ISSN 0389–8237

ION. ANT.—36

IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)

January 1981—June 1981

CONTENTS

Page

Introduction 1

Ionograms

January 4
February 20
March 34
April 50
May 65
June 81

Tables 96

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 fnequency 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

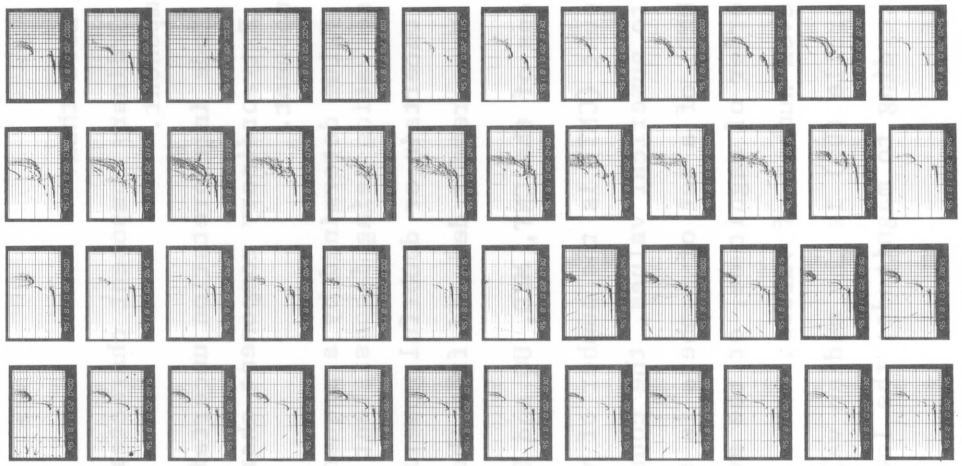
Median count (CNT) is the number of values from which a median has been computed. In addition to numerical values, the count may include certain descriptive letters.

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.

