A	A	
11	R	A	A	A	A	A	A	270	A	A	295	R	F	R	R	F	360	340	345	310	345	R	R	A	A		
12	A	A	A	A	A	B	A	A	A	A	A	A	B	B	B	B	R	R	F	345	B	B	B	R	315		
13	R	A	A	A	A	A	A	A	B	A	R	R	B	B	R	R	B	R	335	B	B	320	A	A			
14	A	A	A	A	A	A	A	A	B	B	U R	300	B	B	R	R	R	B	B	B	335	B	B	R	A		
15	A	285	A	A	A	A	A	265	300	315	310	325	R	R	310	B	B	B	B	B	B	B	B	B			
16	A	A	A	A	A	A	B	B	305	285	335	325	R	A	B	B	B	B	R	285	R	A	A	355			
17	315	A	A	A	A	A	A	A	280	B	A	R	320	U R	R	330	330	325	R	B	B	B	B	B			
18	R	A	R	265	A	285	260	300	285	320	335	340	365	R	R	R	U R	335	R	B	B	B	R	A			
19	A	A	A	A	A	255	290	305	295	295	F	295	R	B	U R	345	330	355	310	335	A	A	A	B	R	A	
20	A	295	F	250	270	F	F	A	R	315	315	B	R	R	R	R	F	A	335	340	335	A	325	320	A		
21	A	A	R	R	J A	A	A	A	A	F	J R	345	300	315	R	R	300	320	J R	350	335	365	325	A	A	A	
22	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C		
23	R	B	A	A	A	A	A	B	295	325	J R	285	310	R	325	F	R	R	C	C	C	C	C	C	B		
24	B	B	A	A	A	B	285	285	295	310	345	R	R	345	U R	350	R	360	R	R	F	370	335	285	A	A	
25	325	A	R	275	250	F	B	A	A	B	290	290	335	R	J R	360	340	325	325	R	B	B	B	B			
26	C	A	A	A	A	A	B	B	B	R	350	305	R	350	R	J R	330	R	J R	300	S	R	A	A	A	A	
27	A	F	A	A	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B		
28	A	A	A	B	B	A	A	A	A	290	330	B	B	B	340	350	320	340	U R	350	B	B	B	B	A		
29	A	R	R	R	J R	J R	B	R	B	C	R	B	B	R	R	R	B	B	B	B	B	B	B	B	A		
30	A	A	A	A	B	A	A	270	260	290	J R	300	R	U R	325	R	345	345	340	J R	315	330	B	315	A	A	A
31	A	B	A	B	B	A	280	A	280	305	R	R	U R	325	R	R	R	R	R	335	335	B	B	B	A		
CNT	3	4	2	4	4	6	7	8	12	13	19	11	9	9	8	13	15	16	13	11	4	4	1	4			
MED	325	300	295	265	275	265	275	275	295	295	310	320	325	345	335	340	325	330	335	340	328	322	320	318			
UQ	335	310		270	J	295	275	282	292	300	315	332	325	335	345	348	345	338	340	345	352	332	340		338		
LQ	320	290		258	260	F	255	268	280	290	295	308	315	335	320	330	315	318	330	335	320	302		298			

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M(3000)F2 (0.01)

# IONOSPHERIC DATA

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H<sup>o</sup>F<sub>2</sub> (KM)

45° E Mean Time (G. M. T. + 3 h)

Station SYDWA BASE Lat. 69° 00' .4 S Long. 39° 35' .4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1											C	C	C	C	C	C								
2										B	B	B	B	B										
3																								
4																								
5													C											
6																								
7																								
8																								
9													B	B										
10																								
11																								
12										A	A	B	B	B	B									
13													B	B										
14												B	B	B										
15																								
16														A	B	B								
17										B	A													
18																								
19													B											
20												B												
21																								
22											C	C	C	C	C	C	C							
23																								
24																								
25										B														
26																								
27										B	B	B	B	B	B	B	B							
28												B	B	B										
29										C		B	B											
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT																								
MED																								
UQ																								
LQ																								

JUL. 1969

H<sup>o</sup>F<sub>2</sub> (KM)

# IONOSPHERIC DATA

JUL. 1969

H\*F (KM)

