ISSN 0389–8237

ION. ANT.—41

IONOSPHERIC DATA AT SYOWA STATION

(ANTARCTICA)

July 1983—December 1983

CONTENTS

	Page
Introduction	1
Ionograms	
July	4
August	20
September	34
October	51
November	67
December	82
Tables	98

RADIO RESEARCH LABORATORY

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TOKYO, JAPAN

INTRODUCTION

Vertical soundings of ionosphere at Syowa Station, Antarctica, have been carried out by the Radio Research Laboratories, through the sponsorship of the National Institute of Polar Research of Japan.

LOCATION OF SYOWA STATION

Geographic		Geomagnetic	
Latitude	Longitude	Latitude	Longitude
69°00.4'S	39°35.4'E	-69.8°	78.2°

SPECIFICATIONS OF THE IONOSONDE USED AT SYOWA STATION

Items	Specificatons
Frequency Range	400 kHz-15 MHz
Transmitting power	10 kW (peak value)
Duration of Sweep	20 sec
Transmitted Pulse Width	80 μsec
Recurrence Frequency of Transmitted Pulse	50 Hz (by power source 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 and video fax for ionograms
Power Supply	100 volt AC, 2.0 kVA
Transmitting Antenna and Receiving Antenna	30 m height vertical delta terminated by 600 Ω respectively

DESCRIPTION

a. All symbols and terminology in the tables or figures of ionospheric data are used in accordance with the "URSI Handbook of Ionogram Interpretation and Reduction (Second Edition 1972)"

b. Ionograms data are printed in the quarter hourly of every days.

c. Characteristics of Ionosphere

fxI	Top frequency of spread F traces or oblique traces.
fof2	Ordinary wave critical frequency for the F2 layer.
fEs(ftEs)	Top frequency of Es layer as reflected overhead.
fmin	Lowest frequency showing vertical ionospheric reflection.
h'F	Minimum virtual height of the ordinary wave F trace as a whole.

Symbols

(i) Descriptive Letters.

The following letters are entered after, or used to replace, a numerical value on the monthly tabulation sheets.

A Measurement influenced by, or impossible because of, the presence of a lower thin layer, for example, Es.

B Measurement influenced by, or impossible because of, absorption in the vicinity of fmin.

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.

E Measurement influenced by, or impossible because of, the lower limit of the normal frequency range.

F Measurement influenced by, or impossible because of, the presence of spread echoes.

G Measurement influenced or impossible because the ionization density of the layer is too small to enable it to made accurately.

H Measurement influenced by, or impossible because of, the presence of stratification.

K Presence of particle E layer.

L Measurement influenced by or impossible because the trace has no sufficiently definite cusp between layers.

M Interpretation of measurement questionable because the ordinary and extraordinary components are not distinguishable.

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

P Man-made perturbation of parameters-Presence of polar spur traces.

Q Range spread present.

R Measurement infuenced by, or impossible because of, attenuation in the vicinity of a critical frequency.

S Measurement influenced by, or impossible because of, interference or atmospherics.

T Volue determined by a sequence of observations, the actual observation being inconsistent or doubtful.

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 Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

The following letters are entered in the first column before a numerical value on the monthly tabuation sheets.

D Greater than.

E Less than.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

O Extraordinary component characterisitic deduced from the ordinary 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 magneto-electronic component.

Definitions of the CNT, MED, UQ and LQ

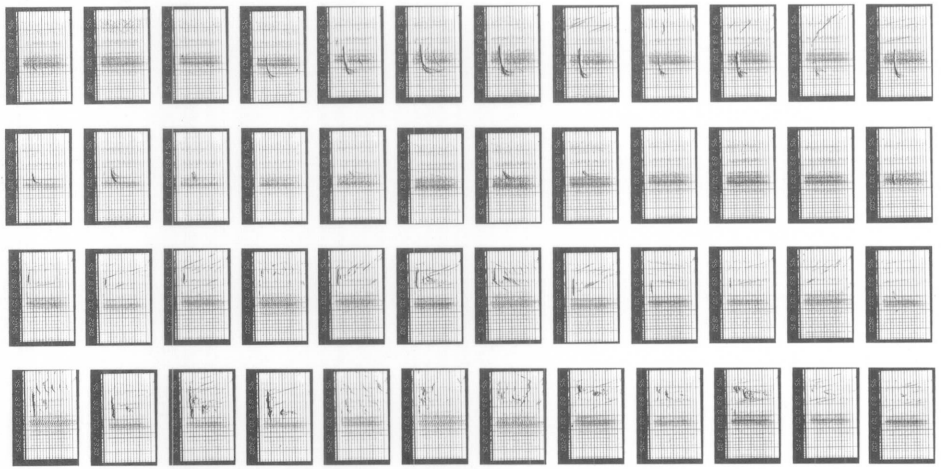
Median count (CNT) is the number of values from which a median has been computed. In addition to numerical values, the count may include certain descriptive letters.

Median (MED) of a set of numbers is the middle value when the numbers are arranged in order of magnitude, or the average of the two middle values if there is an even number of values.

Upper quartile (UQ) is the median value the upper half of the values when they are ranked accrding to magnitude; the lower quartile (LQ) is the median value of the lower half.