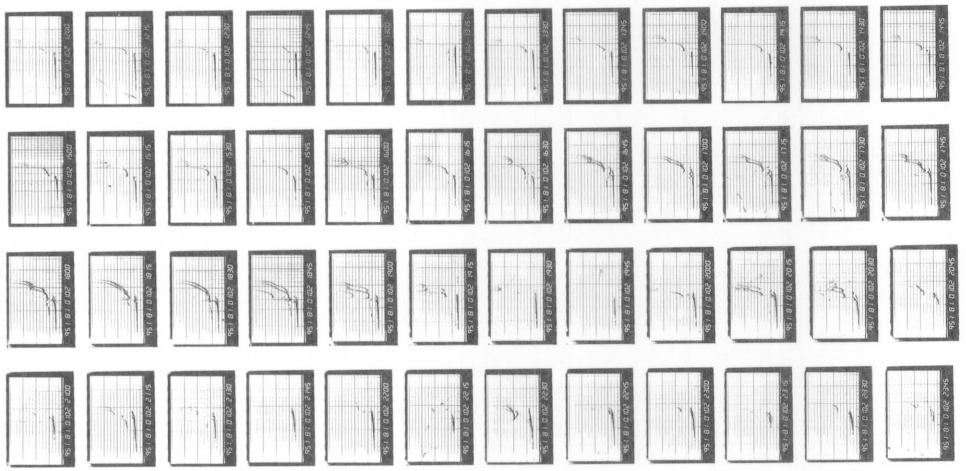
SYOWA STATION

IONOGRAM 1981 01 02 00;00-11;45



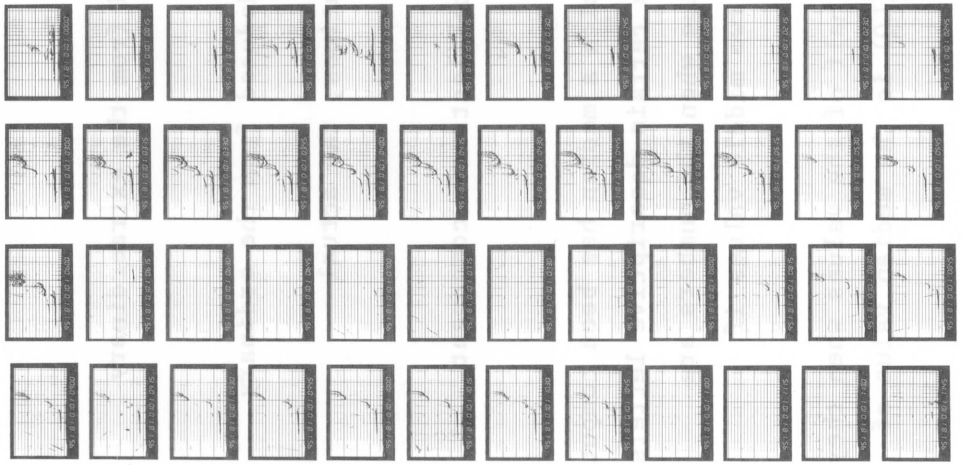
SYOWA STATION

IONOGRAM 1981 01 02 12;00-23;45



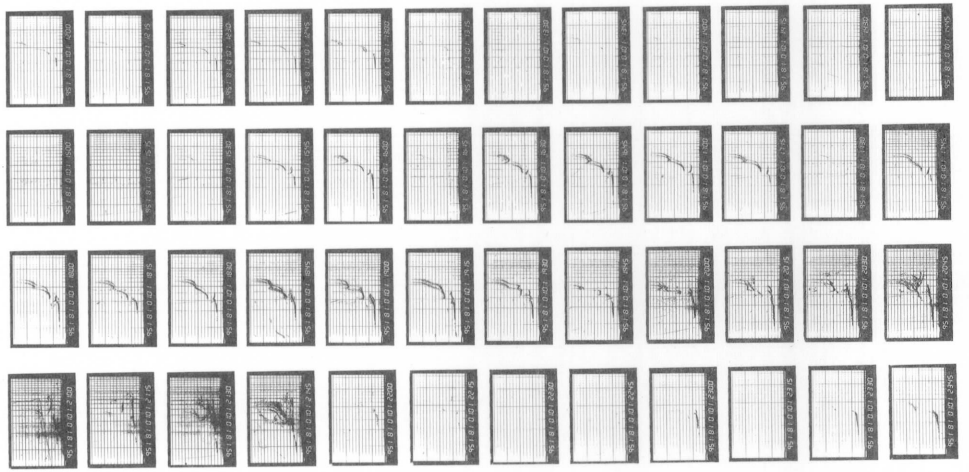
SYOWA STATION

IONOGRAM 1981 01 01 00;00-11;45



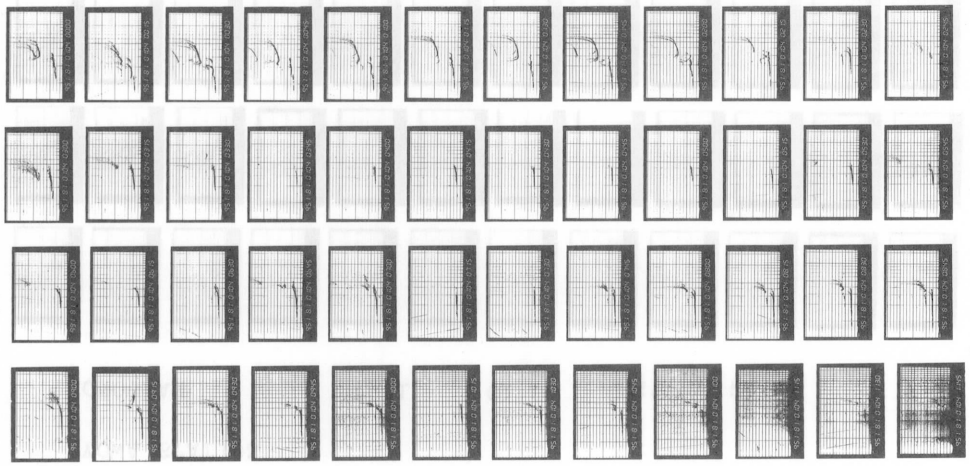
SYOWA STATION

IONOGRAM 1981 01 01 12;00-23;45



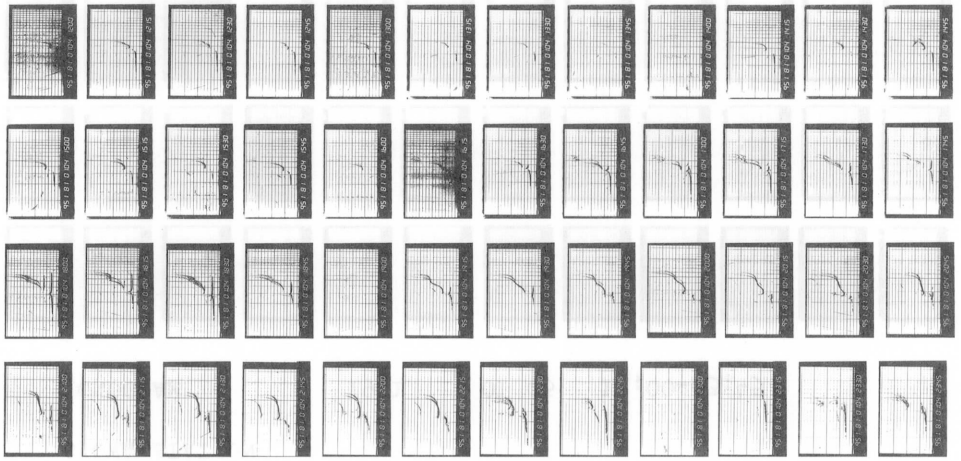
SYOWA STATION

IONOGRAM 1981 01 04 00;00-11;45



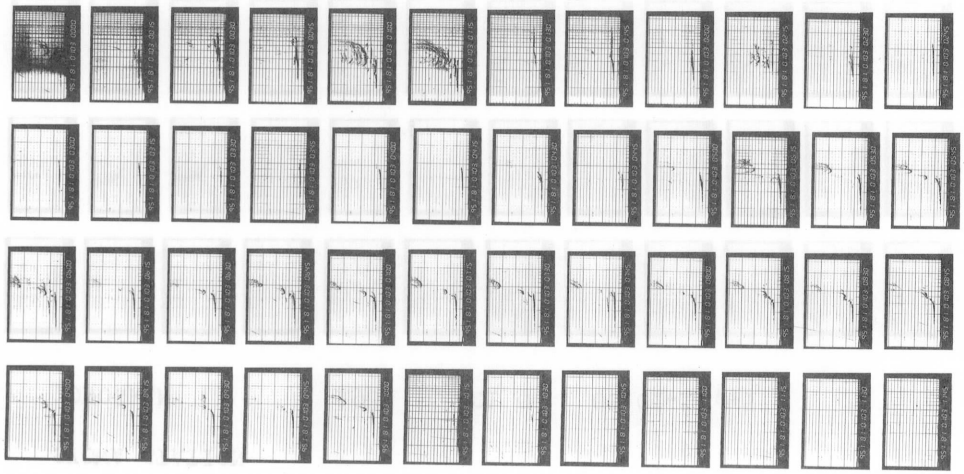
SYOWA STATION

IONOGRAM 1981 01 04 12;00-23;45



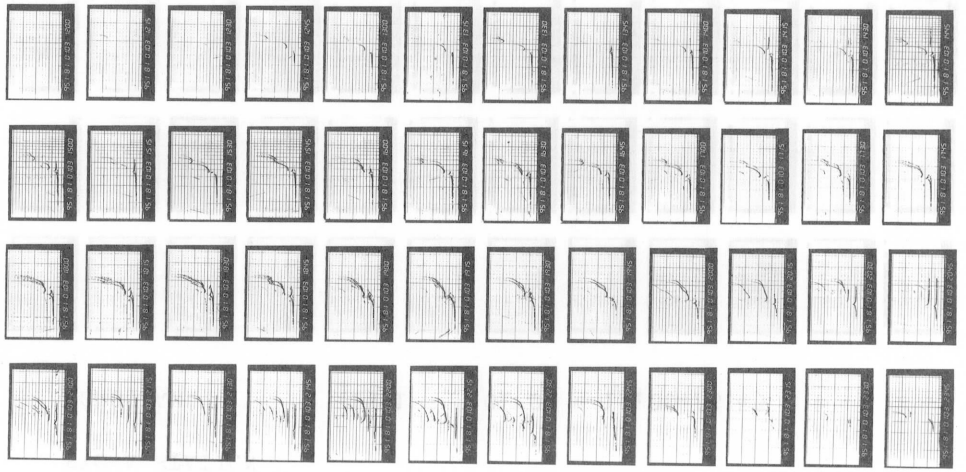
SYOWA STATION

IONOGRAM 1981 01 03 00;00-11;45



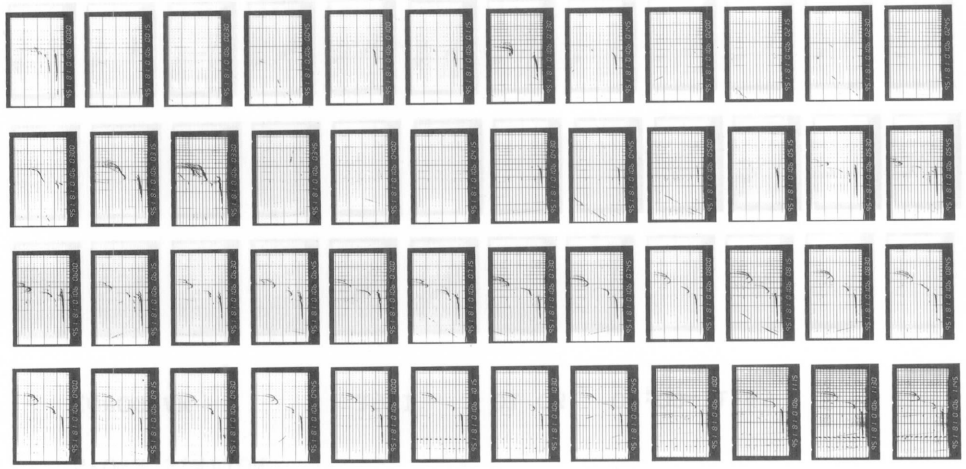
SYOWA STATION

IONOGRAM 1981 01 03 12;00-23;45



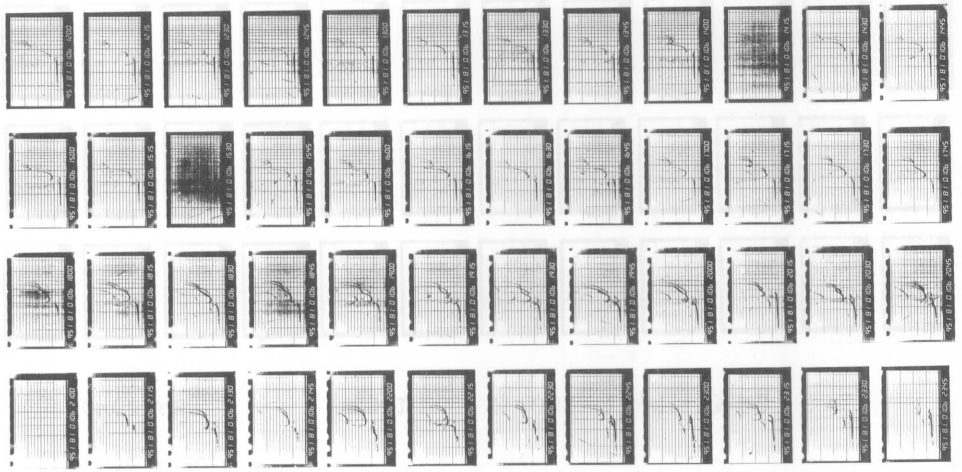
SYOWA STATION

IONOGRAM 1981 01 06 00;00-11;45



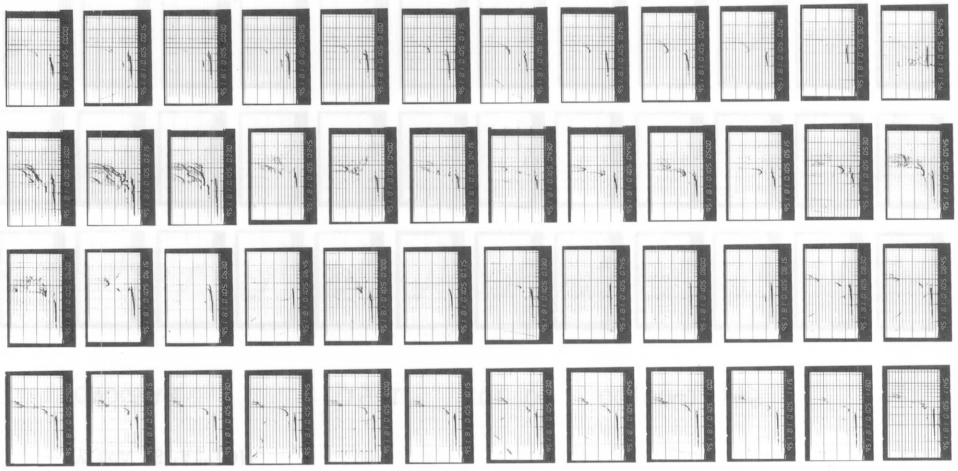
SYOWA STATION

IONOGRAM 1981 01 06 12;00-23;45



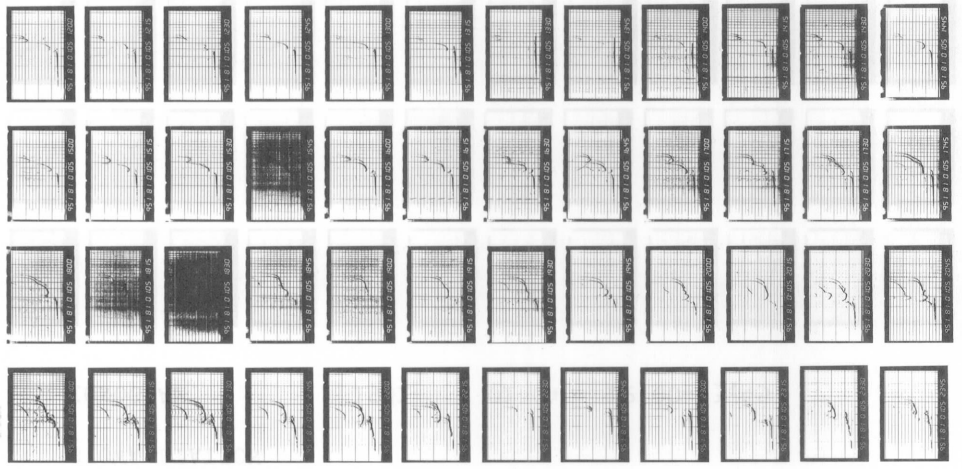
SYOWA STATION

IONOGRAM 1981 01 05 00;00-11;45



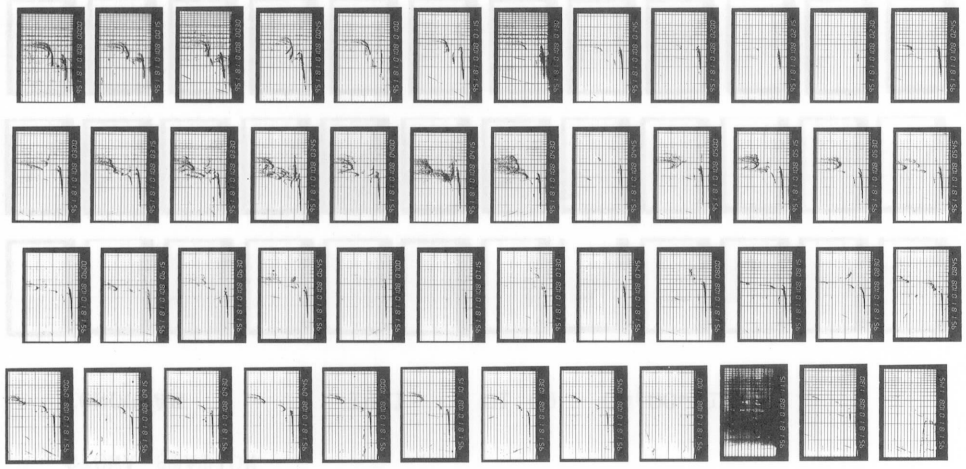
SYOWA STATION

IONOGRAM 1981 01 05 12;00-23;45



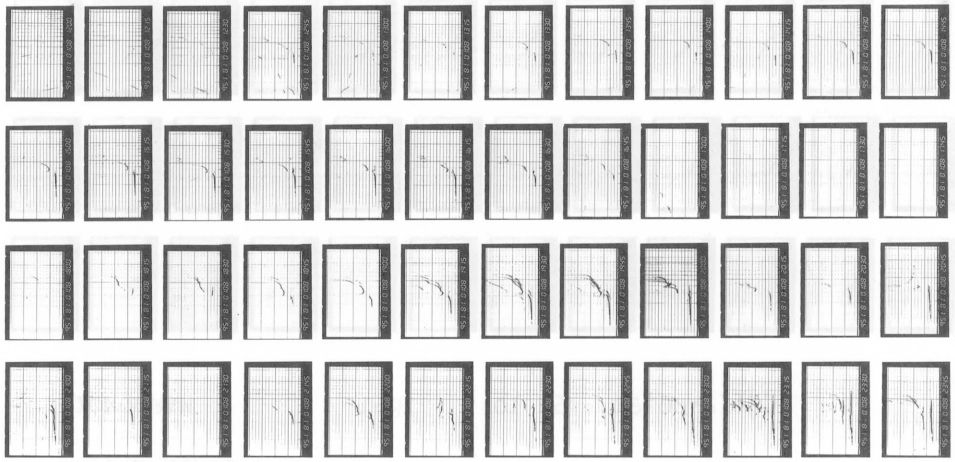
SYOWA STATION

IONOGRAM 1981 01 08 00;00-11;45



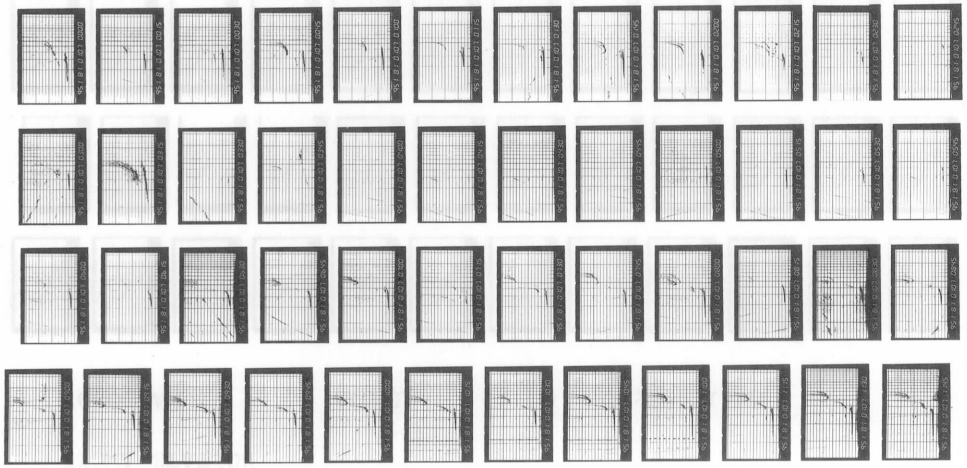
SYOWA STATION

IONOGRAM 1981 01 08 12;00-23;45



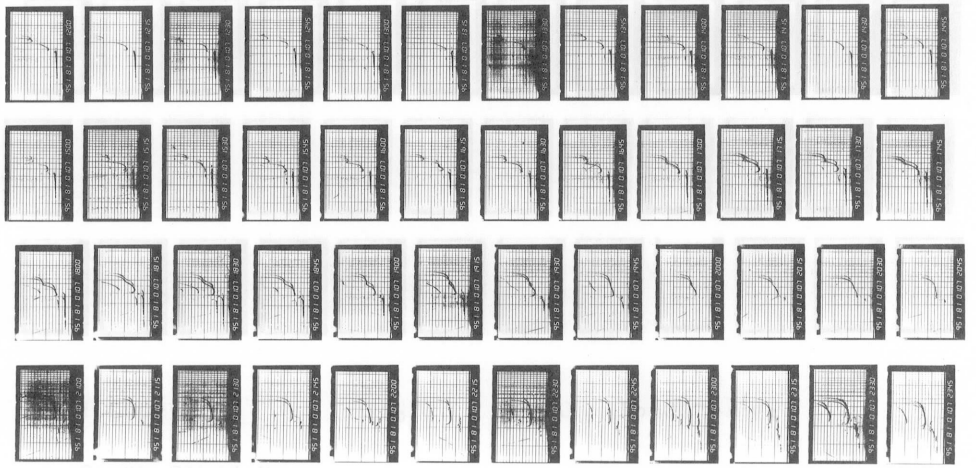
SYOWA STATION

IONOGRAM 1981 01 07 00;00-11;45



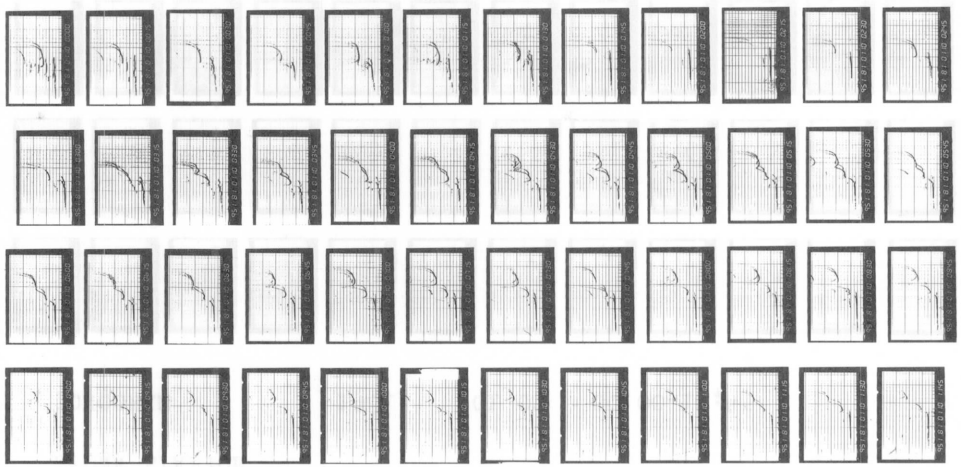
SYOWA STATION

IONOGRAM 1981 01 07 12;00-23;45



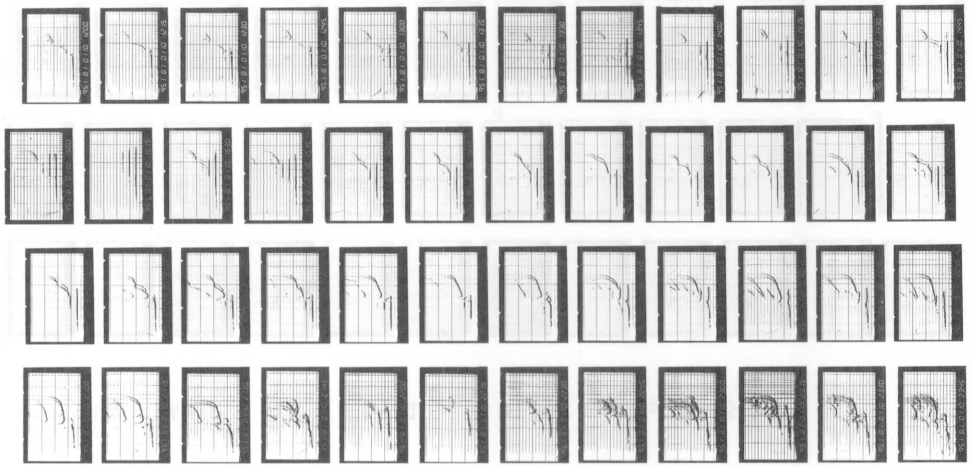
SYOWA STATION

IONOGRAM 1981 01 10 00;00-11;45



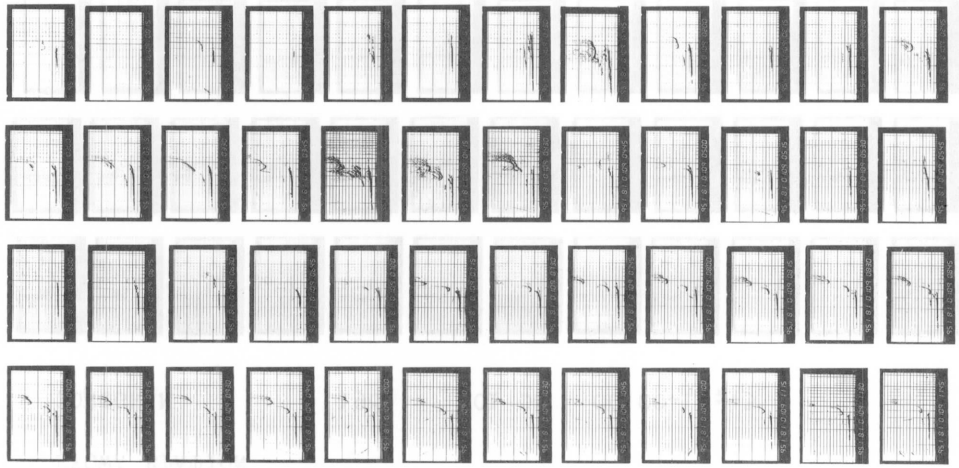
SYOWA STATION

IONOGRAM 1981 01 10 12;00-23;45



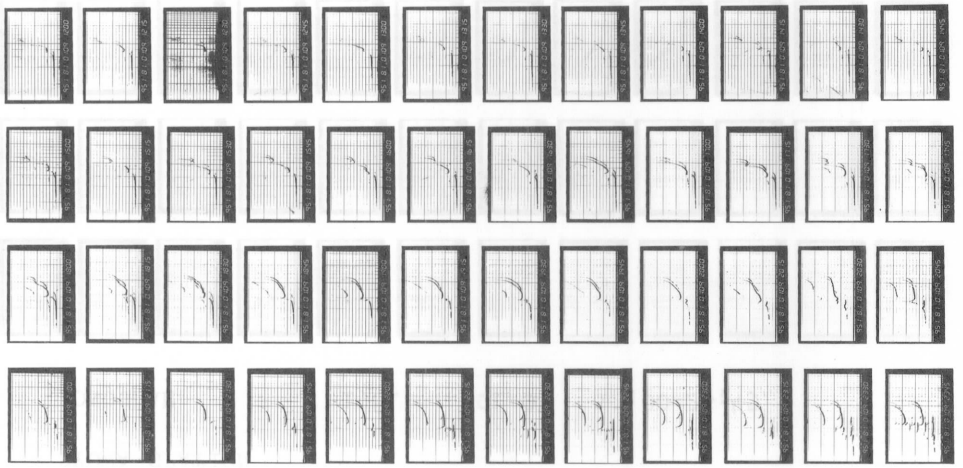
SYOWA STATION

IONOGRAM 1981 01 09 00;00-11;45



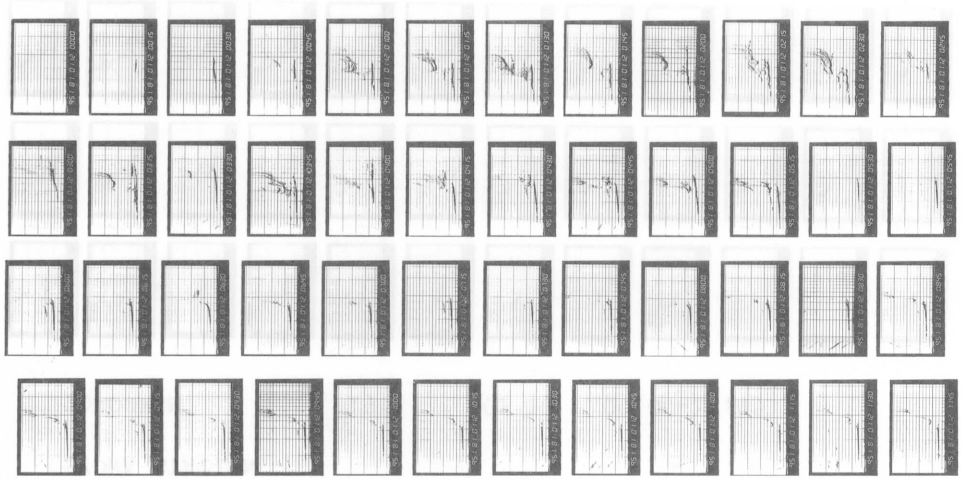
SYOWA STATION

IONOGRAM 1981 01 09 12;00-23;45



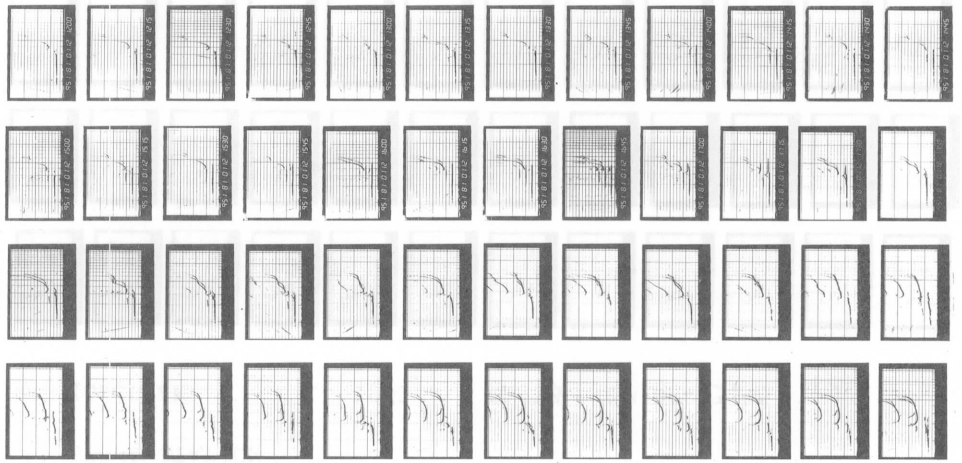
SYOWA STATION

IONOGRAM 1981 01 12 00;00-11;45



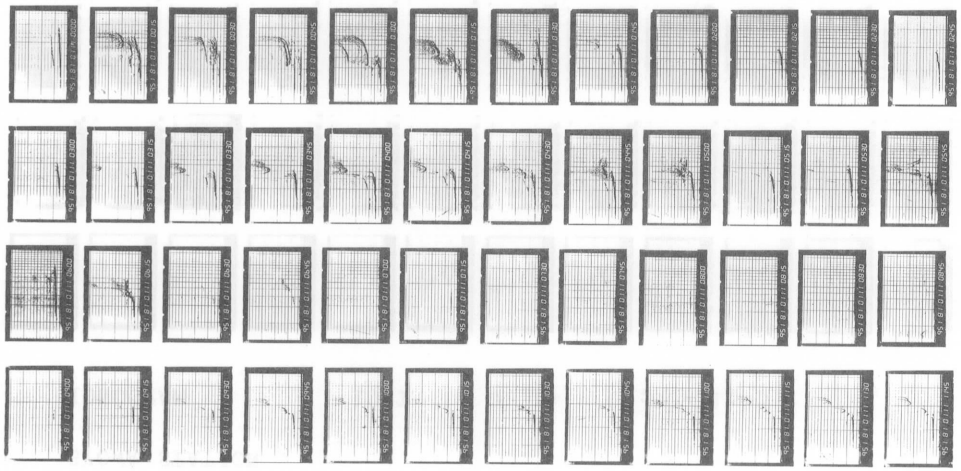
SYOWA STATION

IONOGRAM 1981 01 12 12;00-23;45



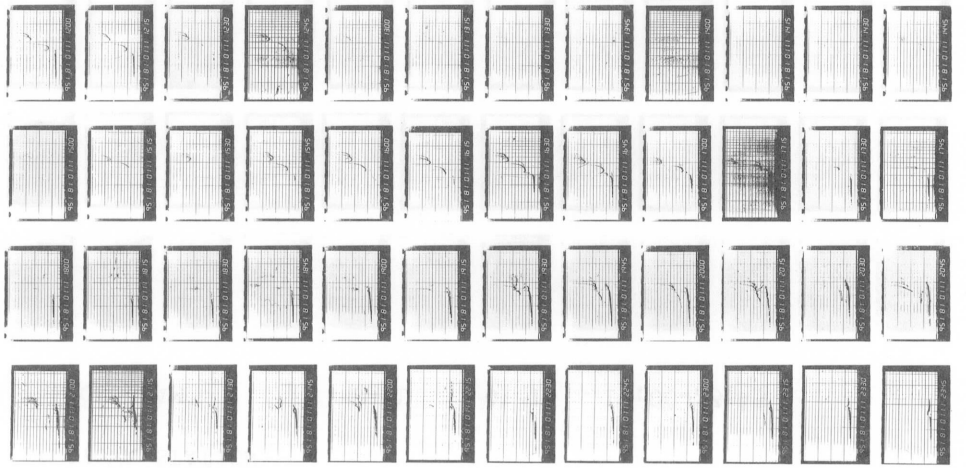
SYOWA STATION

IONOGRAM 1981 01 11 00;00-11;45



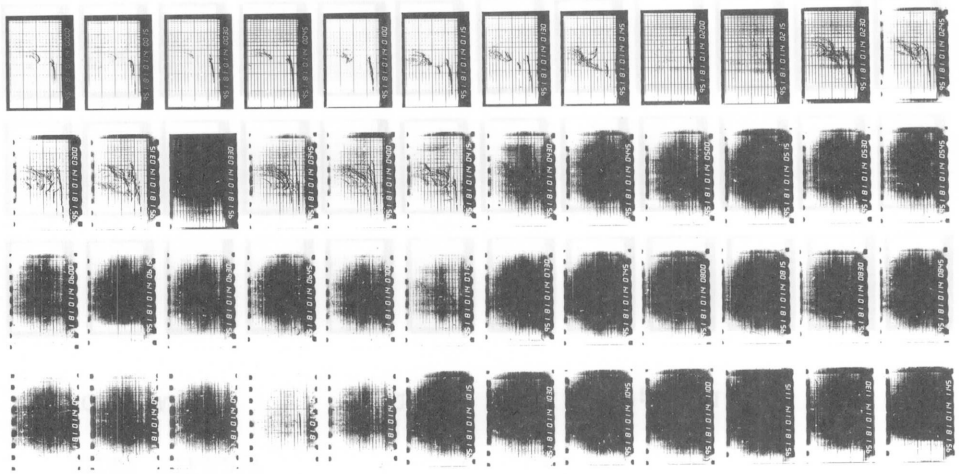
SYOWA STATION