45 E Mean Time (G. M. T. + 3h)

Station **SYDWA BASE** Lat. **69 00.4 S** Long. **39 35.4 E** Sweep **0.4 MHz** to **15 MHz** in **30 sec** in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
1	A	A	290	A	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
2	C	C	C	C	C	B	B	B	B	B	B	B	B	B	240	225	B	240	205	200	A	A	A	A	
3	A	A	A	A	A	A	A	A	300	290	250	215	225	215	215	205	200	225	255	A	A	A	A	A	
4	A	300	A	A	A	A	A	340	280	220	235	200	225	200	200	200	200	230	225	A	A	A	A	A	
5	A	A	A	A	A	365	350	300	300	300	220	240	C	220	210	240	225	A	A	A	A	A	A	A	
6	C	A	A	375	395	390	360	C	300	A	A	240	230	225	225	230	200	210	240	240	220	B	A	A	
7	A	A	A	A	A	390	395	A	A	A	300	A	A	A	215	215	215	290	225	A	B	A	A	A	
8	A	A	B	A	A	A	370	290	265	B	245	B	240	240	240	205	200	230	220	A	B	B	A	A	
9	A	A	A	A	A	A	B	A	A	B	300	270	B	B	240	205	220	220	B	A	A	A	A	A	
10	A	A	A	A	A	B	B	B	A	300	250	225	230	230	250	240	250	240	245	B	B	A	A	A	
11	A	A	A	A	A	A	A	340	A	A	300	220	200	220	205	200	200	230	245	200	A	A	A	A	
12	A	A	A	A	A	B	B	B	B	A	A	B	B	B	B	240	225	250	230	B	B	B	A	A	
13	A	A	A	A	A	A	A	B	B	B	B	300	B	B	255	280	B	250	250	B	B	A	A	A	
14	A	A	A	A	A	A	A	B	B	B	275	B	B	B	240	200	250	B	B	250	B	B	A	A	
15	A	A	A	A	A	A	A	A	300	265	240	240	250	B	225	B	B	B	B	B	B	B	B	B	
16	A	A	A	A	A	A	B	B	320	290	270	235	250	A	B	B	B	B	A	B	B	A	A	290	
17	B	A	A	A	A	A	B	A	A	B	A	200	220	200	235	200	225	240	210	B	B	B	B	B	
18	A	A	A	A	A	320	A	290	300	250	220	A	215	220	225	210	235	240	B	B	B	B	A	A	
19	A	A	A	A	A	375	320	300	265	265	245	225	B	230	205	210	A	230	A	A	A	B	A	A	
20	A	A	A	A	A	350	A	A	300	300	B	B	B	B	215	215	200	A	240	265	240	A	265	A	A
21	A	A	A	A	355	A	A	A	A	275	220	200	230	205	200	200	250	210	230	220	A	A	A	A	
22	A	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	
23	A	B	B	A	B	A	A	B	290	250	250	220	240	240	225	200	210	C	C	C	C	C	C	B	
24	B	B	B	A	A	B	B	350	310	300	290	250	215	230	205	220	200	190	240	200	A	260	A	A	A
25	A	A	A	A	A	A	B	A	A	B	250	250	240	200	200	225	225	240	255	B	B	B	B	B	
26	C	A	A	A	A	B	B	B	B	B	220	240	205	205	200	230	215	250	250	A	A	A	A	A	
27	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B
28	A	A	A	B	B	B	A	A	A	300	240	B	B	B	240	220	225	240	230	B	B	B	B	A	
29	A	A	A	A	A	A	B	B	B	C	255	B	B	220	230	205	B	B	B	B	B	B	B	A	
30	A	A	A	A	B	A	A	A	B	290	240	230	235	205	215	225	200	250	230	B	B	A	A	A	
31	A	B	A	B	B	A	A	A	300	250	230	245	245	210	205	210	210	210	245	250	A	B	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
CNT		1	1	1	2	6	6	7	13	15	22	20	17	19	26	26	21	22	19	7	2	1		1	
MED		300	290	375	375	370	355	300	300	290	248	230	230	215	222	209	215	240	230	240	240	265		290	
UQ					390	370	325	300	295	255	240	240	222	240	225	225	240	248	245						
LQ					350	350	295	290	258	235	218	225	205	205	200	200	230	225	210						

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IONOSPHERIC DATA

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45 E Mean Time (G. M. T. + 3h)