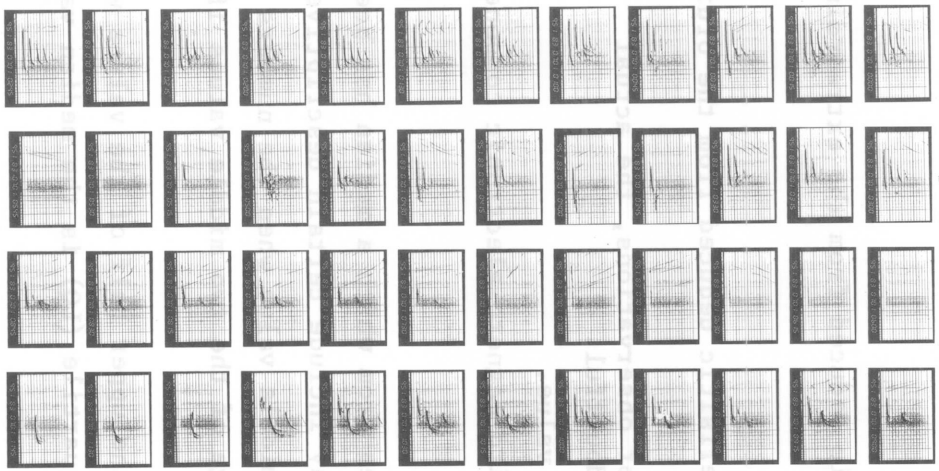
SYOWA STATION

IONOGRAM 1983 07 01 12;00-23;45



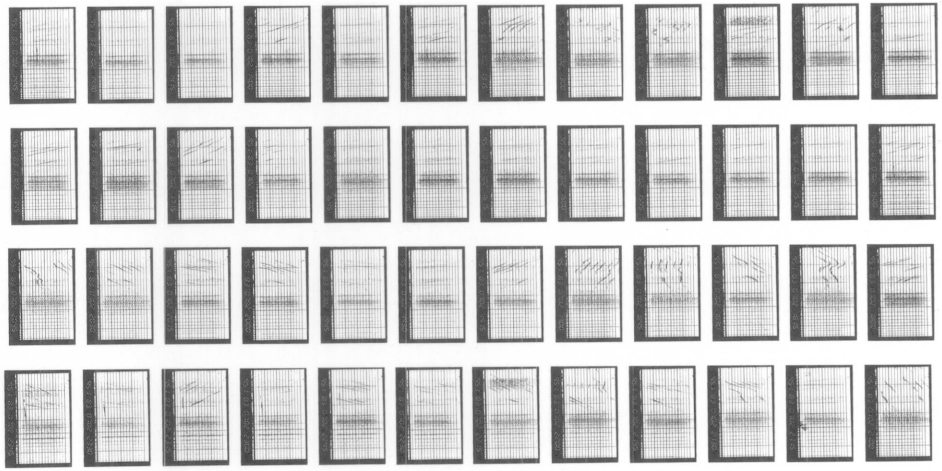
SYOWA STATION

IONOGRAM 1983 07 01 00;00-11;45



SYOWA STATION

IONOGRAM 1983 07 02 12;00-23;45

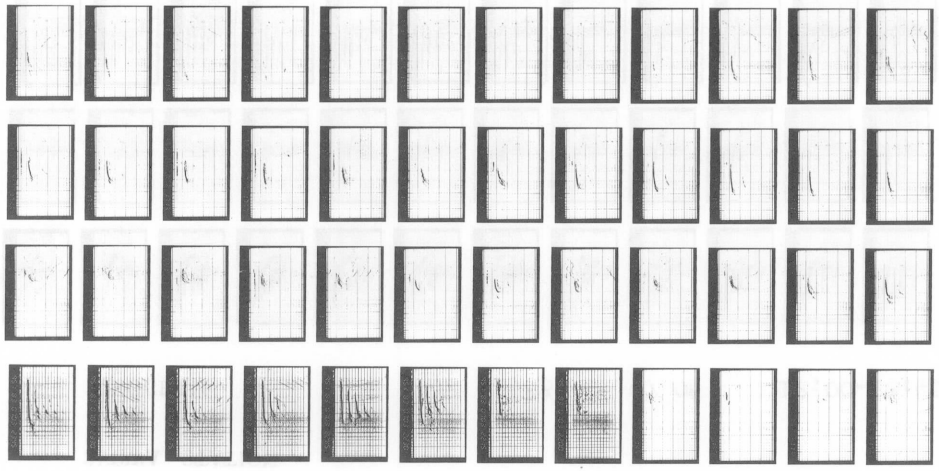


SYOWA STATION

IONOGRAM 1983 07 02 00;00-11;45

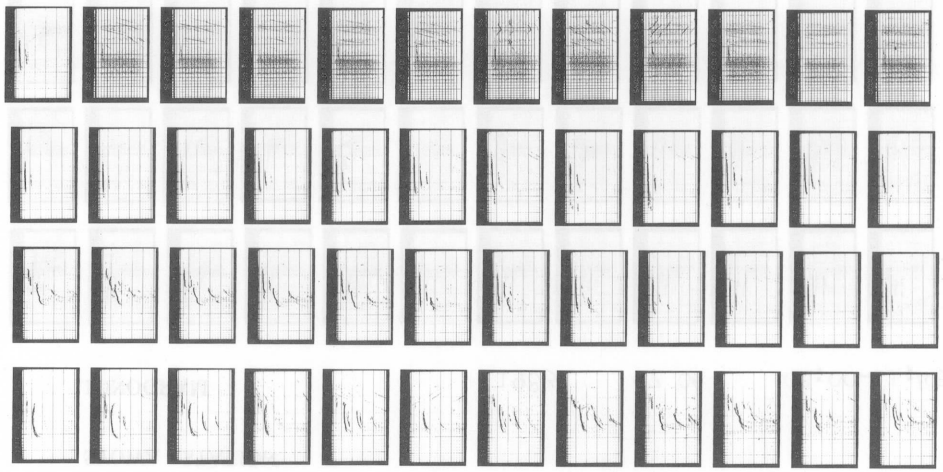
SYOWA STATION

IONOGRAM 1983 07 03 12;00-23;45



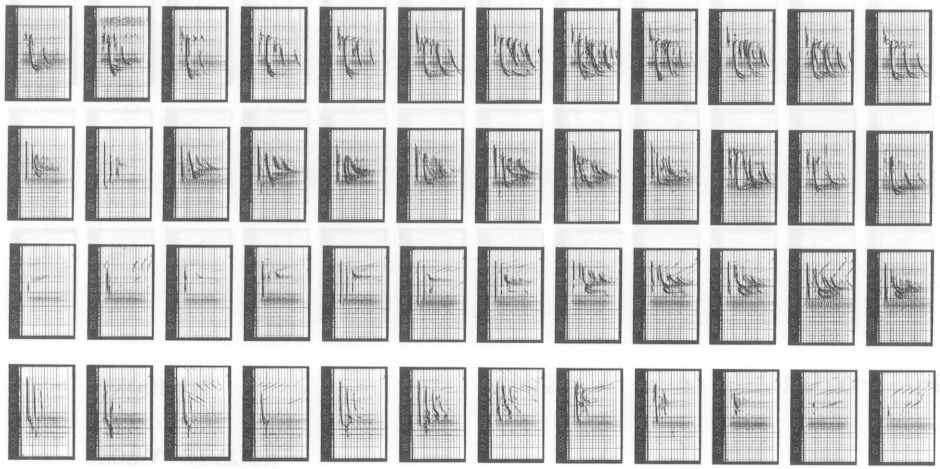
SYOWA STATION

IONOGRAM 1983 07 03 00;00-11;45



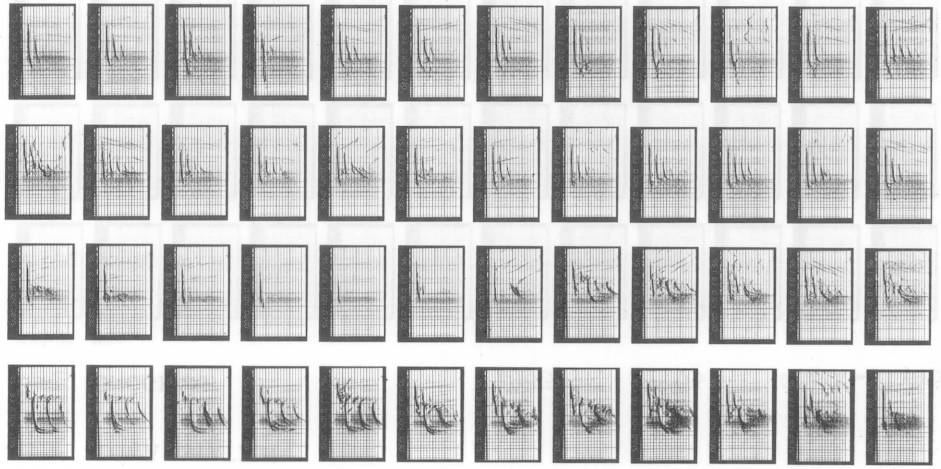
SYOWA STATION

IONOGRAM 1983 07 04 12;00-23;45



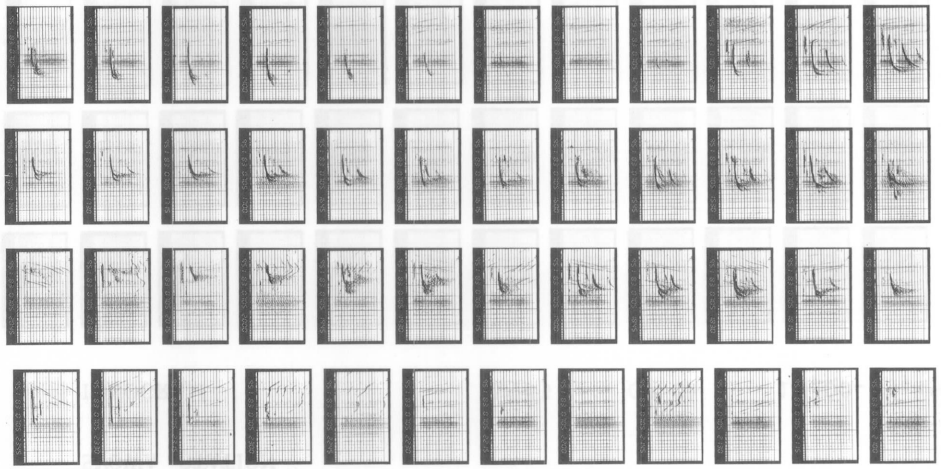
SYOWA STATION

IONOGRAM 1983 07 04 00;00-11;45



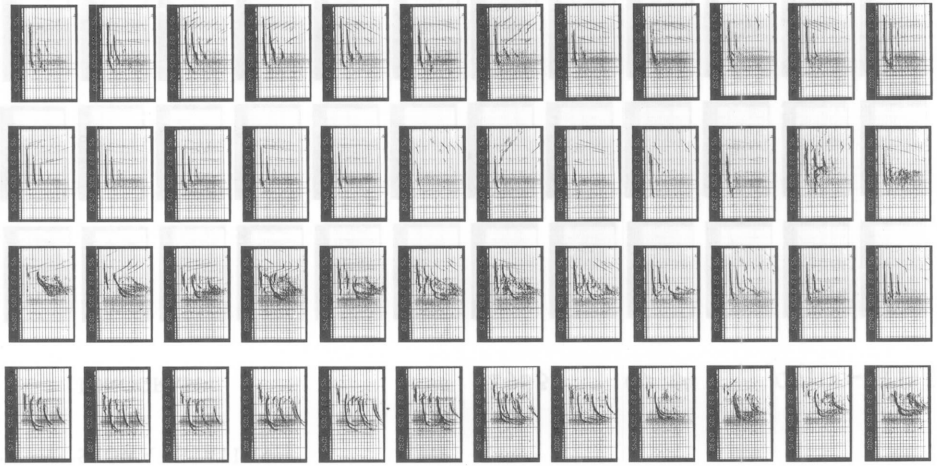
SYOWA STATION

IONOGRAM 1983 07 05 12;00-23;45



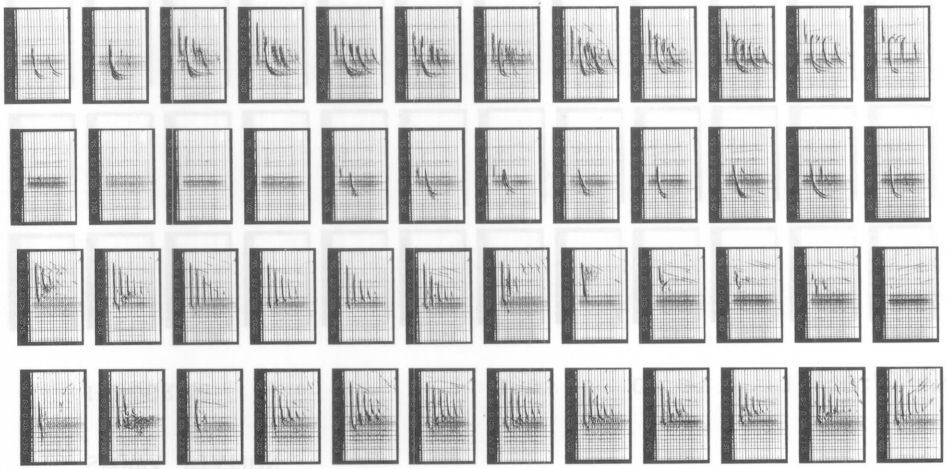
SYOWA STATION

IONOGRAM 1983 07 05 00;00-11;45



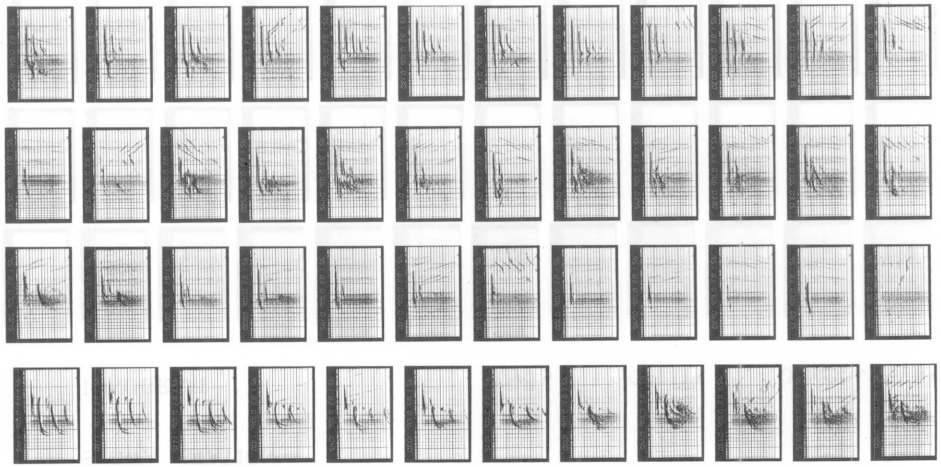
SYOWA STATION

IONOGRAM 1983 07 06 12;00-23;45



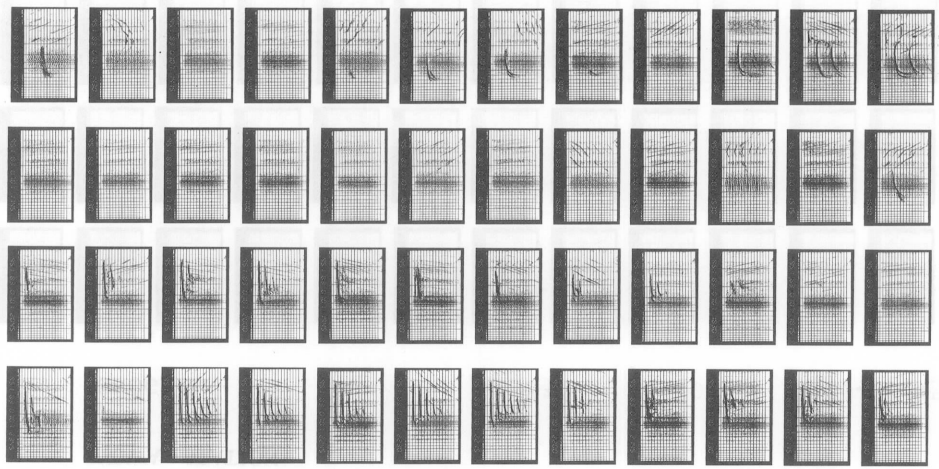
SYOWA STATION

IONOGRAM 1983 07 06 00;00-11;45



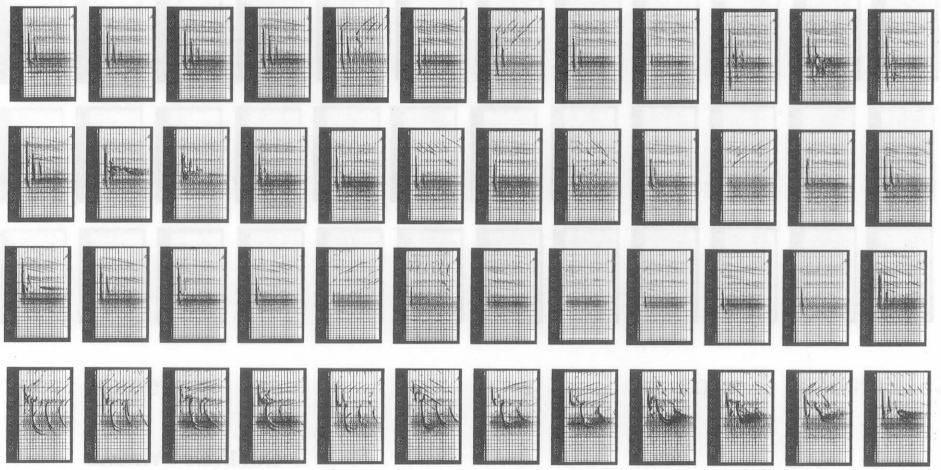
SYOWA STATION

IONOGRAM 1983 07 07 12;00-23;45



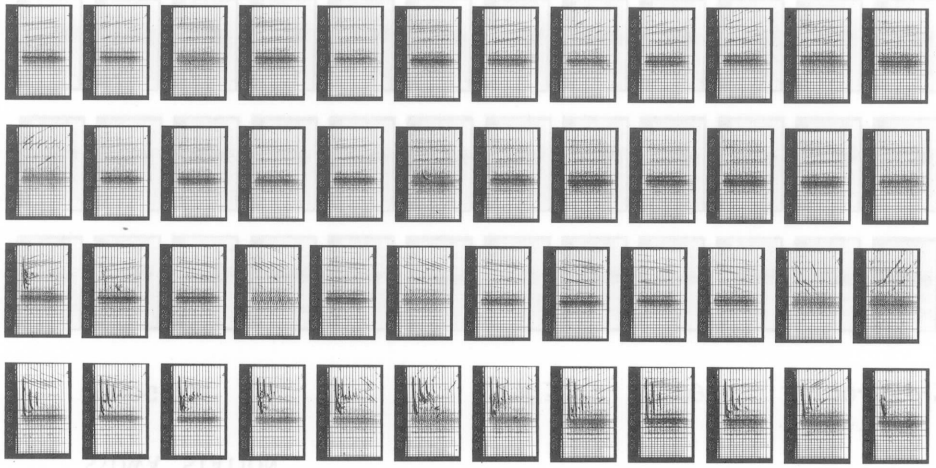
SYOWA STATION

IONOGRAM 1983 07 07 00;00-11;45



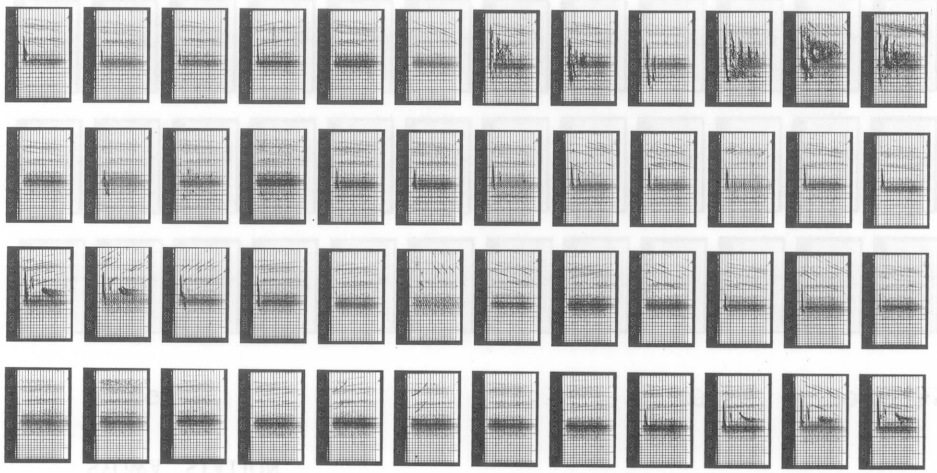
SYOWA STATION

IONOGRAM 1983 07 08 12;00-23;45



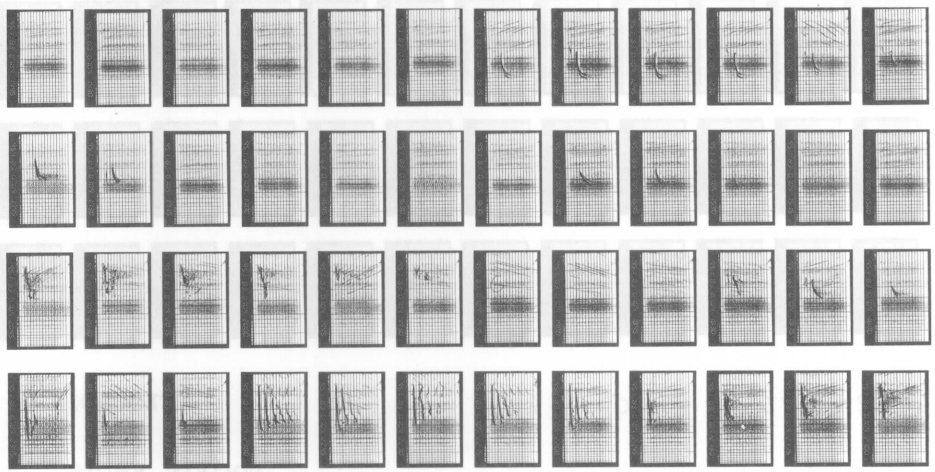
SYOWA STATION

IONOGRAM 1983 07 08 00;00-11;45



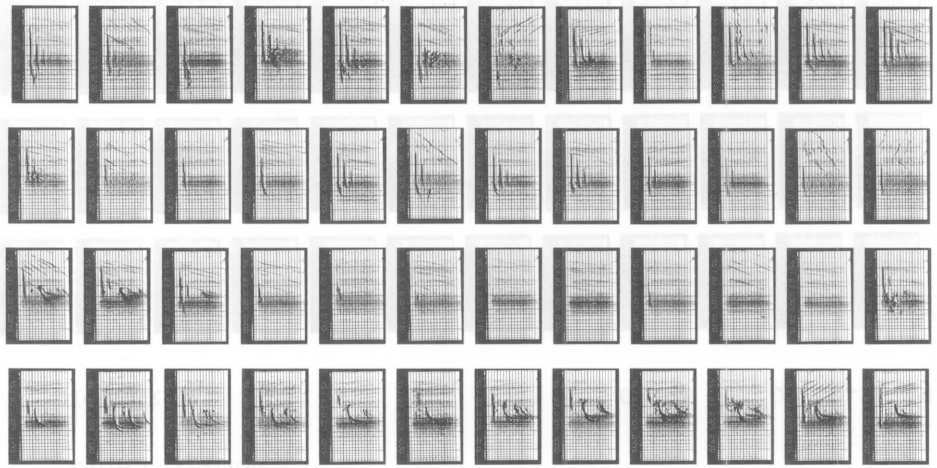
SYOWA STATION

IONOGRAM 1983 07 09 12;00-23;45



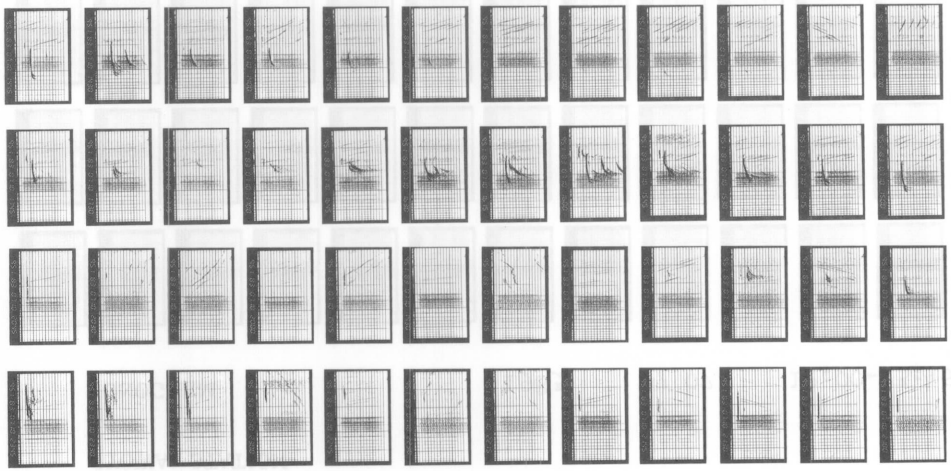
SYOWA STATION

IONOGRAM 1983 07 09 00;00-11;45



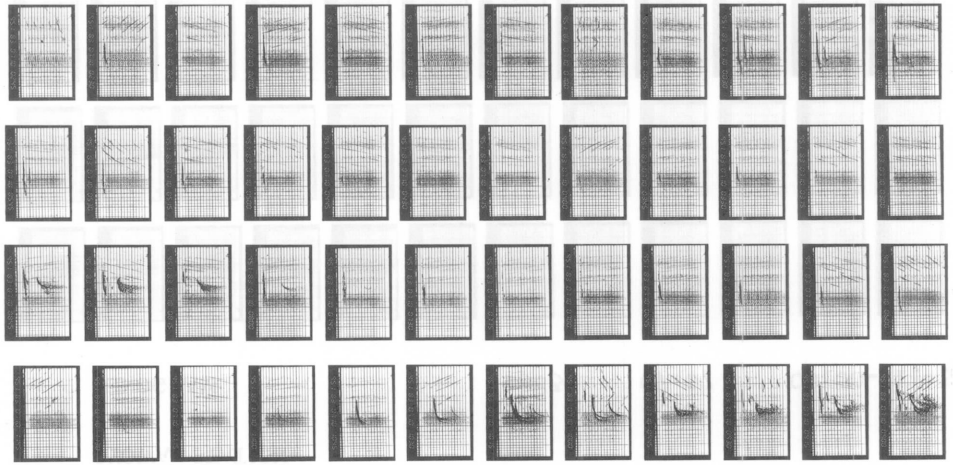
SYOWA STATION

IONOGRAM 1983 07 10 12;00-23;45



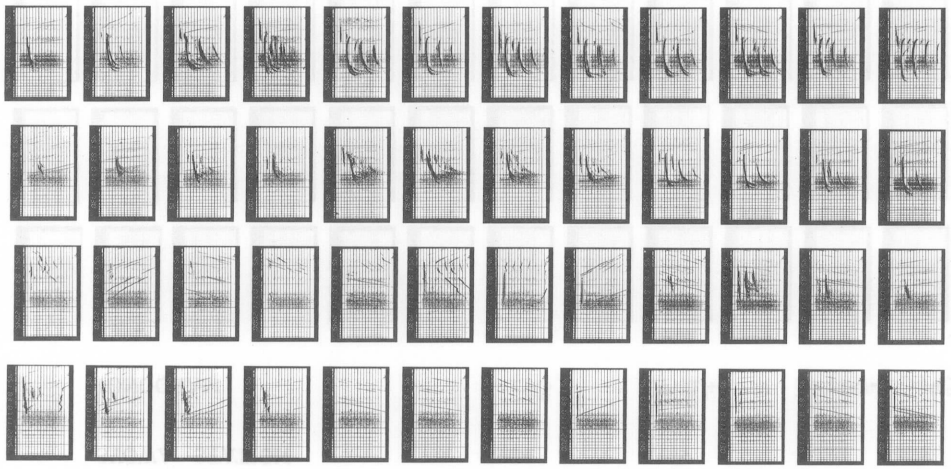
SYOWA STATION

IONOGRAM 1983 07 10 00;00-11;45



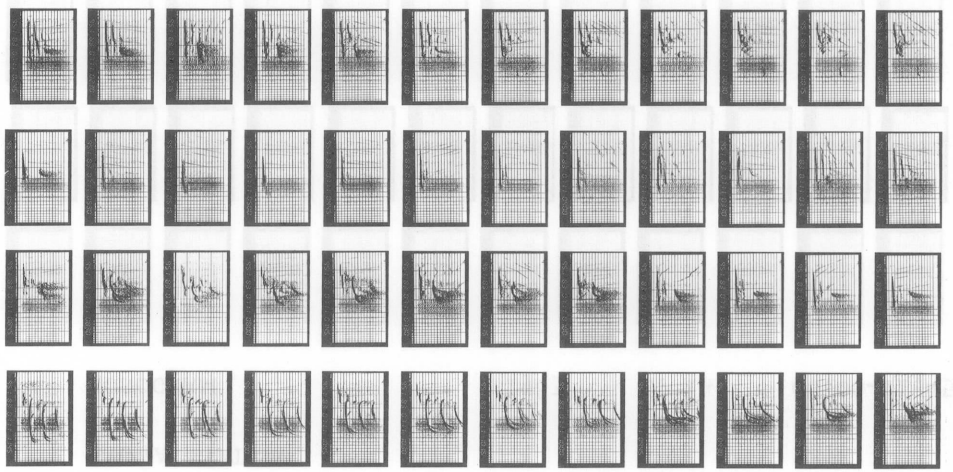
SYOWA STATION

IONOGRAM 1983 07 11 12;00-23;45



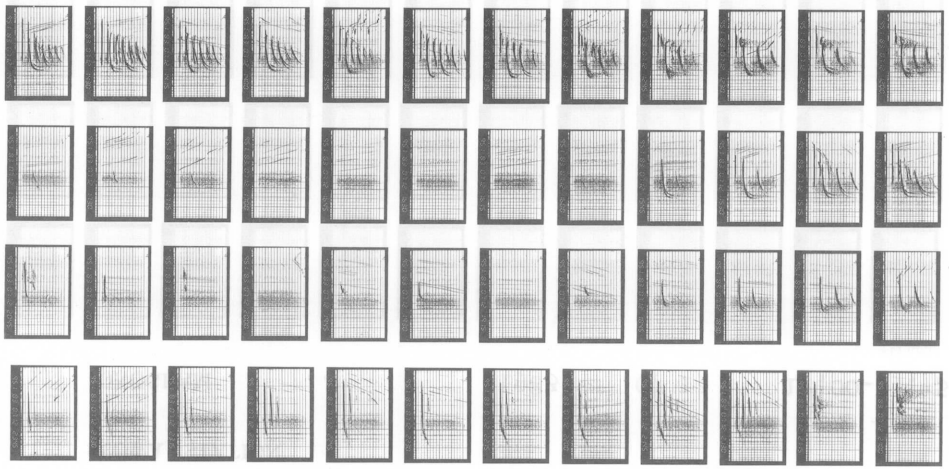
SYOWA STATION

IONOGRAM 1983 07 11 00;00-11;45



SYOWA STATION

IONOGRAM 1983 07 12 12;00-23;45

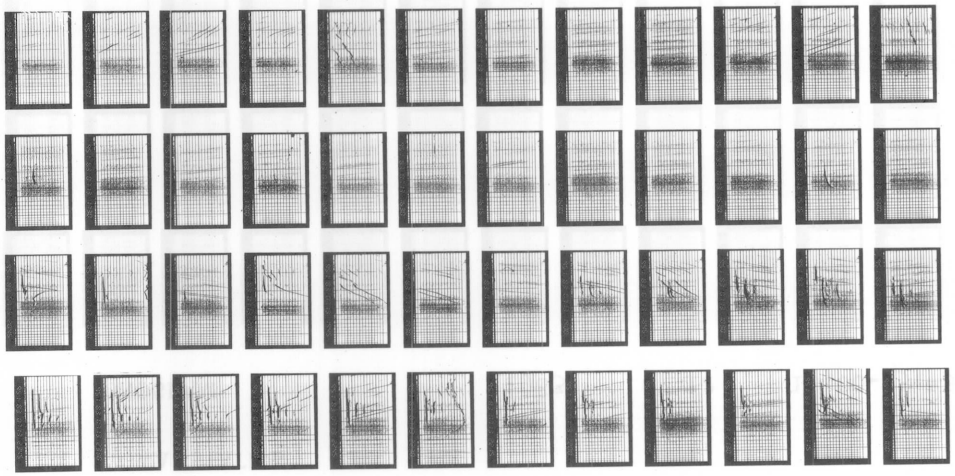


SYOWA STATION

IONOGRAM 1983 07 12 00;00-11;45

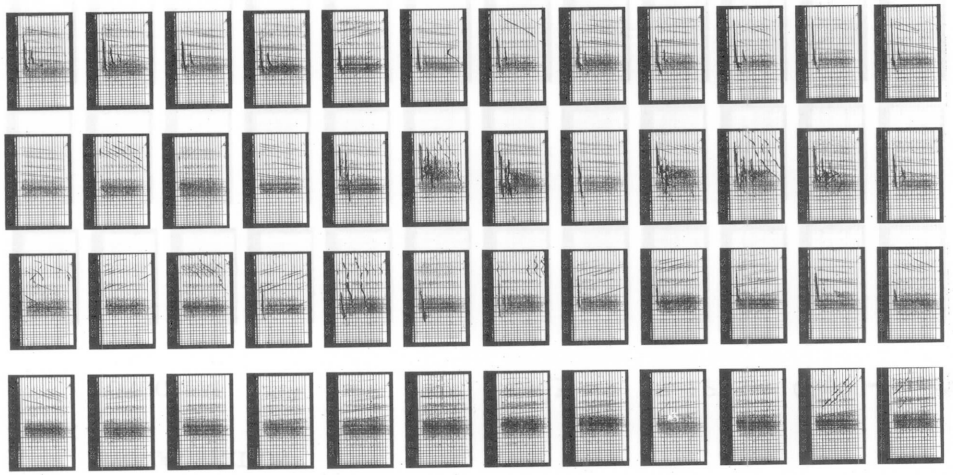
SYOWA STATION

IONOGRAM 1983 07 13 12;00-23;45



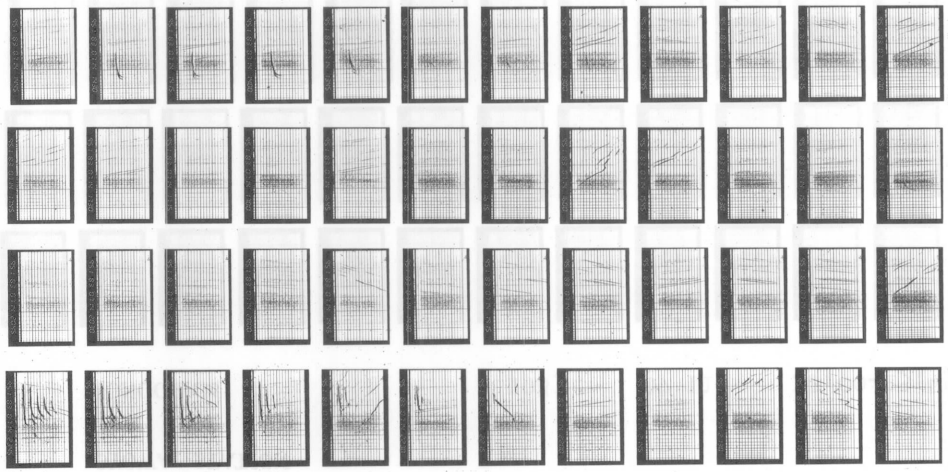
SYOWA STATION

IONOGRAM 1983 07 13 00;00-11;45



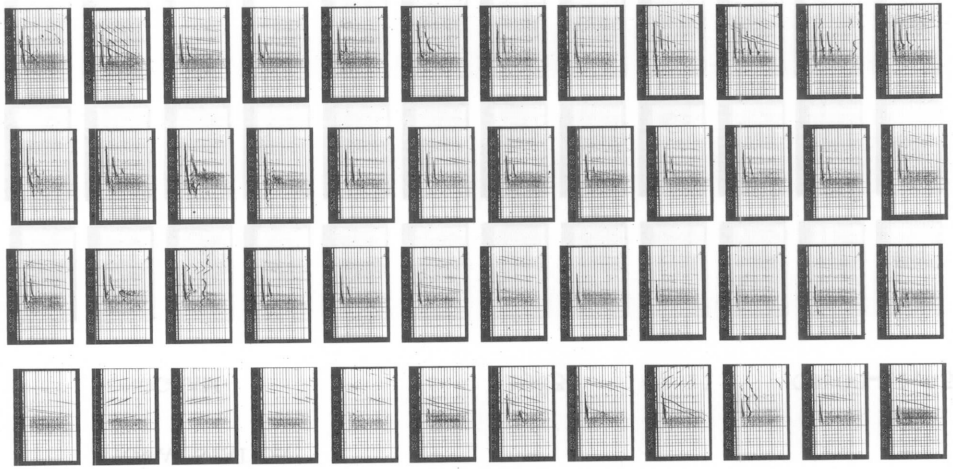
SYOWA STATION

IONOGRAM 1983 07 14 12;00-23;45



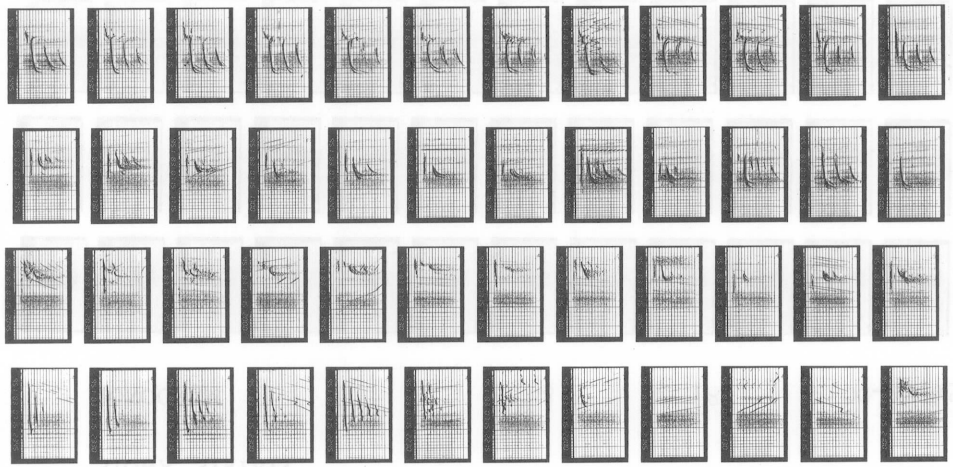
SYOWA STATION

IONOGRAM 1983 07 14 00;00-11;45



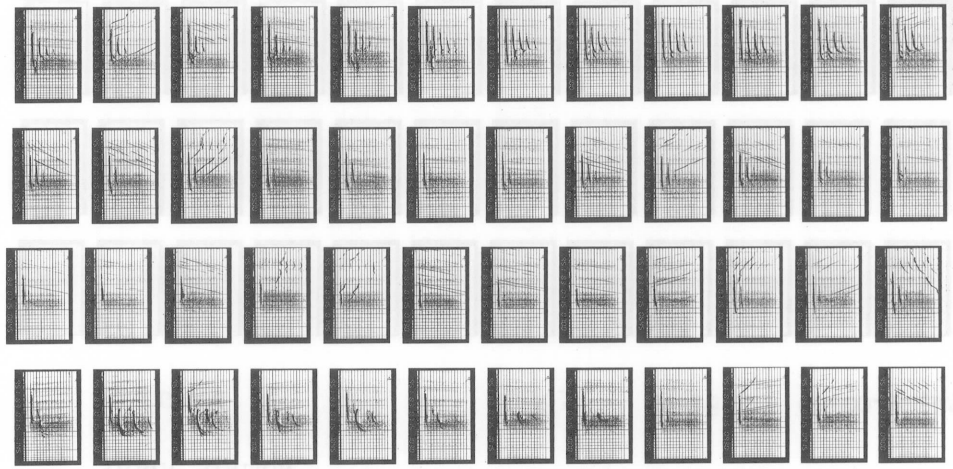
SYOWA STATION

IONOGRAM 1983 07 15 12;00-23;45



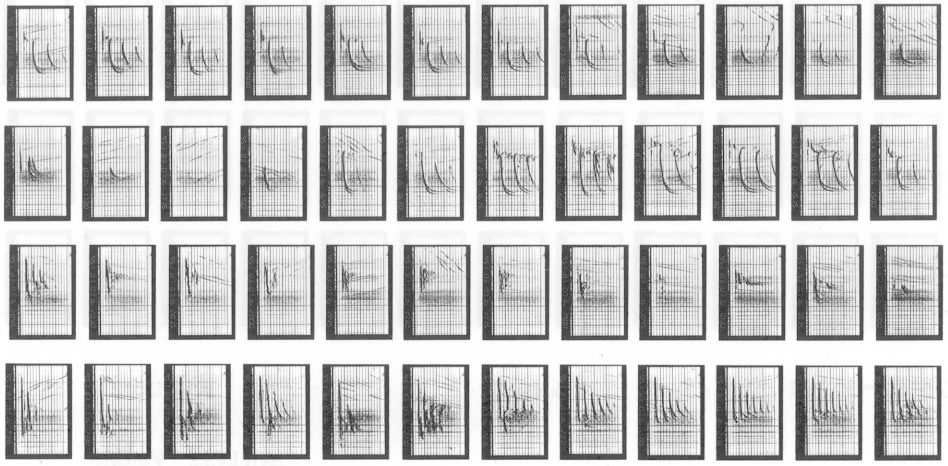
SYOWA STATION

IONOGRAM 1983 07 15 00;00-11;45



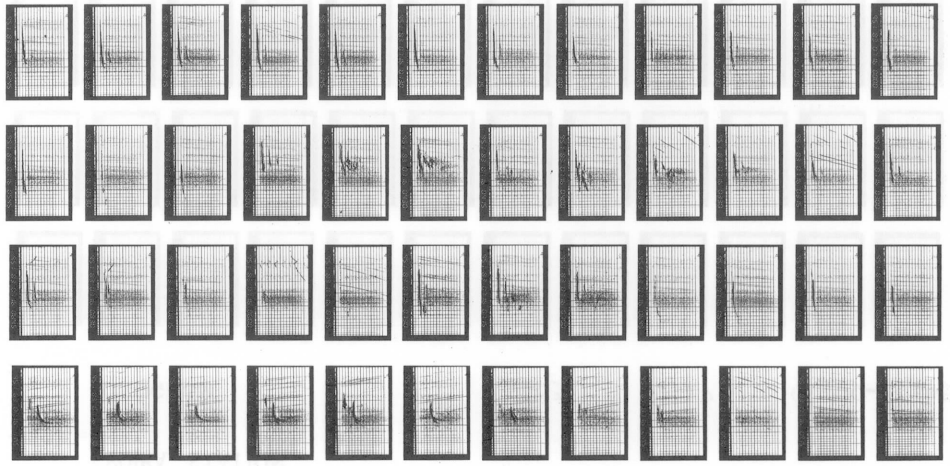
SYOWA STATION

IONOGRAM 1983 07 16 12;00-23;45



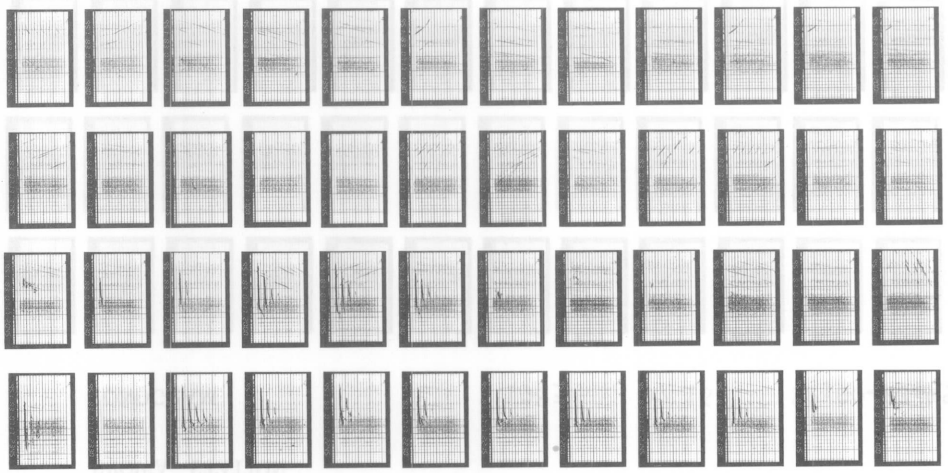
SYOWA STATION

IONOGRAM 1983 07 16 00;00-11;45



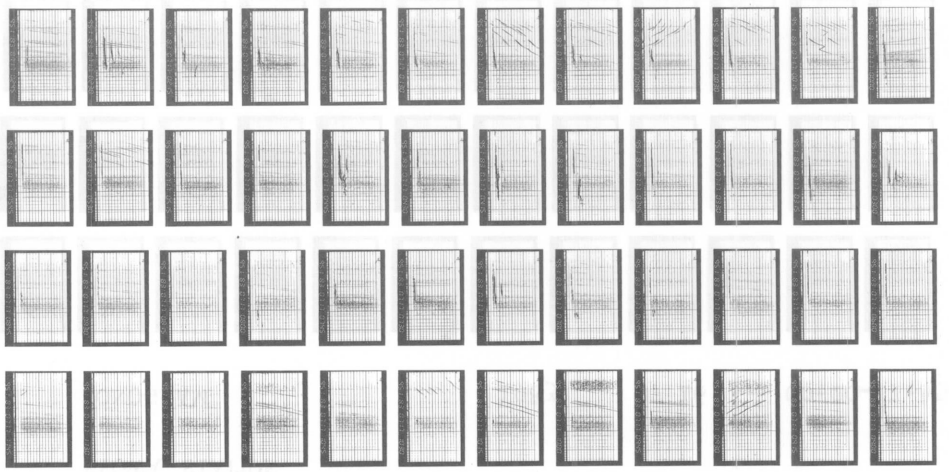
SYOWA STATION

IONOGRAM 1983 07 17 12;00-23;45



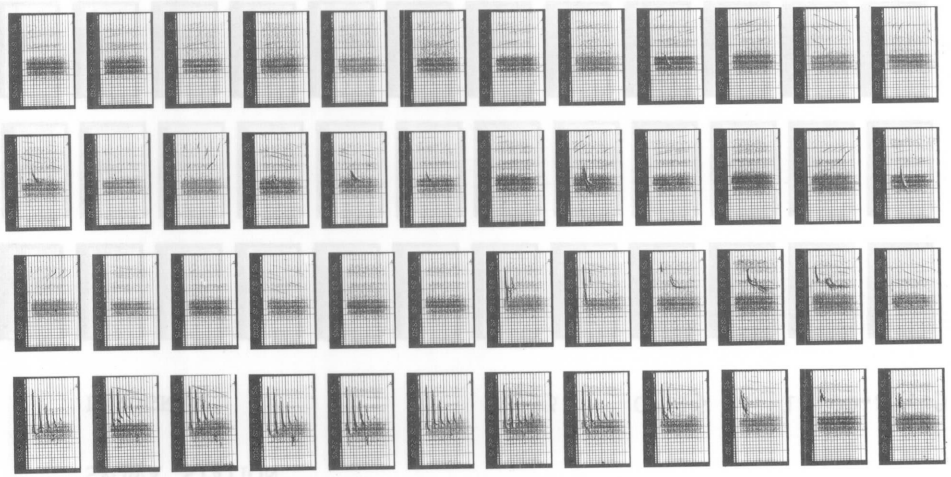
SYOWA STATION

IONOGRAM 1983 07 17 00;00-11;45



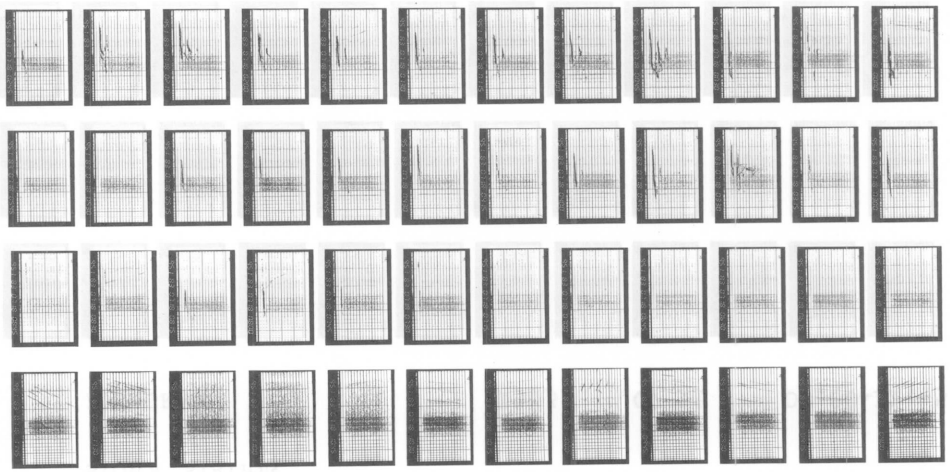
SYOWA STATION

IONOGRAM 1983 07 18 12;00-23;45



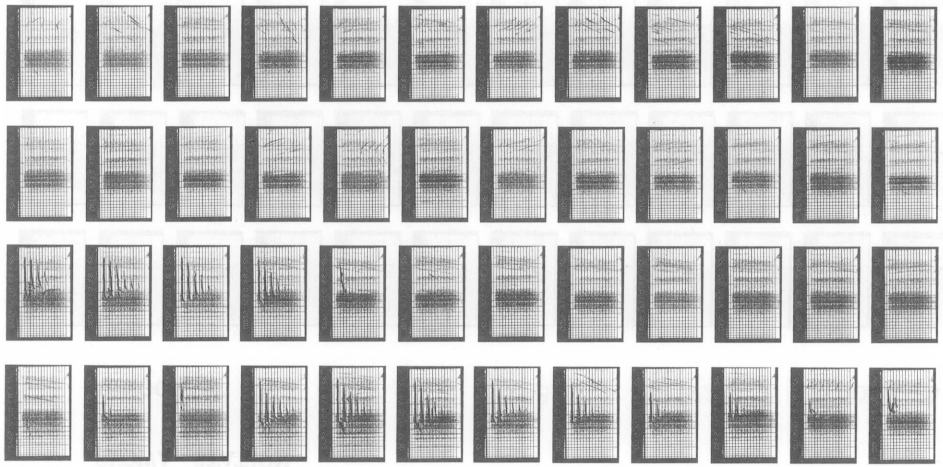
SYOWA STATION

IONOGRAM 1983 07 18 00;00-11;45



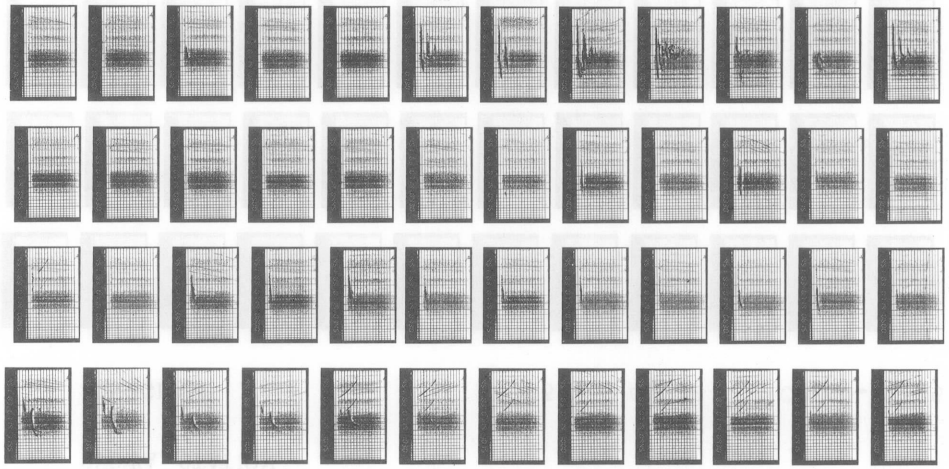
SYOWA STATION

IONOGRAM 1983 07 19 12;00-23;45



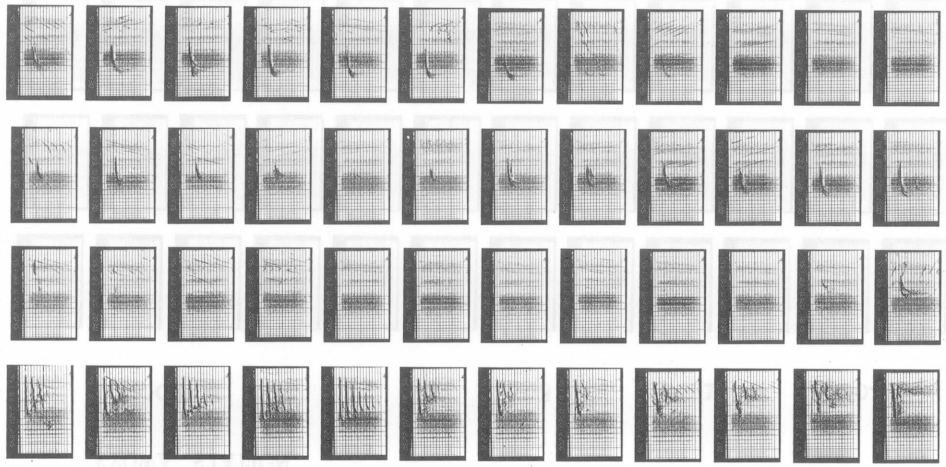
SYOWA STATION

IONOGRAM 1983 07 19 00;00-11;45



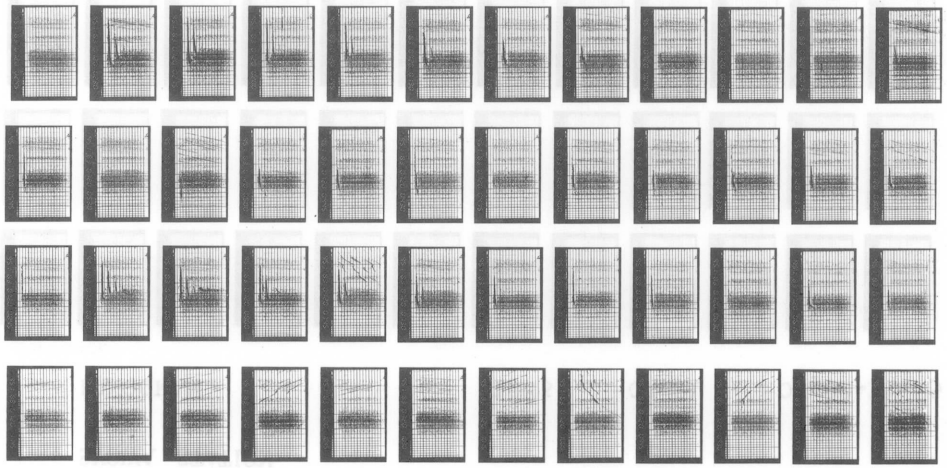
SYOWA STATION

IONOGRAM 1983 07 20 12;00-23;45



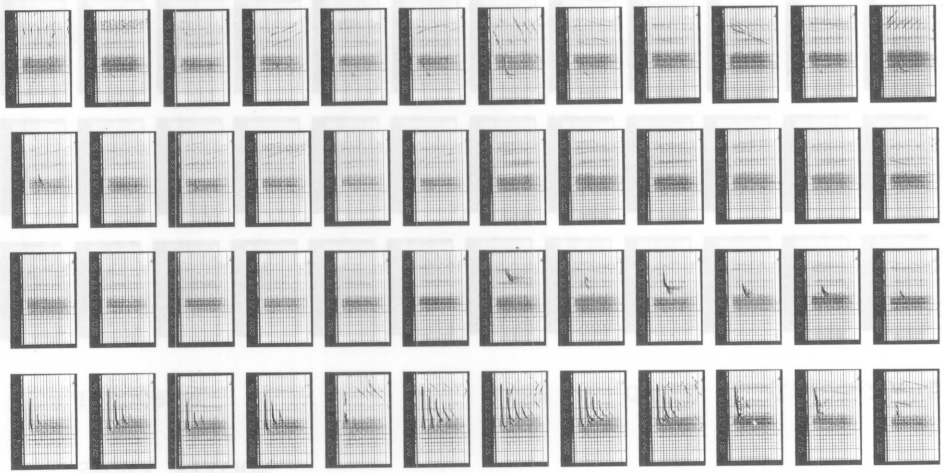
SYOWA STATION

IONOGRAM 1983 07 20 00;00-11;45



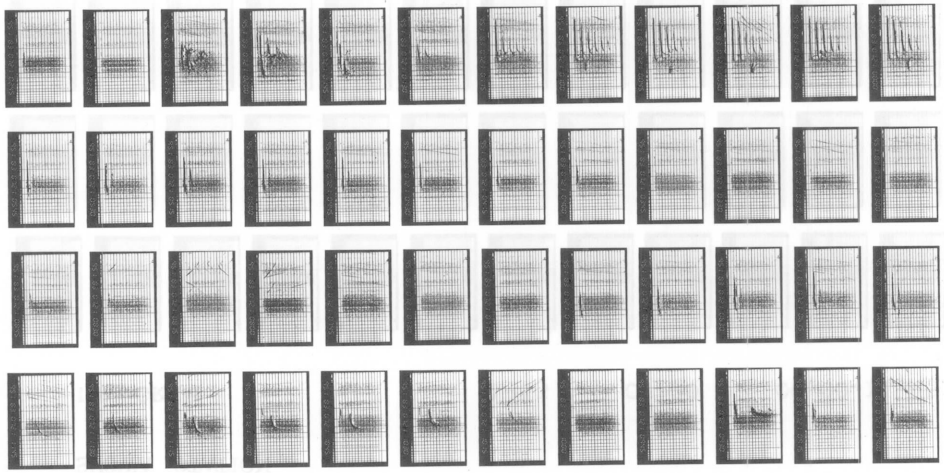
SYOWA STATION

IONOGRAM 1983 07 21 12;00-23;45



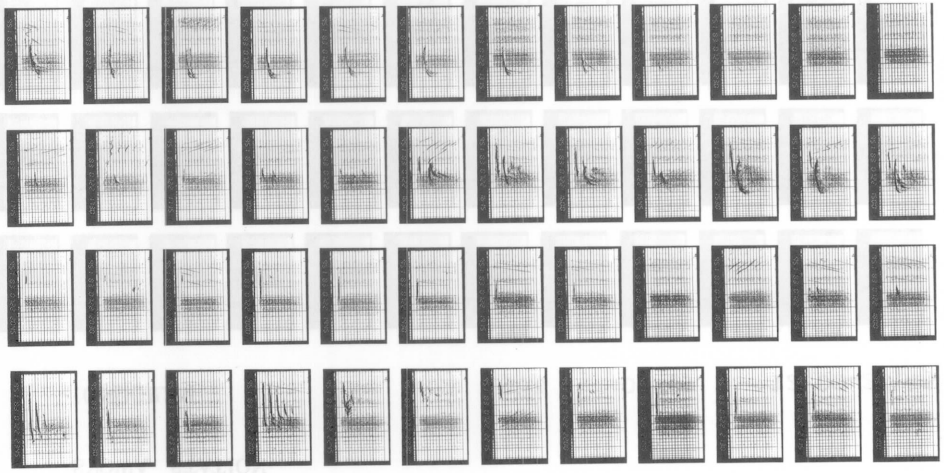
SYOWA STATION

IONOGRAM 1983 07 21 00;00-11;45



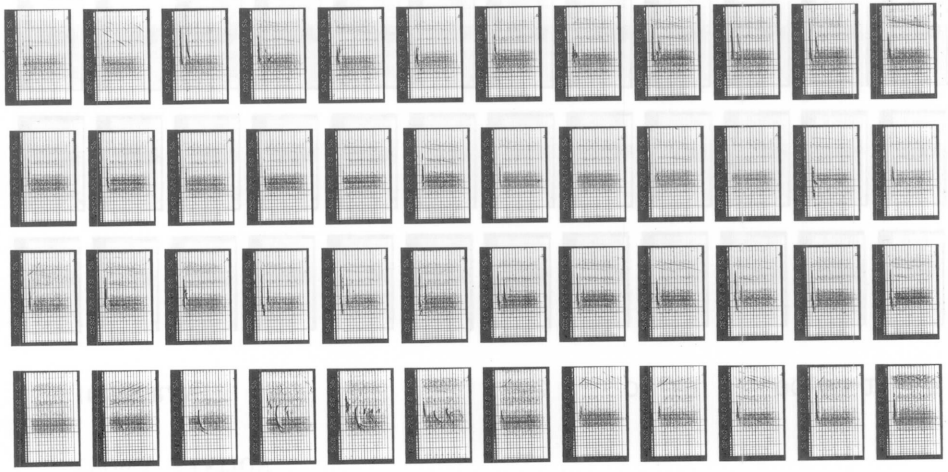
SYOWA STATION

IONOGRAM 1983 07 22 12;00-23;45



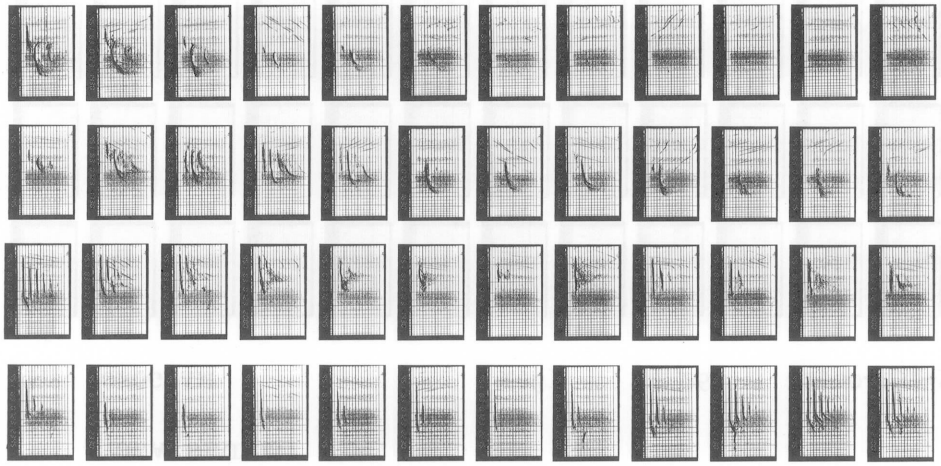
SYOWA STATION

IONOGRAM 1983 07 22 00;00-11;45



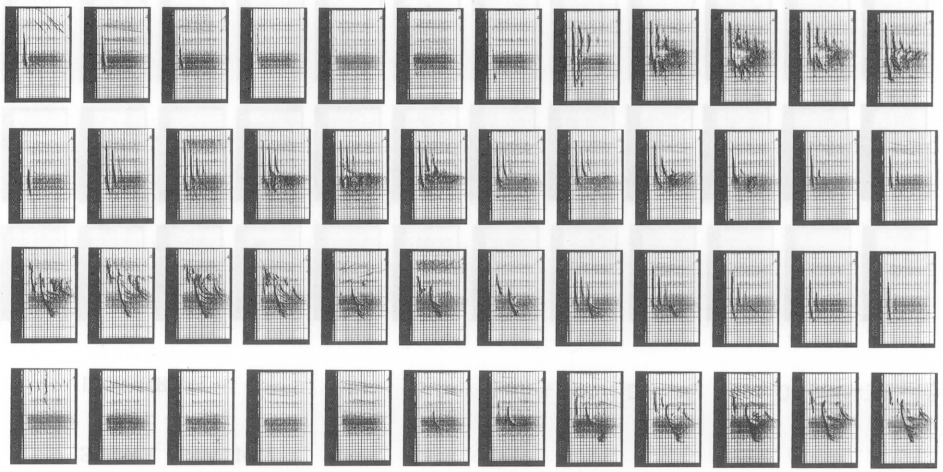
SYOWA STATION

IONOGRAM 1983 07 23 12;00-23;45



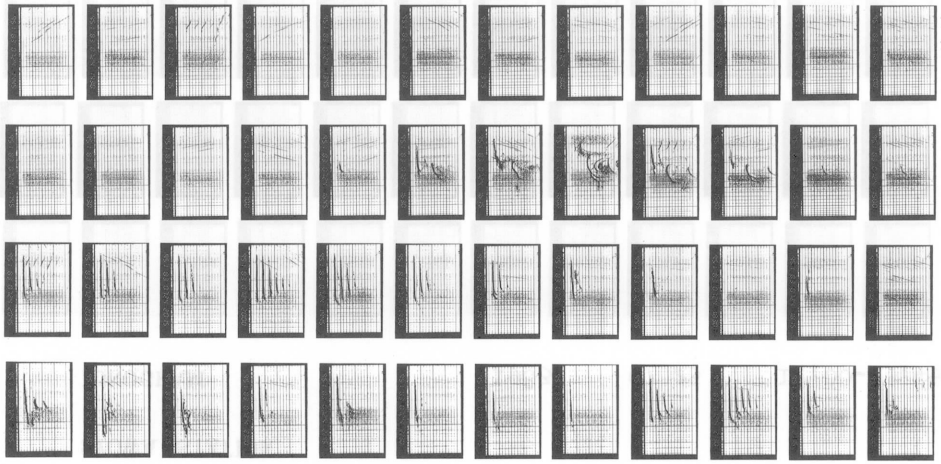
SYOWA STATION

IONOGRAM 1983 07 23 00;00-11;45



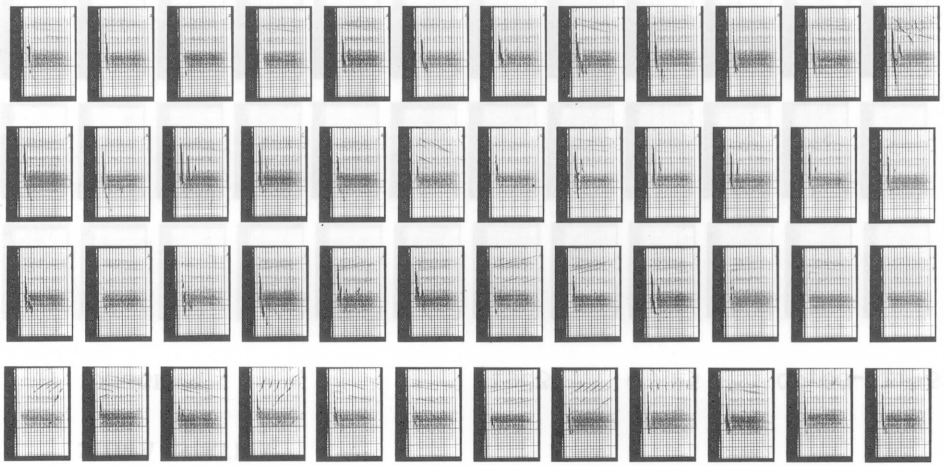
SYOWA STATION

IONOGRAM 1983 07 24 12;00-23;45



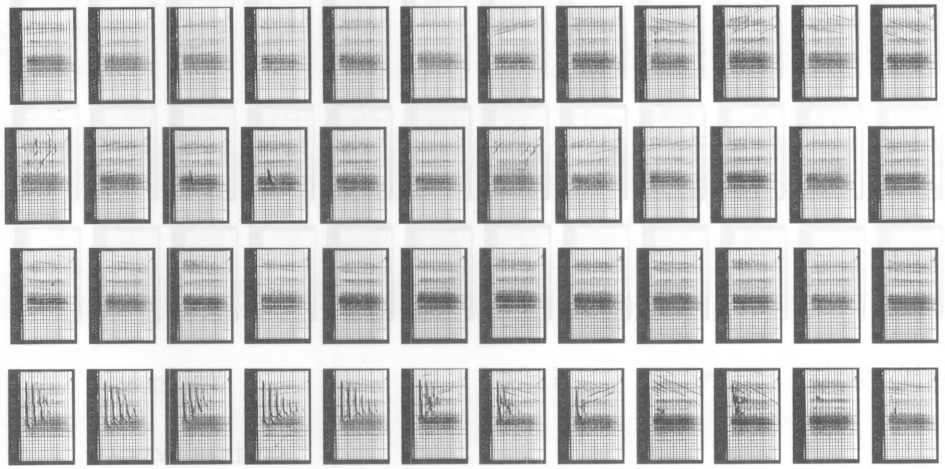
SYOWA STATION

IONOGRAM 1983 07 24 00;00-11;45



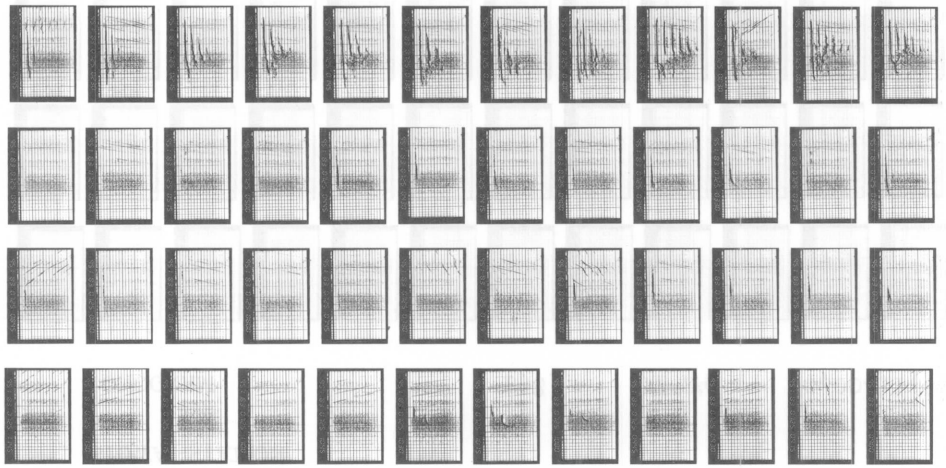
SYOWA STATION

IONOGRAM 1983 07 25 12;00-23;45



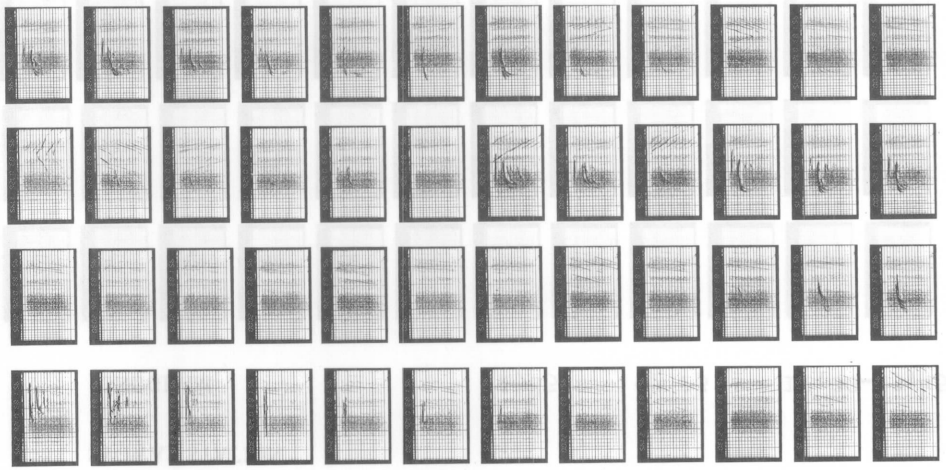
SYOWA STATION

IONOGRAM 1983 07 25 00;00-11;45



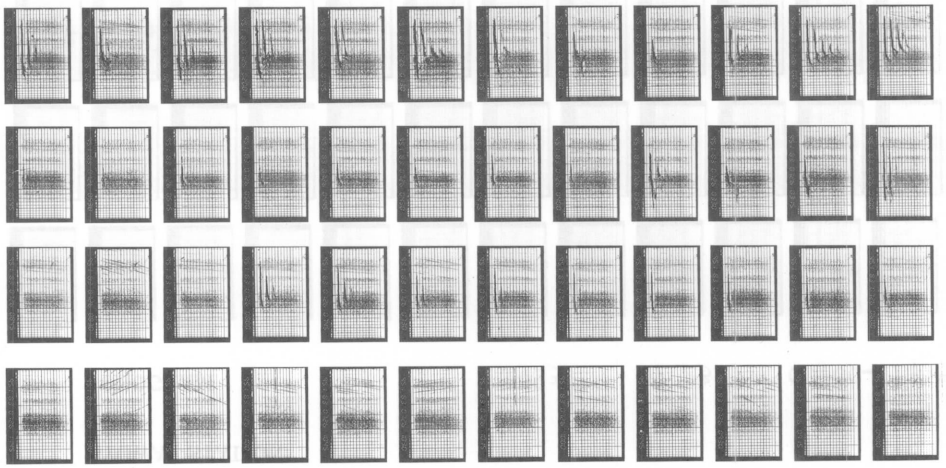
SYOWA STATION

IONOGRAM 1983 07 26 12;00-23;45



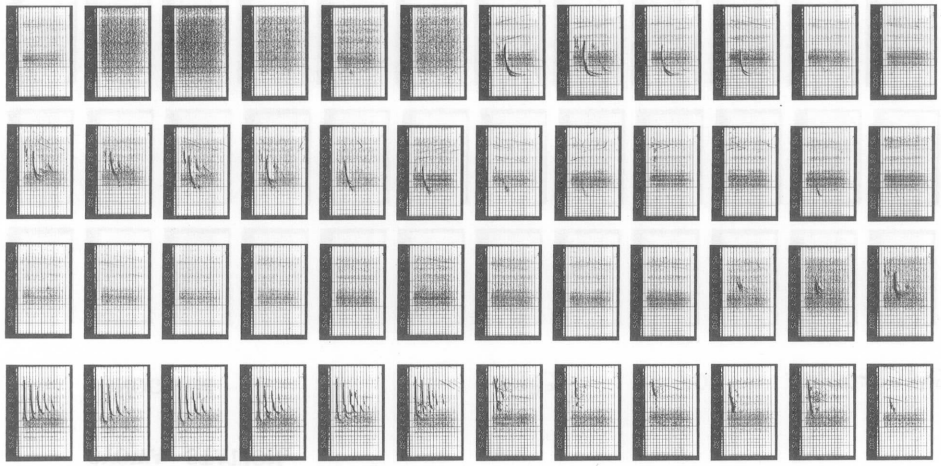
SYOWA STATION

IONOGRAM 1983 07 26 00;00-11;45



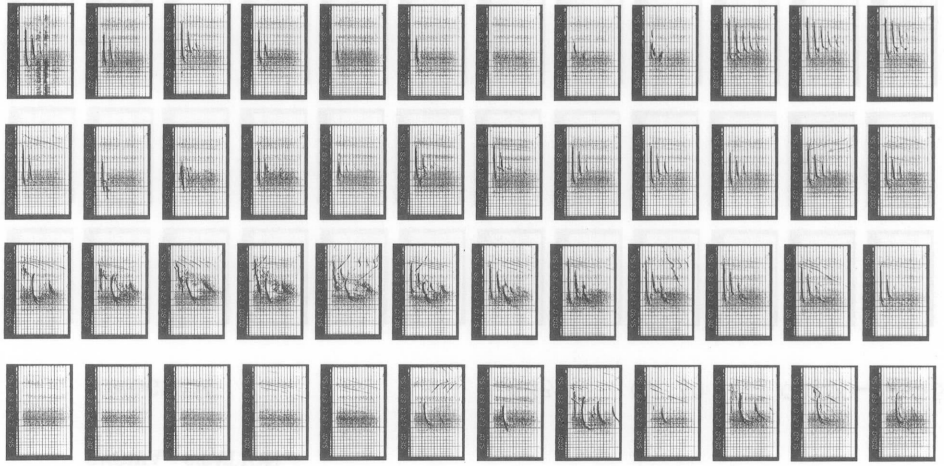
SYOWA STATION

IONOGRAM 1983 07 27 12;00-23;45



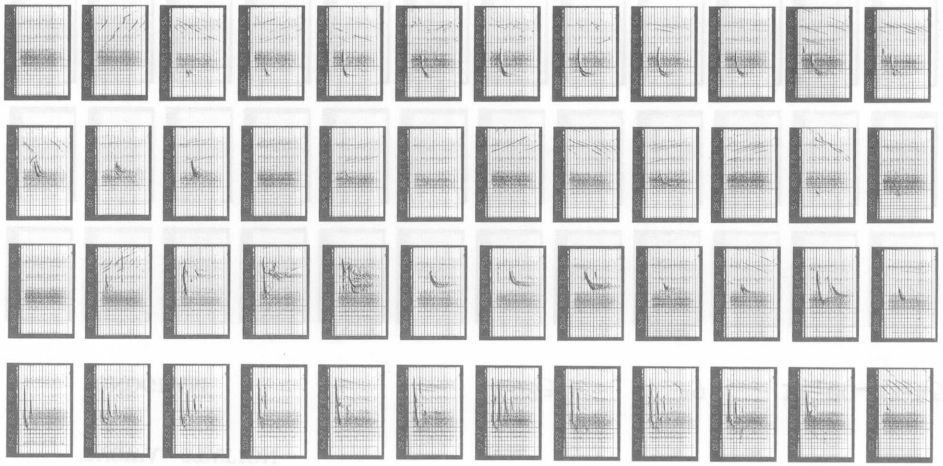
SYOWA STATION

IONOGRAM 1983 07 27 00;00-11;45



SYOWA STATION

IONOGRAM 1983 07 28 12;00-23;45

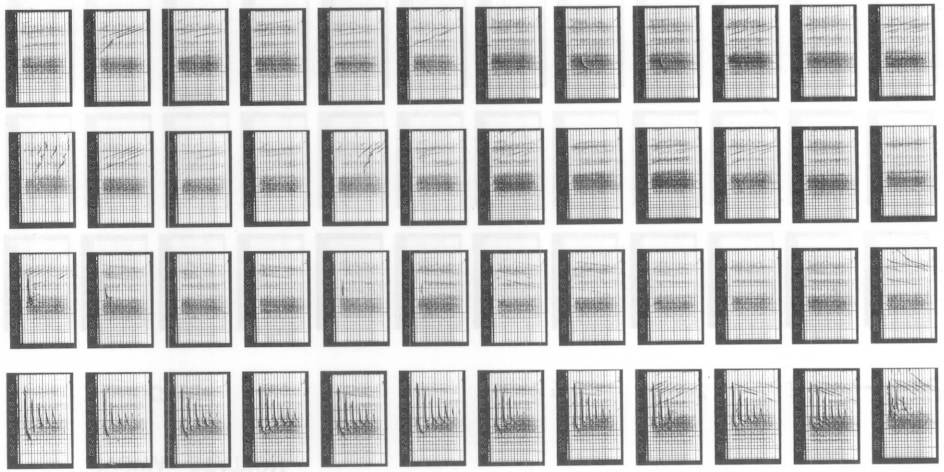


SYOWA STATION

IONOGRAM 1983 07 28 00;00-11;45

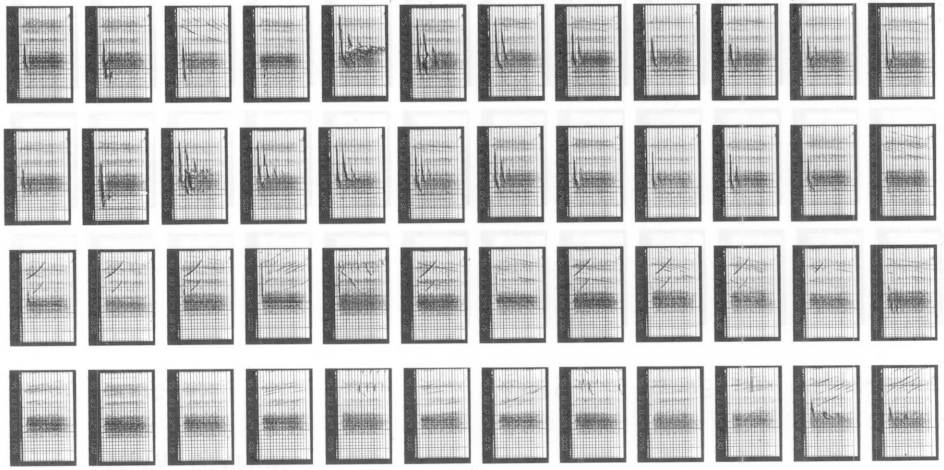
SYOWA STATION

IONOGRAM 1983 07 29 12;00-23;45



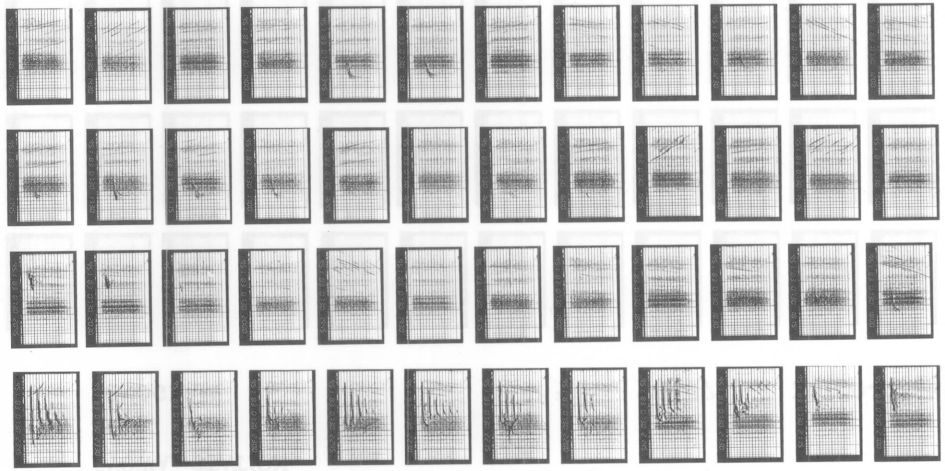
SYOWA STATION

IONOGRAM 1983 07 29 00;00-11;45



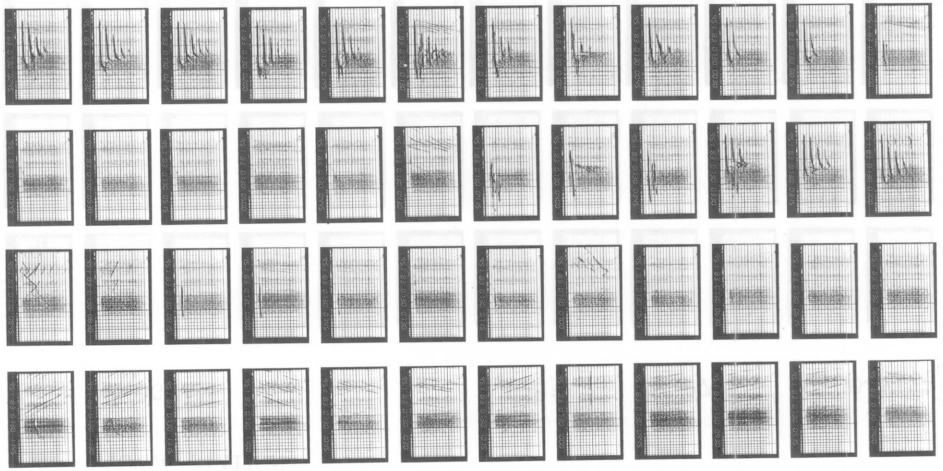
SYOWA STATION

IONOGRAM 1983 07 30 12;00-23;45



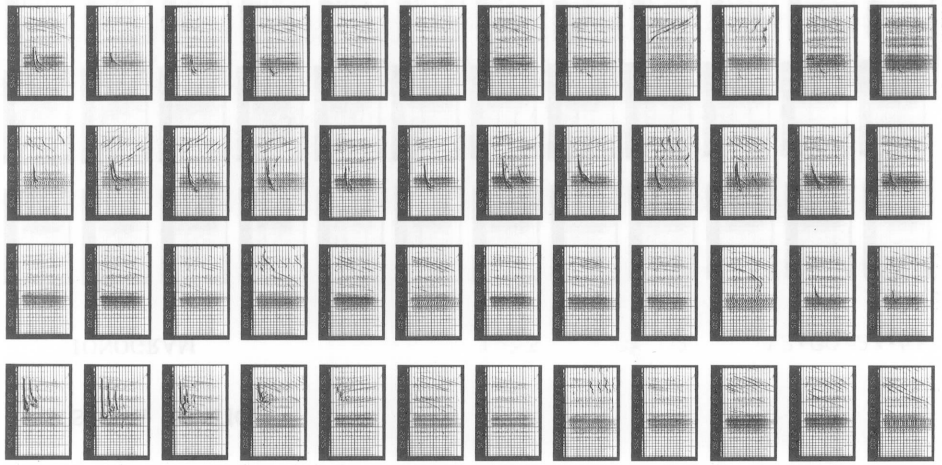
SYOWA STATION

IONOGRAM 1983 07 30 00;00-11;45



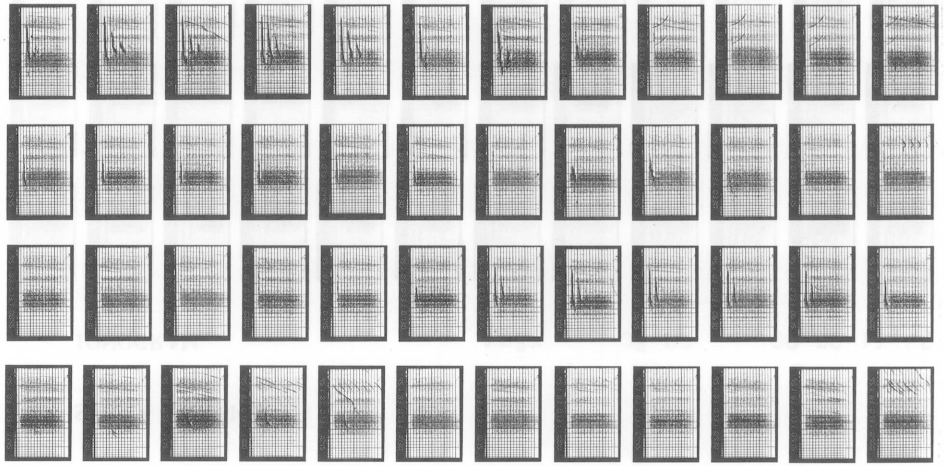
SYOWA STATION

IONOGRAM 1983 07 31 12;00-23;45



SYOWA STATION

IONOGRAM 1983 07 31 00;00-11;45



SYOWA STATION

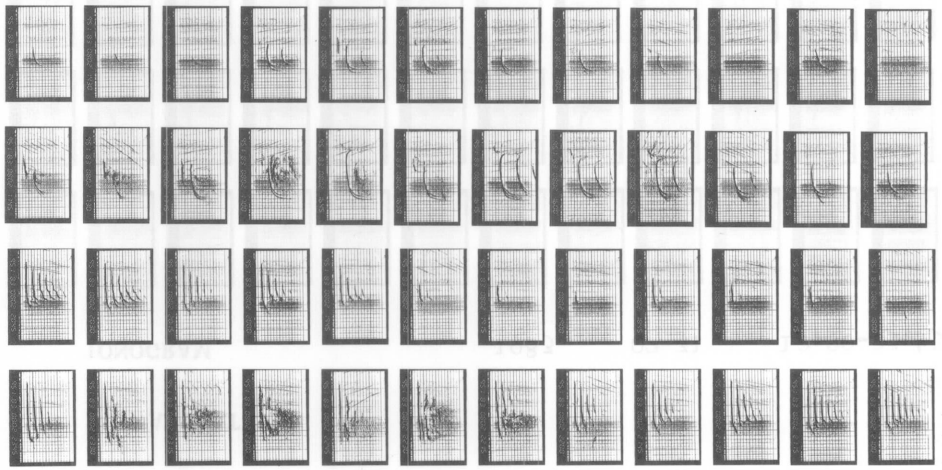
IONOGRAM 1983 08 01 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 01 00;00-11;45

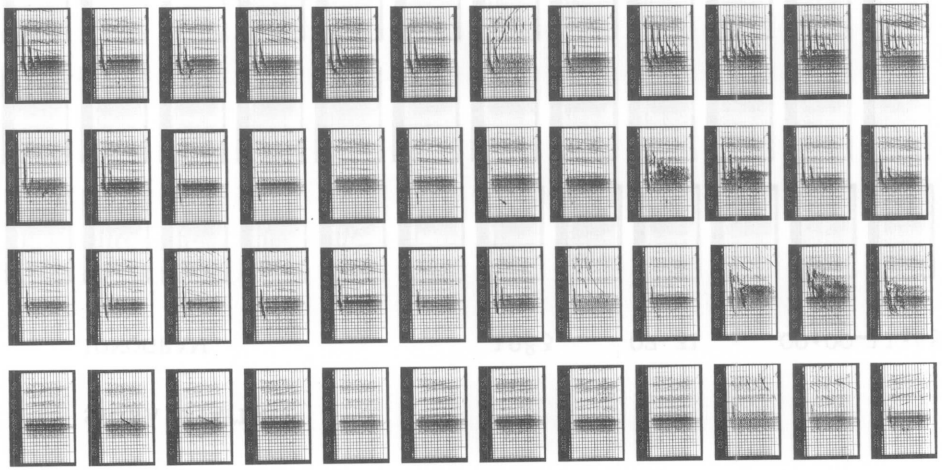
SYOWA STATION

IONOGRAM 1983 08 02 12;00-23;45



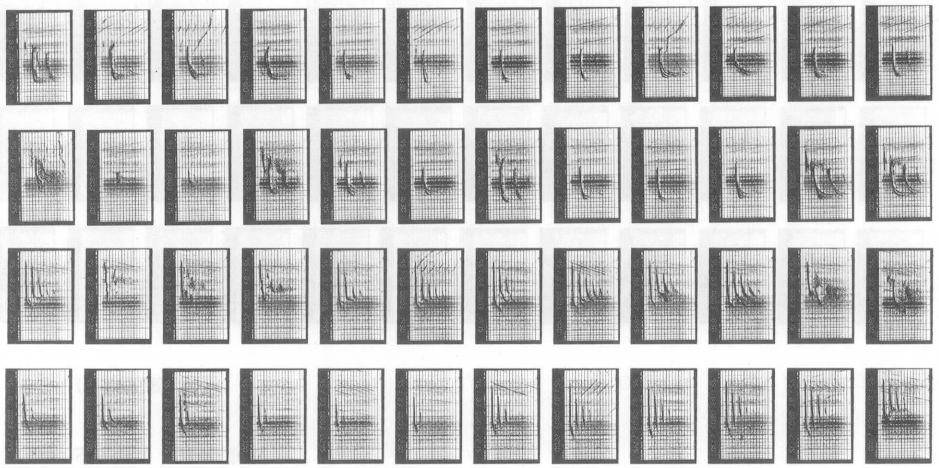
SYOWA STATION

IONOGRAM 1983 08 02 00;00-11;45



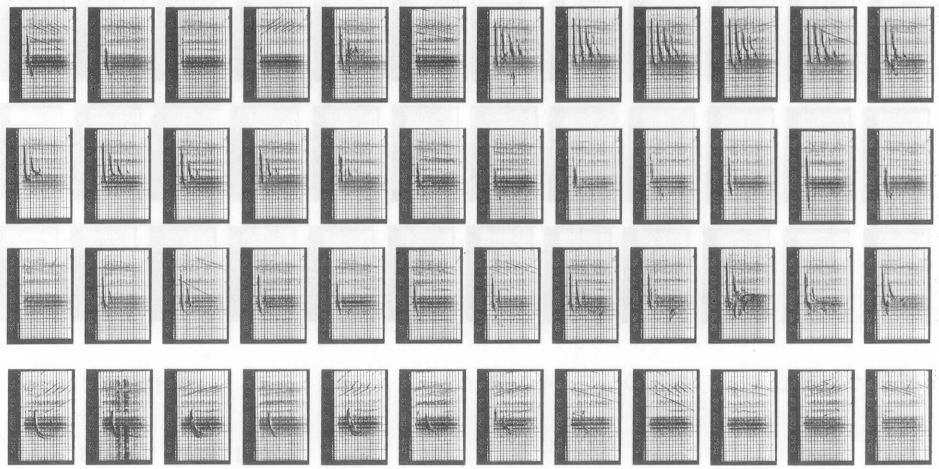
SYOWA STATION

IONOGRAM 1983 08 03 12;00-23;45



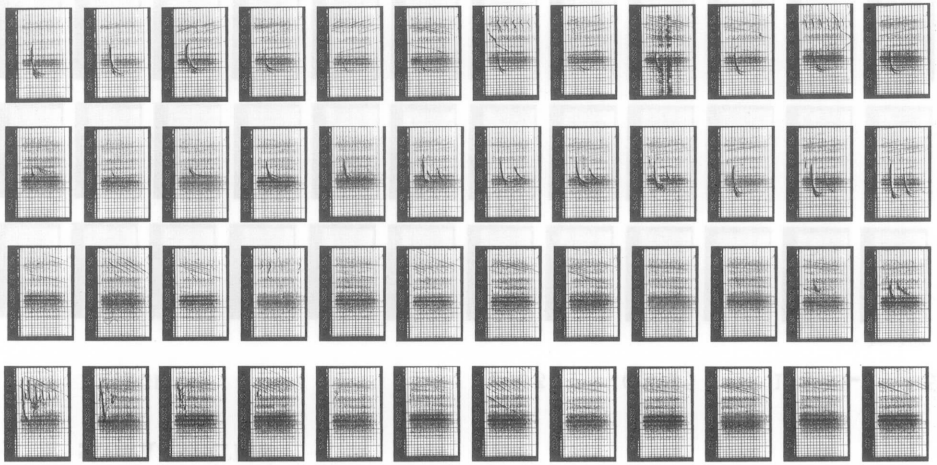
SYOWA STATION

IONOGRAM 1983 08 03 00;00-11;45



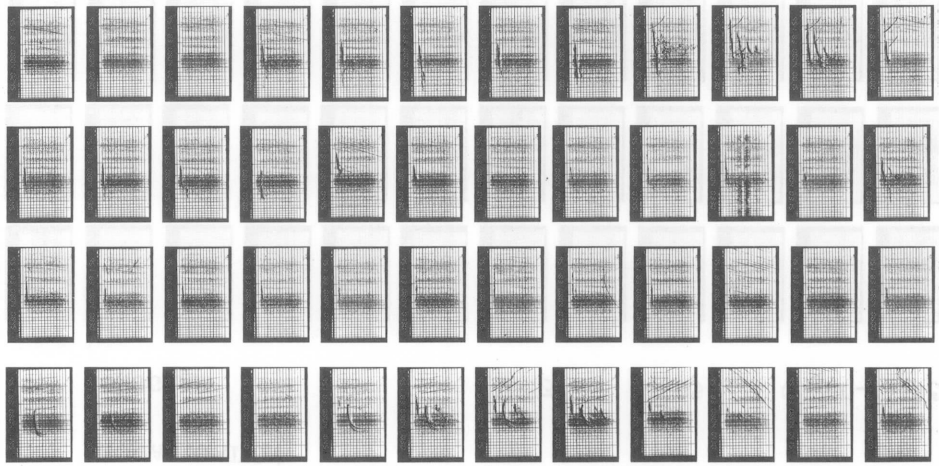
SYOWA STATION

IONOGRAM 1983 08 04 12;00-23;45



SYOWA STATION

IONOGRAM 1983 08 04 00;00-11;45



SYOWA STATION

IONOGRAM 1983 08 05 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 05 00;00-11;45

SYOWA STATION

IONOGRAM 1983 08 06 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 06 00;00-11;45

SYOWA STATION

IONOGRAM 1983 08 07 12;00-23;45

SYOWA STATION

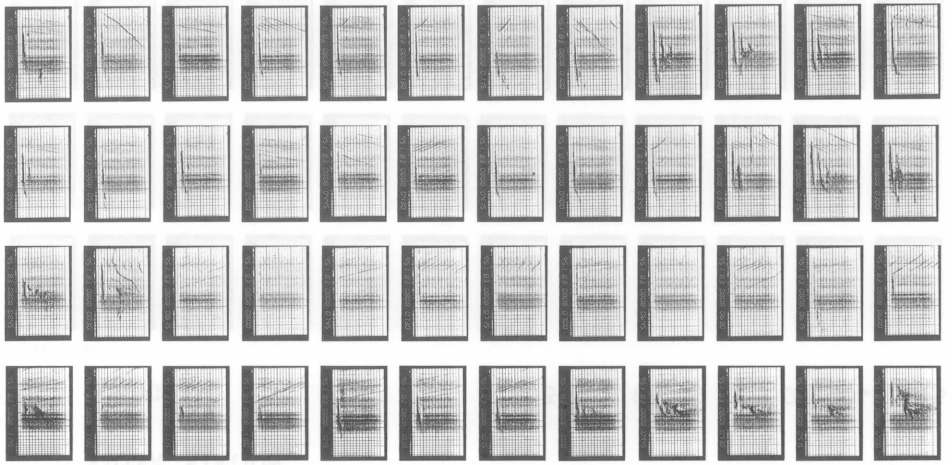
IONOGRAM 1983 08 07 00;00-11;45

SYOWA STATION

IONOGRAM 1983 08 08 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 08 00;00-11;45



SYOWA STATION

IONOGRAM 1983 08 09 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 09 00;00-11;45

SYOWA STATION

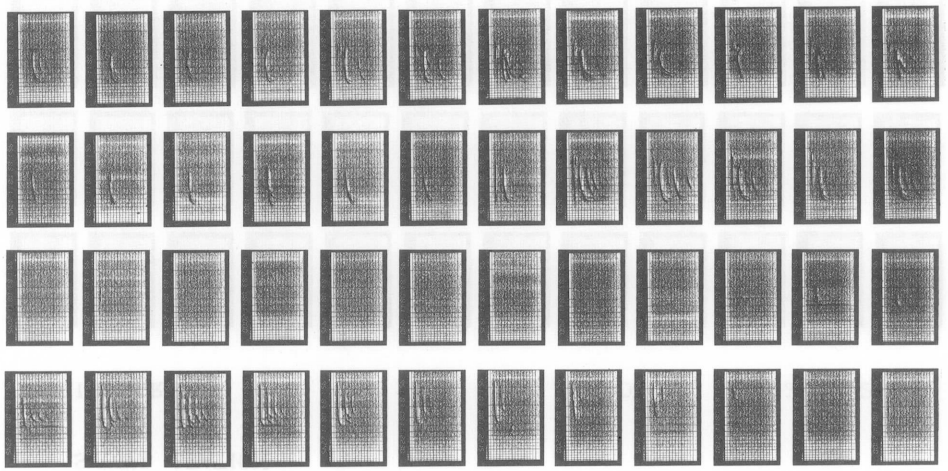
IONOGRAM 1983 08 10 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 10 00;00-11;45

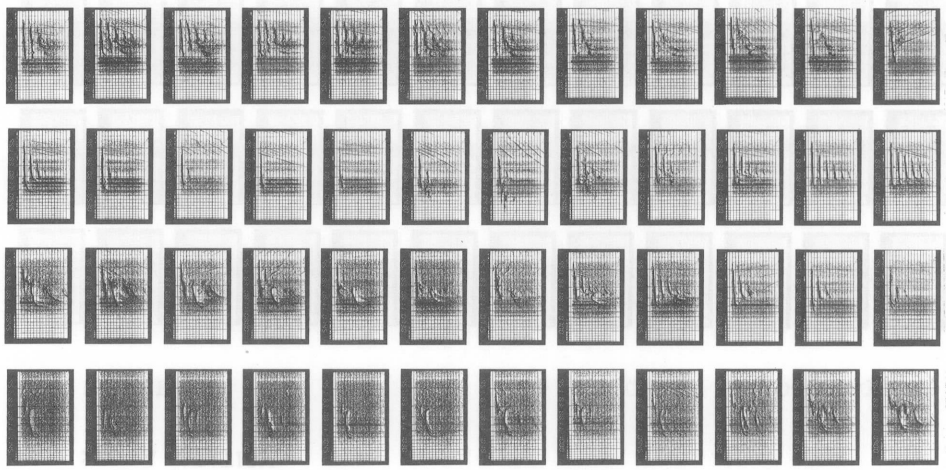
SYOWA STATION

IONOGRAM 1983 08 11 12;00-23;45



SYOWA STATION

IONOGRAM 1983 08 11 00;00-11;45

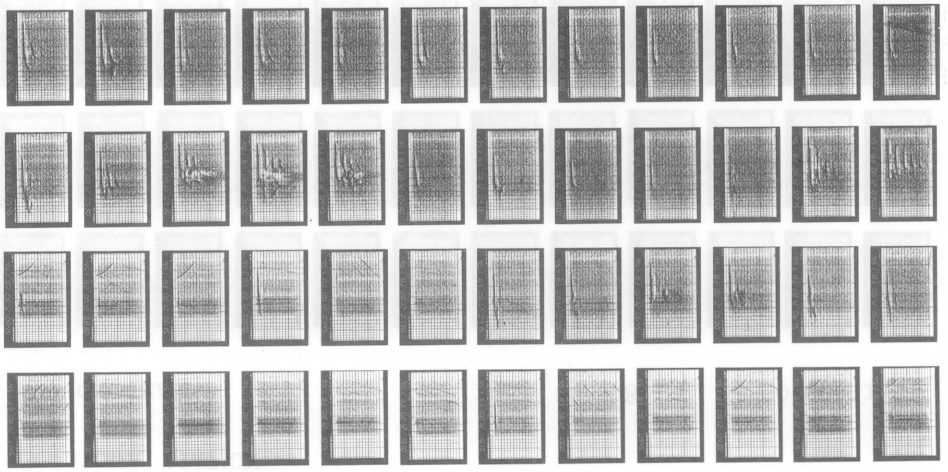


SYOWA STATION

IONOGRAM 1983 08 12 12;00-23;45

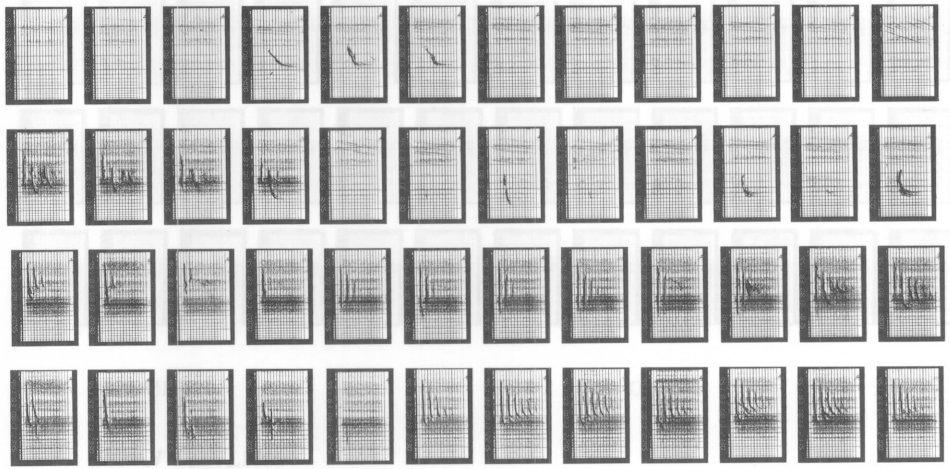
SYOWA STATION

IONOGRAM 1983 08 12 00;00-11;45



SYOWA STATION

IONOGRAM 1983 08 13 12;00-23;45

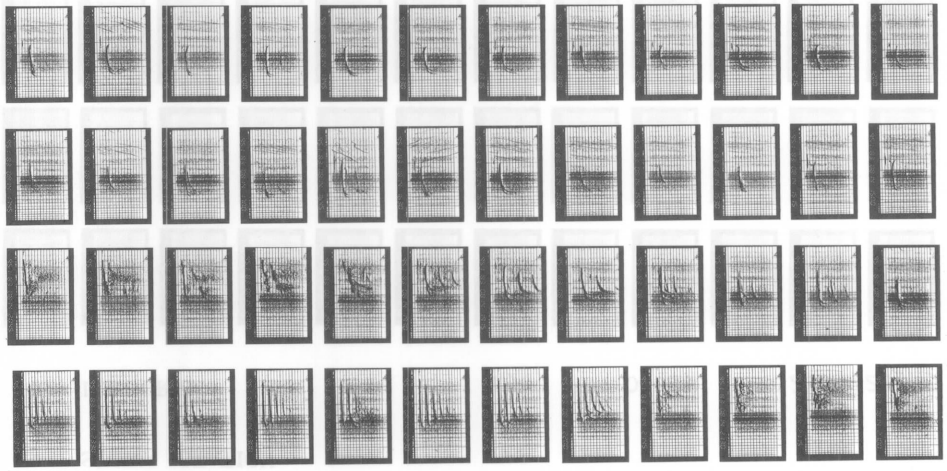


SYOWA STATION

IONOGRAM 1983 08 13 00;00-11;45

SYOWA STATION

IONOGRAM 1983 08 14 12;00-23;45

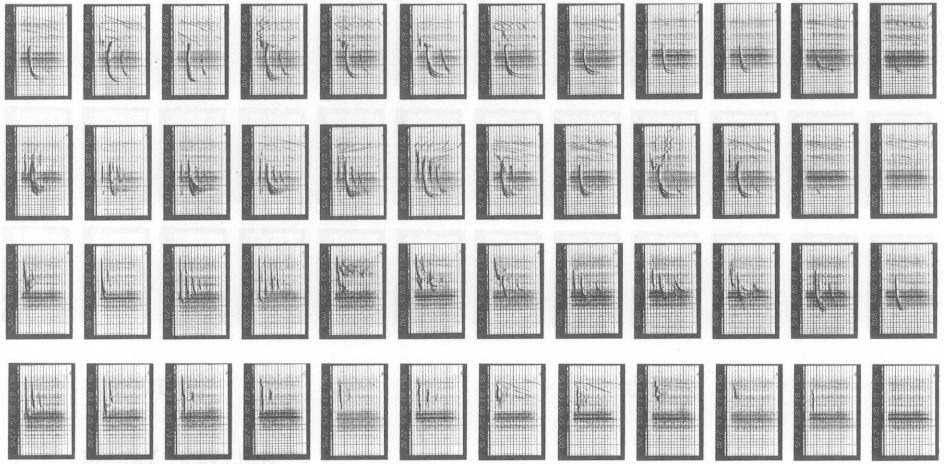


SYOWA STATION

IONOGRAM 1983 08 14 00;00-11;45

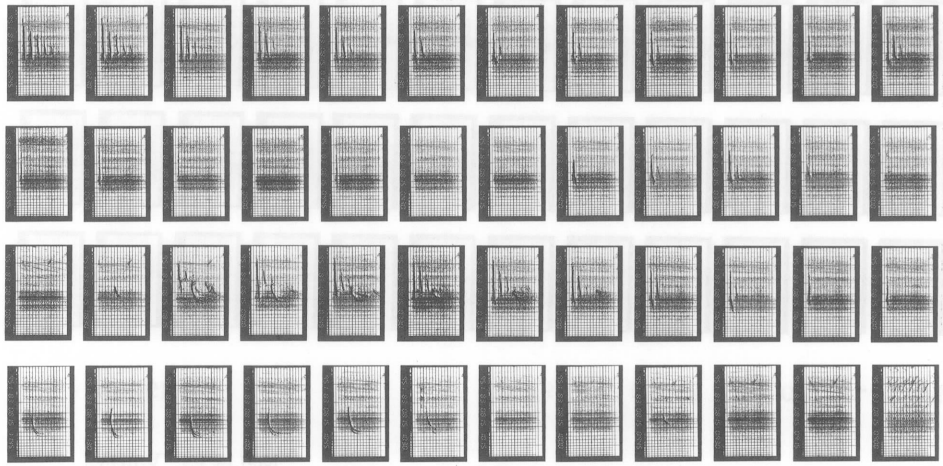
SYOWA STATION

IONOGRAM 1983 08 15 12;00-23;45



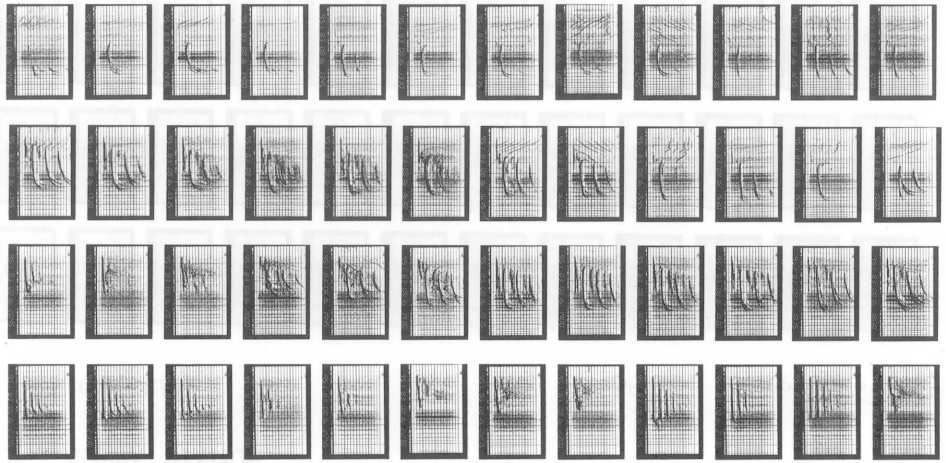
SYOWA STATION

IONOGRAM 1983 08 15 00;00-11;45



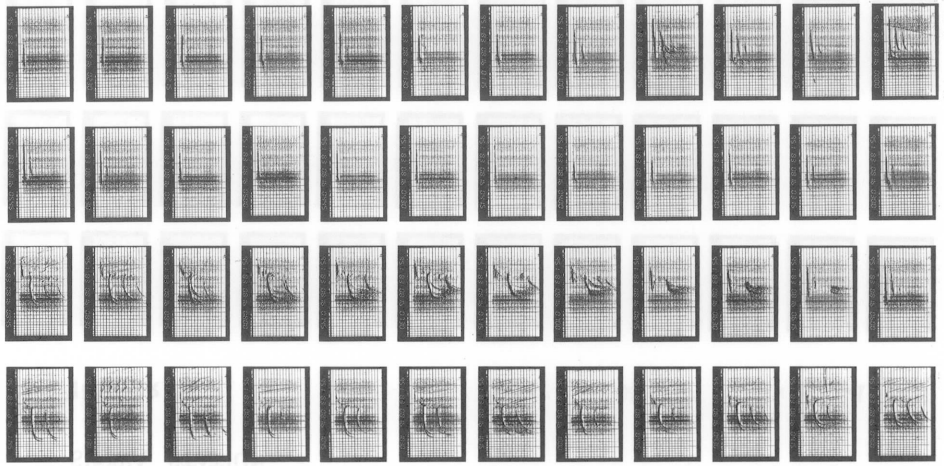
SYOWA STATION

IONOGRAM 1983 08 16 12;00-23;45



SYOWA STATION

IONOGRAM 1983 08 16 00;00-11;45



SYOWA STATION

IONOGRAM 1983 08 17 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 17 00;00-11;45

SYOWA STATION

IONOGRAM 1983 08 18 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 18 00;00-11;45

SYOWA STATION

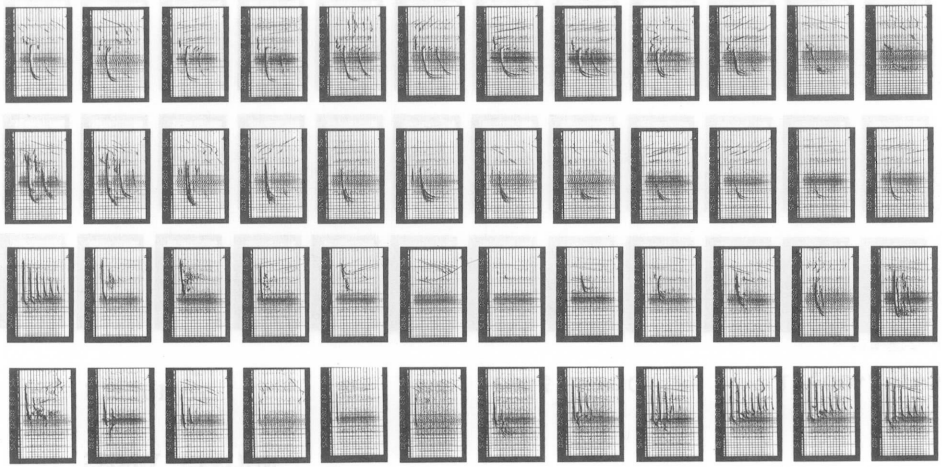
IONOGRAM 1983 08 19 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 19 00;00-11;45