IONOGRAM 1981 01 11 12;00-23;45



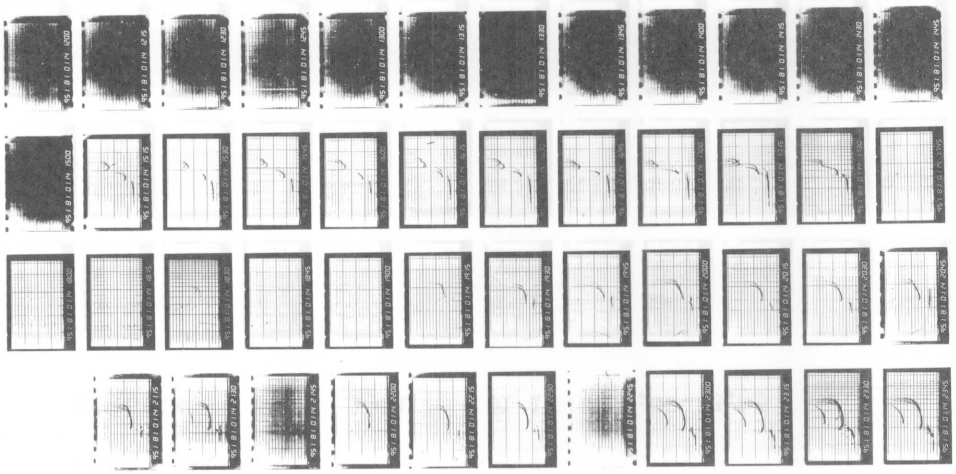
SYOWA STATION

IONOGRAM 1981 01 14 00;00-11;45



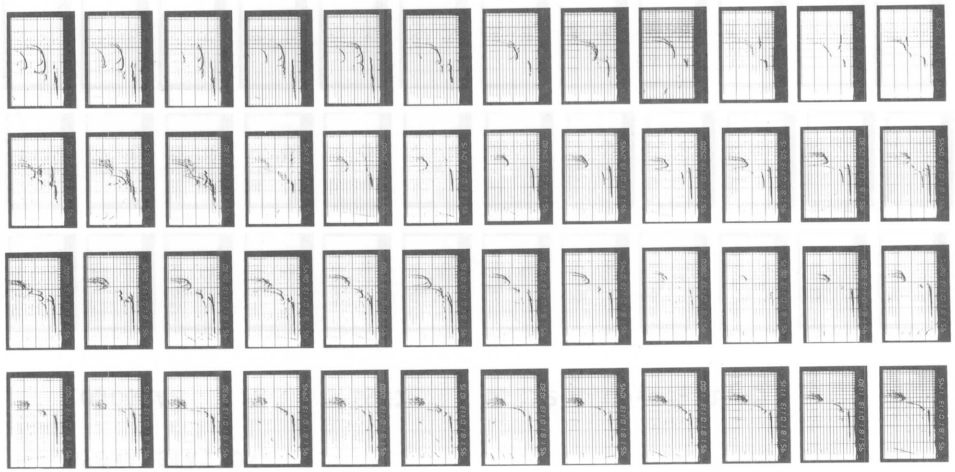
SYOWA STATION

IONOGRAM 1981 01 14 12;00-23;45



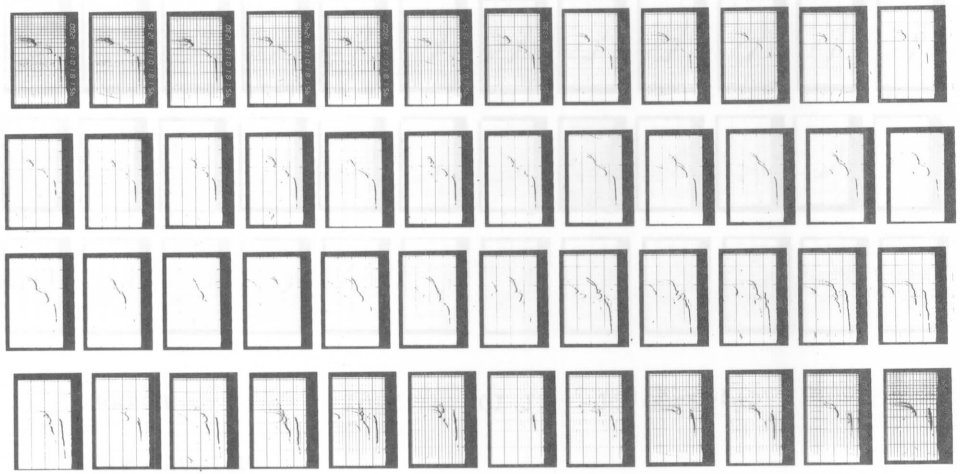
SYOWA STATION

IONOGRAM 1981 01 13 00;00-11;45



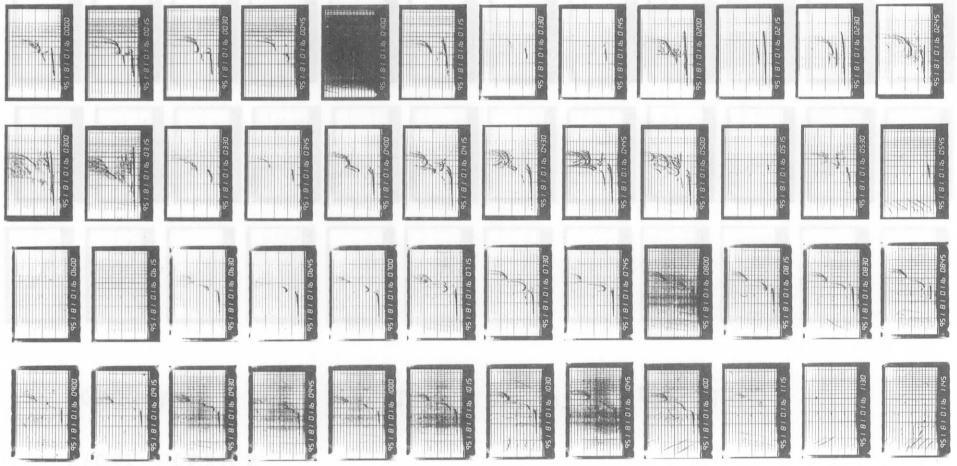
SYOWA STATION

IONOGRAM 1981 01 13 12;00-23;45



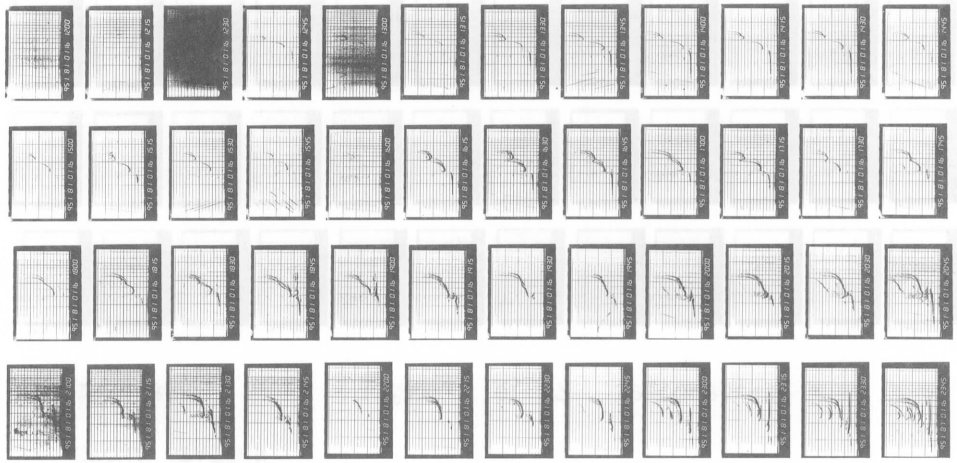
SYOWA STATION

IONOGRAM 1981 01 16 00;00-11;45



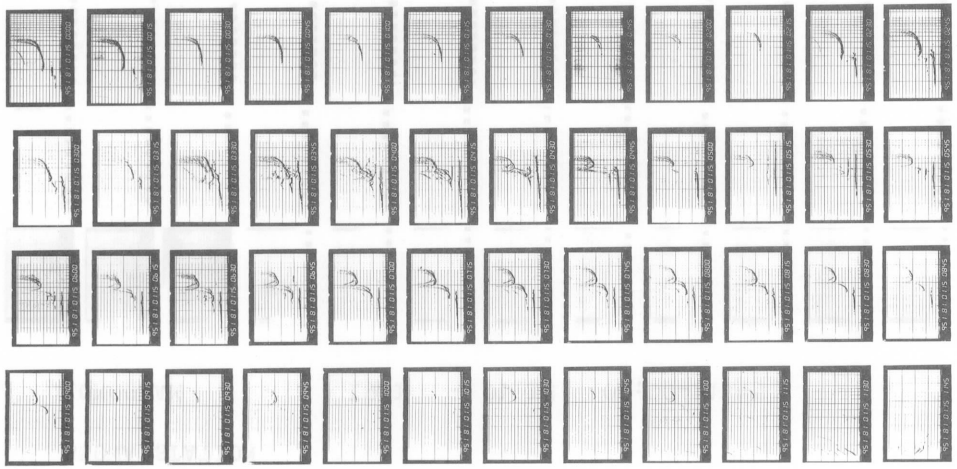
SYOWA STATION

IONOGRAM 1981 01 16 12;00-23;45



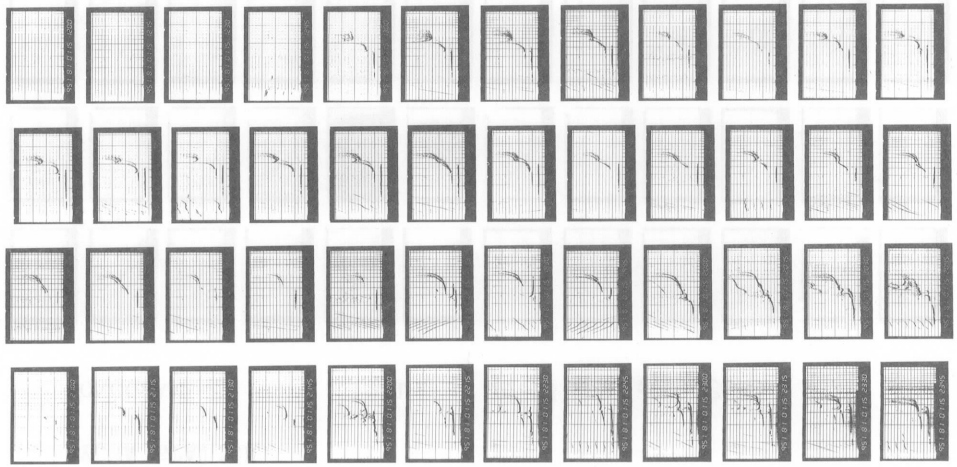
SYOWA STATION

IONOGRAM 1981 01 15 00;00-11;45



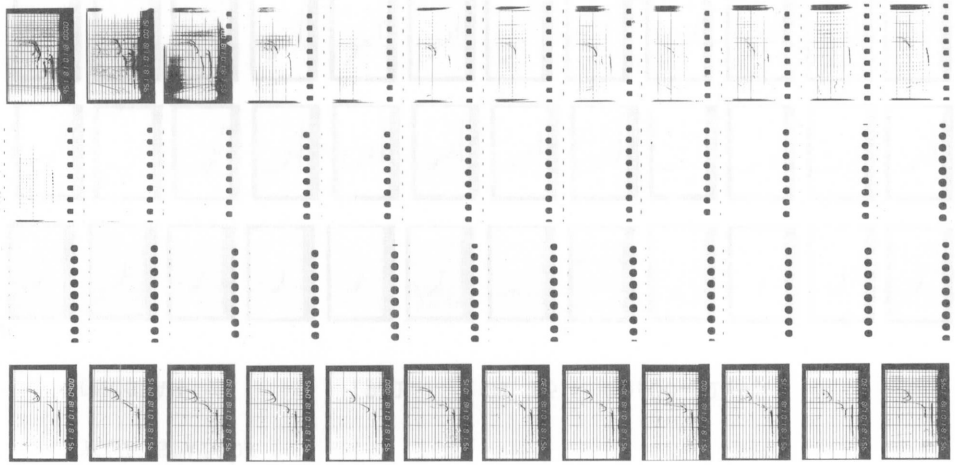
SYOWA STATION

IONOGRAM 1981 01 15 12;00-23;45



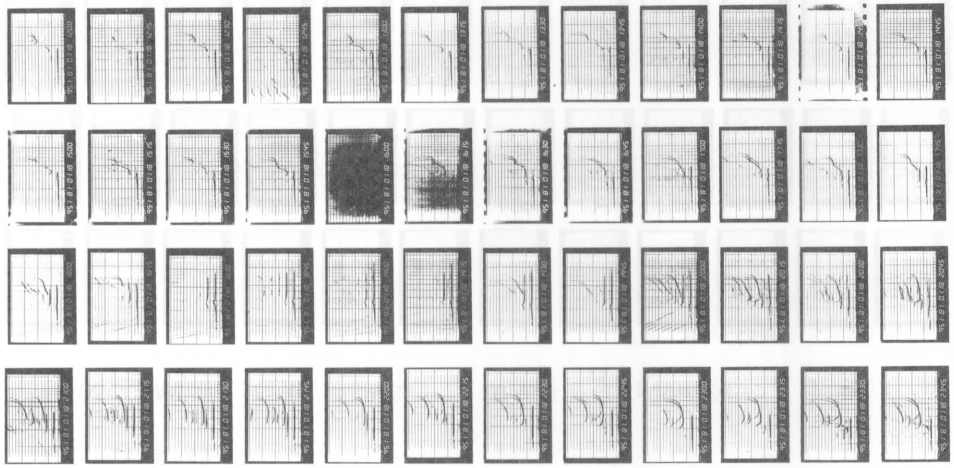
SYOWA STATION

IONOGRAM 1981 01 18 00;00-11;45



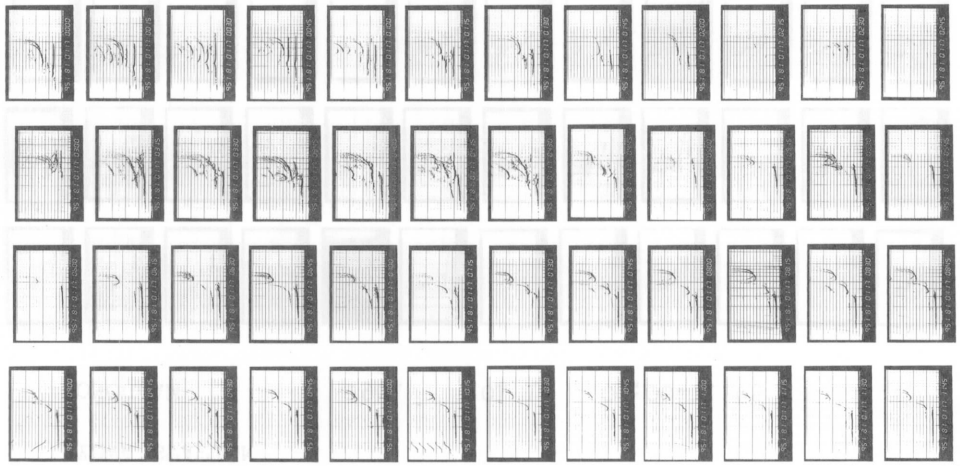
SYOWA STATION

IONOGRAM 1981 01 18 12;00-23;45



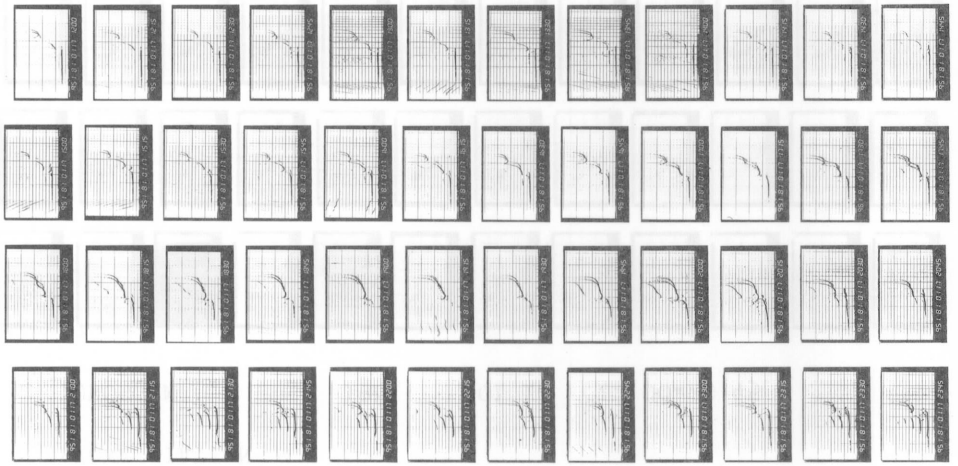
SYOWA STATION

IONOGRAM 1981 01 17 00;00-11;45



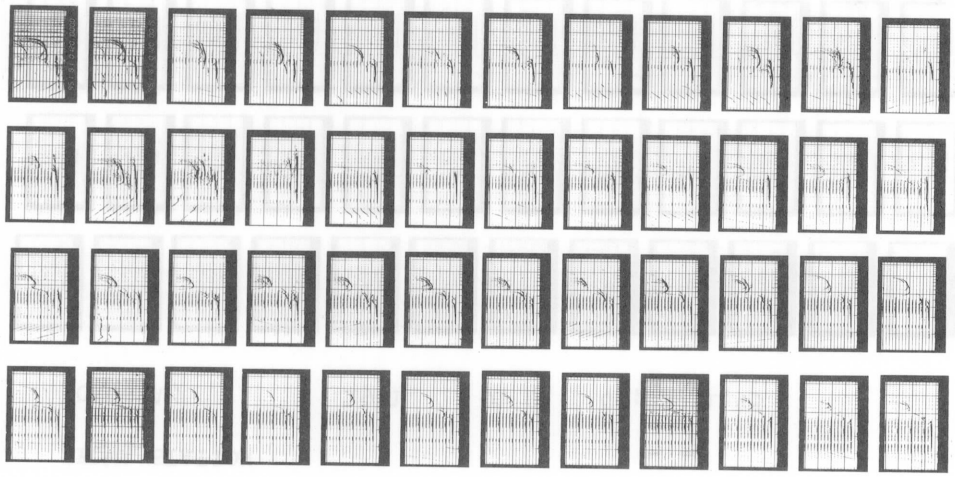
SYOWA STATION

IONOGRAM 1981 01 17 12;00-23;45



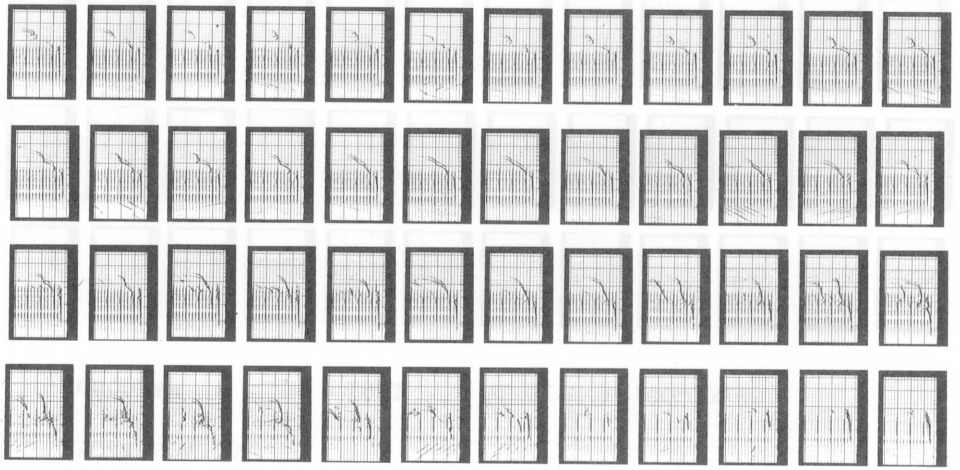
SYOWA STATION

IONOGRAM 1981 01 20 00;00-11;45



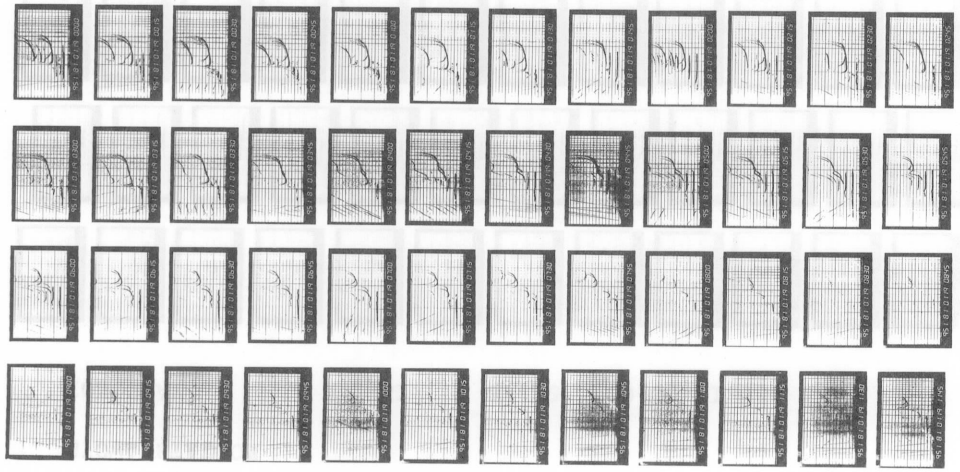
SYOWA STATION

IONOGRAM 1981 01 20 12;00-23;45



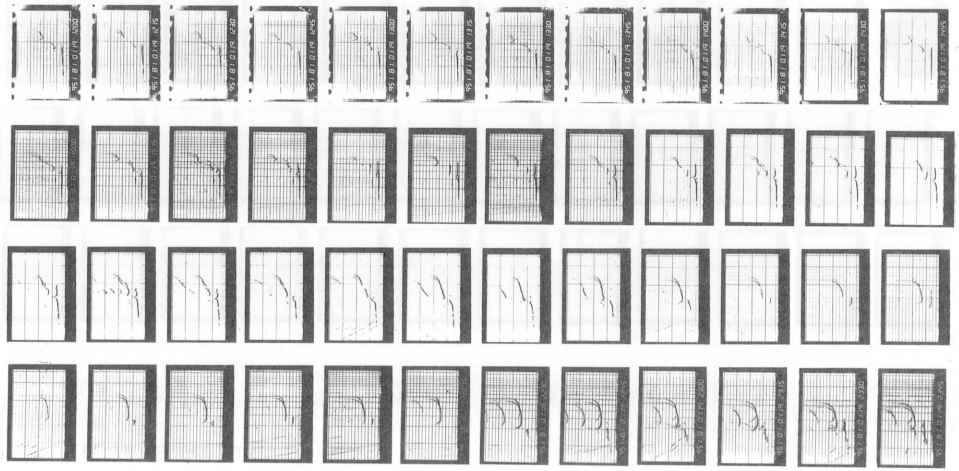
SYOWA STATION

IONOGRAM 1981 01 19 00;00-11;45



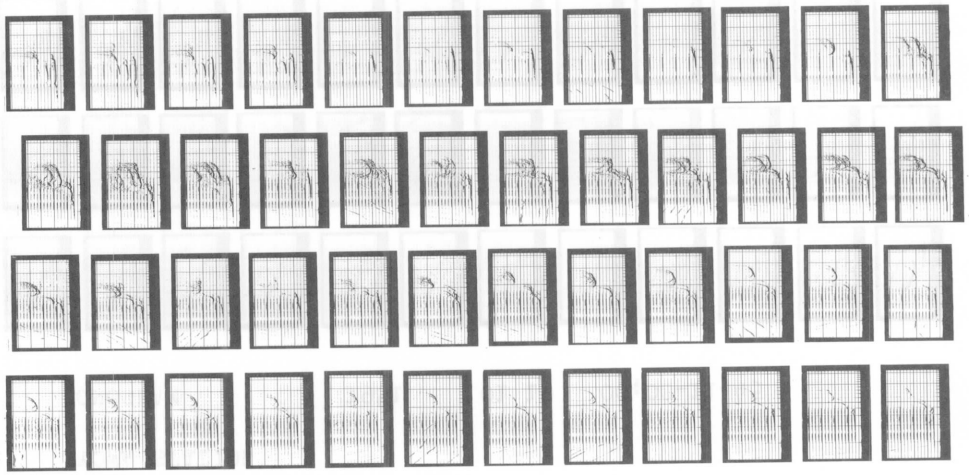
SYOWA STATION

IONOGRAM 1981 01 19 12;00-23;45



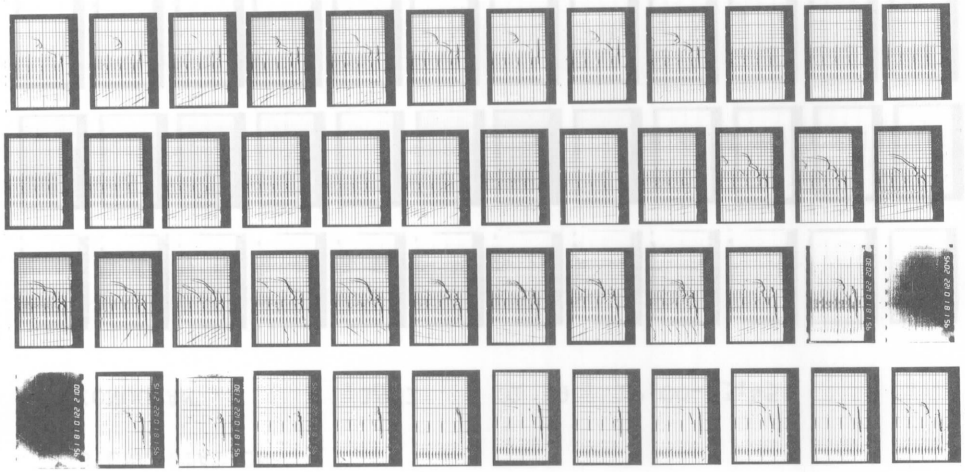
SYOWA STATION

IONOGRAM 1981 01 22 00;00-11;45



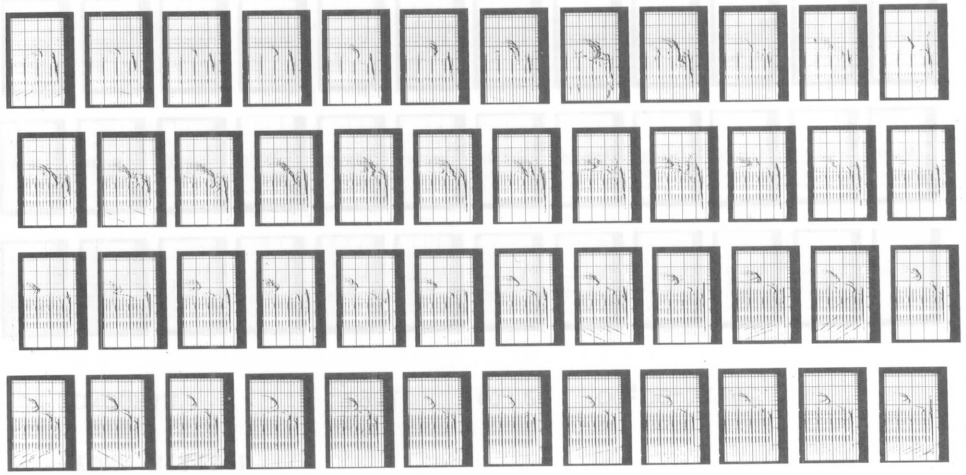
SYOWA STATION

IONOGRAM 1981 01 22 12;00-23;45



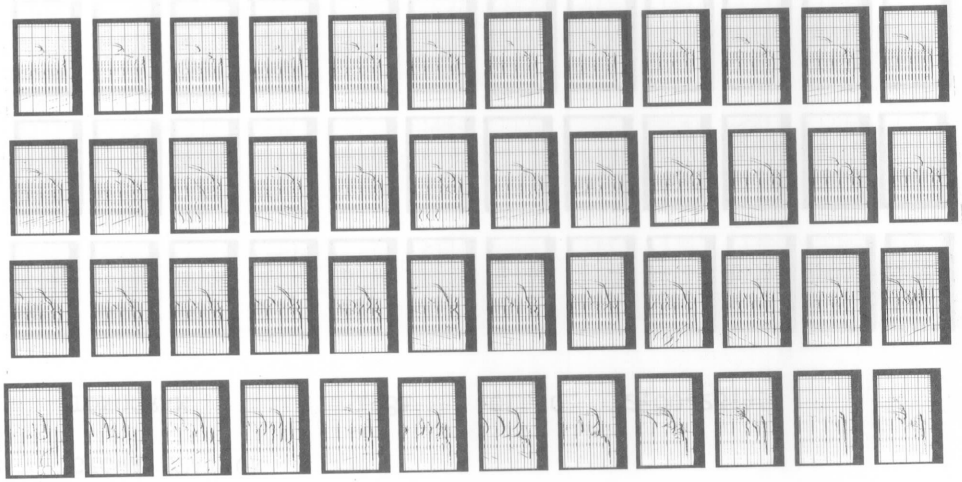
SYOWA STATION

IONOGRAM 1981 01 21 00;00-11;45



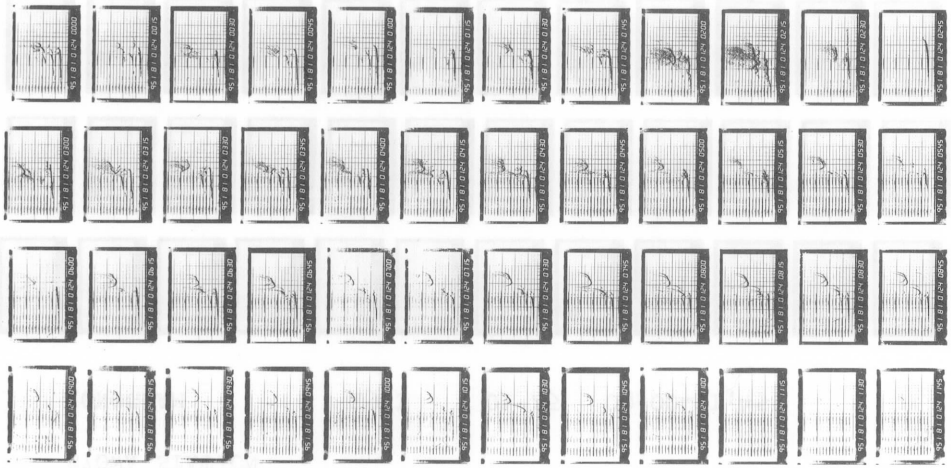
SYOWA STATION

IONOGRAM 1981 01 21 12;00-23;45



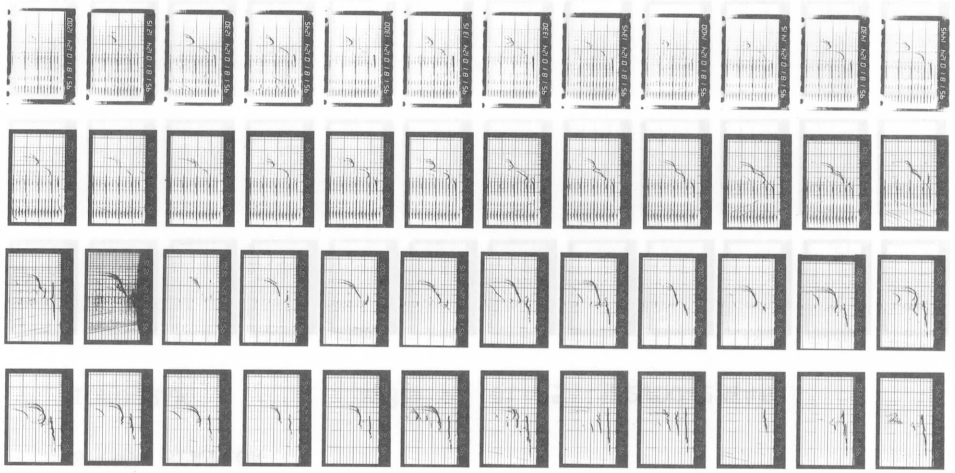
SYOWA STATION

IONOGRAM 1981 01 24 00;00-11;45



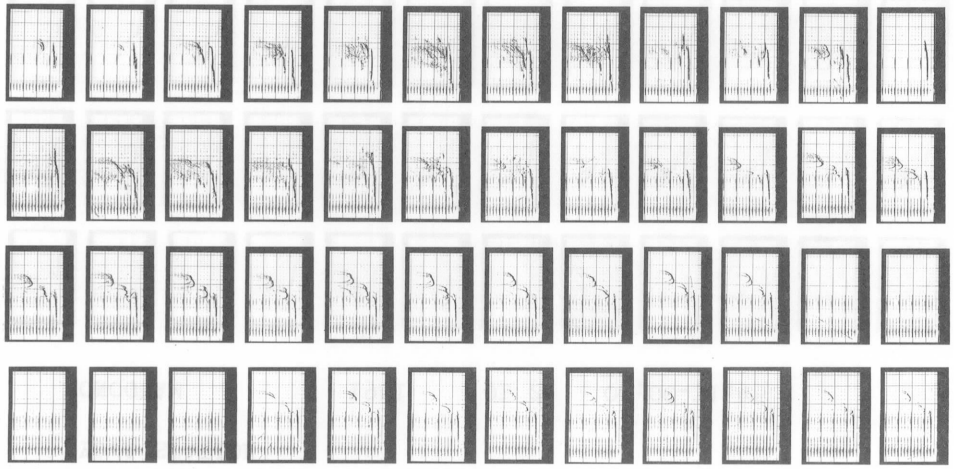
SYOWA STATION

IONOGRAM 1981 01 24 12;00-23;45



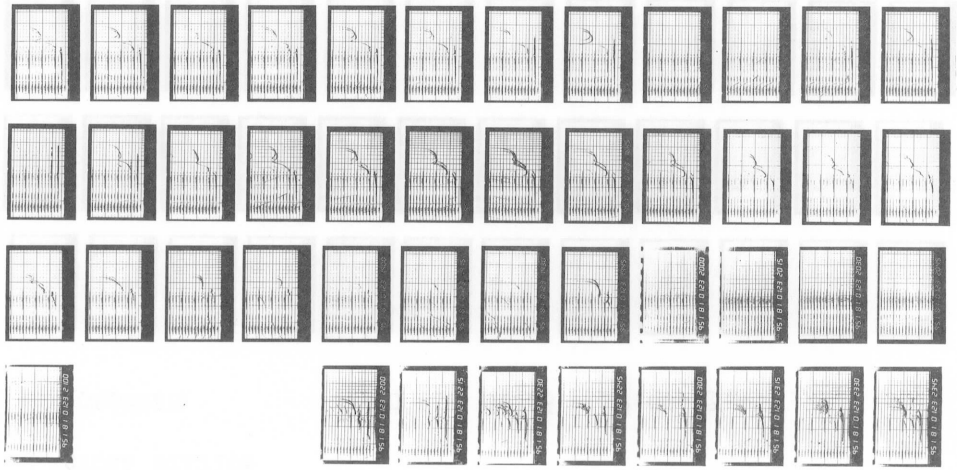
SYOWA STATION

IONOGRAM 1981 01 23 00;00-11;45



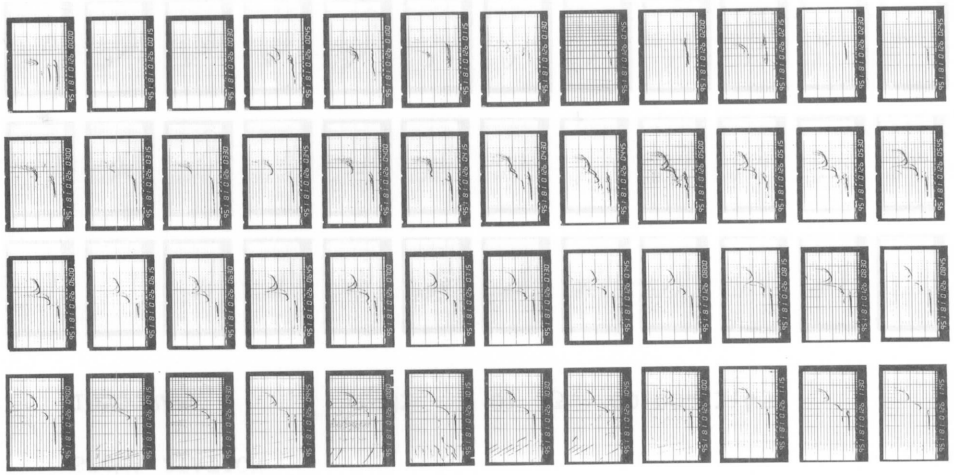