Station SYOWA BASE Lat. 69 00.4 S. Long. 39 35.4 E Sweep 0.4 MHz to 15 MHz in 30 sec in automatic operation

Hour Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	150	140	110	105	110	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
2	C	C	C	C	C	105	110	B	105	B	B	B	B	B	B	B	B	125	105	110	105	140	125	145
3	140	110	115	105	105	110	110	105	110	110	160	145	125	120	120	B	B	105	100	100	100	100	150	145
4	125	125	105	100	100	105	115	150	100	G	125	110	110	100	110	105	100	100	105	100	100	105	105	140
5	130	115	125	100	125	125	125	105	110	170	G	115	C	145	110	100	G	115	115	120	120	120	125	105
6	C	105	110	125	150	110	140	C	105	120	105	115	120	120	G	G	B	120	120	110	B	B	150	150
7	130	110	100	100	100	110	105	110	105	105	130	105	105	100	100	B	B	100	120	110	B	110	145	150
8	125	120	105	105	105	110	125	145	120	B	150	140	B	G	B	140	100	100	100	100	B	B	115	140
9	125	115	115	100	105	105	105	100	100	105	110	115	B	B	105	145	145	100	B	130	125	155	110	110
10	110	120	110	110	110	115	B	100	105	140	120	140	150	145	150	140	110	140	B	B	B	155	145	125
11	120	120	115	100	120	105	100	125	130	130	140	145	125	145	125	125	120	B	110	110	195	155	125	110
12	105	110	100	115	150	B	120	125	105	100	100	B	B	B	B	B	B	100	B	B	B	B	150	130
13	110	125	110	105	110	100	110	105	B	140	140	B	B	B	B	B	B	B	B	B	B	100	115	150
14	115	105	115	105	105	100	105	105	B	B	120	B	B	B	B	150	B	B	B	130	B	B	115	120
15	110	130	125	110	110	110	100	110	115	G	100	100	105	B	B	B	B	B	B	B	B	B	B	B
16	140	140	140	115	110	115	B	B	120	105	105	115	105	105	B	B	B	B	130	B	125	150	110	170
17	140	105	105	110	110	105	110	105	105	B	115	115	G	G	G	B	B	110	120	B	B	B	B	B
18	150	125	125	115	125	105	105	100	100	105	115	115	120	130	B	B	145	B	B	B	B	B	120	120
19	115	115	105	105	130	120	115	105	110	B	B	B	B	B	B	B	120	125	105	105	100	B	140	120
20	120	120	115	105	105	115	125	100	B	B	B	B	110	105	115	115	100	110	100	150	100	150	150	150
21	120	125	140	120	105	110	120	110	105	115	140	G	140	120	120	155	105	G	100	120	145	110	110	110
22	115	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
23	140	B	110	110	120	115	115	B	B	B	G	G	B	155	140	140	B	C	C	C	C	C	C	B
24	B	B	125	110	120	B	B	B	B	145	B	G	120	115	110	G	B	B	100	150	105	160	150	150
25	125	125	125	105	140	100	B	105	100	B	B	150	150	145	190	G	105	150	B	B	B	B	B	B
26	C	145	120	115	110	110	B	B	B	B	150	140	140	120	140	125	B	B	120	150	140	150	130	110
27	110	110	105	105	B	B	130	B	120	B	B	B	B	B	B	B	B	B	B	B	B	155	B	B
28	110	120	125	B	B	105	105	110	105	B	G	B	B	B	B	150	B	B	B	B	B	B	B	160
29	150	105	110	110	125	150	B	B	B	C	145	B	B	150	B	B	B	B	B	B	B	B	B	135
30	145	150	145	115	B	105	105	120	B	B	135	B	B	B	145	B	B	B	B	B	B	140	110	105
31	120	B	110	B	B	105	110	125	150	G	140	140	140	G	G	G	G	125	110	110	B	B	B	145
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	26	29	27	25	26	23	21	21	13	20	16	15	16	14	12	10	15	16	16	12	16	21	24
MED	125	120	115	105	110	110	110	105	105	115	128	115	120	120	120	140	108	110	108	110	112	145	125	138
UQ	140	125	125	112	125	115	120	120	115	140	140	140	140	145	140	148	120	125	120	130	132	155	145	150
LQ	115	110	110	105	105	105	105	105	105	105	112	115	110	110	110	120	100	100	100	108	100	110	115	115

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