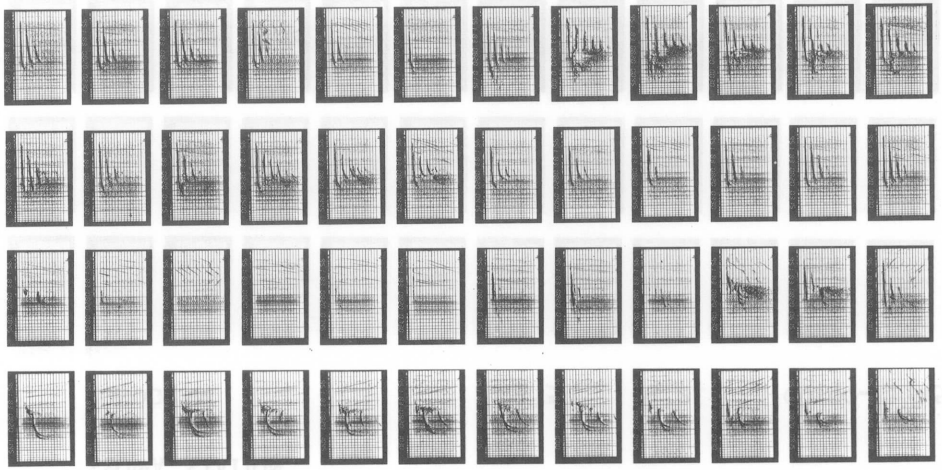
SYOWA STATION

IONOGRAM 1983 08 20 12;00-23;45



SYOWA STATION

IONOGRAM 1983 08 20 00;00-11;45



SYOWA STATION

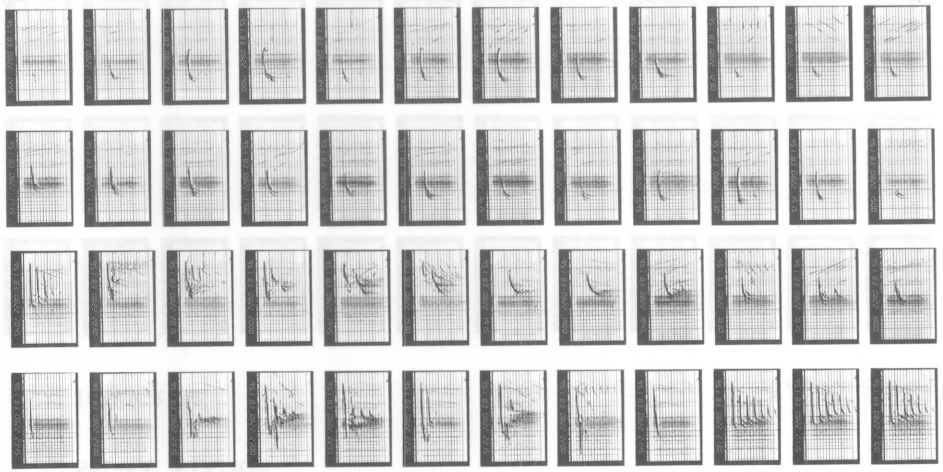
IONOGRAM 1983 08 21 12;00-23;45

SYOWA STATION

IONOGRAM 1983 08 21 00;00-11;45

SYOWA STATION

IONOGRAM 1983 08 22 12;00-23;45

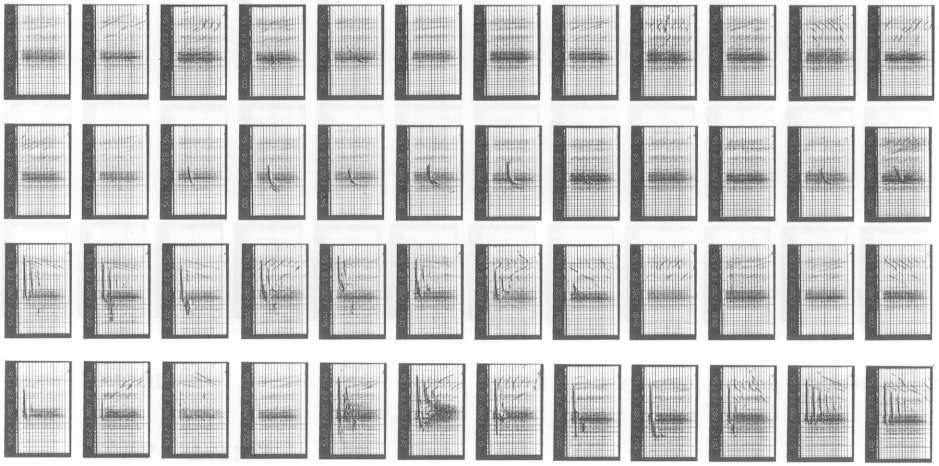


SYOWA STATION

IONOGRAM 1983 08 22 00;00-11;45

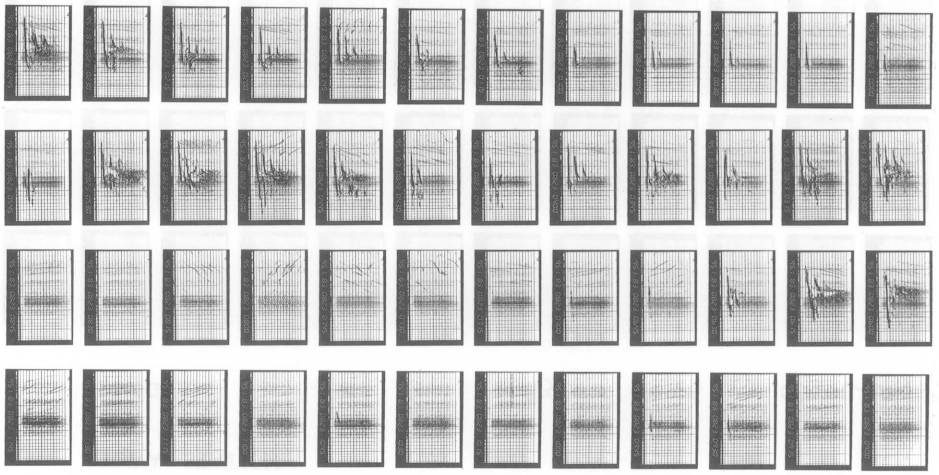
SYOWA STATION

IONOGRAM 1983 08 23 12;00-23;45



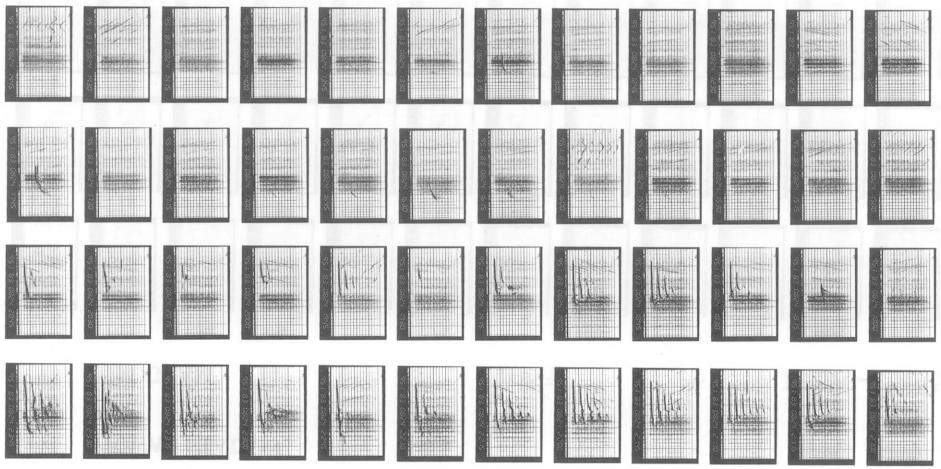
SYOWA STATION

IONOGRAM 1983 08 23 00;00-11;45



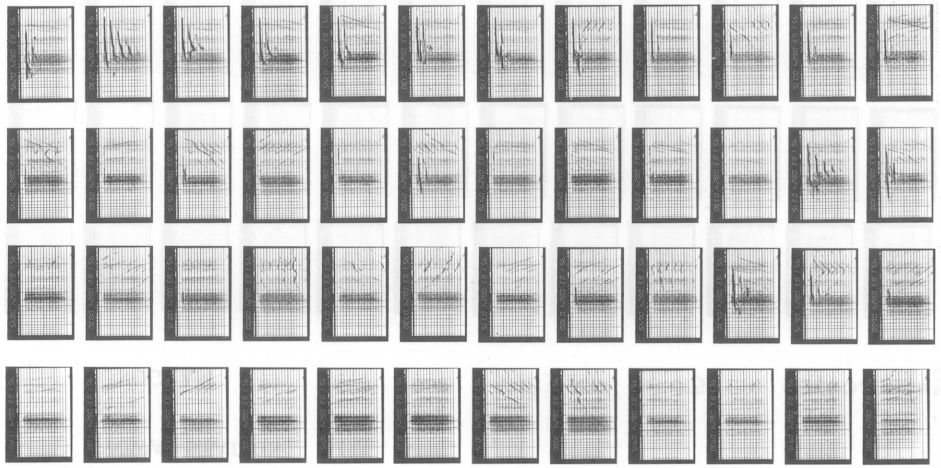
SYOWA STATION

IONOGRAM 1983 08 24 12;00-23;45



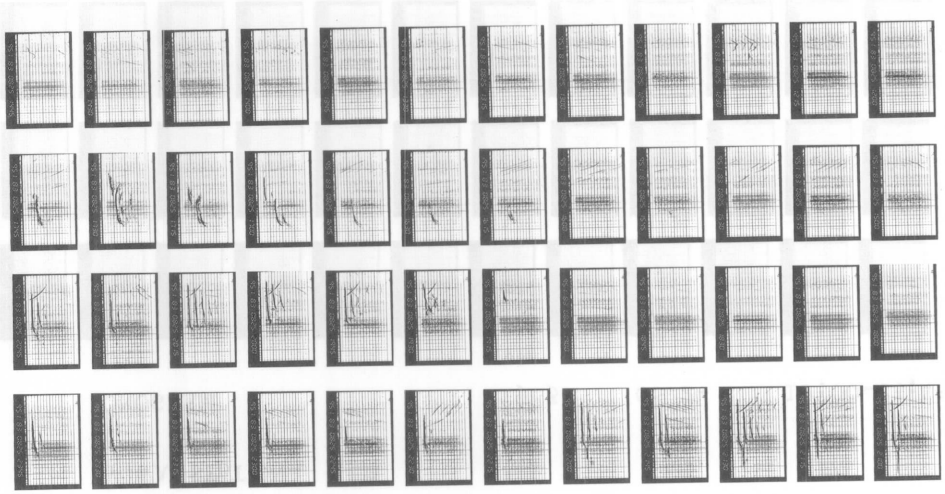
SYOWA STATION

IONOGRAM 1983 08 24 00;00-11;45



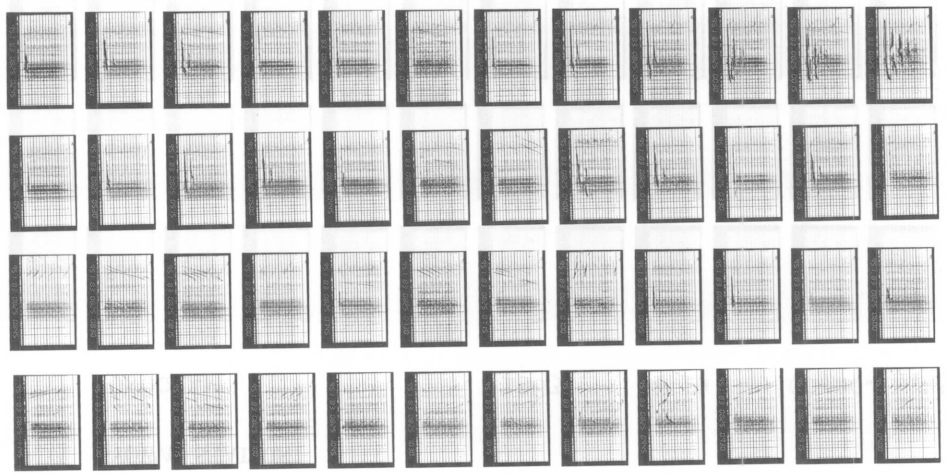
SYOWA STATION

IONOGRAM 1983 08 25 12;00-23;45



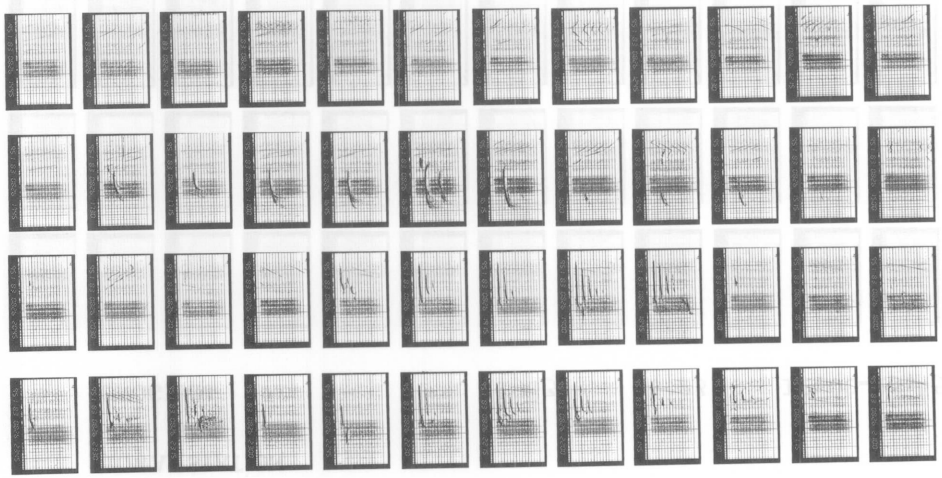
SYOWA STATION

IONOGRAM 1983 08 25 00;00-11;45



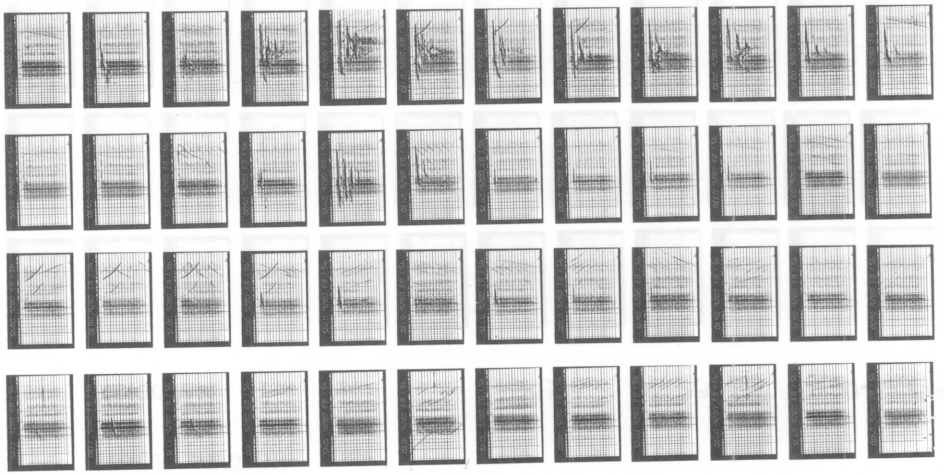
SYOWA STATION

IONOGRAM 1983 08 26 12;00-23;45



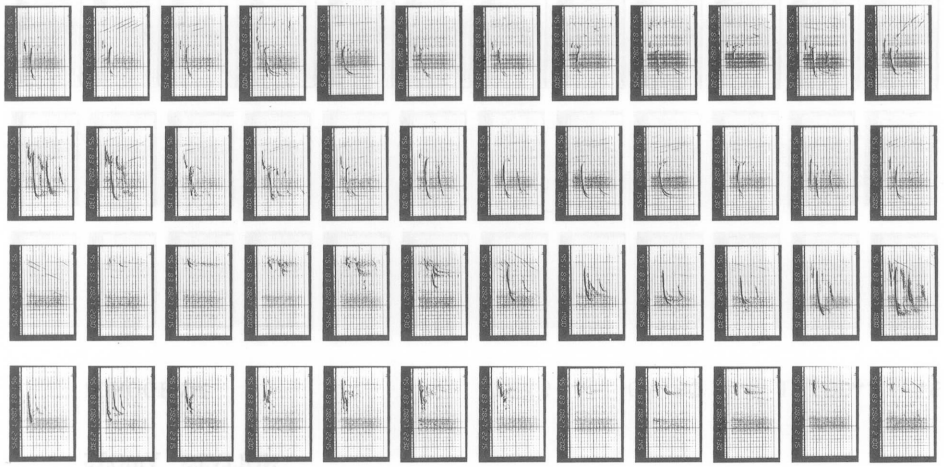
SYOWA STATION

IONOGRAM 1983 08 26 00;00-11;45



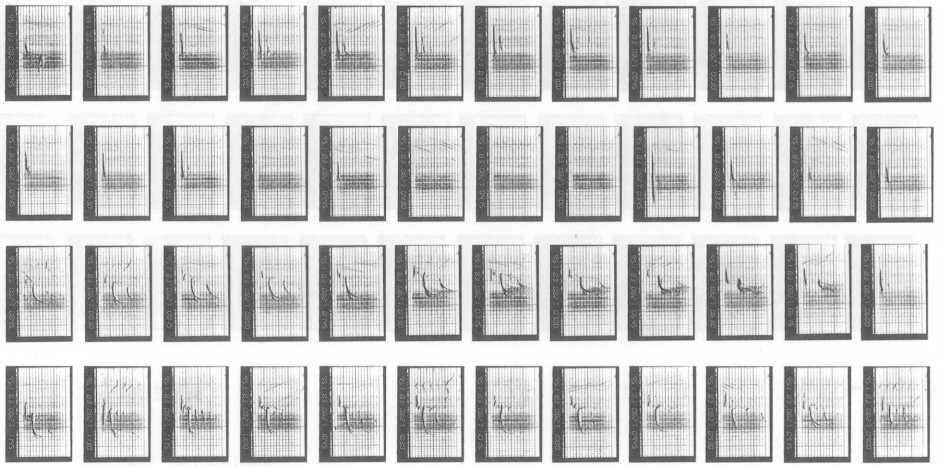
SYOWA STATION

IONOGRAM 1983 08 27 12;00-23;45



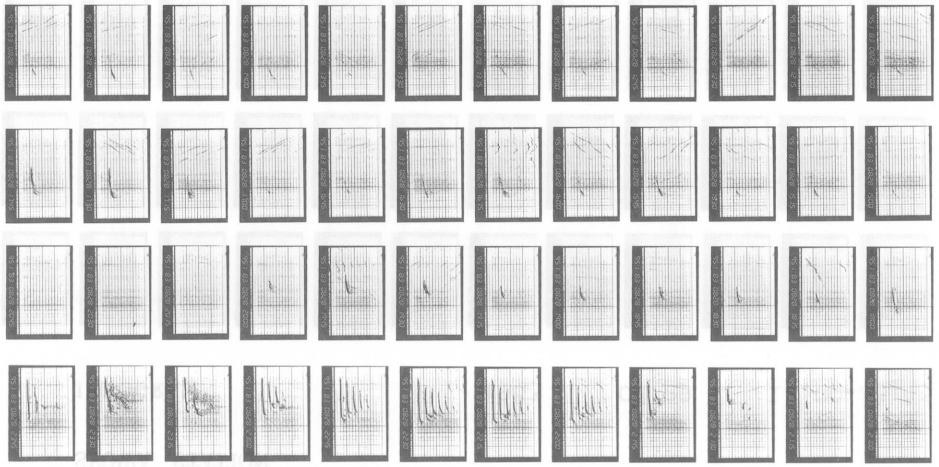
SYOWA STATION

IONOGRAM 1983 08 27 00;00-11;45



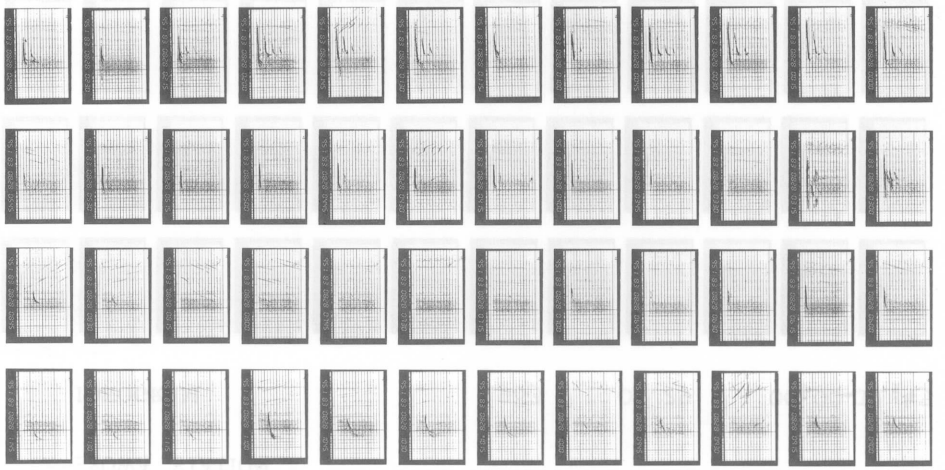
SYOWA STATION

IONOGRAM 1983 08 28 12;00-23;45



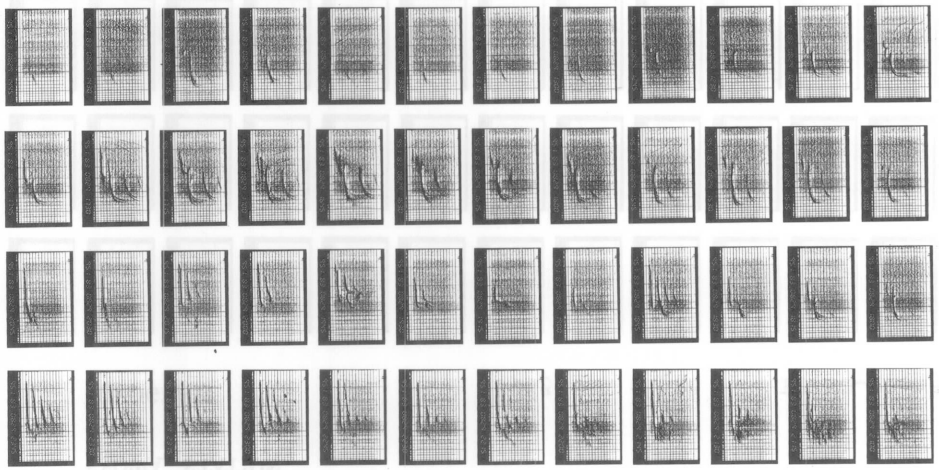
SYOWA STATION

IONOGRAM 1983 08 28 00;00-11;45



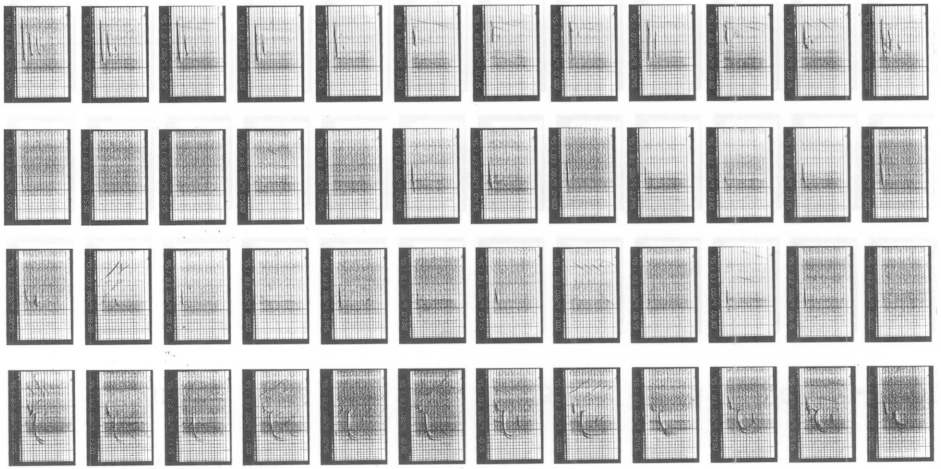
SYOWA STATION

IONOGRAM 1983 08 29 12;00-23;45



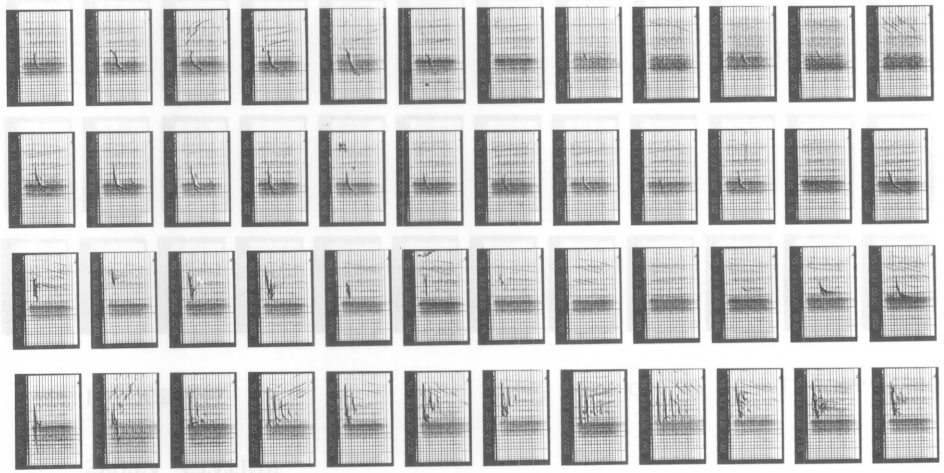
SYOWA STATION

IONOGRAM 1983 08 29 00;00-11;45



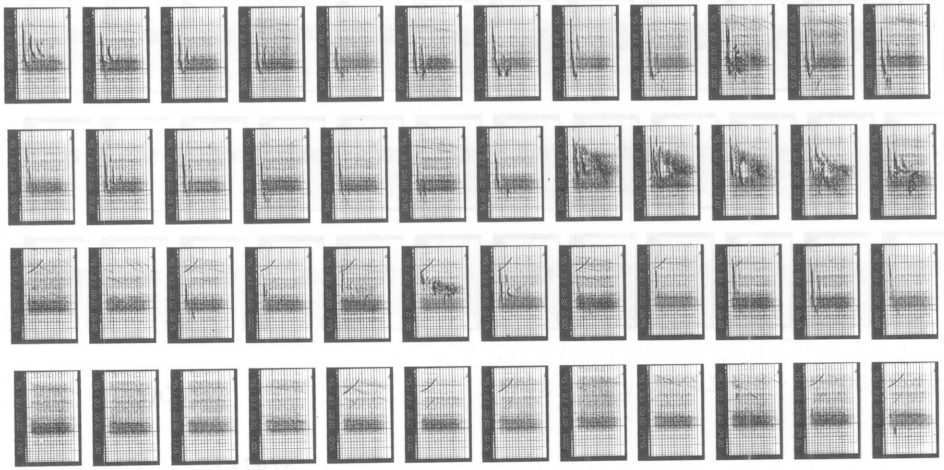
SYOWA STATION

IONOGRAM 1983 08 30 12;00-23;45



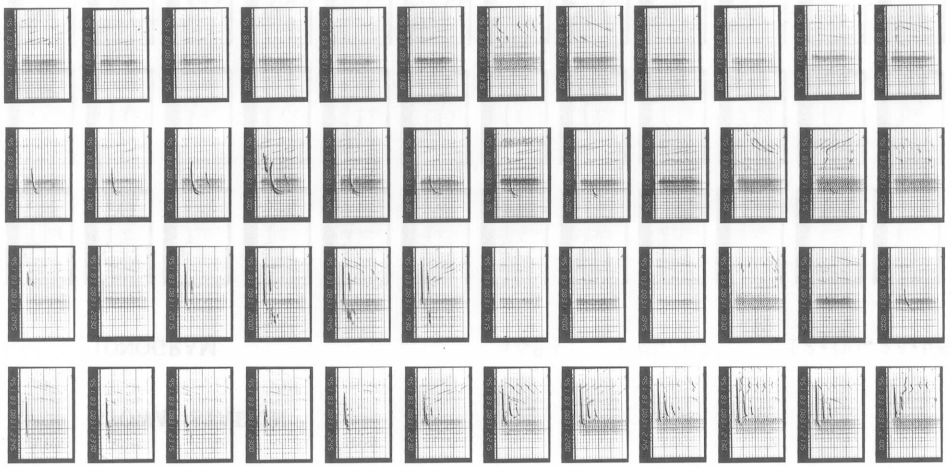
SYOWA STATION

IONOGRAM 1983 08 30 00;00-11;45



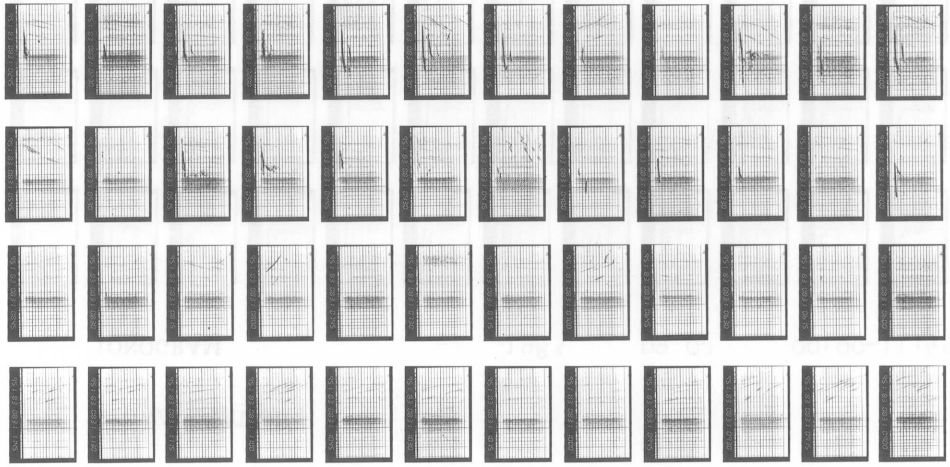
SYOWA STATION

IONOGRAM 1983 08 31 12;00-23;45



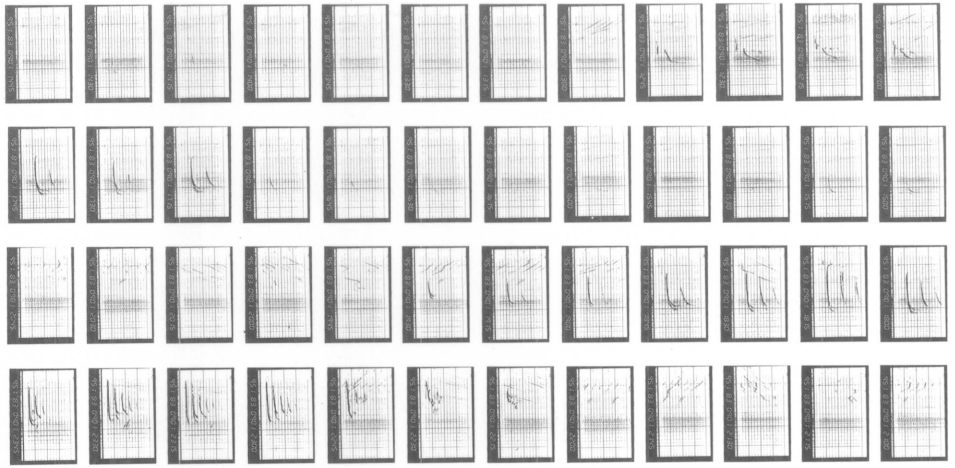
SYOWA STATION

IONOGRAM 1983 08 31 00;00-11;45



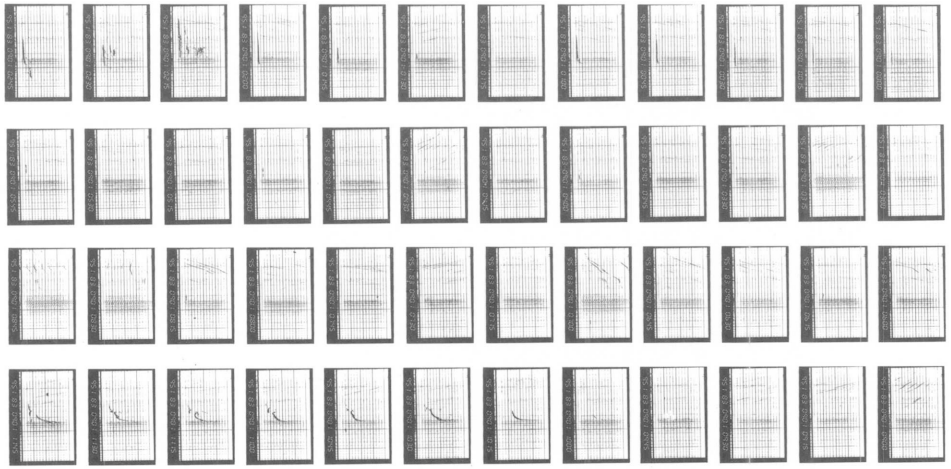
SYOWA STATION

IONOGRAM 1983 09 01 12;00-23;45



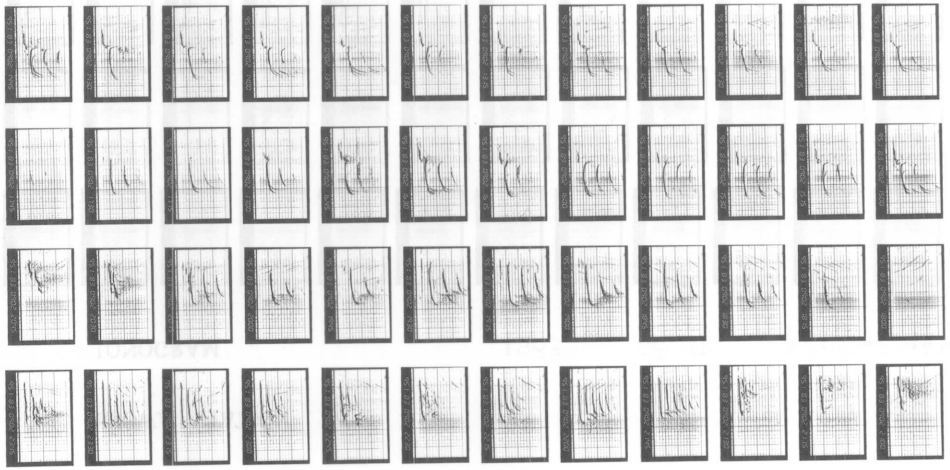
SYOWA STATION

IONOGRAM 1983 09 01 00;00-11;45



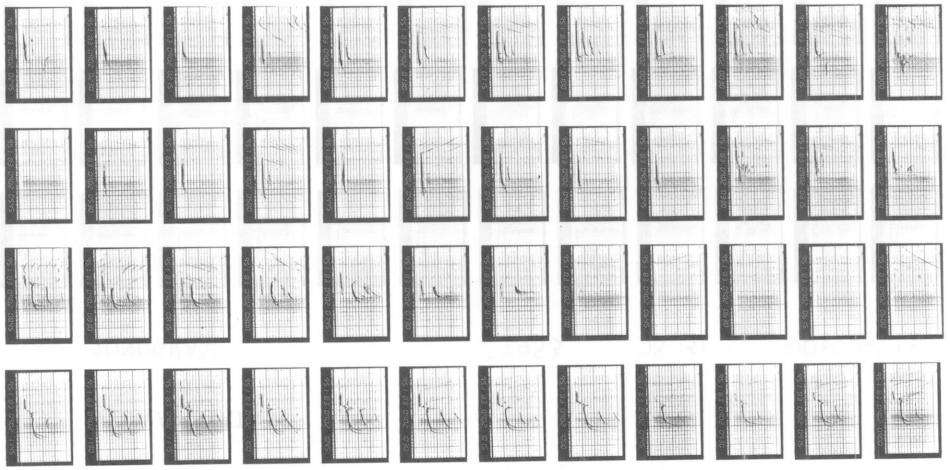
SYOWA STATION

IONOGRAM 1983 09 02 12;00-23;45



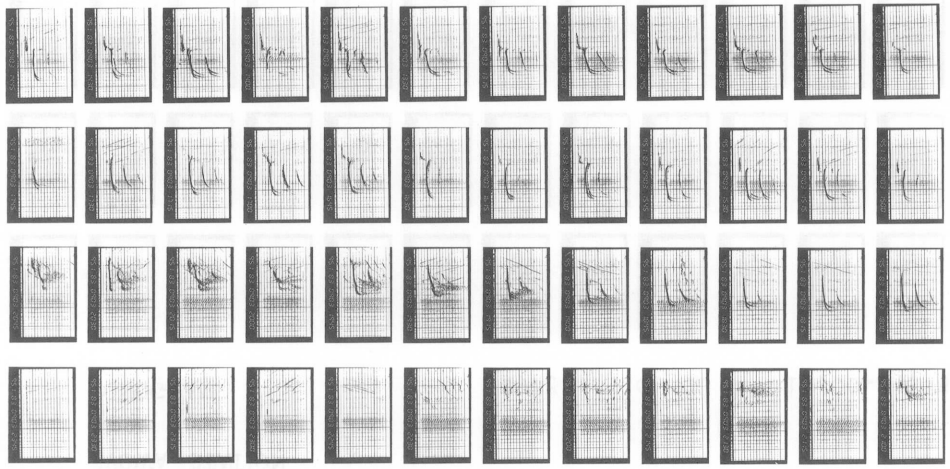
SYOWA STATION

IONOGRAM 1983 09 02 00;00-11;45



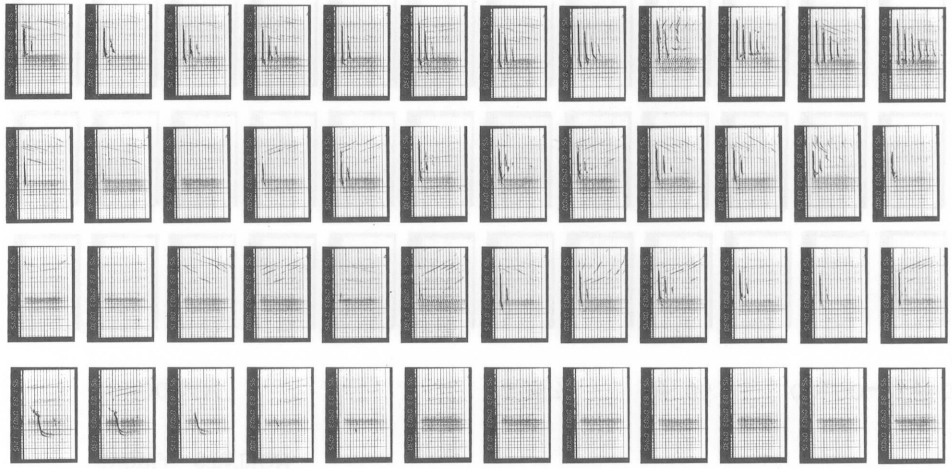
SYOWA STATION

IONOGRAM 1983 09 03 12;00-23;45



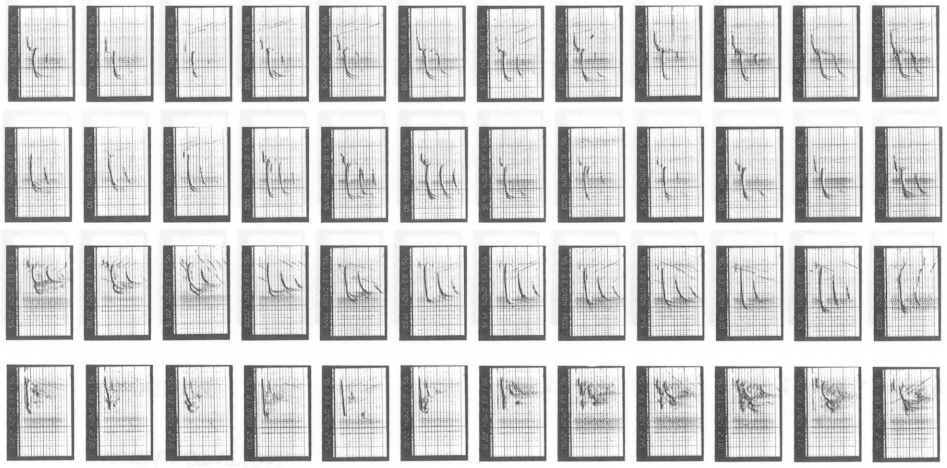
SYOWA STATION

IONOGRAM 1983 09 03 00;00-11;45



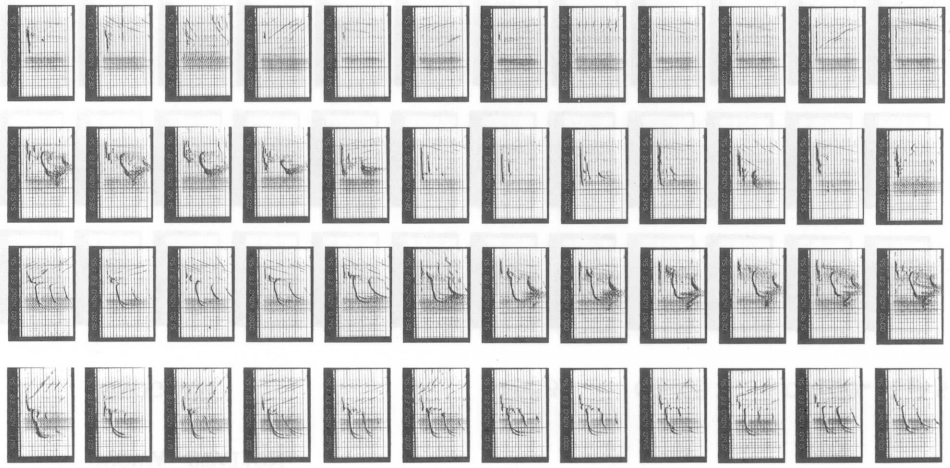
SYOWA STATION

IONOGRAM 1983 09 04 12;00-23;45



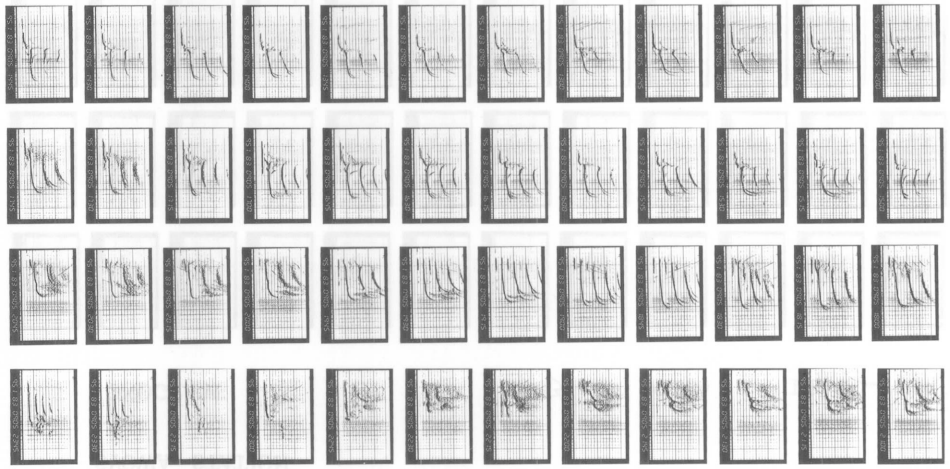
SYOWA STATION

IONOGRAM 1983 09 04 00;00-11;45



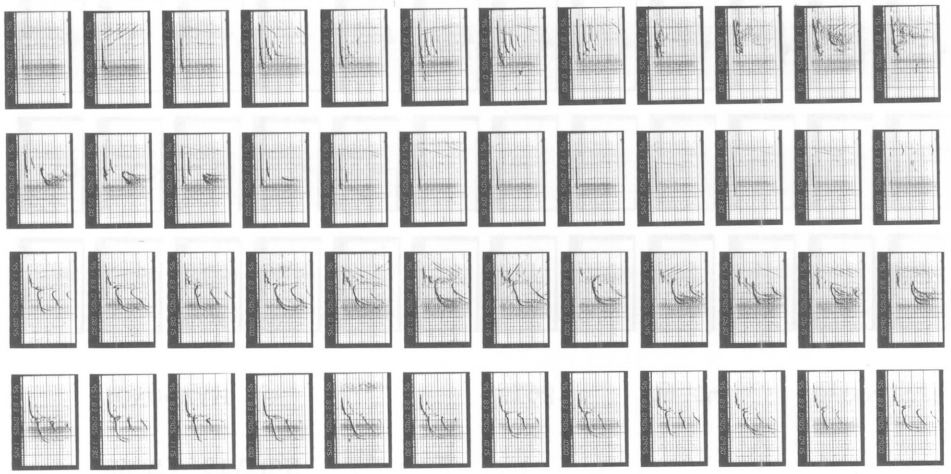
SYOWA STATION

IONOGRAM 1983 09 05 12;00-23;45



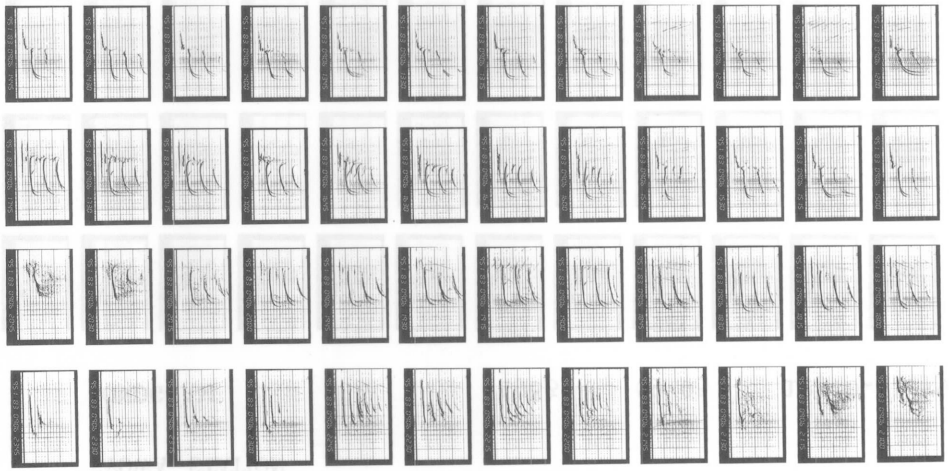
SYOWA STATION

IONOGRAM 1983 09 05 00;00-11;45



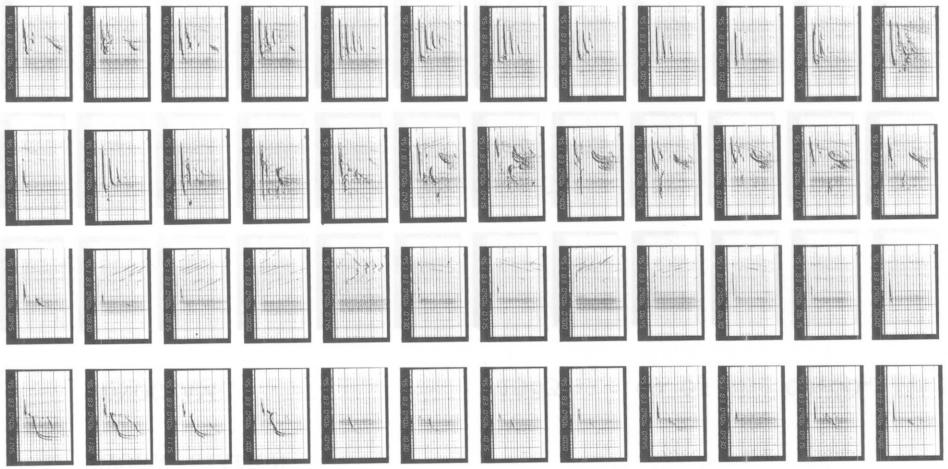
SYOWA STATION

IONOGRAM 1983 09 06 12;00-23;45



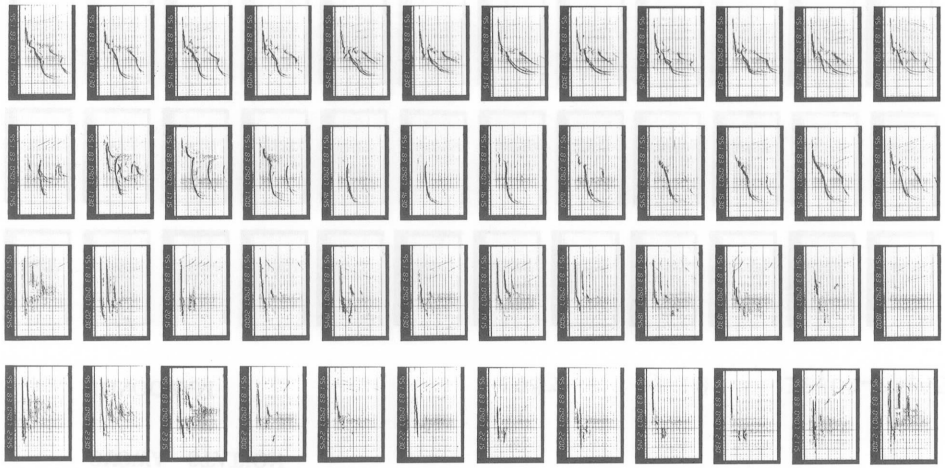
SYOWA STATION

IONOGRAM 1983 09 06 00;00-11;45



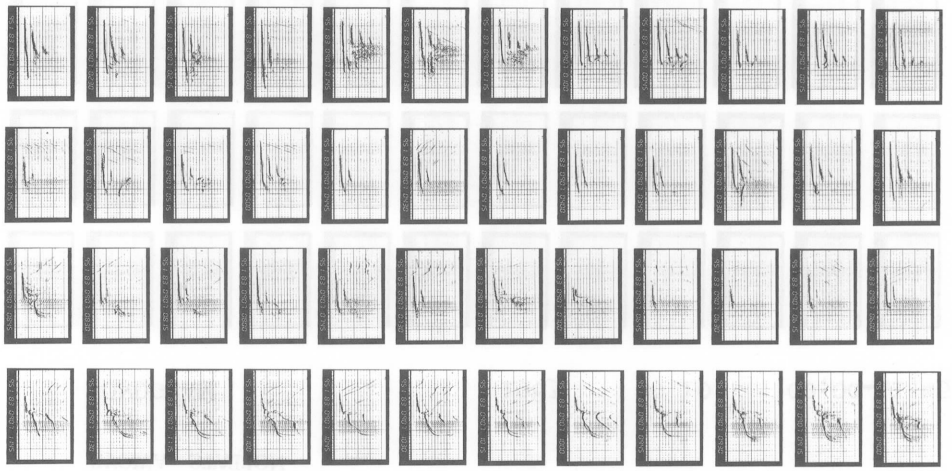
SYOWA STATION

IONOGRAM 1983 09 07 12;00-23;45



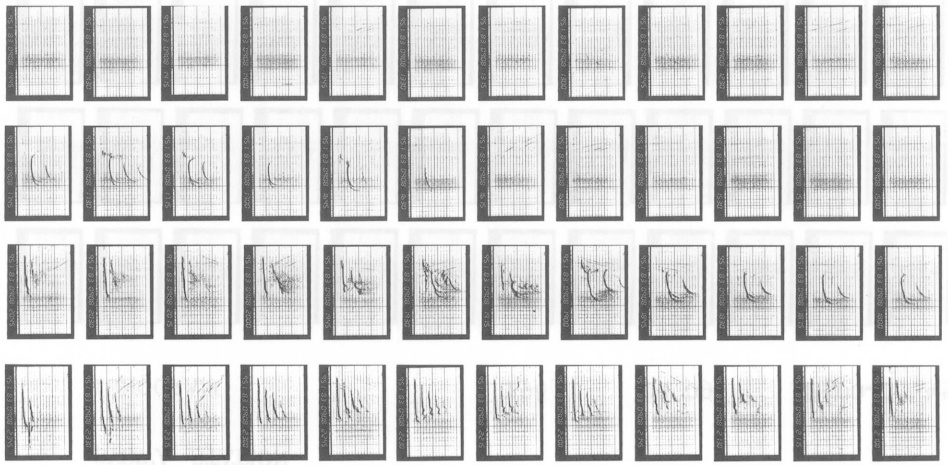
SYOWA STATION

IONOGRAM 1983 09 07 00;00-11;45



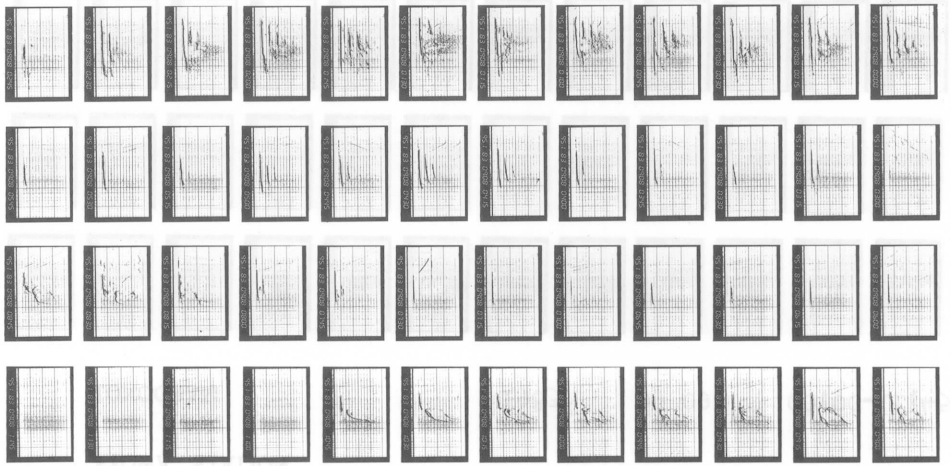
SYOWA STATION

IONOGRAM 1983 09 08 12;00-23;45



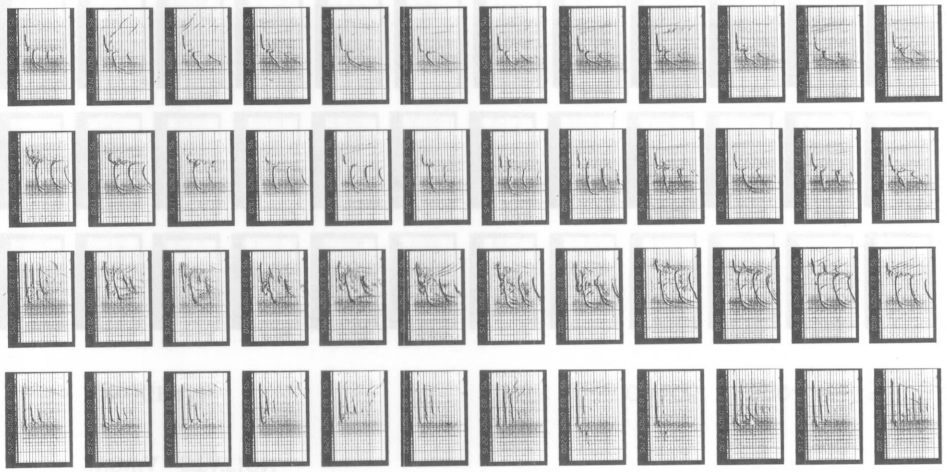
SYOWA STATION

IONOGRAM 1983 09 08 00;00-11;45



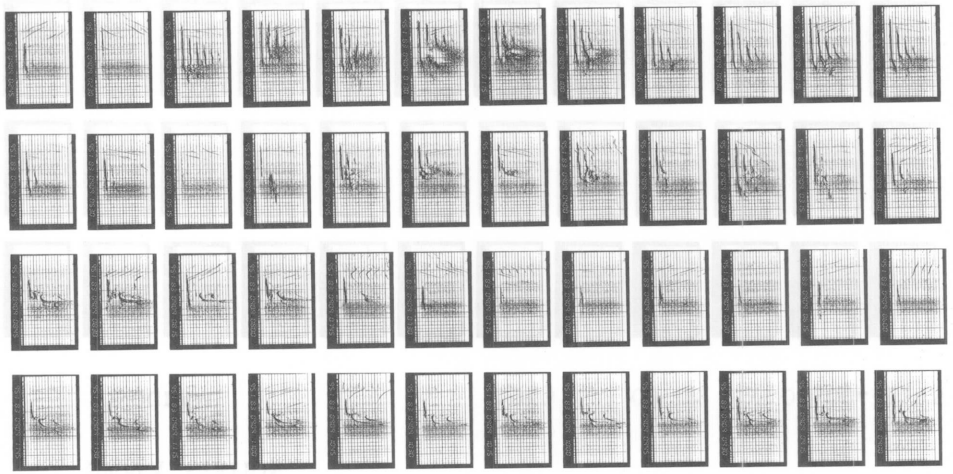
SYOWA STATION

IONOGRAM 1983 09 09 12;00-23;45



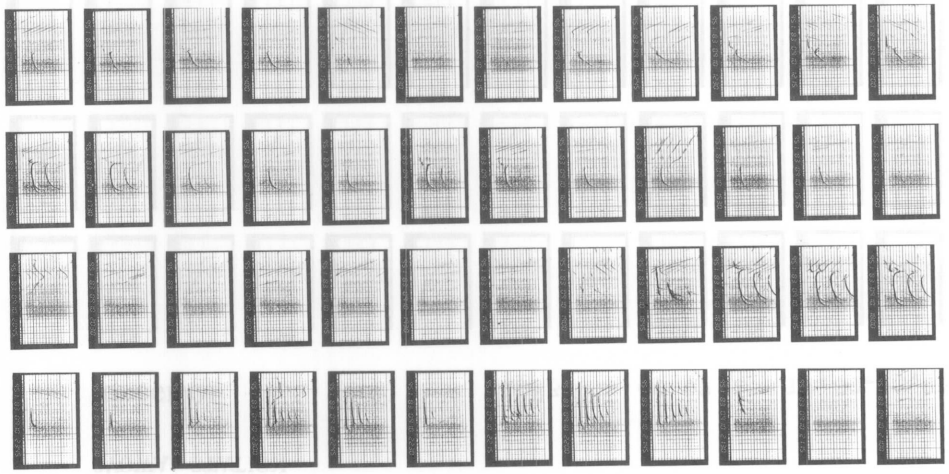
SYOWA STATION

IONOGRAM 1983 09 09 00;00-11;45



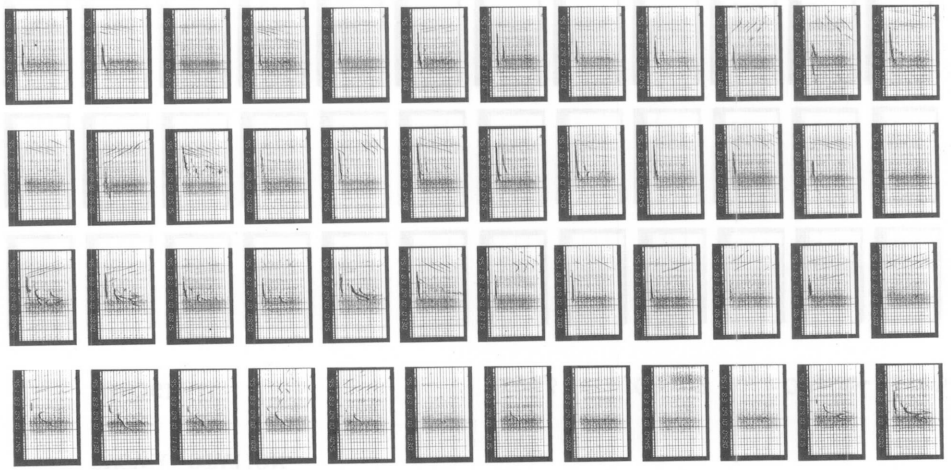
SYOWA STATION

IONOGRAM 1983 09 10 12;00-23;45



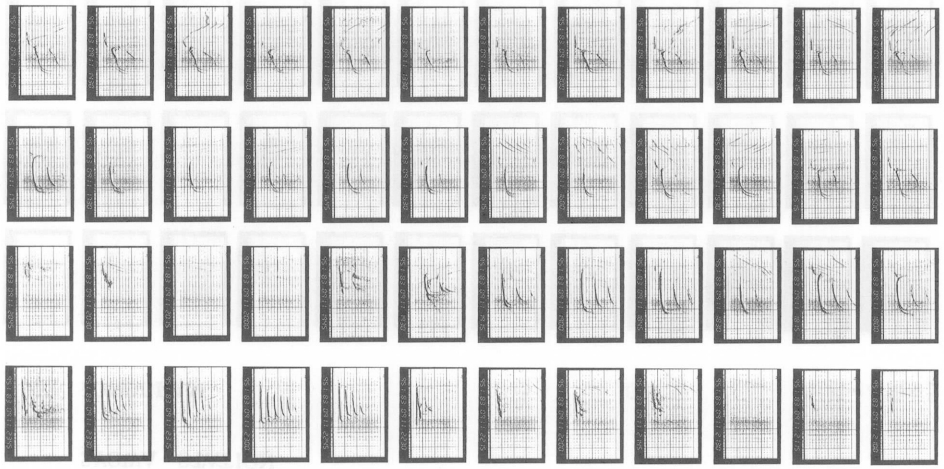
SYOWA STATION

IONOGRAM 1983 09 10 00;00-11;45



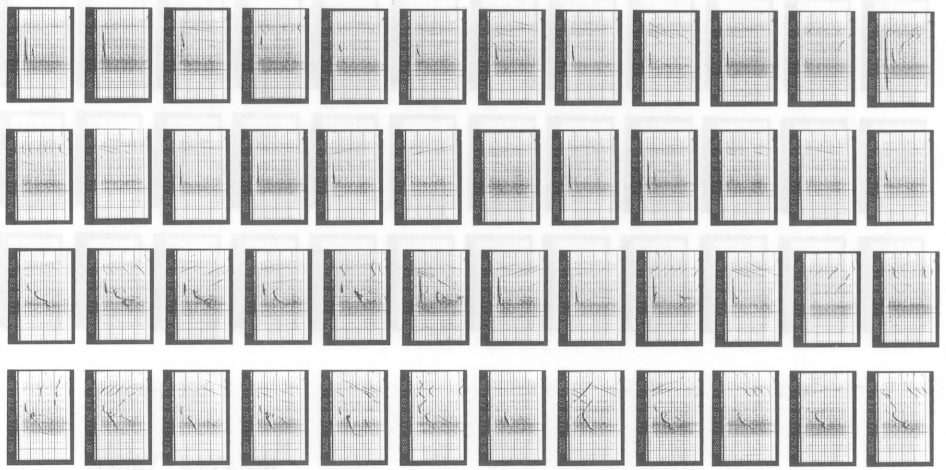
SYOWA STATION

IONOGRAM 1983 09 11 12;00-23;45



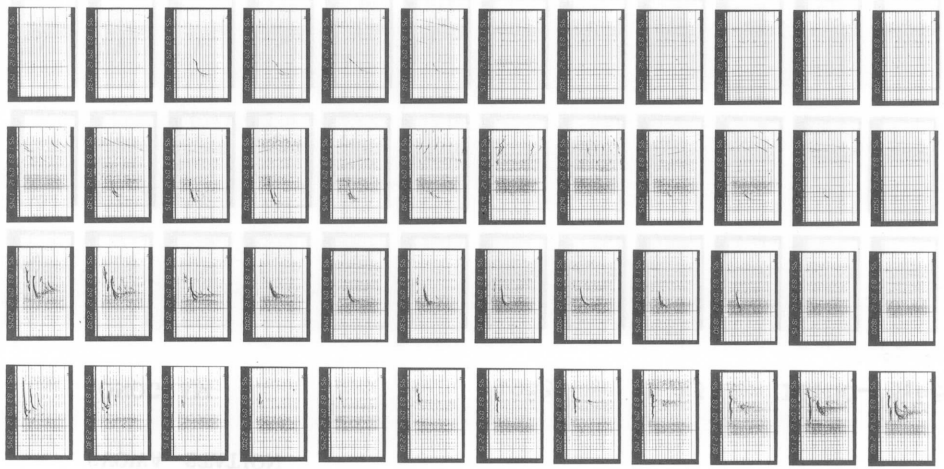
SYOWA STATION

IONOGRAM 1983 09 11 00;00-11;45



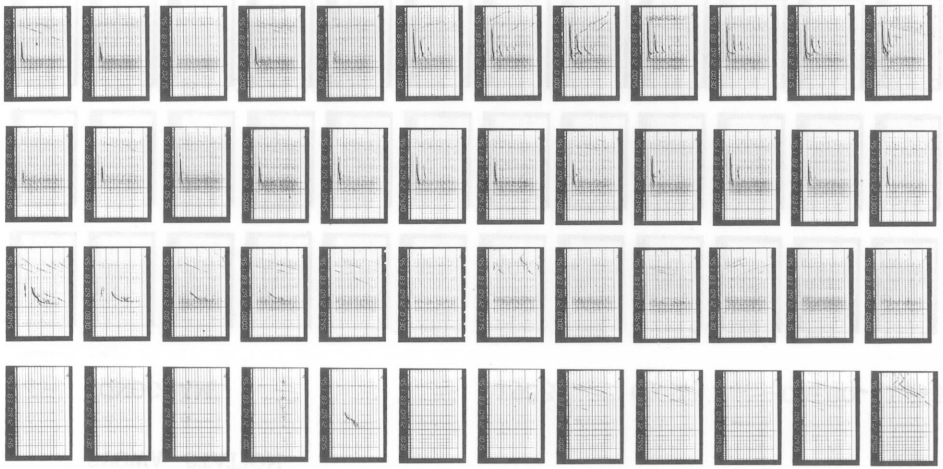
SYOWA STATION

IONOGRAM 1983 09 12 12;00-23;45



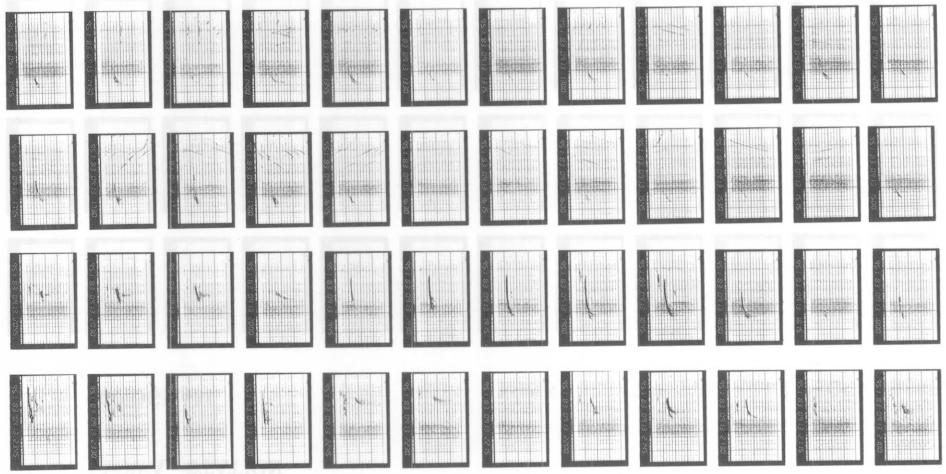
SYOWA STATION

IONOGRAM 1983 09 12 00;00-11;45



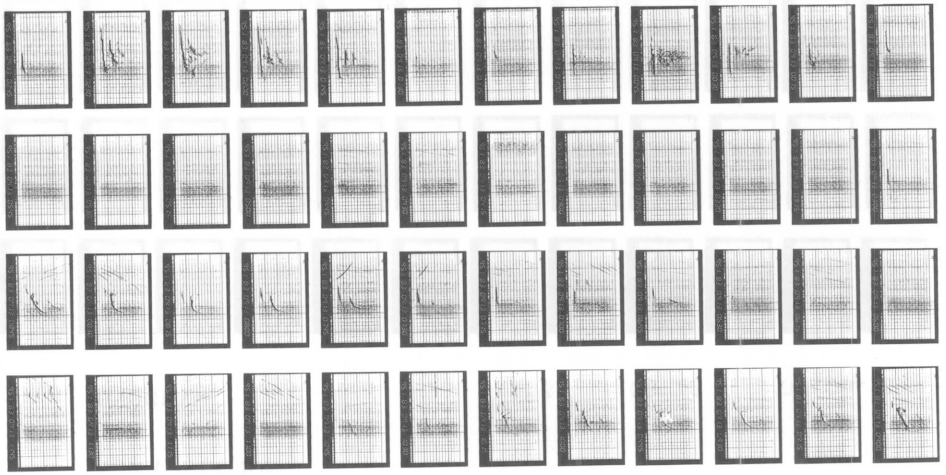
SYOWA STATION

IONOGRAM 1983 09 13 12;00-23;45



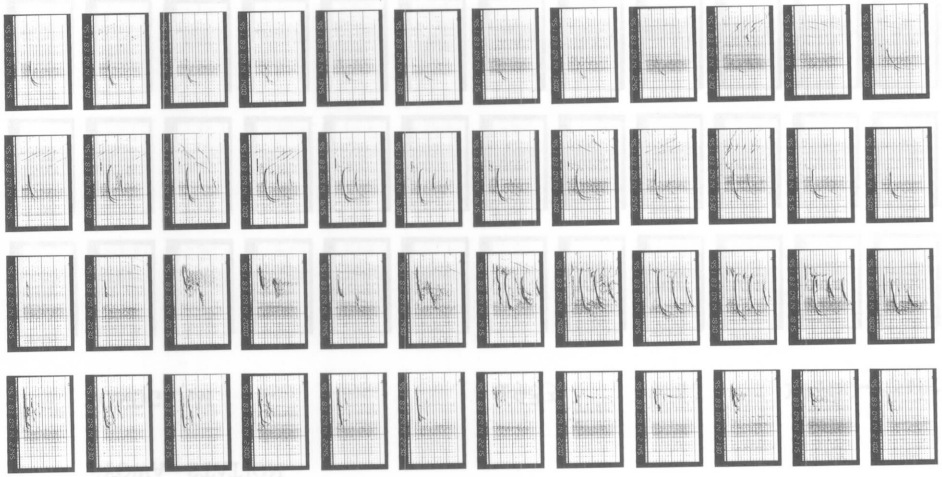
SYOWA STATION

IONOGRAM 1983 09 13 00;00-11;45



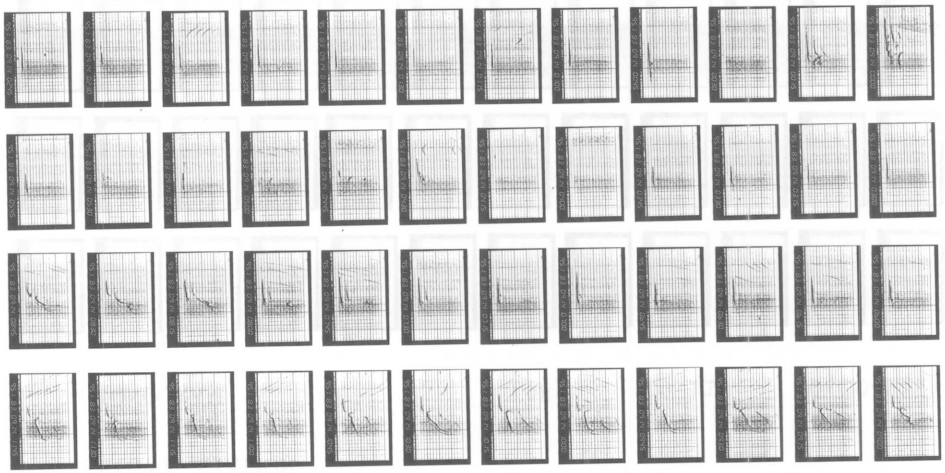
SYOWA STATION

IONOGRAM 1983 09 14 12;00-23;45



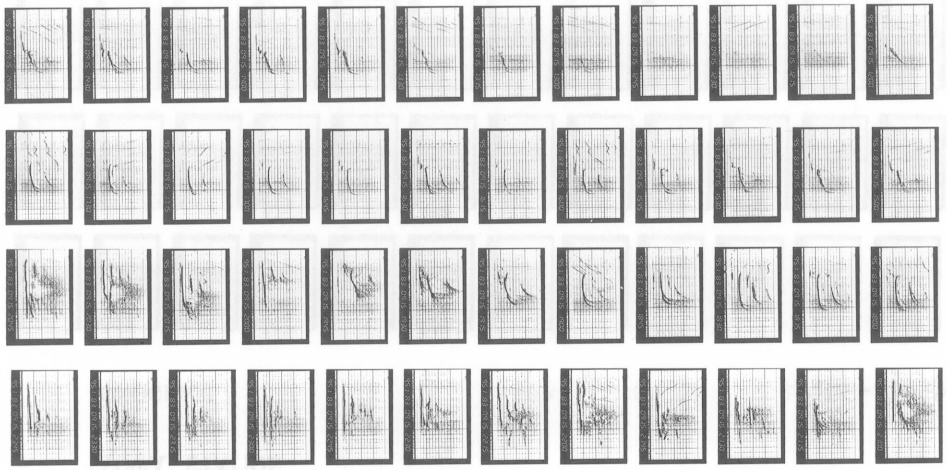
SYOWA STATION

IONOGRAM 1983 09 14 00;00-11;45



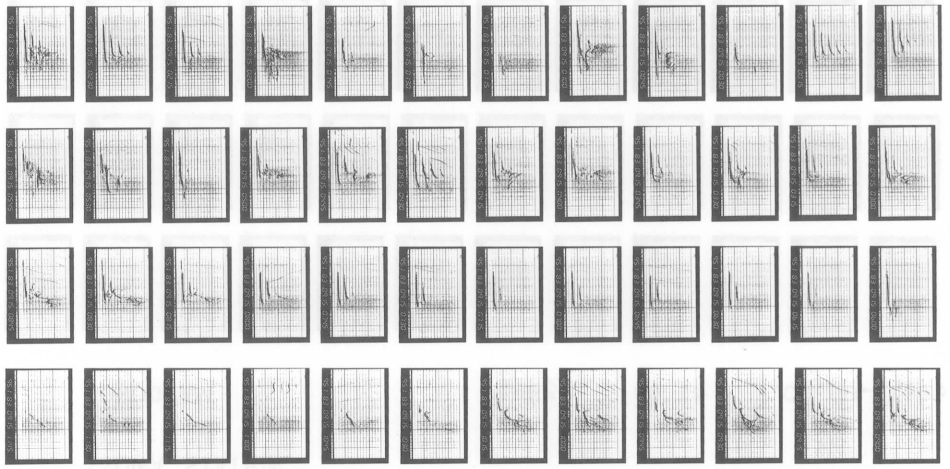
SYOWA STATION

IONOGRAM 1983 09 15 12;00-23;45



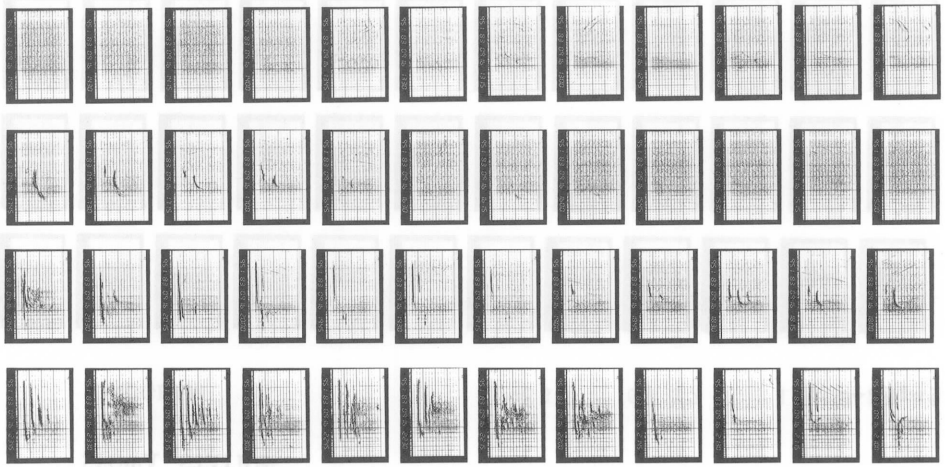
SYOWA STATION

IONOGRAM 1983 09 15 00;00-11;45



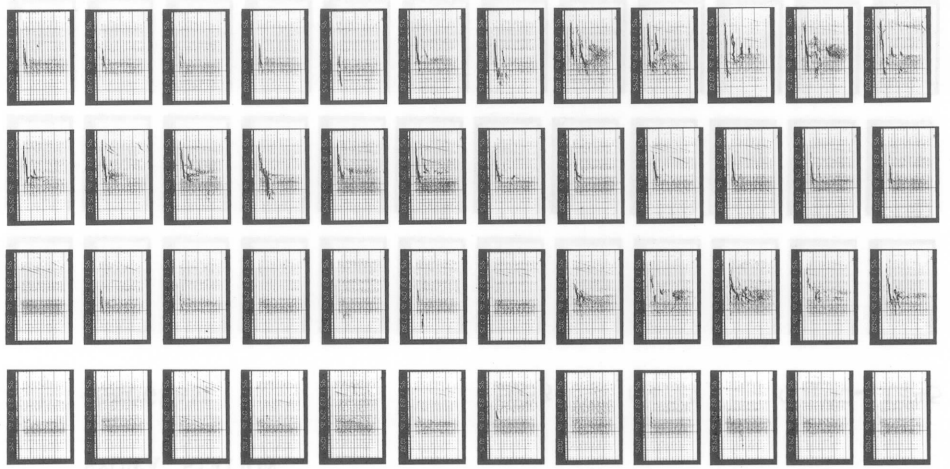
SYOWA STATION

IONOGRAM 1983 09 16 12;00-23;45



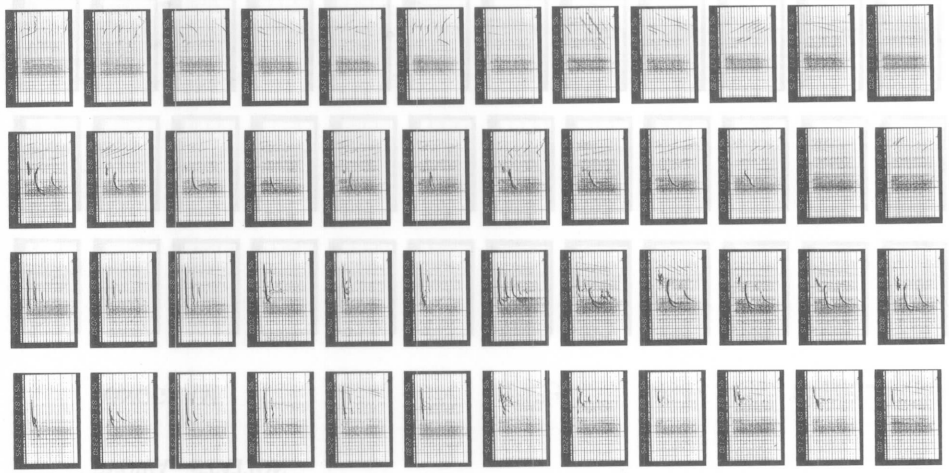
SYOWA STATION

IONOGRAM 1983 09 16 00;00-11;45



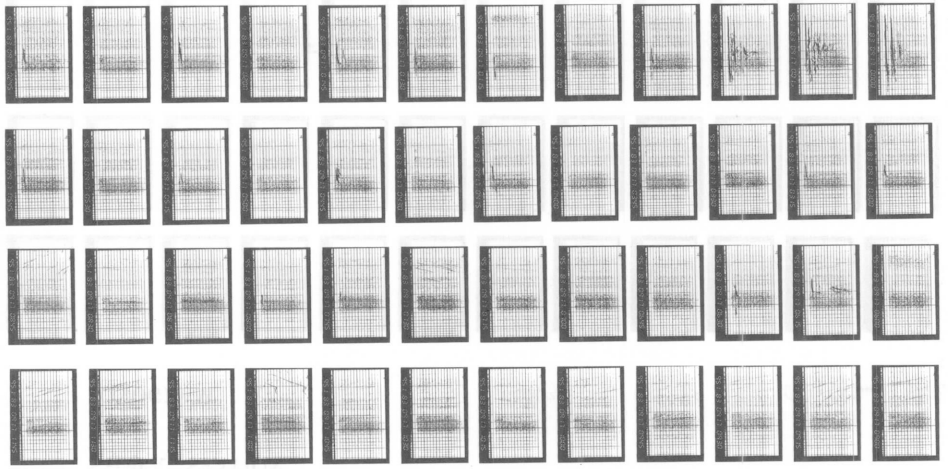
SYOWA STATION

IONOGRAM 1983 09 17 12;00-23;45



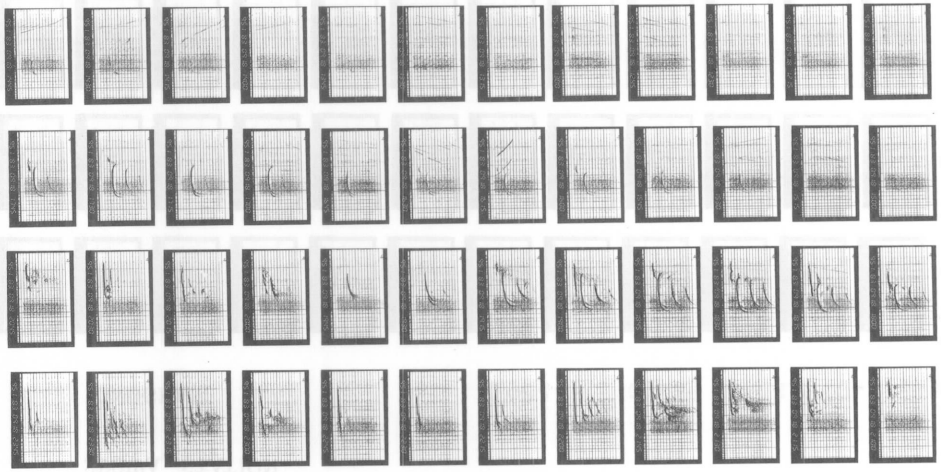
SYOWA STATION

IONOGRAM 1983 09 17 00;00-11;45



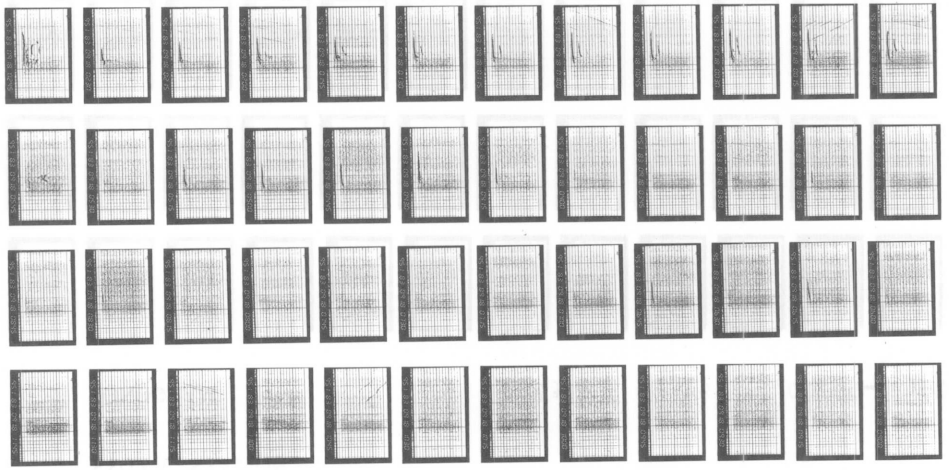
SYOWA STATION

IONOGRAM 1983 09 18 12;00-23;45



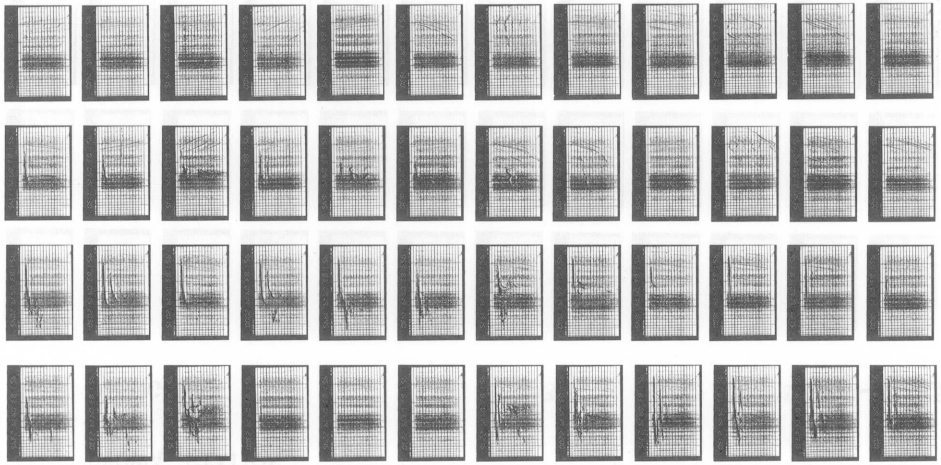
SYOWA STATION

IONOGRAM 1983 09 18 00;00-11;45



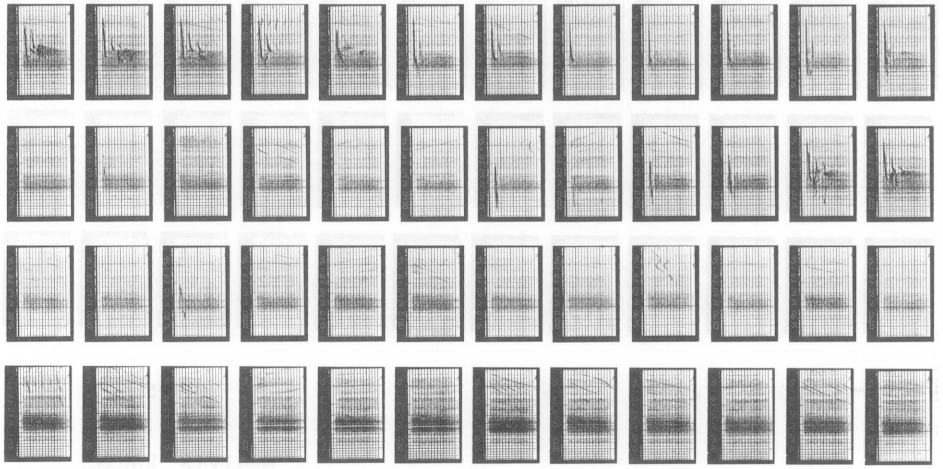
SYOWA STATION

IONOGRAM 1983 09 19 12;00-23;45



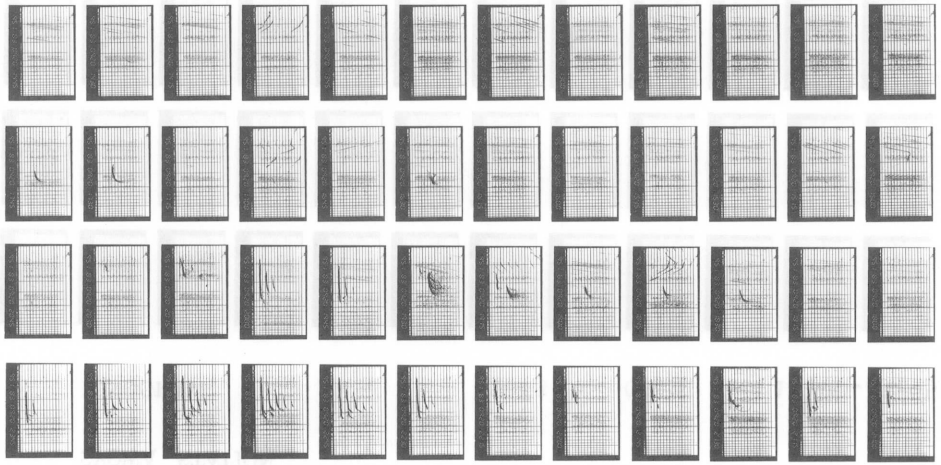
SYOWA STATION

IONOGRAM 1983 09 19 00;00-11;45



SYOWA STATION

IONOGRAM 1983 09 20 12;00-23;45

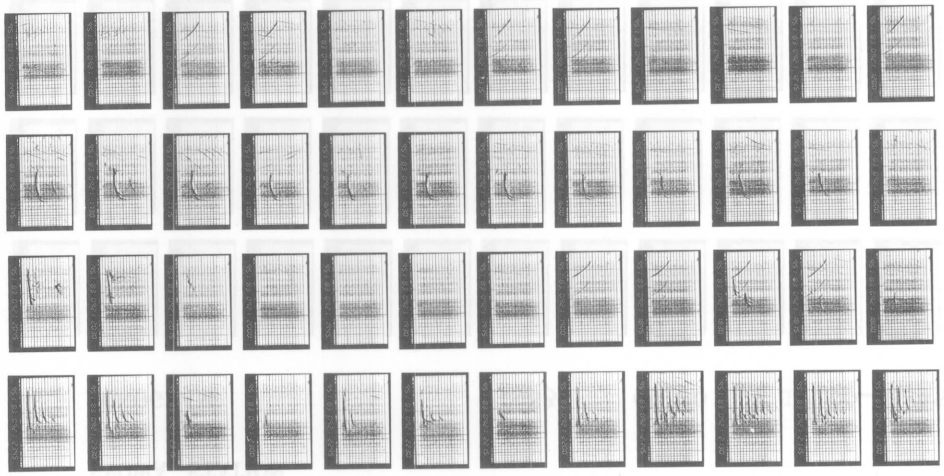


SYOWA STATION

IONOGRAM 1983 09 20 00;00-11;45

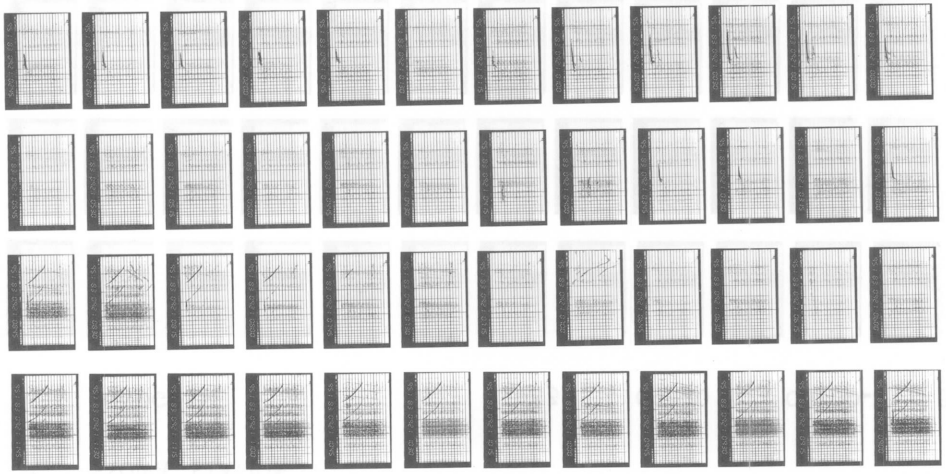
SYOWA STATION

IONOGRAM 1983 09 21 12;00-23;45



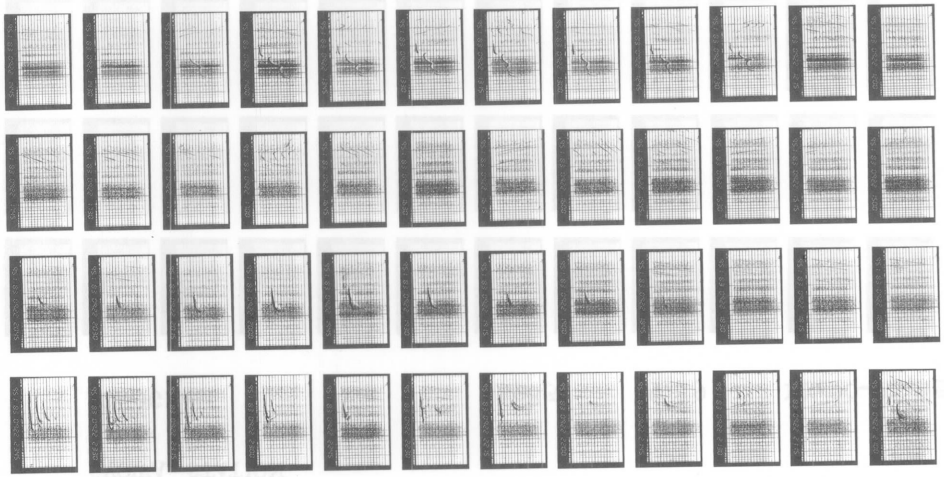
SYOWA STATION

IONOGRAM 1983 09 21 00;00-11;45



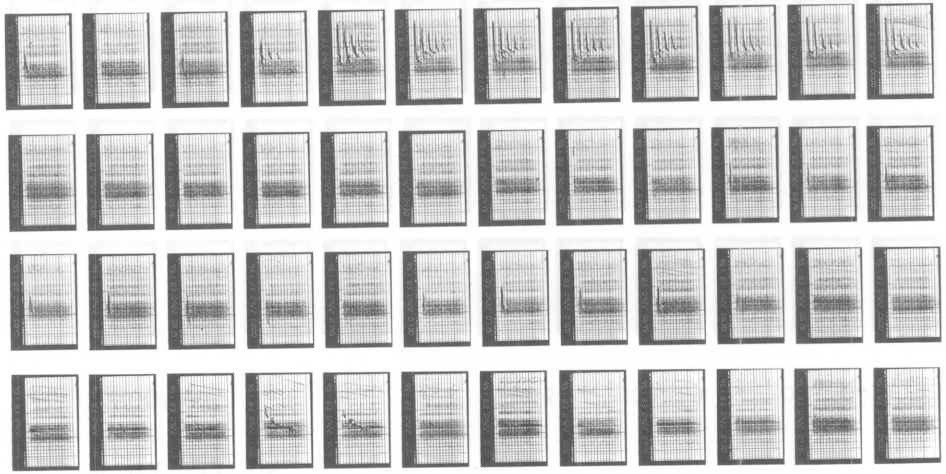
SYOWA STATION

IONOGRAM 1983 09 22 12;00-23;45



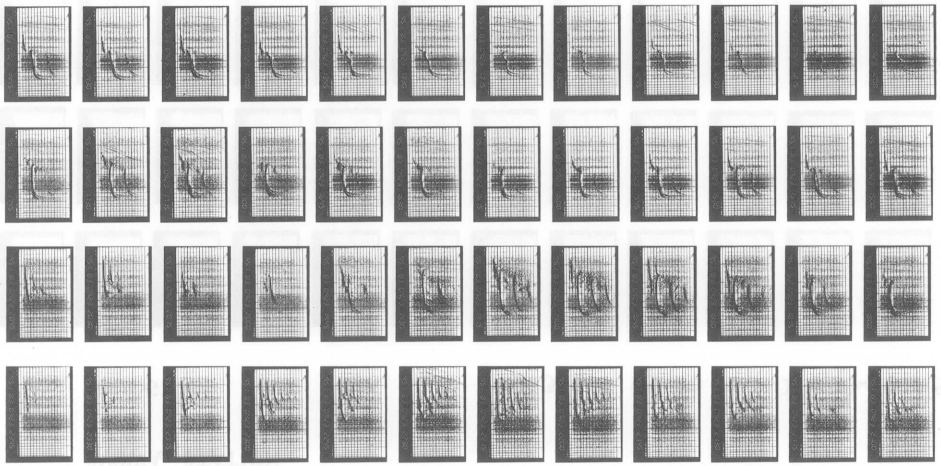
SYOWA STATION

IONOGRAM 1983 09 22 00;00-11;45



SYOWA STATION

IONOGRAM 1983 09 23 12;00-23;45



SYOWA STATION

IONOGRAM 1983 09 23 00;00-11;45

SYOWA STATION

IONOGRAM 1983 09 24 12;00-23;45

SYOWA STATION

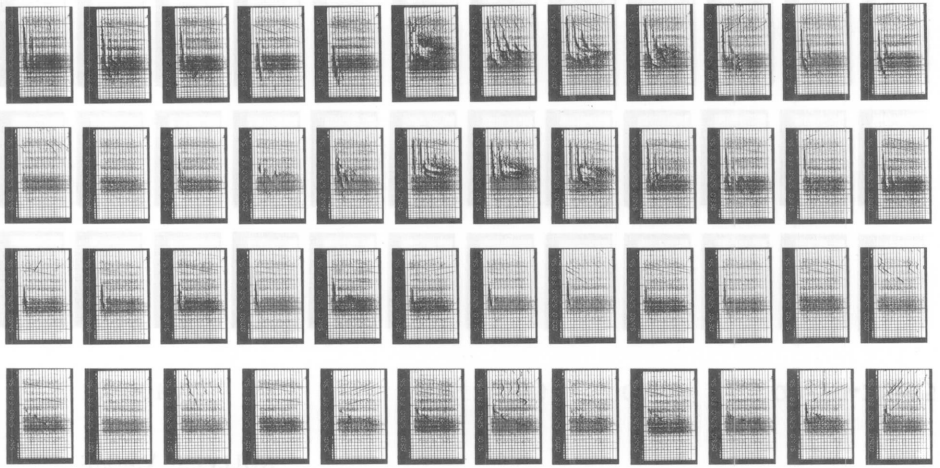
IONOGRAM 1983 09 24 00;00-11;45

SYOWA STATION

IONOGRAM 1983 09 25 12;00-23;45

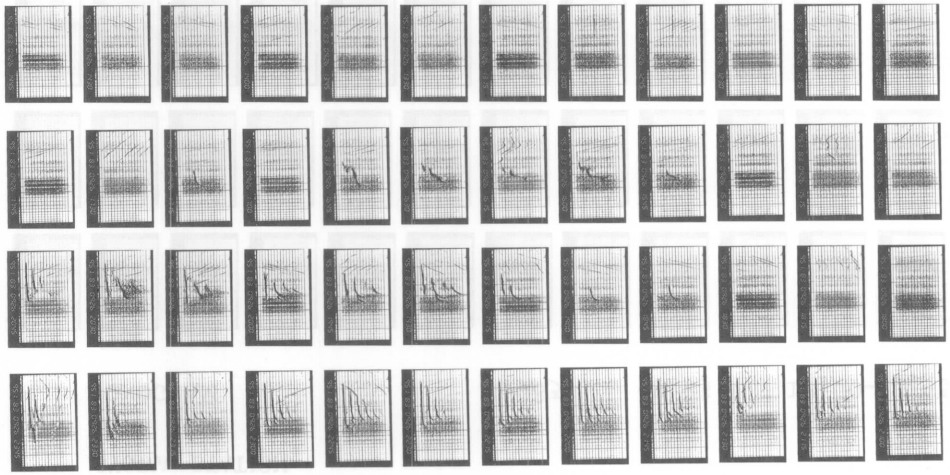
SYOWA STATION

IONOGRAM 1983 09 25 00;00-11;45



SYOWA STATION

IONOGRAM 1983 09 26 12;00-23;45

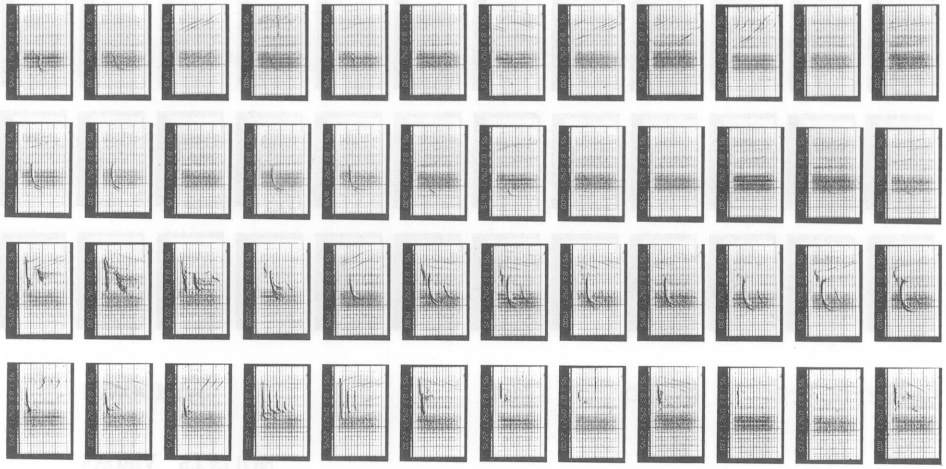


SYOWA STATION

IONOGRAM 1983 09 26 00;00-11;45

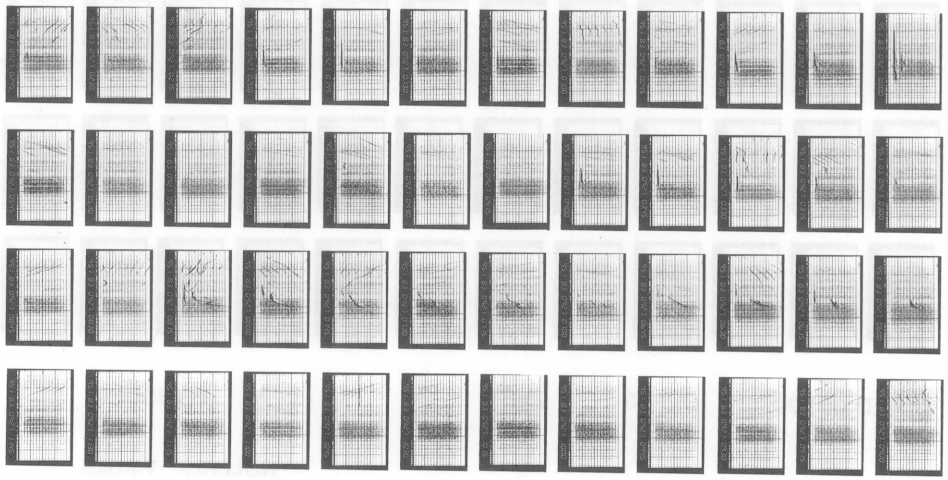
SYOWA STATION

IONOGRAM 1983 09 27 12;00-23;45



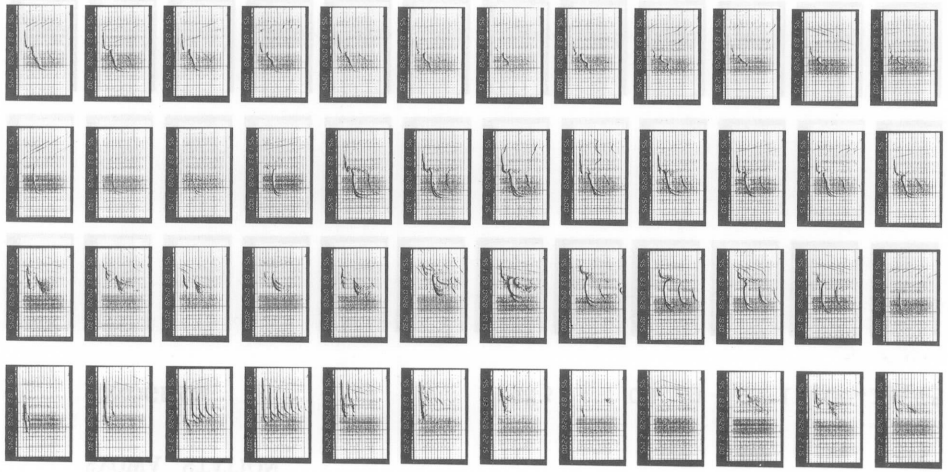
SYOWA STATION

IONOGRAM 1983 09 27 00;00-11;45



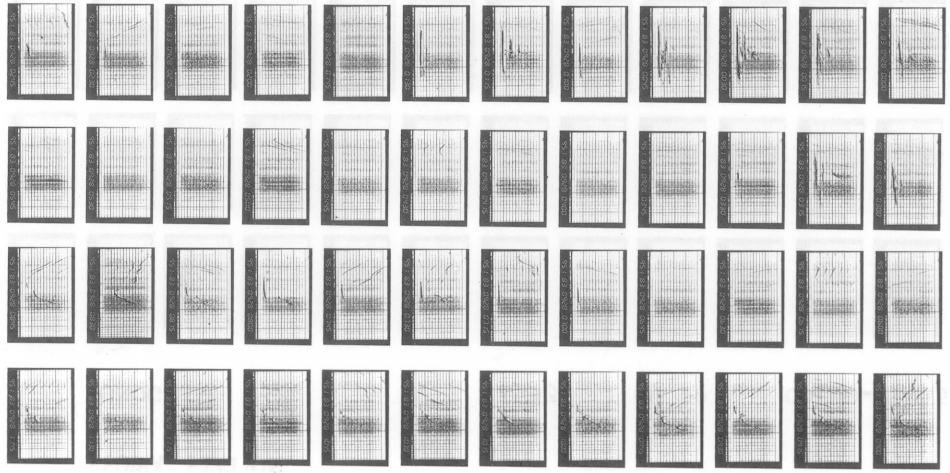
SYOWA STATION

IONOGRAM 1983 09 28 12;00-23;45



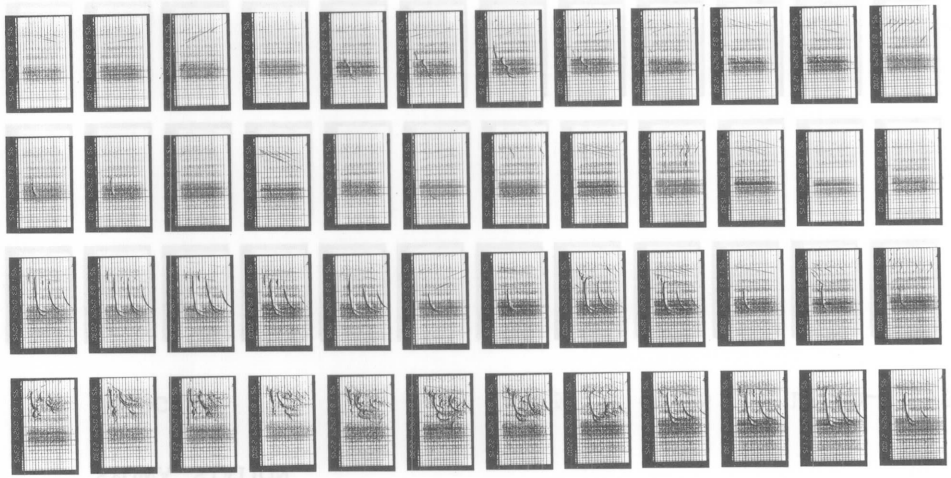
SYOWA STATION

IONOGRAM 1983 09 28 00;00-11;45



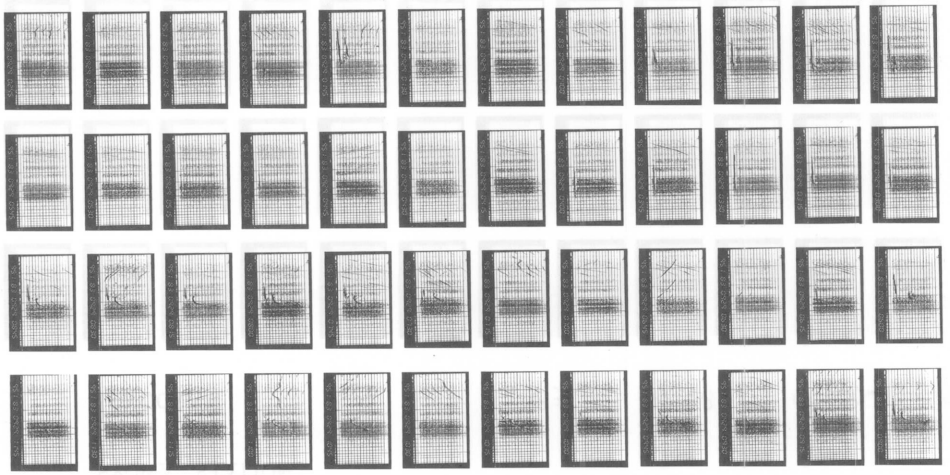
SYOWA STATION

IONOGRAM 1983 09 29 12;00-23;45



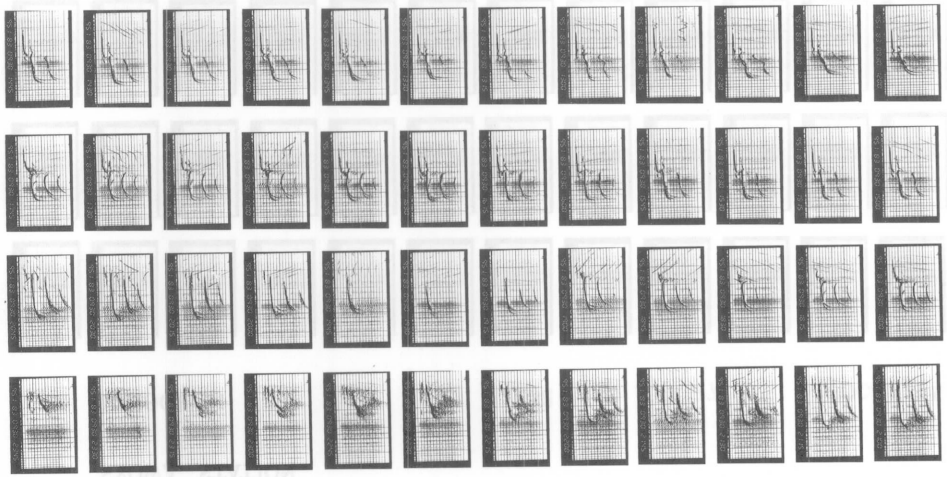
SYOWA STATION

IONOGRAM 1983 09 29 00;00-11;45



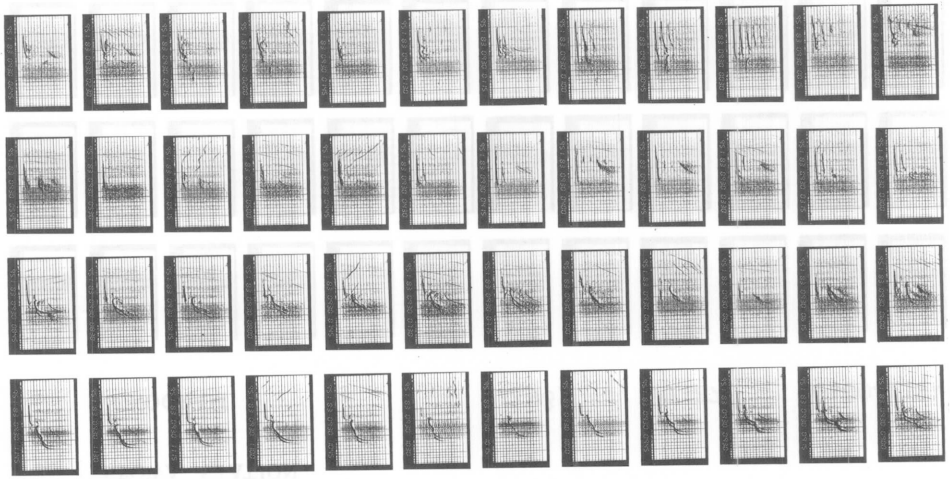
SYOWA STATION

IONOGRAM 1983 09 30 12;00-23;45



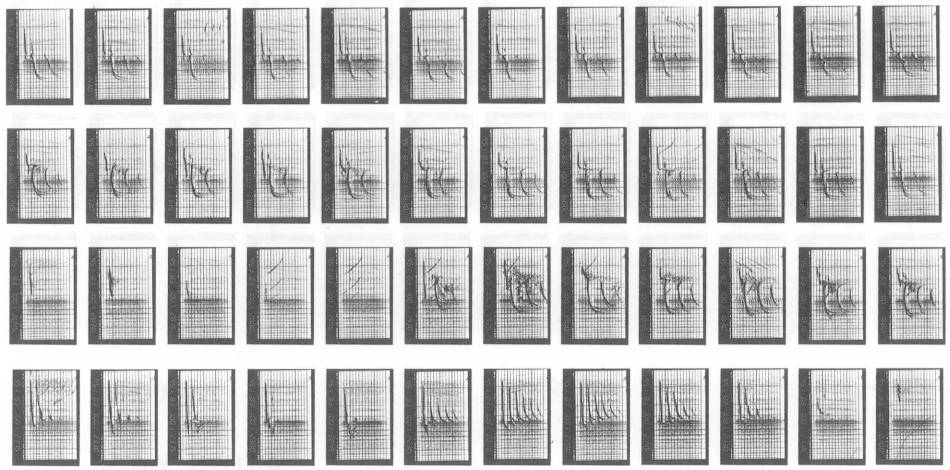
SYOWA STATION

IONOGRAM 1983 09 30 00;00-11;45



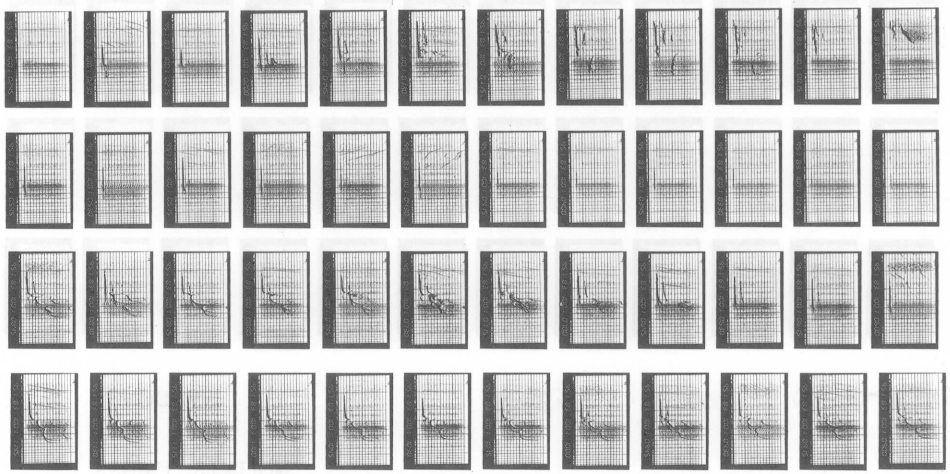
SYOWA STATION

IONOGRAM 1983 10 01 12;00-23;45



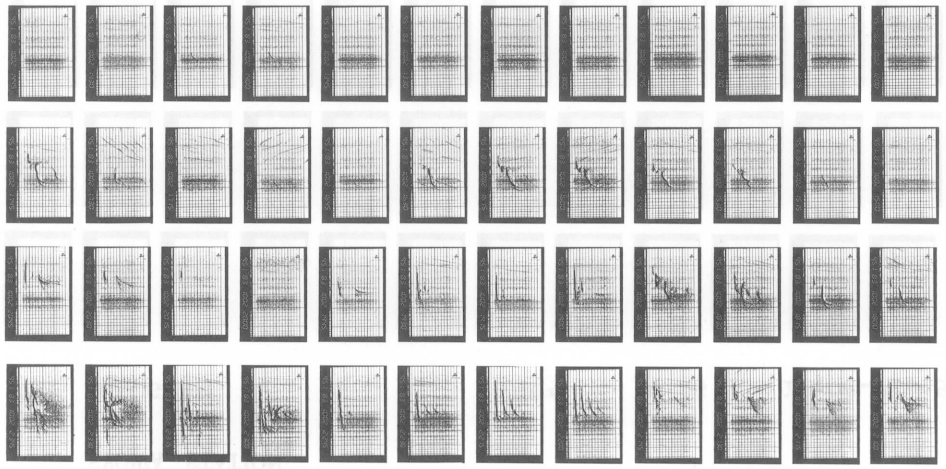
SYOWA STATION

IONOGRAM 1983 10 01 00;00-11;45



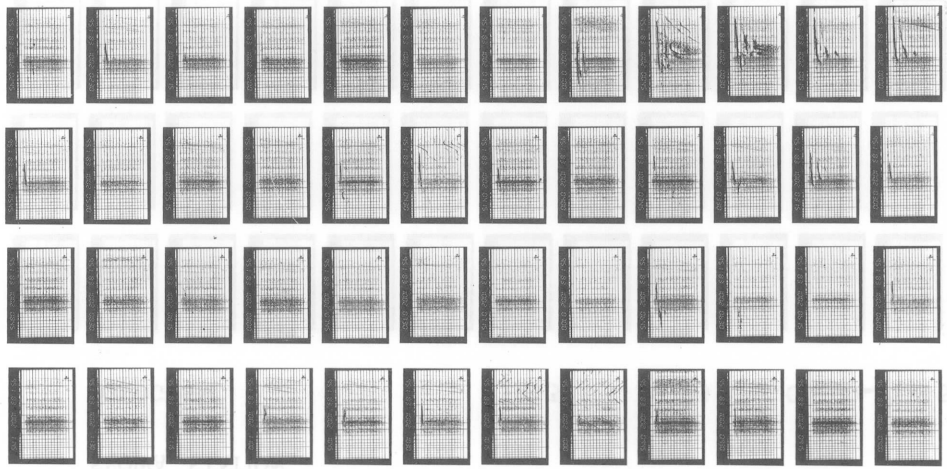
SYOWA STATION

IONOGRAM 1983 10 02 12;00-23;45



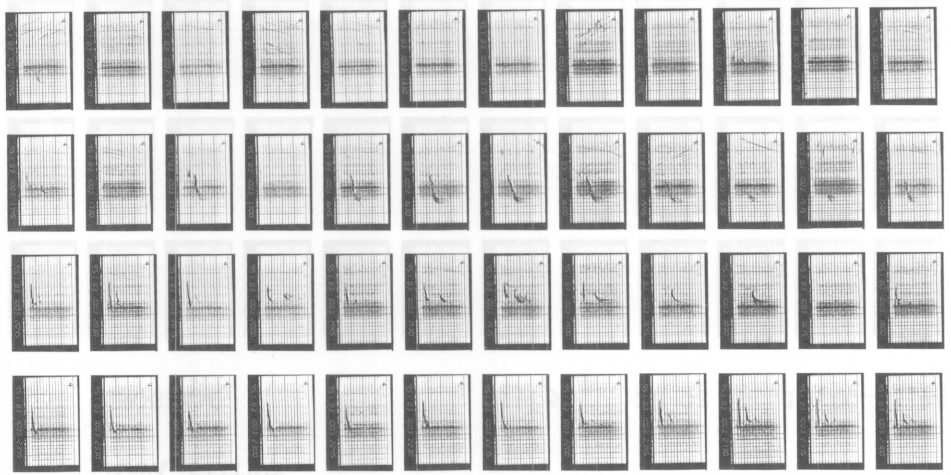
SYOWA STATION

IONOGRAM 1983 10 02 00;00-11;45



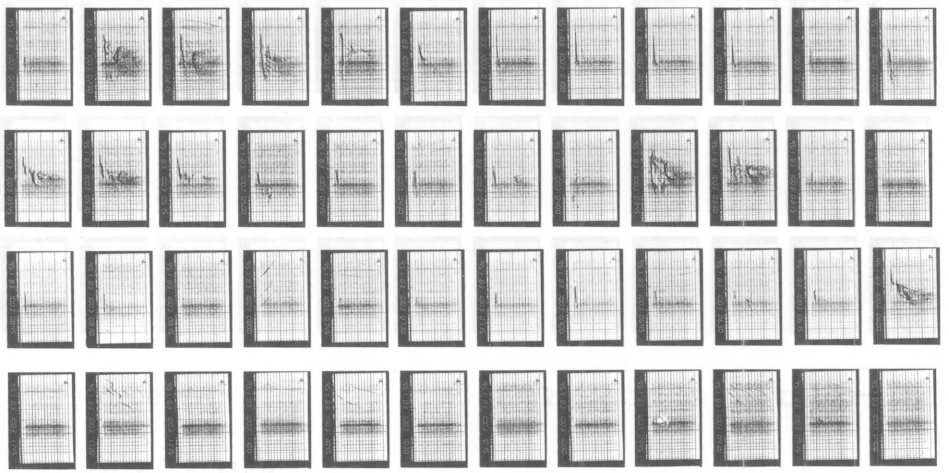
SYOWA STATION

IONOGRAM 1983 10 03 12;00-23;45



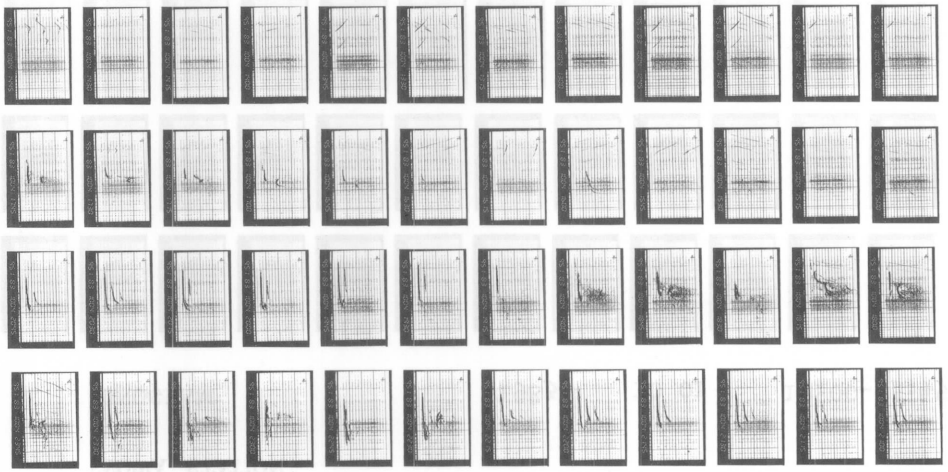
SYOWA STATION

IONOGRAM 1983 10 03 00;00-11;45



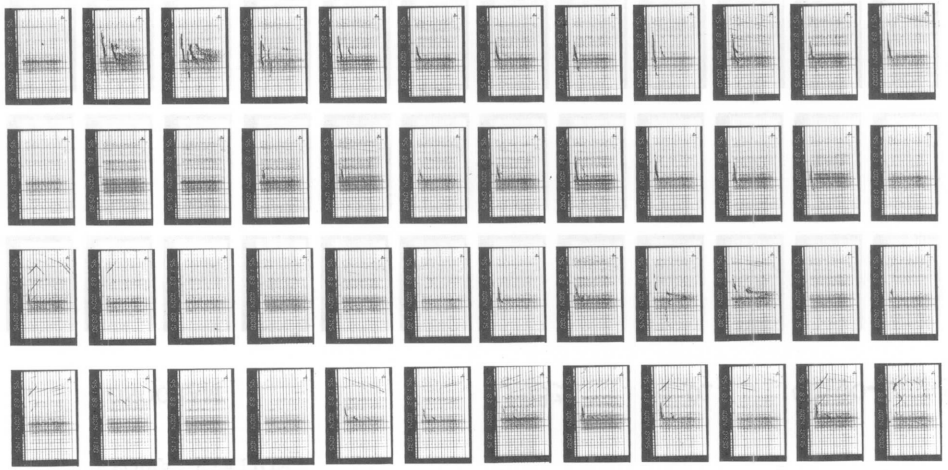
SYOWA STATION

IONOGRAM 1983 10 04 12;00-23;45



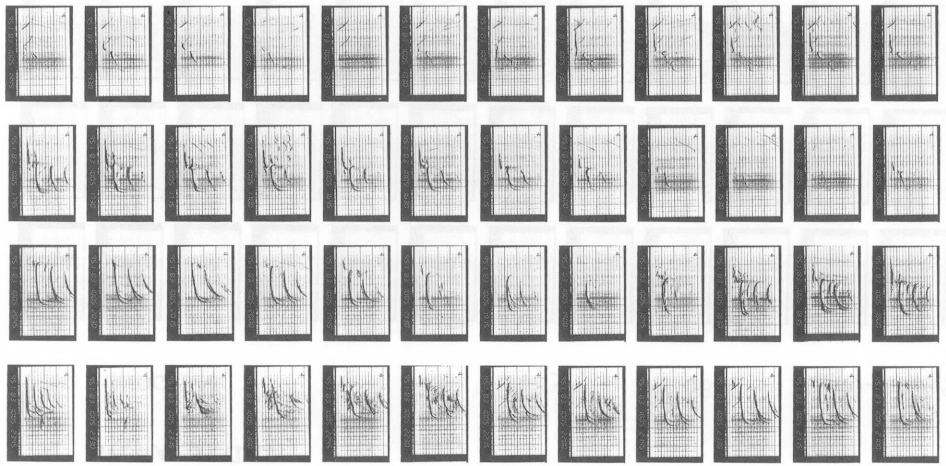
SYOWA STATION

IONOGRAM 1983 10 04 00;00-11;45



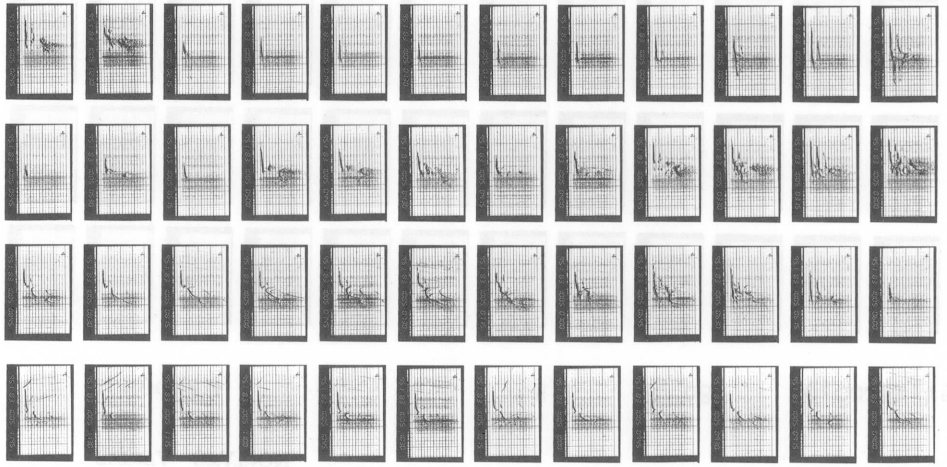
SYOWA STATION

IONOGRAM 1983 10 05 12;00-23;45



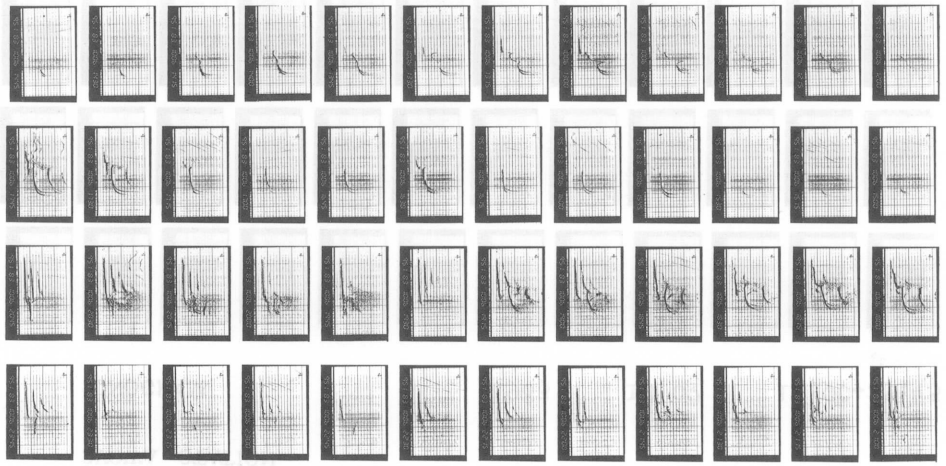
SYOWA STATION

IONOGRAM 1983 10 05 00;00-11;45



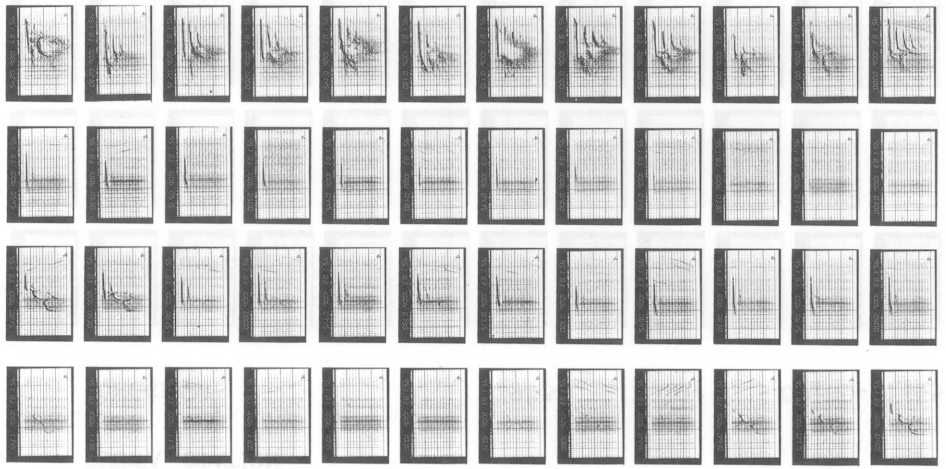
SYOWA STATION

IONOGRAM 1983 10 06 12;00-23;45



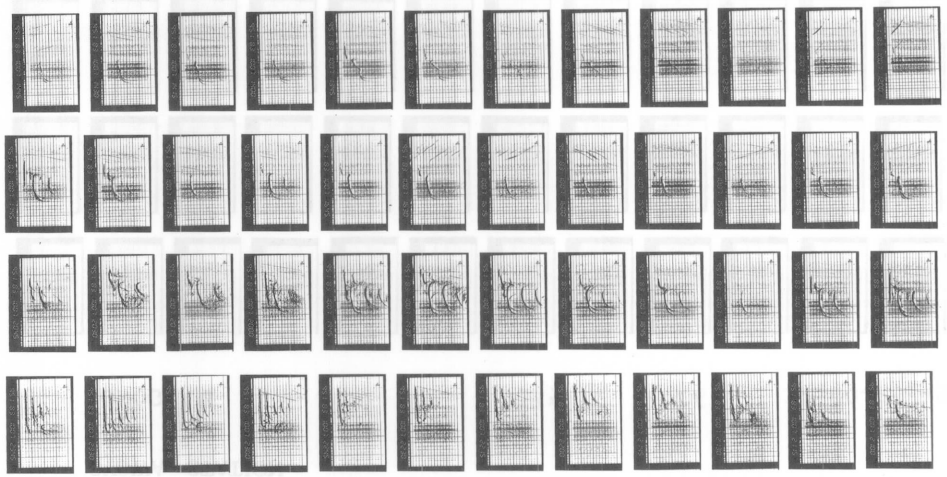
SYOWA STATION

IONOGRAM 1983 10 06 00;00-11;45



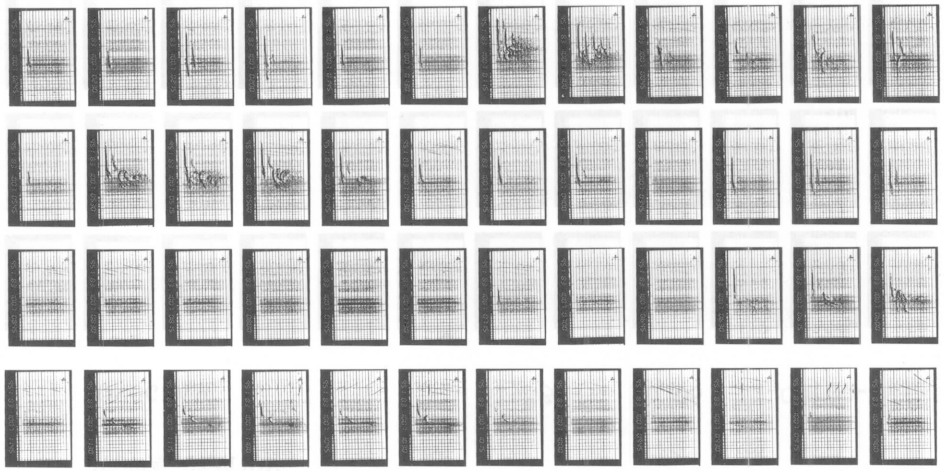
SYOWA STATION

IONOGRAM 1983 10 07 12;00-23;45



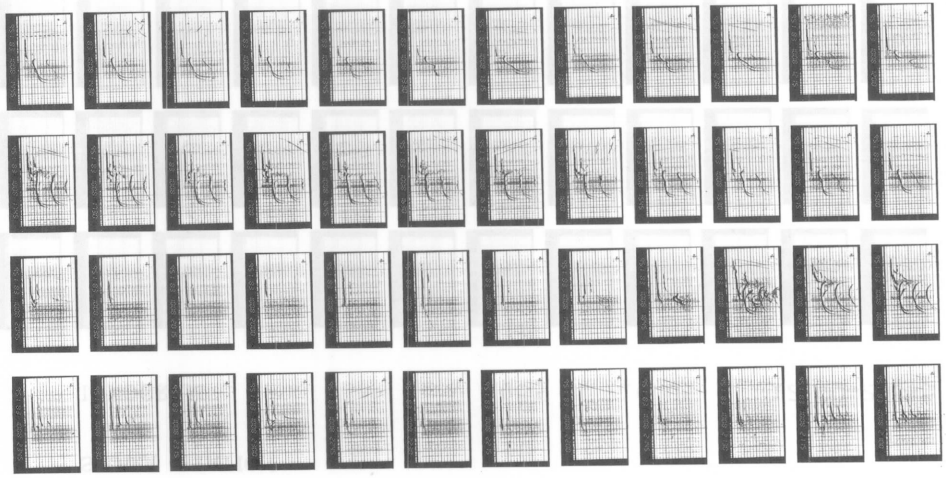
SYOWA STATION

IONOGRAM 1983 10 07 00;00-11;45



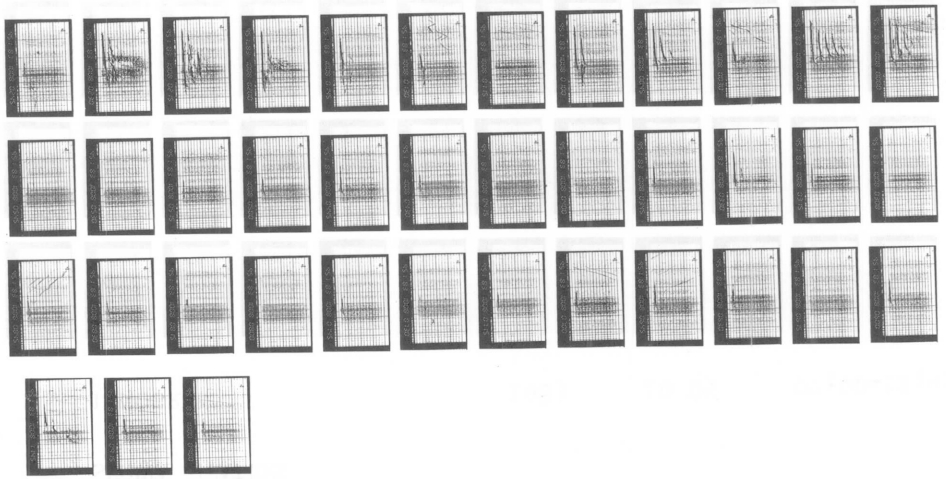
SYOWA STATION

IONOGRAM 1983 10 08 12;00-23;45



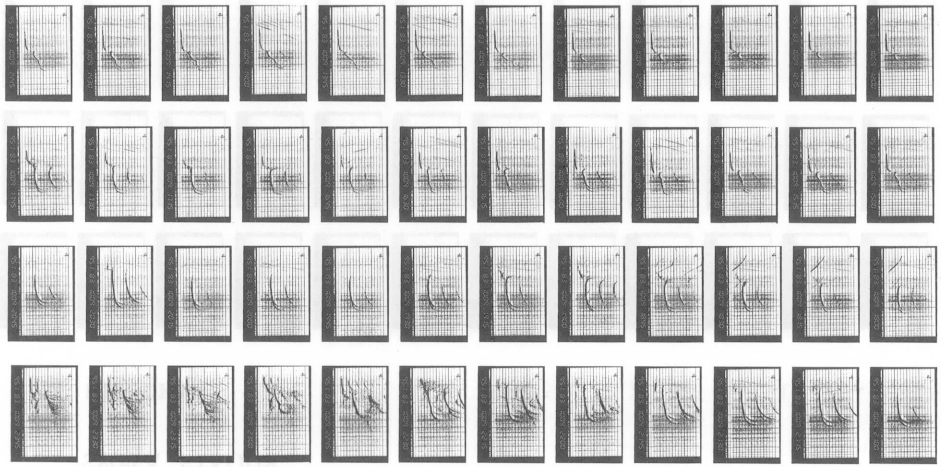
SYOWA STATION

IONOGRAM 1983 10 08 00;00-11;45



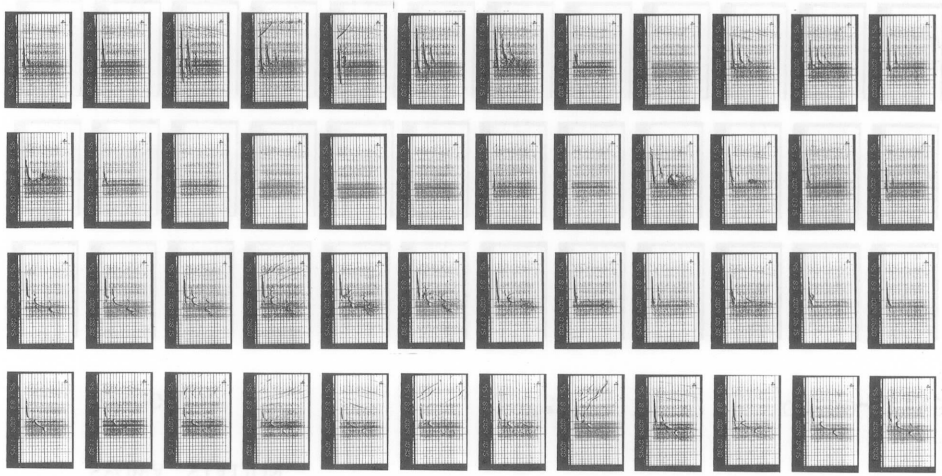
SYOWA STATION

IONOGRAM 1983 10 09 12;00-23;45



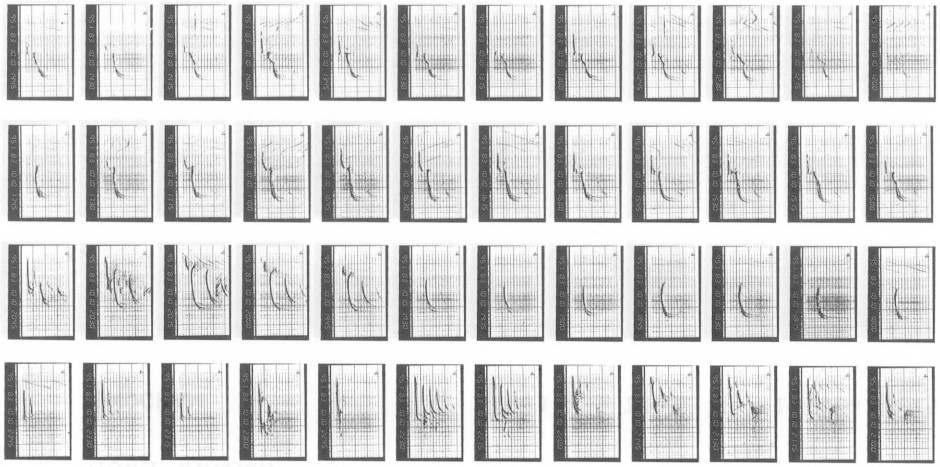
SYOWA STATION

IONOGRAM 1983 10 09 00;00-11;45



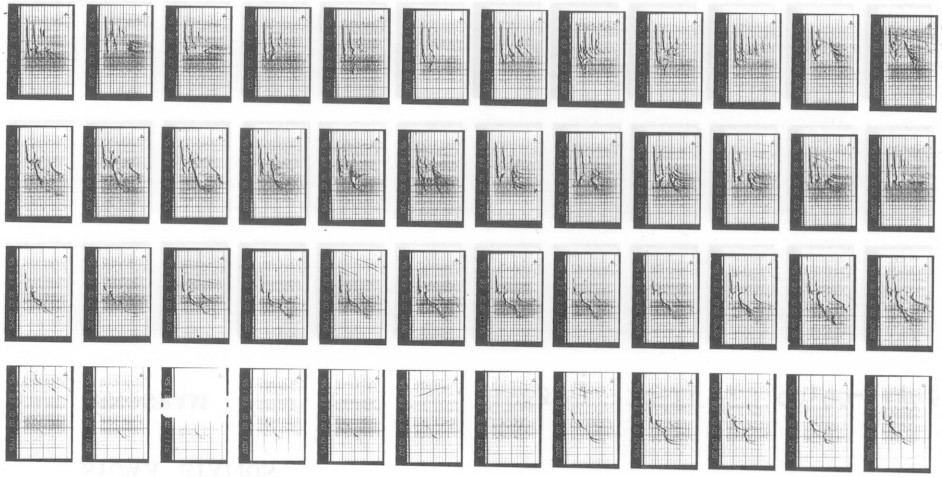
SYOWA STATION

IONOGRAM 1983 10 10 12;00-23;45



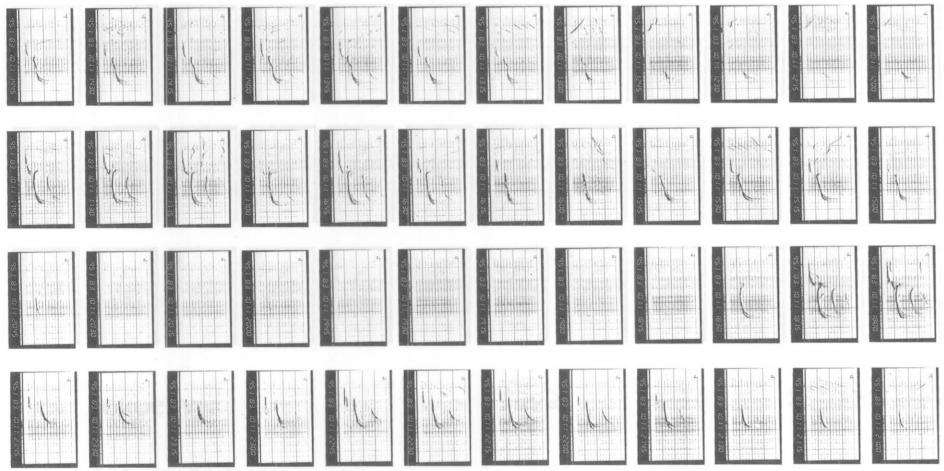
SYOWA STATION

IONOGRAM 1983 10 10 00;00-11;45



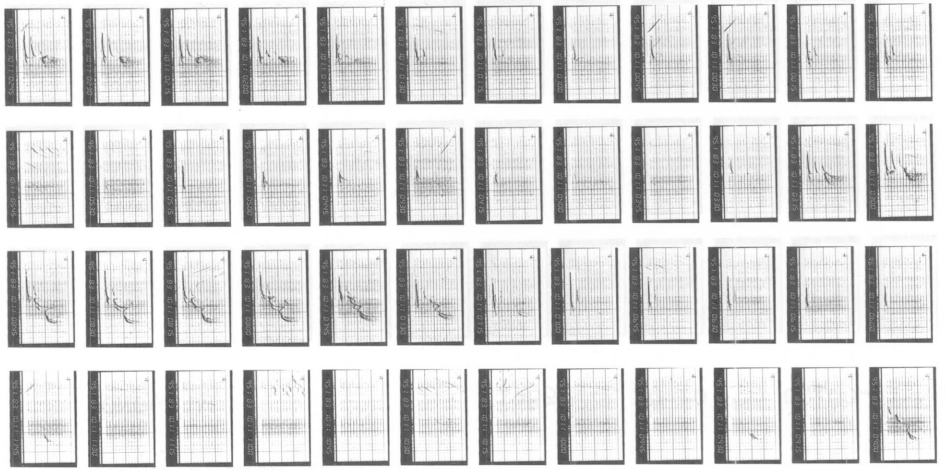
SYOWA STATION

IONOGRAM 1983 10 11 12;00-23;45



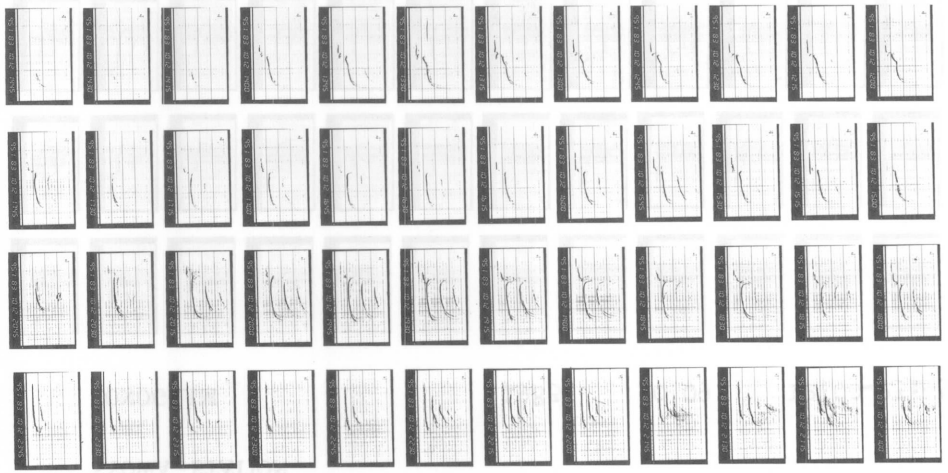
SYOWA STATION

IONOGRAM 1983 10 11 00;00-11;45



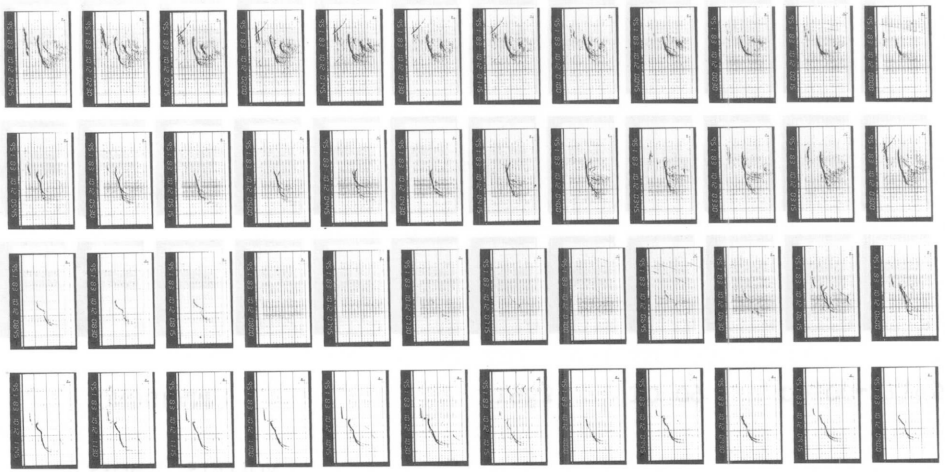
SYOWA STATION

IONOGRAM 1983 10 12 12;00-23;45



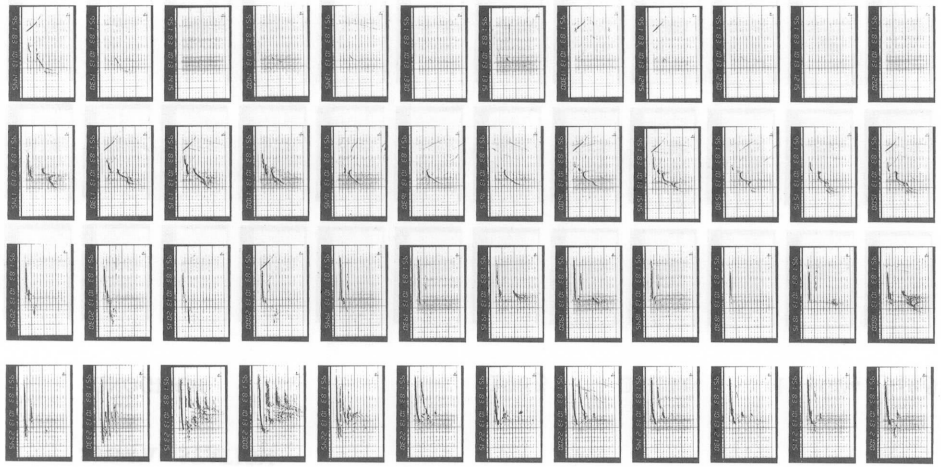
SYOWA STATION

IONOGRAM 1983 10 12 00;00-11;45



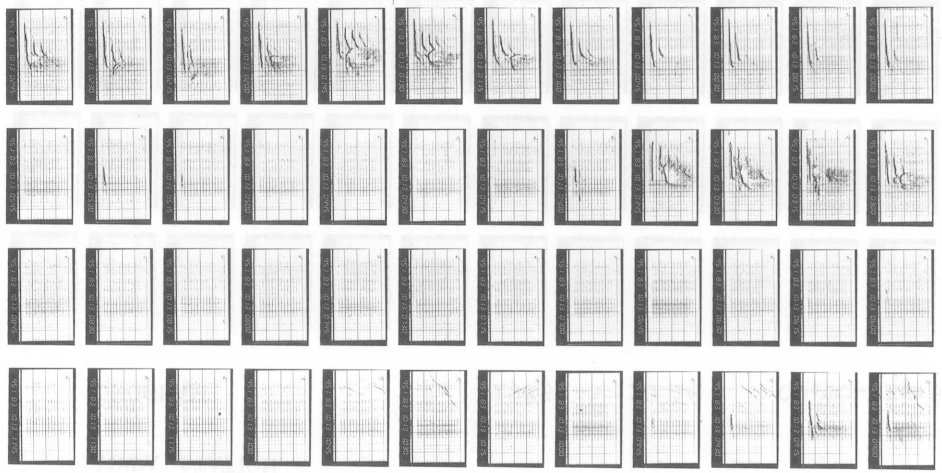
SYOWA STATION

IONOGRAM 1983 10 13 12;00-23;45



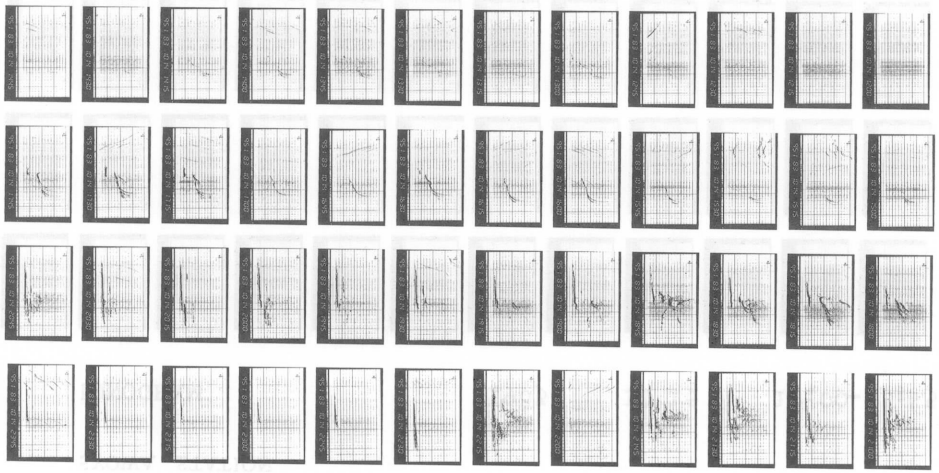
SYOWA STATION

IONOGRAM 1983 10 13 00;00-11;45



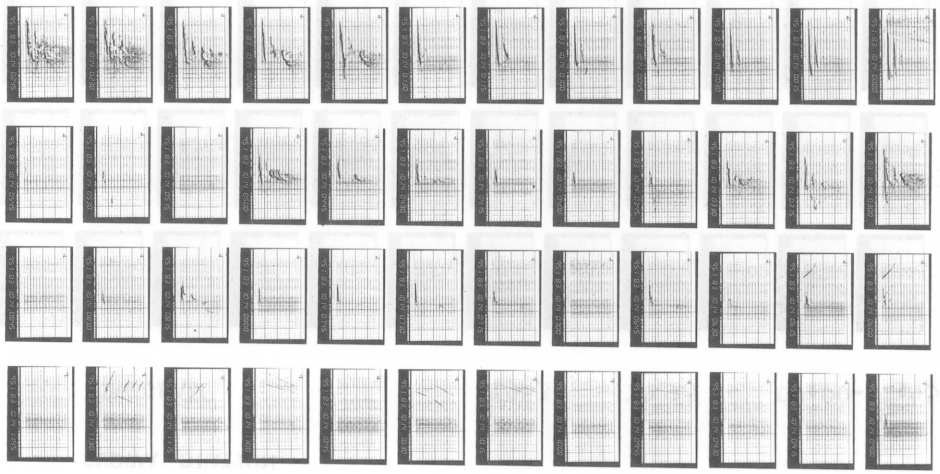
SYOWA STATION

IONOGRAM 1983 10 14 12;00-23;45



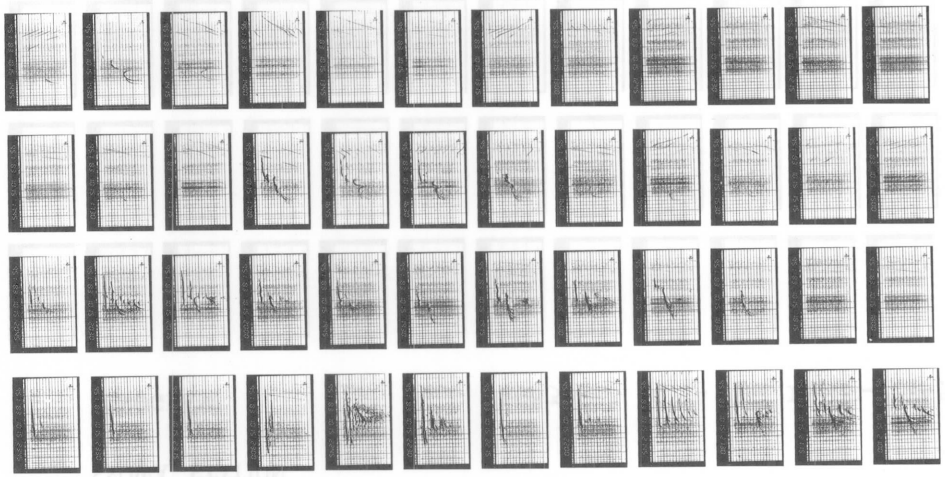
SYOWA STATION

IONOGRAM 1983 10 14 00;00-11;45



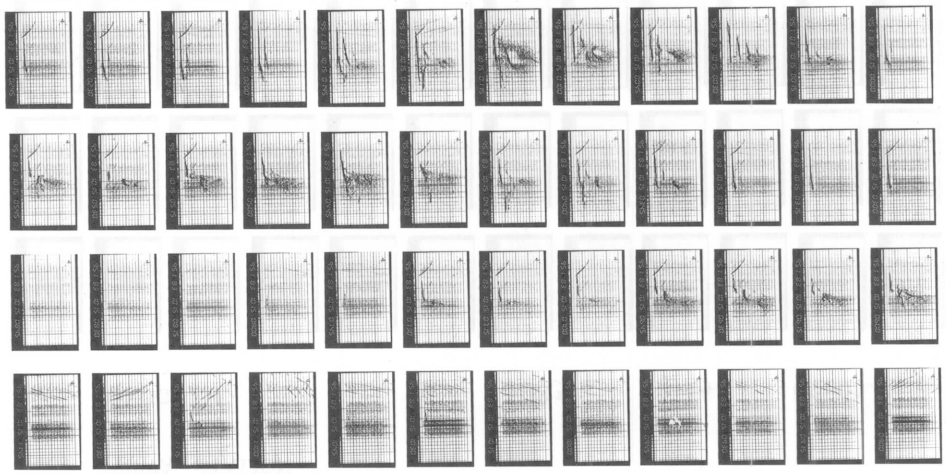
SYOWA STATION

IONOGRAM 1983 10 15 12;00-23;45



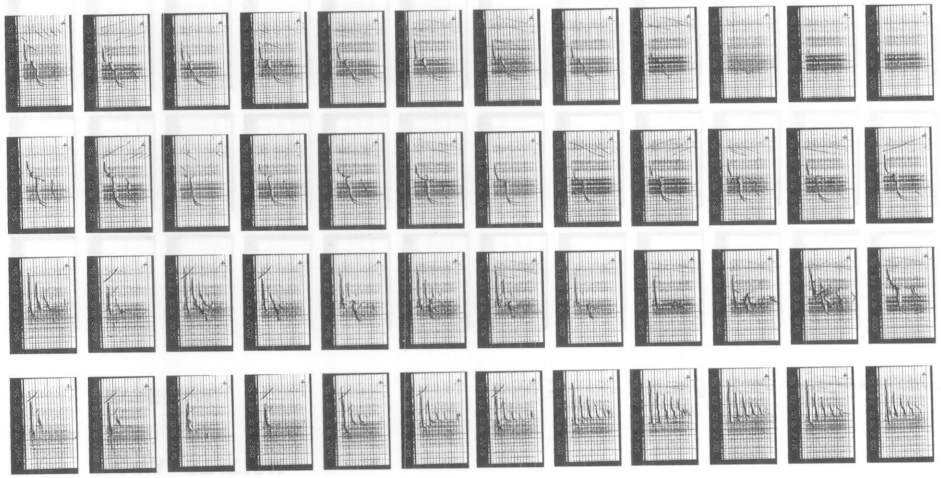
SYOWA STATION

IONOGRAM 1983 10 15 00;00-11;45



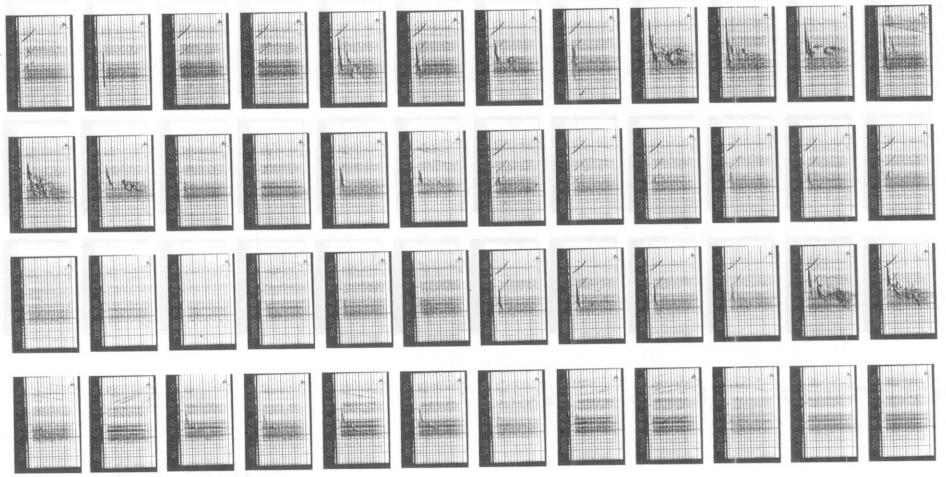
SYOWA STATION

IONOGRAM 1983 10 16 12;00-23;45



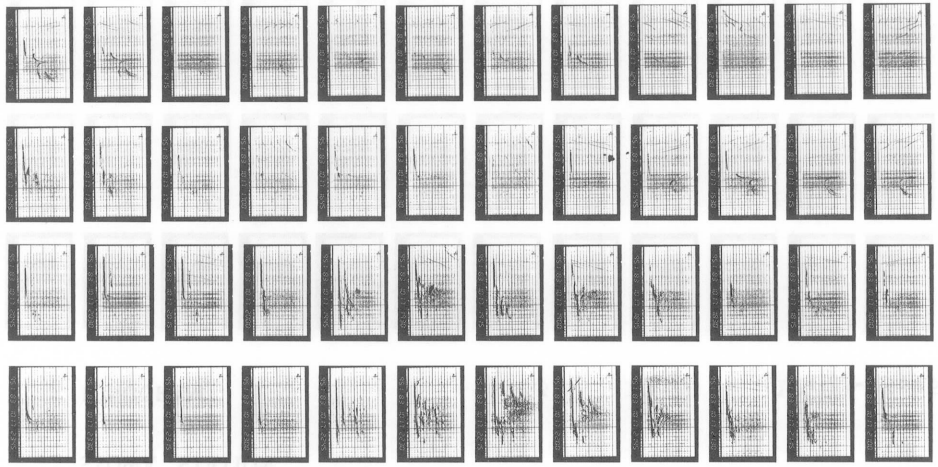
SYOWA STATION

IONOGRAM 1983 10 16 00;00-11;45



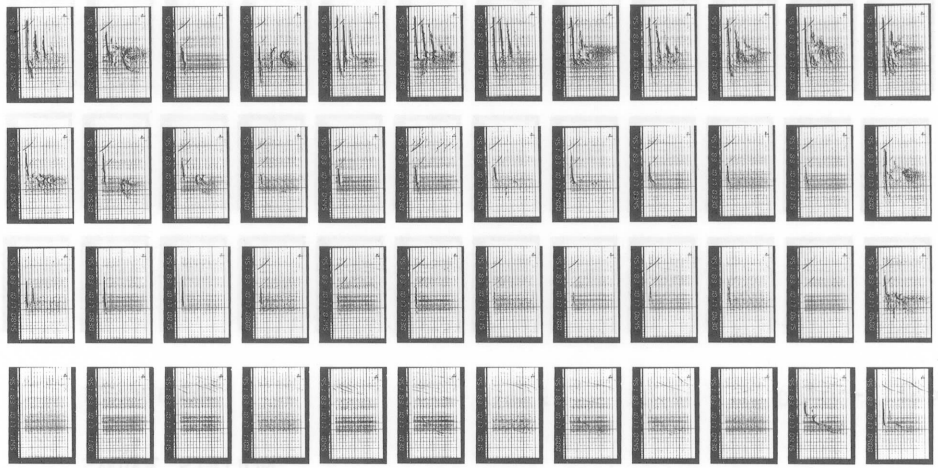
SYOWA STATION

IONOGRAM 1983 10 17 12;00-23;45



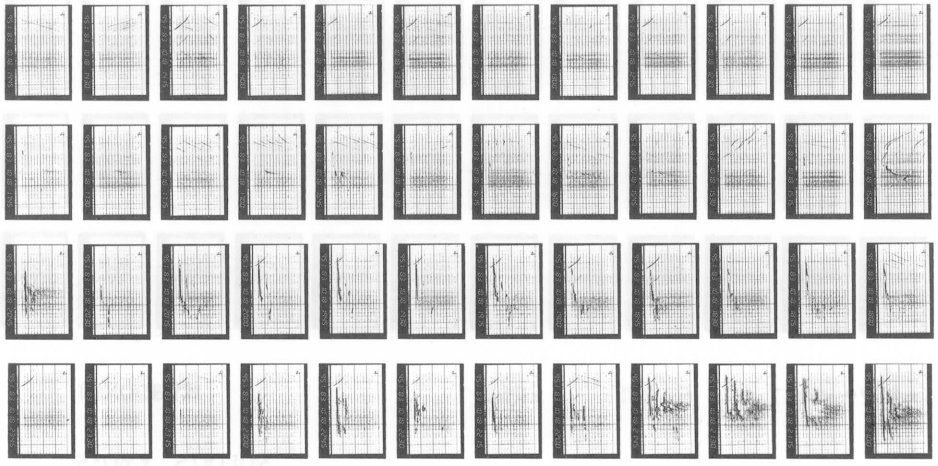
SYOWA STATION

IONOGRAM 1983 10 17 00;00-11;45



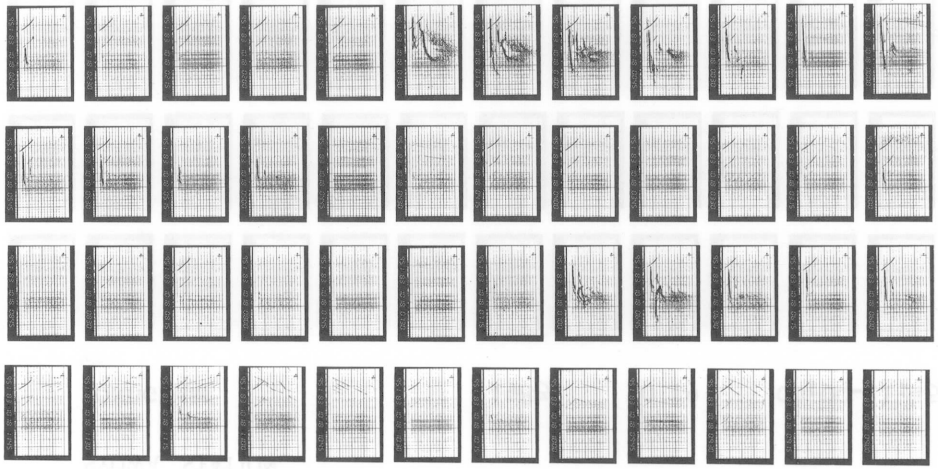
SYOWA STATION

IONOGRAM 1983 10 18 12;00-23;45



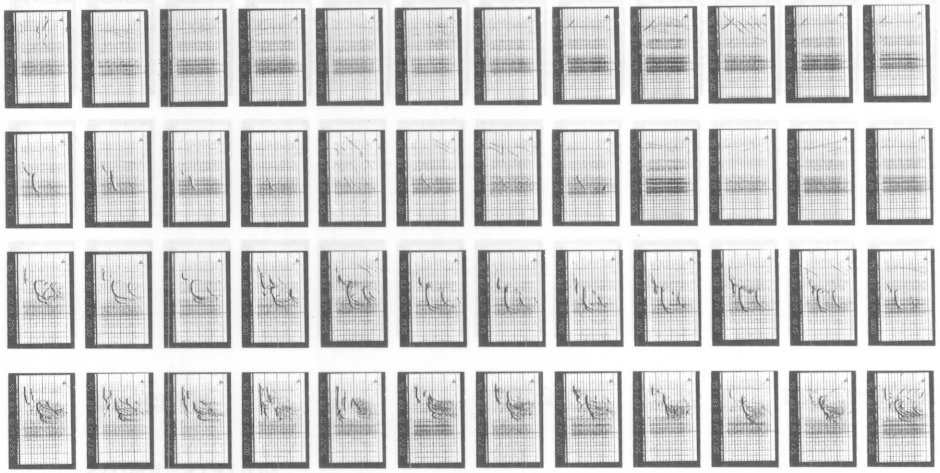
SYOWA STATION

IONOGRAM 1983 10 18 00;00-11;45



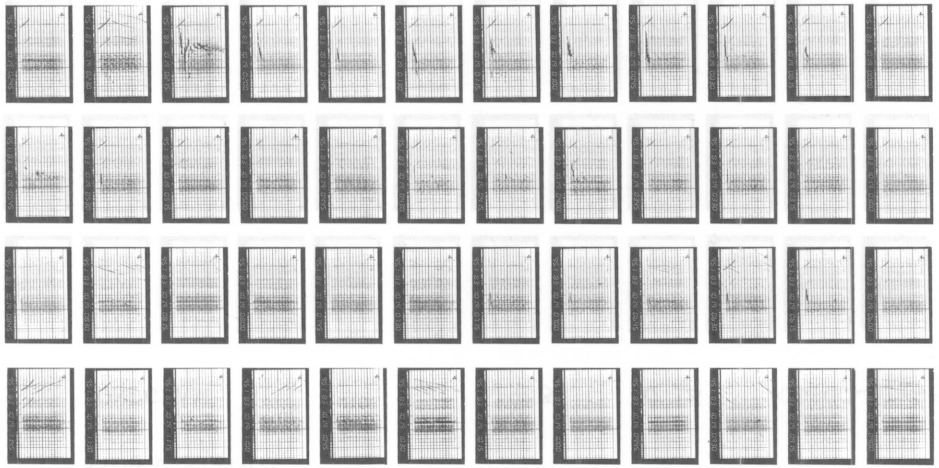
SYOWA STATION

IONOGRAM 1983 10 19 12;00-23;45



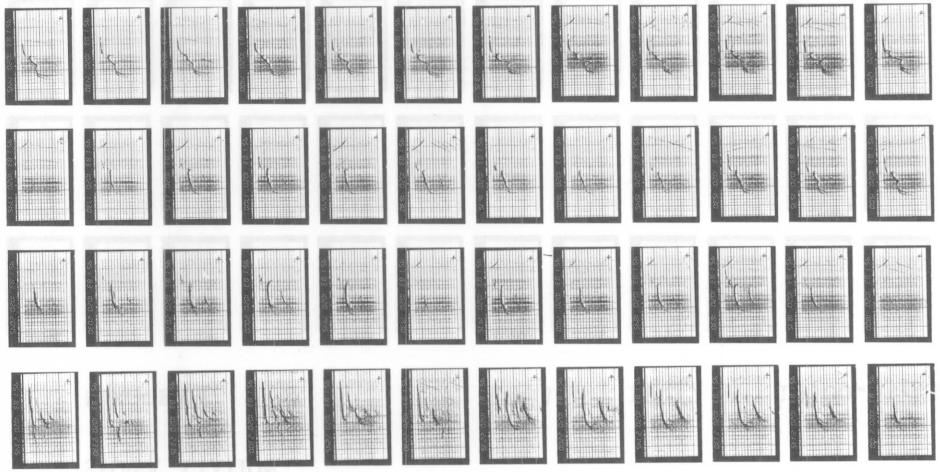
SYOWA STATION

IONOGRAM 1983 10 19 00;00-11;45



SYOWA STATION

IONOGRAM 1983 10 20 12;00-23;45

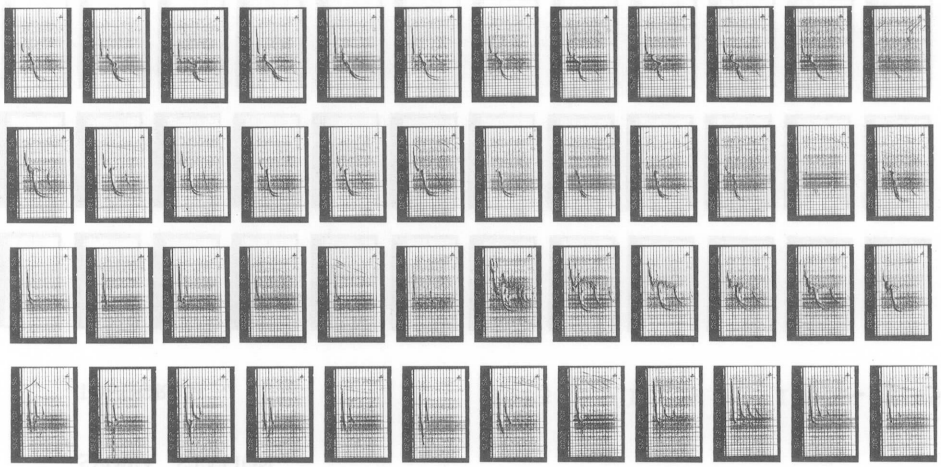


SYOWA STATION

IONOGRAM 1983 10 20 00;00-11;45

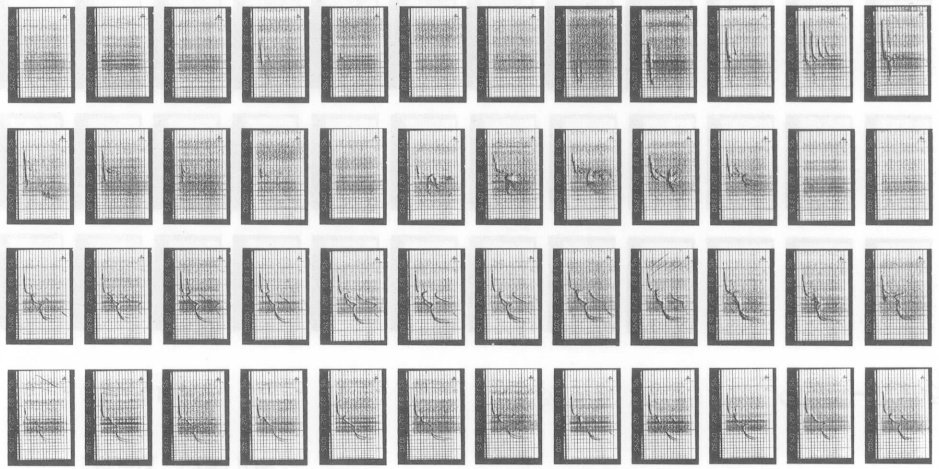
SYOWA STATION

IONOGRAM 1983 10 21 12;00-23;45



SYOWA STATION

IONOGRAM 1983 10 21 00;00-11;45



SYOWA STATION

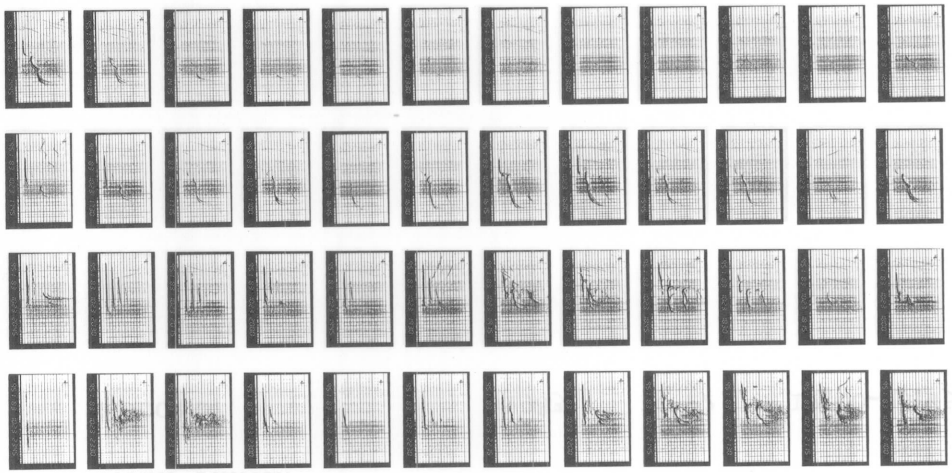
IONOGRAM 1983 10 22 12;00-23;45

SYOWA STATION

IONOGRAM 1983 10 22 00;00-11;45

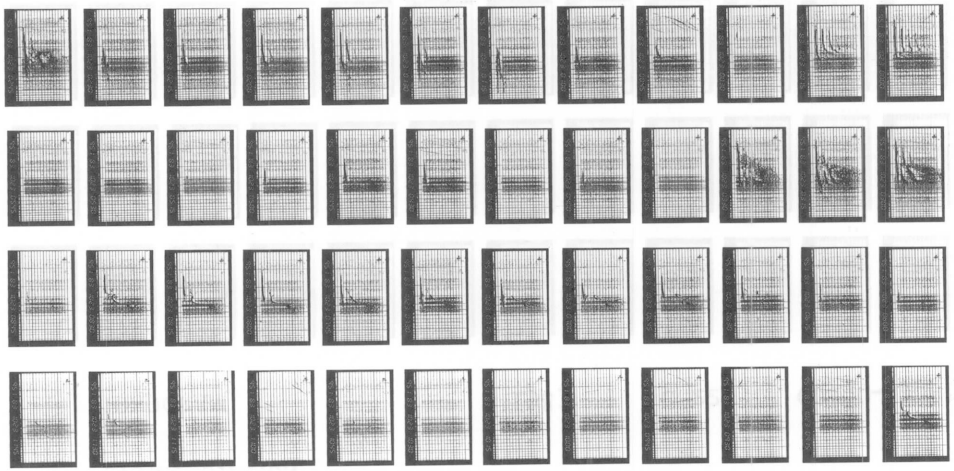
SYOWA STATION

IONOGRAM 1983 10 23 12;00-23;45



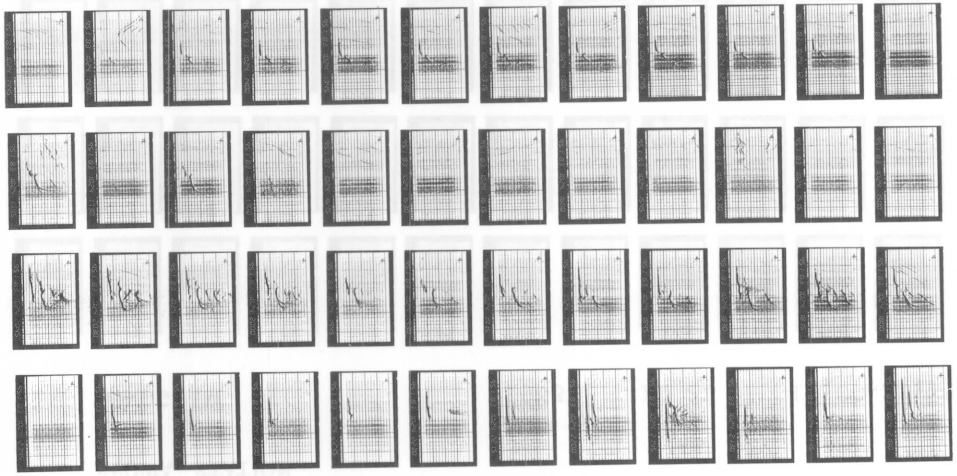
SYOWA STATION

IONOGRAM 1983 10 23 00;00-11;45



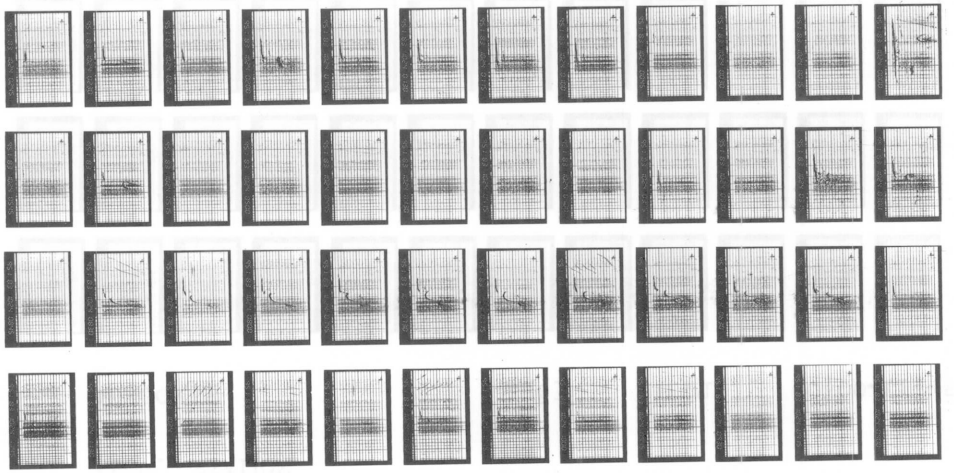
SYOWA STATION

IONOGRAM 1983 10 24 12;00-23;45



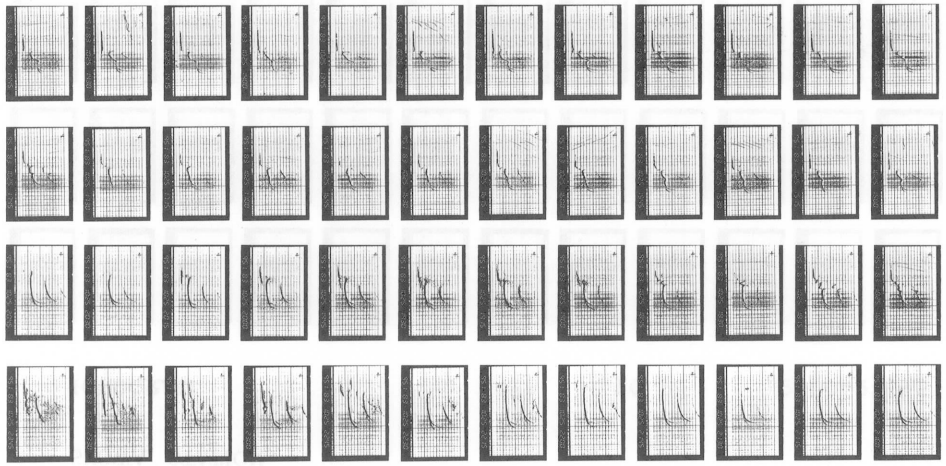
SYOWA STATION

IONOGRAM 1983 10 24 00;00-11;45



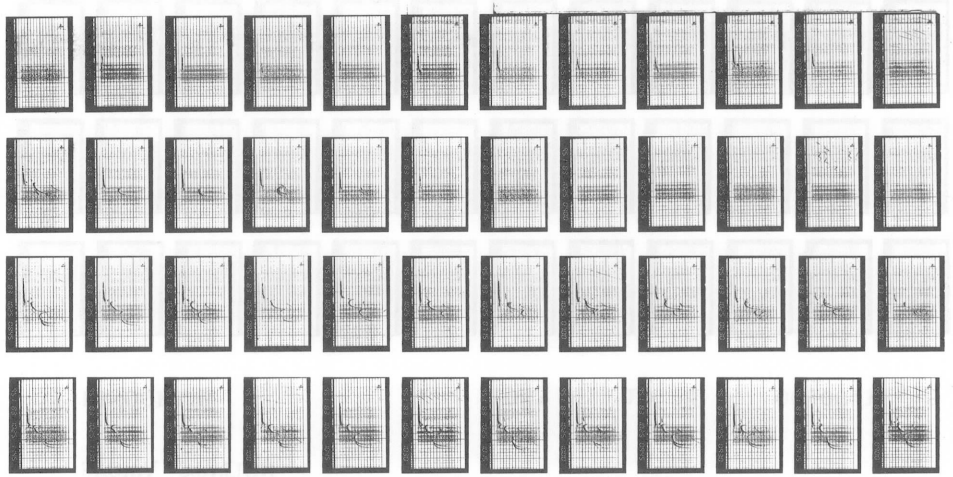
SYOWA STATION

IONOGRAM 1983 10 25 12;00-23;45



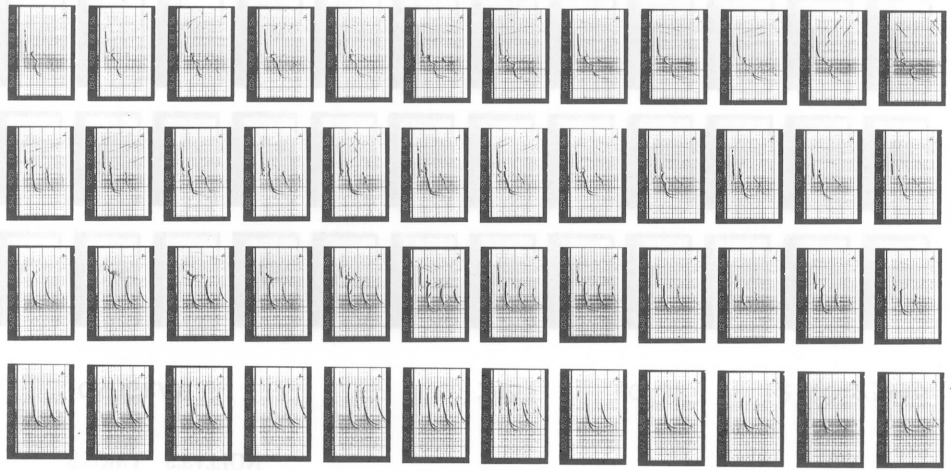
SYOWA STATION

IONOGRAM 1983 10 25 00;00-11;45



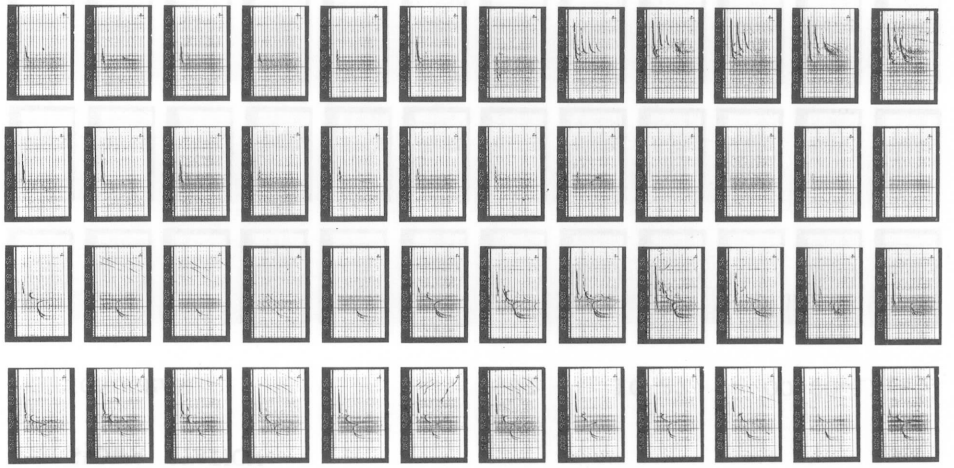
SYOWA STATION

IONOGRAM 1983 10 26 12;00-23;45



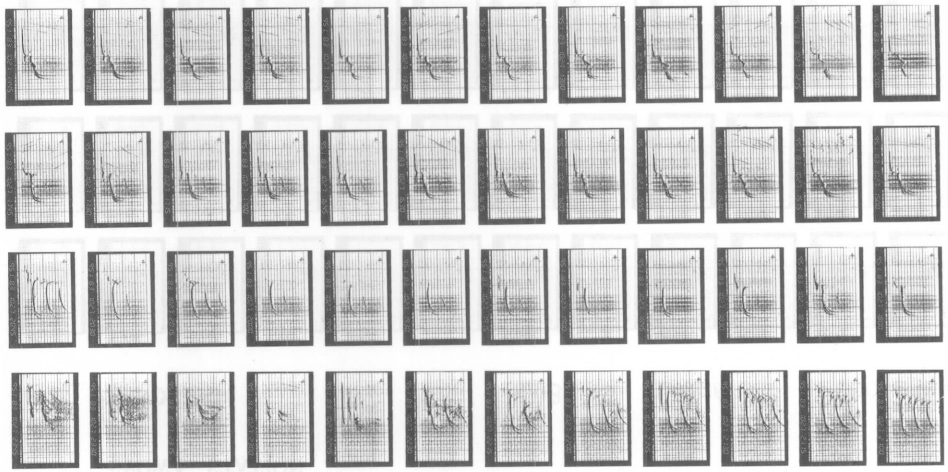
SYOWA STATION

IONOGRAM 1983 10 26 00;00-11;45



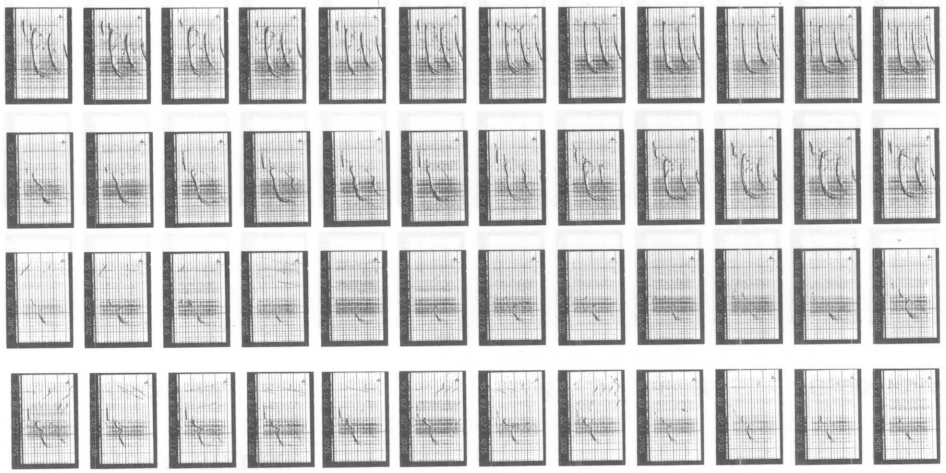
SYOWA STATION

IONOGRAM 1983 10 27 12;00-23;45



SYOWA STATION

IONOGRAM 1983 10 27 00;00-11;45

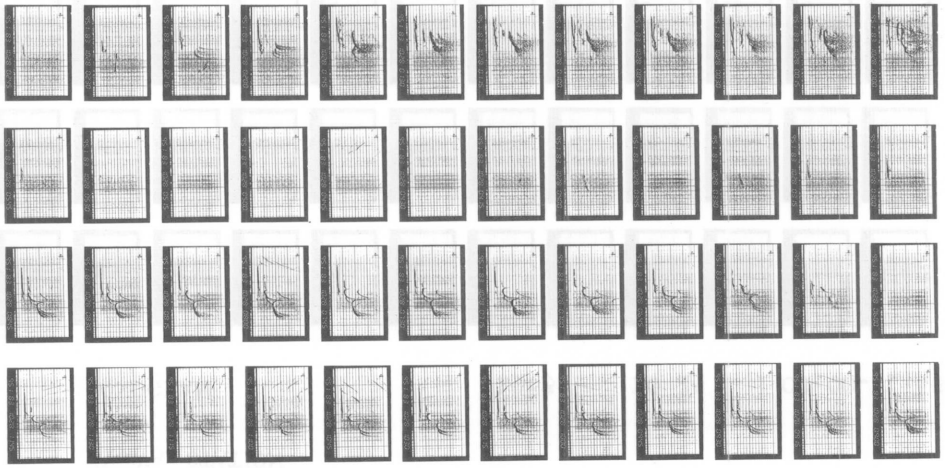


SYOWA STATION

IONOGRAM 1983 10 28 12;00-23;45

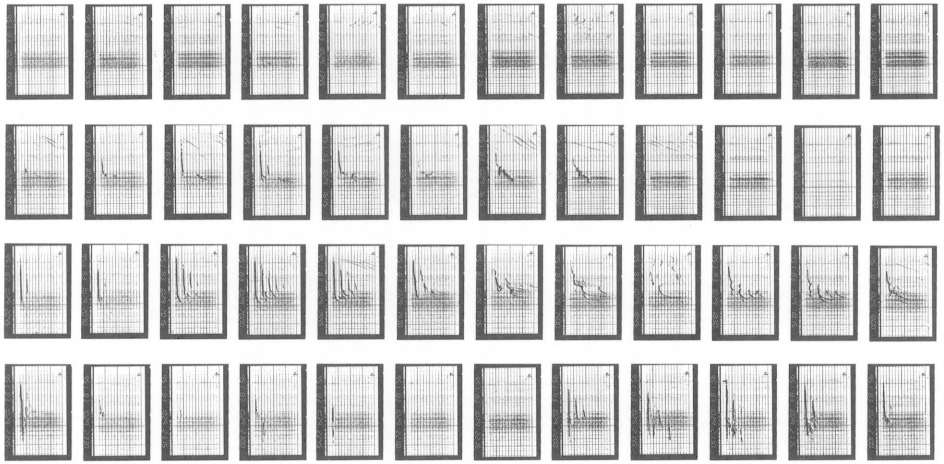