SYOWA STATION

IONOGRAM 1981 01 23 12;00-23;45



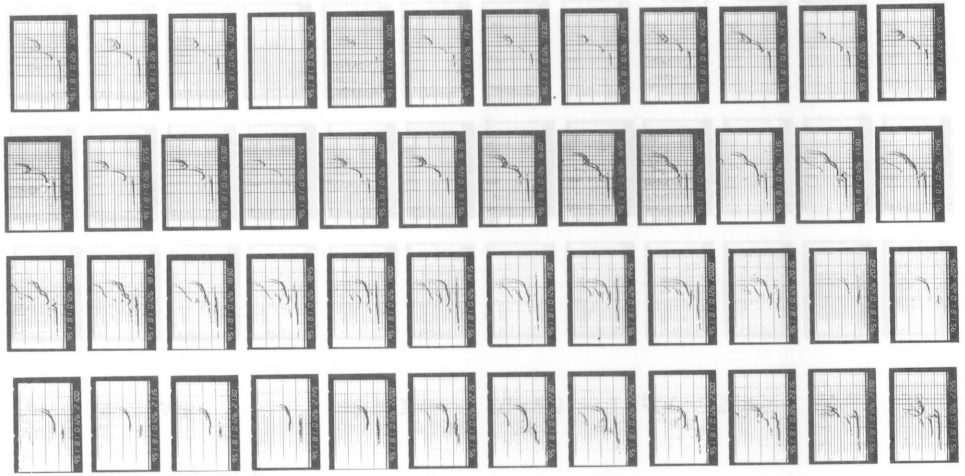
SYOWA STATION

IONOGRAM 1981 01 26 00;00-11;45



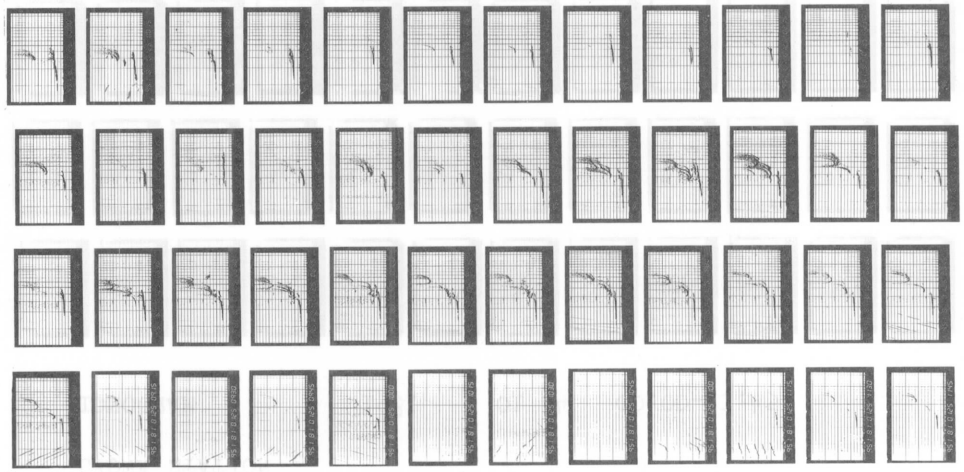
SYOWA STATION

IONOGRAM 1981 01 26 12;00-23;45



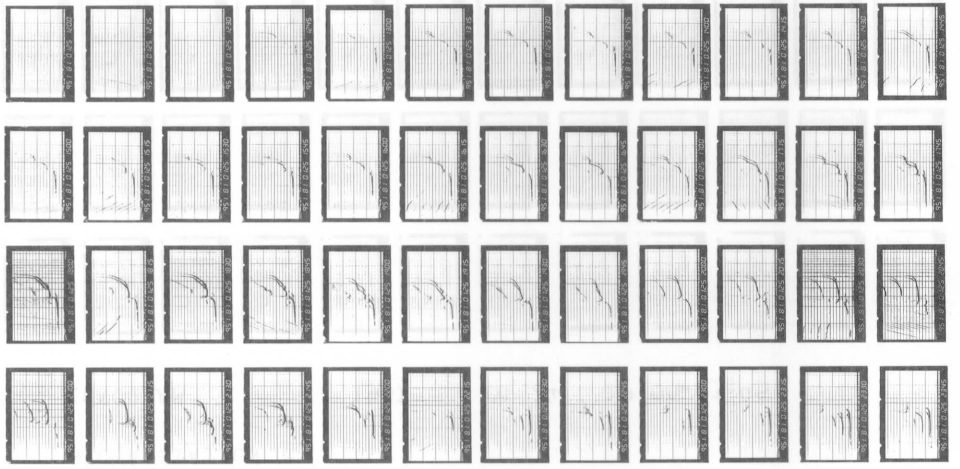
SYOWA STATION

IONOGRAM 1981 01 25 00;00-11;45



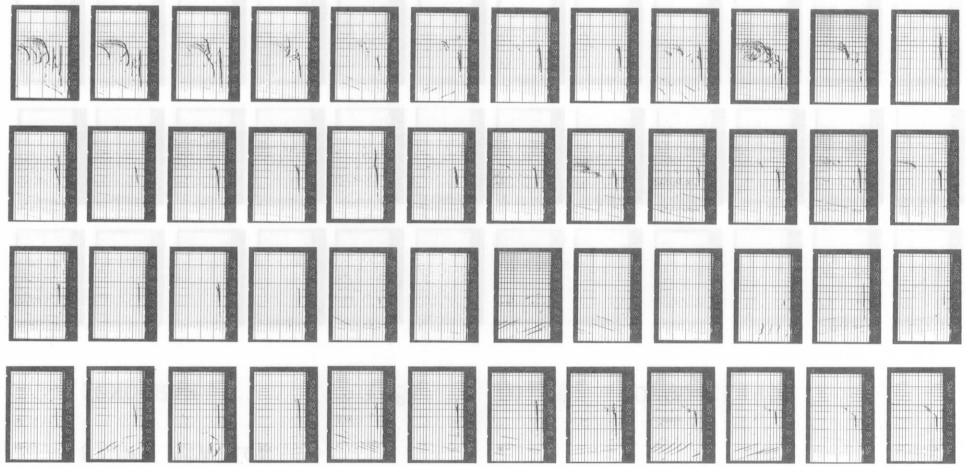
SYOWA STATION

IONOGRAM 1981 01 25 12;00-23;45



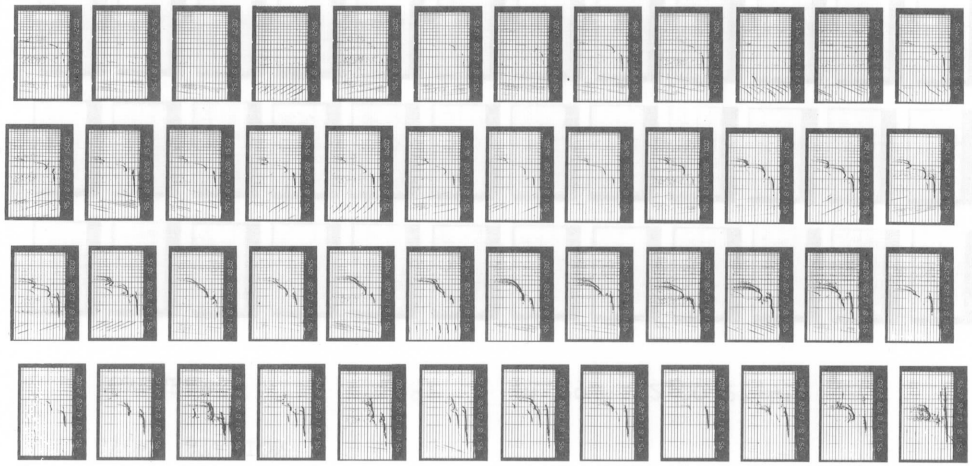
SYOWA STATION

IONOGRAM 1981 01 28 00;00-11;45



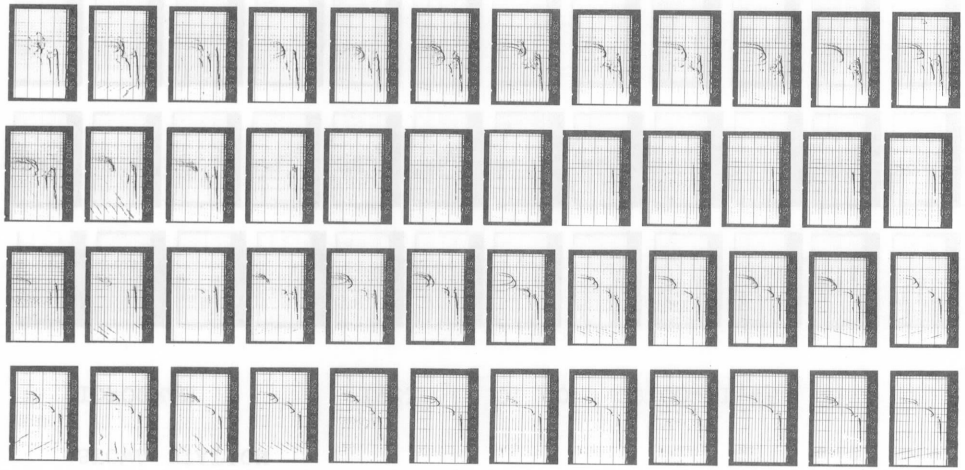
SYOWA STATION

IONOGRAM 1981 01 28 12;00-23;45



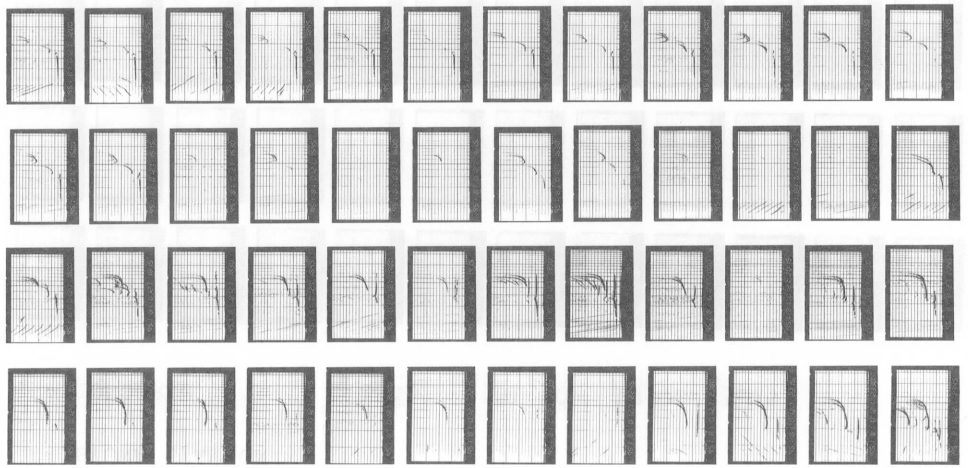
SYOWA STATION

IONOGRAM 1981 01 27 00;00-11;45



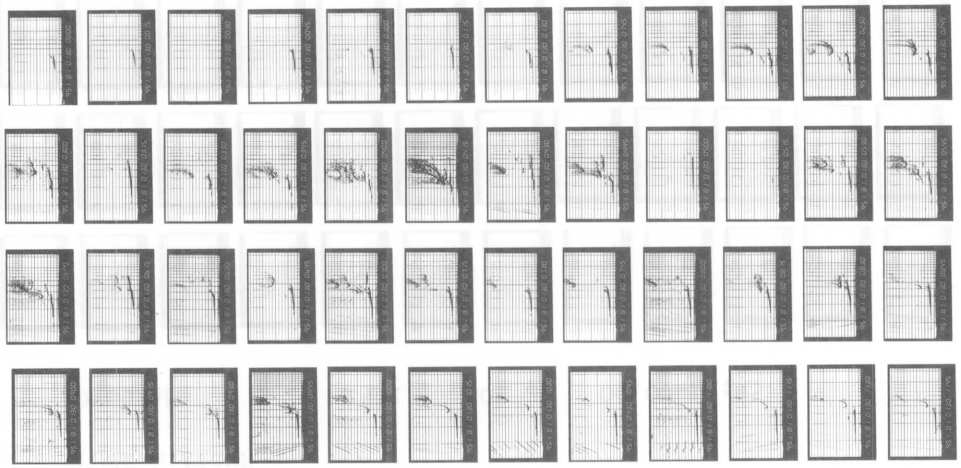
SYOWA STATION

IONOGRAM 1981 01 27 12;00-23;45



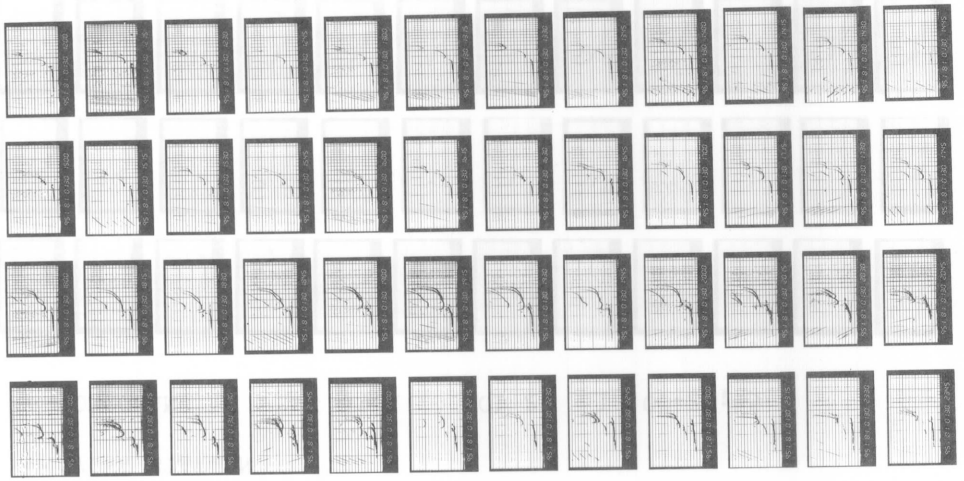
SYOWA STATION

IONOGRAM 1981 01 30 00;00-11;45



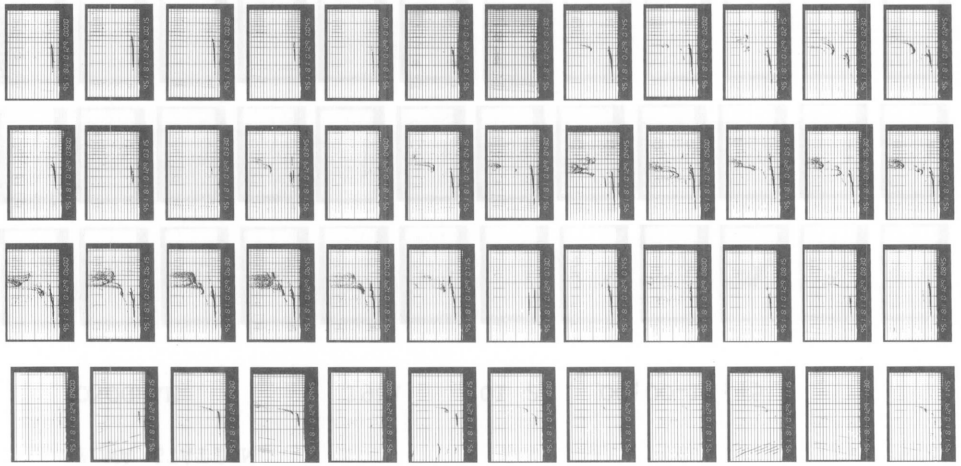
SYOWA STATION

IONOGRAM 1981 01 30 12;00-23;45



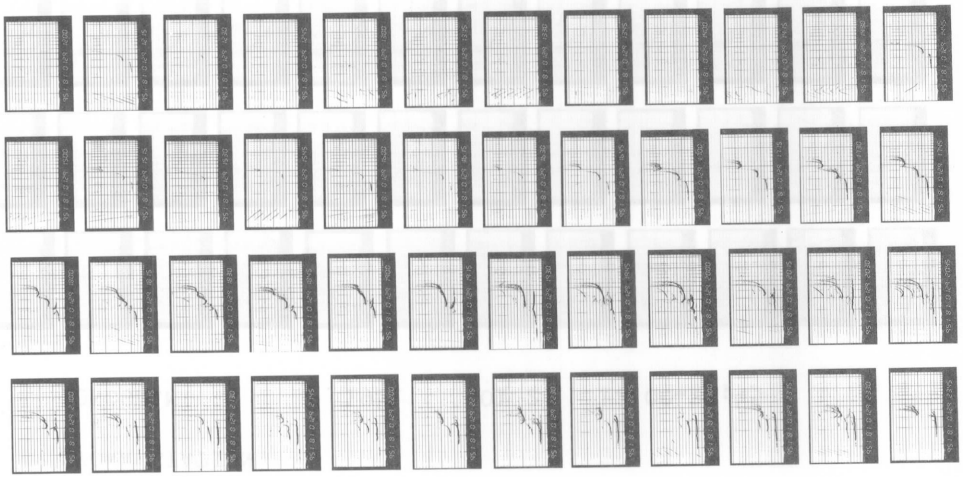
SYOWA STATION

IONOGRAM 1981 01 29 00;00-11;45



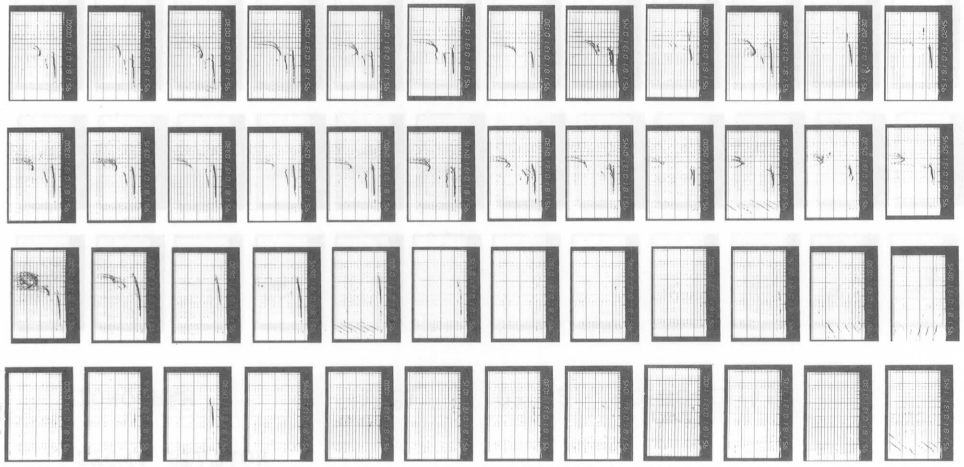
SYOWA STATION

IONOGRAM 1981 01 29 12;00-23;45



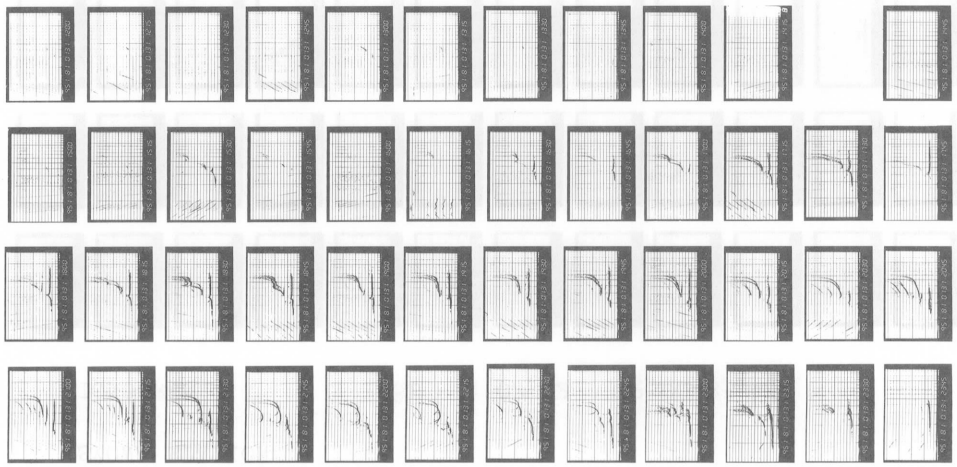
SYOWA STATION

IONOGRAM 1981 01 31 00;00-11;45



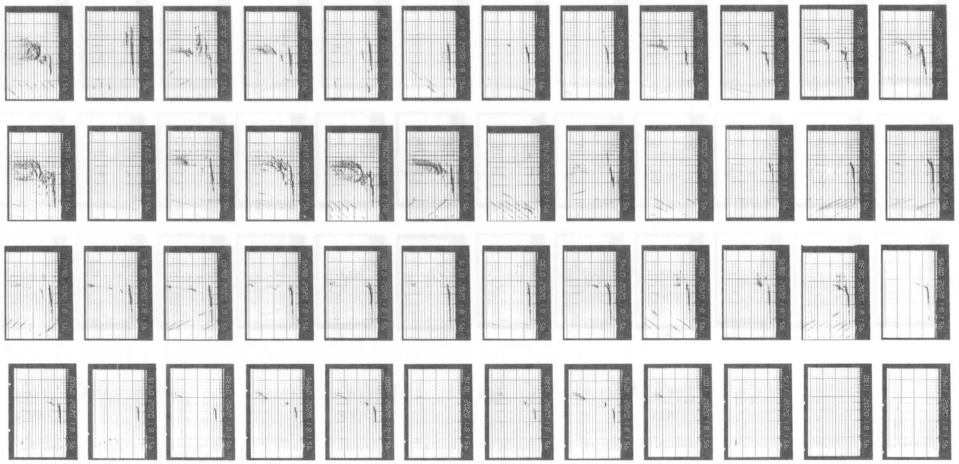
SYOWA STATION

IONOGRAM 1981 01 31 12;00-23;45



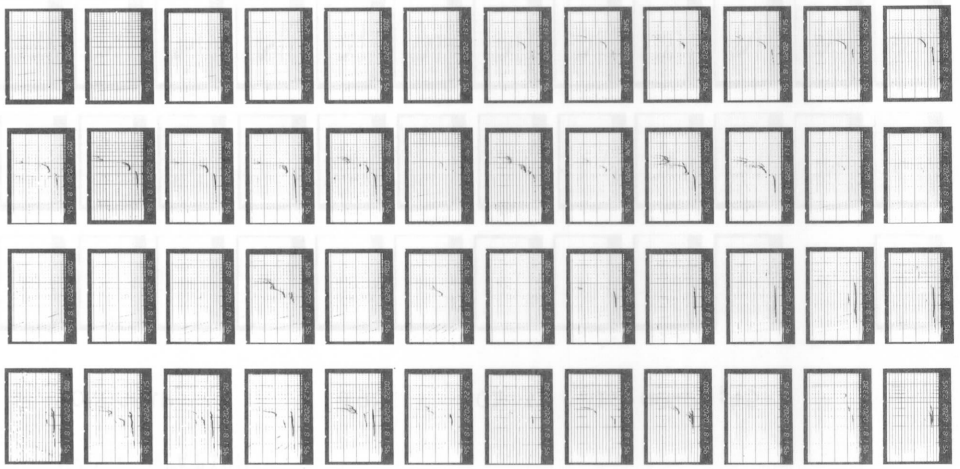
SYOWA STATION

IONOGRAM 1981 02 02 00;00-11;45



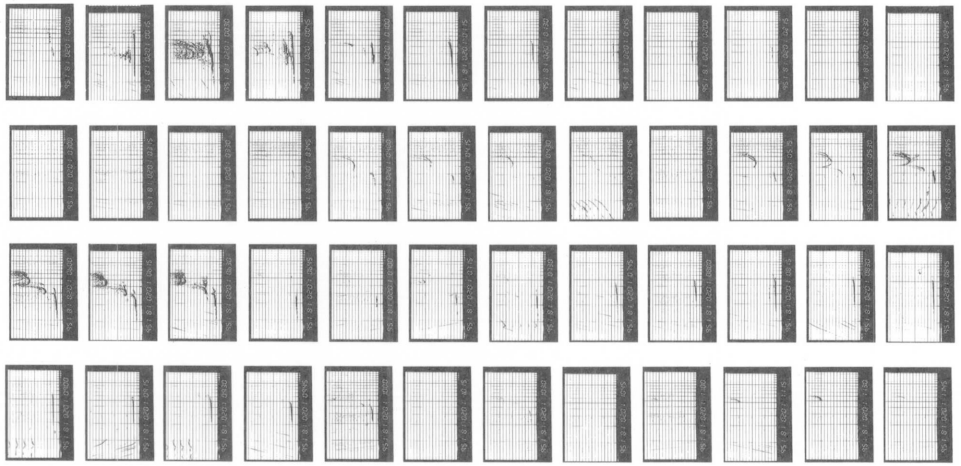
SYOWA STATION

IONOGRAM 1981 02 02 12;00-23;45



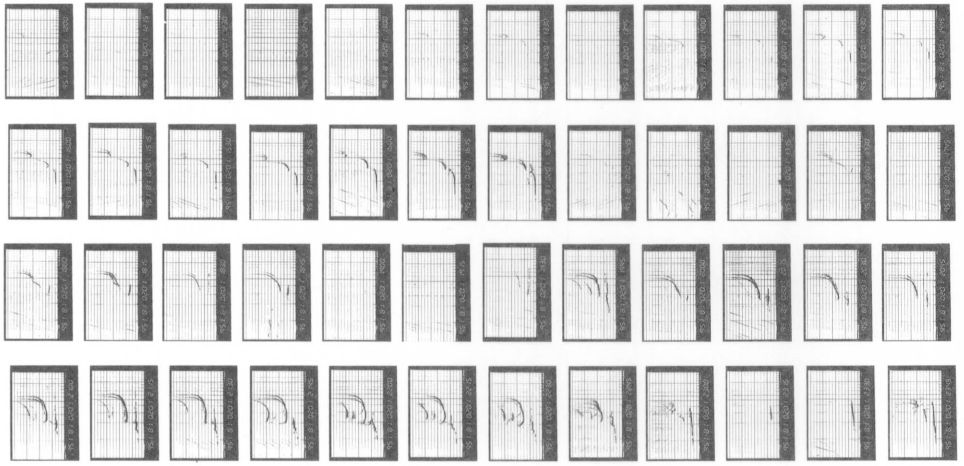
SYOWA STATION

IONOGRAM 1981 02 01 00;00-11;45



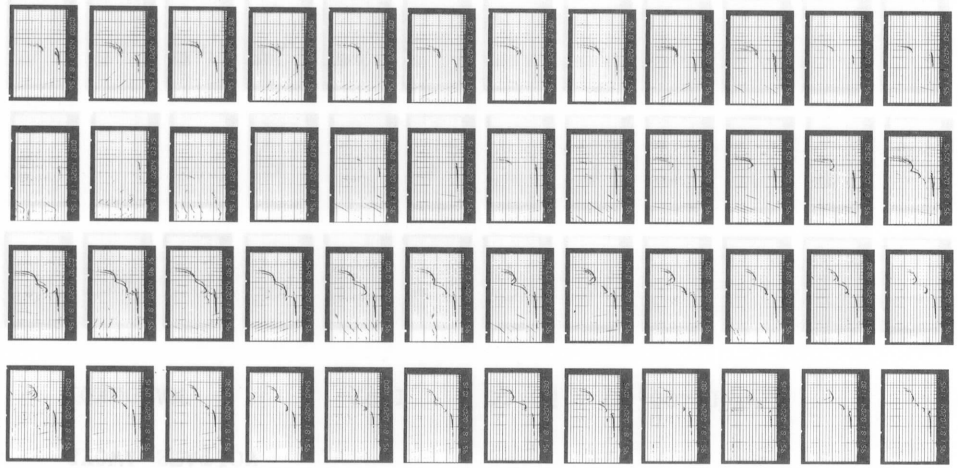
SYOWA STATION

IONOGRAM 1981 02 01 12;00-23;45



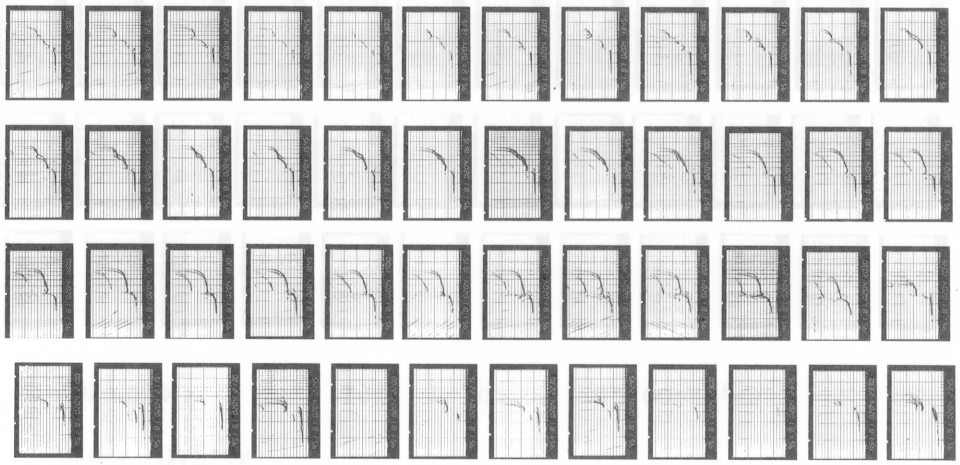
SYOWA STATION

IONOGRAM 1981 02 04 00;00-11;45



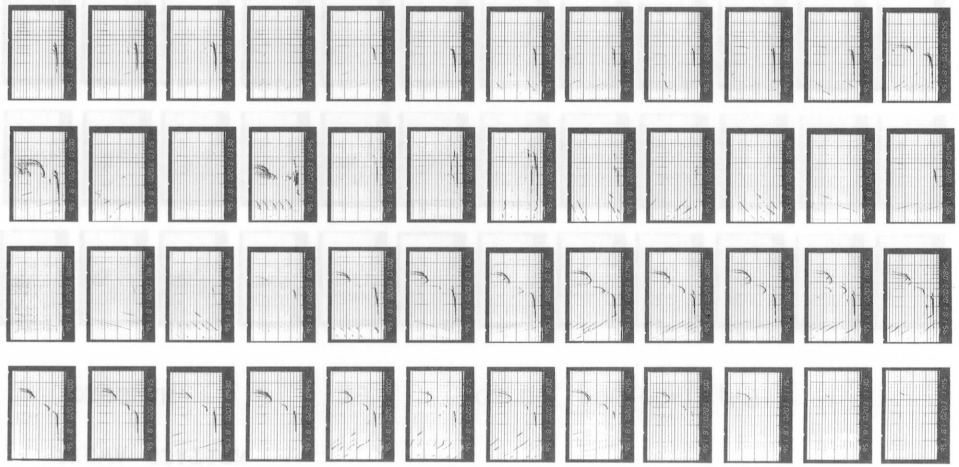
SYOWA STATION

IONOGRAM 1981 02 04 12;00-23;45



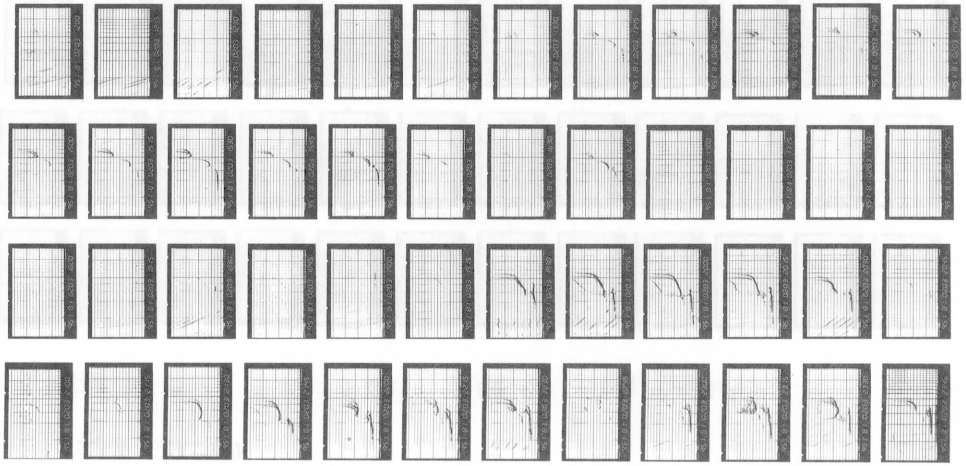
SYOWA STATION

IONOGRAM 1981 02 03 00;00-11;45



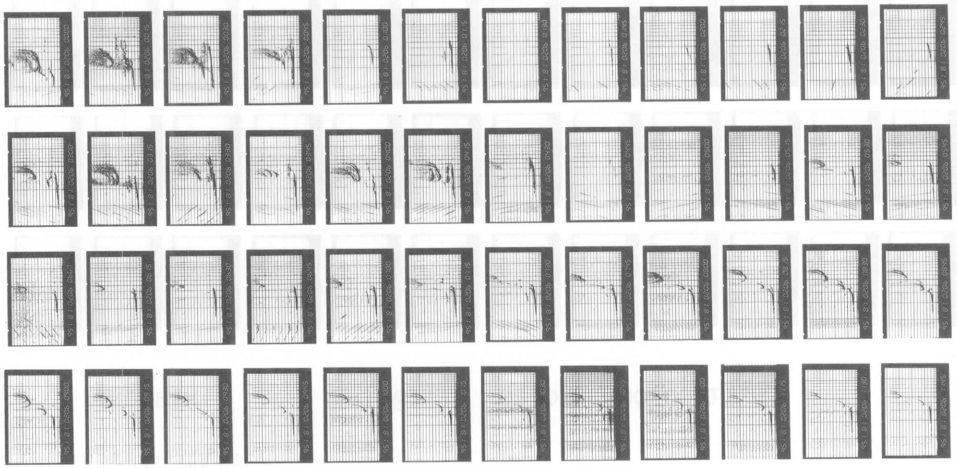
SYOWA STATION

IONOGRAM 1981 02 03 12;00-23;45



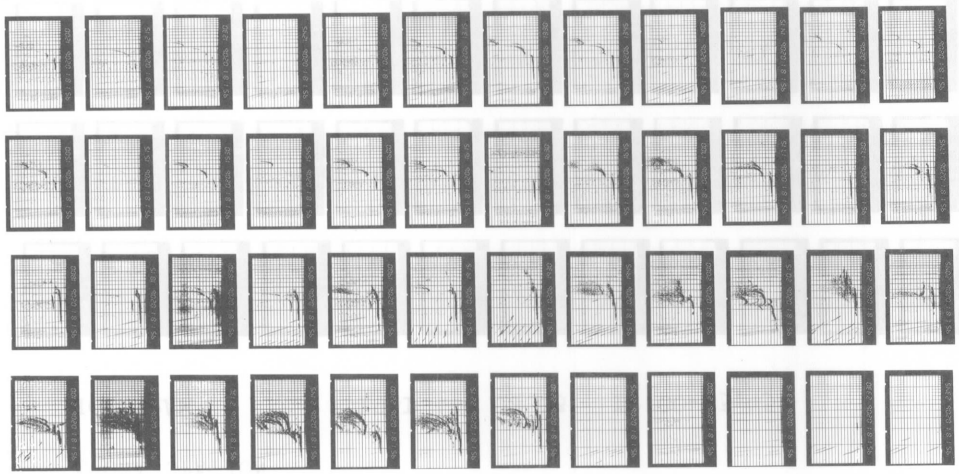
SYOWA STATION

IONOGRAM 1981 02 06 00;00-11;45



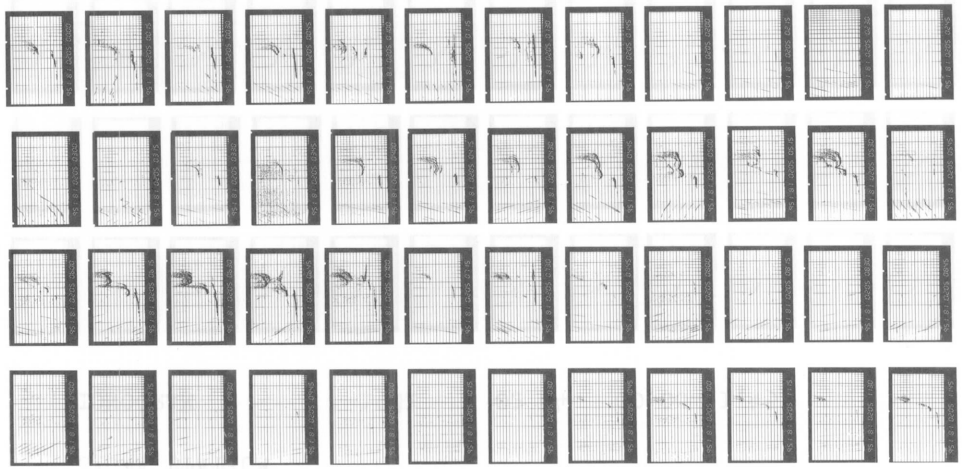
SYOWA STATION

IONOGRAM 1981 02 06 12;00-23;45



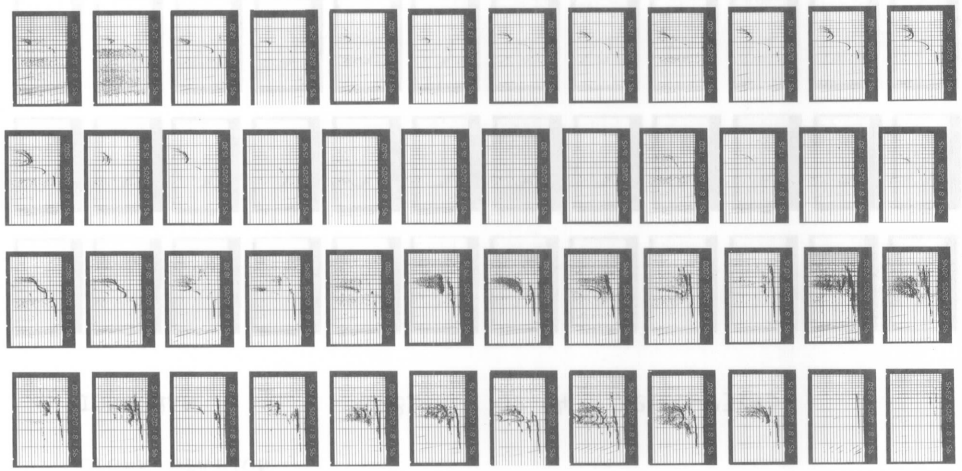
SYOWA STATION

IONOGRAM 1981 02 05 00;00-11;45



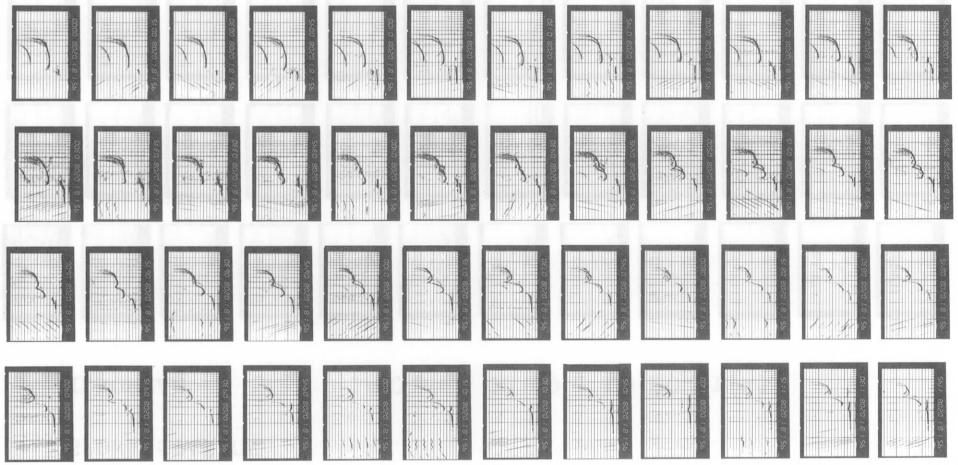
SYOWA STATION

IONOGRAM 1981 02 05 12;00-23;45



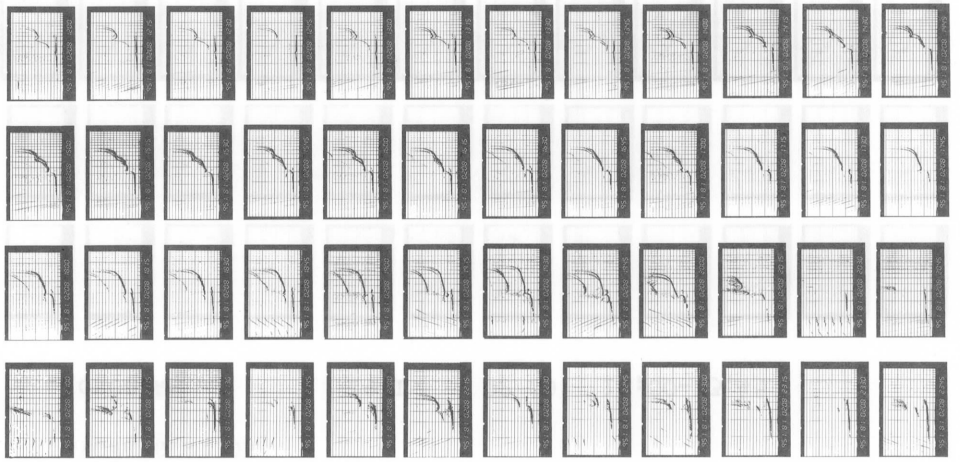
SYOWA STATION

IONOGRAM 1981 02 08 00;00-11;45



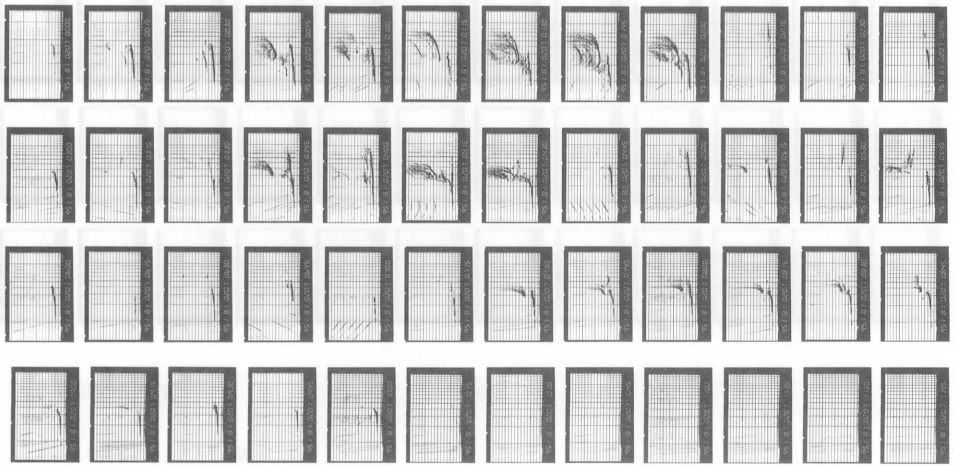
SYOWA STATION

IONOGRAM 1981 02 08 12;00-23;45



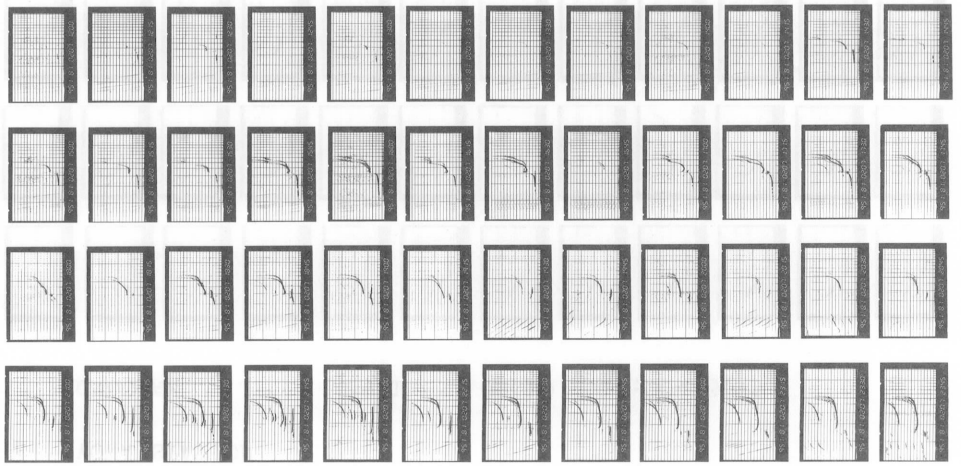
SYOWA STATION

IONOGRAM 1981 02 07 00;00-11;45



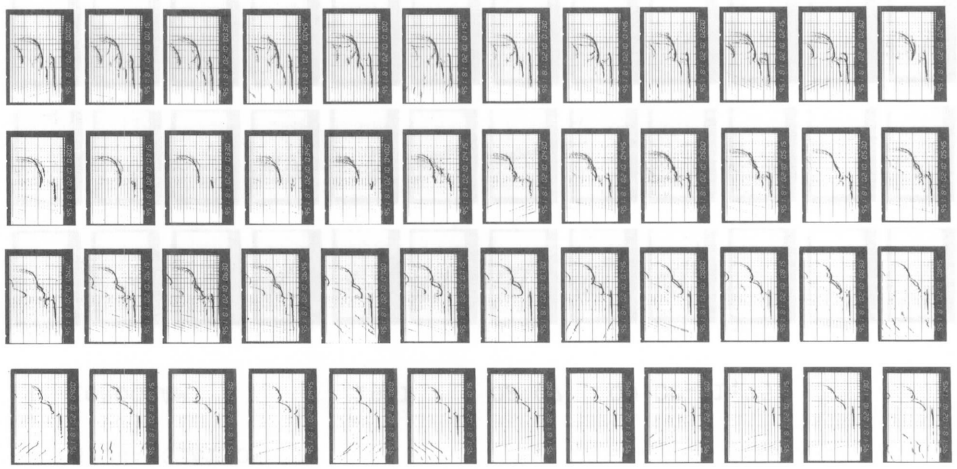
SYOWA STATION

IONOGRAM 1981 02 07 12;00-23;45



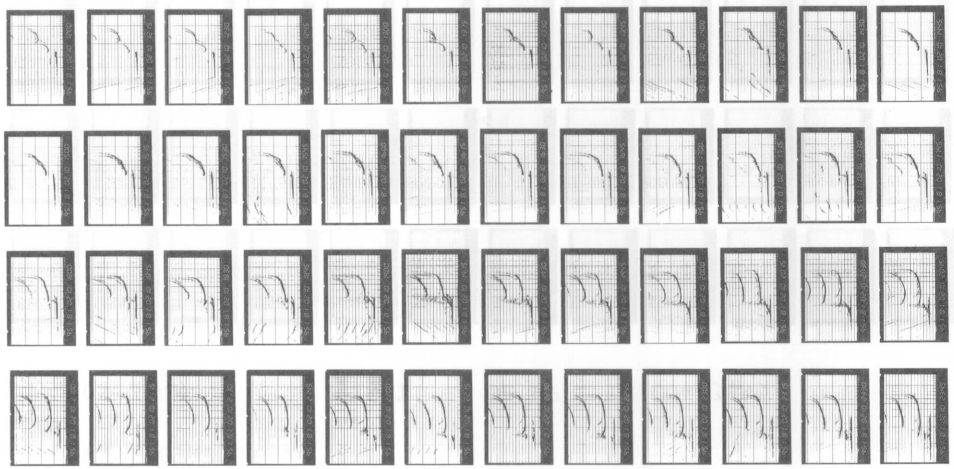
SYOWA STATION

IONOGRAM 1981 02 10 00;00-11;45



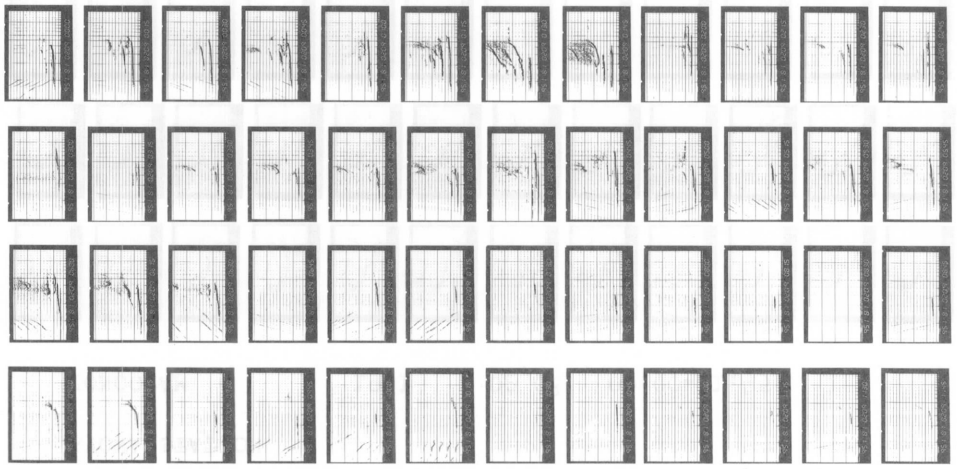
SYOWA STATION

IONOGRAM 1981 02 10 12;00-23;45



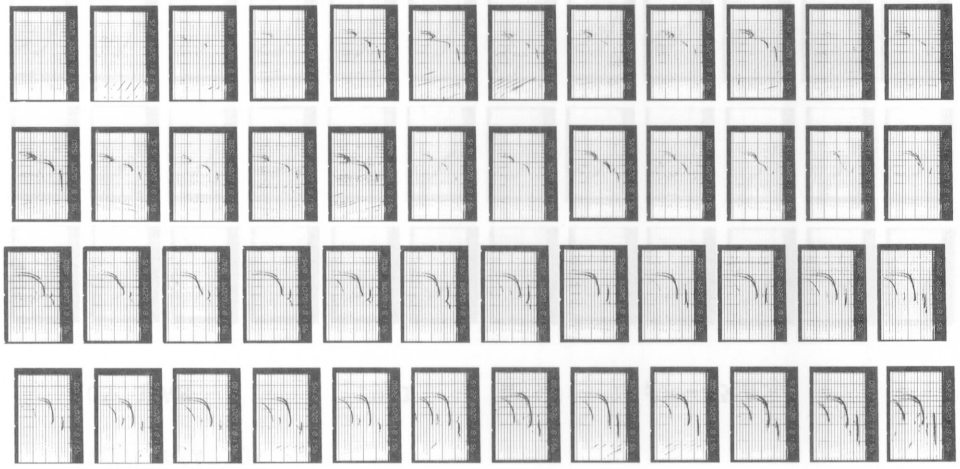
SYOWA STATION

IONOGRAM 1981 02 09 00;00-11;45



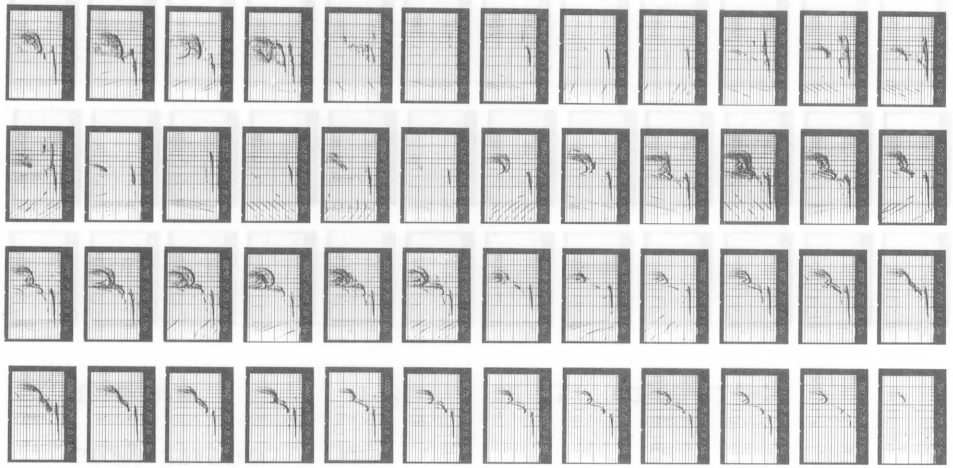
SYOWA STATION

IONOGRAM 1981 02 09 12;00-23;45



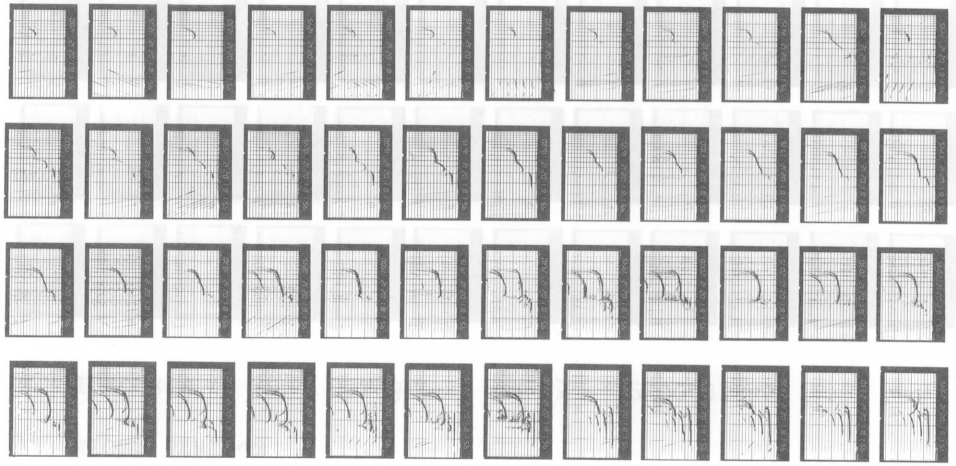
SYOWA STATION

IONOGRAM 1981 02 12 00;00-11;45



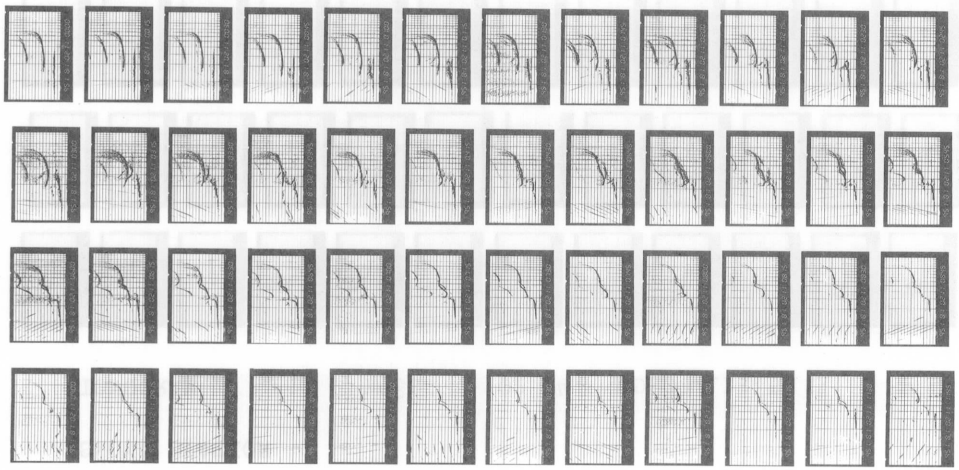
SYOWA STATION

IONOGRAM 1981 02 12 12;00-23;45



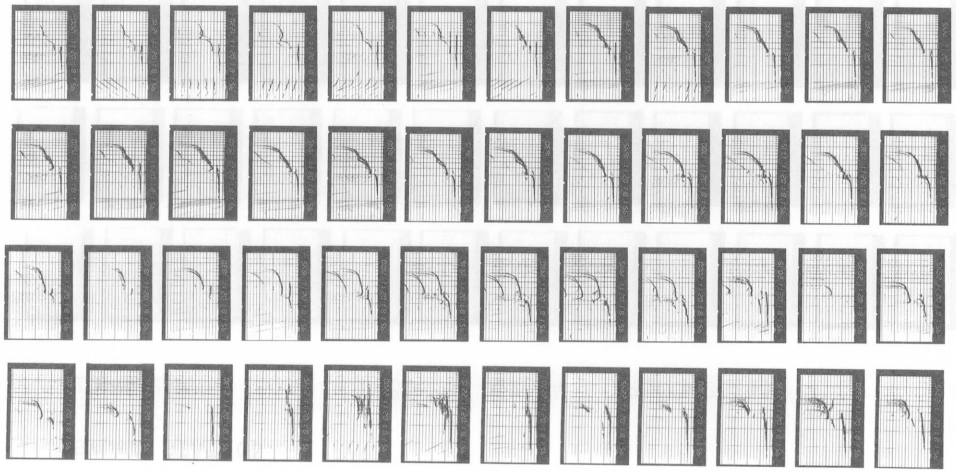
SYOWA STATION

IONOGRAM 1981 02 11 00;00-11;45



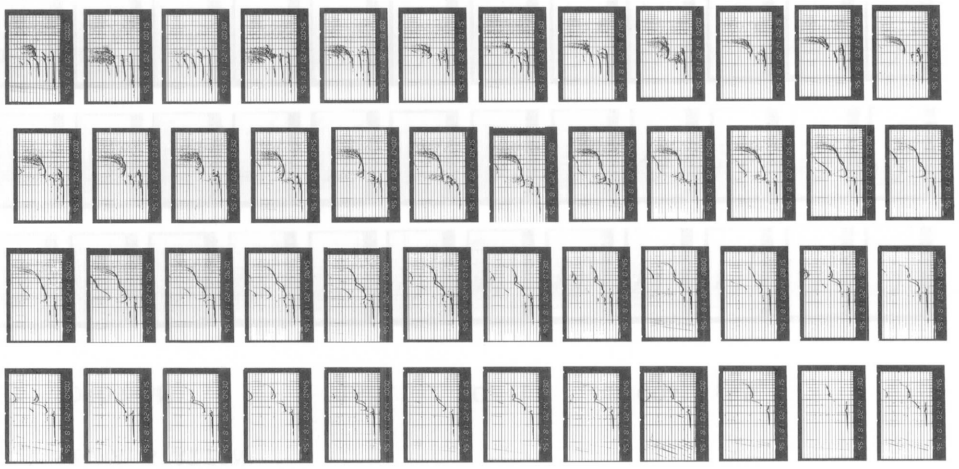
SYOWA STATION

IONOGRAM 1981 02 11 12;00-23;45



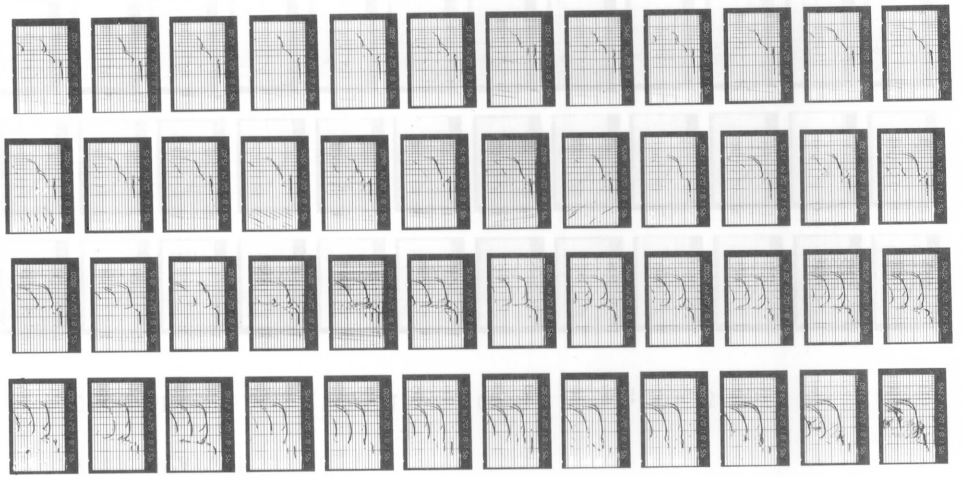
SYOWA STATION

IONOGRAM 1981 02 14 00;00-11;45



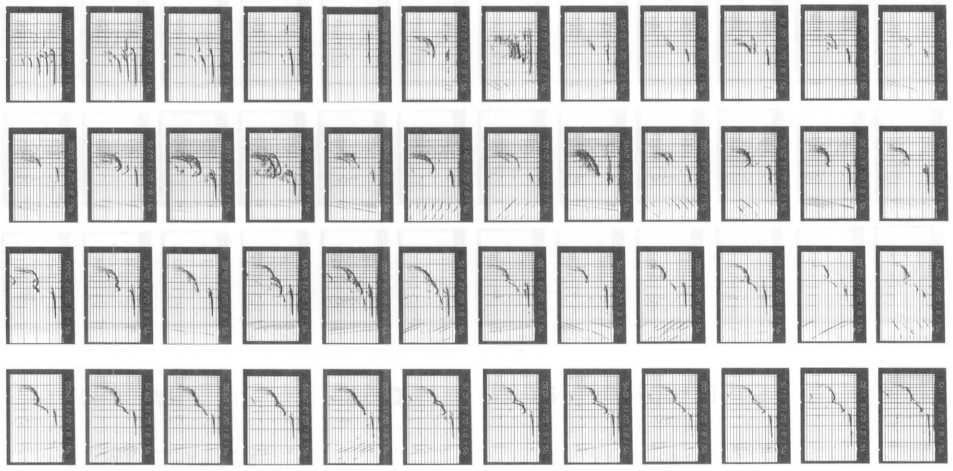
SYOWA STATION

IONOGRAM 1981 02 14 12;00-23;45



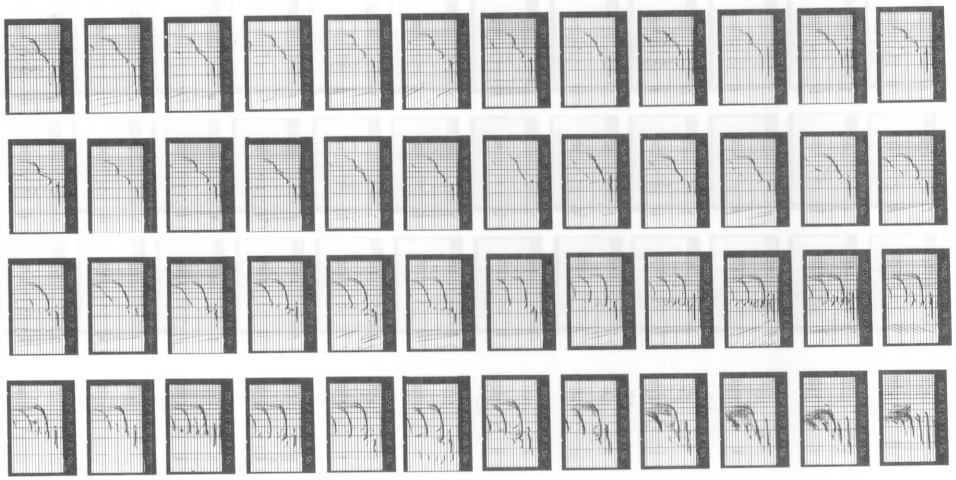
SYOWA STATION

IONOGRAM 1981 02 13 00;00-11;45



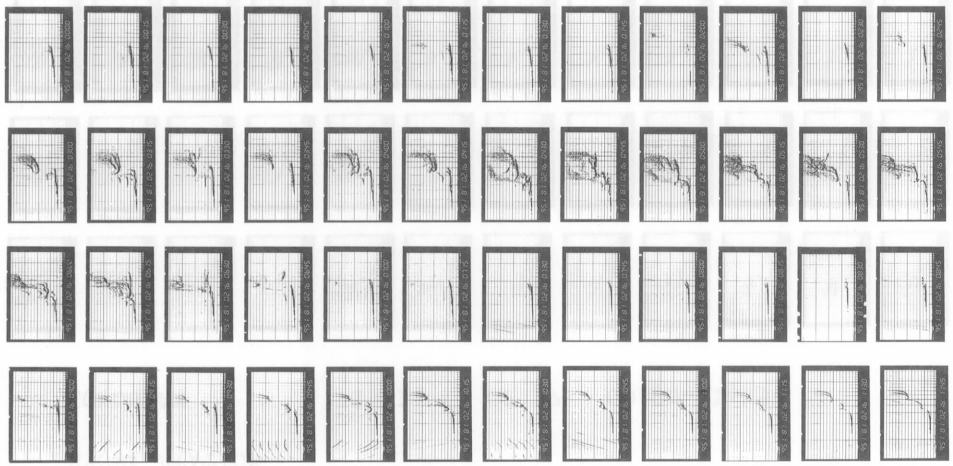
SYOWA STATION

IONOGRAM 1981 02 13 12;00-23;45



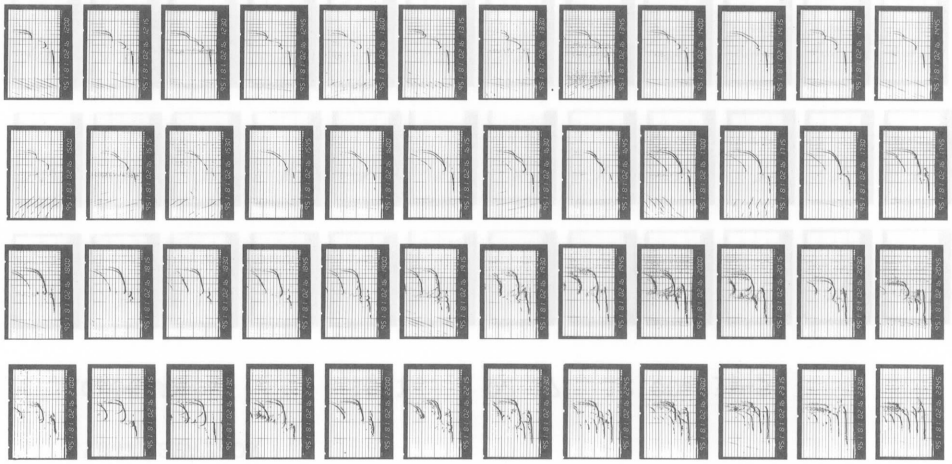
SYOWA STATION

IONOGRAM 1981 02 16 00;00-11;45



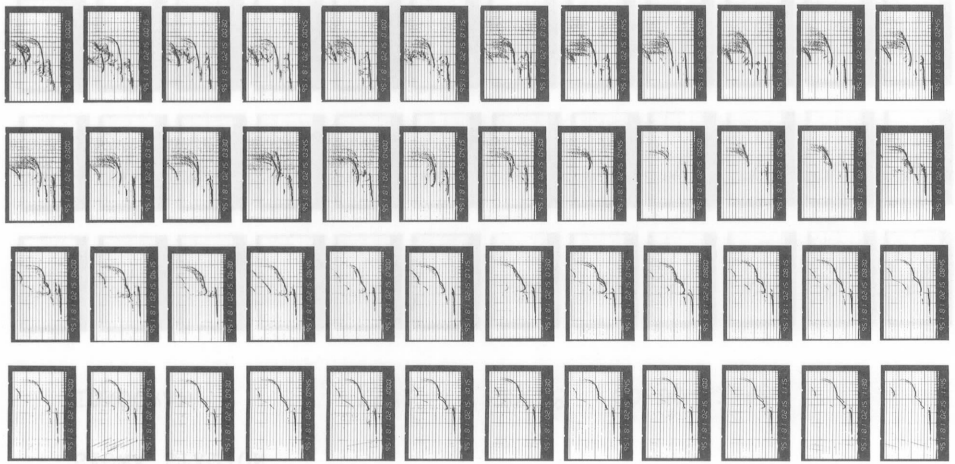
SYOWA STATION

IONOGRAM 1981 02 16 12;00-23;45



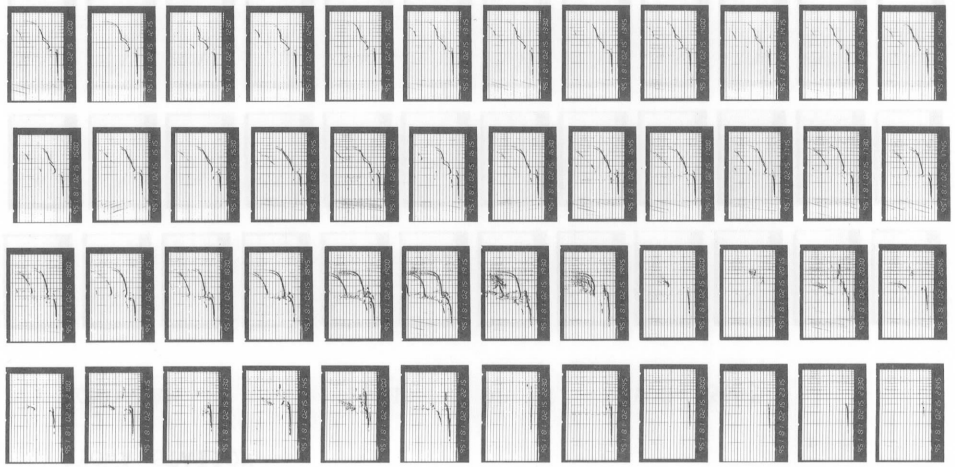
SYOWA STATION

IONOGRAM 1981 02 15 00;00-11;45



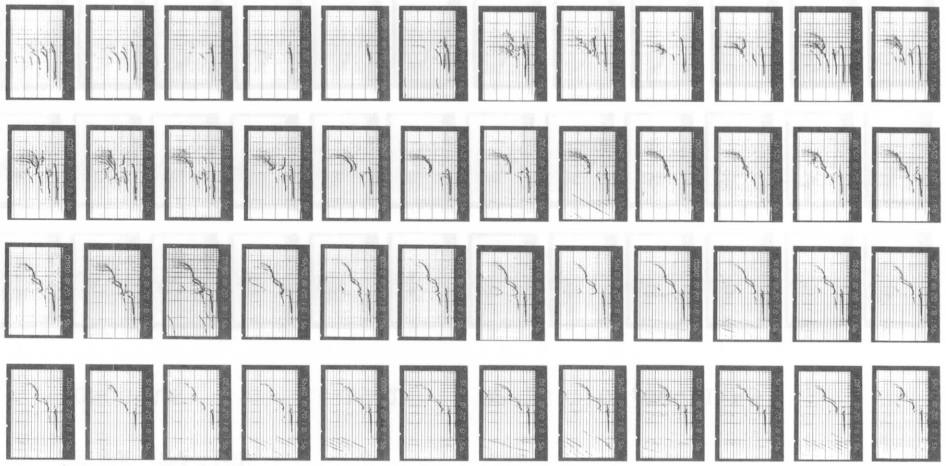
SYOWA STATION

IONOGRAM 1981 02 15 12;00-23;45



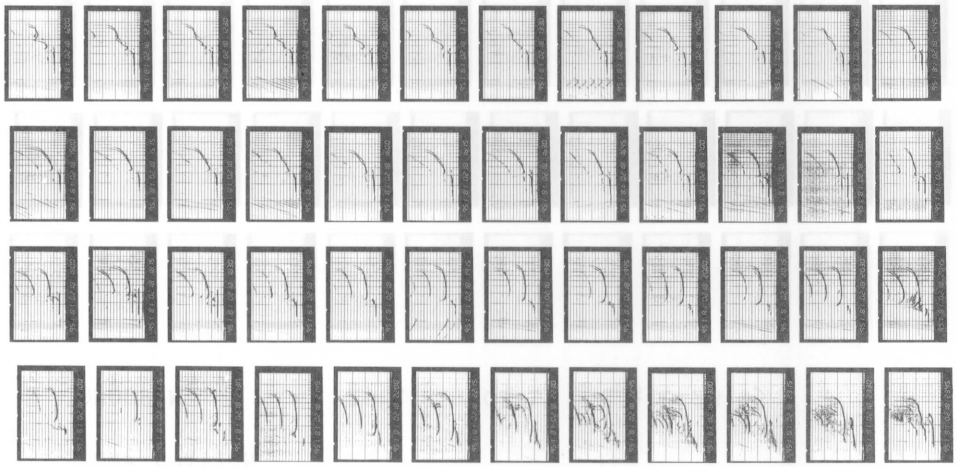
SYOWA STATION

IONOGRAM 1981 02 18 00;00-11;45