SYOWA STATION

IONOGRAM 1983 10 28 00;00-11;45



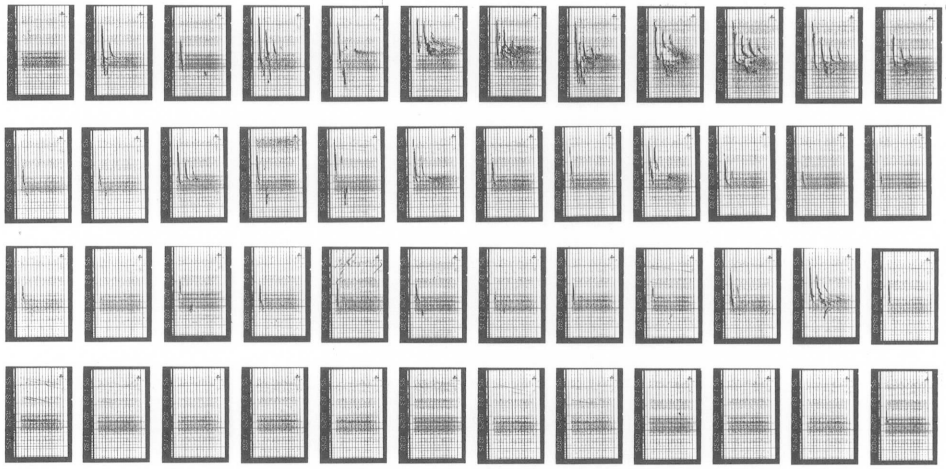
SYOWA STATION

IONOGRAM 1983 10 29 12;00-23;45



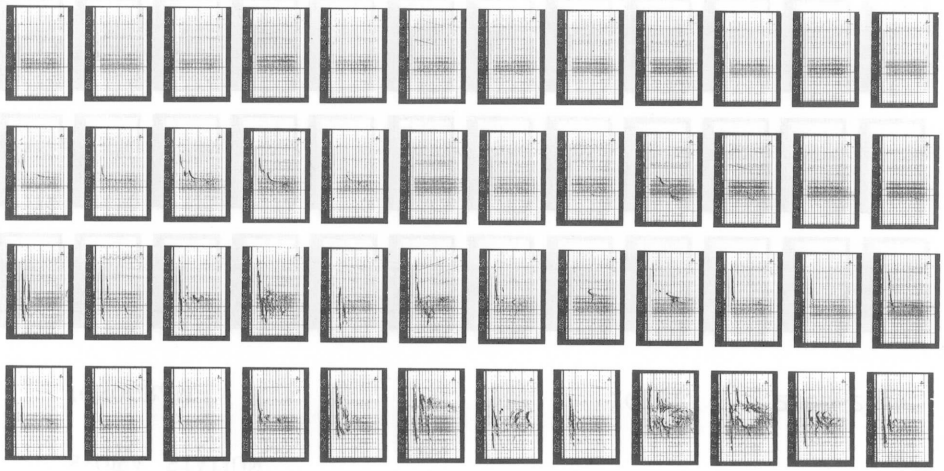
SYOWA STATION

IONOGRAM 1983 10 29 00;00-11;45



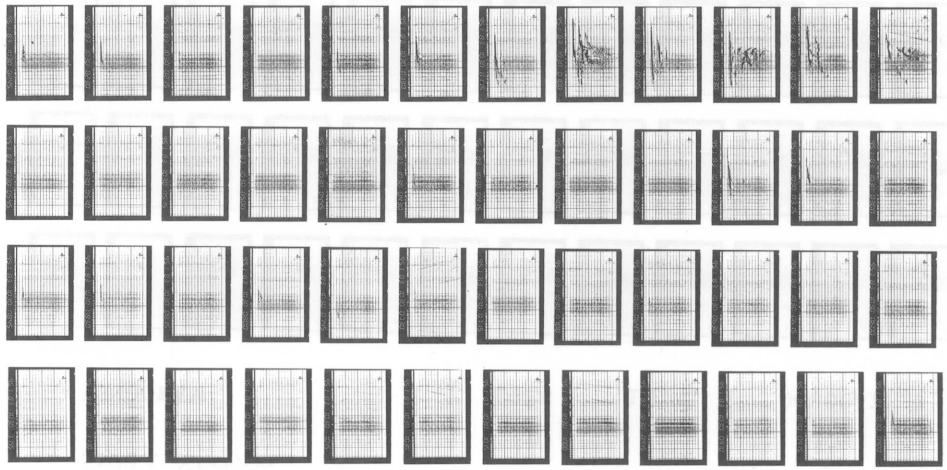
SYOWA STATION

IONOGRAM 1983 10 30 12;00-23;45



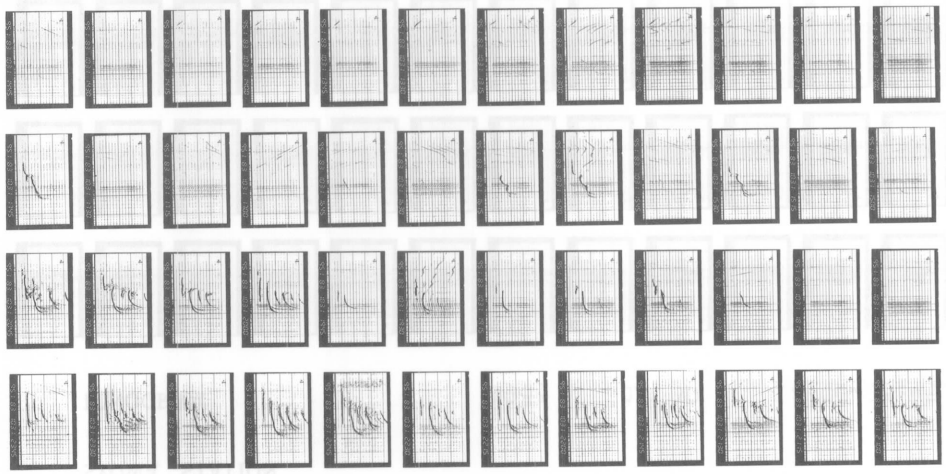
SYOWA STATION

IONOGRAM 1983 10 30 00;00-11;45



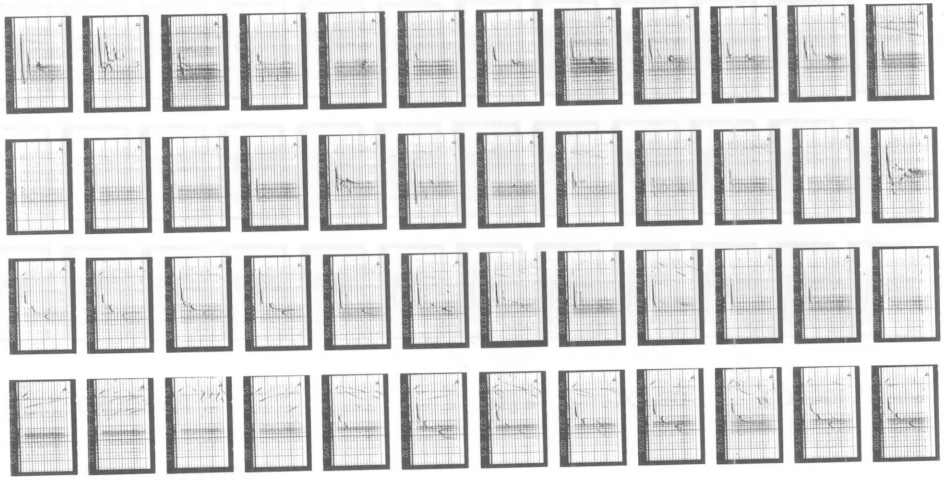
SYOWA STATION

IONOGRAM 1983 10 31 12;00-23;45



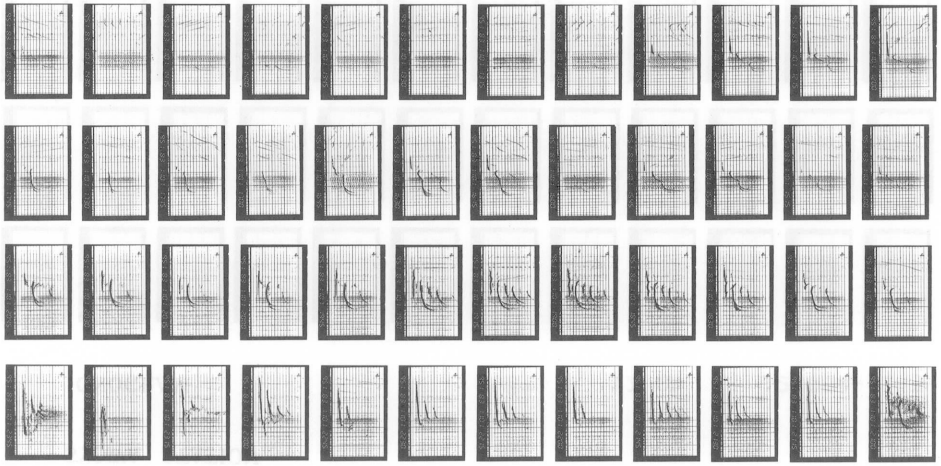
SYOWA STATION

IONOGRAM 1983 10 31 00;00-11;45



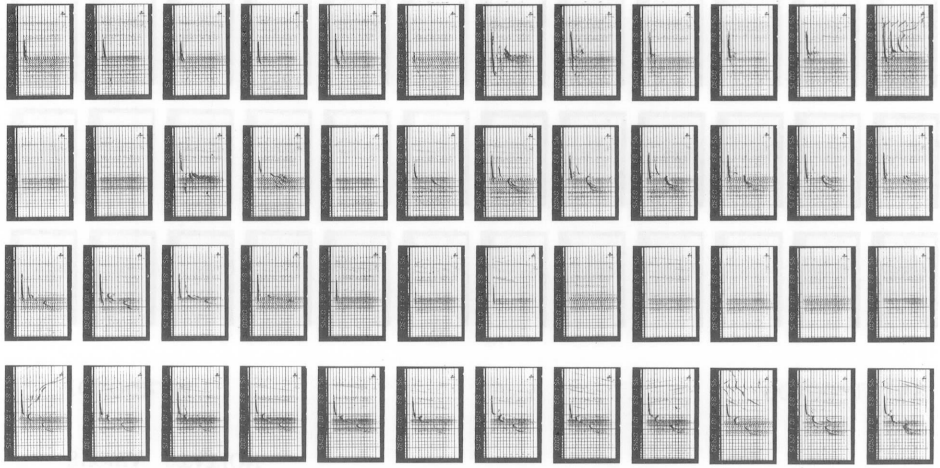
SYOWA STATION

IONOGRAM 1983 11 01 12;00-23;45



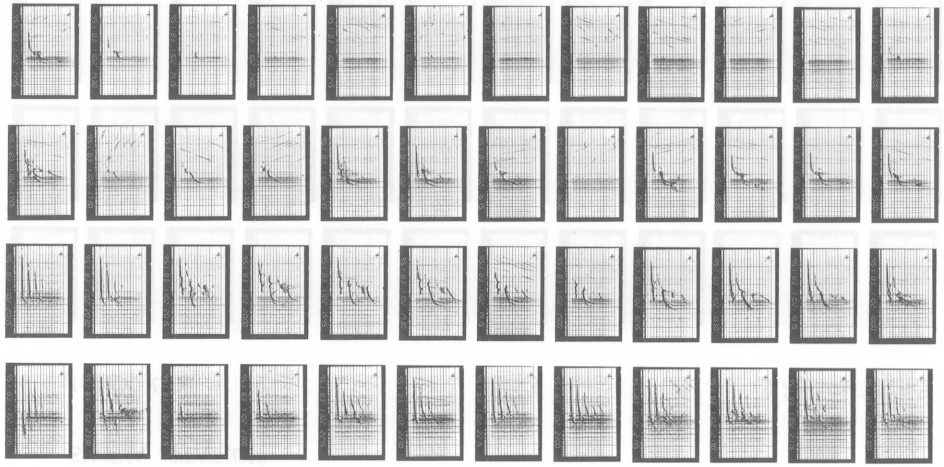
SYOWA STATION

IONOGRAM 1983 11 01 00;00-11;45



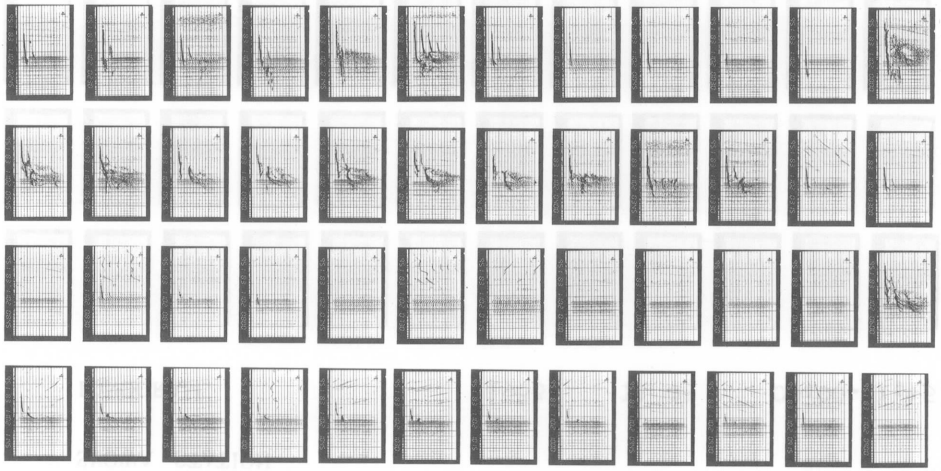
SYOWA STATION

IONOGRAM 1983 11 02 12;00-23;45



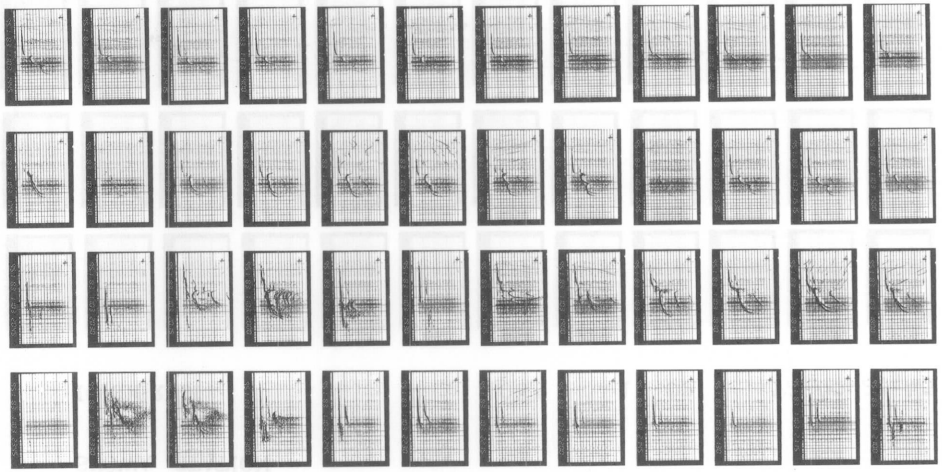
SYOWA STATION

IONOGRAM 1983 11 02 00;00-11;45



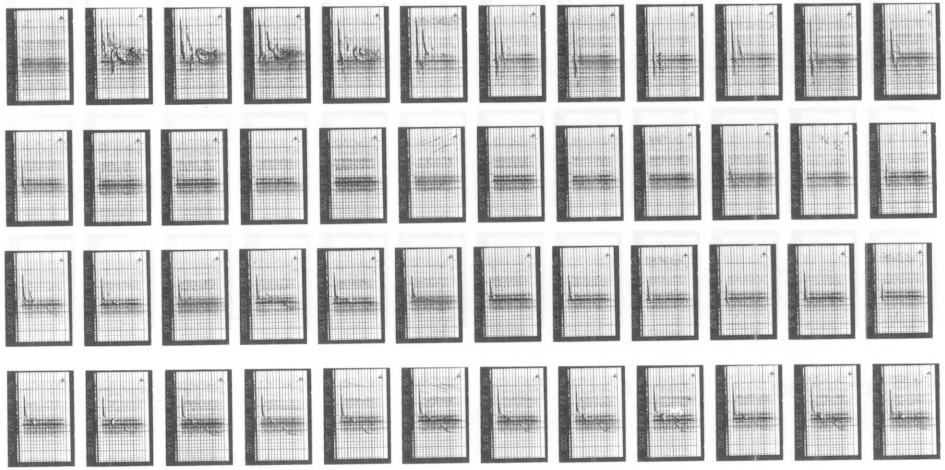
SYOWA STATION

IONOGRAM 1983 11 03 12;00-23;45



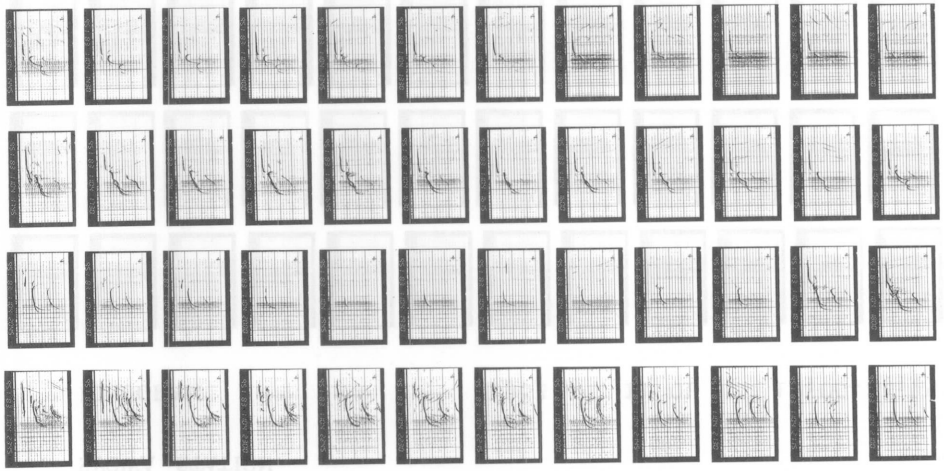
SYOWA STATION

IONOGRAM 1983 11 03 00;00-11;45



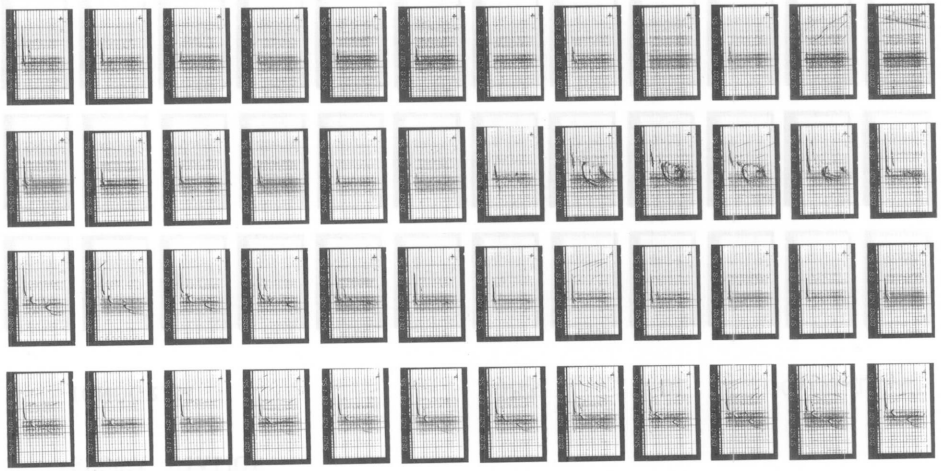
SYOWA STATION

IONOGRAM 1983 11 04 12;00-23;45



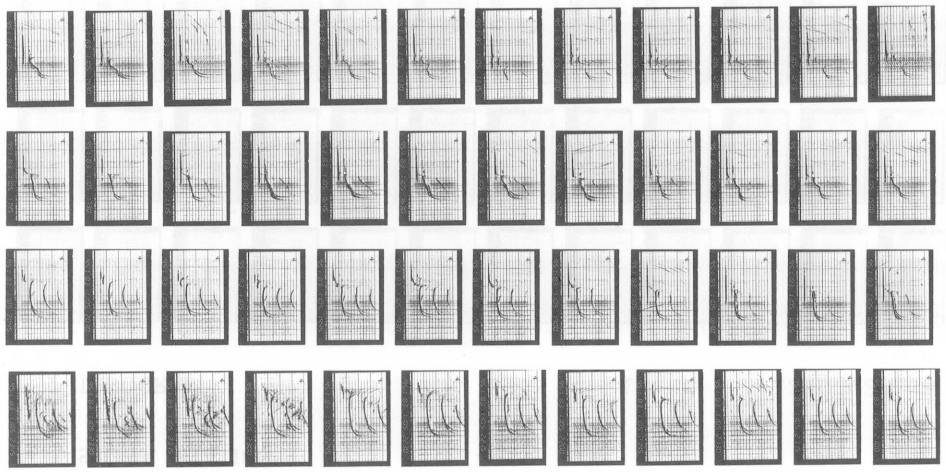
SYOWA STATION

IONOGRAM 1983 11 04 00;00-11;45



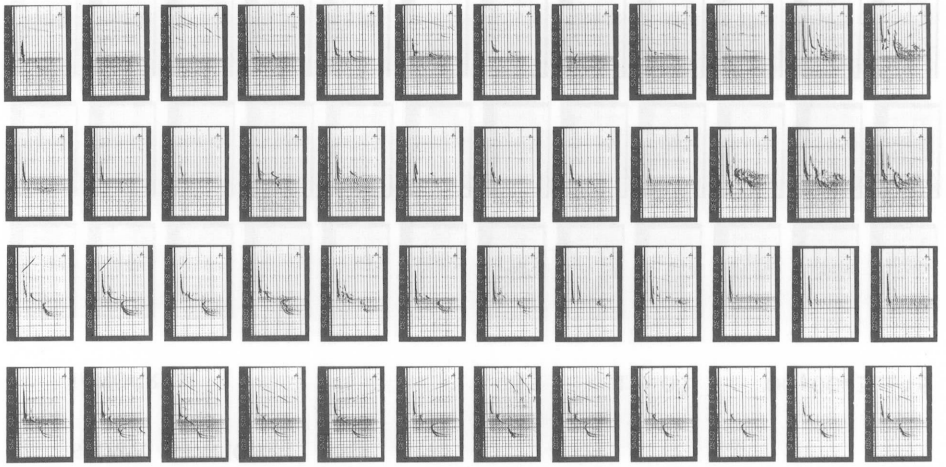
SYOWA STATION

IONOGRAM 1983 11 05 12;00-23;45



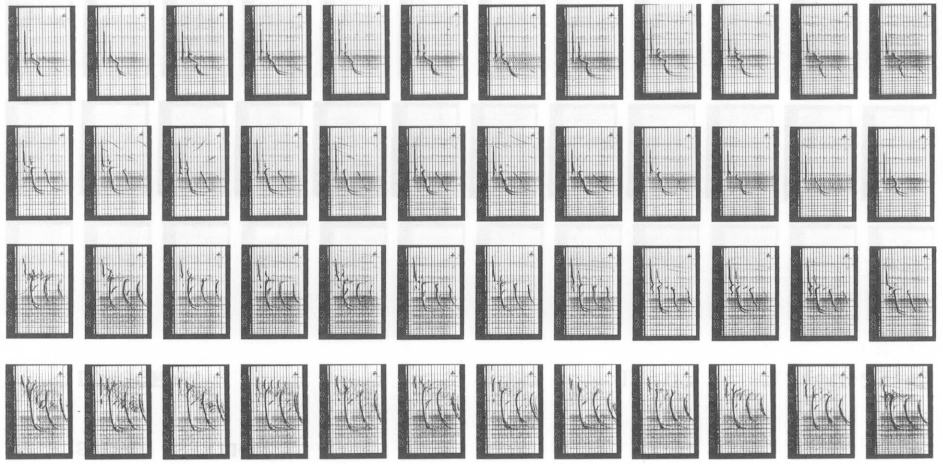
SYOWA STATION

IONOGRAM 1983 11 05 00;00-11;45



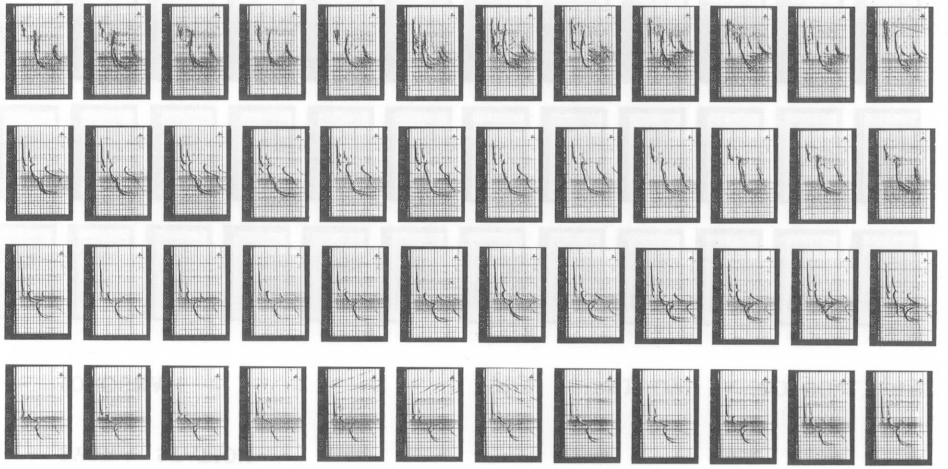
SYOWA STATION

IONOGRAM 1983 11 06 12;00-23;45



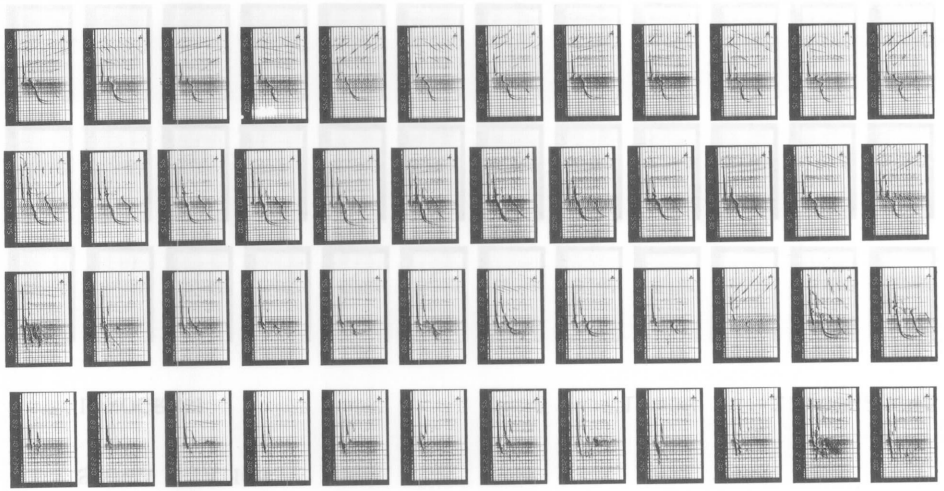
SYOWA STATION

IONOGRAM 1983 11 06 00;00-11;45



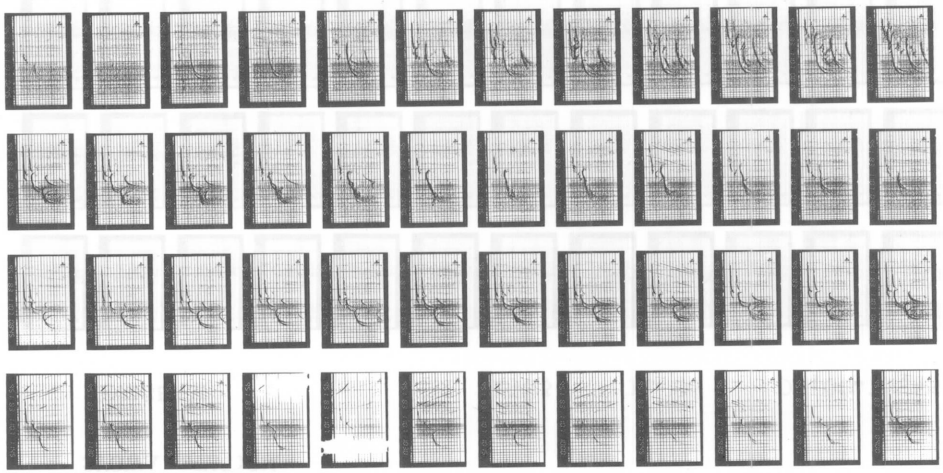
SYOWA STATION

IONOGRAM 1983 11 07 12;00-23;45



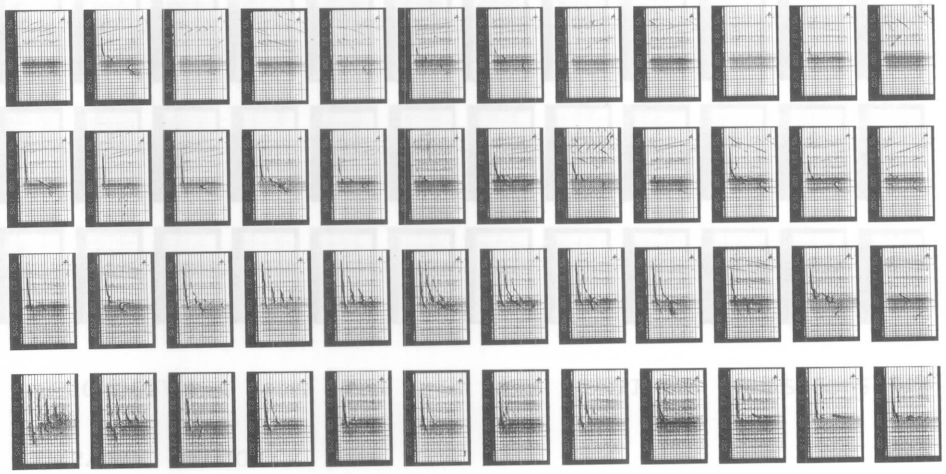
SYOWA STATION

IONOGRAM 1983 11 07 00;00-11;45



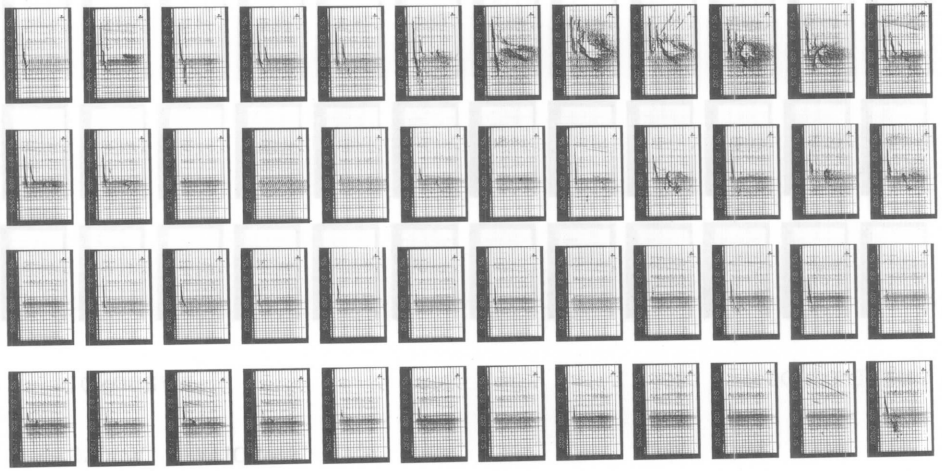
SYOWA STATION

IONOGRAM 1983 11 08 12;00-23;45



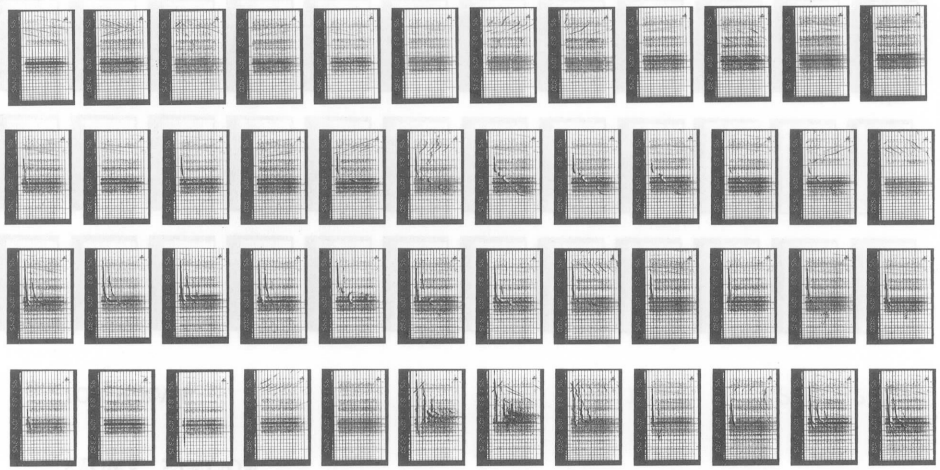
SYOWA STATION

IONOGRAM 1983 11 08 00;00-11;45



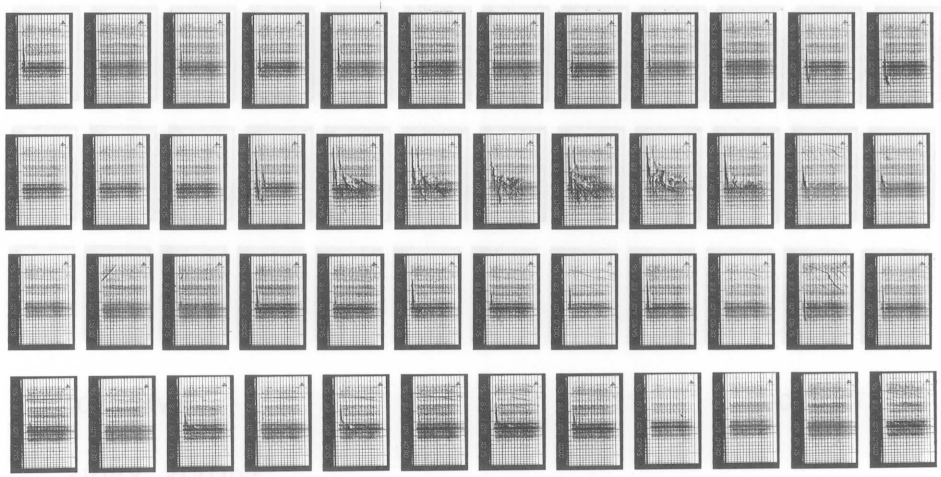
SYOWA STATION

IONOGRAM 1983 11 09 12;00-23;45



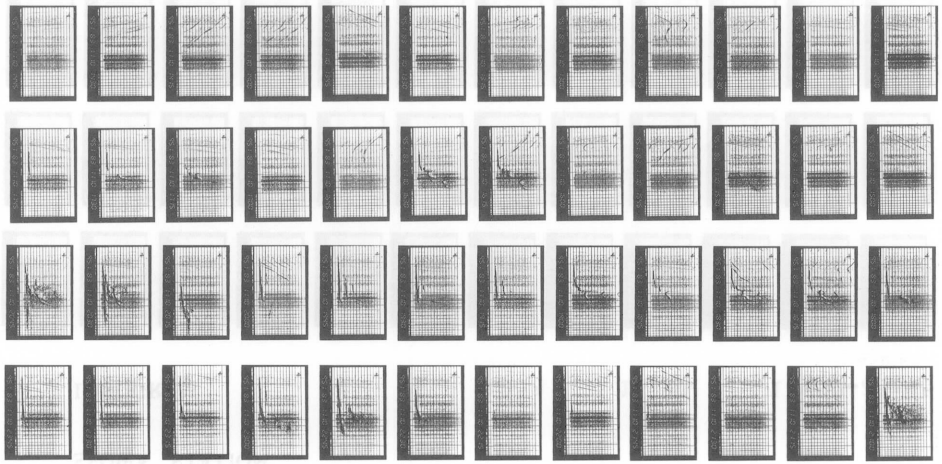
SYOWA STATION

IONOGRAM 1983 11 09 00;00-11;45



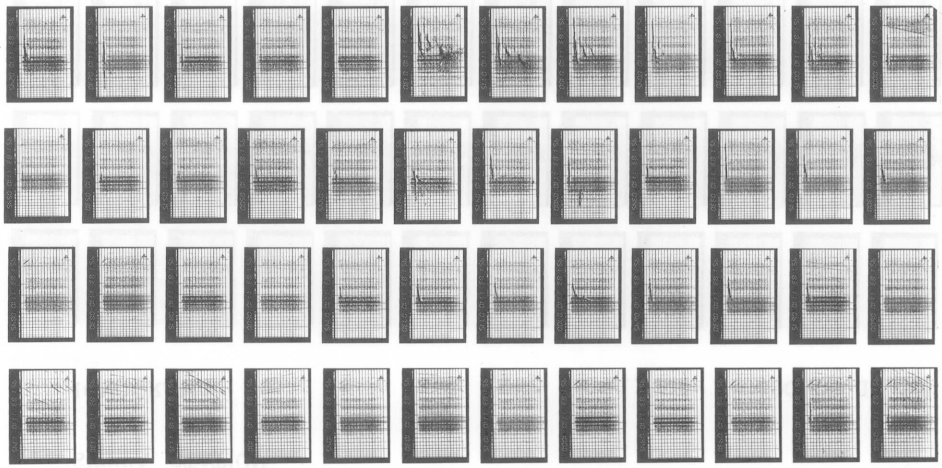
SYOWA STATION

IONOGRAM 1983 11 10 12;00-23;45



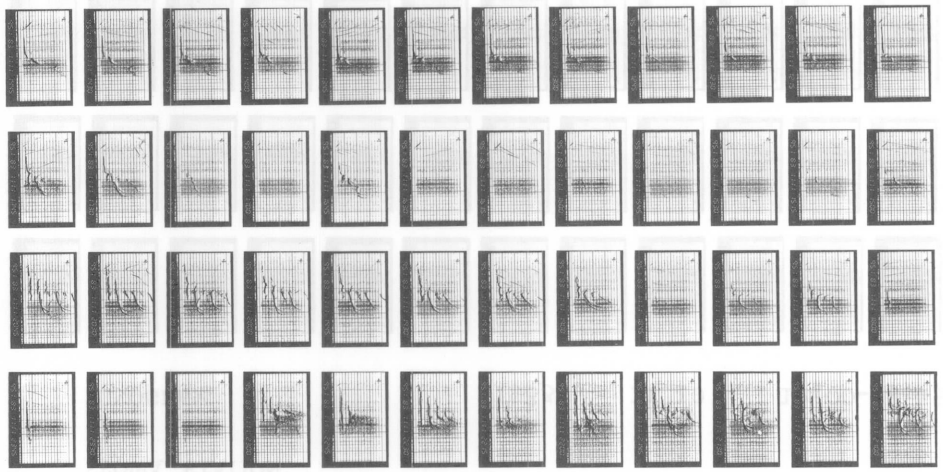
SYOWA STATION

IONOGRAM 1983 11 10 00;00-11;45



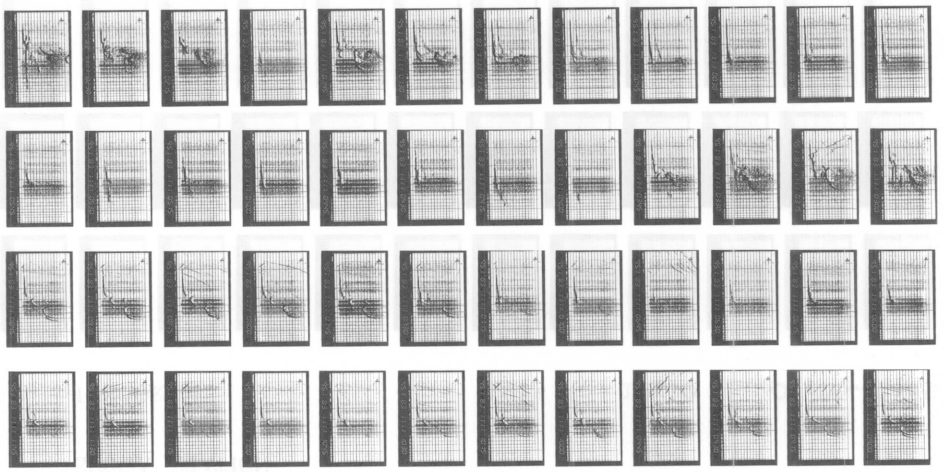
SYOWA STATION

IONOGRAM 1983 11 11 12;00-23;45



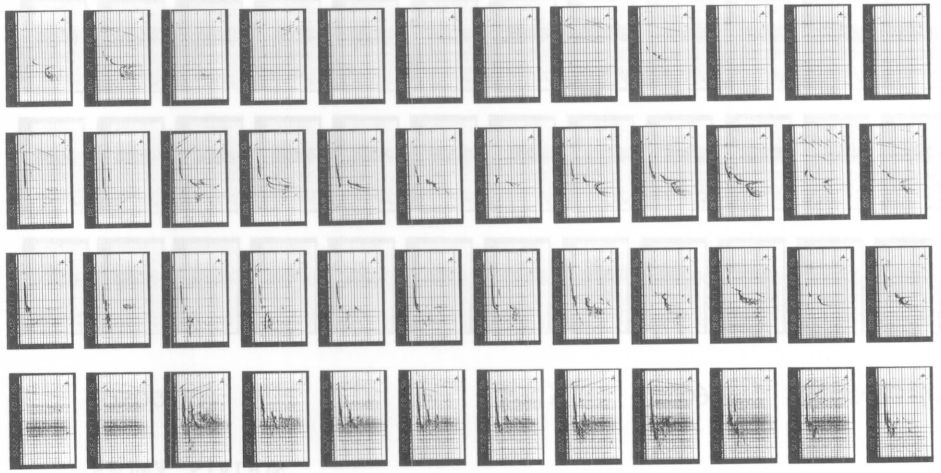
SYOWA STATION

IONOGRAM 1983 11 11 00;00-11;45



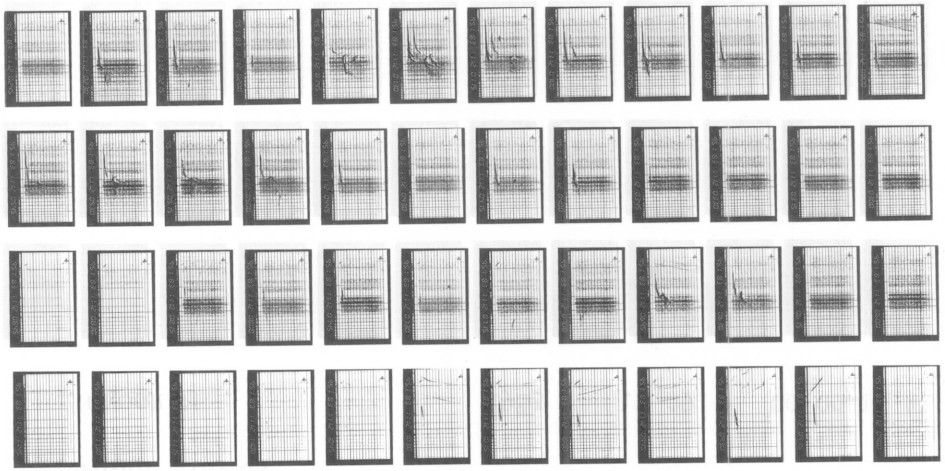
SYOWA STATION

IONOGRAM 1983 11 12 12;00-23;45



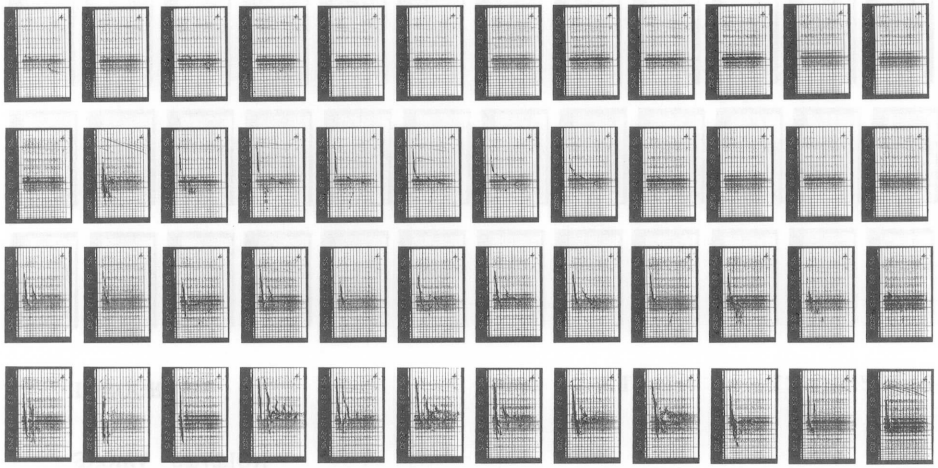
SYOWA STATION

IONOGRAM 1983 11 12 00;00-11;45



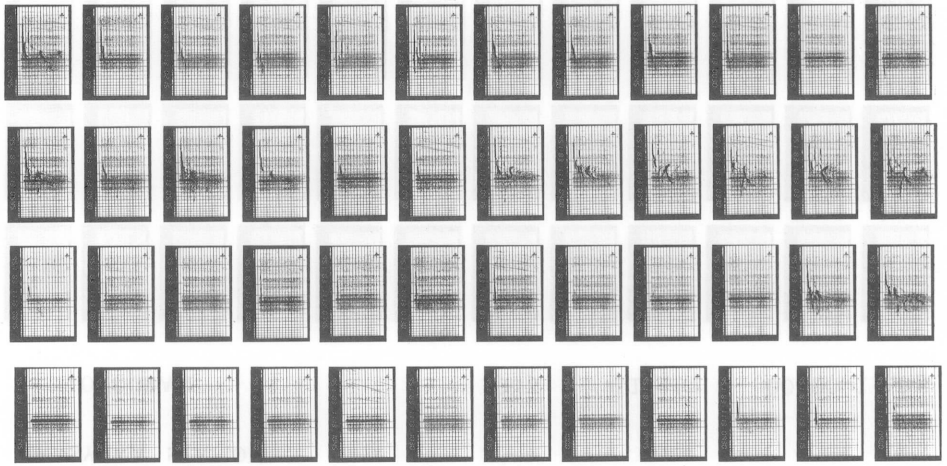
SYOWA STATION

IONOGRAM 1983 11 13 12;00-23;45



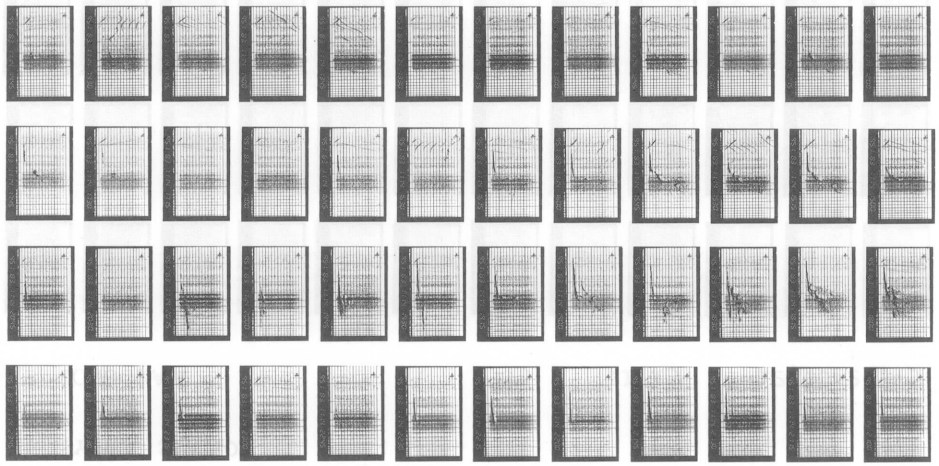
SYOWA STATION

IONOGRAM 1983 11 13 00;00-11;45



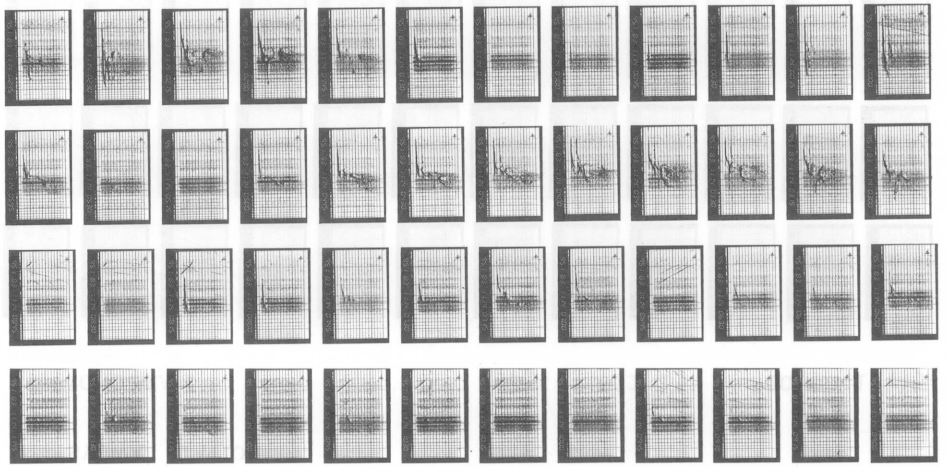
SYOWA STATION

IONOGRAM 1983 11 14 12;00-23;45



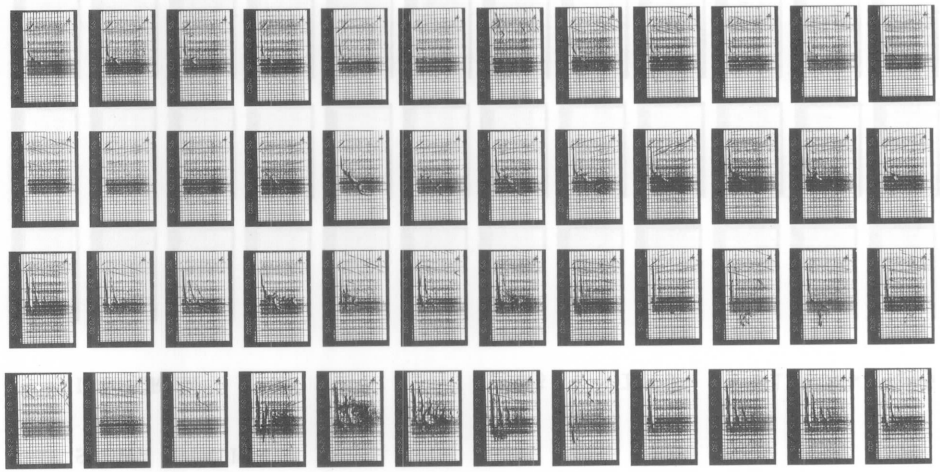
SYOWA STATION

IONOGRAM 1983 11 14 00;00-11;45



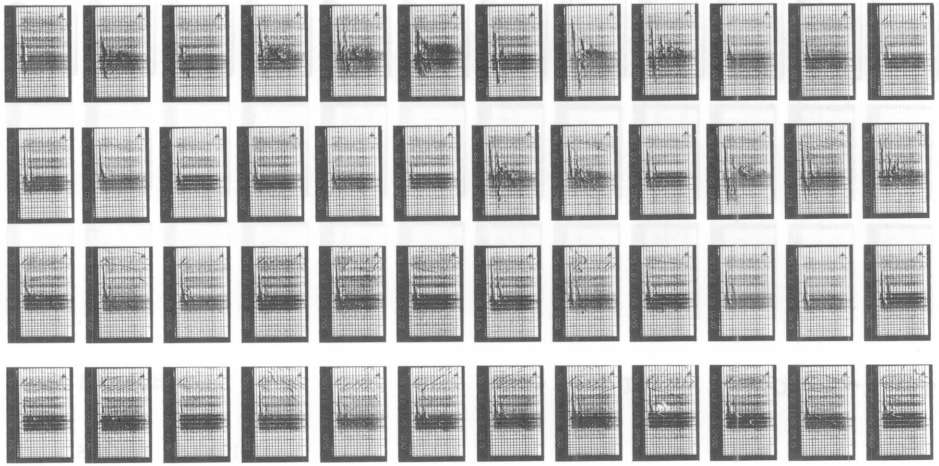
SYOWA STATION

IONOGRAM 1983 11 15 12;00-23;45



SYOWA STATION

IONOGRAM 1983 11 15 00;00-11;45

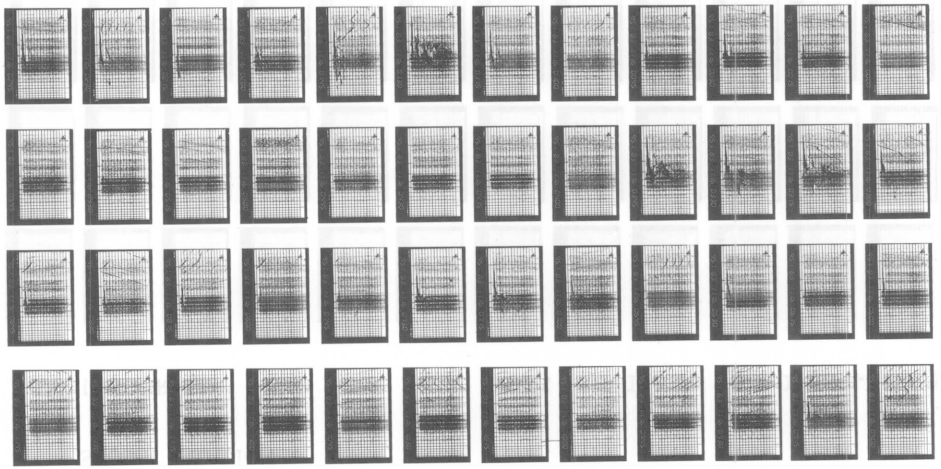


SYOWA STATION

IONOGRAM 1983 11 16 12;00-23;45

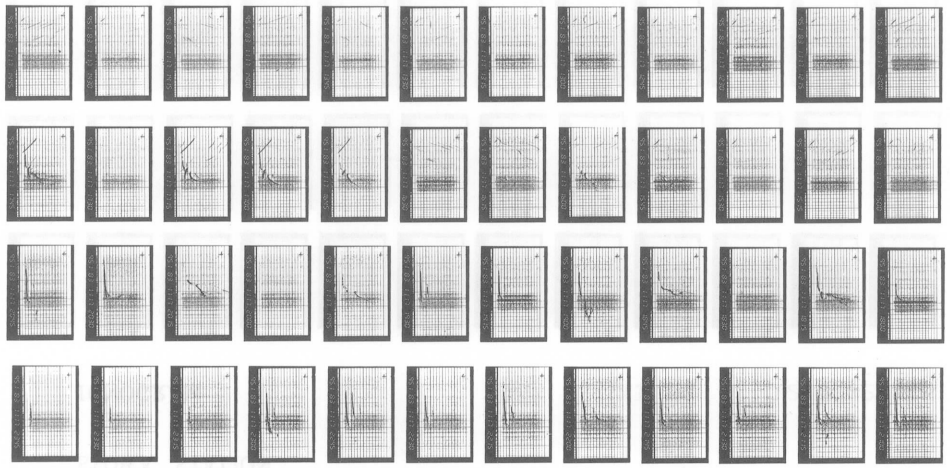
SYOWA STATION

IONOGRAM 1983 11 16 00;00-11;45



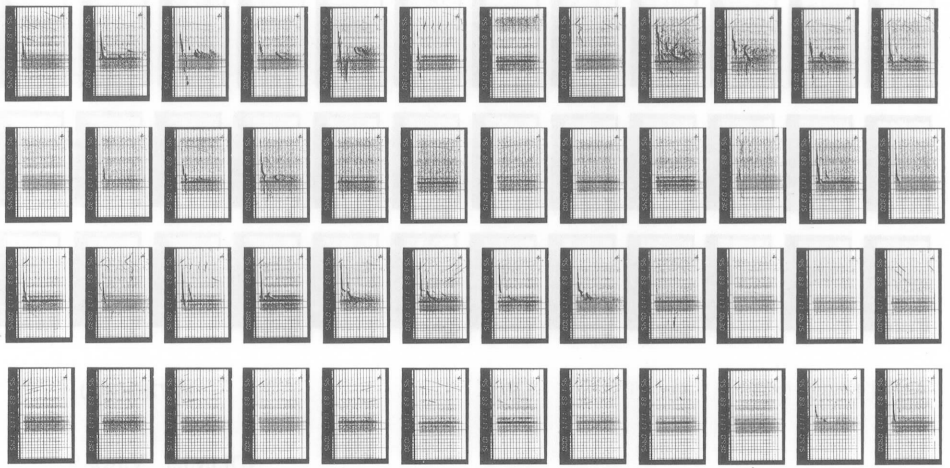
SYOWA STATION

IONOGRAM 1983 11 17 12;00-23;45



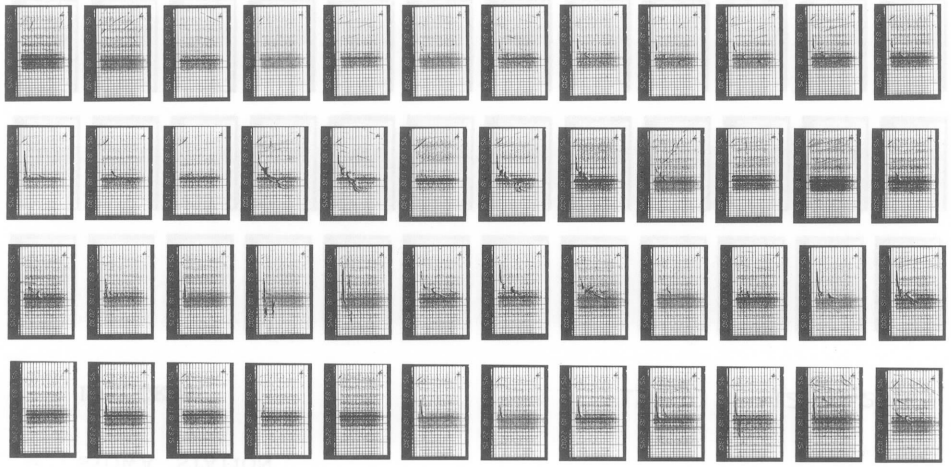
SYOWA STATION

IONOGRAM 1983 11 17 00;00-11;45



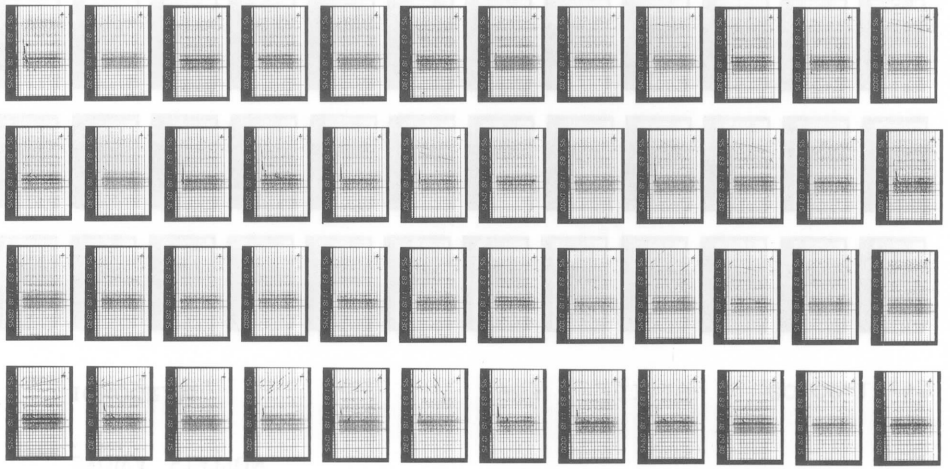
SYOWA STATION

IONOGRAM 1983 11 18 12;00-23;45



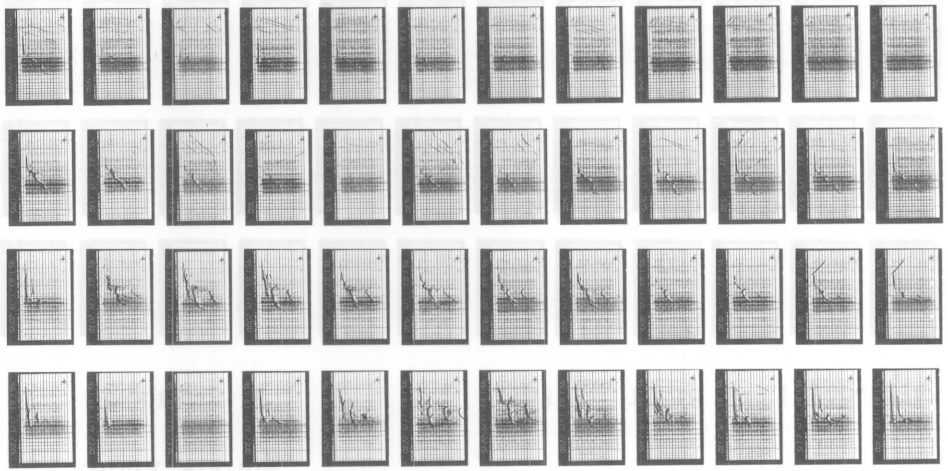
SYOWA STATION

IONOGRAM 1983 11 18 00;00-11;45



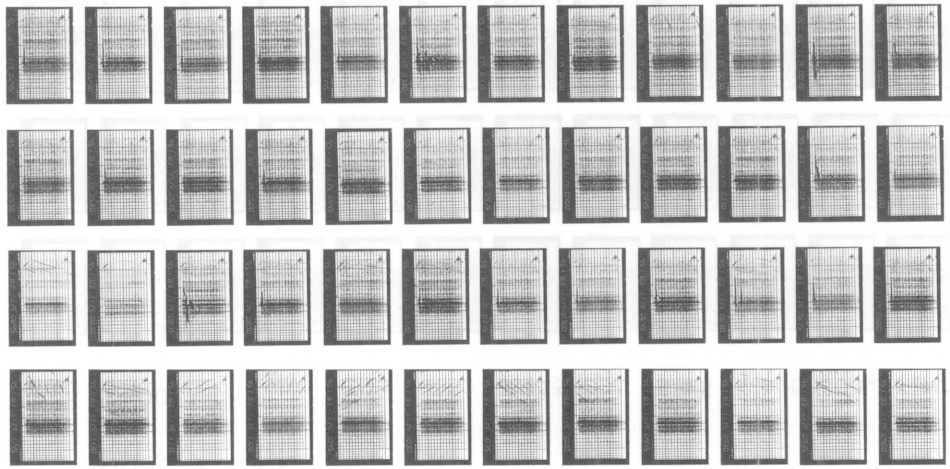
SYOWA STATION

IONOGRAM 1983 11 19 12;00-23;45



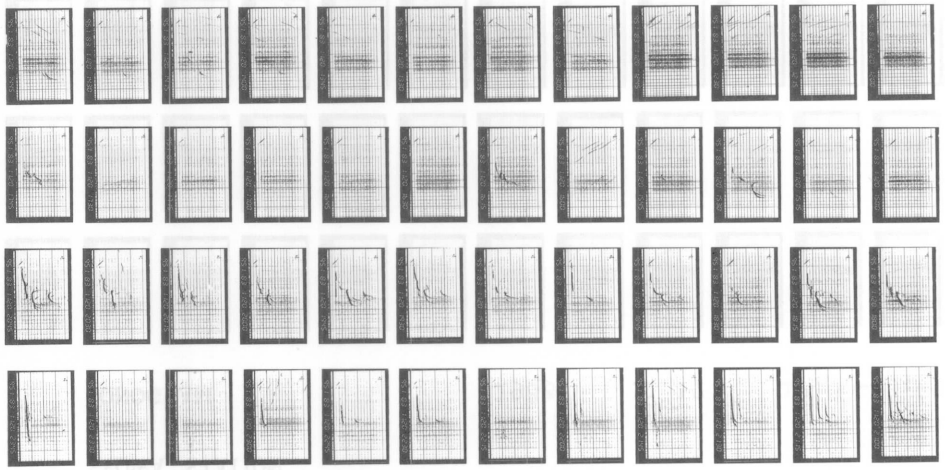
SYOWA STATION

IONOGRAM 1983 11 19 00;00-11;45



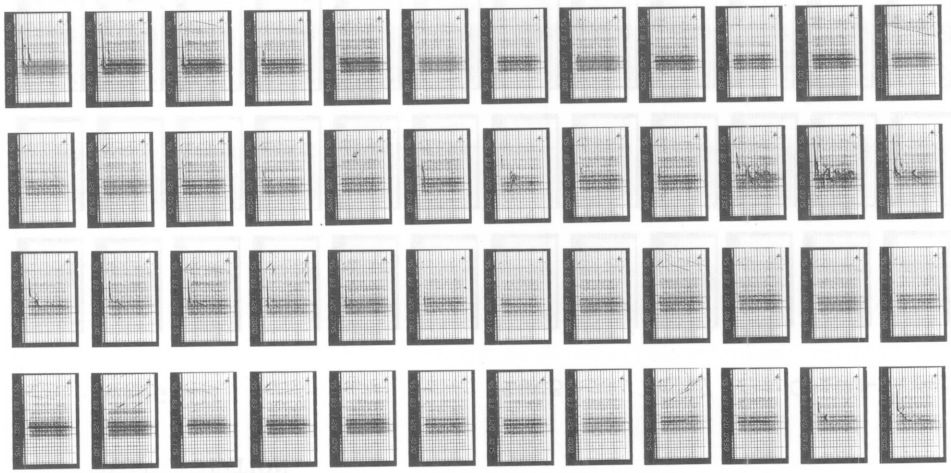
SYOWA STATION

IONOGRAM 1983 11 20 12;00-23;45



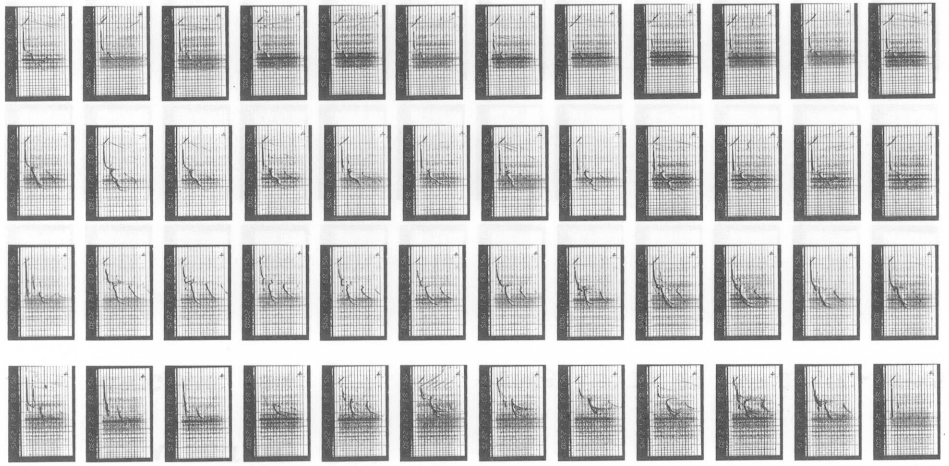
SYOWA STATION

IONOGRAM 1983 11 20 00;00-11;45



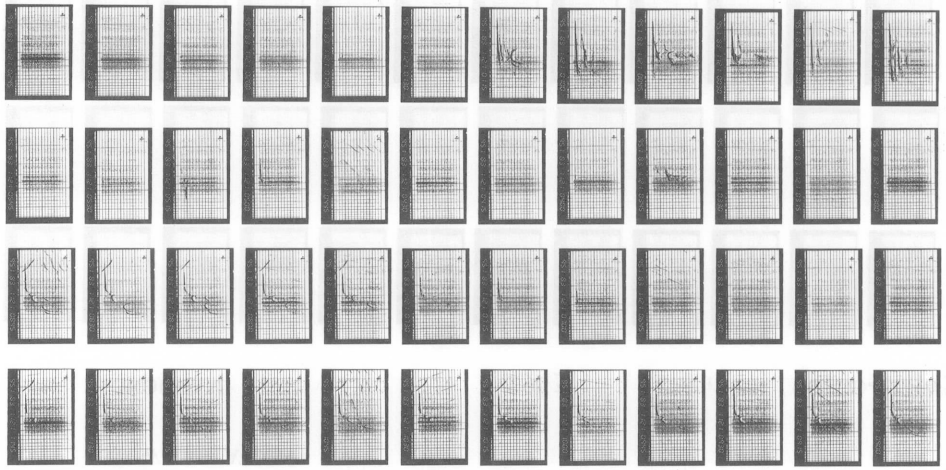
SYOWA STATION

IONOGRAM 1983 11 21 12;00-23;45



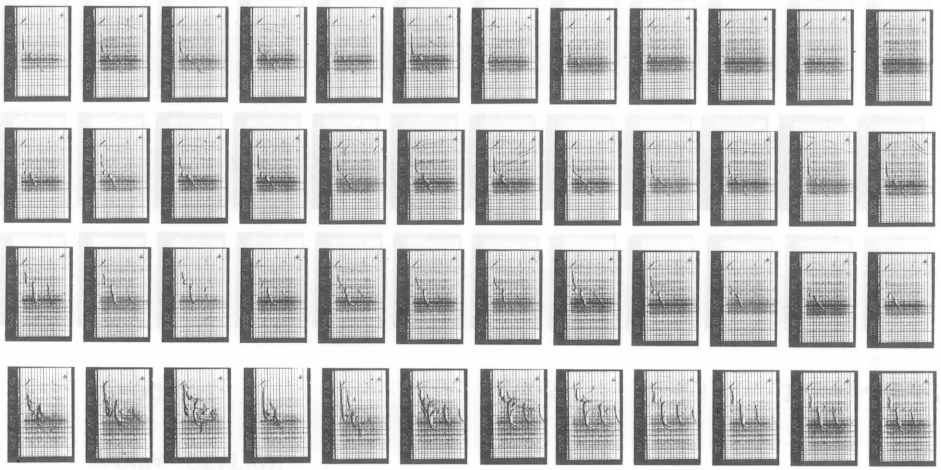
SYOWA STATION

IONOGRAM 1983 11 21 00;00-11;45



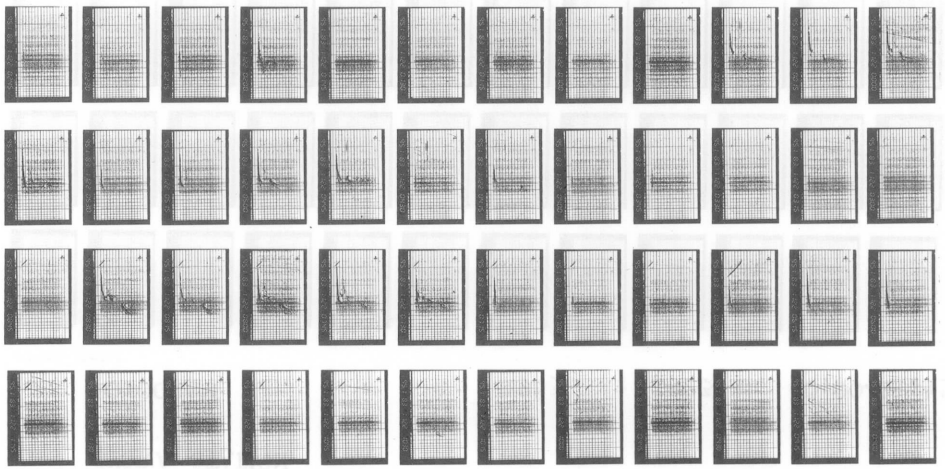
SYOWA STATION

IONOGRAM 1983 11 22 12;00-23;45



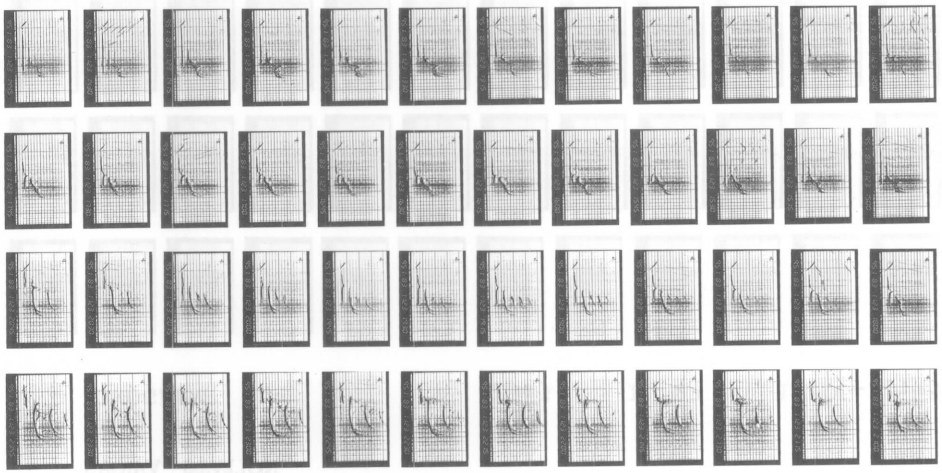
SYOWA STATION

IONOGRAM 1983 11 22 00;00-11;45



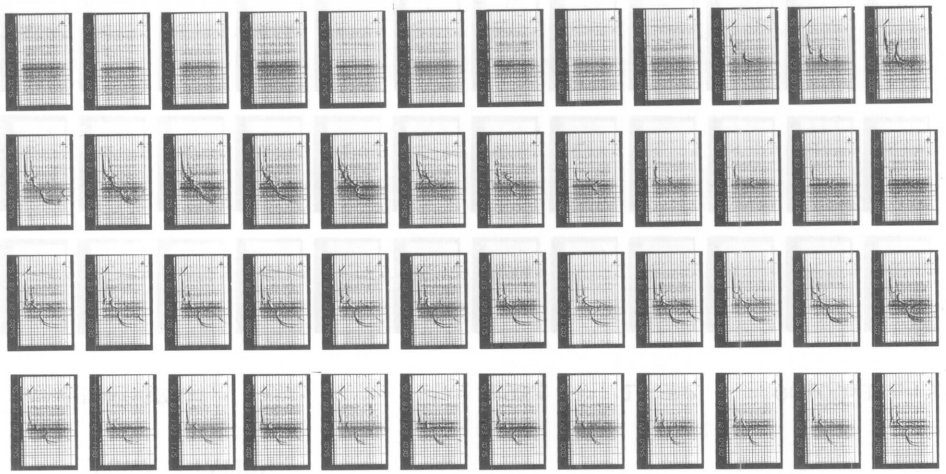
SYOWA STATION

IONOGRAM 1983 11 23 12;00-23;45



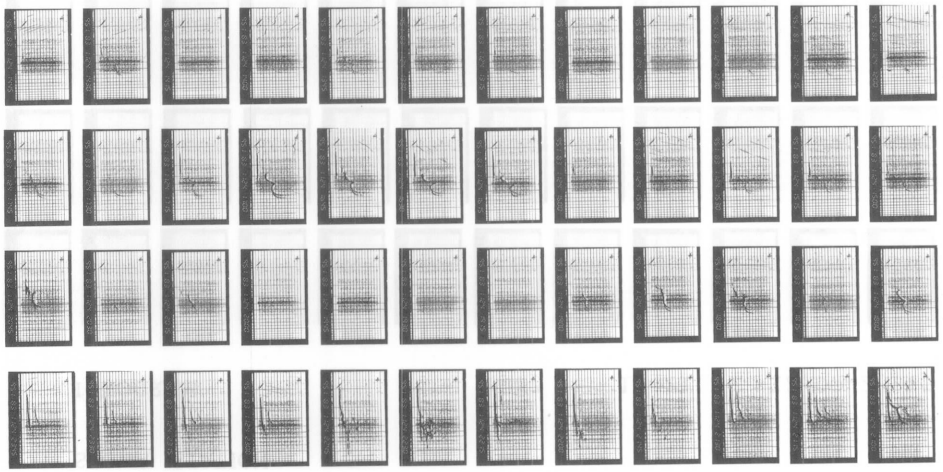
SYOWA STATION

IONOGRAM 1983 11 23 00;00-11;45



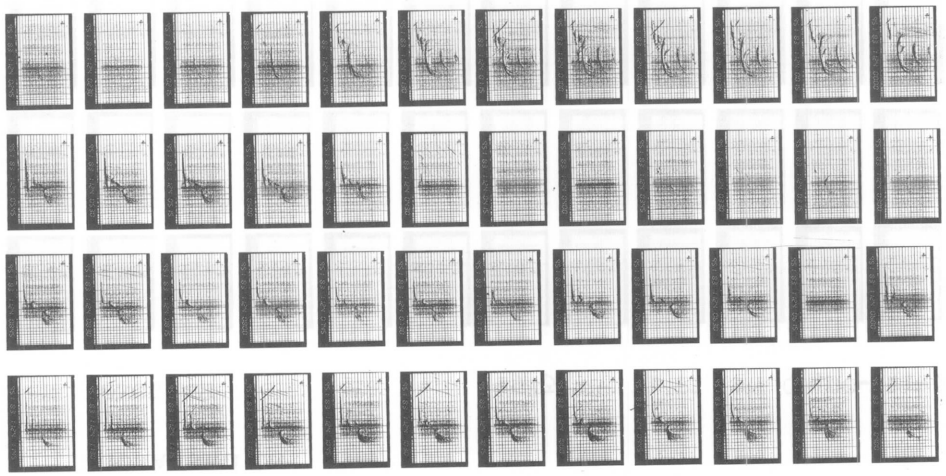
SYOWA STATION

IONOGRAM 1983 11 24 12;00-23;45



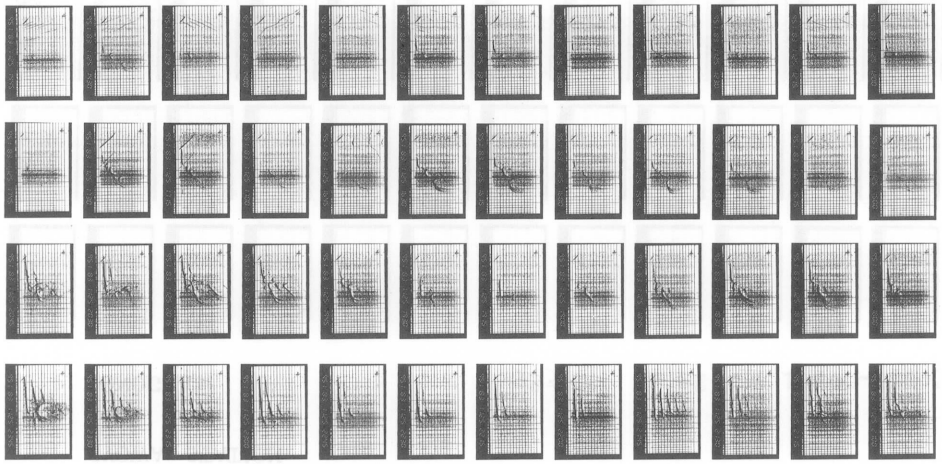
SYOWA STATION

IONOGRAM 1983 11 24 00;00-11;45



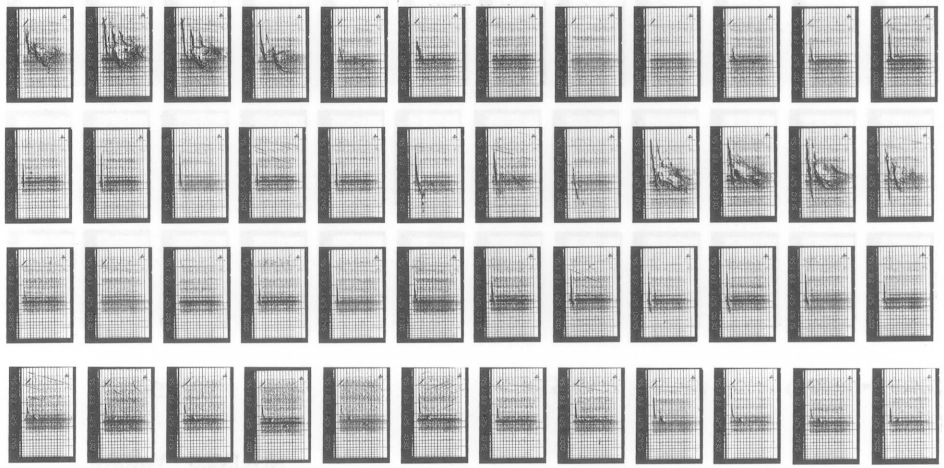
SYOWA STATION

IONOGRAM 1983 11 25 12;00-23;45



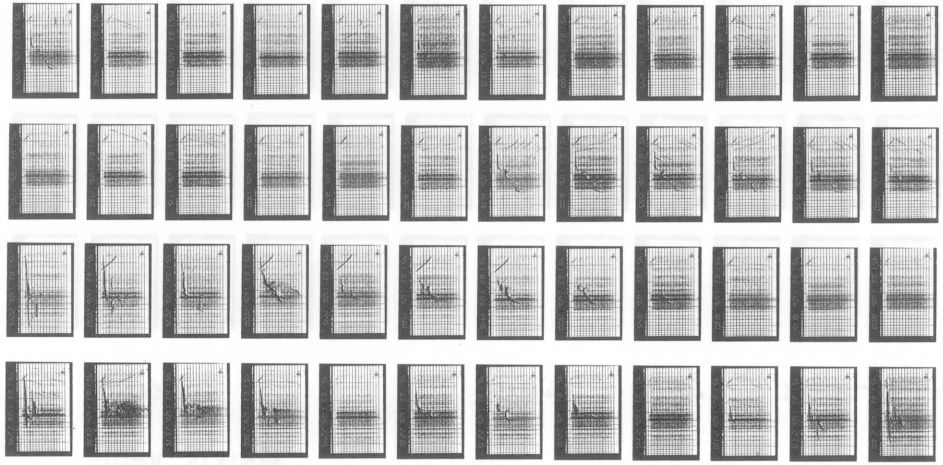
SYOWA STATION

IONOGRAM 1983 11 25 00;00-11;45



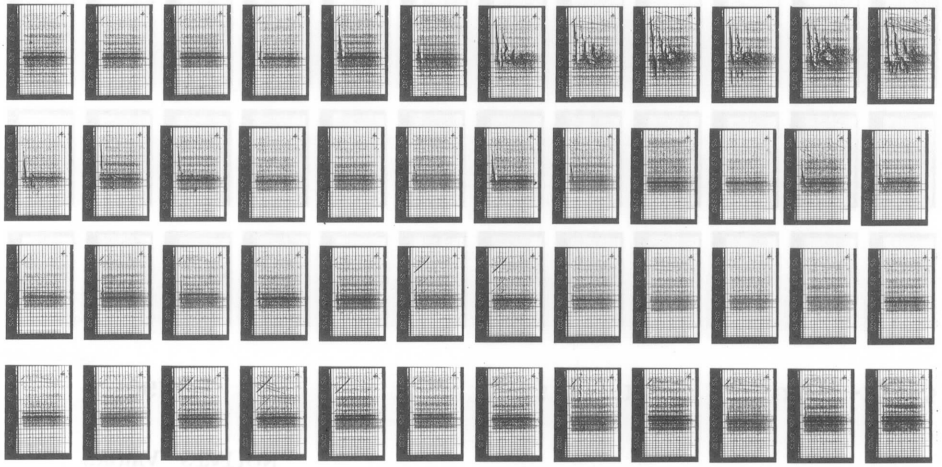
SYOWA STATION

IONOGRAM 1983 11 26 12;00-23;45



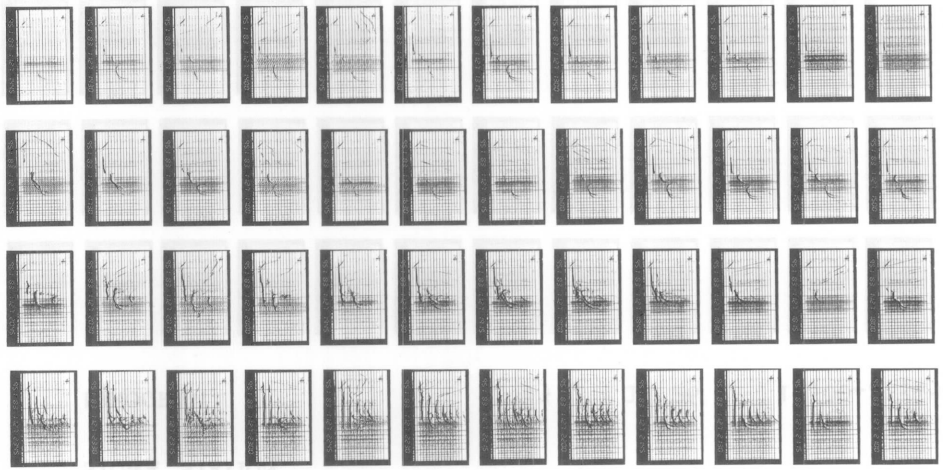
SYOWA STATION

IONOGRAM 1983 11 26 00;00-11;45



SYOWA STATION

IONOGRAM 1983 11 27 12;00-23;45

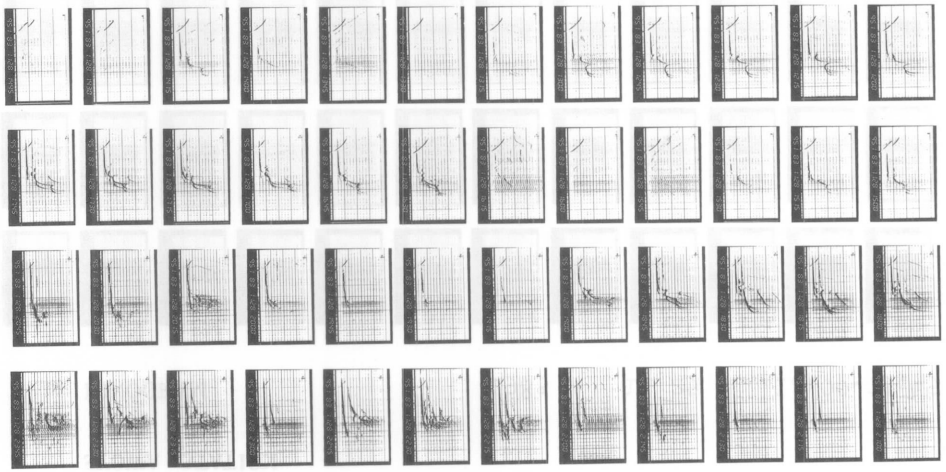


SYOWA STATION

IONOGRAM 1983 11 27 00;00-11;45

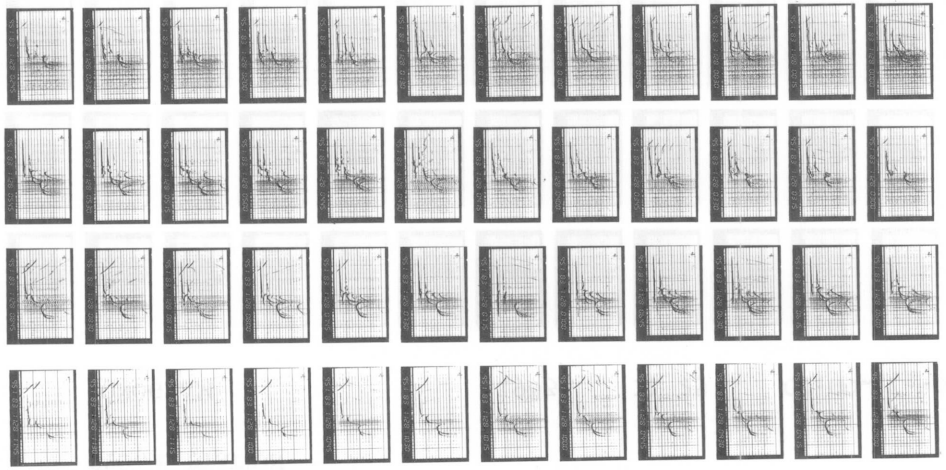
SYOWA STATION

IONOGRAM 1983 11 28 12;00-23;45



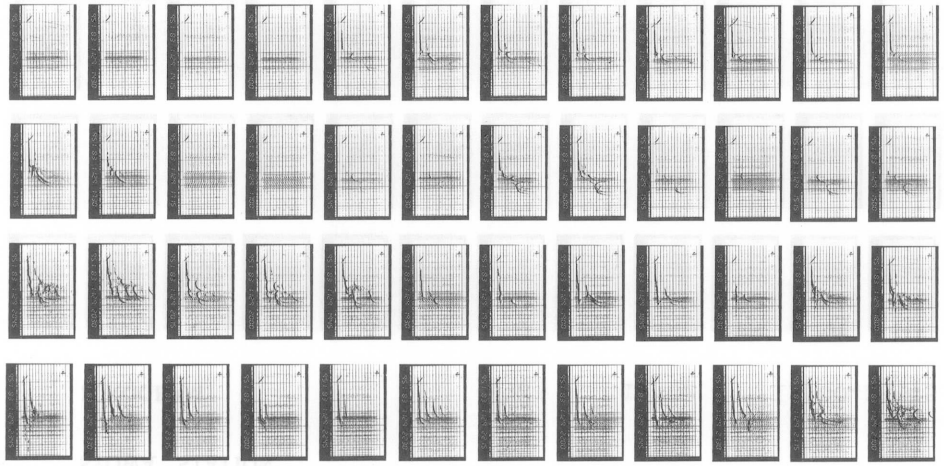
SYOWA STATION

IONOGRAM 1983 11 28 00;00-11;45



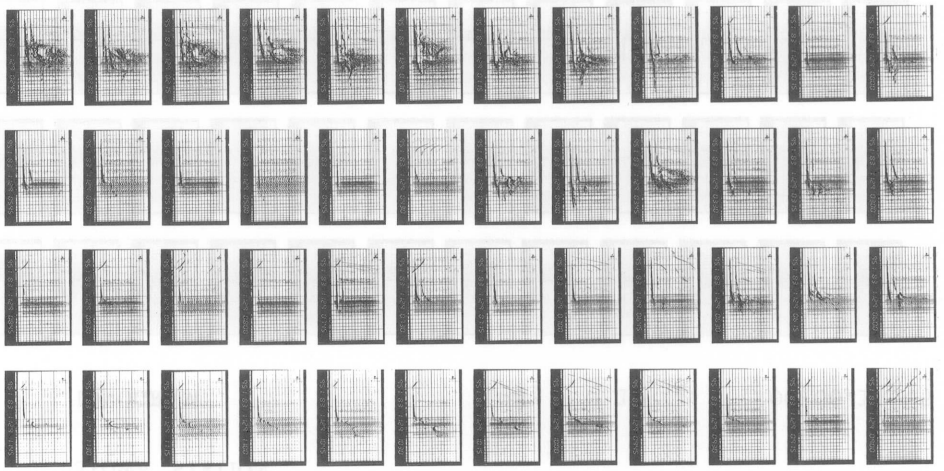
SYOWA STATION

IONOGRAM 1983 11 29 12;00-23;45



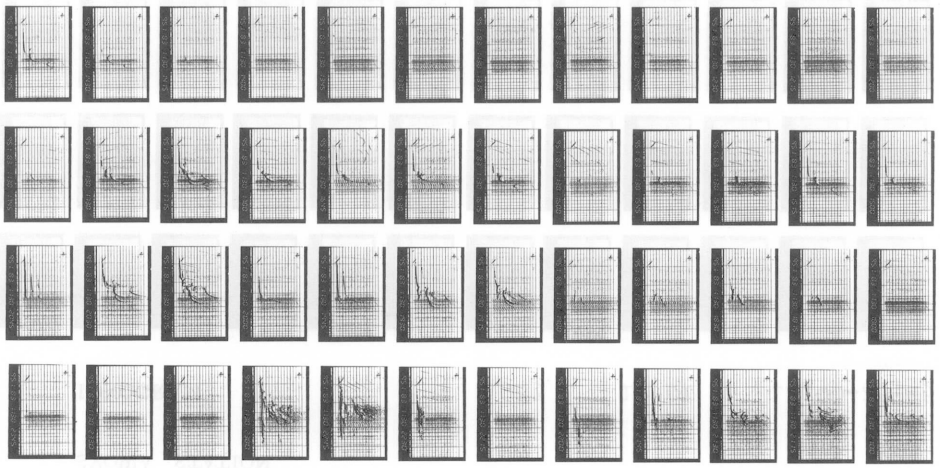
SYOWA STATION

IONOGRAM 1983 11 29 00;00-11;45



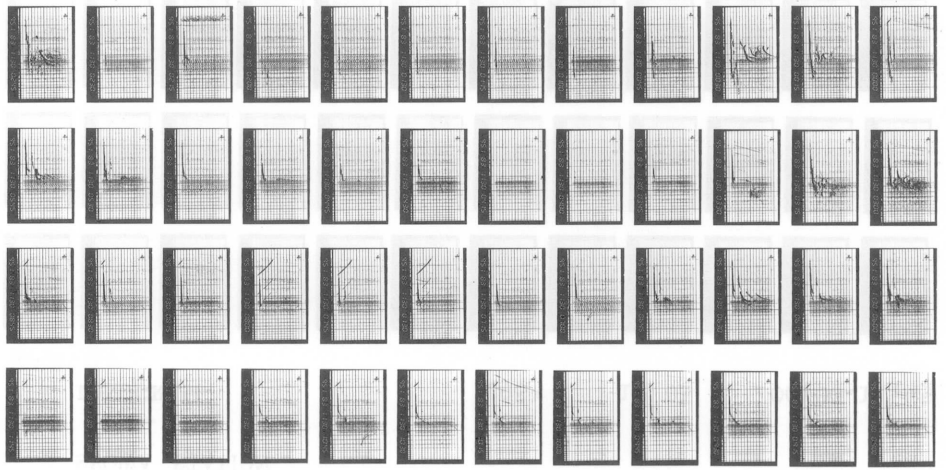
SYOWA STATION

IONOGRAM 1983 11 30 12;00-23;45



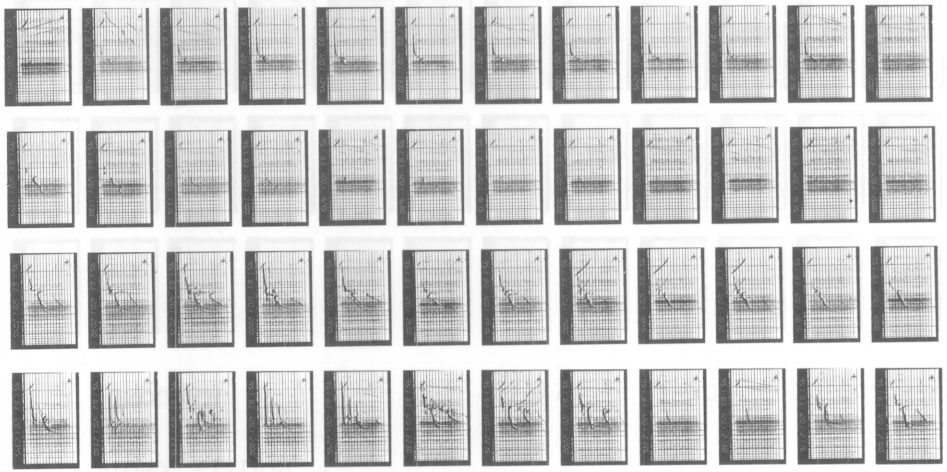
SYOWA STATION

IONOGRAM 1983 11 30 00;00-11;45



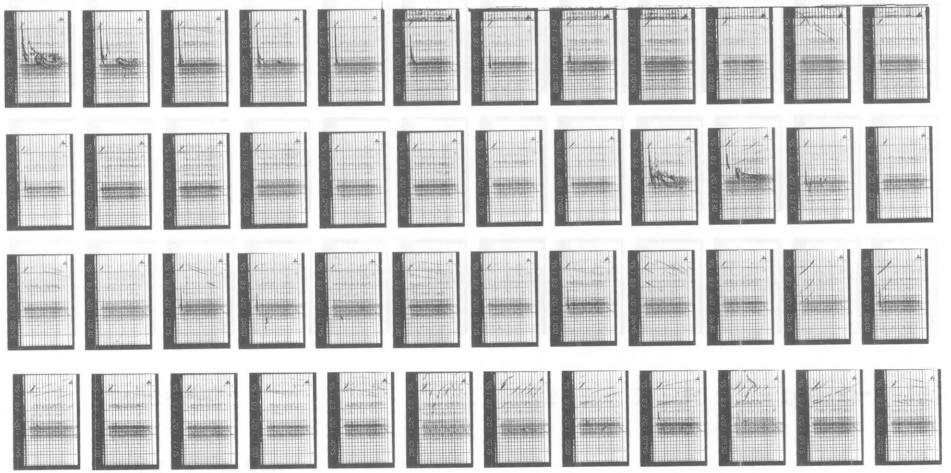
SYOWA STATION

IONOGRAM 1983 12 01 12;00-23;45



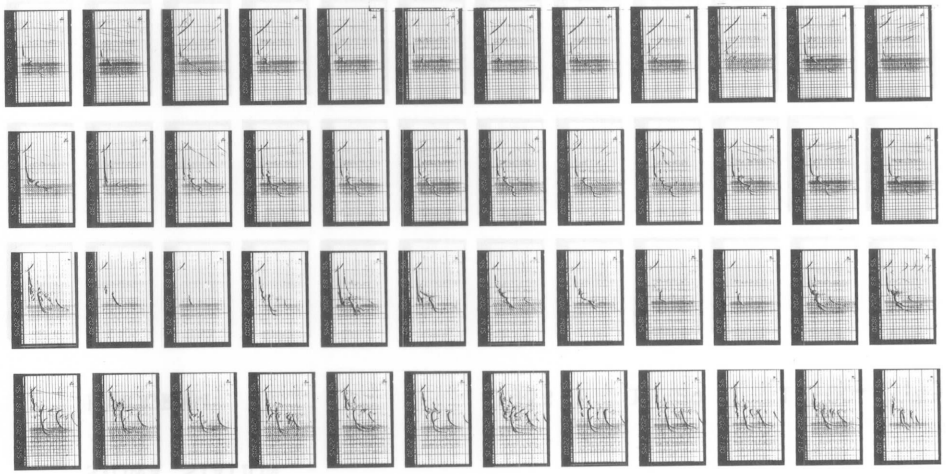
SYOWA STATION

IONOGRAM 1983 12 01 00;00-11;45



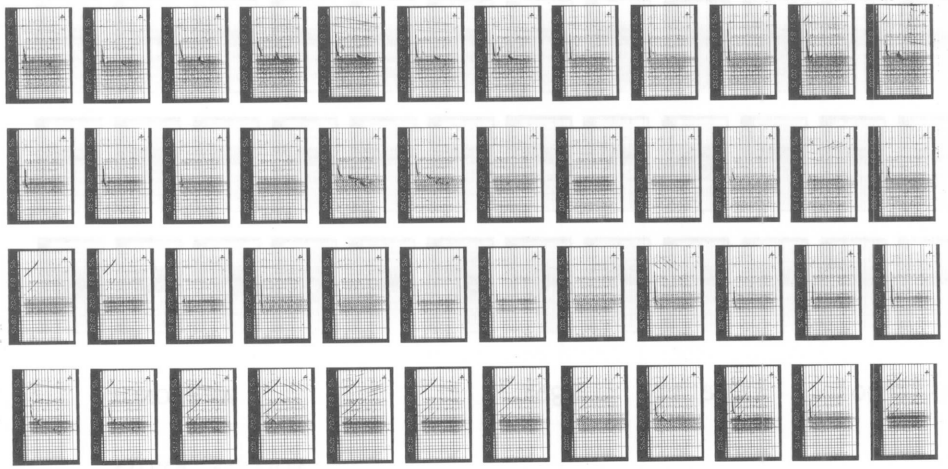
SYOWA STATION

IONOGRAM 1983 12 02 12;00-23;45



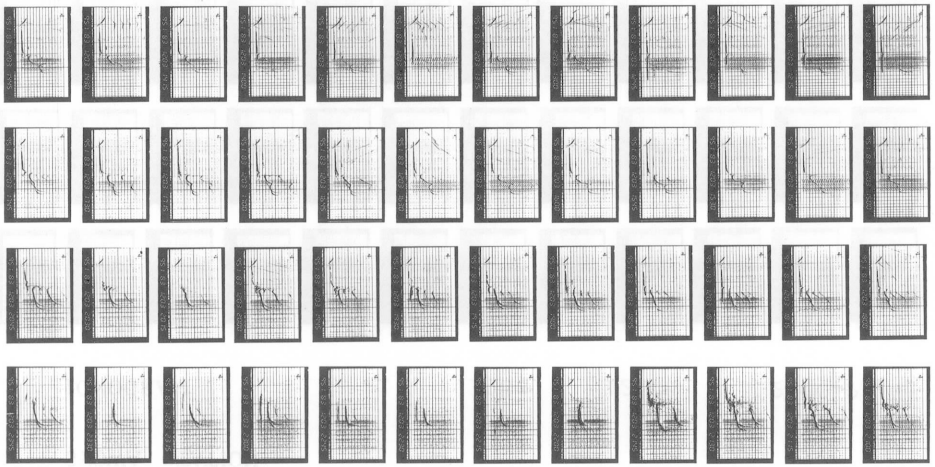
SYOWA STATION

IONOGRAM 1983 12 02 00;00-11;45



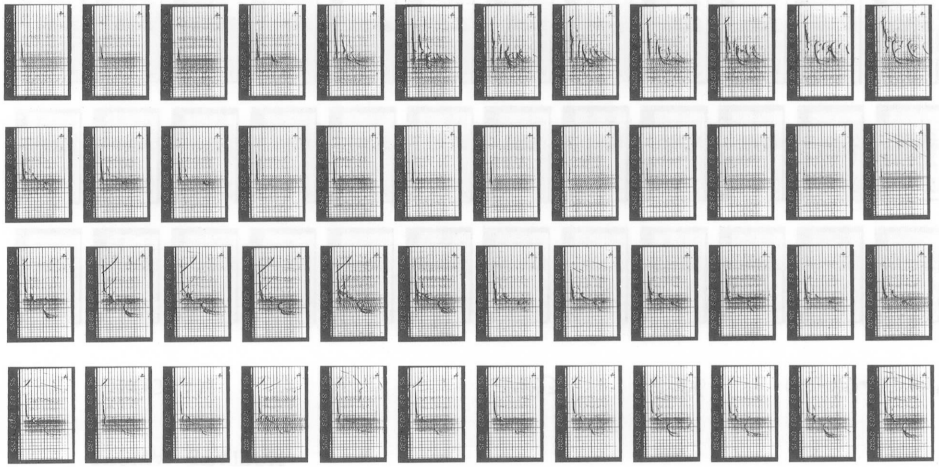
SYOWA STATION

IONOGRAM 1983 12 03 12;00-23;45



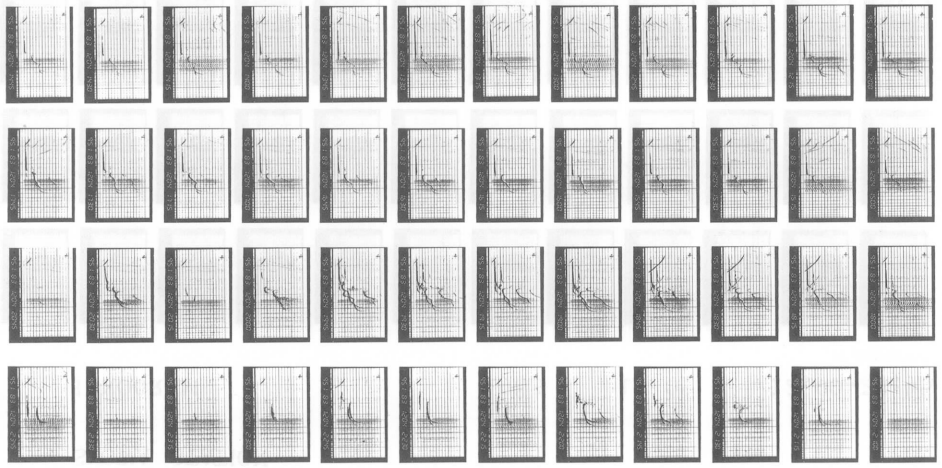
SYOWA STATION

IONOGRAM 1983 12 03 00;00-11;45



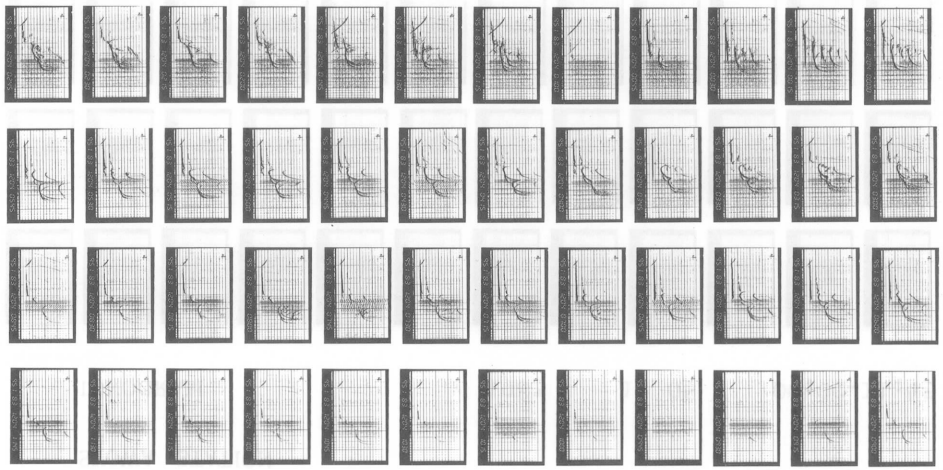
SYOWA STATION

IONOGRAM 1983 12 04 12;00-23;45



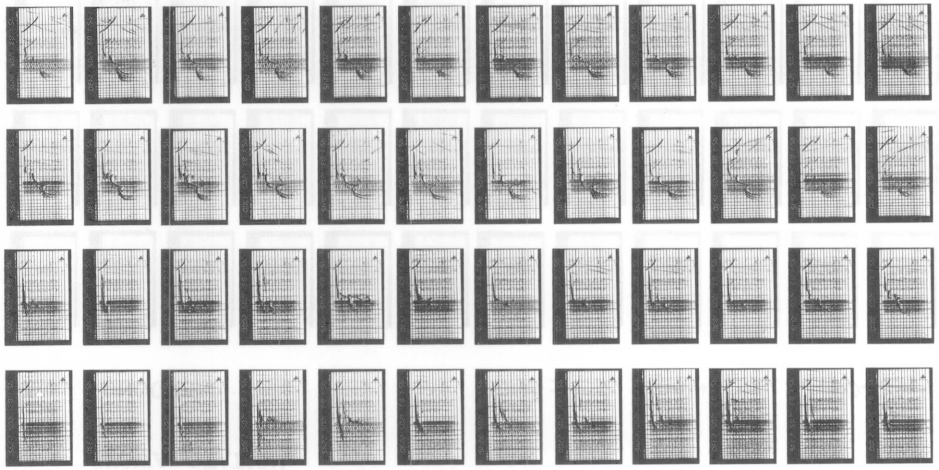
SYOWA STATION

IONOGRAM 1983 12 04 00;00-11;45



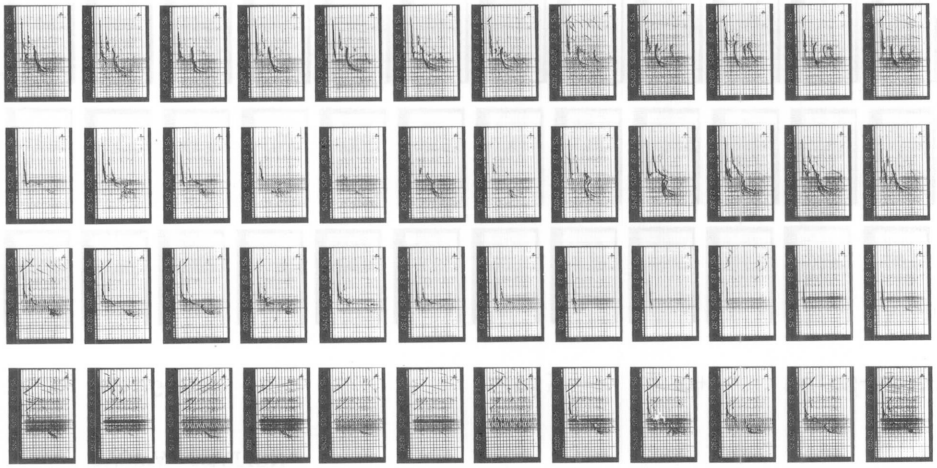
SYOWA STATION

IONOGRAM 1983 12 05 12;00-23;45



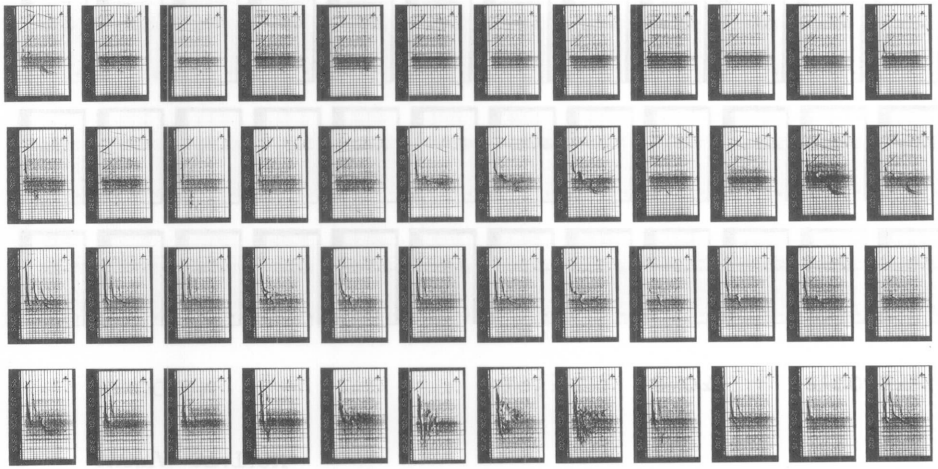
SYOWA STATION

IONOGRAM 1983 12 05 00;00-11;45



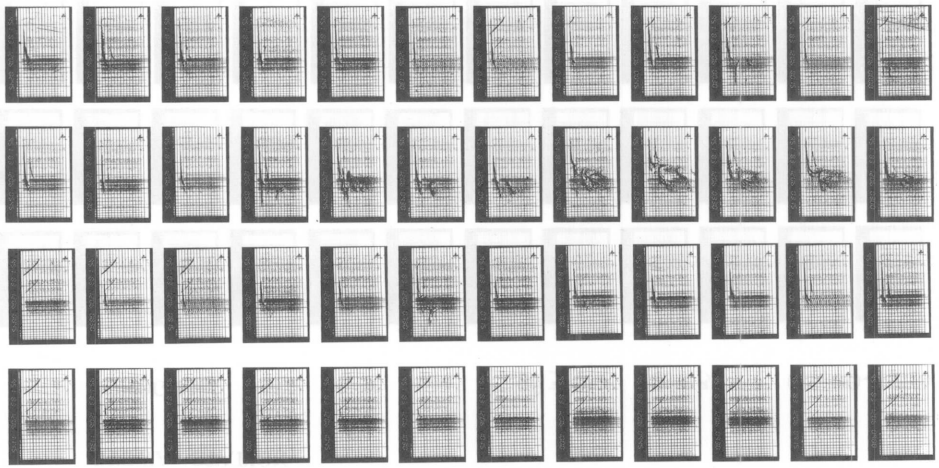
SYOWA STATION

IONOGRAM 1983 12 06 12;00-23;45



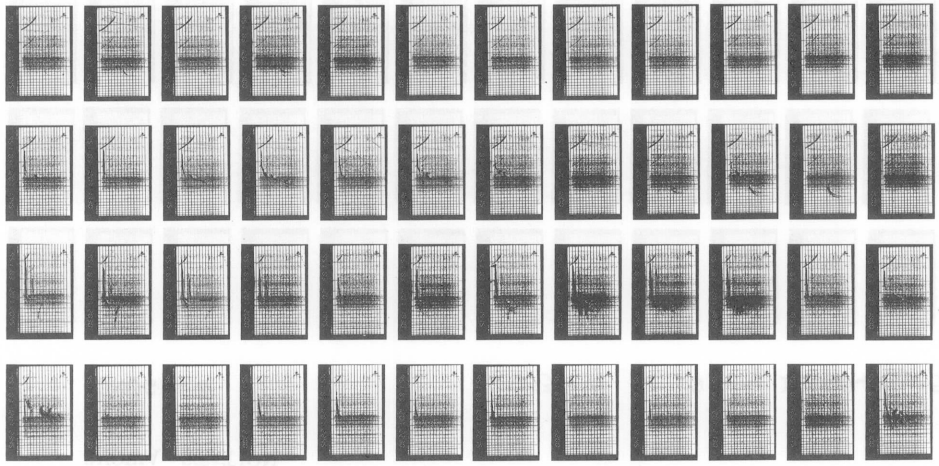
SYOWA STATION

IONOGRAM 1983 12 06 00;00-11;45



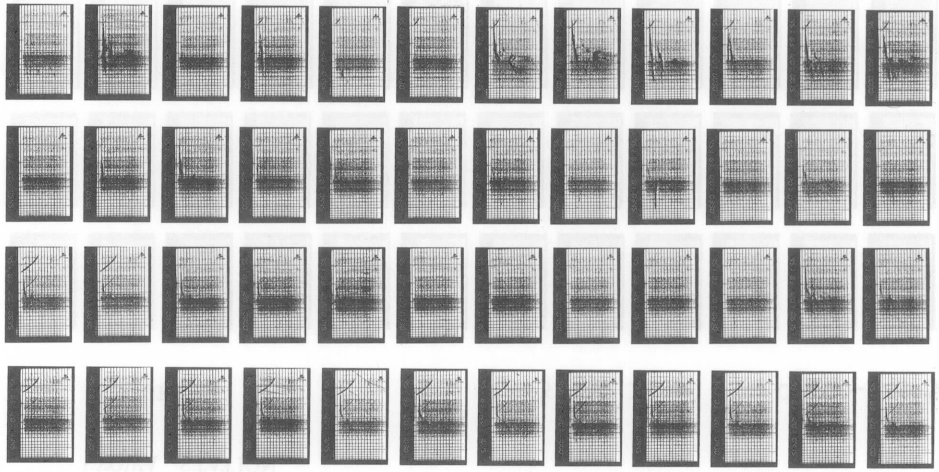
SYOWA STATION

IONOGRAM 1983 12 07 12;00-23;45



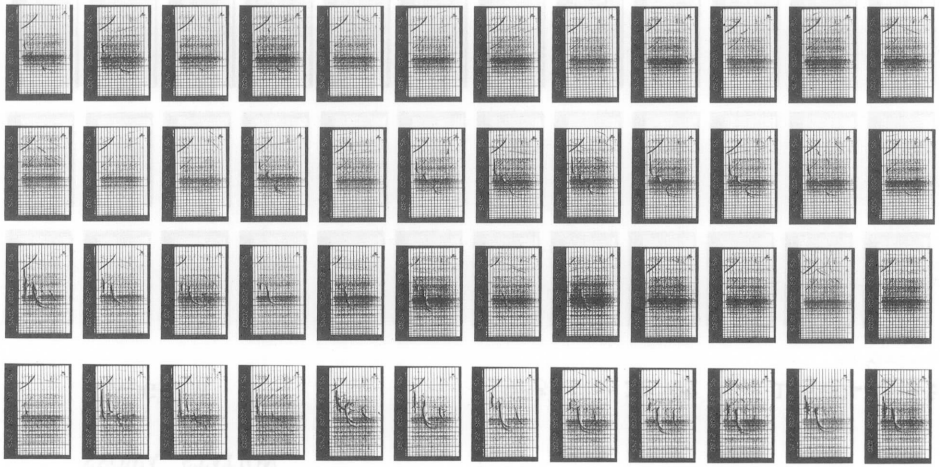
SYOWA STATION

IONOGRAM 1983 12 07 00;00-11;45



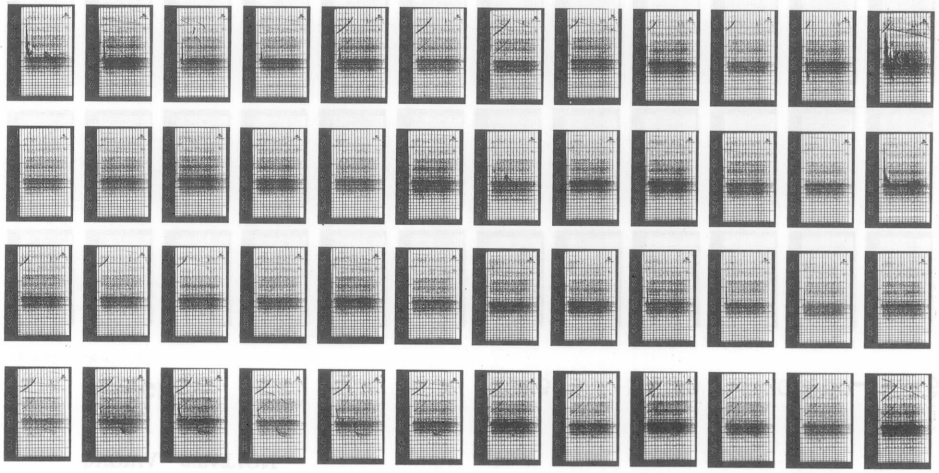
SYOWA STATION

IONOGRAM 1983 12 08 12;00-23;45



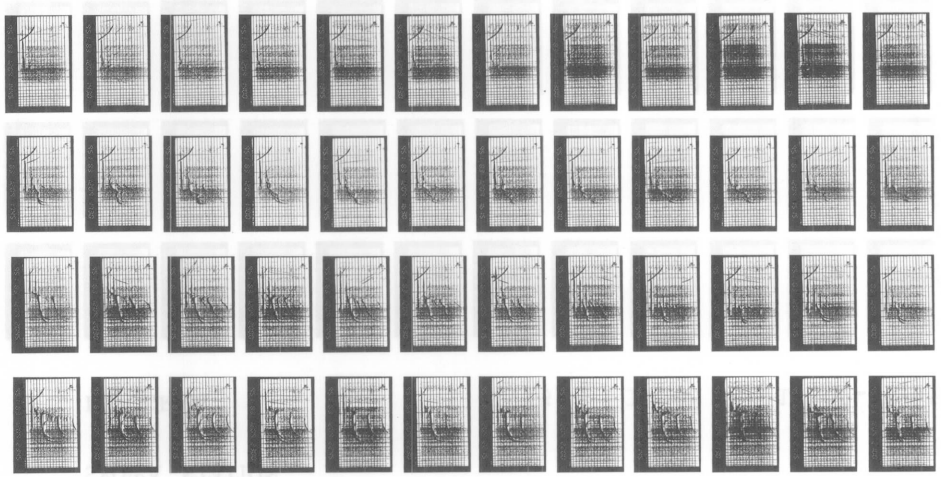
SYOWA STATION

IONOGRAM 1983 12 08 00;00-11;45



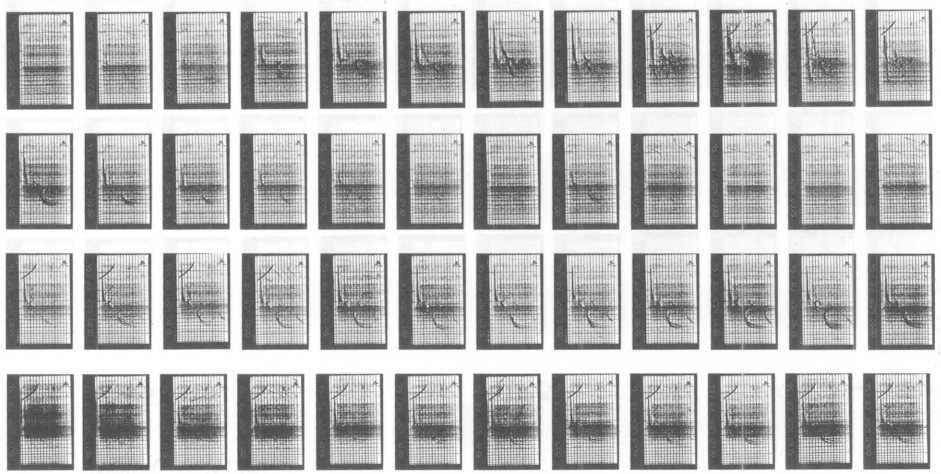
SYOWA STATION

IONOGRAM 1983 12 09 12;00-23;45



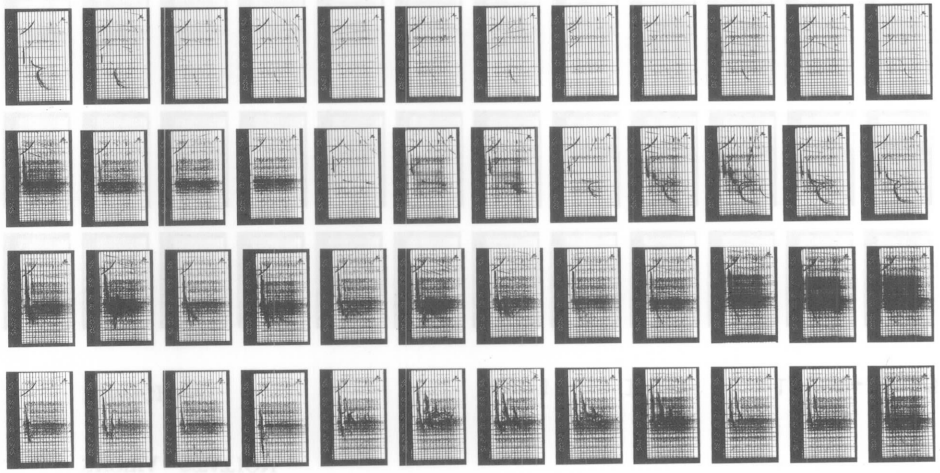
SYOWA STATION

IONOGRAM 1983 12 09 00;00-11;45



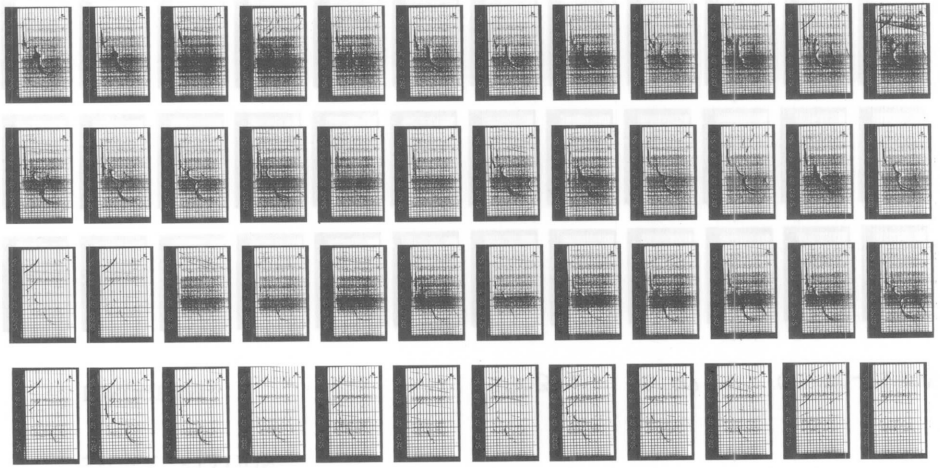
SYOWA STATION

IONOGRAM 1983 12 10 12;00-23;45



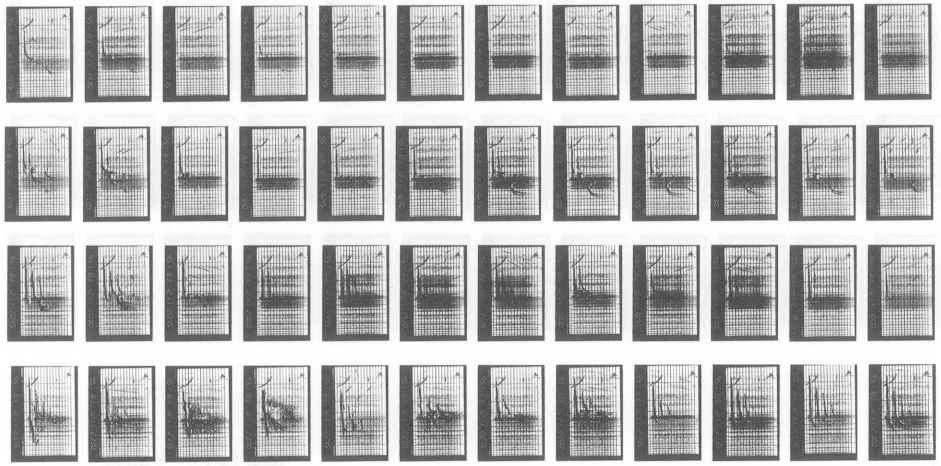
SYOWA STATION

IONOGRAM 1983 12 10 00;00-11;45



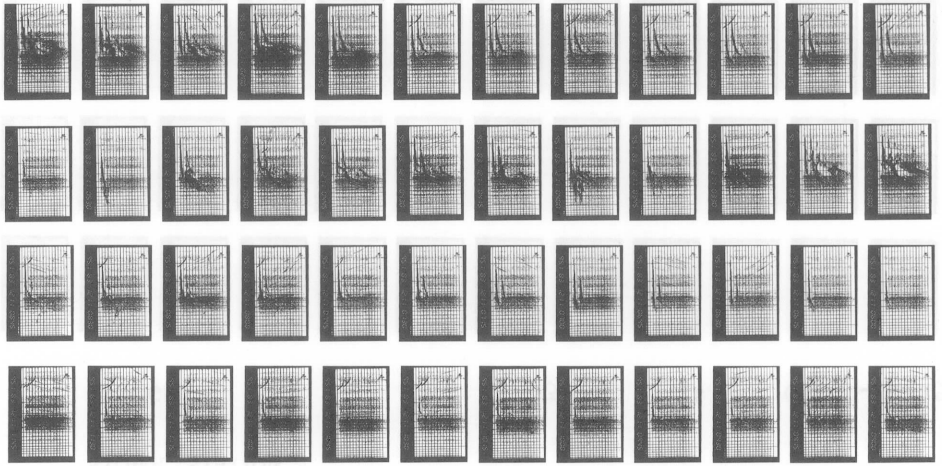
SYOWA STATION

IONOGRAM 1983 12 11 12;00-23;45



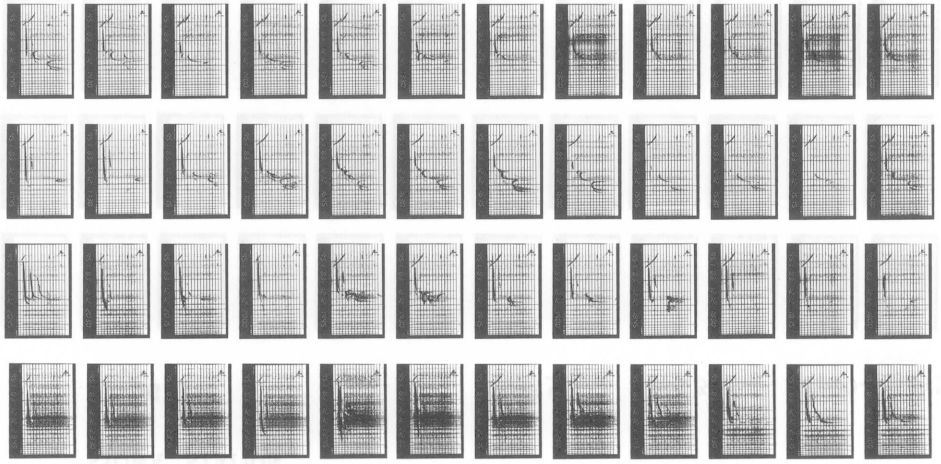
SYOWA STATION

IONOGRAM 1983 12 11 00;00-11;45



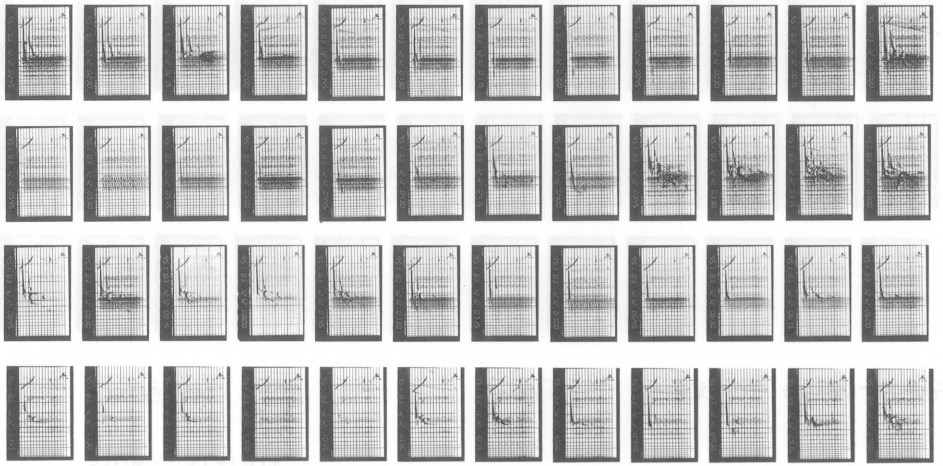
SYOWA STATION

IONOGRAM 1983 12 12 12;00-23;45



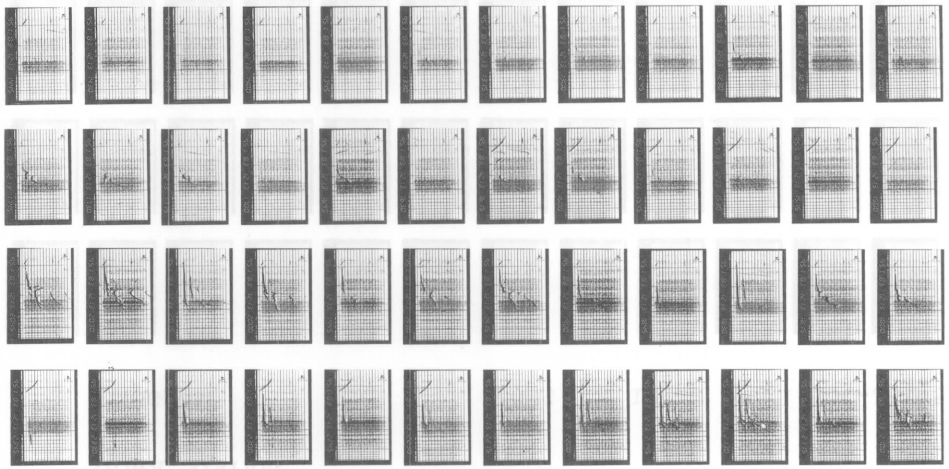
SYOWA STATION

IONOGRAM 1983 12 12 00;00-11;45



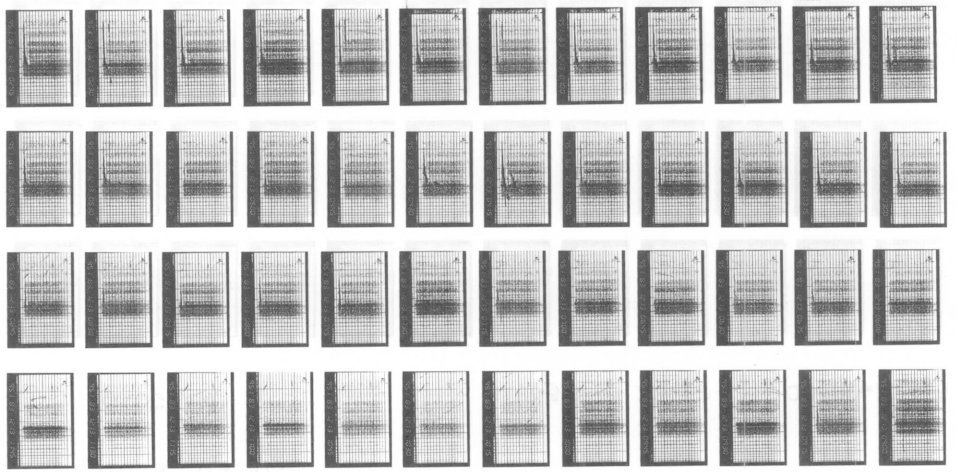
SYOWA STATION

IONOGRAM 1983 12 13 12;00-23;45



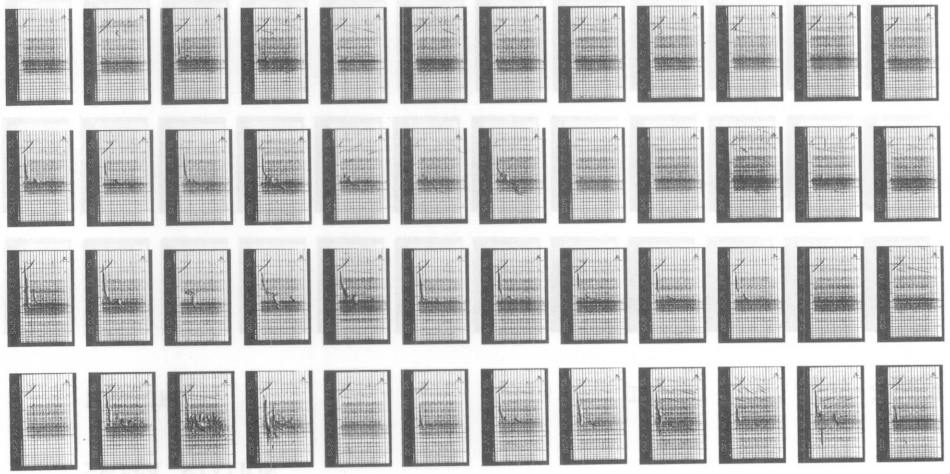
SYOWA STATION

IONOGRAM 1983 12 13 00;00-11;45



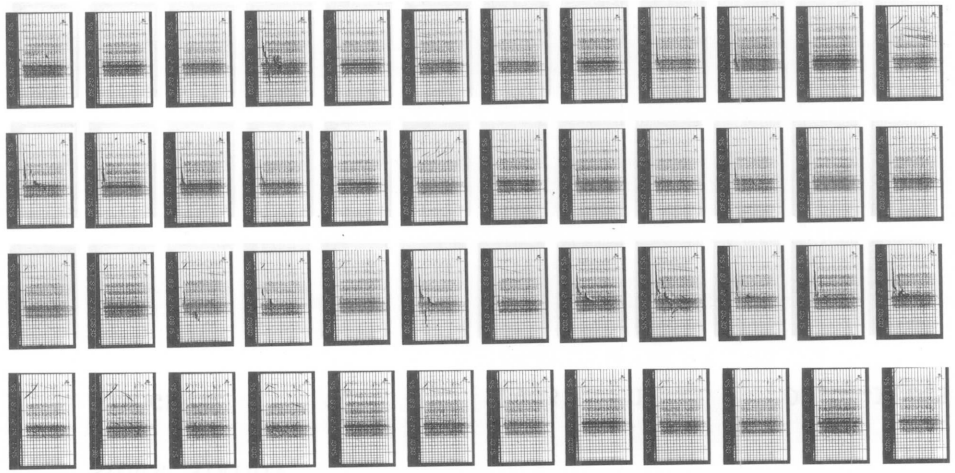
SYOWA STATION

IONOGRAM 1983 12 14 12;00-23;45



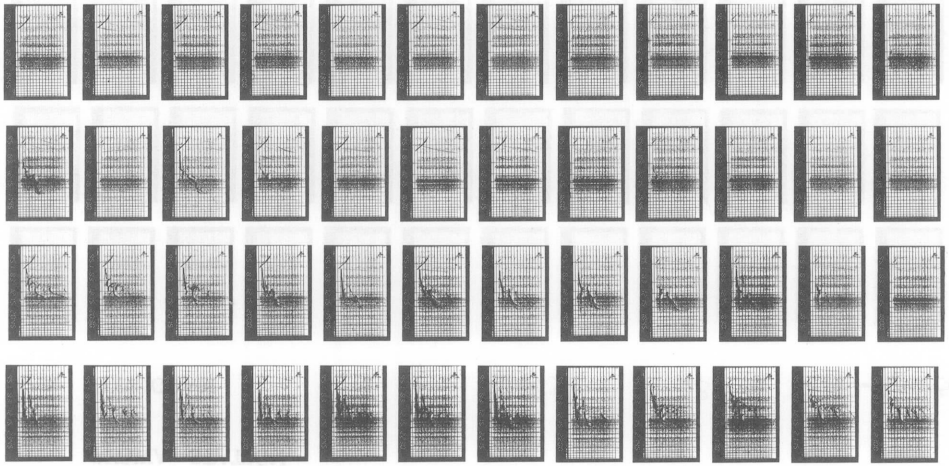
SYOWA STATION

IONOGRAM 1983 12 14 00;00-11;45



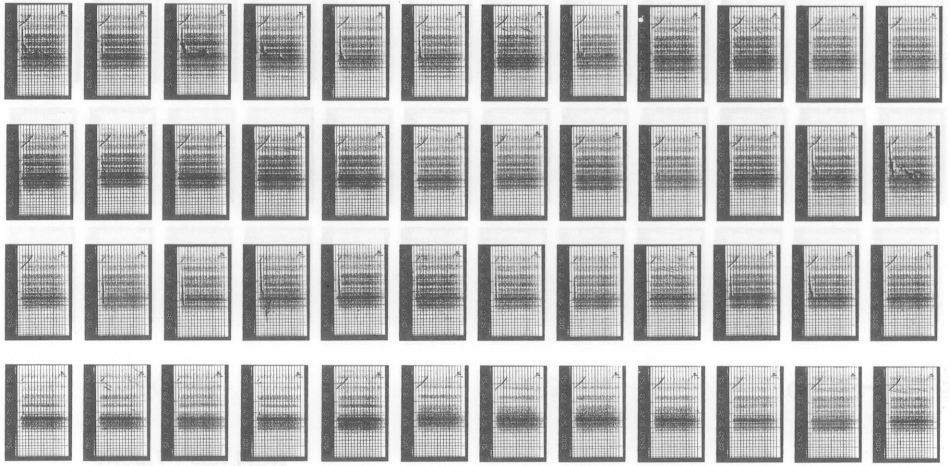
SYOWA STATION

IONOGRAM 1983 12 15 12;00-23;45



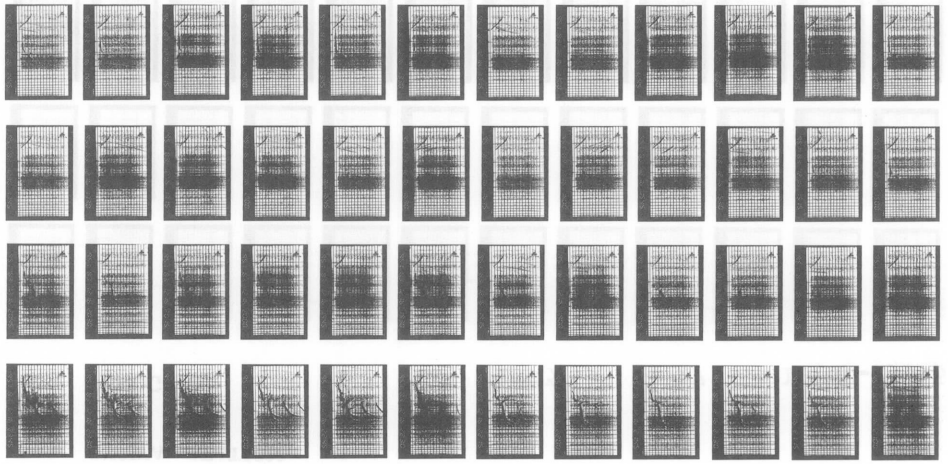
SYOWA STATION

IONOGRAM 1983 12 15 00;00-11;45



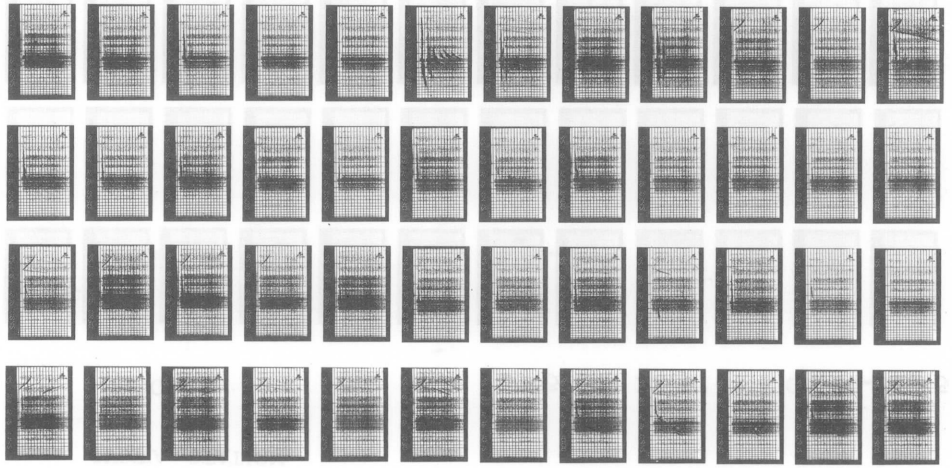
SYOWA STATION

IONOGRAM 1983 12 16 12;00-23;45



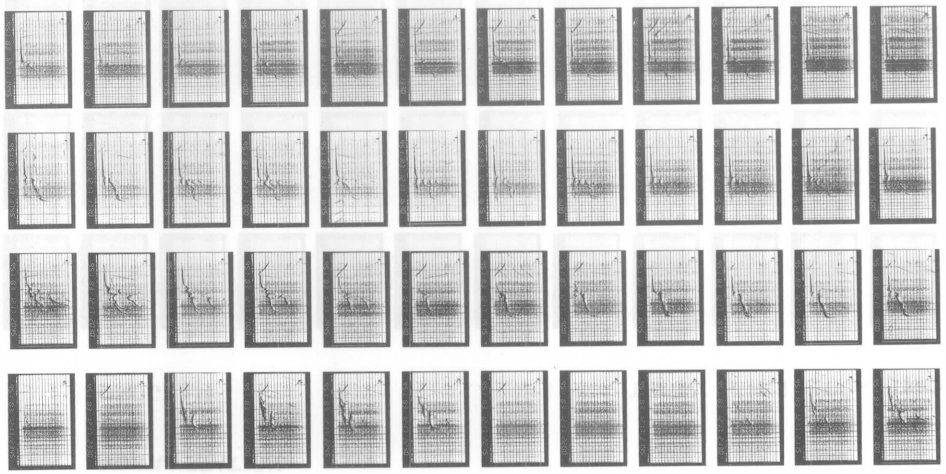
SYOWA STATION

IONOGRAM 1983 12 16 00;00-11;45



SYOWA STATION

IONOGRAM 1983 12 17 12;00-23;45

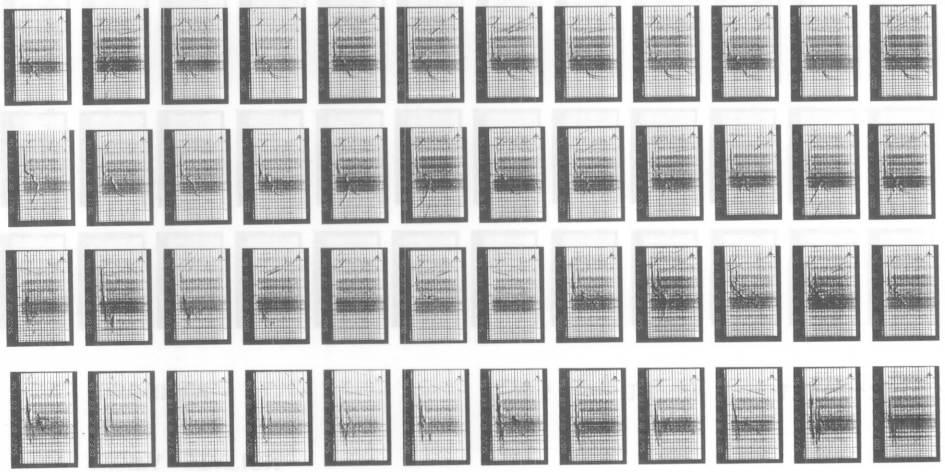


SYOWA STATION

IONOGRAM 1983 12 17 00;00-11;45

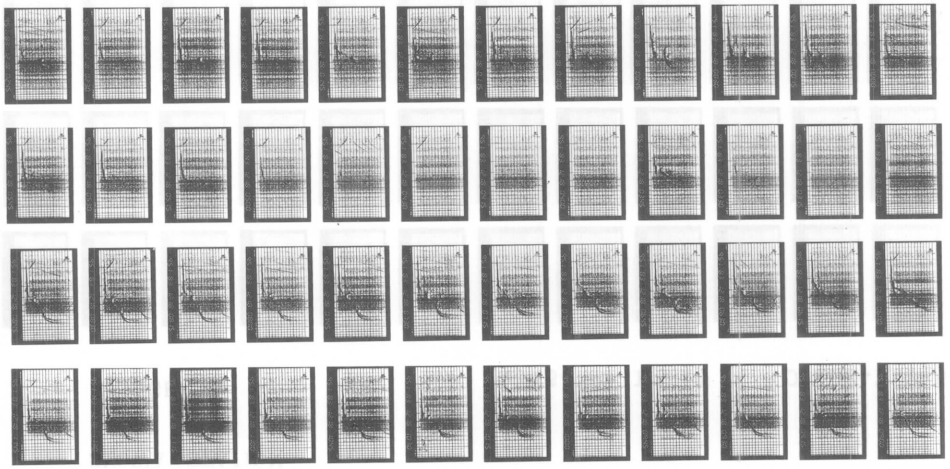
SYOWA STATION

IONOGRAM 1983 12 18 12;00-23;45



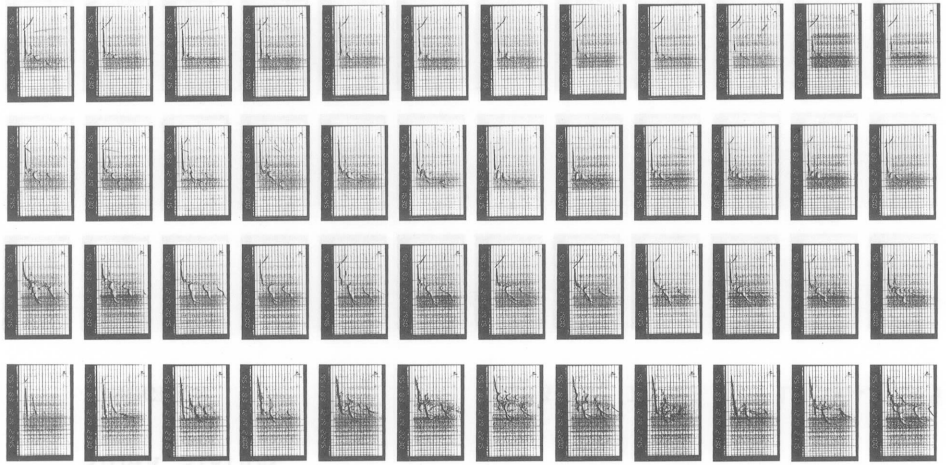
SYOWA STATION

IONOGRAM 1983 12 18 00;00-11;45



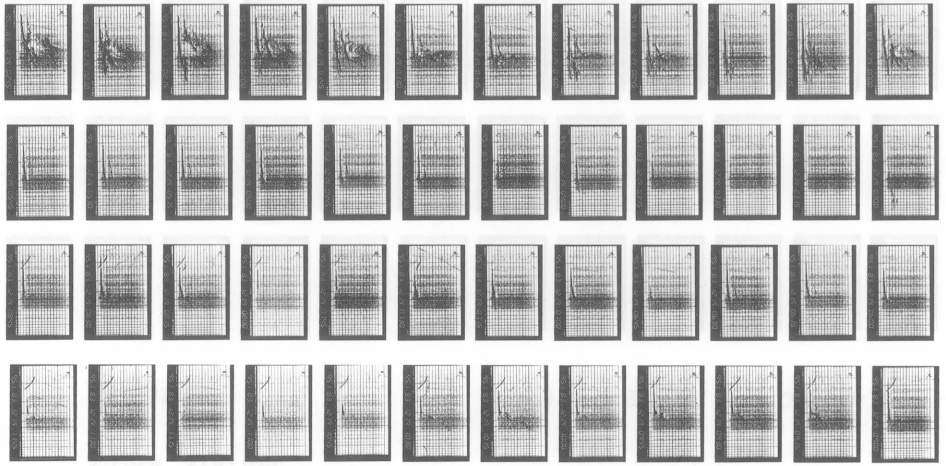
SYOWA STATION

IONOGRAM 1983 12 19 12;00-23;45



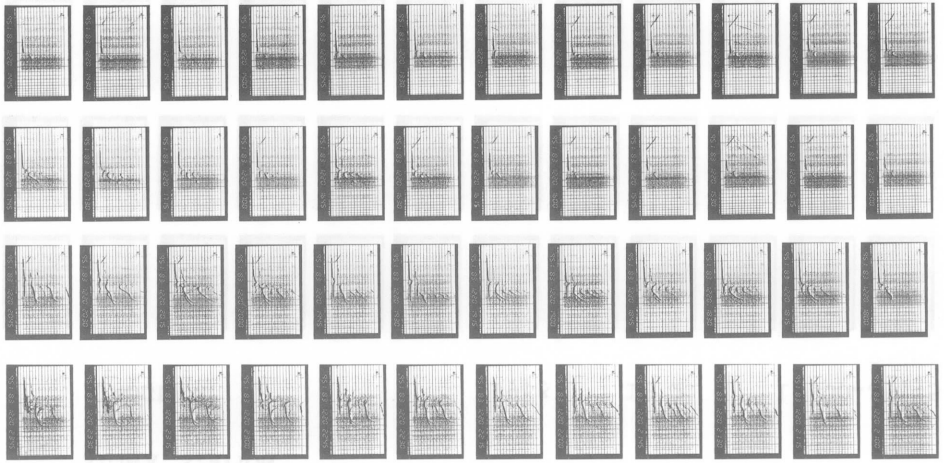
SYOWA STATION

IONOGRAM 1983 12 19 00;00-11;45



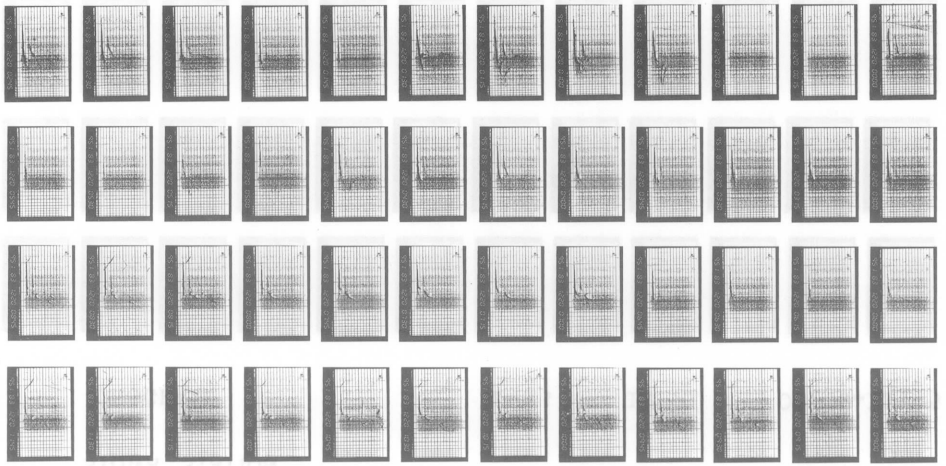
SYOWA STATION

IONOGRAM 1983 12 20 12;00-23;45



SYOWA STATION

IONOGRAM 1983 12 20 00;00-11;45



SYOWA STATION

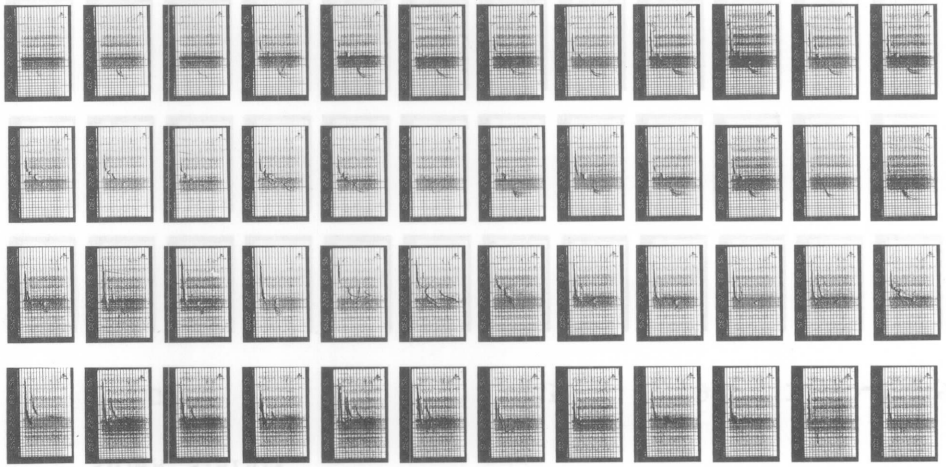
IONOGRAM 1983 12 21 12;00-23;45

SYOWA STATION

IONOGRAM 1983 12 21 00;00-11;45

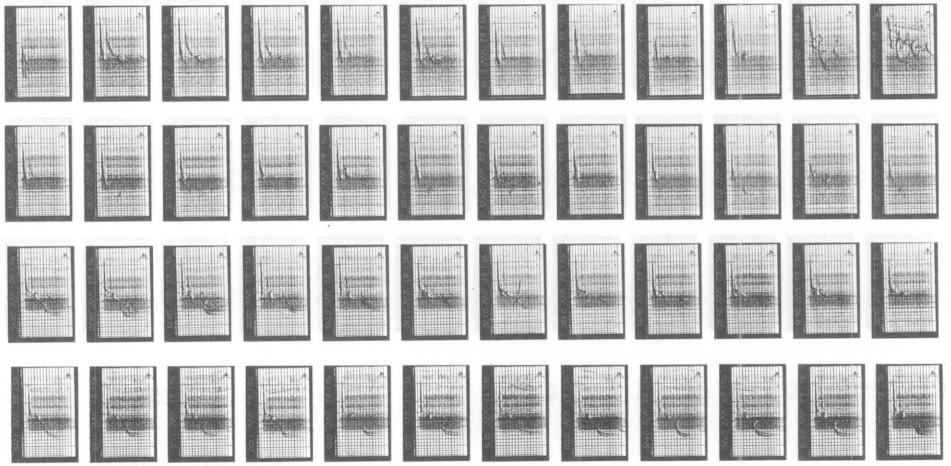
SYOWA STATION

IONOGRAM 1983 12 22 12;00-23;45



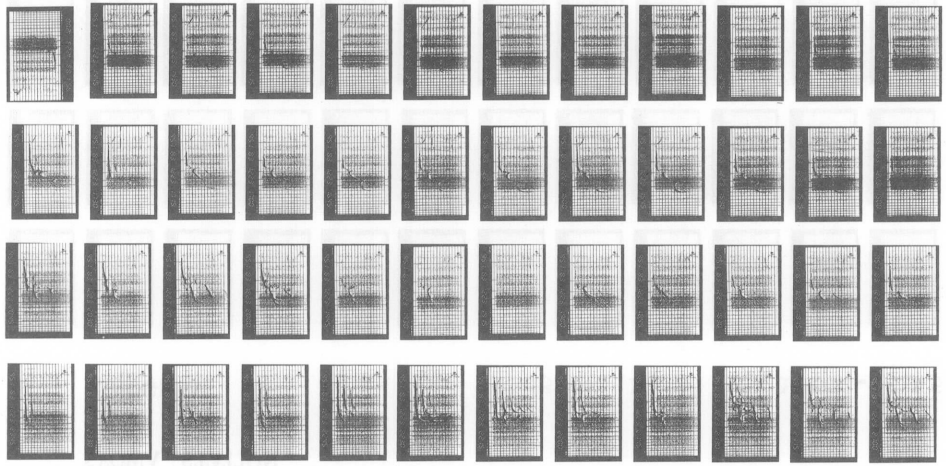
SYOWA STATION

IONOGRAM 1983 12 22 00;00-11;45



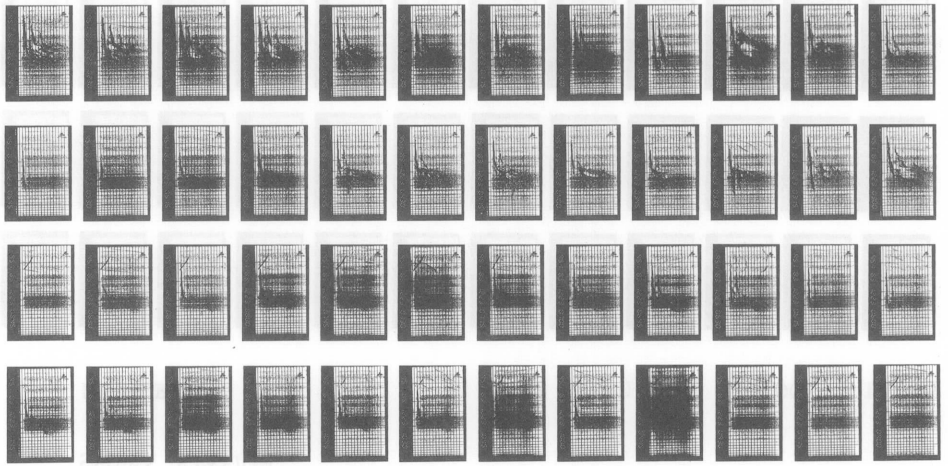
SYOWA STATION

IONOGRAM 1983 12 23 12;00-23;45



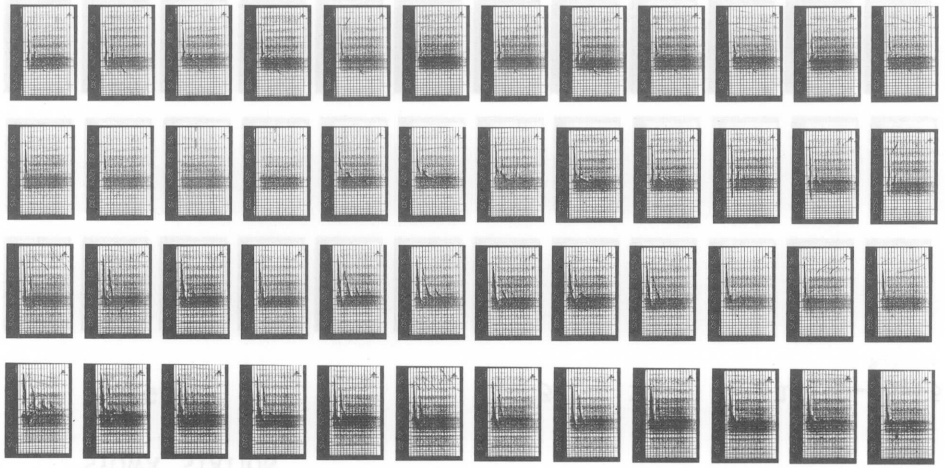
SYOWA STATION

IONOGRAM 1983 12 23 00;00-11;45



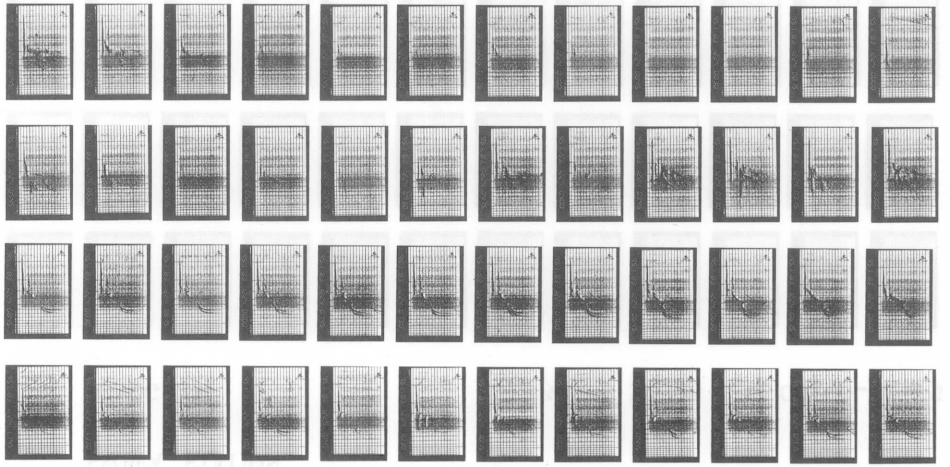
SYOWA STATION

IONOGRAM 1983 12 24 12;00-23;45



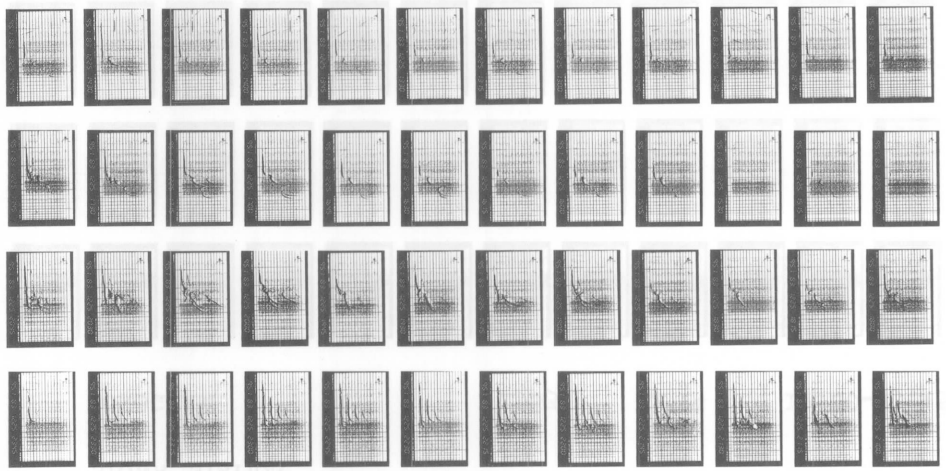
SYOWA STATION

IONOGRAM 1983 12 24 00;00-11;45



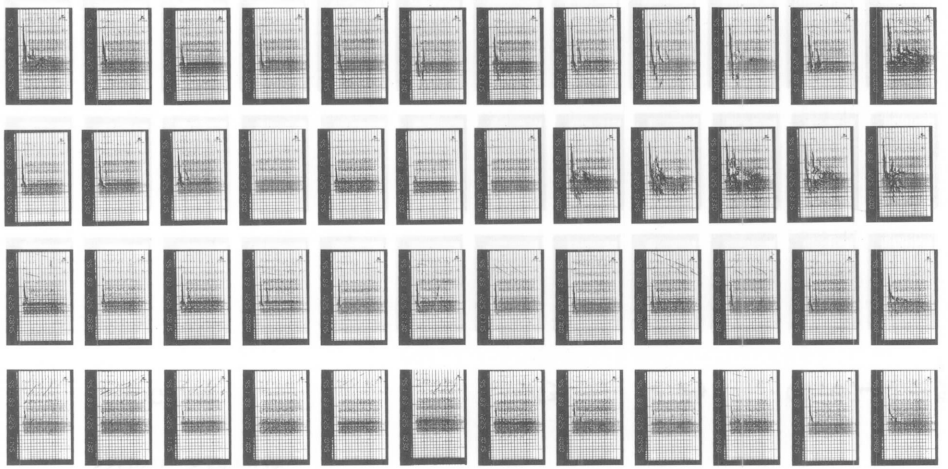
SYOWA STATION

IONOGRAM 1983 12 25 12;00-23;45



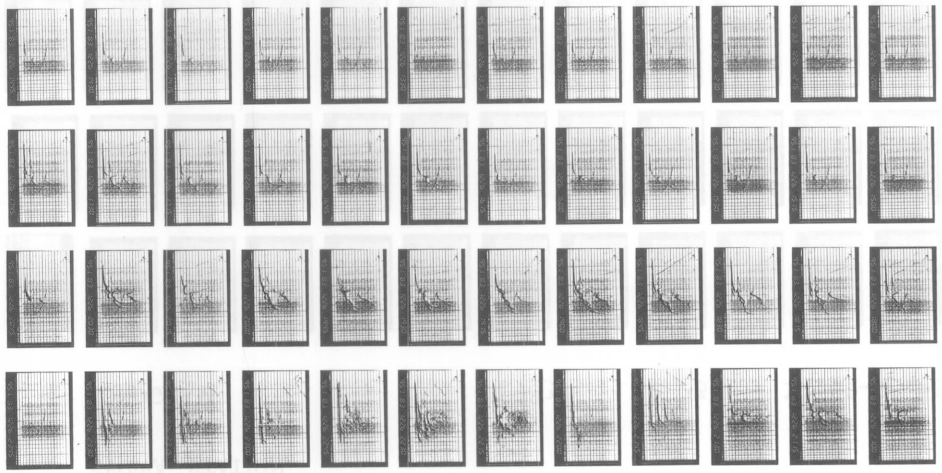
SYOWA STATION

IONOGRAM 1983 12 25 00;00-11;45



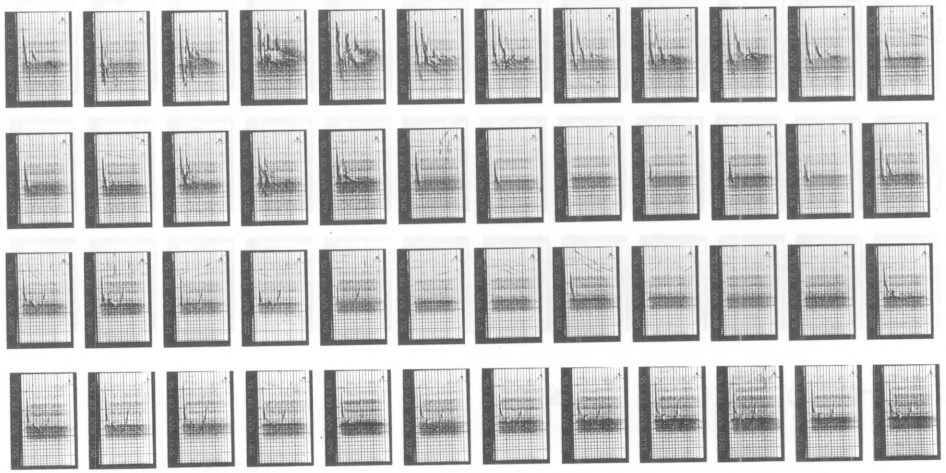
SYOWA STATION

IONOGRAM 1983 12 26 12;00-23;45



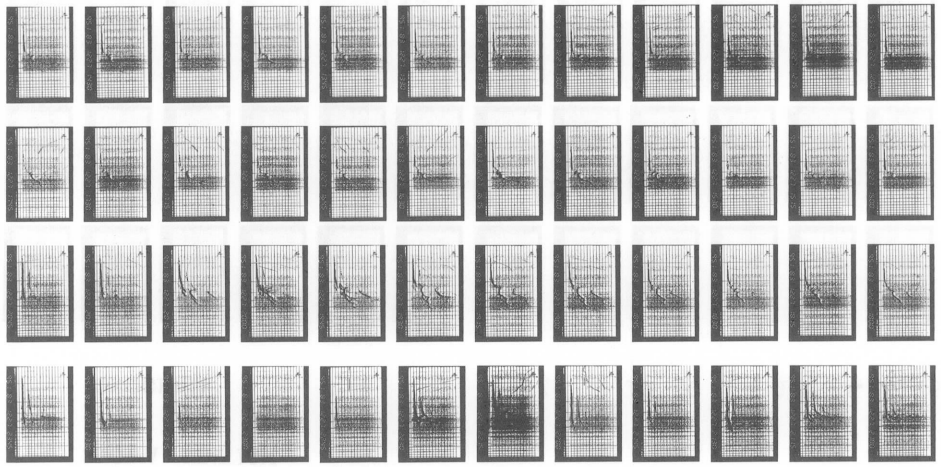
SYOWA STATION

IONOGRAM 1983 12 26 00;00-11;45



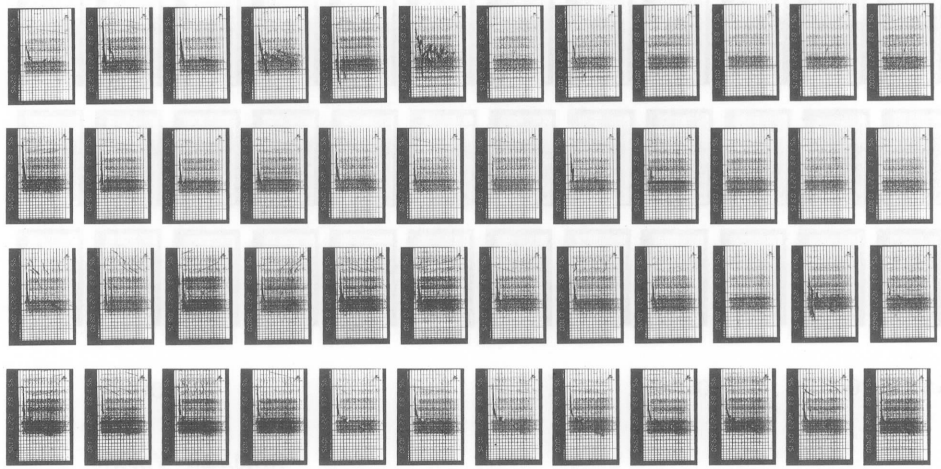
SYOWA STATION

IONOGRAM 1983 12 27 12;00-23;45



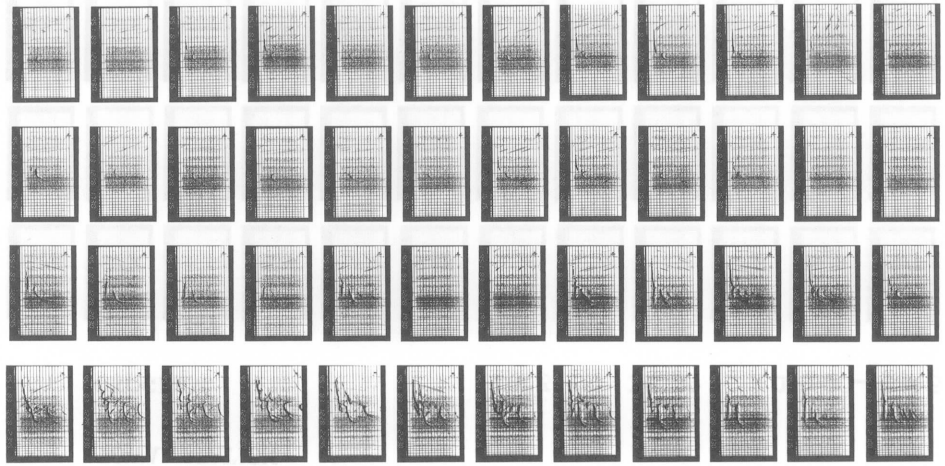
SYOWA STATION

IONOGRAM 1983 12 27 00;00-11;45



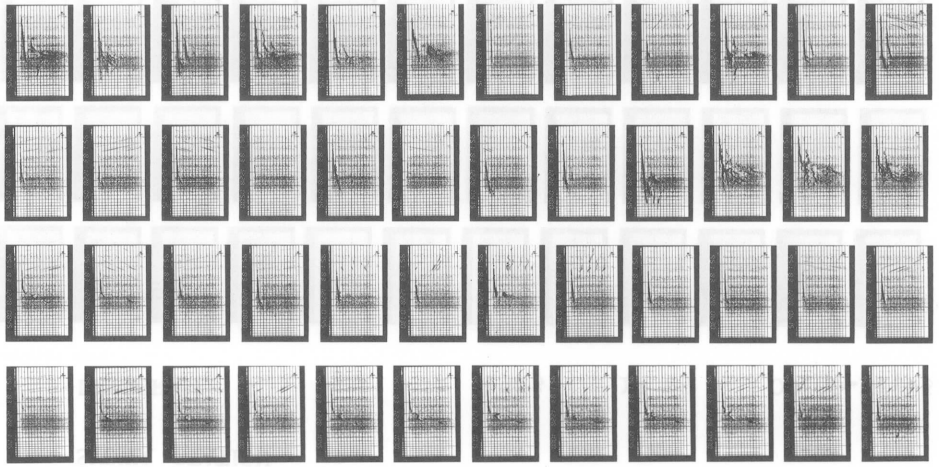
SYOWA STATION

IONOGRAM 1983 12 28 12;00-23;45



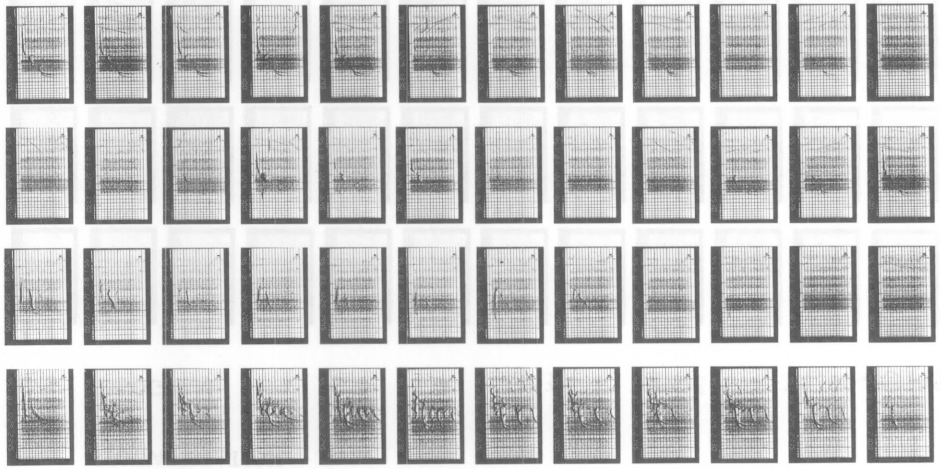
SYOWA STATION

IONOGRAM 1983 12 28 00;00-11;45



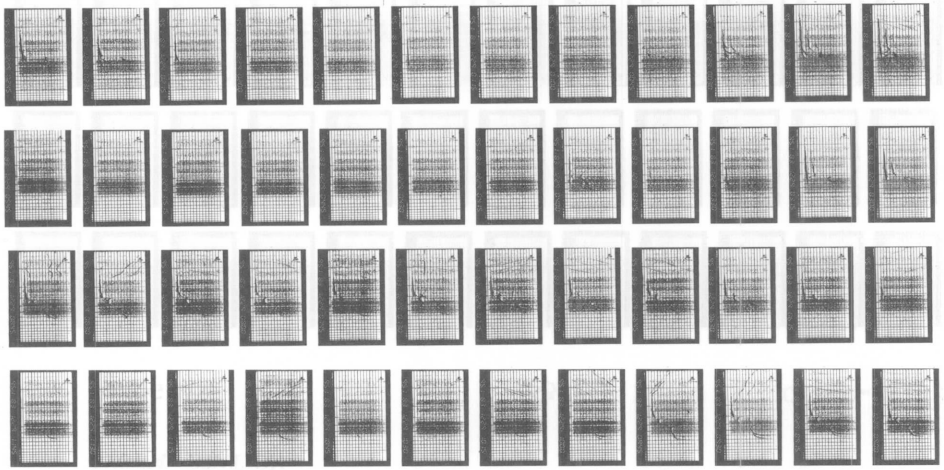
SYOWA STATION

IONOGRAM 1983 12 29 12;00-23;45



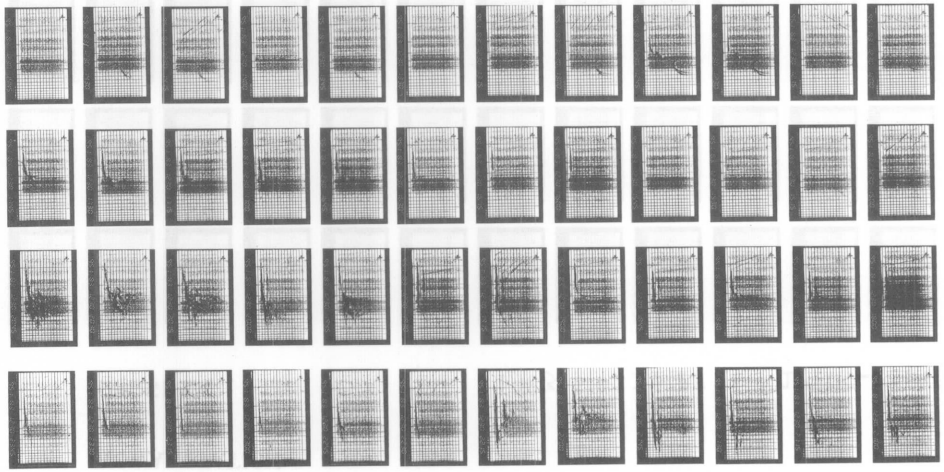
SYOWA STATION

IONOGRAM 1983 12 29 00;00-11;45



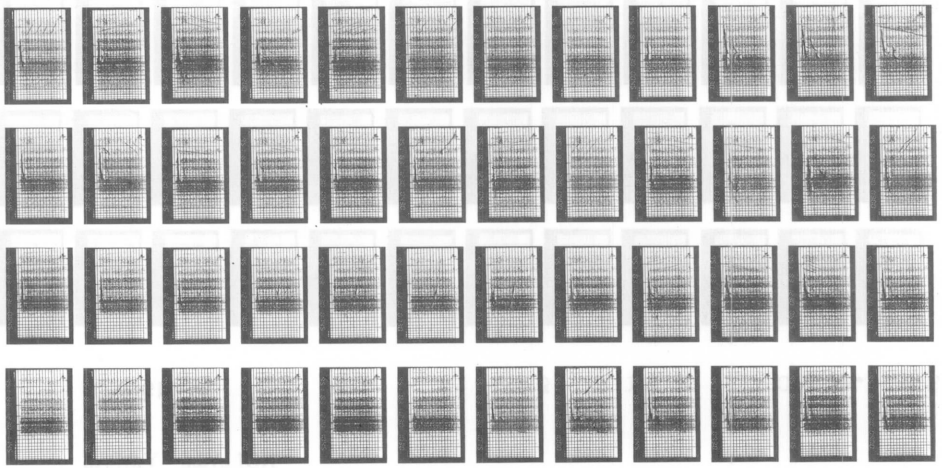
SYOWA STATION

IONOGRAM 1983 12 30 12;00-23;45



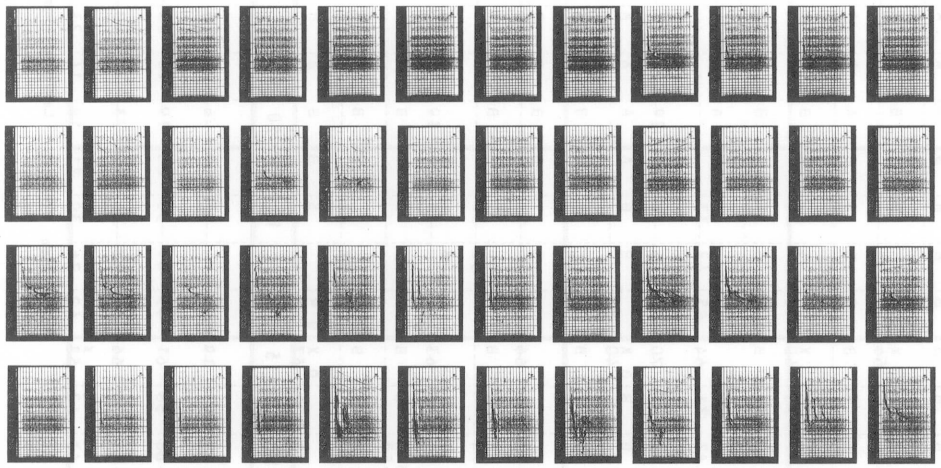
SYOWA STATION

IONOGRAM 1983 12 30 00;00-11;45



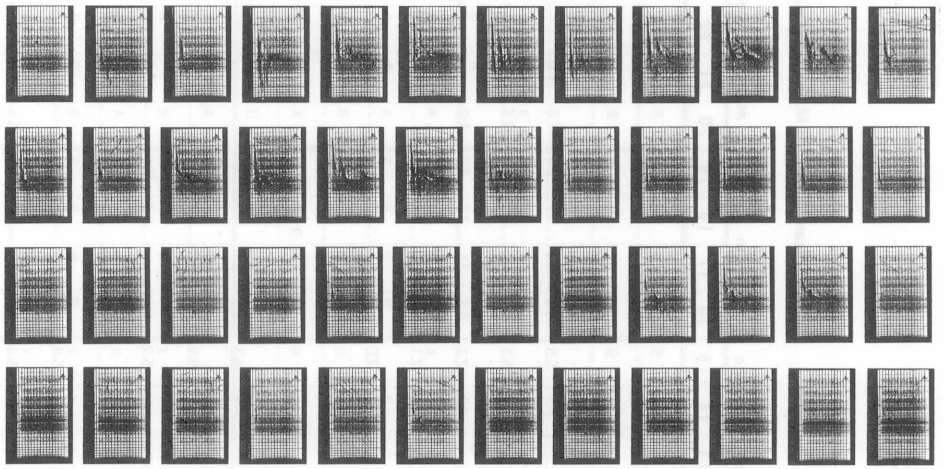
SYOWA STATION

IONOGRAM 1983 12 31 12;00-23;45



SYOWA STATION

IONOGRAM 1983 12 31 00;00-11;45



IONOSPHERIC DATA

JUL. 1983 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00'.4 S, Long. 39° 35'.4 E Sweep 4 MHz to 15 MHz in 20 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	35	A	A	A	69	B	B	O X 48	40	45	61	73	72	X 67	S	O X 36	B	B	A	A	O X 21	O R 20	27
2	A	51	A	A	A	34	33	X 34	59	48	B	B	B	B	B	B	B	B	B	B	B	B	B	A
3	B	A	B	A	A	A	A	43	37	X 34	42	51	61	B	71	58	43	44	31	21	18	14	A	A
4	A	A	A	A	A	A	37	41	A	46	58	53	64	68	68	51	42	40	30	26	O R 23	A	26	A
5	A	36	A	43	A	A	A	37	35	X 32	X 41	X 51	X 53	B	89	71	45	36	32	32	19	A	B	A
6	27	A	A	73	59	58	B	A	A	45	53	X 51	X 61	66	64	X 71	65	B	B	A	A	A	A	A
7	70	A	A	A	A	A	A	B	A	33	42	X 60	59	61	B	70	B	B	B	A	A	A	A	A