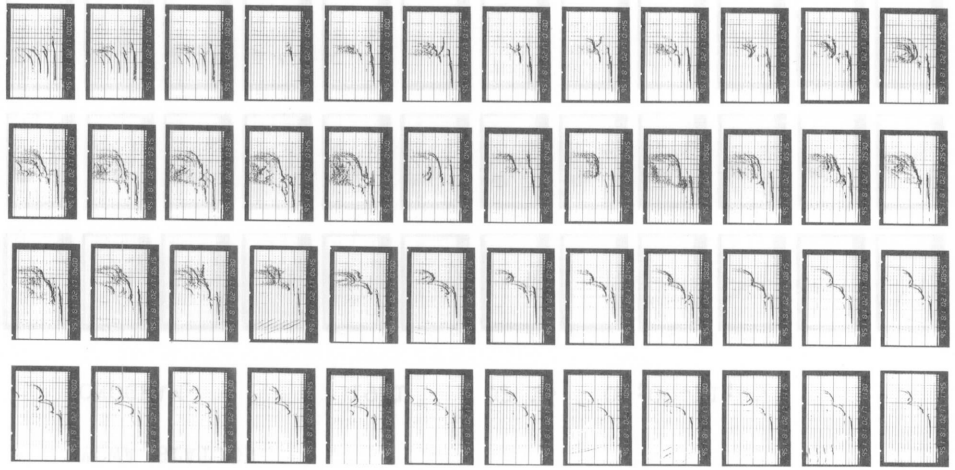
SYOWA STATION

IONOGRAM 1981 02 18 12;00-23;45



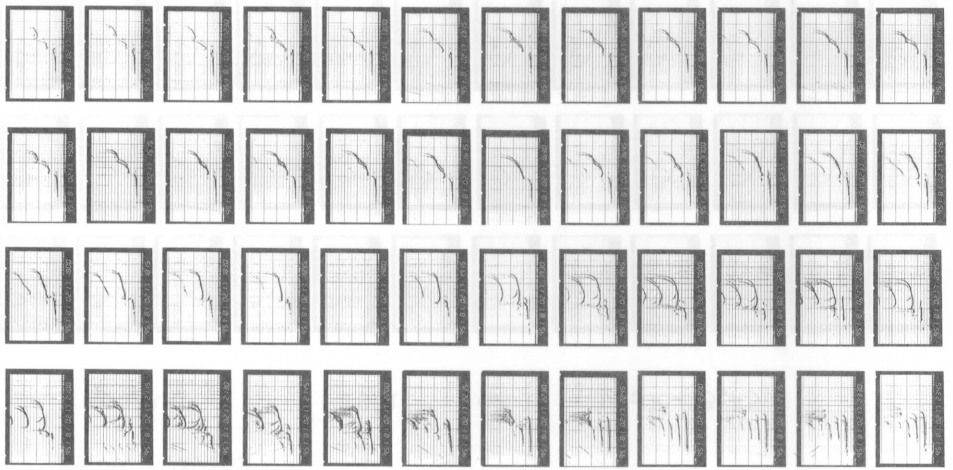
SYOWA STATION

IONOGRAM 1981 02 17 00;00-11;45



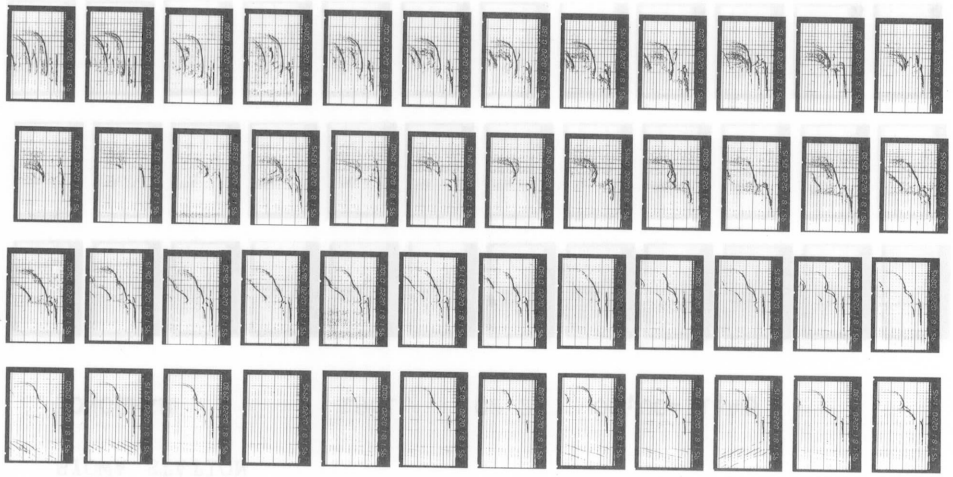
SYOWA STATION

IONOGRAM 1981 02 17 12;00-23;45



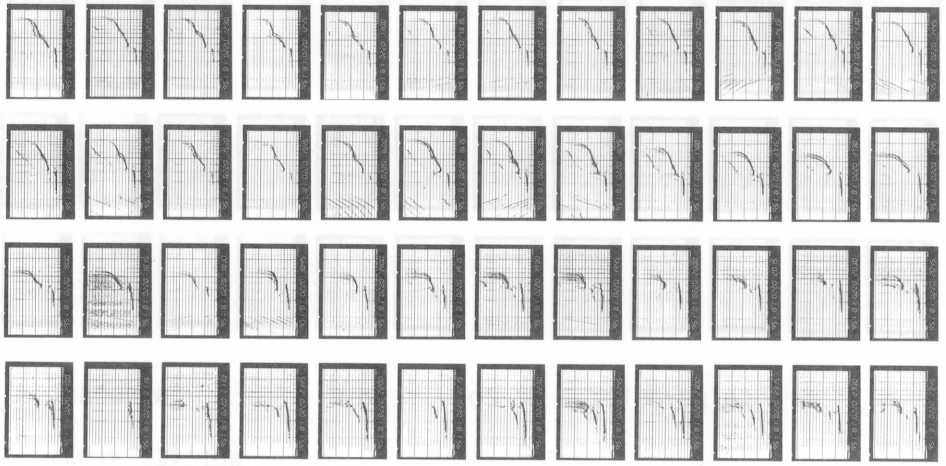
SYOWA STATION

IONOGRAM 1981 02 20 00;00-11;45



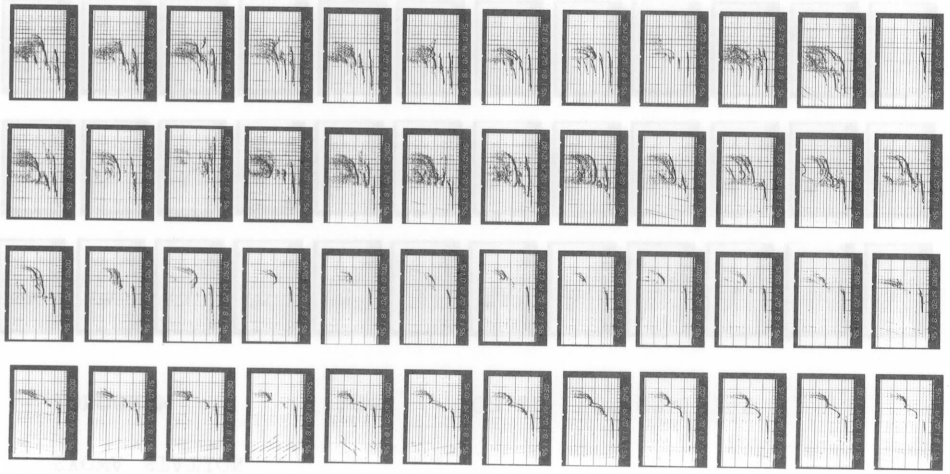
SYOWA STATION

IONOGRAM 1981 02 20 12;00-23;45



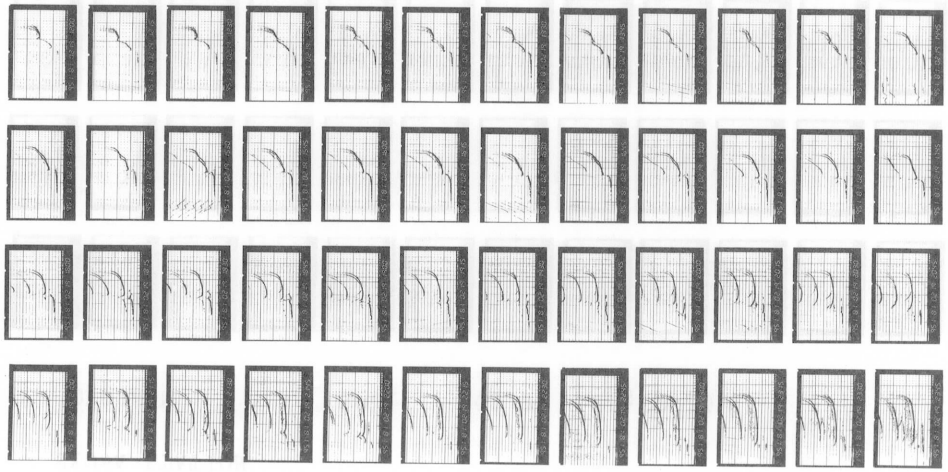
SYOWA STATION

IONOGRAM 1981 02 19 00;00-11;45



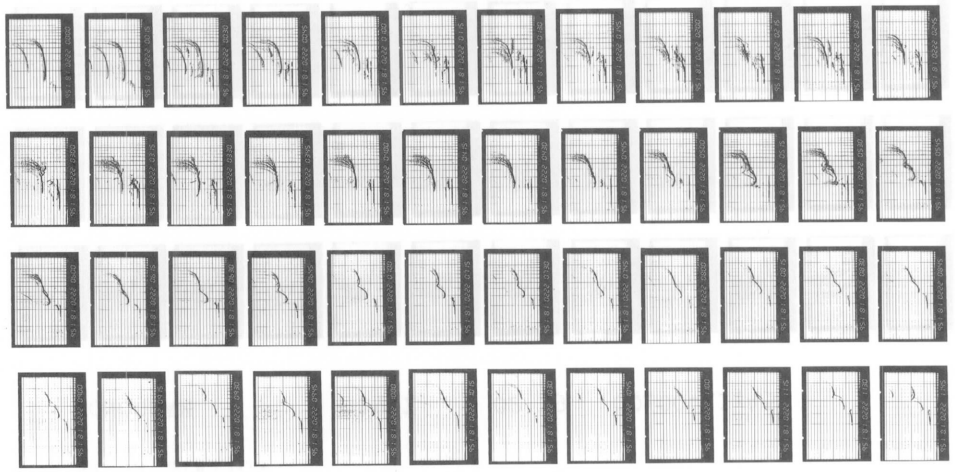
SYOWA STATION

IONOGRAM 1981 02 19 12;00-23;45



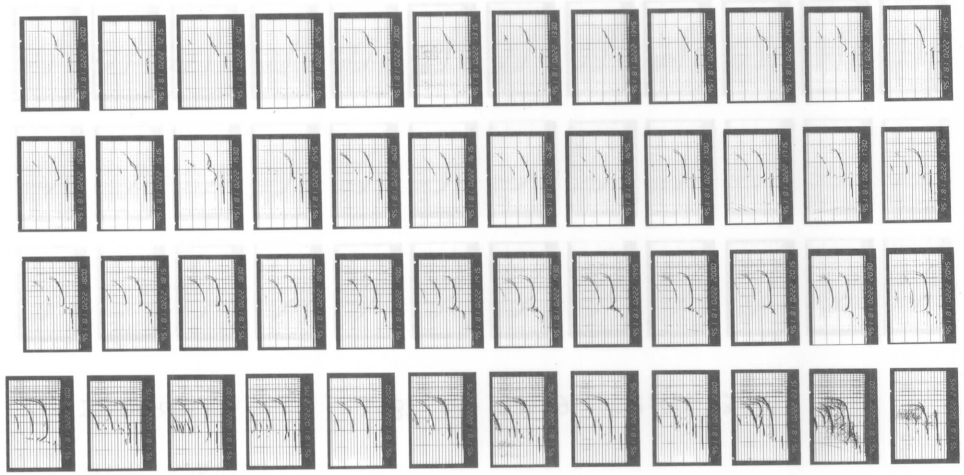
SYOWA STATION

IONOGRAM 1981 02 22 00;00-11;45



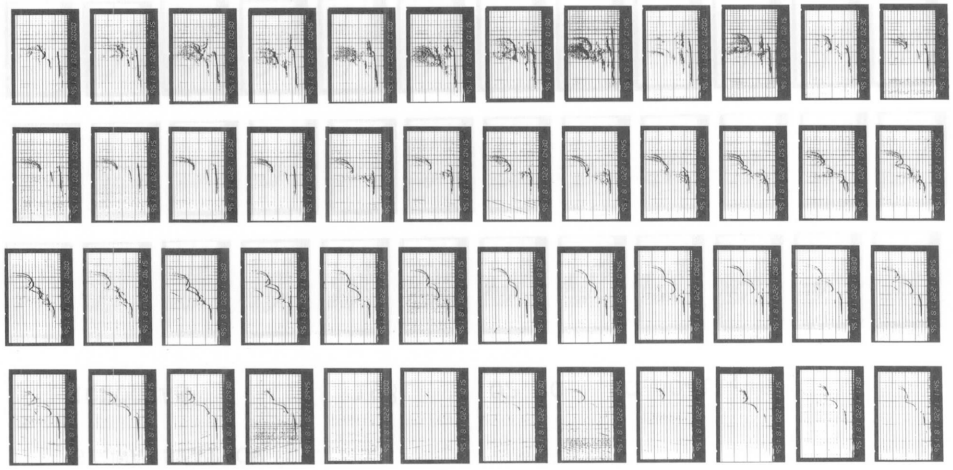
SYOWA STATION

IONOGRAM 1981 02 22 12;00-23;45



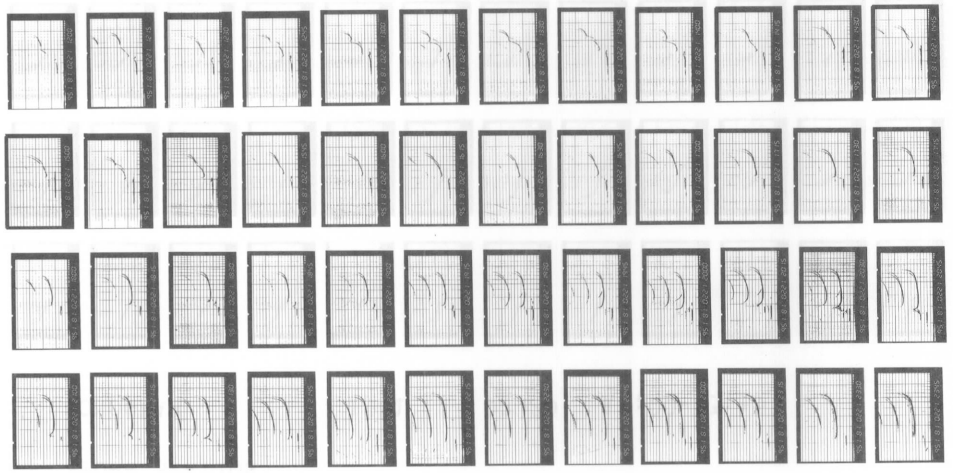
SYOWA STATION

IONOGRAM 1981 02 21 00;00-11;45



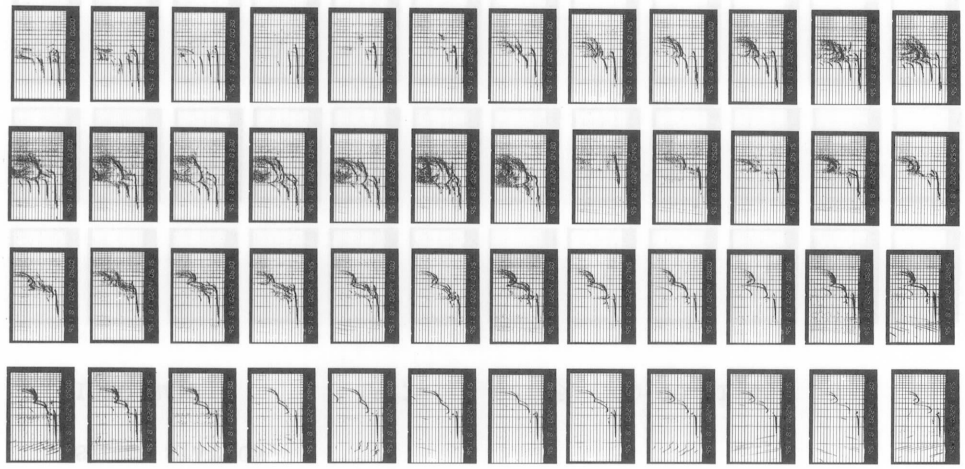
SYOWA STATION

IONOGRAM 1981 02 21 12;00-23;45



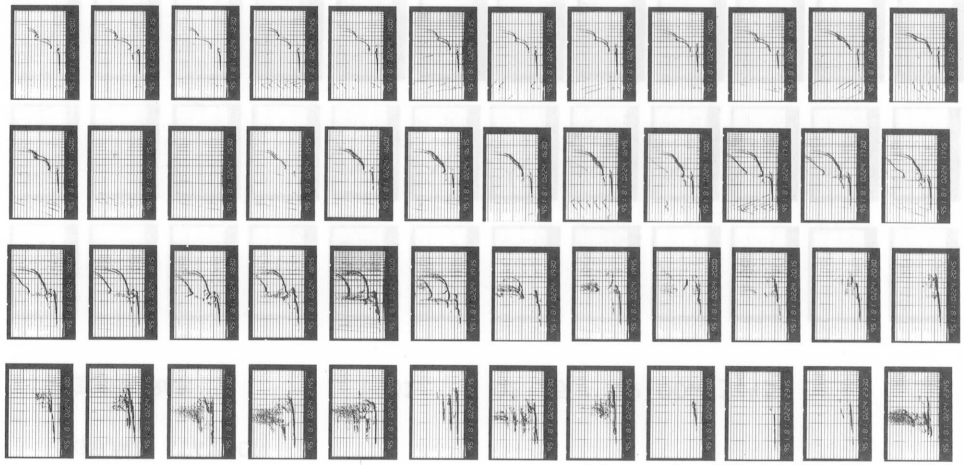
SYOWA STATION

IONOGRAM 1981 02 24 00;00-11;45



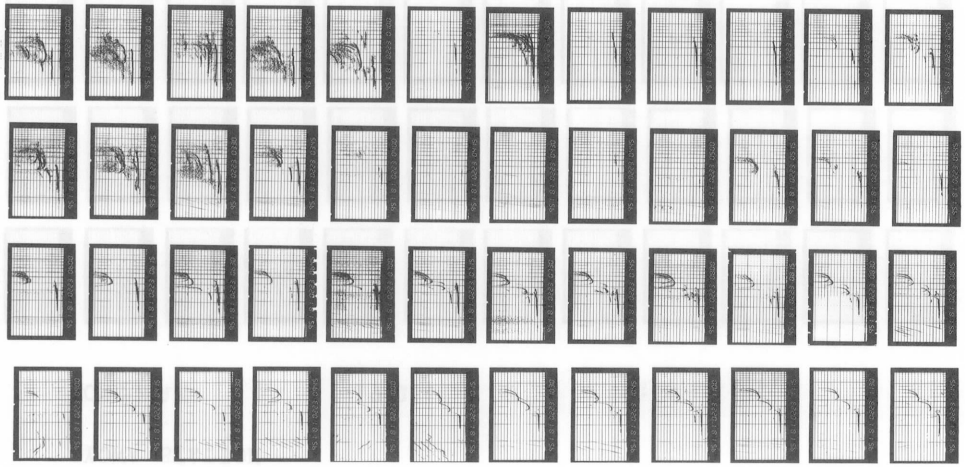
SYOWA STATION

IONOGRAM 1981 02 24 12;00-23;45



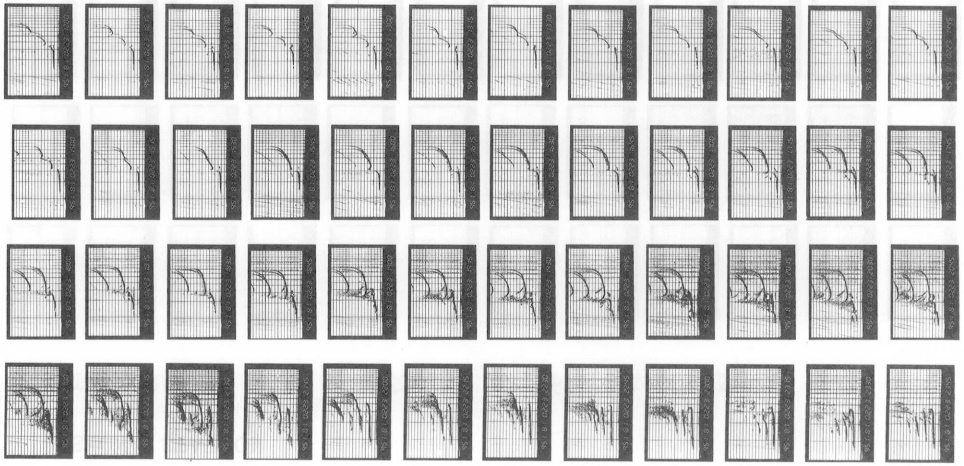
SYOWA STATION

IONOGRAM 1981 02 23 00;00-11;45



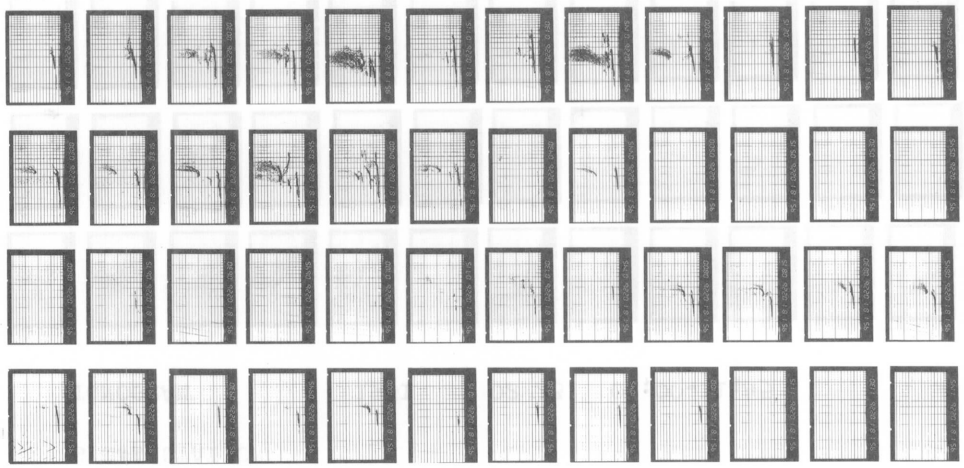
SYOWA STATION

IONOGRAM 1981 02 23 12;00-23;45



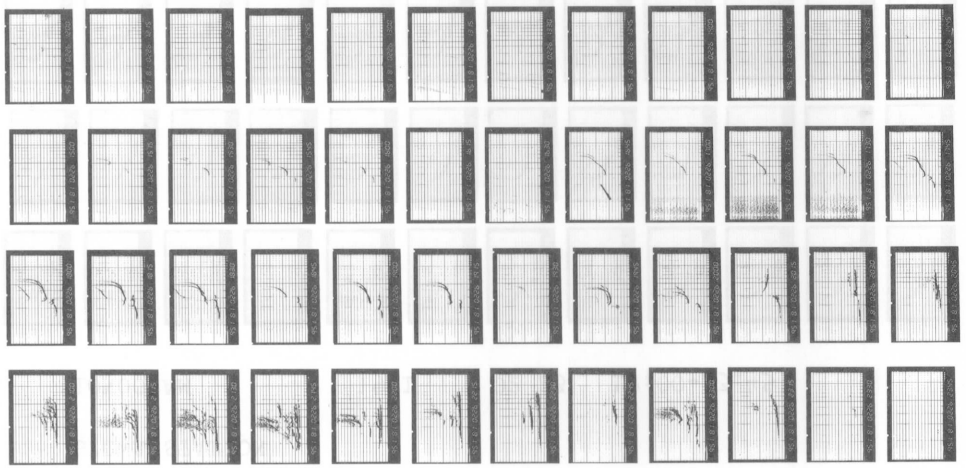
SYOWA STATION

IONOGRAM 1981 02 26 00;00-11;45



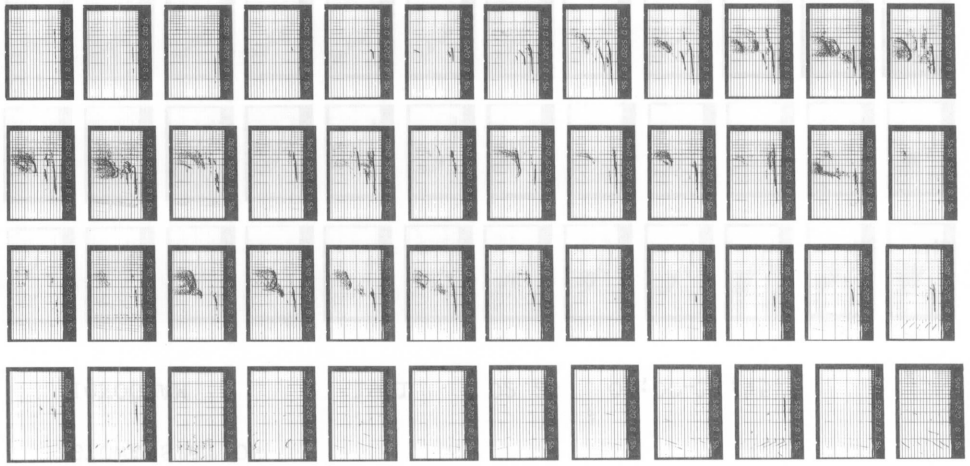
SYOWA STATION

IONOGRAM 1981 02 26 12;00-23;45



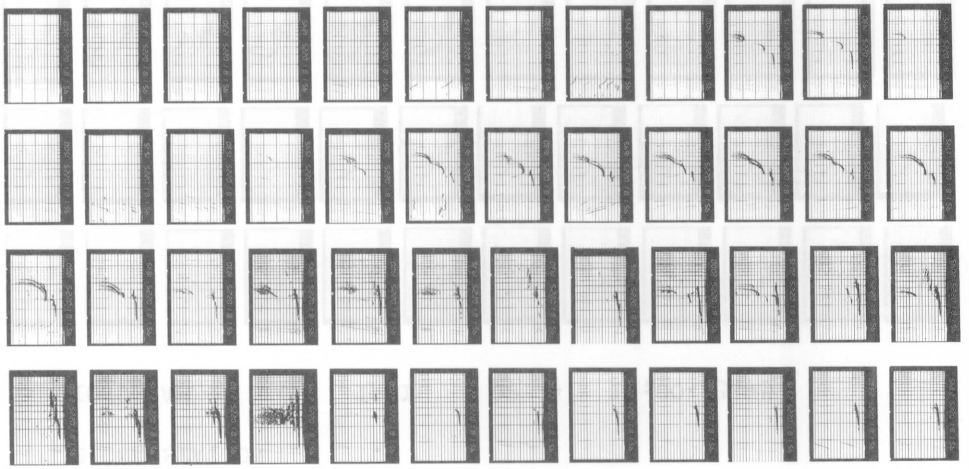
SYOWA STATION

IONOGRAM 1981 02 25 00;00-11;45



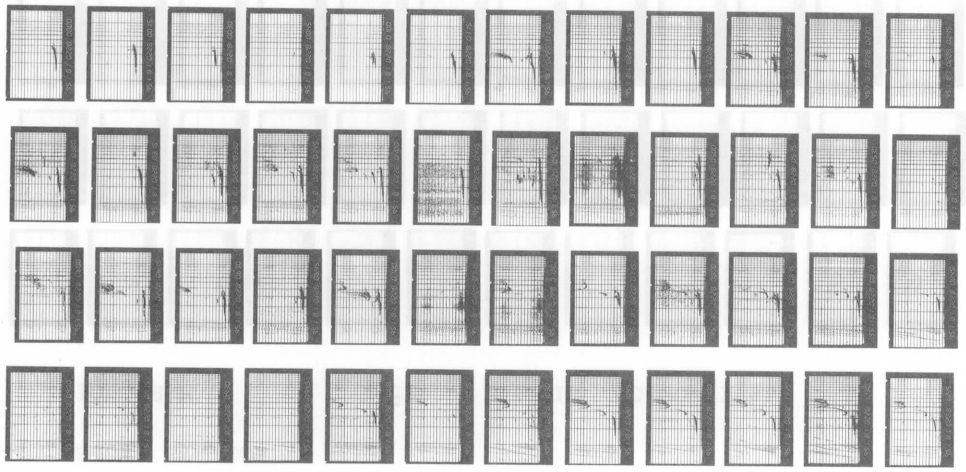
SYOWA STATION

IONOGRAM 1981 02 25 12;00-23;45



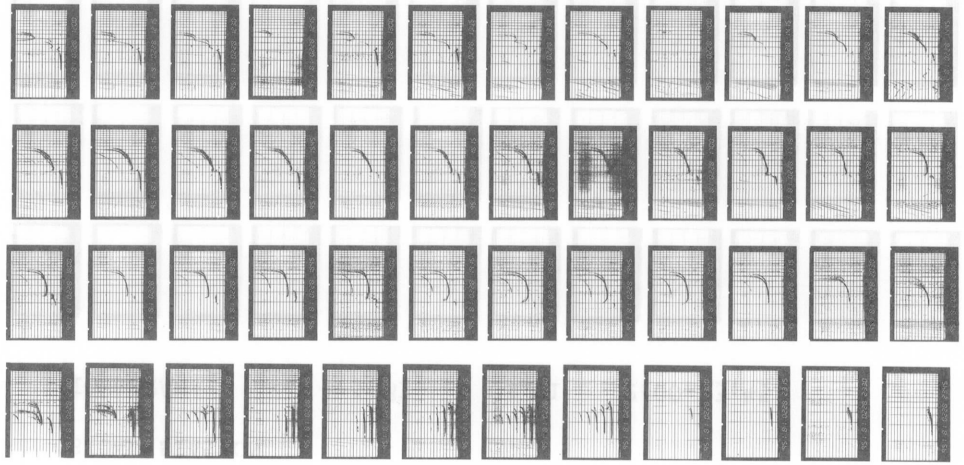
SYOWA STATION

IONOGRAM 1981 02 28 00;00-11;45



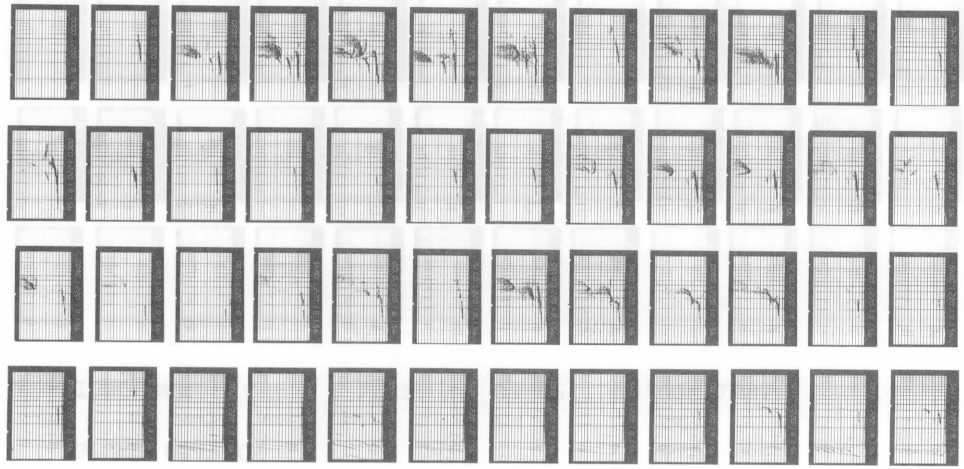
SYOWA STATION

IONOGRAM 1981 02 28 12;00-23;45



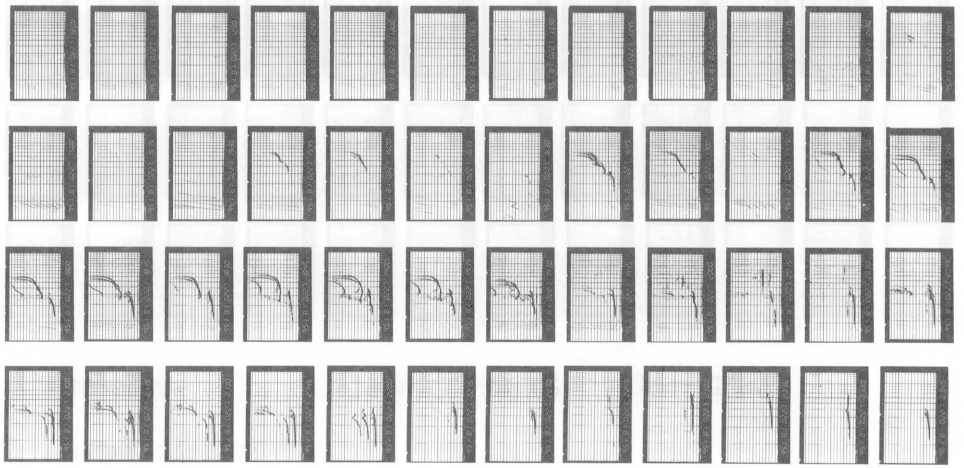
SYOWA STATION

IONOGRAM 1981 02 27 00;00-11;45



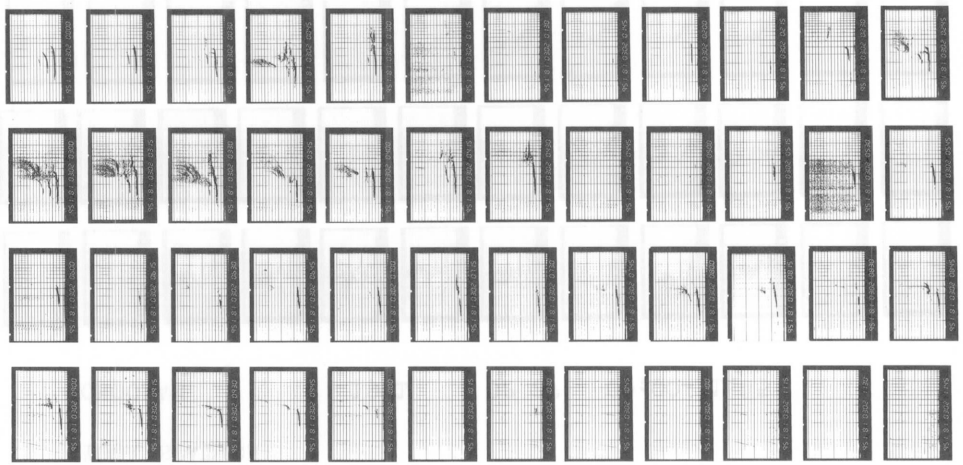
SYOWA STATION

IONOGRAM 1981 02 27 12;00-23;45



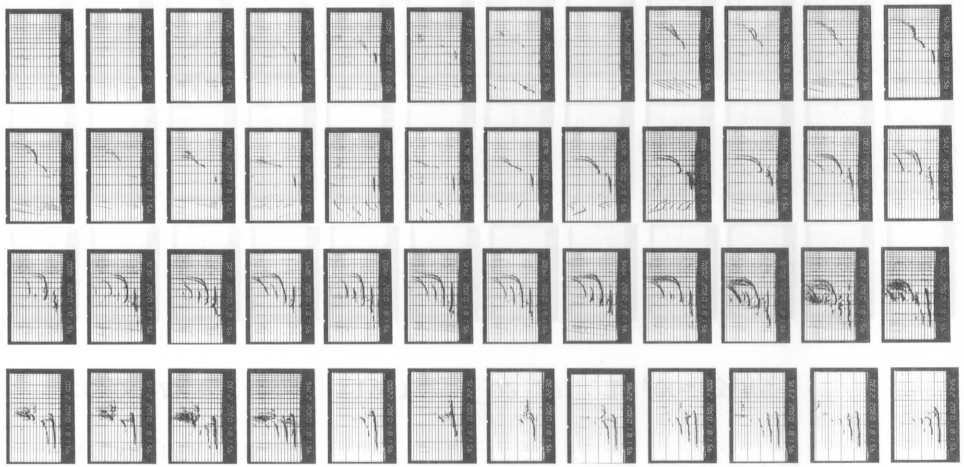
SYOWA STATION