8	43	36	A	A	A	B	A	B	A	O R 34	B	B	B	B	B	B	B	B	B	B	B	A	A	A
9	A	35	50	A	A	A	52	B	A	O R 36	35	43	43	62	B	B	O R 41	B	O R 33	B	A	A	A	A
10	A	B	A	B	B	A	A	A	O R 33	31	X 42	O X 48	B	B	O X 53	63	42	25	30	B	B	A	A	A
11	A	A	34	40	A	A	O R 32	33	35	32	41	X 57	X 76	70	62	59	37	40	32	A	A	A	A	A
12	A	59	A	50	23	A	42	48	43	O X 43	51	50	62	70	59	X 59	44	B	53	O R 36	B	25	A	A
13	A	A	O X 42	31	A	B	A	A	A	B	B	B	B	B	B	B	B	B	45	O X 35	A	A	A	A
14	A	A	A	A	A	40	A	A	A	A	A	B	B	B	X 68	O X 58	B	B	B	B	B	B	B	A
15	A	A	A	A	A	A	A	A	A	A	O X 42	52	X 59	66	X 61	X 53	43	35	23	18	15	16	A	A
16	A	A	A	A	60	A	A	52	B	A	A	48	X 51	X 57	70	X 61	X 74	61	O R 36	A	A	A	53	60
17	A	A	A	A	A	A	A	A	S	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A
18	A	A	A	A	A	A	B	B	A	B	B	B	B	B	B	X 56	53	36	B	A	B	A	A	64
19	A	A	B	B	A	B	A	A	A	B	B	X 51	53	B	B	B	B	B	B	B	A	A	A	A
20	A	A	A	A	A	A	A	A	A	B	B	B	B	B	70	X 60	43	S	30	B	B	13	A	A
21	A	A	37	B	A	A	A	A	B	A	B	O X 49	X 65	70	B	B	B	B	S	21	B	A	A	A
22	A	A	A	A	B	A	A	A	A	A	A	53	B	63	71	64	45	42	33	A	A	A	A	A
23	47	A	A	A	A	53	A	62	66	70	70	B	B	45	O X 56	70	60	45	28	22	29	A	A	A
24	A	A	B	A	A	A	B	A	A	A	A	A	B	B	B	O X 40	60	B	B	A	A	A	A	A
25	44	A	70	A	A	B	A	A	A	B	O X 42	B	B	B	B	B	B	40	B	B	B	B	A	A
26	A	A	A	A	A	A	A	A	A	B	B	B	B	X 72	66	66	52	B	52	B	B	B	B	A
27	A	40	A	A	A	34	A	44	44	48	52	B	B	X 74	B	B	B	52	36	B	B	A	A	A
28	A	A	52	B	A	O R 32	X 33	40	X 35	B	B	43	63	71	70	63	B	B	36	26	19	A	A	A
29	A	A	B	B	A	A	A	B	B	35	B	B	B	O X 53	B	B	B	B	B	B	B	A	A	A
30	A	41	A	A	A	B	B	B	A	B	B	B	B	B	B	B	O X 79	71	63	B	B	A	A	A
31	B	A	A	B	A	A	A	A	B	B	B	53	62	73	70	O X 67	O R 61	60	S	B	B	B	B	21
	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	8	6	5	3	7	6	10	10	15	14	17	15	17	17	19	19	14	17	9	6	5	3	4
MED	44	38	46	43	59	40	35	42	40	36	42	51	61	68	63	61	45	41	33	26	19	16	26	44
UQ	47	46	52	50	60	56	42	48	48	46	52	53	64	71	70	66	60	52	36	32	23	21	40	62
LQ	43	36	37	40	41	34	33	37	35	34	X 42	X 49	56	62	X 62	X 58	42	36	30	21	18	14	23	24

The Radio Research Laboratory, Japan

JUL. 1983 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUL. 1983 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 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	F	A	A	A	F	B	B	42	F	F	48	65	62	60	S 45	30	B	B	A	A	15	F 13	F
2	A	A	A	A	A	F	F	28	F	F	B	B	B	B	B	B	B	B	B	B	B	B	B	A
3	B	A	B	A	A	A	A	F 34	J F 31	28	F	F	F	B	F	F	F 36	F	F 23	F	F	F	A	A
4	A	A	A	A	A	A	F	F	A	F	F	F	F 54	F	F	F	F	F	F 23	20	F 15	A	F	A
5	A	F	A	F	A	A	A	J F 31	F	26	35	45	46	B	F	F	35	F	F 23	F 25	F	A	B	A
6	F	A	A	F	F	F	B	A	A	F	F 32	45	55	F 55	F	65	F 54	B	B	A	A	A	A	A
7	A	A	A	A	A	A	A	B	A	F 23	F	44	50	F	B	F	B	B	B	A	A	A	A	A
8	F	F	A	A	A	B	A	B	A	F 25	B	B	B	B	B	B	B	B	B	B	B	A	A	A
9	A	F	F	A	A	A	F	B	A	F 28	F	F 36	F	F 53	B	B	35	B	F 26	B	A	A	A	A
10	A	B	A	B	B	A	A	A	F 24	F	36	42	B	B	47	F 53	J F 56	F	F	B	B	A	A	A
11	A	A	F	F	A	A	F 23	F	F	F	J F 35	51	70	F 61	F	F 48	F	F	F	A	A	A	A	A
12	A	A	A	F	F	A	J F 36	F	F	37	F 43	F 40	F 51	J F 64	50	52	F	B	F 40	F 28	B	F	A	A
13	A	A	36	F	A	B	A	A	A	B	B	B	B	B	B	B	B	B	F	29	A	A	A	A
14	A	A	A	A	A	F	A	A	A	A	A	B	B	B	60	52	B	B	B	B	B	B	B	A
15	A	A	A	A	A	A	A	A	A	A	36	F 42	52	F 56	55	47	F 35	F	F	F	F	F	A	A
16	A	A	A	A	F	A	A	A	B	A	A	40	45	51	F 57	55	68	F 53	F 29	A	A	A	A	F
17	A	A	A	A	A	A	A	A	S	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A
18	A	A	A	A	A	A	B	B	A	B	B	B	B	B	B	50	F 42	F	B	A	B	A	A	A
19	A	A	B	B	A	B	A	A	A	B	B	45	F	B	B	B	B	B	B	B	A	A	A	A
20	A	A	A	A	A	A	A	A	A	B	B	B	B	B	F	53	F	D S 31	F	B	B	F	A	A
21	A	A	F	B	A	A	A	A	B	A	B	43	59	F	B	B	B	B	D S 31	F	B	A	A	A
22	A	A	A	A	B	A	A	A	A	A	A	46	B	F	F	F	F	F	F	A	A	A	A	A
23	F	A	A	A	A	F	A	F	F	F	36	B	B	F	50	F	F	J F 39	F	F	F	A	A	A
24	A	A	B	A	A	A	B	A	A	A	A	A	B	B	B	34	36	B	B	A	A	A	A	A
25	F	A	F	A	A	B	A	A	A	B	36	B	B	B	B	B	B	32	B	B	B	B	A	A
26	A	A	A	A	A	A	A	A	A	B	B	B	B	66	F	F	F	B	F	B	B	B	B	A
27	A	F	A	A	A	F	A	F	F	F	43	B	B	68	B	B	B	F	F	B	B	A	A	A
28	A	A	F	B	A	F 23	27	F 27	29	B	B	F	F	F 62	F	F	B	B	F	F	F	A	A	A
29	A	A	B	B	A	A	A	B	B	F	B	B	B	47	B	B	B	B	B	B	B	A	A	A
30	A	F	A	A	A	B	B	B	A	B	B	B	B	B	B	B	73	F	F	B	B	A	A	A
31	B	A	A	B	A	A	A	A	B	B	B	F	F	F	F	61	F 43	F	D S 42	B	B	B	B	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			1			1	3	4	4	6	9	13	10	11	7	12	12	4	8	4	1	1	1	
MED			36			F 23	F 27	F 30	30	27	36	44	53	F 61	55	52	39	U 41	F 28	26	F 15	15	F 13	
UQ							32	F 32	36	28	36	45	59	63	58	54	F 55	F 46	U 38	28				
LQ							25	28	26	F 25	35	42	50	F 54	50	48	35	32	F 23	22				

JUL. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 1983 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 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	40	42	45	48	70	39	B	B	33	36	35	21	E B 26	E B 23	E B 30	E B 30	E B 24	B	B	27	13	E B 13	13	29
2	34	35	45	50	42	30	32	38	32	14	B	B	B	B	B	B	B	B	B	B	B	B	B	23
3	B	28	B	41	70	45	48	41	26	12	14	19	24	B	E B 32	E B 29	16	26	11	16	30	12	26	43
4	59	48	89	46	45	40	34	31	51	44	30	20	16	18	23	E B 13	33	34	32	22	33	27	34	40
5	41	46	45	47	45	47	41	30	22	16	21	18	23	B	E B 22	19	E B 14	15	E B 13	36	E B 9	14	B	30
6	40	69	45	46	59	59	B	42	48	30	23	29	20	40	42	E B 21	E B 23	B	B	30	43	42	42	40
7	80	51	50	48	54	35	42	B	42	30	19	10	16	E B 50	B	E B 22	B	B	B	38	41	32	36	43
8	80	70	36	36	38	B	46	B	44	33	B	B	B	B	B	B	B	B	B	B	B	27	35	23
9	41	41	35	59	53	60	35	B	35	43	23	28	E B 23	24	B	B	E B 22	B	E B 20	B	16	29	42	43
10	90	B	42	B	B	43	60	36	36	30	19	E B 27	B	B	E B 23	E B 20	16	20	E B 16	B	B	27	24	17
11	24	27	27	35	50	36	40	30	20	30	15	16	22	20	19	17	26	24	E B 20	40	10	23	30	29
12	35	42	37	31	40	40	28	20	13	17	19	18	17	29	36	35	E B 38	B	E B 13	E B 21	B	41	43	62
13	45	43	43	44	64	B	35	42	60	B	B	B	B	B	B	B	B	B	28	26	20	31	30	33
14	35	41	40	40	36	75	63	45	41	40	36	B	B	B	E B 26	E B 40	B	B	B	B	B	B	B	33
15	35	36	35	41	51	50	59	45	41	41	34	33	34	19	17	E B 16	44	22	30	15	11	16	22	48
16	59	43	57	42	35	30	63	37	B	34	31	24	21	26	26	18	15	E B 23	26	30	32	43	42	45
17	90	40	37	37	15	17	32	35	71	26	B	B	B	B	B	B	B	B	B	B	45	21	41	36
18	93	40	36	66	45	30	B	B	59	B	B	B	3	B	3	E B 22	E B 20	E B 23	B	30	B	23	40	45
19	41	70	B	B	43	B	43	35	36	B	B	25	E B 30	B	3	B	B	B	B	B	41	25	40	43
20	43	36	42	45	59	48	42	42	44	B	B	B	B	B	E B 21	E B 18	E B 21	E B 20	E B 13	B	B	30	30	36
21	36	36	60	B	36	51	52	63	B	37	B	25	E B 40	E B 35	B	B	B	B	E B 23	E B 13	B	30	40	41
22	34	41	36	42	B	40	58	51	58	42	31	21	B	E B 30	E B 22	26	32	30	E B 23	30	32	22	22	40
23	69	90	31	43	37	37	59	39	29	17	28	B	B	E B 30	30	32	18	30	29	30	32	58	52	53
24	104	33	B	42	72	48	B	31	70	45	60	26	B	B	B	E B 23	E B 11	B	B	36	45	34	45	44
25	58	80	60	51	35	B	36	33	25	B	28	B	B	B	B	B	B	E B 23	B	B	B	B	32	38
26	39	37	60	81	41	43	44	57	48	B	B	B	B	E B 40	26	37	37	B	E B 16	B	B	B	B	60
27	33	31	44	46	42	48	46	42	32	E B 14	33	B	B	25	B	B	B	20	15	B	B	30	18	41
28	39	44	70	B	44	34	20	19	36	B	B	32	27	E B 23	E B 51	E B 40	B	B	E B 23	E B 13	36	23	41	36
29	47	48	B	59	45	37	40	B	B	36	B	B	B	E B 30	B	B	B	B	B	B	B	33	45	45
30	51	37	64	48	70	B	B	B	71	B	B	B	B	B	B	B	E B 60	E B 33	E B 29	B	B	28	37	39
31	B	35	47	B	58	43	44	43	B	B	B	E B 29	E S 48	E B 62	E B 53	E B 30	E B 16	E B 19	E B 28	B	B	B	B	20
	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	27	26	29	26	26	24	27	22	18	18	15	17	17	20	19	15	19	17	17	26	26	31
MED	41	41	44	46	45	42	42	38	41	32	28	22	20	E B 29	E B 26	E B 22	E B 22	22	E B 23	30	32	28	36	40
UQ	59	48	54	48	58	48	52	42	50	40	33	27	26	E B 35	29	E B 31	29	26	27	30	41	32	42	44
LQ	36	36	36	41	40	36	35	32	32	17	19	19	19	23	E B 22	E B 18	E B 16	18	E B 16	21	16	23	30	33

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 1983 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 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	7	7	8	10	19	12	B	B	16	14	12	13	26	23	30	30	24	B	B	14	10	13	9	11
2	9	8	11	11	10	9	13	9	8	8	B	B	B	B	B	B	B	B	B	B	B	B	B	17
3	B	19	B	8	13	11	11	9	8	8	9	10	18	B	32	29	13	8	10	9	9	9	8	9
4	9	9	18	10	10	11	9	8	13	8	8	10	9	8	11	13	9	9	7	7	8	18	7	14
5	7	12	7	9	22	10	9	7	10	9	10	11	11	B	22	13	14	13	13	9	9	10	B	20
6	9	7	9	10	11	11	B	14	11	13	11	10	7	10	8	21	23	B	B	B	8	7	7	8
7	13	16	11	13	19	13	12	B	17	10	10	9	12	50	B	22	B	B	B	13	7	13	8	9
8	7	16	16	19	16	B	21	B	16	12	B	B	B	B	B	B	B	B	B	B	B	13	7	7
9	7	10	7	19	12	15	10	B	20	13	10	11	23	19	B	B	22	B	20	B	8	7	7	7
10	16	B	14	B	B	23	24	3	13	10	13	27	B	B	23	20	11	16	16	B	B	14	11	9
11	7	7	7	9	10	13	11	9	9	8	8	10	10	10	8	16	12	13	20	16	9	10	10	11
12	7	11	8	8	8	8	9	8	8	7	8	7	8	10	10	7	38	B	13	21	B	7	8	9
13	8	10	12	10	14	B	24	14	19	B	B	B	B	B	B	B	B	B	14	13	11	9	10	8
14	9	10	13	12	14	13	13	14	10	24	14	B	B	B	26	40	B	B	B	B	B	B	B	7
15	7	7	10	17	15	13	13	23	20	13	12	13	13	13	12	16	10	12	9	8	8	8	10	8
16	13	18	12	9	13	9	23	14	B	9	22	18	19	12	12	9	8	23	19	15	12	7	7	7
17	14	8	20	16	10	8	8	13	E S 50	8	B	B	B	B	B	B	B	B	B	B	8	10	10	8
18	15	13	13	14	13	13	B	B	22	B	B	B	B	B	B	22	20	23	B	8	B	12	8	6
19	9	7	5	B	20	B	28	20	13	B	B	20	30	B	B	B	B	B	B	B	7	11	10	8
20	20	22	7	22	20	23	23	13	11	B	B	B	B	B	21	18	21	20	13	B	B	7	7	7
21	7	7	13	B	20	15	13	27	B	21	B	20	40	35	B	B	B	B	23	13	B	19	7	10
22	16	21	14	23	B	22	13	14	11	16	23	13	B	30	22	14	11	23	23	18	10	13	13	8
23	7	7	11	13	7	7	17	11	11	9	14	B	B	30	23	20	16	10	11	7	7	7	10	13
24	13	19	B	15	13	11	B	15	15	14	20	16	B	B	B	23	11	B	B	8	7	12	11	7
25	7	7	7	13	20	B	21	18	7	B	23	B	B	B	B	B	B	23	B	B	B	B	11	7
26	7	14	7	8	20	31	18	13	10	B	B	B	B	40	23	18	19	B	16	B	B	B	B	11
27	7	20	13	14	10	13	11	8	9	14	10	B	B	18	B	B	B	15	11	B	B	20	7	7
28	7	8	9	B	11	13	11	8	9	B	B	21	22	23	51	40	B	B	23	13	7	21	8	7
29	13	13	B	32	18	7	23	B	B	23	B	B	B	30	B	B	B	B	B	B	B	7	7	9
30	20	7	7	7	13	B	B	B	21	B	B	B	B	B	B	B	60	33	29	B	B	7	7	10
31	B	23	7	6	24	23	18	11	B	B	B	29	48	62	53	30	16	19	28	B	B	B	B	9
	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	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	9	10	11	13	14	13	17	14	13	14	22	21	B	50	51	29	23	B	23	18	11	12	9	8
UQ	14	17	14	20	20	23	24	25	20	B	B	B	B	B	B	B	B	B	B	B	B	18	11	10
LQ	7	7	8	10	11	11	11	9	10	9	10	12	18	21	22	18	14	18	14	11	8	8	7	7

JUL. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 1983 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00' 4 S, Long. 39° 35' 4 E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Day \ 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
1	A	A	A	A	A	A	B	B	A	A	295	245	250	225	240	230	B	B	B	A	A	B	A	A
2	A	A	A	A	A	A	A	A	290	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A
3	B	A	B	A	A	A	A	A	A	255	260	210	250	B	E B 240	220	210	250	220	270	A	A	A	A
4	A	A	A	A	A	A	A	A	A	305	250	225	220	205	220	210	205	230	240	250	330	A	A	A
5	A	A	A	A	A	A	A	320	280	305	245	220	215	B	250	205	210	210	240	240	250	A	B	A
6	A	A	A	A	A	A	B	A	A	A	260	235	200	240	240	240	225	B	B	A	A	A	A	A
7	A	A	A	A	A	A	A	B	A	A	290	220	245	B	B	260	B	B	B	A	A	A	A	A
8	A	A	A	A	A	B	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A
9	A	A	A	A	A	A	A	B	A	350	305	295	280	235	B	B	E B 250	B	E B 255	B	A	A	A	A
10	A	B	A	B	B	A	A	A	A	330	260	290	B	B	220	205	250	E B 250	210	B	B	A	A	A
11	A	A	A	A	A	A	A	A	300	330	250	240	200	210	180	225	205	250	255	A	A	A	A	A
12	A	A	A	A	A	A	A	300	250	270	210	205	200	220	200	240	240	B	250	260	B	A	A	A
13	A	A	A	A	A	B	A	A	A	B	B	B	B	B	B	B	B	B	245	280	A	A	A	A
14	A	A	A	A	A	A	A	A	A	A	A	B	B	B	250	E B 260	B	B	B	B	B	B	B	A
15	A	A	A	A	A	A	A	A	A	A	A	250	230	210	205	205	A 210	240	230	220	300	A	A	A
16	A	A	A	A	A	A	A	A	B	A	A	250	205	205	230	270	220	215	260	A	A	A	A	A
17	A	A	A	A	A	A	A	A	S	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A
18	A	A	A	A	A	A	B	B	A	B	B	B	B	B	B	250	240	B	B	A	B	A	A	A
19	A	A	B	B	A	B	A	A	A	B	B	260	230	B	B	B	B	B	B	B	A	A	A	A
20	A	A	A	A	A	A	A	A	A	B	B	B	B	B	205	230	235	B	230	B	B	A	A	A
21	A	A	A	B	A	A	A	A	B	A	B	260	E B 270	250	B	B	B	B	265	250	B	A	A	A
22	A	A	A	A	B	A	A	A	A	A	A	240	B	250	230	230	245	A	250	A	A	A	A	A
23	A	A	A	A	A	A	A	A	A	295	290	B	B	B	290	250	240	220	235	A	A	A	A	A
24	A	A	B	A	A	A	B	A	A	A	A	A	A	B	B	B	205	B	B	A	A	A	A	A
25	A	A	A	A	A	B	A	A	A	B	B	B	B	B	B	B	B	245	B	B	B	B	A	A
26	A	A	A	A	A	A	A	A	A	B	B	B	B	240	230	220	240	B	230	B	B	B	B	A
27	A	A	A	A	A	A	A	A	280	245	245	B	B	240	B	B	B	205	250	B	B	A	A	A
28	A	A	A	B	A	A	A	A	310	B	B	260	240	230	B	B	B	B	E B 255	E B 255	A	A	A	A
29	A	A	B	B	A	A	A	B	B	A	B	B	B	255	B	B	B	B	B	B	B	A	A	A
30	A	A	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	250	230	B	B	A	A	A
31	B	A	A	B	A	A	A	A	B	B	B	245	S	B	B	215	200	220	225	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								2	6	9	12	17	14	14	15	18	17	12	19	8	3			
MED								310	285	305	260	245	228	232	230	229	222	230	242	251	300			
UQ									300	330	290	260	248	240	240	245	240	250	255	265	315			
LQ									280	270	248	225	205	210	212	215	210	218	230	245	275			

The Radio Research Laboratory, Japan

JUL. 1983 | H'F (KM)

IONOSPHERIC DATA

AUG. 1983 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Day \ 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
1	A	A	A	30	30	X 37	34	A	45	O R 43	53	71	B	B	72	71	48	B	B	B	B	B	B	A
2	A	A	A	A	B	A	60	A	A	A	B	B	B	58	X 54	62	64	X 69	R	A	A	A	A	60
3	63	A	B	A	A	A	A	A	A	B	B	61	73	80	70	X 67	73	54	53	A	28	A	A	A
4	A	A	A	S 35	S	A	S	A	A	A	47	B	X 68	65	61	74	48	S	S	B	B	B	B	A
5	51	A	A	A	A	37	36	36	42	X 43	X 60	X 68	X 76	70	66	69	45	X 39	40	X 32	16	15	15	A
6	16	17	O R 22	O R 21	31	38	45	42	42	44	O X 64	67	68	71	69	67	59	X 43	X 42	36	28	31	23	A
7	A	A	A	A	A	42	A	37	42	43	X 54	59	X 65	69	68	70	81	63	48	19	A	A	A	A
8	A	A	A	A	A	A	A	B	B	35	A	A	36	O X 48	B	B	B	B	B	22	B	B	A	A
9	A	A	43	31	B	A	A	A	A	X 41	O X 47	O X 56	O X 55	S	X 63	65	54	X 42	B	O X 25	18	A	A	A
10	A	A	A	A	A	29	32	A	A	A	X 53	62	73	80	81	B	71	70	61	O R 33	A	B	B	A
11	A	32	27	A	50	A	A	38	45	51	S	62	80	74	74	71	75	35	43	B	B	B	A	A
12	A	A	36	A	A	55	A	A	A	B	B	B	B	B	72	80	90	90	88	A	38	85	A	A
13	A	62	A	A	A	46	43	A	A	B	B	B	B	B	O X 50	73	71	71	52	A	A	A	A	A
14	A	B	A	B	B	B	A	A	O R 62	B	B	O X 51	X 61	X 63	X 74	X 63	62	70	56	X 26	30	A	A	A
15	A	A	A	B	A	B	A	35	44	B	B	X 67	70	73	91	B	83	73	64	45	A	B	A	A
16	A	A	A	A	A	A	A	32	43	X 51	X 61	X 71	O X 86	X 74	X 67	X 81	73	64	60	59	35	A	A	A
17	A	A	A	A	B	A	A	A	A	A	60	X 66	X 73	X 73	X 72	77	63	62	S	50	23	22	16	17
18	19	A	A	A	26	34	40	43	48	X 54	X 65	X 72	80	86	O X 86	80	70	55	53	42	17	16	24	O X 20
19	O X 20	60	16	50	55	50	47	46	36	O X 57	X 68	X 75	81	82	83	80	70	X 67	X 74	68	A	A	A	A
20	70	60	A	A	A	45	A	A	B	X 44	X 55	60	63	X 74	X 86	X 80	73	90	73	O R 32	A	A	A	A
21	40	A	36	28	A	A	B	A	A	B	B	B	B	B	B	B	B	O X 47	53	32	A	A	44	A
22	59	40	A	A	A	A	A	35	B	C	61	O X 70	76	X 80	80	70	73	X 60	O R 44	O R 32	24	A	A	44
23	A	A	A	45	A	42	33	A	B	A	B	B	B	B	O X 51	O X 49	48	63	B	S	A	A	A	B
24	A	A	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
25	A	A	A	B	A	A	A	B	B	B	O X 43	B	B	B	B	B	B	83	B	B	A	A	A	A
26	A	A	40	B	A	A	B	A	A	B	B	B	B	B	B	B	100	90	B	A	B	A	A	A
27	A	A	A	A	B	B	A	46	O X 42	O X 52	X 64	X 69	X 71	X 74	X 74	X 81	X 81	84	71	44	17	O X 20	A	A
28	A	A	A	43	A	A	A	A	B	O X 51	S	71	O X 74	O X 75	O X 86	O X 86	72	62	64	40	30	B	A	A
29	A	A	A	A	A	B	B	B	B	58	68	X 71	69	X 80	84	90	39	83	31	50	35	80	60	A
30	A	A	A	70	34	A	A	A	A	A	B	B	42	45	61	58	O X 54	X 52	O R 42	B	A	A	A	A
31	A	A	A	A	60	29	B	B	B	B	B	B	B	B	B	B	X 72	68	58	B	A	A	A	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	8	6	7	9	7	12	9	10	11	14	16	19	21	21	25	23	27	27	21	18	13	7	6	4
MED	46	50	36	35	34	40	40	38	43	X 48	X 60	X 67	71	74	72	71	71	67	56	34	28	22	24	32
UQ	61	60	38	45	52	46	45	43	45	X 52	X 64	X 71	76	X 80	81	80	74	73	64	45	30	56	44	52
LQ	20	32	24	30	30	36	34	35	42	43	X 53	62	65	69	66	67	60	58	48	32	18	18	16	18

AUG. 1983 | FXI (0.1 MHZ)

IONOSPHERIC DATA

AUG. 1983 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 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	F	F 22	31	F	A	F	F 35	F 42	F	B	B	F	F	F	B	B	B	B	B	B	A
2	A	A	A	A	B	A	F	A	A	A	B	B	B	50	48	F 50	F 55	63	D R 68	A	A	A	A	F
3	F	A	B	A	A	A	A	A	A	B	B	F	F	F	F	60	F 65	F	F	A	F	A	A	A
4	A	A	A	F	S	A	S	A	A	A	F	B	61	F	F 53	F 65	F 40	F 31	S 32	B	B	B	B	A
5	F	A	A	A	A	F	F	F	F	J R 37	56	62	70	60	F 53	60	F	J R 33	F	J R 26	F	F	F	A
6	F	F	F 14	F 14	F	F	F	F	F	F	58	F 58	60	F	F	F	51	37	36	J F 26	F	F	F	A
7	A	A	A	A	A	F	A	F	F	F	48	51	59	F 60	F 58	F 60	F	F 55	J F 42	F	A	A	A	A
8	A	A	A	A	A	A	A	B	B	F	A	A	F	42	B	B	B	B	B	F	B	B	A	A
9	A	A	F	F	B	A	A	A	A	35	41	50	49	S 32	57	F 45	F 46	36	8	19	F	A	A	A
10	A	A	A	A	A	F	F	A	A	A	47	F	F 61	F 70	F 67	B	F	F	F	F 26	A	B	B	A
11	A	F	F 19	A	F	A	A	F	F	F 41	S 41	F	F	F	F	F	F	F	F	B	B	B	A	A
12	A	A	F	A	A	F	A	A	A	B	B	B	B	B	F 61	F	F	F	F	A	F	F	A	A
13	A	F	A	A	A	F	F	A	A	B	B	B	B	B	44	F 60	F	F	J F 46	A	A	A	A	A
14	A	B	A	B	B	B	A	A	F 54	B	B	45	55	56	68	J R 57	F	62	F	20	F	A	A	A
15	A	A	A	B	A	B	A	F	J F 38	B	B	61	F	65	F 30	B	F 68	F	F	F	A	B	A	A
16	A	A	A	A	A	A	A	F 22	35	44	55	65	80	68	61	J R 75	J F 67	J F 53	F	F 51	F	A	A	A
17	A	A	A	A	B	A	A	A	A	A	F	59	67	67	66	F 69	F 56	F	F 32	F	F	F	F	F
18	F	A	A	A	F	F	F	F	F	48	59	65	F 70	F 70	80	F 66	J F 64	J F 49	J F 47	F 34	F	F	F 17	14
19	14	F	F	F	F	F	F	F	J F 30	51	62	69	F	J F 76	F	F 60	F	61	68	F	A	A	A	A
20	F	F	A	A	A	F	A	A	B	38	48	51	F	68	30	73	F	F	F	F 24	A	A	A	A
21	F	A	F	F	A	A	B	A	A	B	B	B	B	B	B	B	B	41	F	F	A	A	F	A
22	F	F	A	A	A	A	A	F	B	C	F	63	J F 70	73	F 70	F 63	60	53	F 35	F 24	F	A	A	F
23	A	A	A	F	A	F	F	A	B	A	B	B	B	B	45	43	F	F	B	S	A	A	A	B
24	A	A	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
25	A	A	A	B	A	A	A	B	B	B	37	B	B	B	B	B	B	75	B	B	A	A	A	A
26	A	A	F	B	A	A	B	A	A	B	B	B	B	B	B	B	F	F	B	A	B	A	A	A
27	A	A	A	A	B	B	A	F	36	46	58	63	J R 65	68	68	75	75	F	F	F	F	14	A	A
28	A	A	A	F	A	A	A	A	B	45	S 45	F	68	69	80	30	F	F	F	J F 34	F	B	A	A
29	A	A	A	A	A	B	B	B	B	F 45	60	65	F 61	74	F 75	F 83	F 70	F	J F 75	F	F	F	F	A
30	A	A	A	F	F	A	A	A	A	A	B	B	F	F	F 43	45	48	46	F 35	B	A	A	A	A
31	A	A	A	A	A	F	B	B	B	B	B	B	B	B	B	B	F 66	F 58	51	B	A	A	A	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		2	1	1	1		1	5	11	15	14	14	17	20	19	14	15	12	10		1	1	1
MED	14		F 16	F 14	F 22	31		F 22	F 36	44	48	62	63	68	64	F 60	F 62	53	F 44	F 26		14	F 17	14
UQ									F 38	46	58	65	70	70	72	71	F 67	60	60	J F 34				
LQ									35	38	44	51	60	60	53	58	F 51	39	F 35	F 24				

AUG. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

AUG. 1983 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION | Lat. 69° 00.4' S, | Long. 39° 35.4' E | Sweep 4 MHz to 15 MHz in 20 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	30	41	44	32	31	26	37	52	34	43	41	E B 22	B	B	E B 27	21	E B 29	B	B	B	B	B	B	40
2	35	41	53	42	B 72	60	59	67	50	B	B	B	E B 26	21	E B 24	14	21	E B 50	36	44	51	50	70	
3	41	42	B 65	42	39	42	49	58	B	B	E B 25	E B 22	E B 23	E B 21	26	E B 22	25	17	42	33	32	60	45	
4	40	90	39	S 35	S 30	70	35	28	35	31	30	B	E B 30	E B 50	E B 31	E B 20	E B 16	E B 19	E B 20	B	B	B	B	16
5	38	45	48	41	41	36	41	29	26	13	29	19	29	30	22	25	43	14	31	29	17	13	20	28
6	23	17	30	32	36	32	29	21	12	30	18	26	25	31	25	19	17	15	25	21	20	25	31	43
7	48	45	42	48	50	40	42	37	19	19	20	23	26	19	19	25	30	12	16	E B 14	36	19	42	50
8	49	100	63	61	60	A	S 31	B	B	22	36	58	36	31	B	B	B	B	B	19	B	B	29	31
9	34	36	31	26	B	36	42	36	48	36	20	16	23	E B 23	E B 24	23	E B 23	26	B	26	18	29	31	31
10	32	36	36	35	29	33	36	48	48	36	25	E B 28	31	29	23	B	E B 60	E B 24	E B 23	E B 19	27	B	B	19
11	37	30	30	38	39	42	45	32	30	24	28	27	30	40	E B 23	30	70	E B 18	E B 26	B	B	B	32	38
12	38	40	45	35	45	32	86	48	58	B	B	B	B	B	29	E B 30	E B 21	34	31	47	47	52	52	52
13	50	51	58	50	42	36	32	30	48	B	B	B	B	B	E B 23	E B 27	E B 57	40	34	50	30	36	40	32
14	58	B	37	B	B	B	37	36	32	B	B	E B 23	26	26	E B 23	23	E B 27	E B 29	E B 18	E B 11	23	27	40	42
15	47	42	42	B	42	B	43	42	38	B	B	E B 25	E B 30	E B 26	24	B	E B 22	79	E B 15	31	42	B	30	31
16	36	46	51	51	42	36	41	20	13	16	21	E B 22	21	E B 23	E B 21	E B 23	26	30	27	31	26	29	28	37
17	34	70	90	42	B 48	48	60	60	51	26	25	26	E B 40	E B 30	E B 30	E B 28	34	E B 23	16	E B 13	30	16	18	
18	26	35	40	41	31	14	15	12	11	19	23	26	27	28	28	23	23	26	16	11	16	13	21	28
19	15	20	33	30	20	20	22	14	13	16	23	24	41	28	25	27	16	30	15	37	50	52	52	52
20	45	58	47	52	43	50	48	51	B	35	22	27	27	25	25	E B 25	E B 38	E B 20	E B 13	E B 13	35	42	39	40
21	90	44	36	25	48	46	B	35	51	B	B	B	B	B	B	B	B	35	35	45	90	70	90	69
22	60	90	47	43	45	51	50	35	B	C	E B 31	E B 57	E B 35	E B 30	E B 23	E B 51	E B 40	E B 23	E B 18	E B 13	30	40	45	52
23	45	42	47	39	48	37	90	70	B	36	B	B	B	B	E B 27	E B 23	E B 28	E B 23	B	S 30	45	43	70	B
24	47	37	42	73	B	B	36	43	B	B	B	B	B	B	B	B	B	B	B	42	20	34	42	60
25	72	50	45	B	37	42	35	B	B	B	32	B	B	B	B	B	B	31	B	B	37	49	43	42
26	42	72	71	B	37	42	B	32	41	B	B	B	B	B	B	B	E B 57	E B 20	B	42	B	20	32	36
27	30	29	40	41	B	B	34	17	17	27	23	24	36	24	26	27	E B 20	25	23	E B 13	E B 8	13	15	24
28	41	36	44	62	44	46	42	30	B	E B 30	E B 40	E B 27	E B 39	E B 58	E B 53	E B 59	E B 33	E B 58	E B 24	E B 24	E B 18	B	42	32
29	33	42	39	42	48	B	B	B	B	33	27	24	32	F 27	28	26	36	31	33	42	41	58	45	51
30	80	70	58	36	26	34	30	28	35	41	B	B	E B 34	E B 30	23	E B 24	E B 28	E B 19	E B 18	B	30	31	36	39
31	70	45	36	73	32	31	B	B	B	B	B	B	B	B	B	B	E B 40	28	E B 24	B	45	33	42	51
	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	31	30	30	27	25	25	27	27	22	20	19	20	21	22	25	23	27	23	24	25	26	24	28	30
MED	41	42	43	41	42	37	41	35	35	30	24	23	28	25	22	22	E B 28	24	19	29	30	32	40	40
UQ	48	51	48	50	45	46	44	48	48	36	29	26	32	30	26	26	E B 40	30	28	42	42	46	45	51
LQ	34	36	37	35	32	33	34	28	19	20	22	20	26	22	E B 23	21	E B 22	E B 20	E B 18	E B 16	20	26	30	31

AUG. 1983 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

AUG. 1983 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00'.4 S Long. 39° 35'.4 E Sweep 4 MHz to 15 MHz in 20 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	7	7	7	7	7	8	8	22	13	15	14	22	B	B	27	16	29	B	B	B	B	B	B	9
2	8	14	8	10	B	25	10	23	23	25	B	B	B	26	18	24	10	14	50	24	8	7	7	9
3	8	7	B	22	21	11	10	13	14	B	B	25	22	23	21	13	22	10	14	8	7	7	10	14
4	7	20	20	17	23	24	23	14	18	22	15	B	30	50	31	20	16	19	20	B	B	B	B	13
5	8	10	13	14	16	10	7	8	8	8	7	15	13	14	16	14	11	8	8	7	8	7	7	12
6	7	8	7	8	11	8	7	7	7	7	10	11	13	13	13	15	8	11	8	7	7	7	7	7
7	7	8	11	10	13	10	14	8	9	11	14	14	14	13	14	8	7	7	7	14	13	11	10	10
8	9	21	11	10	21	A	18	B	B	8	11	23	21	20	B	B	B	B	B	16	B	B	16	13
9	7	7	8	7	B	7	16	14	13	9	11	13	19	23	24	20	23	15	B	13	8	10	8	8
10	8	8	7	10	10	8	8	10	11	23	20	28	19	20	17	B	60	24	23	19	19	B	B	11
11	8	7	7	7	10	8	10	11	7	11	11	20	20	18	23	18	12	18	26	B	B	B	8	8
12	10	8	10	7	15	7	16	10	11	B	B	B	B	B	23	30	21	14	19	14	7	7	7	7
13	7	7	8	14	17	9	10	11	20	B	B	B	B	B	23	27	57	16	10	9	10	8	7	18
14	8	B	14	B	B	B	14	11	13	B	B	23	23	20	23	18	27	29	18	11	8	7	7	8
15	13	13	10	B	19	B	20	10	9	B	B	25	30	26	14	B	22	15	19	14	7	B	12	9
16	8	14	16	17	20	14	9	10	10	11	17	22	19	23	21	23	10	8	7	7	8	8	7	9
17	13	23	13	11	B	14	16	20	14	14	19	17	20	E S 40	30	30	28	19	23	14	13	8	8	8
18	8	7	8	14	8	7	9	8	8	13	17	18	17	15	14	14	8	8	8	7	10	8	8	7
19	7	8	7	7	7	7	8	9	8	13	14	19	18	18	14	14	11	8	8	9	10	8	12	7
20	8	7	8	8	10	7	9	10	B	18	18	20	22	18	17	25	58	20	13	13	10	8	8	16
21	16	13	13	22	13	13	B	20	20	B	B	B	B	B	B	B	B	21	10	9	8	11	8	8
22	7	8	23	8	14	13	10	10	B	C	31	57	35	30	23	51	40	23	18	13	7	7	10	8
23	23	20	11	7	8	8	13	13	B	23	B	B	B	B	27	23	28	23	B	22	9	8	11	B
24	13	7	7	11	B	B	22	22	B	B	B	B	B	B	B	B	B	B	B	8	8	10	7	8
25	7	9	8	B	13	7	23	B	B	B	23	B	B	B	B	B	B	13	B	B	7	9	8	8
26	12	9	8	B	23	23	B	20	23	B	B	B	B	B	B	B	E S 57	20	B	8	B	11	7	15
27	14	11	13	23	B	B	13	12	13	16	15	16	19	22	20	17	20	13	9	13	8	10	9	8
28	10	13	10	13	17	19	22	21	B	30	40	27	39	58	58	59	33	58	24	24	18	B	7	7
29	8	9	10	13	18	B	B	B	B	20	18	23	18	27	24	23	14	23	21	22	8	8	8	7
30	12	8	13	7	7	8	8	16	19	28	B	B	34	30	21	24	28	19	18	B	9	9	8	8
31	13	24	14	21	25	12	B	B	B	B	B	B	B	B	B	B	40	13	24	B	8	11	9	16
	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	31	31	31	31	31	30	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	8	9	10	11	17	10	13	13	14	22	20	25	23	26	23	24	U 25	18	19	14	8	9	8	8
UQ	12	14	13	19	23	23	21	20	B	B	B	B	B	B	30	D B 59	U 44	23	38	23	13	11	10	12
LQ	7	8	8	8	10	8	9	10	10	13	14	20	19	20	18	18	13	13	10	9	8	8	7	8

The Radio Research Laboratory, Japan

AUG. 1983 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

AUG. 1983 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 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	A	290	275	250	B	B	200	205	B	B	B	B	B	B	B	A
2	A	A	A	A	B	A	A	A	A	A	B	B	B	245	230	250	270	300	B	A	A	A	A	A
3	A	A	B	A	A	A	A	A	A	B	B	225	240	240	210	205	220	215	250	A	A	A	A	A
4	A	A	A	A	S	A	S	A	A	A	260	B	230	B	240	230	200	230	210	B	B	B	B	A
5	A	A	A	A	A	A	A	280	310	260	230	225	225	205	200	200	A	200	240	205	A	A	A	A
6	A	A	A	A	A	A	A	290	260	255	220	215	220	210	200	220	205	210	210	A 225	225	A	A	A
7	A	A	A	A	A	A	A	A	300	260	225	225	235	210	225	205	210	200	210	B	A	A	A	A
8	A	A	A	A	A	A	A	B	B	A	A	A	A	E A 290	B	B	B	B	B	B	B	B	A	A
9	A	A	A	A	B	A	A	A	A	A	240	240	220	280	210	250	225	250	B	260	250	A	A	A
10	A	A	A	A	A	A	A	A	A	A	245	250	250	250	230	B	B	240	220	245	A	B	B	A
11	A	A	A	A	A	A	A	A	300	250	205	210	220	210	200	220	205	225	220	B	B	B	A	A
12	A	A	220	A	A	A	A	A	A	B	B	B	B	B	290	270	240	280	A	A	A	A	A	A
13	A	A	A	A	A	A	A	A	A	B	B	B	B	B	230	B	B	250	220	A	A	A	A	A
14	A	B	A	B	B	B	A	A	A	B	B	250	240	230	240	215	245	240	220	225	A	A	A	A