IONOGRAM 1981 03 02 00;00-11;45



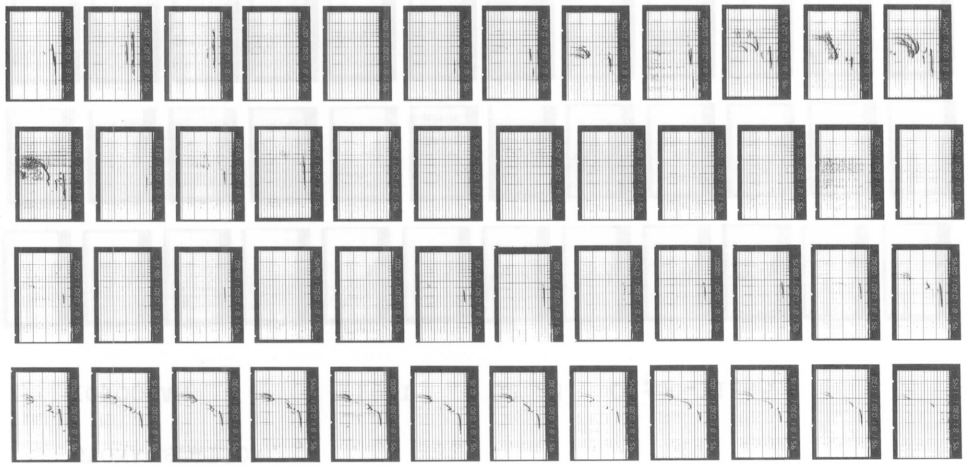
SYOWA STATION

IONOGRAM 1981 03 02 12;00-23;45



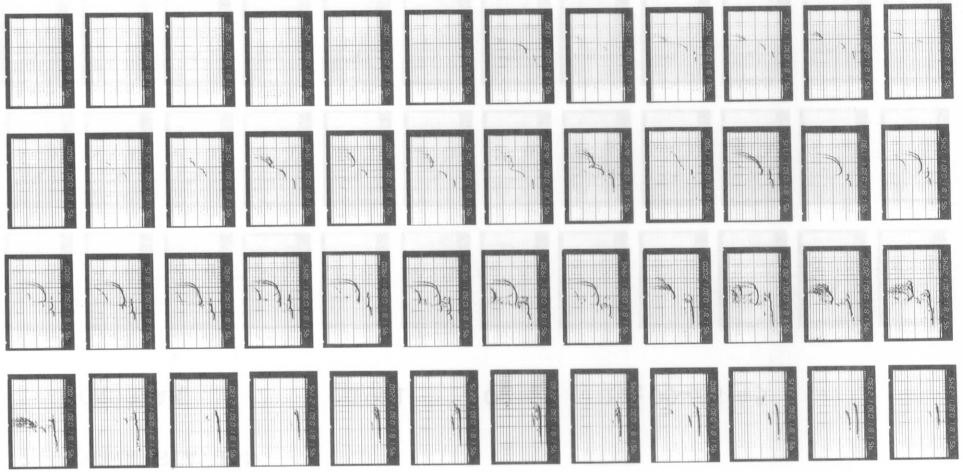
SYOWA STATION

IONOGRAM 1981 03 01 00;00-11;45



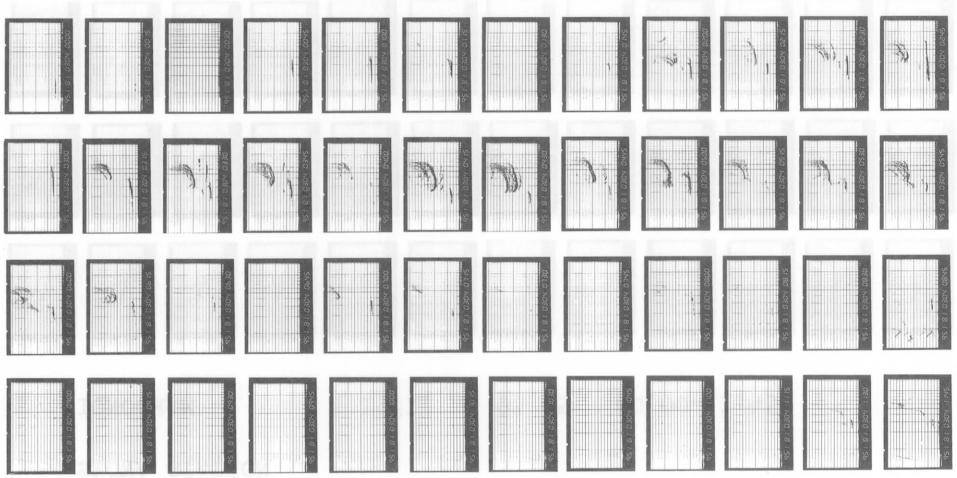
SYOWA STATION

IONOGRAM 1981 03 01 12;00-23;45



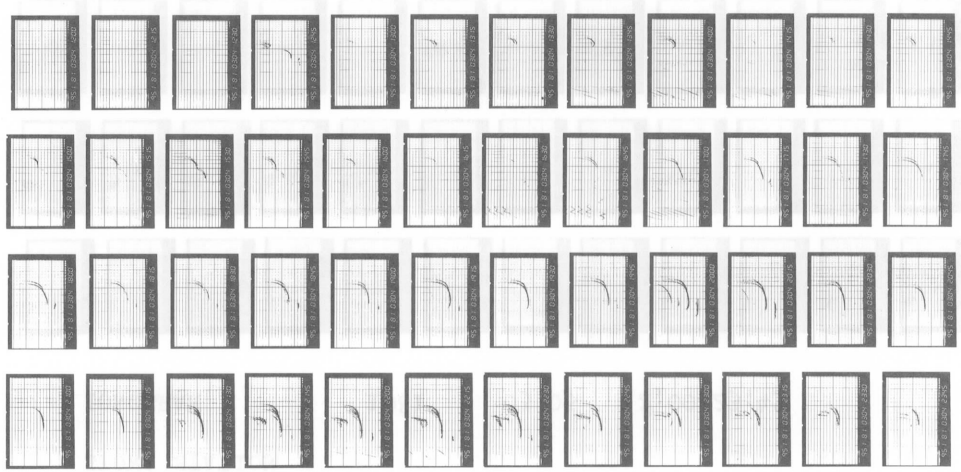
SYOWA STATION

IONOGRAM 1981 03 04 00;00-11;45



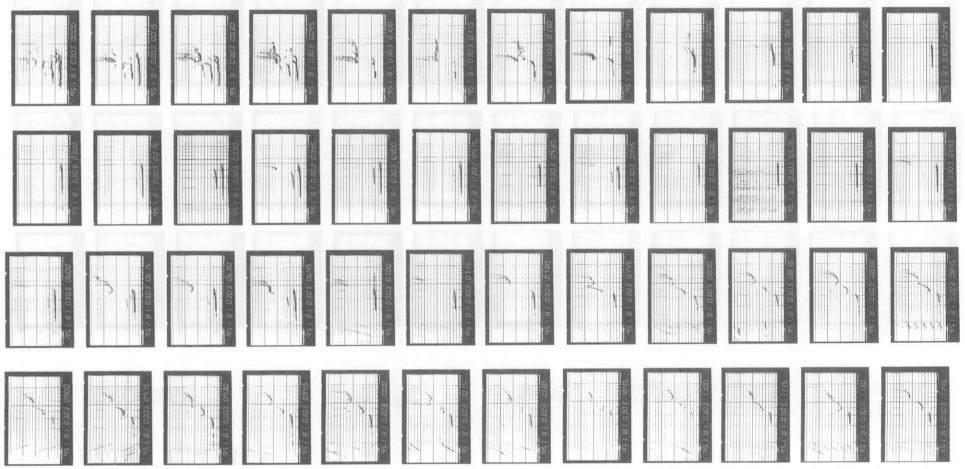
SYOWA STATION

IONOGRAM 1981 03 04 12;00-23;45



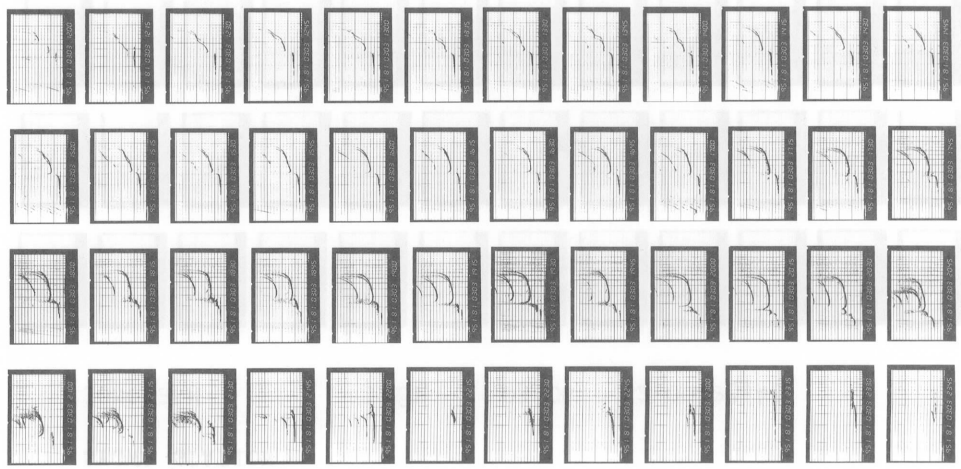
SYOWA STATION

IONOGRAM 1981 03 03 00;00-11;45



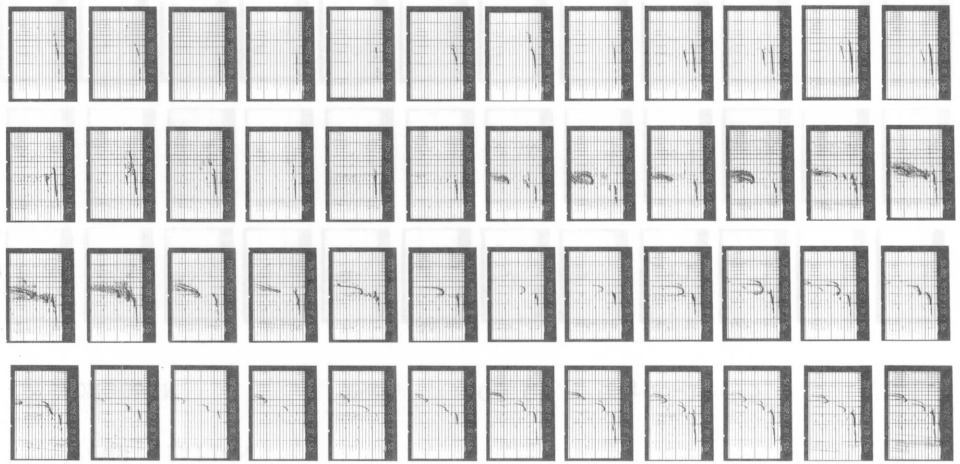
SYOWA STATION

IONOGRAM 1981 03 03 12;00-23;45



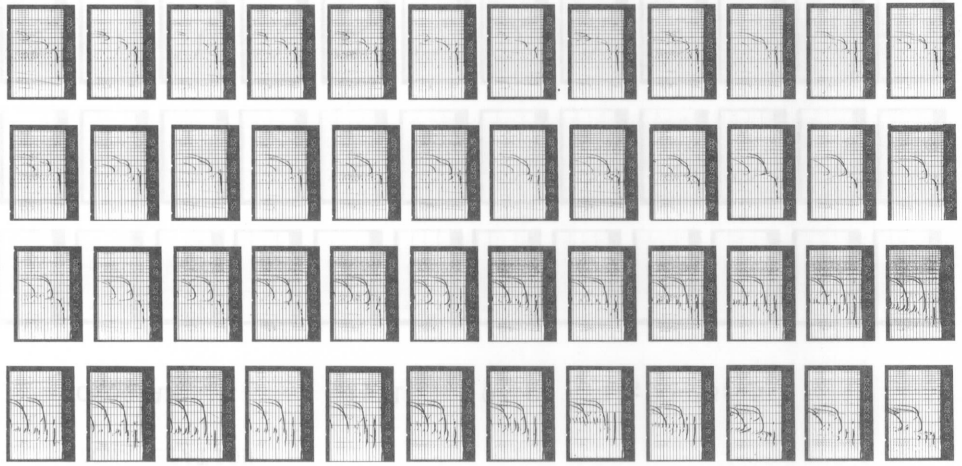
SYOWA STATION

IONOGRAM 1981 03 06 00;00-11;45



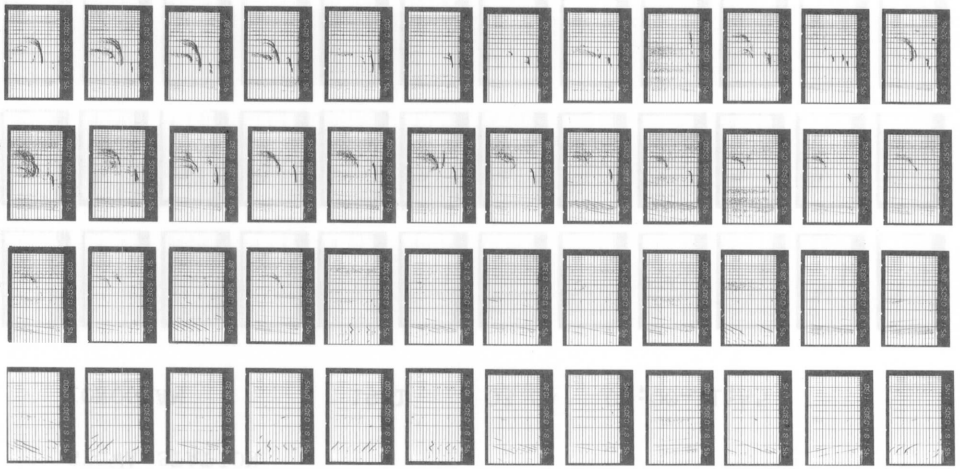
SYOWA STATION

IONOGRAM 1981 03 06 12;00-23;45



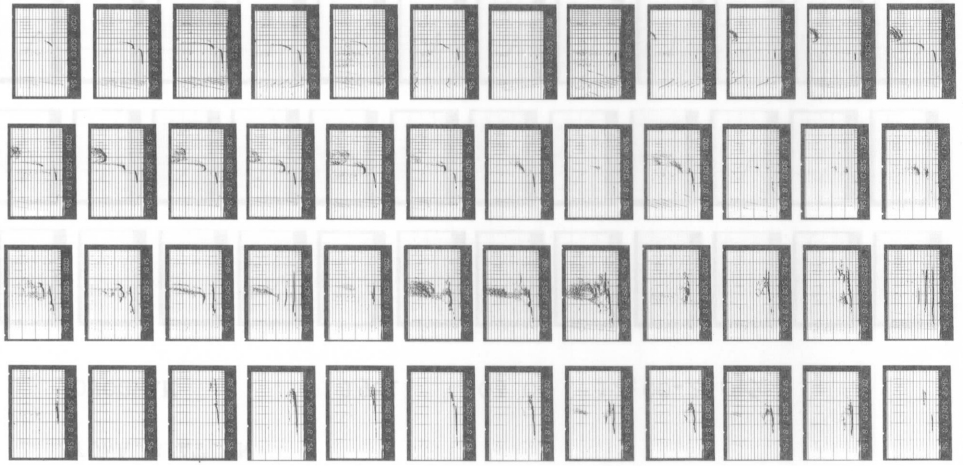
SYOWA STATION

IONOGRAM 1981 03 05 00;00-11;45



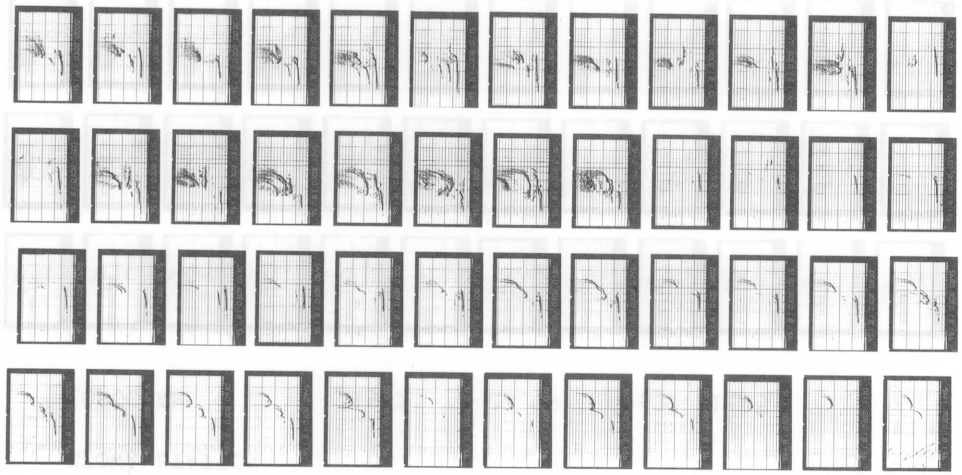
SYOWA STATION

IONOGRAM 1981 03 05 12;00-23;45



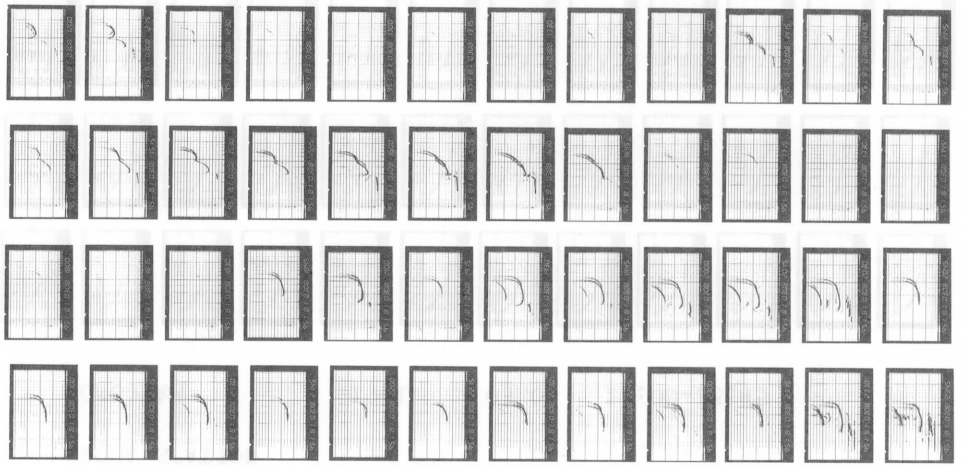
SYOWA STATION

IONOGRAM 1981 03 08 00;00-11;45



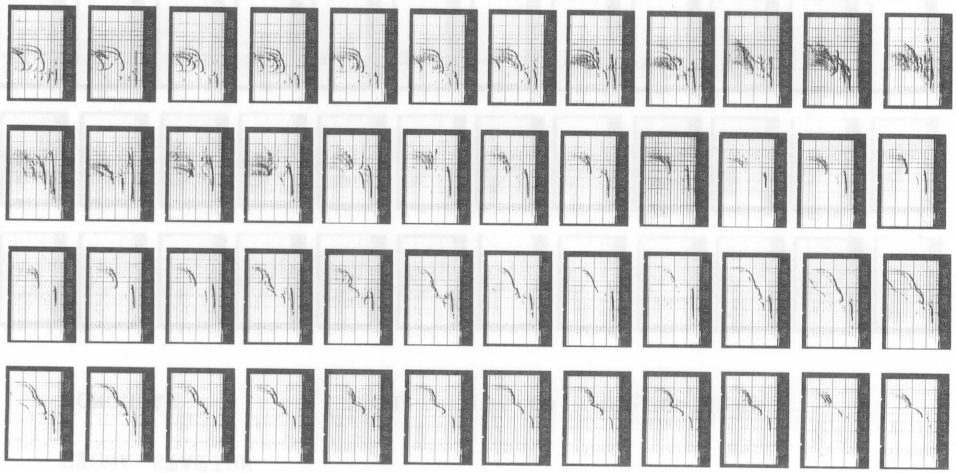
SYOWA STATION

IONOGRAM 1981 03 08 12;00-23;45



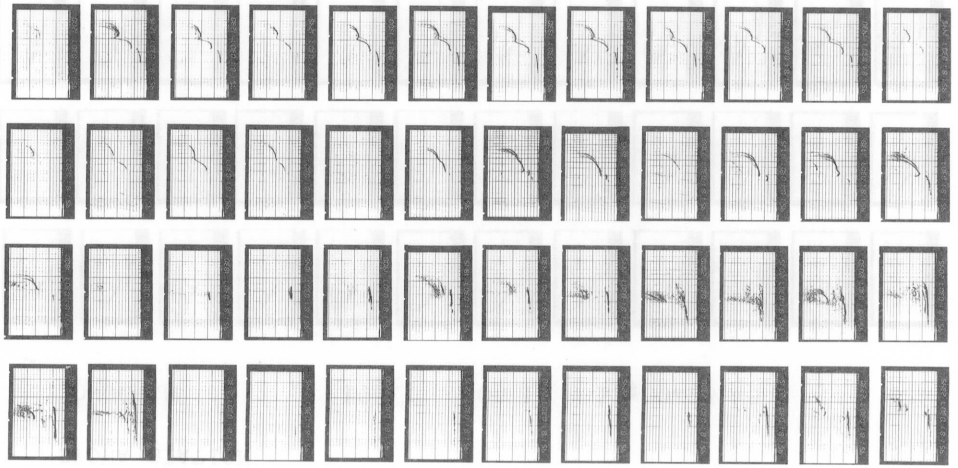
SYOWA STATION

IONOGRAM 1981 03 07 00;00-11;45



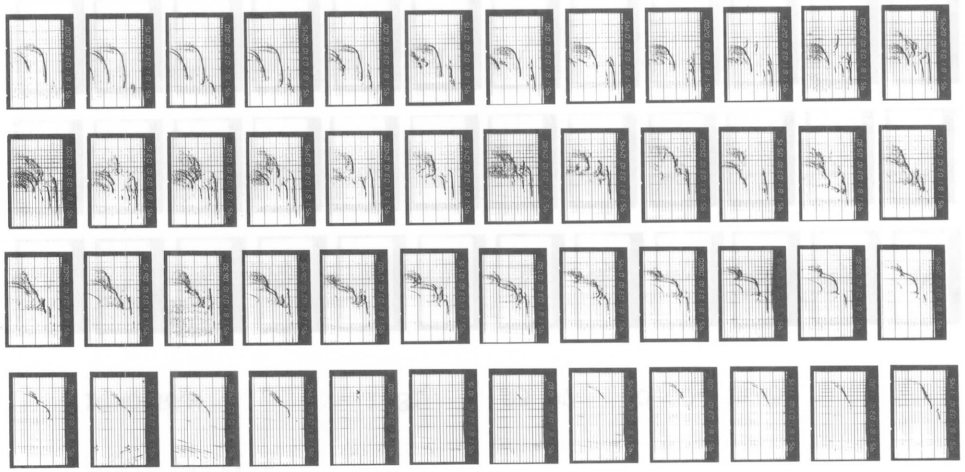
SYOWA STATION

IONOGRAM 1981 03 07 12;00-23;45



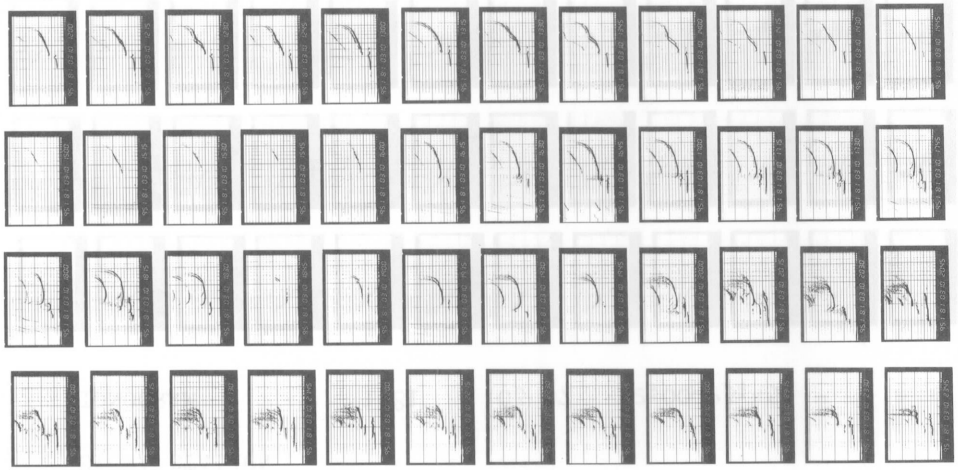
SYOWA STATION

IONOGRAM 1981 03 10 00;00-11;45



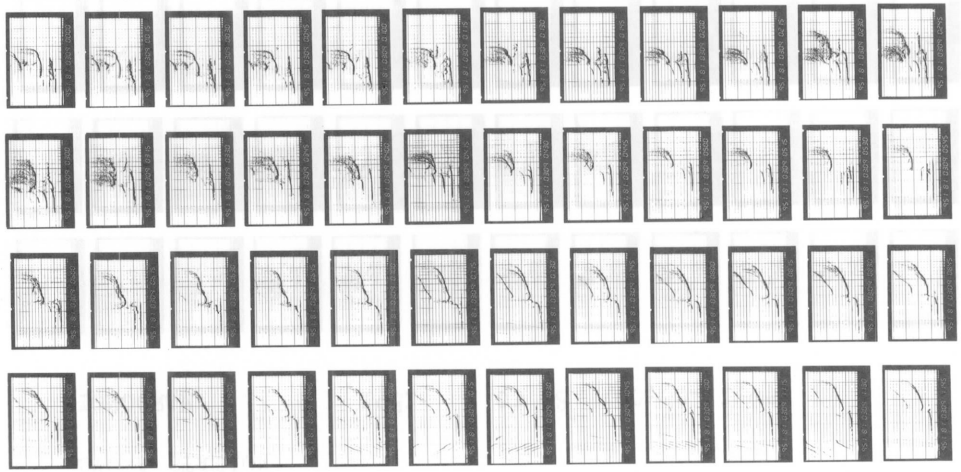
SYOWA STATION

IONOGRAM 1981 03 10 12;00-23;45



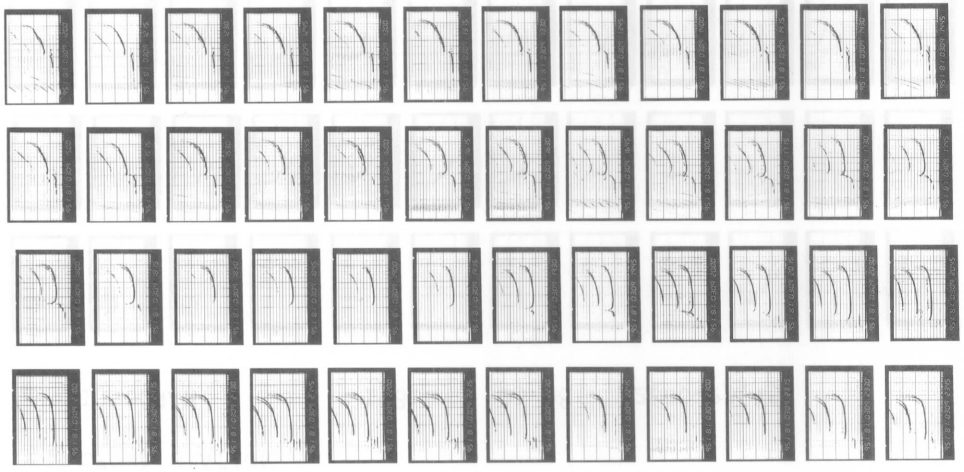
SYOWA STATION

IONOGRAM 1981 03 09 00;00-11;45



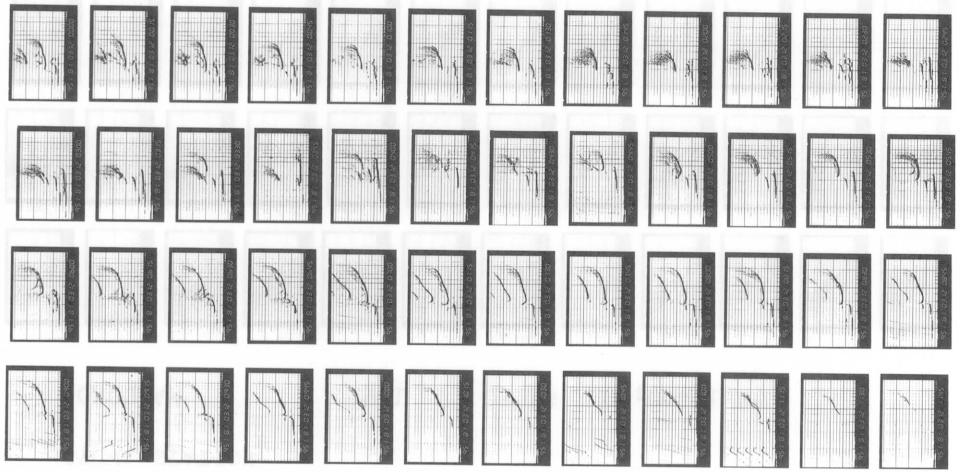
SYOWA STATION

IONOGRAM 1981 03 09 12;00-23;45



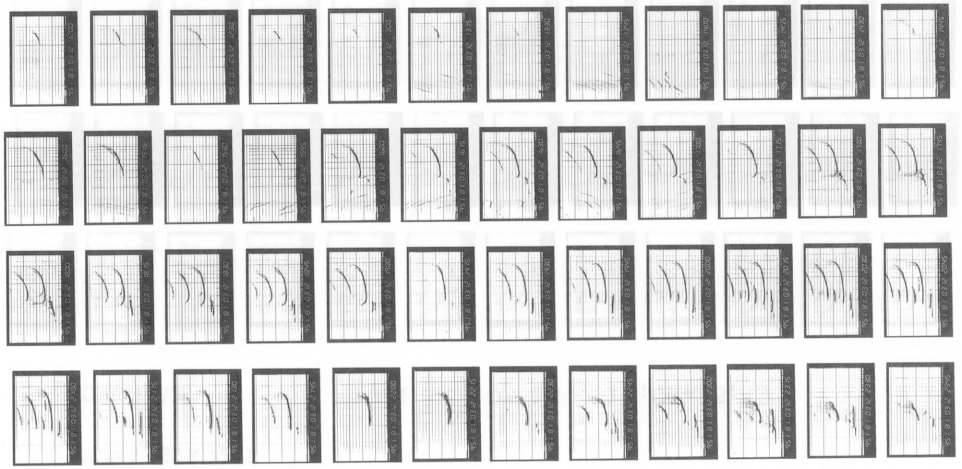
SYOWA STATION

IONOGRAM 1981 03 12 00;00-11;45



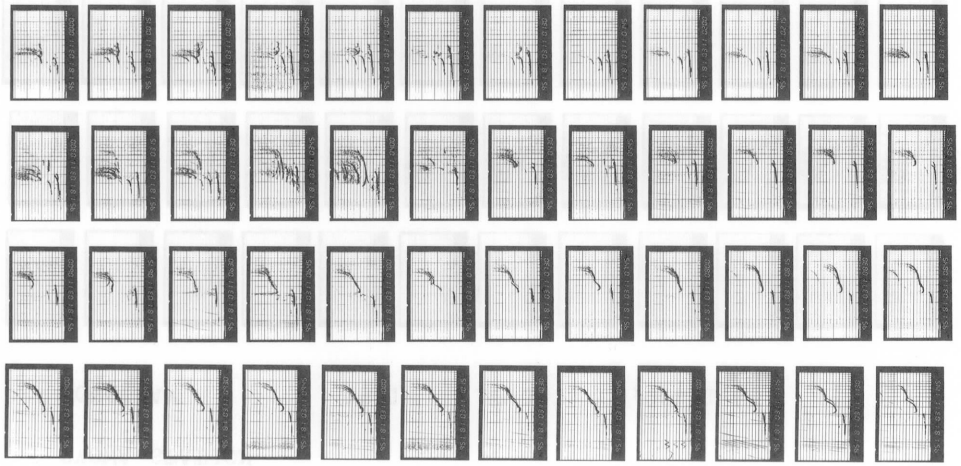
SYOWA STATION

IONOGRAM 1981 03 12 12;00-23;45



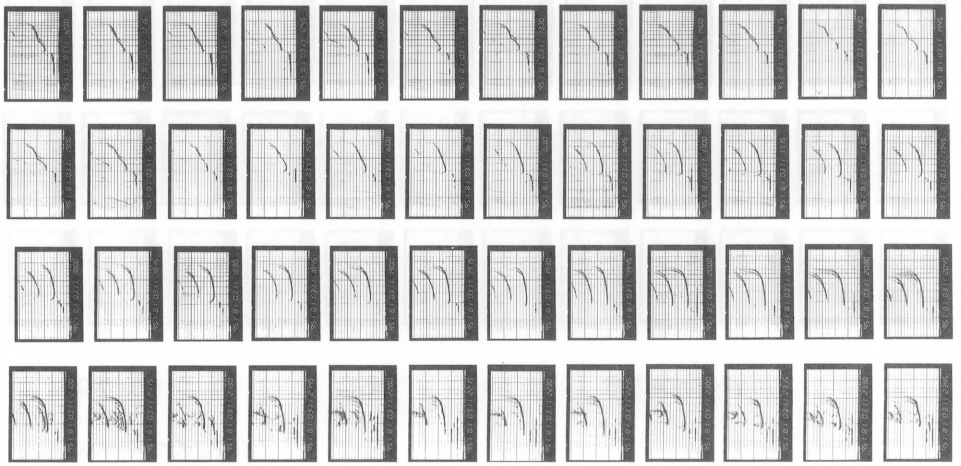
SYOWA STATION

IONOGRAM 1981 03 11 00;00-11;45



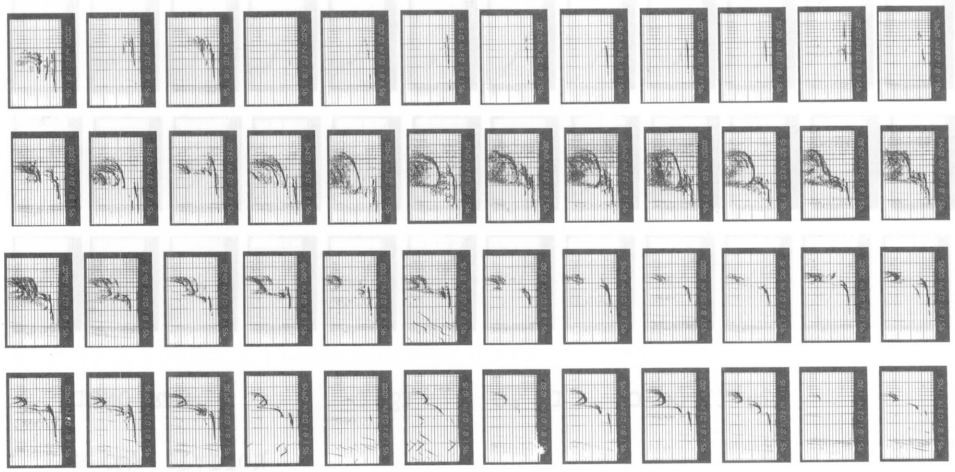
SYOWA STATION

IONOGRAM 1981 03 11 12;00-23;45



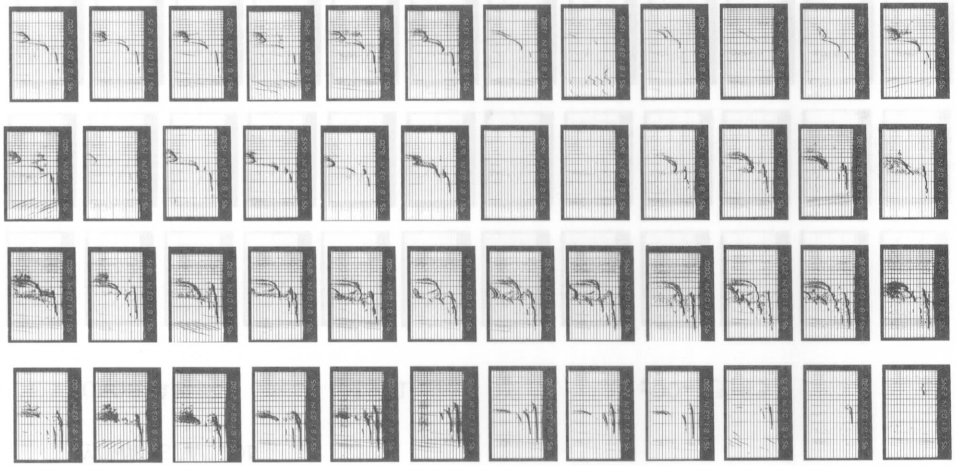