15	A	A	A	B	A	B	A	A	A	B	B	240	230	230	230	B	225	210	240	245	A	B	A	A
16	A	A	A	A	A	A	A	A	255	230	225	225	225	210	210	240	210	200	205	225	A	A	A	A
17	A	A	A	A	B	A	A	A	A	A	250	255	240	250	245	215	245	210	E B 250	210	B	E B 240	E B 265	E B 260
18	A	A	A	A	A	A	A	250	200	230	225	220	210	200	205	205	190	205	200	200	250	255	255	300
19	320	A	A	A	A	A	A	A	265	210	220	220	220	205	200	200	205	275	245	300	A	A	A	A
20	A	A	A	A	A	A	A	A	B	A	250	230	250	230	255	230	B	250	225	250	A	A	A	A
21	A	A	A	A	A	A	B	A	A	B	B	B	B	B	B	B	B	A	A	A	A	A	A	A
22	A	A	A	A	A	A	A	A	B	C	275	B	245	250	210	B	E B 250	225	220	260	A	A	A	A
23	A	A	A	A	A	A	A	A	B	A	B	B	B	B	B	B	B	270	B	A	A	A	A	B
24	A	A	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
25	A	A	A	B	A	A	A	B	B	B	300	B	B	B	B	B	B	280	B	B	A	A	A	A
26	A	A	A	B	A	A	B	A	A	B	B	B	B	B	B	B	B	240	B	A	B	A	A	A
27	A	A	A	A	B	B	A	300	245	230	230	230	210	205	210	230	230	A	200	230	B	A	A	A
28	A	A	A	A	A	A	A	A	B	E B 260	E B 280	250	260	B	275	E B 250	220	B	220	250	280	B	A	A
29	A	A	A	A	A	B	B	B	B	265	250	240	220	240	230	240	205	255	230	250	240	A	A	A
30	A	A	A	A	A	A	A	A	A	A	B	B	B	E B 250	240	E B 250	290	250	250	B	A	A	A	A
31	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	270	230	240	B	A	A	A	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					4	8	11	18	18	19	20	24	20	20	25	21	15	5	2	2	2
MED	320		220					285	262	252	238	230	230	225	228	222	221	240	220	245	250	248	258	280
UQ								295	300	260	255	250	240	246	240	240	244	250	240	250	250			
LQ								265	250	230	225	225	220	210	208	205	205	210	210	225	240			

AUG. 1983 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1983 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	B	A	A	B	B	B	B	33	0 X 42	0 X 44	B	B	X 66	B	59	62	X 51	23	B	B	A
2	62	A	A	33	A	A	B	B	45	X 51	X 56	X 61	X 64	X 73	X 74	0 X 77	X 74	X 58	43	50	X 42	19	A	A
3	A	A	A	A	A	A	A	A	B	B	B	0 X 53	X 66	X 66	65	X 76	X 75	X 62	52	X 40	26	17	0 X 19	A
4	A	B	A	A	33	33	50	37	43	X 57	X 65	X 69	X 76	83	80	82	80	X 71	63	51	X 36	32	22	A
5	A	A	A	A	A	0 X 36	36	39	X 44	X 51	X 58	X 64	X 67	X 68	X 72	72	69	69	54	46	33	30	26	23
6	58	A	28	27	28	60	A	A	B	48	59	X 65	70	X 76	78	X 75	X 76	X 64	X 54	X 51	X 44	34	A	A
7	A	A	A	A	A	A	A	43	60	70	70	X 66	X 67	69	79	X 84	X 98	89	B	A	37	A	A	50
8	A	A	A	B	A	A	A	A	A	0 X 51	0 X 51	B	B	B	B	B	B	X 54	46	43	32	A	A	A
9	A	47	A	A	42	70	A	A	E G 34	0 X 42	44	0 X 46	0 X 51	0 X 50	0 X 54	0 X 54	X 60	X 54	X 51	X 47	36	A	A	A
10	A	A	A	B	A	A	B	A	X 40	X 45	B	X 46	0 X 52	0 X 53	0 X 54	0 X 56	0 X 55	0 X 53	X 48	B	B	B	A	A
11	A	A	A	A	A	A	B	A	0 X 42	0 X 51	0 X 56	S	X 60	X 61	X 61	X 70	X 71	60	X 58	X 58	B	A	30	A
12	A	A	A	A	A	A	B	B	0 X 42	B	B	B	B	B	67	B	B	98	B	0 X 46	38	32	0 X 23	A
13	A	A	A	A	B	B	B	A	0 X 51	56	S	B	0 X 71	X 79	0 X 84	0 X 86	R	84	68	68	30	27	26	A
14	A	A	A	A	B	58	A	A	0 X 46	0 X 54	X 60	X 61	X 66	X 77	X 79	X 75	X 71	68	60	49	26	A	0 X 19	A
15	A	60	87	45	40	34	A	A	0 X 42	51	51	S	0 X 56	X 63	X 62	59	X 61	X 60	59	X 45	20	68	60	A
16	56	59	A	A	A	60	31	37	B	B	B	B	B	B	B	B	B	45	0 X 51	A	A	A	48	A
17	A	B	B	A	B	B	B	B	A	B	B	B	B	B	B	B	0 X 52	0 X 52	X 51	45	A	A	A	A
18	A	A	A	B	B	A	B	A	B	B	B	B	B	B	B	B	X 64	X 63	X 57	X 49	33	A	A	44
19	33	A	A	46	B	B	B	B	B	B	B	B	B	B	0 X 49	B	60	A	A	33	A	A	43	B
20	A	A	A	B	B	B	A	32	B	B	B	B	B	B	B	B	B	B	B	0 X 41	A	A	A	A
21	A	A	A	A	59	B	B	B	A	A	B	B	B	B	B	S	X 63	X 61	X 64	B	B	A	A	A
22	A	A	A	A	B	B	B	A	A	B	B	0 X 51	B	X 64	X 64	B	B	B	B	0 X 46	0 R 49	35	18	A
23	A	45	A	A	27	35	X 36	0 X 45	0 X 46	45	X 46	R 62	X 68	X 72	X 76	79	76	73	70	70	40	A	A	A
24	20	A	A	0 X 36	52	58	A	0 X 48	0 X 54	A	S	0 X 68	X 71	79	80	X 80	84	X 95	77	0 R 42	A	51	35	A
25	A	46	A	A	42	32	B	A	A	A	0 X 47	B	45	0 X 51	59	59	X 58	0 X 51	X 46	A	A	A	A	A
26	A	36	B	B	B	34	B	B	B	B	B	B	B	B	B	B	0 X 46	B	B	0 X 43	36	A	A	A
27	A	B	A	A	A	B	34	0 X 42	0 X 46	B	B	B	B	B	B	0 X 69	B	X 66	X 60	60	43	28	A	A
28	36	A	B	A	B	B	B	A	0 X 48	0 X 49	0 X 51	S	0 X 56	X 59	X 59	X 60	62	X 66	X 63	X 44	35	23	18	A
29	A	B	B	A	A	A	34	B	46	43	0 X 49	0 X 51	S	58	B	0 X 66	0 X 67	S	0 X 56	X 53	X 49	X 42	X 33	25
30	17	A	50	36	27	35	45	45	49	54	X 62	X 66	X 70	X 80	X 77	79	X 72	X 64	X 57	X 53	58	X 50	X 37	28
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	7	6	3	6	9	12	7	9	17	16	16	15	18	19	20	20	22	25	24	25	21	14	15	5
MED	36	46	50	36	40	36	36	42	0 X 46	X 51	X 54	X 61	X 66	X 68	X 70	X 74	X 68	X 63	X 57	X 47	36	32	26	28
UQ	57	59	68	45	42	59	40	0 X 45	0 X 48	X 54	X 60	X 66	X 70	X 76	X 78	X 79	X 75	X 69	X 62	X 51	42	42	36	44
LQ	26	45	39	33	28	34	34	37	X 42	X 46	X 48	0 X 51	0 X 56	X 60	X 60	X 63	X 60	X 58	X 51	X 44	32	27	20	25

SEP. 1983 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1983 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20 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	B	A	A	B	B	B	B	F	36	38	B	B	60	B	F	F 52	45	F	B	B	A
2	F	A	A	F	A	A	B	B	F	45	50	55	58	67	68	71	68	52	F	J F 44	36	F	A	A
3	A	A	A	A	A	A	A	A	B	B	B	47	60	60	D S 40	70	69	55	F	34	F 18	F	13	A
4	A	B	A	A	F	F	F	J F 31	F 36	51	59	63	70	F	70	F 65	F	65	F	F	30	F	F	A
5	A	A	A	A	A	30	F 24	F 32	38	45	52	58	61	62	67	F 62	F 60	J F 63	F	J F 40	F 25	F 20	F 18	F
6	F	A	F	F	F	F	A	A	B	F	51	58	62	70	70	69	70	58	48	45	38	F	A	A
7	A	A	A	A	A	A	A	F	F	F	F 59	60	60	F 60	J F 73	78	92	J F 83	B	A	F	A	A	F
8	A	A	A	B	A	A	A	A	A	45	45	B	B	B	B	B	B	48	38	J F 37	F	A	A	A
9	A	F	A	A	F	F	A	A	E G 28	36	36	40	45	44	48	48	J R 54	48	45	41	J F 30	A	A	A
10	A	A	A	B	A	A	B	A	J R 34	39	B	J R 40	46	47	48	50	49	47	42	B	B	B	A	A
11	A	A	A	A	A	A	B	A	36	45	50	S	54	55	55	63	65	51	52	52	B	A	F	A
12	A	A	A	A	A	A	B	B	36	B	B	B	B	B	F 59	B	B	F	B	40	F 30	F 22	17	A
13	A	A	A	A	B	B	B	A	45	F	S 45	B	66	72	78	80	D R 80	F 75	F	59	F	F	F	A
14	A	A	A	A	B	F	A	A	40	48	53	J R 55	60	70	73	69	65	60	F	F	F	A	13	A
15	A	F	F	F	F	F	A	A	36	F	F	S 43	50	57	55	F	55	53	F	39	F	F	F	A
16	F	F	A	A	A	A	F	F	B	B	B	B	B	B	B	B	B	F	45	A	A	A	F	A
17	A	B	B	A	B	B	B	B	A	B	B	B	B	B	B	B	46	46	45	F	A	A	A	A
18	A	A	A	B	B	A	B	A	B	B	B	B	B	B	B	B	58	57	50	43	F	A	A	F
19	F	A	A	F	B	B	B	B	B	B	B	B	B	B	43	B	F	A	A	21	A	A	35	B
20	A	A	A	B	B	B	A	F	B	B	B	B	B	B	B	B	B	B	B	35	A	A	A	A
21	A	A	A	A	F	B	B	B	A	A	B	B	B	B	B	S	57	55	58	B	B	A	A	A
22	A	A	A	A	B	B	B	A	A	B	B	45	B	58	58	B	B	B	B	40	F 40	F	F	A
23	A	F	A	A	F	F 28	31	39	40	F	40	R 56	61	65	70	70	F 68	F 60	F	F	F	A	A	A
24	F	A	A	30	F	F	A	42	48	A	S 42	62	64	70	F	73	F 73	89	F 60	F 32	A	F	F	A
25	A	F	A	A	F	F	B	A	A	A	41	B	F	45	50	51	52	45	40	A	A	A	A	A
26	A	F	B	B	B	F	B	B	B	B	B	B	B	B	B	B	40	B	B	37	F 29	A	A	A
27	A	B	A	A	A	B	F	36	40	B	B	B	B	B	B	63	B	60	54	F 50	F	F	A	A
28	F	A	B	A	B	B	B	A	42	43	45	S	50	52	J R 53	53	54	60	57	38	22	F	F	A
29	A	B	B	A	A	A	F	B	F	F	43	45	S 42	F	B	60	61	S	50	47	43	36	27	F
30	F	A	F	F	F	27	F	F	F	F	55	60	63	74	70	70	J R 66	58	51	47	F	J R 44	J R 31	F
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		3	2	5	13	9	16	16	18	17	19	19	21	22	16	21	11	4	7	
MED				30		28	28	36	38	45	48	55	60	60	U 63	65	61	58	50	40	F 30	29	18	
UQ						29		39	40	45	52	59	62	70	70	70	68	60	53	45	37	40	29	
LQ						28		F 32	36	43	42	44	50	55	53	60	54	51	45	37	F 27	F 21	15	

SEP. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1983 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	42	42	45	B	33	32	B	B	B	B	E B 30	25	33	B	B	E B 45	B	E B 33	E B 14	E B 16	E B 28	B	B	36
2	33	41	45	32	48	70	B	B	31	21	E G 20	22	E G 21	24	24	23	20	E B 15	E B 39	11	E B 13	27	41	39
3	42	48	43	37	34	44	44	40	B	B	B	E B 38	23	26	26	28	20	19	E B 13	E B 11	12	10	18	29
4	32	B	16	30	40	28	14	27	20	21	24	26	34	28	25	28	22	19	E B 14	E B 11	E B 10	12	24	32
5	30	33	42	48	42	36	18	13	18	E G 21	E G 23	E G 23	31	30	32	23	21	29	20	22	10	E B 8	12	32
6	48	39	33	28	23	78	46	29	B	39	35	29	25	27	27	24	33	27	28	25	16	20	37	48
7	47	42	108	70	51	50	47	41	47	31	22	28	29	32	32	29	22	G 17	B	59	51	70	24	49
8	44	36	59	B	45	60	42	30	38	30	24	B	B	B	B	B	B	E B 20	E B 14	24	31	32	42	45
9	53	40	37	42	32	26	42	36	30	34	24	24	24	26	26	26	29	E G 19	14	24	24	40	42	36
10	45	43	42	B	36	26	B	41	32	30	B	E G 26	26	E G 26	23	E B 30	E B 23	E B 23	K 24	B	B	B	41	40
11	90	33	20	32	42	38	B	34	27	E B 23	E B 25	24	E G 24	30	21	E G 23	E B 24	E B 19	K 15	E B 11	B	25	32	41
12	32	39	43	40	39	40	B	B	E B 29	B	B	B	B	B	E B 36	B	B	E B 31	B	E B 22	E B 18	32	26	20
13	29	59	58	42	B	B	B	36	31	23	24	B	E B 50	E B 56	E B 57	E B 56	E B 60	E B 55	E B 28	15	E B 23	28	17	34
14	32	44	41	45	B	32	41	41	36	E G 24	E G 23	E G 24	26	E B 54	E B 57	E B 27	21	22	35	30	20	25	26	23
15	34	68	40	34	33	31	45	46	41	33	25	E B 29	25	E B 33	29	24	29	20	16	E B 13	44	38	59	77
16	64	31	41	40	39	31	37	37	B	B	B	B	B	B	B	B	B	35	28	28	40	39	70	70
17	128	B	B	B 34	B	B	B	B 41	41	B	B	B	B	B	B	B	E B 23	E B 29	23	29	33	19	17	33
18	42	44	41	B	B	44	B	40	B	B	B	B	B	B	B	B	E G 28	E B 20	29	30	28	16	40	57
19	70	43	42	36	B	B	B	B	B	B	B	B	B	B	E B 29	B	E B 26	42	32	26	46	51	46	B
20	37	69	41	B	B	B	36	24	B	B	B	B	B	B	B	B	B	B	B	E B 23	38	23	21	40
21	41	51	38	36	E B 30	B	B	B	44	37	B	B	B	B	B	E B 29	E B 25	E B 23	E B 25	B	B	33	41	34
22	36	33	35	43	B	B	B	45	71	B	B	E G 27	B	28	E G 27	B	B	B	B	E B 24	E B 18	19	E B 15	31
23	35	70	41	41	34	28	32	31	40	32	26	30	E B 29	25	31	27	26	27	22	20	E B 14	36	33	35
24	18	27	29	40	75	60	46	40	33	36	28	E G 28	30	29	28	28	23	E B 35	E B 24	E B 23	43	37	45	47
25	60	43	80	50	35	27	B	42	42	39	28	B	27	E B 29	26	25	25	E G 16	28	50	48	41	72	48
26	43	40	B	B	B	31	B	B	B	B	B	B	B	B	B	B	25	B	B	E B 23	33	40	38	39
27	70	B	38	29	31	B	E B 25	25	26	B	B	B	B	B	B	E B 57	B	E B 24	20	E B 18	19	25	16	37
28	42	70	B	71	B	B	B	36	32	E G 23	13	31	31	30	27	26	28	K 24	E B 25	K 13	19	28	30	40
29	34	B	B	42	58	36	28	B	28	29	25	29	E B 33	29	B	E B 56	E B 55	E B 33	E B 23	15	15	E B 13	E B 11	21
30	23	36	31	31	34	31	32	31	31	31	27	E G 27	34	35	33	33	31	21	20	16	14	14	12	15
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	30	26	26	24	21	22	16	23	22	19	18	18	19	19	20	21	23	27	25	28	27	28	29	29
MED	42	42	41	40	36	34	39	36	32	30	24	25	28	28	27	26	23	E E 23	20	18	21	28	32	37
UQ	48	48	43	42	42	44	44	41	41	34	26	28	31	30	30	E B 30	27	E B 30	26	26	36	38	41	45
LQ	33	36	37	33	33	31	30	30	29	22	23	23	24	26	26	24	21	E E 20	16	13	14	19	18	32

SEP. 1983 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1983 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	29	16	14	B	25	22	B	B	B	B	30	19	19	B	B	45	B	33	14	16	28	B	B	7
2	17	8	18	12	15	16	B	B	14	15	14	13	14	13	13	11	14	15	39	8	13	7	8	8
3	8	8	13	14	10	15	13	12	B	B	B	38	21	14	14	16	15	9	13	10	9	8	9	23
4	12	B	13	10	10	10	8	8	8	13	13	16	13	14	18	14	19	13	14	11	10	7	7	7
5	7	8	8	11	13	7	11	9	9	11	11	10	10	8	14	14	12	8	7	7	8	8	7	7
6	8	9	8	8	8	13	15	23	B	19	23	16	16	15	14	11	8	8	8	8	8	8	7	8
7	7	8	8	7	10	8	13	23	10	11	11	11	8	7	7	23	17	10	B	8	8	7	8	10
8	8	7	8	B	13	14	16	20	13	13	13	B	B	B	B	B	B	20	14	9	8	7	8	8
9	8	8	7	13	8	9	20	20	13	12	13	14	13	14	13	13	13	14	9	8	8	8	7	7
10	11	19	19	B	9	11	B	14	15	14	B	22	17	23	21	30	23	23	21	B	B	B	7	10
11	13	19	15	23	14	19	B	19	18	23	25	19	17	14	19	15	24	19	13	11	B	14	11	9
12	9	10	22	19	18	21	B	B	29	B	B	B	B	B	36	B	B	31	B	22	18	13	11	13
13	13	19	9	23	B	B	B	23	19	18	18	B	50	56	57	56	60	55	28	11	23	14	13	11
14	7	16	16	19	B	30	19	13	14	14	14	19	24	54	57	27	18	13	13	7	8	13	10	9
15	9	9	14	8	E	7	14	13	13	14	14	29	23	33	14	18	18	18	14	13	8	8	9	9
16	7	8	18	13	13	10	13	19	B	B	B	B	B	B	B	B	B	20	20	18	8	8	8	8
17	7	B	B	23	B	B	B	B	29	B	B	B	B	B	B	B	23	29	14	10	8	11	9	11
18	14	14	15	B	B	21	B	30	B	B	B	B	B	B	B	B	20	20	13	9	10	8	8	9
19	9	11	10	9	B	B	B	B	B	B	B	B	B	B	29	B	26	15	18	8	10	8	12	B
20	23	14	19	B	B	B	19	13	B	B	B	B	B	B	B	B	B	B	B	23	8	13	11	8
21	17	16	22	19	30	B	B	B	30	24	B	B	B	B	B	29	25	23	25	B	B	8	9	24
22	8	8	14	23	B	B	B	21	30	B	B	18	B	19	19	B	B	B	B	24	18	14	15	11
23	8	8	22	12	13	9	8	16	18	24	22	24	29	24	19	15	18	20	14	8	14	8	7	7
24	11	8	8	11	9	8	13	15	17	20	19	19	17	17	17	17	17	35	24	23	9	9	9	9
25	13	7	20	13	9	20	B	18	18	20	23	B	23	29	20	20	15	13	11	9	10	15	8	15
26	24	13	B	B	B	20	B	B	B	B	B	B	B	B	B	B	18	B	B	23	13	8	8	8
27	10	B	20	24	18	B	25	23	18	B	B	B	B	B	B	57	B	24	13	18	13	9	13	9
28	16	20	B	16	B	B	B	21	15	19	19	24	18	18	18	14	11	22	25	9	13	11	13	7
29	16	B	B	23	23	23	13	B	18	16	23	24	33	23	B	56	55	33	23	11	10	13	11	9
30	7	8	11	9	8	16	13	14	16	13	18	15	13	13	12	11	12	10	11	11	10	8	8	8
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	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	10	10	15	18	14	20	22	20	18	20	23	24	24	26	20	28	20	20	14	11	10	8	9	9
UQ	14	19	20	23	B	B	B	B	B	B	B	B	B	B	B	B	60	31	25	18	14	13	11	11
LQ	8	8	10	11	10	10	13	14	14	14	14	18	17	14	14	15	15	13	13	8	8	8	8	8

SEP. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1983 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Day \ 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
1	A	A	A	B	A	A	B	B	B	B	B	240	240	B	B	255	B	250	230	220	280	B	B	A
2	A	A	A	A	A	A	B	B	275	245	220	215	220	240	220	215	205	205	B	205	225	A	A	A
3	A	A	A	A	A	A	A	A	B	B	B	B	225	220	A	215	210	210	210	205	250	250	A	A
4	A	A	A	A	A	A	A	220	250	240	210	200	205	215	205	210	210	205	220	210	225	240	A	A
5	A	A	A	A	A	A	A	A	265	240	210	H 180	220	210	205	H 225	205	210	200	200	200	225	A	A
6	A	A	A	A	A	A	A	A	B	A	A	245	H 220	H 220	245	225	220	215	200	215	240	300	A	A
7	A	A	A	A	A	A	A	170	A	A	225	H 200	200	210	E A 205	240	245	250	B	A	A	A	A	A
8	A	A	A	B	A	A	A	A	A	235	H 220	B	B	B	B	B	B	240	240	255	A	A	A	A
9	A	A	A	A	A	A	A	A	290	270	240	210	H 210	235	250	240	250	250	245	250	275	A	A	A
10	A	A	A	B	A	A	B	A	A	280	B	250	245	H 210	225	260	245	250	240	B	B	B	A	A
11	A	A	A	A	A	A	B	A	285	250	230	225	210	230	215	240	245	240	230	220	B	A	A	A
12	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	265	B	240	250	245	A	A
13	A	A	A	A	B	B	B	A	280	H 200	H 210	B	B	B	B	E B 260	E B 260	E B 265	E B 240	240	B	A	300	A
14	A	A	A	A	B	B	A	A	A	240	H 240	H 200	225	B	B	240	225	210	220	230	A	A	A	A
15	A	A	A	A	A	A	A	A	A	E A 300	225	220	210	B	220	240	250	240	235	240	E A 300	A	A	A
16	A	250	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	A	260	A	A	A	A	A
17	A	B	B	A	B	B	B	B	A	B	B	B	B	B	B	B	275	250	250	290	A	A	A	A
18	A	A	A	B	B	A	B	A	B	B	B	B	B	B	B	B	255	240	230	230	285	A	A	A
19	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A	B
20	A	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A
21	A	A	A	A	B	B	B	B	A	A	B	B	B	B	B	250	250	240	255	B	B	A	A	A
22	A	A	A	A	B	B	B	A	A	B	B	210	B	240	255	B	B	B	B	E B 250	250	250	B	A
23	A	A	A	A	A	A	A	A	A	245	240	A	220	H 240	210	225	235	240	210	230	255	A	A	A
24	A	A	A	250	A	A	A	A	A	A	A	220	225	200	200	225	225	245	250	E B 290	A	A	A	A
25	A	A	A	A	A	A	B	A	A	A	250	B	A	255	250	250	250	280	290	A	A	A	A	A
26	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	255	B	B	E B 270	E A 280	A	A	A
27	A	B	A	A	A	B	B	A	250	B	B	B	B	B	B	B	B	260	225	230	240	A	A	A
28	A	A	B	A	B	B	B	A	A	240	H 240	280	240	225	220	220	240	240	240	240	300	A	A	A
29	A	B	B	A	A	A	A	B	255	240	225	250	B	225	B	B	B	240	225	210	210	230	240	275
30	A	A	A	A	A	A	290	250	H 210	210	H 215	225	210	230	210	220	230	215	210	210	235	210	210	255
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		1			1	3	9	14	15	16	16	16	15	19	21	25	23	23	17	8	3	2
MED		250		250			290	220	265	240	225	220	220	225	220	232	242	240	230	225	245	242	240	265
UQ								235	280	248	240	242	225	238	235	242	250	250	242	242	268	250	270	
LQ								195	250	240	218	205	210	212	208	222	225	215	220	212	235	228	225	

SEP. 1983 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 1983 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	19	56	A	B	A	A	A	49	X 52	X 59	X 60	X 64	X 73	X 78	X 76	X 77	77	70	66	58	A	A	A	A
2	A	A	B	A	B	B	A	B	B	B	A	A	B	B	S	B	X 54	S	0 X 49	33	B	29	A	60
3	A	A	62	B	B	A	43	A	B	B	B	B	B	0 X 42	B	30	73	B	A	0 X 36	29	A	A	A
4	A	A	50	B	A	A	A	S	B	B	0 X 43	B	B	B	B	0 X 74	59	0 X 51	X 41	36	A	A	A	32
5	51	A	A	33	31	52	A	X 53	0 X 54	X 55	X 56	58	X 59	X 63	S	X 58	59	60	70	58	X 49	48	X 43	38
6	58	70	60	B	A	A	A	A	A	X 59	X 58	B	S	70	X 76	67	X 65	X 60	63	68	70	A	A	A
7	A	51	A	A	A	45	59	B	B	S	B	0 X 50	S	X 60	X 68	X 63	X 59	X 58	X 58	X 49	X 45	31	24	42
8	A	A	38	B	B	A	A	A	B	A	C	C	X 58	X 60	68	X 68	X 74	X 74	70	A	A	A	A	0 X 35
9	A	A	A	A	B	B	A	43	51	X 55	X 58	X 56	X 54	X 58	X 60	X 63	X 62	X 64	X 64	X 61	X 58	X 46	X 42	32
10	31	35	A	35	46	52	70	63	68	X 65	X 70	X 74	X 78	X 80	80	82	80	80	80	69	60	42	A	70
11	A	A	36	42	B	A	A	A	70	78	B	B	80	89	87	80	82	82	72	B	B	0 X 54	50	43
12	36	36	37	46	67	66	68	B	B	X 77	X 80	X 90	X 94	X 95	X 95	X 95	X 91	X 93	82	X 73	67	43	A	A
13	A	42	52	50	A	B	A	B	B	A	B	B	B	B	B	63	0 X 56	53	58	46	A	A	A	42
14	A	A	48	42	A	42	A	B	A	A	B	B	B	62	67	68	X 76	X 67	59	70	A	62	B	A
15	A	42	A	A	44	46	42	34	B	B	B	B	B	B	B	B	B	70	B	49	X 43	59	A	A
16	A	A	B	A	B	B	52	A	B	B	S	58	S	70	X 73	X 77	X 77	X 74	X 62	62	60	A	A	A
17	50	45	52	52	A	A	61	A	A	S	58	B	B	S	68	80	A	34	A	42	A	A	40	A
18	36	43	B	A	B	37	43	51	B	B	B	B	B	B	B	58	S	0 X 38	A	A	A	50	A	A
19	B	A	A	B	A	B	B	A	B	B	B	B	B	B	B	B	S	0 X 53	X 54	X 52	41	X 34	30	31
20	35	44	42	42	46	58	61	0 X 57	A	71	71	71	72	64	63	68	63	X 59	S	0 X 56	60	59	52	37
21	A	S	A	B	69	A	71	30	X 79	X 77	X 75	X 75	0 X 76	X 81	30	89	79	X 68	63	58	A	A	A	A
22	A	A	43	B	B	B	A	A	A	B	B	59	0 X 65	S	B	70	0 X 68	B	0 X 56	0 X 52	0 X 46	X 37	29	A
23	A	A	A	45	A	A	S	50	51	0 X 51	B	B	61	B	0 X 70	90	90	X 84	51	49	A	34	37	A
24	0 X 27	A	45	0 X 45	B	B	A	0 X 48	X 48	B	B	B	B	S	X 56	B	B	X 59	X 51	X 49	X 42	A	A	A
25	B	A	A	B	B	X 49	0 X 53	0 X 55	X 62	X 69	0 X 70	X 70	X 69	X 66	X 65	X 66	X 62	X 58	X 55	58	X 55	X 50	X 52	52
26	37	A	A	B	45	A	X 63	70	80	82	X 76	X 68	X 72	X 74	X 74	X 72	X 67	X 66	X 62	X 57	X 55	X 50	X 51	X 54
27	X 56	60	65	70	X 70	73	72	73	0 X 79	80	80	X 84	80	79	X 70	68	X 67	67	X 66	X 62	X 59	X 56	X 53	33
28	36	32	38	A	60	B	B	71	80	72	70	X 67	X 66	X 66	X 65	X 64	63	X 60	X 56	X 56	X 60	59	46	50
29	59	60	A	A	A	A	A	A	A	A	B	B	B	B	B	B	S	S	X 43	X 42	A	A	A	S
30	36	45	B	B	B	B	B	B	S	S	B	B	B	B	B	B	B	X 54	42	42	70	A	A	41
31	A	X 41	A	35	A	A	B	0 X 49	0 X 54	0 X 56	X 57	B	B	0 X 64	B	0 X 68	X 62	B	B	X 56	X 50	X 43	X 49	58
	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	14	15	14	12	9	10	13	15	13	15	15	14	15	19	19	25	24	26	25	28	19	19	14	17
MED	36	44	46	44	46	50	61	53	X 62	X 69	X 70	X 68	X 72	X 66	X 70	68	X 67	X 62	X 59	56	X 55	48	44	42
UQ	51	54	52	48	67	58	68	66	79	77	X 73	X 74	X 77	X 78	X 76	80	77	X 70	66	60	60	55	X 51	52
LQ	35	42	38	38	45	45	52	49	X 52	X 58	X 58	X 58	X 63	X 62	X 63	X 66	X 62	X 58	X 54	48	X 46	40	37	35

OCT. 1983 | FXI (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1983 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	B	A	A	A	F	46	52	54	58	67	J R 72	70	71	J F 70	F	F	F	A	A	A	A
2	A	A	B	A	B	B	A	B	B	B	A	A	B	B	S	B	48	D S 42	42	F	B	F 20	A	F
3	A	A	F	B	B	A	F	A	B	B	B	B	B	36	B	F	F	B	A	30	F	A	A	A
4	A	A	F	B	A	A	A	S	B	B	E G 37	B	B	B	B	68	51	45	35	F	A	A	A	F
5	F	A	A	F	F	F	A	47	48	49	50	50	53	57	S	52	50	52	60	48	43	40	37	F
6	F	F	F	B	A	A	A	A	A	52	R 52	B	S	62	70	F	59	J R 54	F 53	F	F	A	A	A
7	A	F	A	A	A	F	F	B	B	S	B	44	S	54	62	57	53	51	51	43	39	19	F	F
8	A	A	F	B	B	A	A	A	B	A	C	C	52	53	60	62	63	63	60	A	A	A	A	29
9	A	A	A	A	B	B	A	F	F	49	J R 52	50	48	51	54	57	56	58	58	55	51	40	36	F
10	F	F	A	F	F 28	F	F 43	F	F	59	63	68	72	73	F 71	73	F 70	F 71	F 69	F 61	F	F	A	F
11	A	A	F	F	B	A	A	A	F 60	F 63	B	B	F	F 72	L 80	F 70	F	F 72	F	B	B	F 48	F 42	F
12	F	F	F	F	F	F	F	B	B	71	74	83	88	89	89	89	35	J R 87	74	67	J F 60	F	A	A
13	A	F	F	F	A	B	A	B	B	A	B	B	B	B	B	F	50	F 45	F	F	A	A	A	F
14	A	A	F	F	A	F	A	B	A	A	B	B	B	F	F 53	F	70	61	F	F	A	F	B	A
15	A	F	A	A	F	F	F	F	B	B	B	B	B	B	B	B	B	F	B	F	37	F	A	A
16	A	A	B	A	B	B	F	A	B	B	S	J F 52	S	62	66	71	71	68	55	F	F	A	A	A
17	F	F	F	F	A	A	F	A	A	S	F	B	B	S	F	F	A	F	A	F	A	A	F	A
18	F	F	B	A	B	F	36	F	B	B	B	B	B	B	B	F 48	S	E G 32	A	A	A	F	A	A
19	B	A	A	B	A	B	B	A	B	B	B	B	B	B	B	B	D S 42	47	48	46	F 33	28	F	F
20	F	F 36	F	F	38	F 43	50	R 51	A	F	F	F	F	F	F 57	60	56	53	S	50	45	F	F	F
21	A	S	A	B	F	A	J F 65	F 69	73	70	69	69	70	75	F 71	F	70	62	F 56	51	A	A	A	A
22	A	A	F	B	B	B	A	A	A	B	B	S	59	S	B	F 61	62	B	50	46	40	31	F	A
23	A	A	A	F	A	A	S	F 42	44	45	B	B	52	B	64	F 72	J F 84	78	F	36	A	F	J F 31	A
24	21	A	F	39	B	B	A	42	42	B	B	B	B	S	50	9	B	53	45	42	35	A	A	A
25	B	A	A	B	B	43	47	49	J R 56	62	64	64	62	60	59	60	56	52	49	49	49	44	45	F 44
26	F 23	A	A	B	F	A	57	F 62	F	F 73	70	62	66	68	J R 68	66	61	60	55	51	49	44	45	48
27	50	F	F 54	F 59	64	F 65	F	F	73	F	F	78	F	F 70	63	F 60	61	F 60	60	56	J R 53	50	47	F 25
28	F	F	F 24	A	F	B	B	F	F	F	F 60	60	60	60	59	58	55	54	50	50	J R 54	F	F	F 28
29	F	F	A	A	A	A	A	A	A	A	B	B	B	B	B	B	S	S	37	35	A	A	A	S
30	F	F	B	B	B	B	B	B	S	S	B	B	B	B	B	B	B	48	F	F	F	A	A	F
31	A	35	A	F	A	A	B	43	48	50	51	B	B	58	B	62	56	B	B	50	44	37	43	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	3	2	2	2	3	3	6	8	9	12	12	12	12	17	18	19	23	24	19	18	14	11	8	5
MED	23	36	F 39	49	38	F 43	48	48	48	56	57	61	61	62	64	62	60	55	53	50	44	40	42	F 29
UQ	36				51	F 54	57	56	60	69	66	68	68	72	70	70	70	65	59	51	51	44	45	44
LQ	22				33	43	43	42	46	50	52	51	52	57	59	59	55	51	48	43	39	30	36	F 28

OCT. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 1983 | FES (0.1 MHZ)

45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	13	30	44	B	41	52	50	34	EG 23	EG 25	31	30	30	33	34	33	EG 23	32	21	17	34	17	41	44
2	41	90	B	37	B	B	37	B	B	B	36	35	B	B	EB 29	B	28	EB 36	23	38	B	19	37	90
3	70	36	68	B	B	35	20	36	B	B	B	B	B	EB 30	B	EB 30	25	B	36	20	30	40	23	41
4	40	60	41	B	42	32	36	36	B	B	35	B	B	B	B	EB 58	EB 24	35	26	35	45	48	43	70
5	38	43	40	29	31	31	36	33	24	27	29	29	31	33	EG 29	28	24	31	27	EB 20	EB 11	EB 9	EB 10	21
6	36	36	36	B	36	44	58	46	43	EG 27	EB 36	B	EB 34	31	EB 28	EB 56	EG 26	EG 24	29	37	42	37	48	37
7	38	36	70	50	41	32	31	B	B	31	B	EG 20	EG 28	30	EB 30	G 25	EB 26	22	35	K 16	32	19	29	34
8	38	42	84	B	B	42	43	42	B	42	C	C	35	29	30	28	32	32	29	36	26	43	48	41
9	42	34	51	43	B	B	36	33	31	31	EG 29	EG 29	30	29	EG 27	EG 28	26	EG 22	EB 22	K 18	EB 16	EB 15	11	31
10	22	41	34	34	30	30	26	23	26	25	28	EB 33	EB 56	32	30	30	29	27	EB 24	EB 22	15	34	31	70
11	42	34	35	34	B	44	45	51	31	EG 28	B	B	EB 56	EB 33	EG 30	26	EB 27	26	24	B	B	EB 26	19	24
12	23	15	17	24	EB 14	EB 22	23	B	B	EG 30	EB 30	EG 31	33	32	32	29	EG 27	24	22	18	16	EB 18	43	48
13	46	41	44	36	42	B	35	B	B	42	B	B	B	B	B	27	EG 24	31	42	37	42	45	43	62
14	71	44	38	69	37	41	33	B	39	37	B	B	B	31	EB 42	EB 56	EB 30	EB 30	36	44	46	91	B	41
15	43	36	69	49	36	36	24	27	B	B	B	B	B	B	B	B	B	31	B	34	30	22	41	90
16	49	67	B	37	B	B	30	47	B	B	DS 32	EG 32	EB 34	31	29	EG 28	EG 31	EG 24	EG 23	37	42	44	39	34
17	70	46	90	70	42	42	51	42	42	43	EB 35	B	B	34	EB 41	EB 40	30	EB 30	43	70	26	37	70	44
18	60	59	B	42	B	37	40	21	B	B	B	B	B	B	B	EB 29	24	EB 29	42	43	44	90	69	80
19	B	32	34	B	36	B	B	36	B	B	B	B	B	B	B	B	EB 28	EB 29	24	26	25	14	16	26
20	14	22	31	31	31	28	29	42	42	32	EG 29	EB 52	32	EG 29	EG 27	EG 29	EB 27	EG 23	EB 34	EB 23	16	EB 20	16	38
21	35	70	43	B	27	32	35	EG 23	EG 26	EG 27	EG 29	31	EB 56	31	29	EG 26	EB 26	24	31	29	33	42	43	51
22	63	41	35	B	B	B	42	37	42	B	B	EG 29	EG 28	EG 29	B	EG 27	EB 57	B	EB 23	22	21	28	36	34
23	36	41	42	41	42	39	36	36	33	31	B	B	30	B	EB 57	EG 27	28	EB 28	36	31	35	36	36	45
24	78	39	35	33	B	B	34	26	25	B	B	B	B	EG 29	29	B	B	EB 29	34	36	26	42	70	36
25	B	36	42	B	B	32	EG 28	29	EG 27	31	32	30	30	31	31	28	EG 25	EG 23	EG 21	23	22	EB 13	12	30
26	32	35	42	B	36	37	43	36	EB 29	32	28	31	32	30	EG 29	28	28	31	24	20	16	13	14	10
27	11	EB 9	10	14	17	20	23	EB 30	EB 57	EB 34	30	EG 30	EG 29	37	32	32	31	30	23	25	EB 13	13	11	29
28	28	31	31	40	EB 32	B	B	EG 26	33	33	36	35	32	36	35	37	42	30	31	34	30	15	31	42
29	43	90	45	44	41	41	37	41	44	37	B	B	B	B	B	B	34	40	32	23	45	42	72	32
30	34	35	B	B	B	B	B	B	41	37	B	B	B	B	B	B	B	29	42	EB 23	43	71	50	41
31	41	31	31	35	42	50	B	42	30	EG 26	EG 28	B	B	EB 33	B	EB 50	EG 26	B	B	26	33	29	30	32
	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	31	27	20	20	22	27	25	20	22	17	15	18	22	21	25	28	28	29	30	29	31	30	31
MED	40	36	41	37	36	36	36	36	32	31	29	EE 31	31	31	EE 30	EE 29	EE 27	26	28	26	30	29	36	41
UQ	46	44	44	44	42	42	41	42	42	37	34	32	EB 34	33	31	EG 33	29	31	35	36	42	42	43	46
LQ	34	34	34	34	30	32	30	28	25	EG 27	EE 29	EG 30	30	30	EG 29	G 26	EE 26	EE 24	23	20	21	16	19	32

OCT. 1983 | FES (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1983 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	9	14	B	23	18	16	13	11	11	14	11	13	10	13	10	12	11	11	10	20	9	8	8
2	E	19	B	20	B	B	18	B	B	B	30	23	B	B	29	B	18	36	18	12	B	9	9	10
3	21	11	13	B	B	23	11	20	B	B	B	B	B	30	B	30	24	B	19	15	16	13	15	15
4	14	21	18	B	15	24	28	24	B	B	23	B	B	B	B	58	24	20	12	13	11	13	10	15
5	10	20	19	7	13	13	20	13	13	12	13	13	15	12	24	21	16	9	9	20	11	9	10	7
6	7	7	7	B	21	20	14	20	13	18	36	B	34	18	23	56	23	24	8	7	8	8	11	9
7	13	10	14	15	13	8	13	B	B	28	B	17	24	23	30	15	26	16	11	11	10	12	7	8
8	7	8	8	B	B	24	18	23	B	26	C	C	11	14	18	14	10	11	8	7	14	9	11	8
9	11	22	10	18	B	B	14	13	11	12	12	18	13	13	12	11	13	15	22	13	16	15	8	7
10	7	9	9	8	9	9	9	13	11	16	20	33	56	15	13	19	13	13	24	22	9	9	7	11
11	14	18	14	10	B	23	22	13	11	21	B	B	56	33	16	20	27	23	9	B	B	26	14	13
12	13	10	7	10	14	22	16	B	B	25	30	20	20	18	21	23	14	15	14	11	11	18	10	8
13	7	9	8	8	21	B	23	B	B	20	B	B	B	B	B	19	20	14	13	8	13	9	8	6
14	13	9	7	10	25	15	18	B	23	23	B	B	B	24	42	56	30	30	18	9	9	8	B	19
15	9	9	9	11	15	11	13	13	B	B	B	B	B	B	B	B	B	13	B	16	13	11	9	8
16	9	20	B	30	B	B	13	16	B	B	27	24	34	21	15	14	24	16	11	13	13	8	8	18
17	7	7	23	12	14	30	15	28	23	16	35	B	B	23	41	40	13	30	14	10	8	11	7	8
18	8	12	B	23	B	18	13	11	B	B	B	B	B	B	B	29	18	29	11	13	9	8	11	16
19	B	14	13	B	20	B	B	28	B	B	B	B	B	B	B	B	28	29	18	14	9	9	8	7
20	7	8	8	8	12	8	13	20	30	24	22	52	17	14	19	18	27	15	34	23	13	20	8	7
21	8	42	19	B	13	22	13	13	12	12	14	14	56	13	10	19	26	19	14	9	18	13	10	10
22	15	16	9	B	B	B	23	22	22	B	B	23	19	23	B	21	57	B	23	20	16	13	9	7
23	9	20	13	9	25	23	25	19	10	19	B	B	24	B	57	23	13	28	13	10	8	9	8	8
24	9	16	14	16	B	B	22	15	14	B	B	B	B	17	17	B	B	29	11	9	10	8	8	13
25	B	24	29	B	B	18	20	13	13	12	13	12	14	14	13	14	15	13	11	14	11	13	10	9
26	8	8	30	B	28	23	13	13	29	23	13	11	11	13	11	12	13	8	15	10	13	11	11	7
27	7	9	8	8	9	11	19	30	57	34	22	18	17	13	13	13	13	13	19	19	18	10	8	14
28	8	7	8	19	32	B	B	13	10	10	11	10	11	11	10	11	8	8	8	8	8	9	8	11
29	13	9	7	35	11	14	16	20	23	21	B	B	B	B	B	B	18	9	13	11	9	10	13	19
30	13	7	B	B	B	B	B	B	24	22	B	B	B	B	B	B	B	15	10	23	7	9	13	11
31	20	15	21	9	20	25	B	16	7	17	14	B	B	33	B	50	15	B	B	19	11	11	13	9
	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	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31	31	31
MED	9	10	13	19	23	23	18	20	23	23	32	D B 52	56	23	24	21	18	16	13	13	11	10	9	9
UQ	13	18	20	B	B	B	22	28	B	B	B	B	B	B	B	56	26	29	18	18	15	13	11	13
LQ	8	9	8	10	14	16	13	13	12	16	14	18	17	14	14	14	13	13	11	10	9	9	8	8

OCT. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 1983 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	B	A	A	A	A	240	230	235	235	230	220	215	220	230	220	210	230	A	A	A	A
2	A	A	B	A	B	B	A	B	B	B	A	A	B	B	240	B	250	B	A	A	B	A	A	A
3	A	A	A	B	B	A	A	A	B	B	B	B	B	250	B	250	250	B	A	335	A	A	A	A
4	A	A	A	B	A	A	A	A	B	B	260	B	B	B	B	B	255	A	275	A	A	A	A	A
5	A	A	A	A	A	A	A	A	210	225	215	210	220	230	225	240	220	215	230	240	200	215	225	255
6	A	A	A	B	A	A	A	A	A	245	B	B	E B 250	200	250	B	240	240	280	300	A	A	A	A
7	A	A	A	A	A	275	A	B	B	S	B	230	245	240	E B 240	225	225	240	240	255	270	A	A	A
8	A	A	A	B	B	A	A	A	B	A	C	C	235	240	235	225	250	250	225	A	A	A	A	A
9	A	A	A	A	B	B	A	A	240	225	280	240	225	225	H 220	240	240	240	230	230	240	240	235	285
10	A	A	A	A	A	300	260	230	225	205	200	230	S	225	205	220	225	235	240	225	245	A	A	A
11	A	A	A	A	B	A	A	A	250	220	B	B	S	235	225	225	240	245	230	B	B	240	240	275
12	A	A	325	330	B	B	260	B	B	230	210	210	205	210	225	205	230	225	220	210	210	270	A	A
13	A	A	A	A	A	B	A	B	B	A	B	B	B	B	B	250	255	255	A	A	A	A	A	A
14	A	A	A	A	A	280	A	B	A	A	B	B	A	250	B	S	255	E B 290	A	A	A	A	B	A
15	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	290	B	E A 300	280	A	A	A
16	A	A	B	A	B	B	200	A	B	B	S	245	235	225	225	240	260	245	H 250	A	E A 240	A	A	A
17	A	A	A	A	A	A	A	A	A	A	225	B	B	250	B	B	A	B	A	A	A	A	A	A
18	A	A	B	A	B	A	A	A	B	B	B	B	B	B	B	240	A	E B 270	A	A	A	A	A	A
19	B	A	A	B	A	B	B	A	B	B	B	B	B	B	B	B	240	260	245	250	310	290	325	A
20	300	290	A	A	A	290	H 220	A	A	S 250	205	B	200	225	205	205	220	235	250	250	225	245	250	A
21	A	S	A	B	A	A	A	205	H 200	200	225	H 200	B	200	210	240	H 210	215	225	250	A	A	A	A
22	A	A	A	B	B	B	A	A	A	B	B	255	240	240	B	H 220	B	B	260	250	255	A	A	A
23	A	A	A	A	A	A	A	300	250	205	B	B	E A 250	B	B	225	225	250	E A 290	A	A	A	A	A
24	A	A	A	A	B	B	A	255	220	B	B	B	B	200	200	B	B	235	250	A	255	A	A	A
25	B	A	A	B	B	A	265	240	240	H 240	220	205	H 210	210	H 200	235	220	225	H 220	215	230	240	245	260
26	300	A	A	B	A	A	A	250	240	240	H 205	205	H 200	H 200	H 200	210	210	230	225	230	180	240	250	240
27	245	250	255	260	260	H 250	240	290	B	250	220	225	240	220	225	225	225	210	230	225	225	210	230	A
28	A	A	A	A	B	B	B	240	205	200	210	210	210	235	225	220	225	225	220	225	225	240	275	A
29	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	A	A	260	275	A	A	A	A
30	A	A	B	B	B	B	B	B	A	A	B	B	B	B	B	B	B	245	A	B	A	A	A	A
31	A	A	A	A	A	A	B	A	250	225	H 210	B	B	E B 240	B	B	225	B	B	250	250	275	255	250
	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	2	2	2	1	5	6	8	12	15	14	13	15	22	18	20	24	24	22	19	16	11	10	6
MED	300	270	290	295	260	280	250	245	240	225	218	225	225	225	224	225	230	238	232	245	240	240	248	258
UQ	300					290	260	272	245	240	225	235	238	240	225	240	250	248	250	251	255	258	255	275
LQ	272					275	220	235	215	212	210	210	210	210	205	220	225	225	225	228	222	240	235	250

OCT. 1983 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1983 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Day \ 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
1	A	A	A	48	61	52	B	B	49	60	X 57	X 57	X 61	O X 64	O X 66	O X 62	O X 69	O X 70	62	58	X 55	52	A	A
2	42	A	A	A	54	48	50	B	A	B	O X 44	O X 44	O X 45	B	B	52	B	O X 51	X 47	X 48	X 50	X 48	A	A
3	A	A	U S 43	A	B	B	A	A	X 53	X 57	X 59	X 59	X 58	X 58	X 55	X 58	X 65	X 62	X 53	48	63	A	A	50
4	B	A	A	41	50	A	A	A	X 51	X 56	X 56	X 59	O X 46	X 58	X 59	X 61	X 60	X 58	X 57	O X 49	O X 49	X 53	X 49	45
5	41	47	O X 45	52	O X 55	U R 54	A	55	70	X 73	X 74	X 71	X 75	X 76	X 69	X 66	X 66	X 63	X 71	X 67	65	X 60	X 59	60
6	57	52	52	58	65	X 70	73	80	O X 86	X 85	X 80	X 81	X 85	80	X 73	X 69	X 70	X 67	X 66	X 64	X 60	60	60	63
7	X 63	62	62	60	70	72	70	74	X 79	X 84	O X 84	94	X 100	X 84	X 80	X 81	X 81	X 87	X 77	X 65	58	A	43	A
8	60	59	A	59	A	B	A	B	A	72	A	42	B	B	B	O X 56	50	81	81	53	52	42	A	A
9	A	A	A	A	59	A	A	A	A	B	A	B	B	B	B	B	X 60	B	A	X 49	O X 49	51	A	B
10	A	A	A	A	A	A	B	O X 42	B	A	B	B	B	B	B	B	B	B	43	O X 46	A	46	A	60
11	A	51	A	51	B	A	Y	X 57	65	X 66	64	X 59	X 59	X 59	X 61	60	O X 42	B	S 56	X 49	X 54	X 52	55	50
12	A	A	A	B	A	59	B	B	Y	B	A	B	B	B	B	70	69	58	X 53	62	48	60	60	43
13	B	A	A	51	42	52	59	B	A	A	B	B	B	B	B	B	O X 53	O X 49	B	52	A	A	44	S
14	A	A	42	O X 48	50	52	Y	Y	A	B	B	B	B	B	B	O X 46	X 50	B	66	59	A	A	A	B
15	O X 51	42	44	51	59	A	A	A	A	O X 55	X 57	X 57	X 58	O X 52	O X 46	O X 54	59	O X 56	Y	A	X 47	50	A	45
16	Y	B	A	X 42	B	B	Y	42	Y	Y	B	B	B	B	O X 49	X 56	O X 56	55	X 54	B	60	A	Y	X 42
17	O X 63	B	O X 40	A	B	37	B	42	O X 44	Y	B	B	B	B	B	B	X 59	X 52	Y	Y	B	A	O X 44	A
18	B	B	B	A	B	42	B	B	B	B	O X 43	Y	49	O X 55	B	X 58	X 54	X 54	X 49	X 43	A	O X 43	A	A
19	S	A	S	Y	B	A	Y	A	A	B	B	B	B	B	X 56	X 59	X 61	O X 56	O X 47	X 47	X 47	O X 46	X 44	X 43
20	B	B	A	48	Y	B	B	B	A	O X 44	B	B	B	B	63	B	B	B	52	40	O X 47	44	A	A
21	A	58	B	B	B	A	B	Y	58	X 59	X 51	X 56	O X 47	O X 46	X 59	X 58	X 58	X 56	X 54	X 51	X 46	A	33	O X 40
22	X 42	B	45	B	B	O X 48	A	B	58	B	B	B	B	O X 46	61	X 58	X 59	X 56	O X 50	O X 52	O X 50	O X 51	X 51	53
23	45	B	B	42	X 53	65	72	X 77	78	X 78	X 75	X 71	X 68	X 65	X 65	X 59	X 60	X 57	X 57	X 57	X 54	X 54	X 53	60
24	62	60	60	B	B	70	70	70	70	73	75	72	70	O X 67	B	63	Y	X 68	X 65	X 59	B	X 42	A	A
25	A	B	56	58	A	A	A	A	A	O X 47	O X 46	46	O X 43	50	B	X 62	69	63	60	O X 54	X 48	O X 46	A	A
26	58	50	A	A	A	B	B	B	A	Y	B	B	B	B	B	O R 58	62	B	B	O X 49	48	48	O X 45	50
27	42	43	B	48	Y	X 51	58	69	X 73	71	X 71	X 65	X 67	X 75	X 79	X 74	X 71	X 65	X 53	48	X 51	X 48	49	54
28	46	X 44	X 46	X 48	X 52	58	69	68	X 70	X 74	X 70	68	X 66	70	58	X 60	B	X 53	X 57	X 48	58	A	A	A
29	43	51	67	A	52	A	51	Y	A	Y	O X 51	U R 56	O R 51	O X 53	B	X 66	X 68	B	O X 54	X 51	X 51	51	52	A
30	A	A	A	50	B	O X 41	51	Y	A	O X 46	O X 46	O X 50	B	B	B	O X 55	B	O X 49	B	O X 49	O X 48	O X 43	A	48
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	14	12	12	17	13	16	10	11	14	17	18	18	17	17	16	25	24	23	24	27	24	22	15	16
MED	48	51	46	50	54	52	64	68	68	X 66	X 58	X 59	X 59	X 59	X 61	X 59	X 60	X 57	X 55	X 51	X 50	X 49	49	50
UQ	60	58	58	52	59	62	70	72	X 73	X 73	X 74	X 71	X 68	X 70	X 68	X 63	X 68	X 66	X 64	X 58	56	52	54	57
LQ	42	46	44	48	52	48	51	48	53	X 56	O X 51	X 56	O X 49	O X 53	X 57	X 58	X 57	X 54	X 52	X 48	X 48	X 46	44	44

NOV. 1983 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1983 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	F	F	42	B	B	42	50	51	51	55	58	60	56	63	64	52	49	49	F	A	A
2	F	A	A	A	F	F	F	B	A	B	E G 38	E G 38	E G 39	B	B	F 44	B	45	41	42	43	42	A	A
3	A	A	U S 37	A	B	B	A	A	47	51	52	52	52	52	49	52	59	55	47	F 41	F	A	A	F
4	B	A	A	F	F	A	A	A	45	50	50	J R 53	E G 40	52	53	55	53	51	51	43	43	47	43	J F 39
5	F	F	39	F	46	U R 43	A	F	F	67	68	65	69	70	63	60	60	61	65	61	F 57	54	52	F 47
6	F	F	F 42	F	F 57	63	F	F 70	80	79	73	J R 74	79	F 70	67	63	63	61	60	58	54	F	F	F 55
7	55	F	53	48	F	F	F	F 66	72	78	78	86	94	78	74	75	75	80	70	59	48	A	F	A
8	F	F	A	F	A	B	A	B	A	F	A	F	B	B	B	50	F	F	39	F	F	F	A	A
9	A	A	A	A	F	A	A	A	A	B	A	B	B	B	B	B	54	B	A	43	43	F	A	B
10	A	A	A	A	A	A	B	E G 36	B	A	B	B	B	B	B	B	B	B	F	40	A	F	A	F
11	A	F	A	F	B	A	Y	51	F 55	60	F 57	53	53	J R 53	55	F	E G 36	B	F 50	43	48	46	F	F
12	A	A	A	B	A	F	B	B	Y	B	A	B	B	B	B	F	F	42	47	F	F	F	F	F
13	B	A	A	F	F	F	F	B	A	A	B	B	B	B	B	B	47	43	B	F	A	A	F	F
14	A	A	F	42	F	F	Y	Y	A	B	B	B	B	B	B	E G 40	44	B	F	F	A	A	A	B
15	45	F	F	F	F	A	A	A	A	49	51	51	J R 52	46	E G 40	48	52	50	Y	A	41	F	A	F
16	Y	B	A	36	B	B	Y	F	Y	Y	B	B	B	B	E G 43	50	50	F	48	B	F	A	Y	36
17	47	B	34	A	B	F	B	F	E G 38	Y	B	B	B	B	B	B	53	46	Y	Y	B	A	38	A
18	B	B	B	A	B	F	B	B	B	B	E G 37	Y	F	49	B	52	48	48	43	37	A	37	A	A
19	S	A	S	Y	B	A	Y	A	A	B	B	B	B	B	50	53	54	50	41	41	41	40	38	37
20	B	B	A	F	Y	B	B	B	A	E G 38	B	B	B	B	F	B	B	B	F	F	40	F 37	A	A
21	A	F	B	B	B	A	B	A	J F 52	52	45	50	E G 41	E G 40	52	51	52	50	48	44	40	A	F 26	34
22	35	B	F	B	B	42	A	B	49	B	B	B	B	E G 40	53	52	53	50	44	46	44	45	45	F
23	F 35	B	B	F	47	F 53	F 60	70	70	72	69	65	62	59	59	53	53	51	51	51	48	48	47	F
24	F	F	F	B	B	F	F	F	F	F	F	F 59	F	61	B	55	Y	61	59	J R 53	B	36	A	A
25	A	B	F	F	A	A	A	A	A	E G 41	E G 40	F	E G 37	F	B	56	F 59	F	F	R 48	42	40	A	A
26	F	F	A	A	A	B	B	B	A	Y	B	B	B	B	B	U R 52	53	B	B	43	F 40	F	39	F
27	F	F	B	F	Y	45	F	F 57	67	62	65	59	61	69	73	68	64	59	47	40	45	42	F 41	F 38
28	F	38	40	42	46	50	60	60	64	68	63	F 60	60	62	F	53	B	47	51	42	F	A	A	A
29	F	F	F	A	F	A	F 42	Y	A	Y	45	U R 50	F 44	46	B	60	62	B	48	45	45	F	F	A
30	A	A	A	F	B	E G 35	F	Y	A	E G 40	E G 40	44	B	B	B	49	B	43	B	E G 43	42	37	A	F
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	1	6	4	4	8	3	7	12	15	17	16	15	16	14	23	22	20	20	22	19	13	9	7
MED	45	38	40	42	46	46	F 60	60	54	52	51	53	53	56	54	53	53	50	48	43	43	42	41	F 38
UQ	47		42	45	52	52	60	68	68	68	65	62	62	66	63	56	60	60	52	49	48	46	45	F 43
LQ	35		37	39	46	42	51	54	46	50	45	50	42	48	50	50	52	46	46	42	42	37	38	36

NOV. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1983 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	42	58	47	38	37	30	B	B	41	E G 28	33	31	32	E B 50	E B 51	E G 32	E B 33	E B 29	26	36	33	33	42	45
2	60	46	53	45	37	33	35	B	42	B	32	31	E G 31	B	E B 33	31	B	29	40	34	30	43	42	41
3	47	70	35	47	B	B	41	37	32	E G 33	E G 29	E G 30	31	E G 30	31	E G 28	E G 28	30	23	34	23	42	44	48
4	B	42	41	37	25	37	42	45	34	30	31	E G 29	E G 30	31	35	33	32	E G 25	33	E B 23	E B 21	18	15	23
5	29	K 31	K 32	35	36	36	45	42	33	33	E G 31	E G 31	39	42	35	35	27	36	35	32	21	16	16	15
6	28	27	22	17	20	30	31	32	E B 28	36	31	32	33	42	40	42	32	34	25	29	29	28	13	20
7	18	29	E B 18	29	25	30	31	32	E G 28	E G 30	E B 32	E G 32	33	37	34	40	35	40	30	45	47	70	58	51
8	42	30	50	34	44	B	42	B	40	40	34	41	B	B	B	E G 32	36	24	E B 30	41	43	38	45	44
9	79	44	42	41	48	58	42	37	37	B	34	B	B	B	B	B	E G 27	B	42	35	42	44	41	B
10	45	42	41	37	42	36	B	E G 31	B	42	B	B	B	B	B	B	B	B	34	24	42	47	31	42
11	40	37	42	41	B	42	35	41	29	E G 29	E G 29	E G 29	33	32	31	E G 28	E B 30	B	42	30	31	26	42	31
12	47	42	42	B	41	30	B	B	32	B	43	B	B	B	B	E G 32	38	29	26	43	35	58	70	37
13	B	38	45	31	27	26	32	B	36	29	B	B	B	B	B	B	E G 29	29	B	42	46	47	67	37
14	79	42	36	42	30	32	36	E G 30	48	B	B	B	B	B	B	31	32	B	35	40	67	36	39	B
15	38	36	48	41	35	38	51	45	41	30	34	32	E G 30	E G 31	E G 30	E G 29	32	E B 28	37	41	34	45	70	45
16	31	B	51	32	B	B	36	36	33	37	B	B	B	B	E B 36	E G 28	33	37	29	B	71	70	35	70
17	41	B	31	40	B	60	B	30	37	36	B	B	B	B	B	B	31	35	32	32	B	43	37	60
18	B	B	B	42	B	31	B	B	B	B	31	32	27	E G 30	B	E B 30	33	29	33	26	80	31	35	36
19	35	42	35	36	B	37	35	42	60	B	B	B	B	B	28	E G 28	G 28	E B 29	23	25	31	40	30	34
20	B	B	35	36	30	B	B	B	42	E G 27	B	B	B	B	E B 57	B	B	B	31	25	29	38	45	41
21	70	59	B	B	B	39	B	46	E G 30	32	E G 29	31	32	30	E G 28	E G 28	32	29	28	32	29	42	K 17	E B 22
22	31	B	36	B	B	37	45	B	33	B	B	B	H	30	31	31	29	31	28	31	23	21	16	35
23	31	B	B	31	31	30	24	32	32	31	32	31	32	34	37	43	36	34	41	37	36	17	16	16
24	18	36	E B 19	B	B	36	42	41	E G 29	E B 55	32	36	35	E B 56	B	32	29	33	E B 24	E B 29	B	36	61	48
25	41	B	35	80	71	45	42	46	42	37	34	E G 32	E G 32	E G 32	B	E G 29	E G 29	E B 31	33	28	29	36	45	45
26	52	42	58	37	35	B	B	B	50	36	B	B	B	B	B	E G 31	E G 29	4	B	26	30	80	34	42
27	49	35	B	32	35	35	31	30	32	E G 29	E G 28	24	31	31	29	29	E B 30	27	24	34	36	40	36	40
28	37	36	40	32	34	28	31	70	40	E G 29	32	32	33	35	33	36	B	32	31	33	42	58	52	50
29	50	48	32	60	90	45	37	36	42	38	E G 30	33	33	35	B	30	G 33	91	46	45	43	34	45	50
30	70	67	61	40	B	35	35	33	43	E G 31	32	E G 31	B	B	B	E G 30	B	E G 24	B	37	36	30	40	63
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	26	23	26	26	20	25	22	21	28	23	21	19	17	17	17	25	25	23	27	29	28	30	30	28
MED	42	42	40	37	35	36	36	37	36	31	32	31	32	32	32	E E 31	32	29	31	33	34	39	40	42
UQ	50	45	47	41	42	38	42	42	42	36	33	32	33	36	35	32	33	34	35	37	42	45	45	48
LQ	31	36	35	32	30	30	32	32	32	E G 30	E G 31	31	29	30	30	E G 29	E E 29	29	26	29	29	31	31	34

NOV. 1983 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1983 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	13	21	13	15	18	B	B	16	13	20	14	13	50	51	24	33	29	19	12	13	9	11	7
2	9	13	15	19	13	13	8	B	30	B	23	19	23	B	33	13	B	20	9	19	10	7	7	13
3	13	9	7	23	B	B	23	15	13	13	11	13	14	13	12	11	11	12	10	9	8	10	18	7
4	B	23	26	7	9	15	19	19	10	9	9	13	14	13	13	13	13	10	9	23	21	9	9	9
5	7	25	23	8	21	16	13	11	13	15	16	13	12	13	13	13	10	9	11	8	12	9	9	9
6	8	9	11	10	9	9	9	9	13	10	10	13	15	10	10	13	13	9	11	8	9	8	9	7
7	7	8	18	13	13	8	7	8	8	13	32	21	14	15	19	10	9	7	8	9	9	7	8	E
8	7	7	9	13	13	B	30	B	20	20	23	23	B	B	B	24	16	19	30	9	7	9	7	7
9	25	23	19	23	E	8	20	18	18	B	23	B	B	B	B	B	14	B	13	10	8	8	7	B
10	14	7	23	14	15	24	B	19	B	24	B	B	B	B	B	B	B	B	10	11	9	11	23	7
11	8	7	23	9	B	15	19	13	9	8	7	11	10	9	10	21	30	B	23	14	9	7	E	9
12	20	7	29	B	20	13	B	B	23	B	22	B	B	B	B	29	19	12	10	8	18	8	9	8
13	B	11	14	8	10	8	11	B	13	21	B	B	B	B	B	B	15	9	B	13	11	16	8	8
14	9	20	9	15	9	11	15	8	18	B	B	B	B	B	B	22	13	B	11	7	24	13	13	B
15	23	8	8	9	8	14	14	10	14	9	8	10	19	11	13	13	8	28	9	8	12	8	8	9
16	25	B	23	14	B	B	11	19	24	21	B	B	B	B	36	19	13	10	11	B	11	13	21	12
17	9	B	8	7	B	12	B	12	10	10	B	B	B	B	B	B	27	11	19	13	B	13	10	14
18	B	B	B	23	B	13	B	B	B	B	23	23	20	18	B	30	16	15	13	21	18	16	16	23
19	21	29	29	29	B	25	19	24	23	B	B	B	B	B	16	13	18	29	13	13	8	9	9	10
20	B	B	22	7	23	B	B	B	14	11	B	B	B	B	57	B	B	B	14	8	15	10	9	15
21	7	8	B	B	B	18	B	23	13	10	12	13	13	23	11	13	11	10	10	11	7	10	13	22
22	10	B	17	B	B	11	11	B	10	B	B	E	B	19	19	15	15	13	14	11	20	13	8	11
23	10	B	B	23	15	7	8	11	9	11	13	13	13	13	10	11	11	13	13	11	11	11	9	9
24	8	7	19	B	B	13	10	13	15	55	13	8	28	56	B	23	23	13	24	29	B	11	10	14
25	14	B	9	15	22	20	21	14	13	22	20	20	25	19	B	23	22	31	13	23	9	7	10	7
26	7	8	20	13	22	B	B	B	24	21	B	B	B	B	B	23	14	B	B	22	8	8	16	10
27	8	8	B	9	22	13	10	8	8	13	14	22	18	13	21	12	30	23	22	9	10	13	8	7
28	7	6	13	13	9	8	7	9	8	11	8	18	10	13	20	13	B	8	7	10	8	7	7	7
29	11	7	8	8	8	13	8	11	23	22	10	13	10	8	B	26	10	B	8	8	8	8	10	13
30	9	22	22	9	B	13	8	13	17	11	8	16	E	B	8	14	B	16	B	26	16	7	23	8
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	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	10	12	20	13	20	13	17	16	14	18	21	20	24	36	44	20	16	16	13	11	10	9	9	9
UQ	21	29	23	23	B	20	B	B	23	55	B	B	B	B	B	26	30	31	19	19	16	11	13	13
LQ	8	8	11	9	10	11	10	11	10	11	11	13	14	13	13	13	13	10	10	9	8	8	8	7

NOV. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1983 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Day \ 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
1	A	A	A	A	A	A	B	B	270	210	205	200	200	B	B	240	260	240	230	240	255	310	A	A
2	A	A	A	A	A	270	260	B	A	B	280	210	250	B	B	250	B	240	H 260	260	290	A	A	A
3	A	A	A	A	B	B	A	A	A	250	H 200	240	220	255	230	225	240	225	210	300	A	A	A	A
4	B	A	A	A	280	A	A	A	280	210	H 200	H 210	210	210	225	210	H 205	H 210	260	240	240	250	270	270
5	310	B	400	A	A	340	A	A	230	210	H 205	210	240	220	H 210	200	215	205	225	235	235	235	240	245
6	300	270	300	300	255	240	220	220	210	210	H 205	200	210	210	H 200	H 230	210	220	220	230	230	230	240	240
7	250	285	330	A	290	245	230	200	230	205	220	200	210	225	210	210	225	230	225	A	A	A	A	A
8	A	A	A	A	A	B	A	B	A	A	A	A	B	B	B	270	240	275	E B 275	A	A	A	A	A
9	A	A	A	A	A	A	A	A	A	B	A	B	B	B	B	B	240	B	A	130	A	A	A	B
10	A	A	A	A	A	A	B	280	B	A	B	B	B	B	B	B	B	B	A	180	A	A	A	A
11	A	A	A	A	B	A	200	A	240	205	H 210	200	E A 225	200	210	240	250	B	A	240	260	270	250	A
12	A	A	A	B	A	A	B	B	A	B	A	B	B	B	B	255	300	240	E A 280	A	A	A	A	E A 270
13	B	A	A	A	A	260	240	B	A	A	B	B	B	B	B	B	280	A	B	H 270	A	A	A	A
14	A	A	A	A	300	A	A	240	A	B	B	B	B	B	B	H 200	320	B	A	A	A	A	A	B
15	A	A	A	A	A	A	A	A	A	210	H 200	H 210	225	H 210	220	230	230	230	A	A	A	A	A	A
16	A	B	A	A	B	B	A	A	Y	A	B	B	B	B	225	230	270	275	240	B	A	A	A	280
17	A	B	A	A	B	A	B	240	210	A	B	B	B	B	B	B	230	240	A	A	B	A	A	A
18	B	B	B	A	B	A	B	B	B	B	230	Y	Y 230	210	B	220	235	210	255	240	A	300	A	A
19	A	A	A	A	B	A	A	A	A	B	B	B	B	B	E A 240	240	250	210	230	250	255	E A 230	290	300
20	B	B	A	A	A	B	B	B	A	240	B	B	B	B	B	B	B	B	255	Y	A	240	A	A
21	A	A	B	B	B	A	B	A	240	200	H 200	250	210	210	H 210	240	220	210	230	240	240	A	300	300
22	A	B	A	B	B	300	A	B	260	B	B	B	B	230	220	210	225	225	220	225	245	240	255	250
23	A	B	B	A	300	225	220	210	205	200	210	205	200	190	210	E A 210	210	210	220	240	230	220	240	245
24	250	250	300	B	B	A	A	220	210	B	200	200	Y	B	B	210	Y	230	225	E B 250	B	270	A	A
25	A	B	A	A	A	A	A	A	A	225	E A 250	215	210	240	B	250	H 250	E B 240	250	250	240	A	A	A
26	A	A	A	A	A	B	B	B	A	A	B	B	B	B	B	240	H 210	B	B	250	A	A	A	A
27	A	A	B	A	A	A	260	210	205	200	205	Y	Y	240	Y	220	210	225	220	245	A	255	E A 250	A
28	240	A	A	A	A	H 220	225	225	205	235	205	205	210	225	220	200	B	H 180	225	255	240	A	A	A
29	A	A	A	A	A	A	A	A	A	A	200	250	240	225	B	225	260	B	E A 260	260	A	265	A	A
30	A	A	A	A	B	A	220	A	A	240	210	200	B	B	B	210	B	225	B	255	A	290	A	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	5	3	4	1	5	8	9	9	13	15	18	16	15	15	13	25	24	22	21	22	12	14	9	9
MED	250	270	315	300	290	252	225	220	230	210	205	208	210	220	215	225	238	225	228	241	240	252	250	270
UQ	300	278	365		300	285	240	240	240	230	210	212	228	228	222	240	255	240	248	255	255	270	270	280
LQ	250	260	300		280	232	220	210	210	205	H 200	200	210	210	210	210	218	210	225	240	238	235	240	245

NOV. 1983 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 1983 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Day \ 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
1	A	A	O X 42	B	B	B	A	A	A	B	60	B	R 49	O X 52	O X 53	B	O X 47	O S 56	X 57	O X 53	X 49	X 48	X 47	O X 43
2	42	A	O R 48	O X 48	B	B	A	B	A	Y	B	50	X 57	X 60	X 61	X 64	X 62	X 60	X 53	X 49	X 52	O X 48	X 48	X 46
3	X 46	52	50	A	A	A	59	59	65	74	69	X 65	X 68	X 65	X 64	X 62	X 59	X 64	X 61	X 57	X 54	X 53	52	X 49
4	52	Y	51	53	63	72	78	77	X 79	X 79	O X 76	X 77	X 75	X 72	X 70	O X 65	X 60	X 61	X 60	X 57	52	B	X 47	O X 47
5	51	X 52	61	60	80	70	62	A	62	63	63	72	72	80	80	71	73	69	59	52	58	A	42	S
6	A	A	A	52	58	80	A	A	A	B	B	O X 46	Y	B	B	X 73	X 64	Y	O X 47	X 48	O X 48	X 47	80	A
7	39	53	A	B	B	Y	O X 43	B	Y	O X 52	O X 52	O X 52	B	B	71	B	B	X 53	O X 43	70	A	55	A	Y
8	43	B	Y	36	B	B	B	B	B	B	O X 66	65	B	B	O X 66	O X 67	X 67	67	B	X 59	O X 55	X 53	X 56	45
9	58	52	60	B	69	70	79	83	79	X 72	X 70	X 67	O X 64	X 60	X 62	X 61	62	X 64	X 64	X 63	X 60	X 60	X 61	X 57
10	X 57	X 60	60	65	71	80	90	X 78	O X 87	B	O X 94	X 90	O X 87	B	B	99	76	B	Y	Y	A	A	46	A
11	A	42	42	45	48	51	A	A	X 53	58	Y	O X 65	B	B	X 65	X 64	X 75	Y	S	58	O X 48	59	X 46	58
12	51	A	O X 42	58	A	Y	O X 42	A	48	E G 47	O X 51	B	O X 48	O X 49	59	X 60	X 65	X 58	O X 52	O X 51	O X 44	O X 50	47	A
13	A	A	A	A	A	A	B	B	Y	B	B	B	O X 47	O X 47	B	B	58	B	45	43	X 50	46	50	A
14	B	B	50	B	Y	Y	E G 41	O X 44	O X 46	B	B	B	B	B	O X 46	B	B	X 56	B	O X 40	X 48	Y	O X 48	45
15	B	45	O R 46	42	B	B	B	Y	61	B	B	B	B	B	B	B	B	50	B	X 58	X 53	X 48	X 48	X 48
16	X 49	B	B	B	Y	B	B	A	B	59	X 58	B	O X 56	B	R 58	R 58	S	X 59	O X 46	O X 53	U S 54	O X 55	X 53	X 43
17	46	54	Y	A	Y	Y	X 59	69	73	X 70	X 72	X 71	X 68	X 68	X 65	X 61	X 64	X 65	X 62	59	X 53	O X 47	B	46
18	O X 48	52	52	B	B	O X 51	70	X 71	80	79	X 72	X 74	X 76	X 76	X 72	X 66	X 61	X 61	X 57	X 52	B	Y	A	A
19	60	43	55	B	A	A	A	Y	Y	B	54	Y	O X 46	O X 47	O X 46	S	O X 56	X 56	X 56	X 52	X 52	X 48	X 40	X 44
20	O R 41	A	A	A	A	57	Y	O X 42	O X 47	O X 53	59	X 56	E G 47	R 56	U R 56	O X 47	O X 46	O S 51	O X 51	X 49	X 50	X 51	X 51	X 53
21	52	X 43	X 45	52	X 56	58	Y	52	63	70	70	69	X 69	X 64	X 60	X 58	X 57	X 56	X 60	X 60	X 58	X 58	X 45	O X 44
22	45	A	O X 45	80	A	A	45	O X 51	63	71	X 71	X 71	70	X 74	X 81	82	66	X 57	X 52	O X 55	62	60	A	O R 42
23	42	59	51	59	59	55	A	61	58	B	E G 47	58	62	B	63	X 61	X 62	X 60	U R 48	O H 48	50	X 51	O R 51	O X 47
24	A	Y	Y	65	58	45	65	X 70	70	69	X 70	X 69	X 66	X 68	X 66	X 60	O X 55	B	Y	56	A	70	A	O X 44
25	43	A	A	60	58	B	S	A	A	45	O X 55	X 59	X 60	X 59	X 60	R 60	X 61	66	54	X 46	X 47	45	51	A
26	A	O R 41	51	A	B	42	O X 44	Y	O X 43	O X 47	O X 52	O X 48	Y	X 56	X 57	53	O X 48	O X 56	O X 56	56	48	O X 44	A	A
27	B	Y	41	B	A	A	44	A	O X 48	58	63	O X 46	58	O X 47	O X 47	X 58	O R 52	46	X 57	X 57	50	O X 44	A	B
28	A	A	51	50	A	Y	Y	A	A	Y	O X 49	O X 55	B	O X 46	O X 48	O X 49	O X 49	O X 46	O X 45	52	Y	O R 50	O X 52	42
29	42	B	B	47	52	B	Y	X 53	X 59	X 64	X 68	O X 73	O X 70	73	X 68	X 69	B	O X 56	B	O X 52	O X 56	O X 55	X 49	46
30	X 45	B	45	A	B	A	O X 50	Y	A	A	X 58	B	O X 65	X 74	B	B	Y	Y	E G 42	E G 41	70	A	61	A
31	A	R 45	51	A	A	46	B	B	B	Y	O X 47	Y	Y	B	O X 47	B	B	45	O X 51	Y	70	O X 40	60	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	20	14	21	16	11	13	15	13	19	18	25	22	22	21	26	23	24	25	24	29	26	25	24	19
MED	46	52	50	52	58	57	59	X 61	62	64	X 63	X 65	X 64	X 60	X 62	X 61	X 61	X 57	X 54	X 53	X 52	X 50	X 50	X 46
UQ	52	53	51	60	66	70	68	71	72	71	X 70	X 71	X 70	X 72	X 66	X 66	X 64	X 61	X 58	X 57	X 56	X 55	52	X 48
LQ	42	43	45	48	57	51	X 44	X 52	X 50	53	X 54	O X 55	X 56	O X 52	X 56	X 59	O X 56	X 56	O X 48	49	X 49	O X 47	X 47	44

DEC. 1983 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 1983 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	35	B	B	B	A	A	A	B	F	B	J R 43	46	47	B	E G 41	S 50	50	47	43	42	41	37
2	F	A	F 39	R 42	B	B	A	B	A	Y	E	F	51	53	55	58	56	53	47	43	45	42	42	40
3	40	F 42	F	A	A	A	F	F	F 55	F 65	F	59	62	59	58	55	53	58	55	51	48	47	F	43
4	F 43	Y	F 43	F	F	F 63	71	F 69	72	72	70	71	69	66	63	59	54	55	54	50	F	B	41	41
5	F	46	F	F	F	F	F	A	F	F 53	F	F	F	F	F	F	F	F 60	F	F	49	A	F	S
6	A	A	A	F	F	A	A	A	A	B	B	E G 40	Y	B	B	67	58	Y	41	42	42	41	F	A
7	F	F	A	B	B	Y	E G 37	B	Y	46	46	46	B	B	61	B	B	47	E G 37	F	A	F	A	Y
8	F	B	Y	F	B	B	B	B	B	B	R 60	F	B	B	60	61	61	F	B	53	49	48	49	F
9	F	F	F	B	F	F	F	75	71	66	63	61	58	54	56	54	F	58	58	57	54	54	55	51
10	51	J R 54	F	F 57	F	F 70	F	72	81	B	88	84	81	B	B	F 90	60	B	Y	Y	A	A	F	A
11	A	F	F	F	F	F	A	A	47	F	Y	59	B	B	59	58	69	Y	S	F	42	49	40	F
12	F	A	36	F	A	Y	36	A	F	E G 41	E G 45	B	E G 42	43	53	53	59	52	46	45	38	44	F	A
13	A	A	A	A	A	A	B	B	Y	B	B	B	E G 41	E G 41	B	B	51	B	F	F	J R 44	F	F	A
14	B	B	F 40	B	Y	Y	E G 35	E G 38	E G 40	B	B	B	B	B	E G 40	B	B	50	B	E G 34	42	Y	42	F
15	B	F	F 38	F	B	B	B	Y	F	B	B	B	B	B	B	B	B	F	S	51	47	42	42	42
16	43	B	B	B	Y	B	B	A	B	51	50	B	50	B	J R 52	J R 52	S	J R 53	E G 40	47	U S 47	49	47	37
17	F	F 46	Y	A	Y	Y	53	F 60	F 65	64	66	64	62	62	59	J R 55	58	59	56	51	47	41	B	F
18	42	F 40	F	B	B	45	F	64	F 71	70	66	68	70	70	66	60	J R 55	J R 55	51	J R 46	B	Y	A	A
19	F	F	F	B	A	A	A	Y	Y	B	F	Y	E G 40	E G 41	E G 40	I S 51	50	50	50	46	46	42	34	38
20	F 33	A	A	A	A	Y	Y	E G 37	41	47	48	50	E G 41	R 50	U R 50	E G 41	E G 40	U S 45	45	43	44	45	45	47
21	F	37	F 37	F 44	49	F	Y	F 43	F	F 60	F 61	F 60	63	58	J R 54	J R 52	51	50	53	53	52	52	39	38
22	F	A	39	A	A	A	F	46	52	F	65	65	F 61	63	75	F	F	51	46	49	F	F	A	F 34
23	F	F	F	F	F	F	A	F	F	B	E G 41	F	F	B	F	54	55	J R 54	F	42	42	45	U R 45	41
24	A	Y	Y	F	F	F	F 53	63	62	61	64	62	60	62	60	54	49	B	Y	F	A	A	A	38
25	F	A	A	F	F	B	S	A	A	F	49	J R 53	54	53	J R 54	J R 54	55	58	F	40	40	F	F	A
26	A	F 33	F	A	B	F	E G 38	Y	E G 37	E G 41	46	E G 42	Y	50	51	F	E G 42	50	50	F 48	41	38	A	A
27	B	Y	F	B	A	A	F	A	42	F	51	E G 40	J F 52	E G 41	E G 41	J R 52	F 44	F	J R 50	51	F	38	A	B
28	A	A	F	F	A	Y	Y	A	A	Y	43	49	B	E G 40	E G 42	E G 43	43	E G 40	E G 39	F 44	Y	F 42	46	F 33
29	F	B	B	36	F	B	Y	47	53	58	62	67	64	F 64	62	63	B	50	B	46	50	49	42	F 38
30	38	B	F	A	B	A	44	Y 20	A	A	52	B	59	68	B	B	Y	Y	E G 36	E G 35	F	A	F	A
31	A	R 39	F	A	A	F	B	B	B	Y	E G 41	Y	Y	B	E G 41	B	B	F	45	Y	F	34	F	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	7	8	8	4	1	3	8	12	14	14	21	18	20	20	24	21	21	21	20	24	21	20	15	15
MED	42	41	F 38	43	49	F 63	41	54	54	59	52	60	58	54	54	54	54	52	48	46	45	43	42	38
UQ	43	46	F 40	F 50		F 66	53	66	71	65	64	65	62	63	60	59	58	55	52	51	48	48	46	42
LQ	39	38	36	39		54	E G 36	40	42	47	46	49	46	44	48	52	49	50	43	43	42	42	41	38

DEC. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 1983 | FES (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	47	35	41	B	B	B	42	42	45	B	E B 32	B	E B 31	E G 31	31	B	E B 30	E B 30	E G 27	28	32	20	25	39
2	35	39	32	35	B	B	48	B	49	36	B	E B 33	E G 33	29	E G 31	E G 30	E G 29	32	30	27	33	27	28	29
3	30	42	36	36	42	40	36	41	36	31	33	36	62	38	38	29	33	32	35	30	28	24	E B 19	60
4	33	33	22	19	30	30	34	35	34	E G 31	33	32	34	32	31	31	30	33	31	32	28	B	24	E B 20
5	36	32	37	42	36	37	58	42	35	E G 33	E G 31	E B 57	32	32	32	32	34	33	33	37	51	51	45	90
6	70	45	48	36	42	90	51	35	45	B	B	E G 32	33	B	B	G 30	30	32	E B 31	29	39	43	70	48
7	31	35	59	B	B	30	29	B	30	E G 32	E G 32	E G 32	B	B	E B 50	B	B	34	24	41	42	45	42	35
8	35	B	36	33	B	B	B	B	B	B	E B 57	32	B	B	30	34	E G 29	E G 27	B	29	26	35	23	33
9	70	45	33	B	K 33	35	31	33	34	33	35	32	E G 32	33	32	33	33	37	41	41	43	25	30	26
10	32	28	19	22	70	29	29	27	28	B	32	E B 35	E B 54	B	E B 60	39	36	B	36	36	64	49	41	105
11	42	41	32	29	41	31	44	51	41	E G 32	32	E G 32	B	B	E G 32	34	33	35	35	36	45	58	42	70
12	40	70	37	33	48	35	36	37	33	34	42	B	34	34	34	E G 31	32	33	38	40	37	47	48	70
13	45	41	35	38	33	42	B	B	36	B	B	B	26	25	B	B	28	B	34	32	33	31	44	44
14	B	B	33	B	31	35	32	30	26	B	B	B	B	B	25	B	B	31	B	21	29	36	41	75
15	B	35	31	30	B	B	B	36	E G 31	B	B	B	B	B	B	B	B	31	B	63	36	31	35	38
16	35	B	B	B	32	B	B	44	B	33	E G 32	B	31	B	E G 32	31	E B 29	E B 23	E B 30	24	24	24	K 20	19
17	30	35	26	45	36	36	39	32	32	E G 30	32	31	31	34	33	42	58	33	32	25	29	30	B	32
18	41	35	36	B	B	34	36	E G 28	E G 29	E G 29	31	34	31	33	31	36	E G 31	31	33	31	B	41	63	60
19	70	31	41	B	59	43	41	35	28	36	33	35	31	31	33	36	36	30	31	26	K 23	30	29	32
20	40	41	43	41	38	24	31	35	32	E G 29	31	31	31	33	30	E G 31	30	35	31	37	30	38	32	25
21	34	34	28	20	29	32	38	36	31	E G 30	31	33	34	E G 32	31	31	36	40	36	30	26	30	26	E B 20
22	27	48	42	42	43	40	37	35	32	32	E G 30	34	35	E G 31	E G 30	30	32	33	30	41	41	35	36	42
23	36	45	41	42	32	33	45	35	36	B	41	35	E G 32	B	E B 53	E B 31	E G 30	E G 28	31	27	32	29	36	51
24	43	33	32	35	28	33	33	31	33	33	42	34	33	42	32	60	33	B	33	42	45	40	47	42
25	36	50	45	35	65	B	40	47	43	E G 31	E G 30	26	31	33	30	27	29	E G 28	34	33	25	37	42	38
26	36	42	41	45	B	45	30	36	35	35	E G 30	E G 30	30	33	E G 32	29	E G 28	29	E G 26	K 27	K 25	33	45	71
27	B	41	36	B	39	41	31	41	35	35	E G 31	29	29	31	32	31	31	K 30	29	25	33	42	45	B
28	52	36	39	41	45	33	43	42	52	39	34	30	B	32	E G 30	E B 32	28	E B 30	29	37	42	41	35	26
29	41	B	B	36	45	B	34	32	E G 30	E G 32	E B 55	E B 56	E B 57	30	31	32	B	33	B	37	35	E B 23	31	29
30	33	B	43	42	B	38	35	43	42	43	34	B	E B 51	E B 55	B	B	26	36	35	24	72	70	42	42
31	45	70	100	43	43	64	B	B	B	26	E B 34	36	32	B	29	B	B	E B 29	32	36	25	33	70	60
	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	26	29	23	23	24	26	26	28	23	26	24	25	21	27	24	26	28	27	31	30	30	30	30
MED	36	41	36	36	39	35	36	36	34	32	32	32	32	32	31	31	30	32	32	32	33	35	38	40
UQ	44	45	41	42	44	40	42	42	38	34	34	34	34	33	32	34	33	33	34	37	42	42	45	60
LQ	34	35	32	33	32	32	32	33	31	E G 31	E G 31	32	31	30	30	30	28	30	30	27	28	30	29	29

DEC. 1983 | FES (0.1 MHZ)

IONOSPHERIC DATA

DEC. 1983 | F-MIN (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 sec in automatic operation

Day \ 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
1	20	23	8	B	B	B	19	20	23	B	32	B	31	19	10	B	30	30	19	14	8	14	13	7
2	20	14	19	23	B	B	14	B	14	28	B	33	23	19	14	18	9	8	8	13	13	16	8	10
3	7	7	15	23	23	15	13	12	8	8	11	10	13	13	13	13	11	8	13	11	7	9	19	14
4	8	16	8	10	7	7	7	7	8	18	23	15	11	8	13	19	13	10	10	8	13	B	13	20
5	9	8	8	9	8	20	14	13	8	3	9	57	16	13	15	28	8	8	12	13	9	14	8	20
6	14	11	8	8	8	8	10	13	19	B	B	21	22	B	B	25	14	14	31	13	9	8	7	8
7	13	8	14	B	B	22	20	B	13	18	15	15	B	B	50	B	B	12	13	11	13	13	23	16
8	11	B	28	8	B	B	B	B	B	B	57	23	B	B	21	21	15	19	B	24	23	14	17	14
9	13	7	19	B	22	23	11	8	8	8	13	13	13	13	14	10	8	9	10	7	7	7	8	7
10	7	9	14	8	9	11	7	15	23	B	23	35	54	B	60	13	18	B	13	13	8	7	8	23
11	8	7	5	8	11	8	13	8	9	13	23	14	B	B	23	11	8	11	13	8	8	7	7	12
12	8	14	12	7	13	22	8	12	8	8	13	B	13	13	20	14	21	11	17	13	7	13	9	11
13	13	7	8	8	8	22	B	B	13	B	B	B	23	23	B	B	21	B	11	14	10	9	13	13
14	B	B	18	B	24	14	8	13	20	B	B	B	B	B	18	B	B	13	B	13	13	21	13	15
15	B	12	22	8	B	B	B	18	9	B	B	B	B	B	B	B	B	21	B	14	12	13	8	8
16	15	B	B	B	18	B	B	14	B	20	13	B	19	B	14	24	29	28	30	18	16	14	8	7
17	7	7	24	22	23	14	14	14	8	11	13	11	13	11	10	11	9	11	14	18	10	10	B	11
18	14	13	13	B	B	20	9	8	9	10	11	10	15	13	13	10	13	11	8	8	B	18	13	11
19	7	7	9	B	19	13	13	13	13	10	13	23	18	15	8	8	11	9	13	13	9	8	7	7
20	13	9	13	11	13	9	13	9	10	10	9	11	13	13	13	18	15	11	8	8	7	9	8	7
21	7	7	7	9	9	9	13	8	9	8	9	11	12	13	13	8	7	7	8	9	7	8	9	20
22	8	13	7	20	13	14	11	7	8	8	9	10	10	14	20	20	13	15	14	9	9	12	9	13
23	7	7	7	E	9	12	13	10	10	B	11	13	16	B	53	15	8	18	11	15	10	10	8	9
24	16	23	27	7	21	23	9	7	8	8	8	12	15	13	13	8	8	B	13	9	9	7	10	7
25	7	7	13	7	9	B	13	18	13	10	18	24	15	13	9	24	18	12	9	11	12	10	7	8
26	14	7	8	11	B	9	11	14	17	9	13	10	18	17	17	11	13	8	7	7	10	9	9	9
27	B	23	11	B	13	13	20	22	18	13	11	9	11	10	9	9	11	19	10	9	7	11	8	B
28	7	13	7	7	8	23	14	13	13	15	11	10	B	15	15	32	16	30	16	11	24	9	9	9
29	9	B	B	12	13	B	20	17	15	13	55	56	57	24	14	13	B	13	B	27	24	23	8	7
30	13	B	18	18	B	14	13	15	24	13	9	B	51	55	B	B	11	13	11	10	8	13	10	18
31	8	13	15	14	15	9	B	B	B	24	34	23	19	B	23	B	B	29	25	15	13	7	14	19
	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	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	11	12	13	11	15	15	13	13	13	13	13	21	18	17	15	18	13	13	13	13	10	10	9	11
UQ	14	20	18	D B 23	D B 24	23	20	18	18	D B 28	33	56	52	B	23	30	21	20	18	14	13	14	13	16
LQ	8	7	8	8	9	12	11	10	8	10	11	11	13	13	13	11	10	10	10	9	8	8	8	8

DEC. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 1983 | H'F (KM) | 45° E Mean Time (G.M.T. + 3 h)

Station SYOWA STATION Lat. 69°00.4'S, Long. 39°35.4'E Sweep 4 MHz to 15 MHz in 20 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	B	B	B	A	A	A	B	200	B	190	225	205	B	200	215	225	225	275	250	255	A
2	A	A	A	A	B	B	A	B	A	A	B	250	220	Y 205	H 210	210	220	205	H 225	200	245	245	255	260
3	250	A	A	A	A	A	255	255	250	250	215	210	A	210	235	H 220	H 200	225	210	230	215	245	250	245
4	260	A	300	255	225	225	210	210	205	220	S	200	H 190	200	230	200	225	200	215	220	A	B	250	270
5	270	270	300	275	A	A	A	A	220	245	200	B	200	245	220	240	225	225	250	A	A	A	A	A
6	A	A	A	A	265	A	A	A	A	B	B	200	250	B	B	240	200	A	225	260	255	A	A	A
7	A	A	A	B	B	A	250	B	Y	200	200	225	B	B	B	B	B	260	E Y 250	A	A	A	A	A
8	A	B	A	A	B	B	B	B	B	B	B	Y	B	B	200	Y	H 220	220	B	240	240	250	250	A
9	A	E A 290	A	B	B	A	260	205	200	190	210	210	225	H 205	210	210	H 200	H 200	240	235	230	230	240	240
10	260	295	A	260	E A 240	240	215	200	Y	B	210	205	B	B	B	225	A	B	A	A	A	A	A	A
11	A	A	A	A	A	A	A	A	A	200	Y	210	B	B	220	H 200	215	A	A	A	A	A	A	A
12	A	A	A	A	A	A	A	A	210	210	300	B	240	225	240	215	240	220	A	A	A	A	A 220	A
13	A	A	A	A	A	A	B	B	A	B	B	B	Y 215	Y 225	B	B	H 200	B	260	A	A	A	A	A
14	B	B	275	B	A	A	230	230	225	B	B	B	B	B	210	B	B	220	B	Y 230	A	A	A	A
15	B	A	A	A	B	B	B	A	230	B	B	B	B	B	B	B	B	215	B	H 240	250	260	275	280
16	A	B	B	B	A	B	B	A	B	A	205	B	200	B	205	205	205	210	240	230	245	250	250	255
17	280	A	Y	A	A	A	A	H 230	200	190	200	190	H 200	H 200	225	A	210	205	210	210	E A 245	260	B	280
18	A	A	A	B	B	A	A	H 200	H 200	H 200	200	190	205	200	200	H 210	200	215	250	260	B	A	A	A
19	A	A	A	B	A	A	A	A	Y	B	230	A	205	220	H 200	230	235	210	210	245	230	260	245	290
20	A	A	A	A	A	Y	Y	275	200	210	210	205	200	190	H 210	215	210	220	210	225	245	240	235	255
21	A	290	310	H 240	260	240	A	A	220	190	185	195	H 200	220	200	190	205	A 210	225	H 210	220	240	250	240
22	240	A	A	A	A	A	290	260	220	210	215	210	210	210	230	210	220	230	220	A	A	A	A	A
23	A	A	A	A	A	A	A	260	210	B	250	H 200	200	B	B	205	220	215	245	230	240	240	250	A
24	A	Y	Y	A	A	A	205	205	H 190	225	255	H 200	200	E A 240	200	A	H 180	B	Y	A	A	A	A	A
25	A	A	A	A	A	B	210	A	A	200	H 200	Y 200	210	230	200	Y 225	210	220	250	210	220	A	A	A
26	A	A	A	A	B	A	225	A	255	H 200	190	210	Y	210	240	210	H 210	220	200	H 230	H 230	290	A	A
27	B	A	A	B	A	A	A	A	A	A	H 190	Y 210	Y	210	H 200	215	200	220	240	220	A	A	A	B
28	A	A	A	A	A	Y	A	A	A	A	210	H 200	B	240	210	210	210	250	225	225	E A 260	245	245	275
29	A	B	B	A	260	B	A	Y	225	210	B	B	B	Y 250	210	210	B	200	B	230	240	240	260	260
30	300	B	A	A	B	A	A	E A 300	A	A	210	B	B	B	B	B	Y	A	215	250	A	A	A	A
31	A	A	A	A	A	A	B	B	B	E Y 240	225	A	A	B	E Y 210	B	B	220	240	A	A	A	A	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	7	4	4	4	5	3	10	12	16	17	22	19	18	20	24	21	24	25	23	22	17	15	15	12
MED	260	290	300	258	260	240	228	225	215	205	210	205	202	212	210	210	210	220	225	230	240	245	250	260
UQ	275	292	305	268	260	240	255	259	225	215	215	210	215	226	222	220	220	220	241	240	245	255	252	278
LQ	255	275	288	248	240	232	210	205	200	200	200	200	200	205	200	210	200	210	215	220	230	240	245	250

DEC. 1983 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)
ION. ANT. — 41 July 1983—December 1983 (Not for Sale)

昭和基地電離層資料（南極）

（1983年7月—1983年12月）

1988年3月19日　印刷
1988年3月25日　発行
（非売品）

編集兼発行所　郵政省電波研究所
〒184 東京都小金井市貫井北町4丁目2－1
☎ 0423（21）1211（代）

Queries about "Ionospheric Data at Syowa Station" should be forwarded to: The Radio Research Laboratory, Ministry of Posts and Telecommunications, 2-1 Nukui-Kitamachi 4-chome, Koganei-shi, Tokyo 184 JAPAN.