SYOWA STATION

IONOGRAM 1981 03 14 00;00-11;45



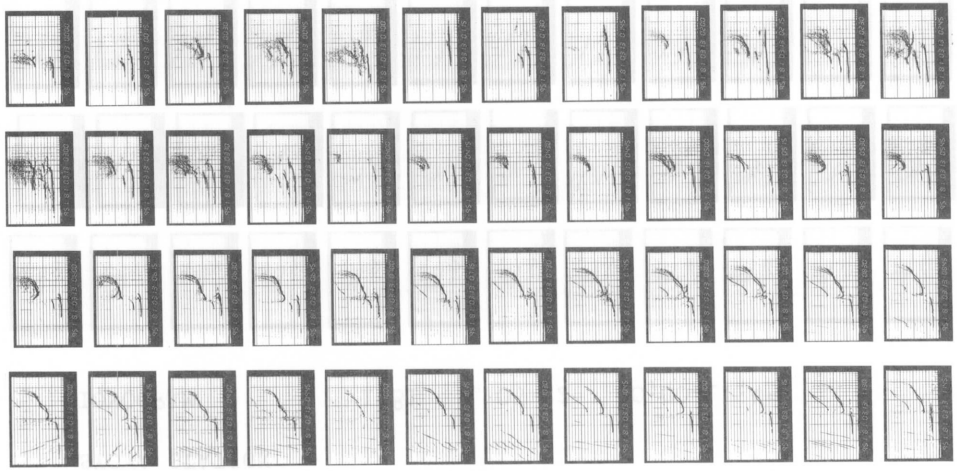
SYOWA STATION

IONOGRAM 1981 03 14 12;00-23;45



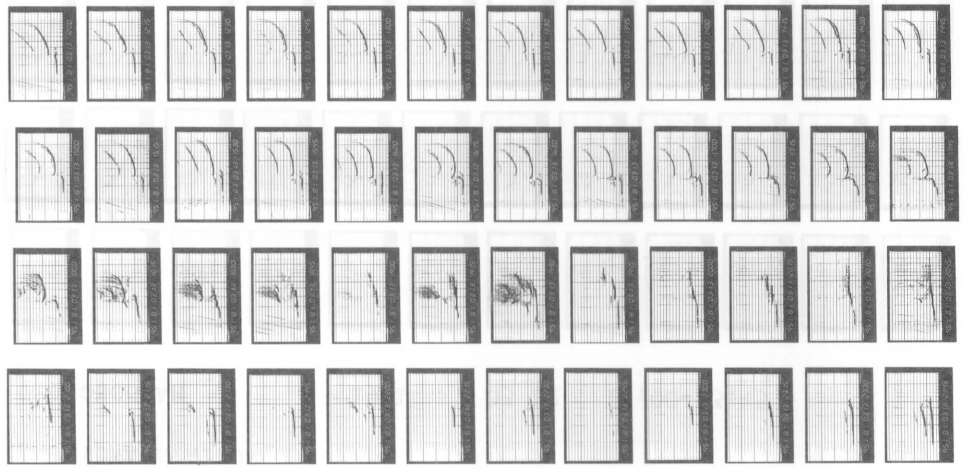
SYOWA STATION

IONOGRAM 1981 03 13 00;00-11;45



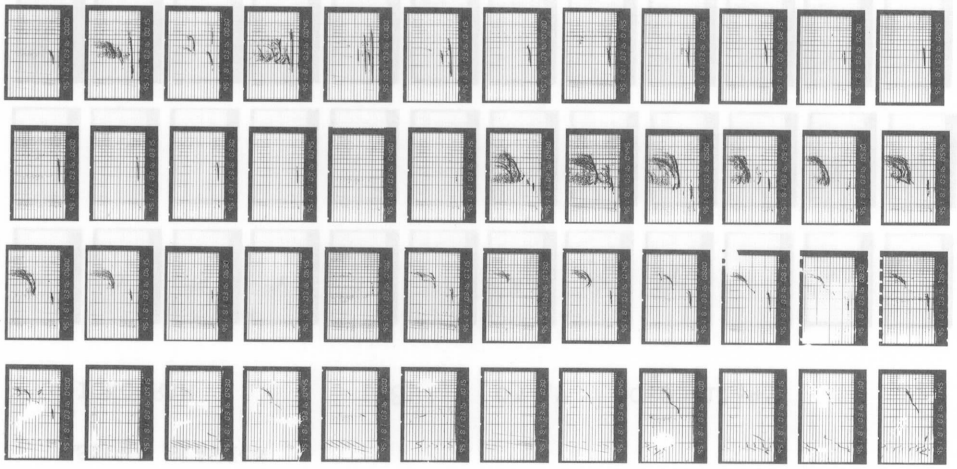
SYOWA STATION

IONOGRAM 1981 03 13 12;00-23;45



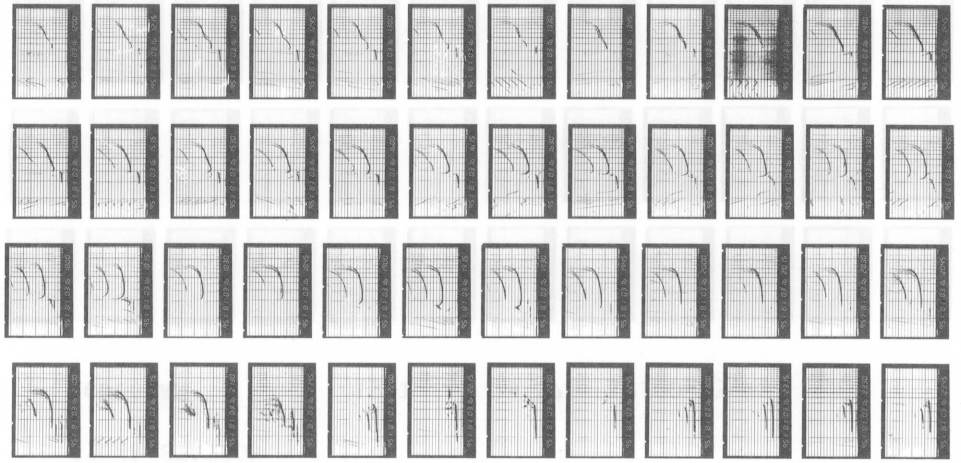
SYOWA STATION

IONOGRAM 1981 03 16 00;00-11;45



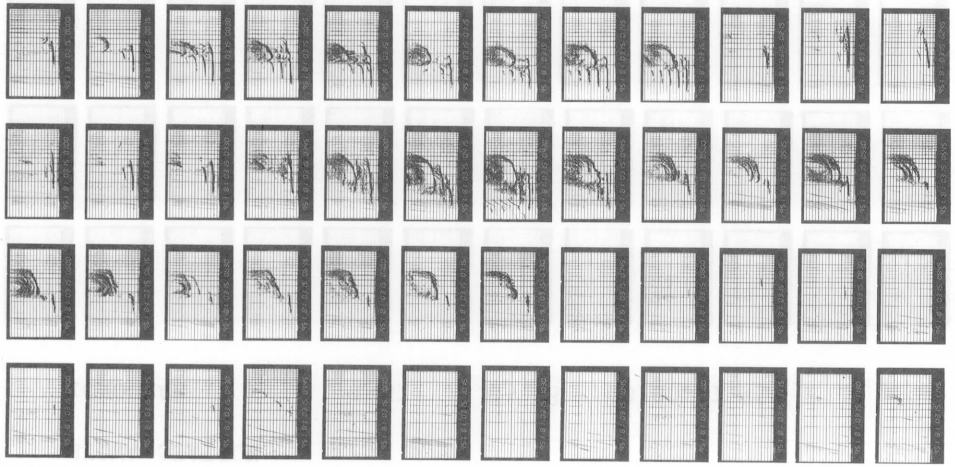
SYOWA STATION

IONOGRAM 1981 03 16 12;00-23;45



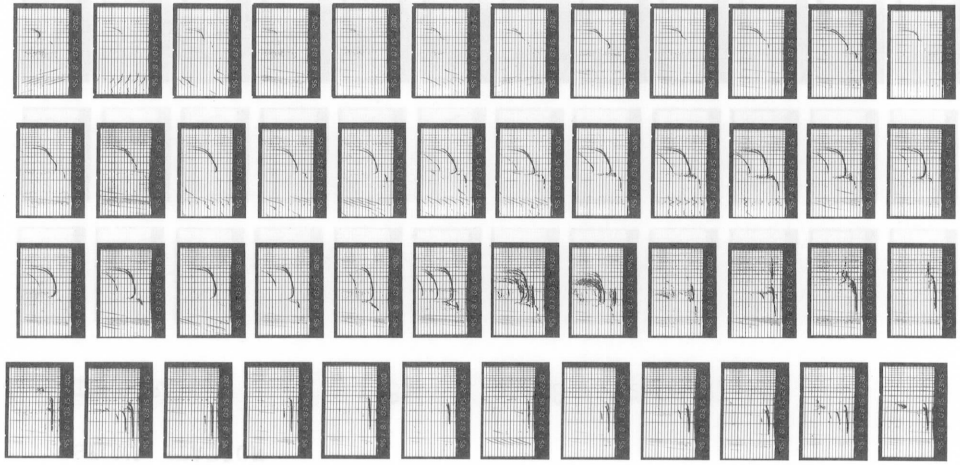
SYOWA STATION

IONOGRAM 1981 03 15 00;00-11;45



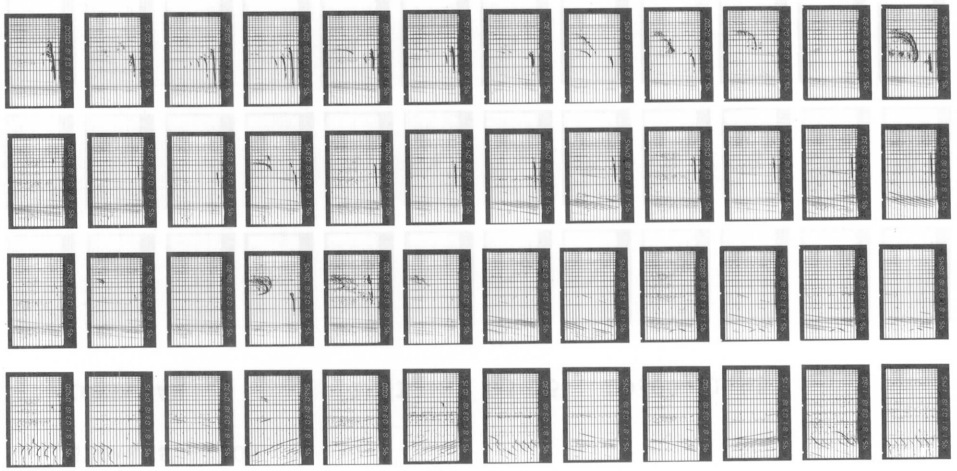
SYOWA STATION

IONOGRAM 1981 03 15 12;00-23;45



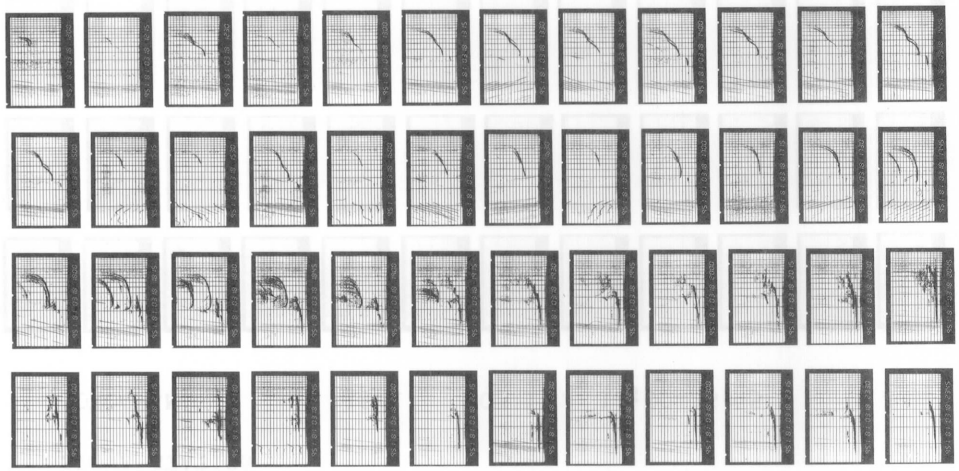
SYOWA STATION

IONOGRAM 1981 03 18 00;00-11;45



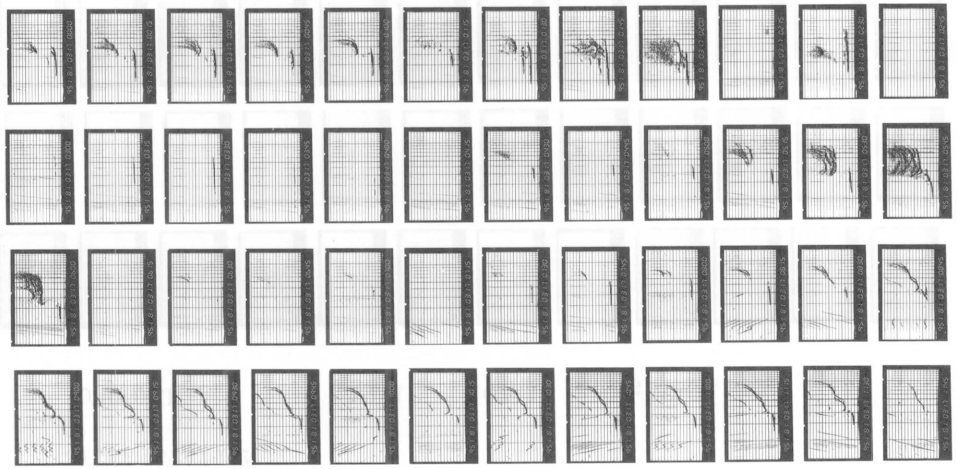
SYOWA STATION

IONOGRAM 1981 03 18 12;00-23;45



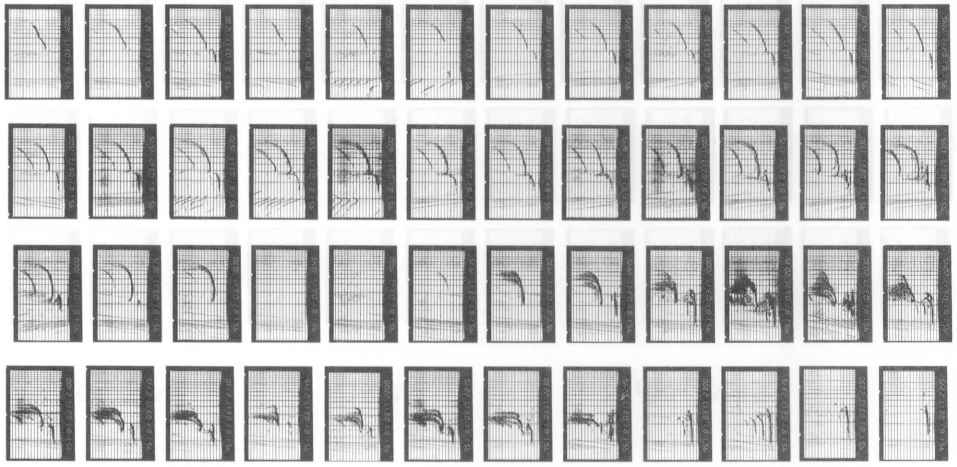
SYOWA STATION

IONOGRAM 1981 03 17 00;00-11;45



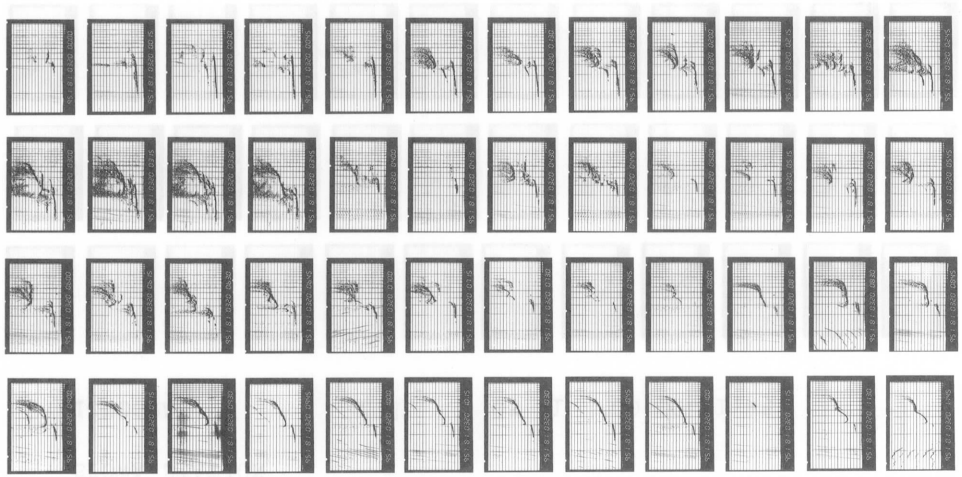
SYOWA STATION

IONOGRAM 1981 03 17 12;00-23;45



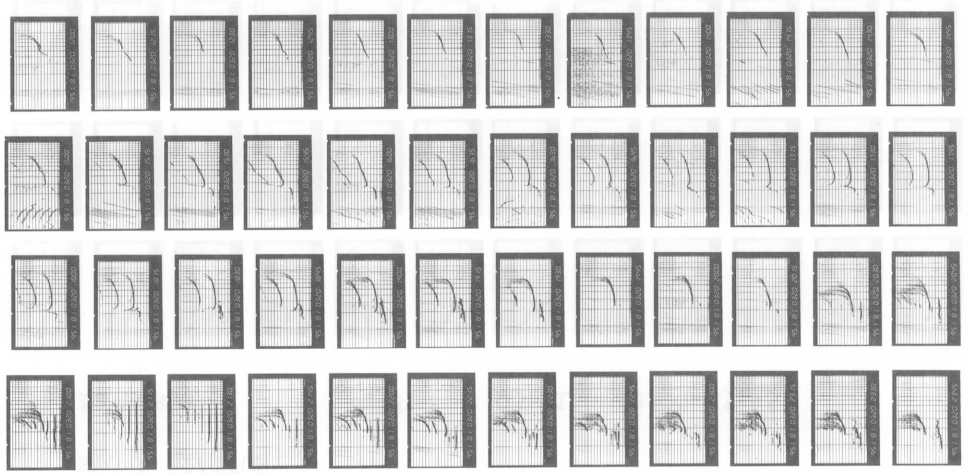
SYOWA STATION

IONOGRAM 1981 03 20 00;00-11;45



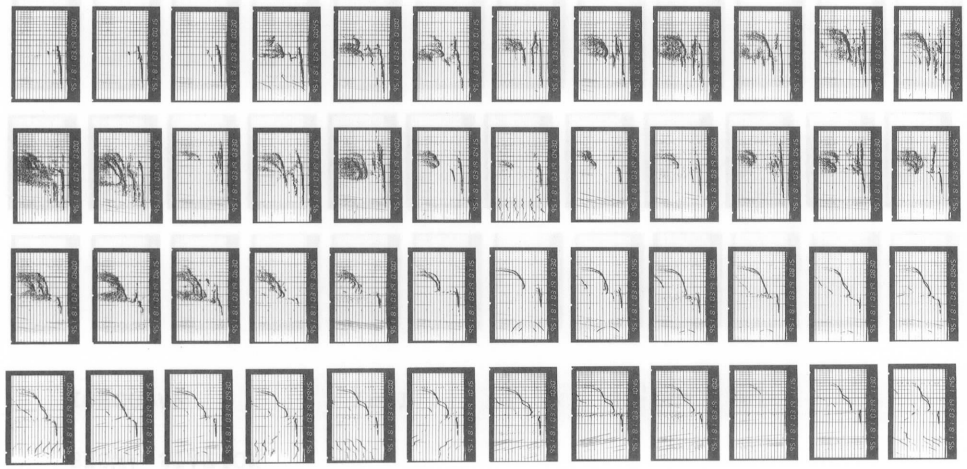
SYOWA STATION

IONOGRAM 1981 03 20 12;00-23;45



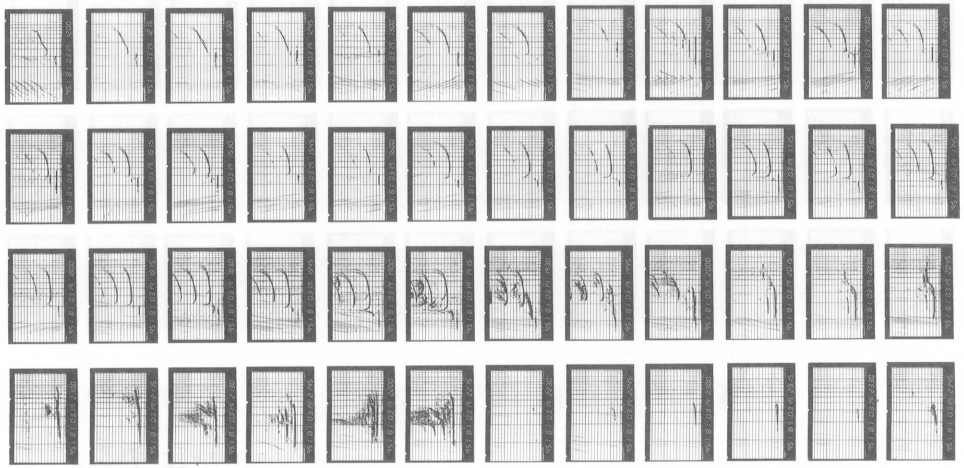
SYOWA STATION

IONOGRAM 1981 03 19 00;00-11;45



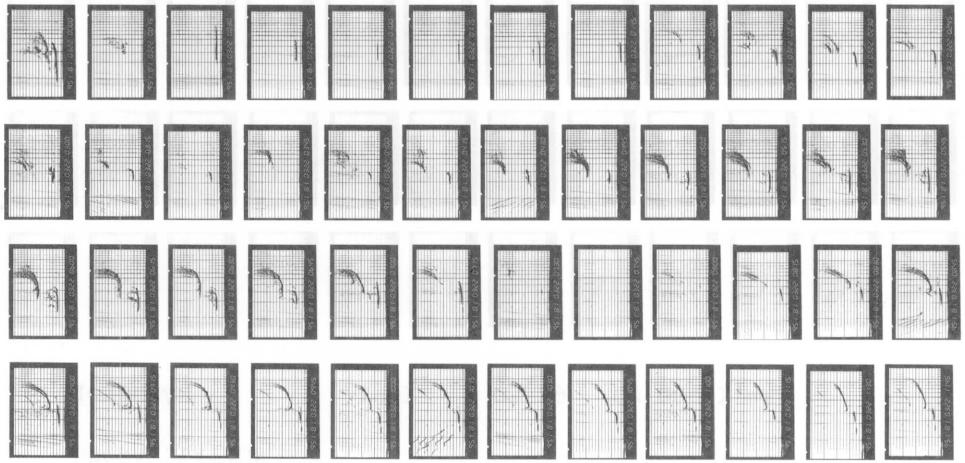
SYOWA STATION

IONOGRAM 1981 03 19 12;00-23;45



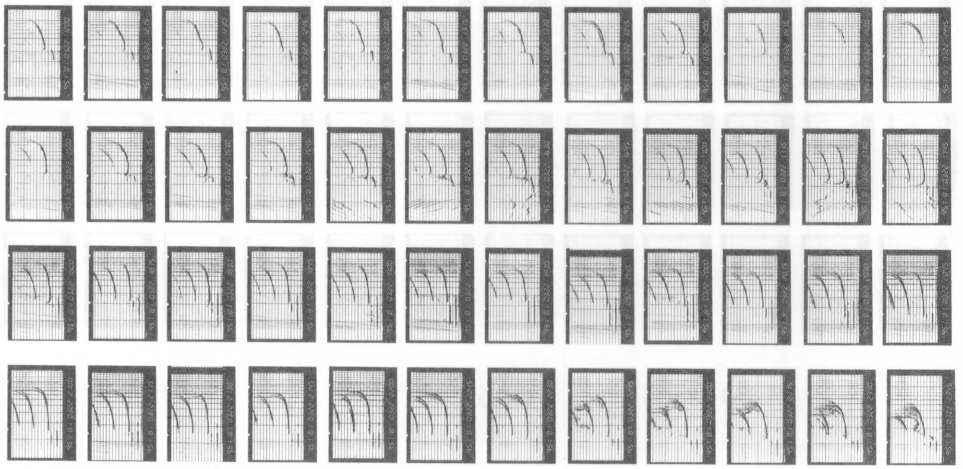
SYOWA STATION

IONOGRAM 1981 03 22 00;00-11;45



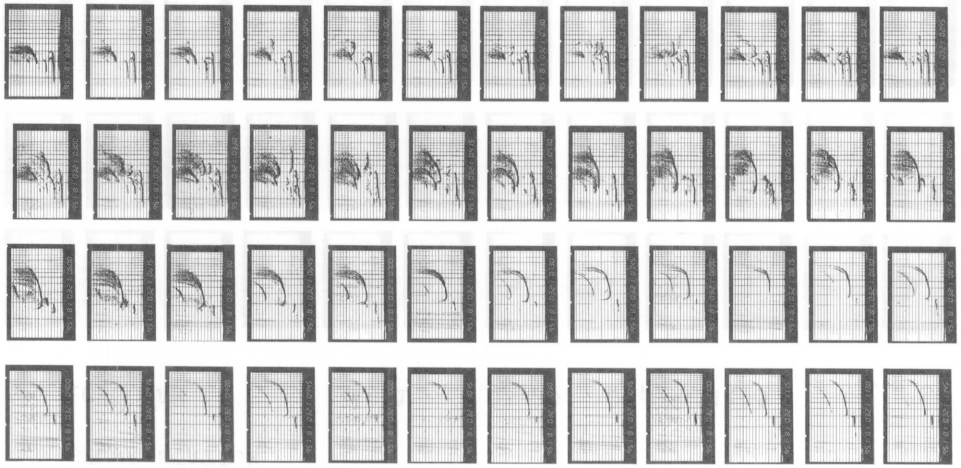
SYOWA STATION

IONOGRAM 1981 03 22 12;00-23;45



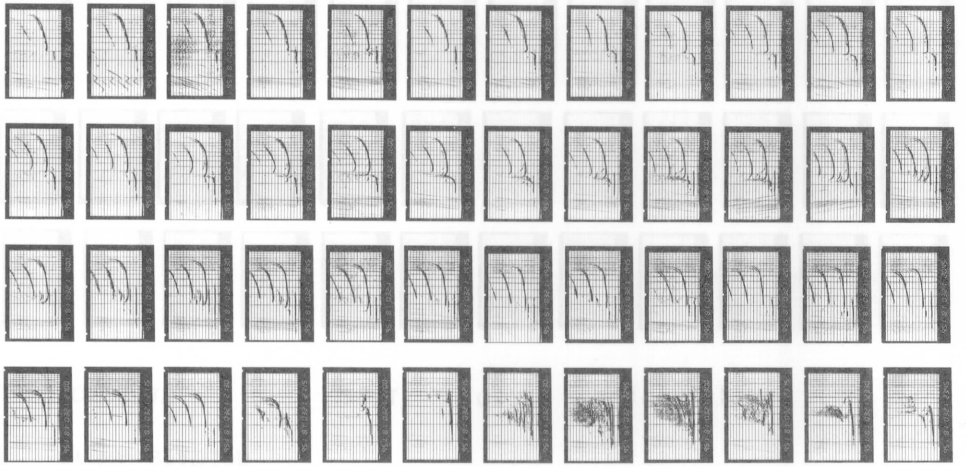
SYOWA STATION

IONOGRAM 1981 03 21 00;00-11;45



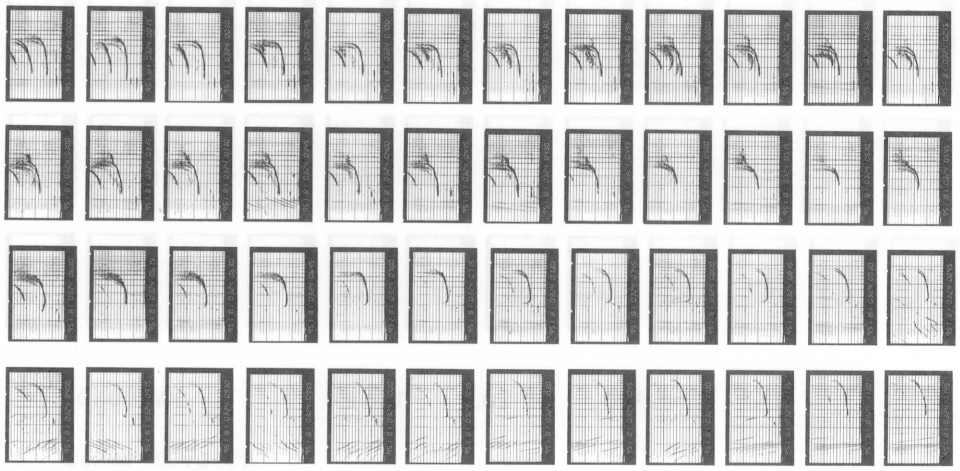
SYOWA STATION

IONOGRAM 1981 03 21 12;00-23;45



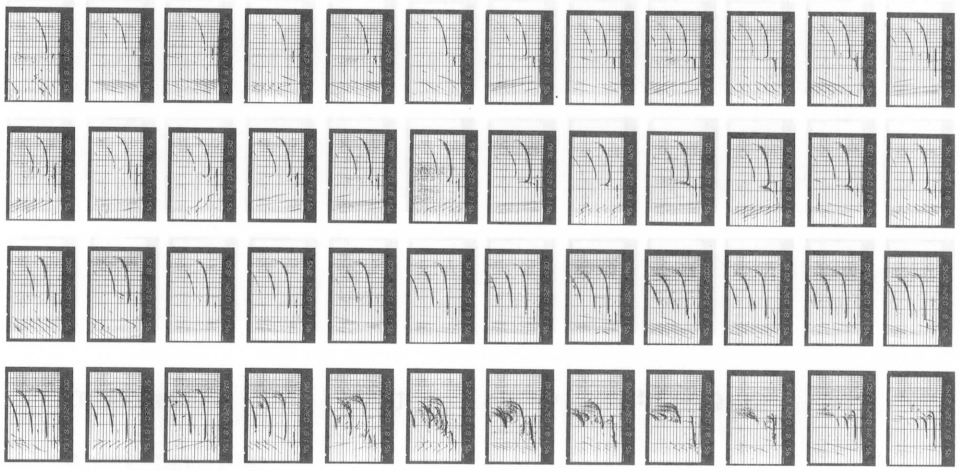
SYOWA STATION

IONOGRAM 1981 03 24 00;00-11;45



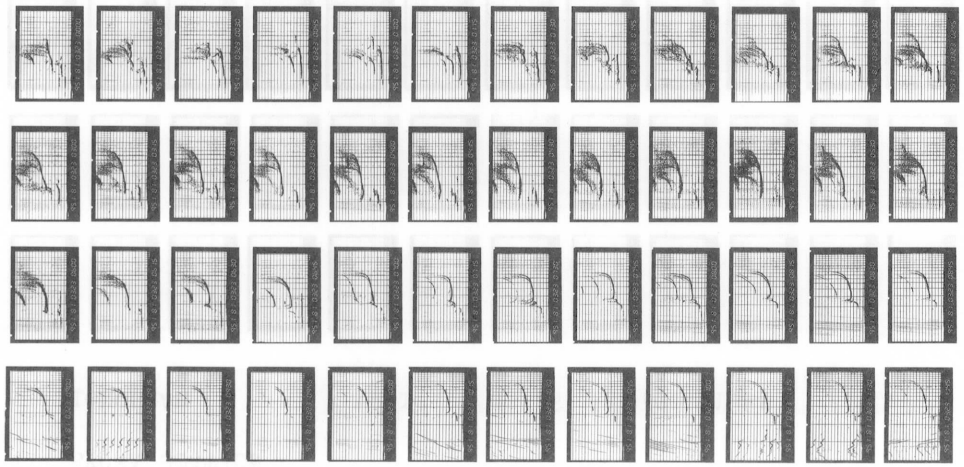
SYOWA STATION

IONOGRAM 1981 03 24 12;00-23;45



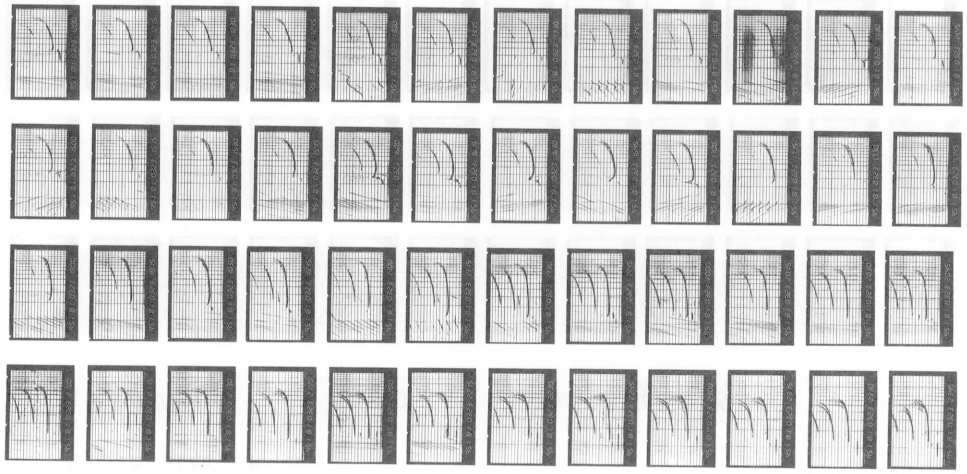
SYOWA STATION

IONOGRAM 1981 03 23 00;00-11;45



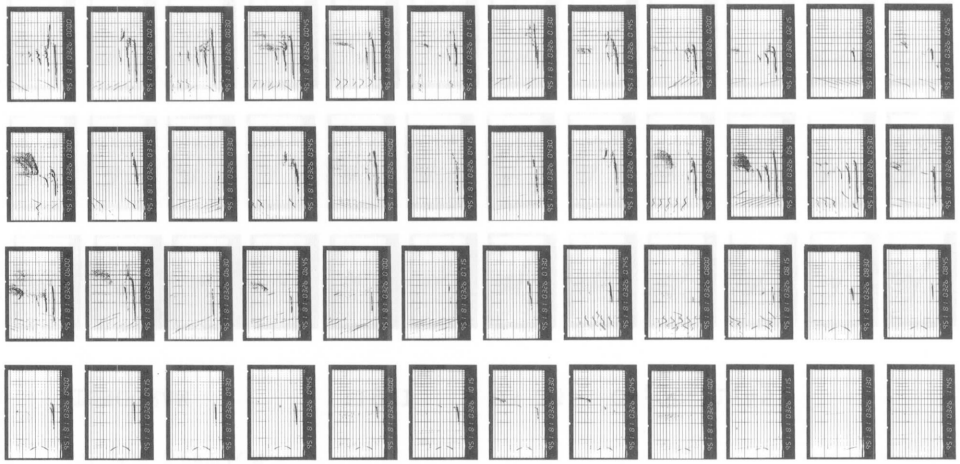
SYOWA STATION

IONOGRAM 1981 03 23 12;00-23;45



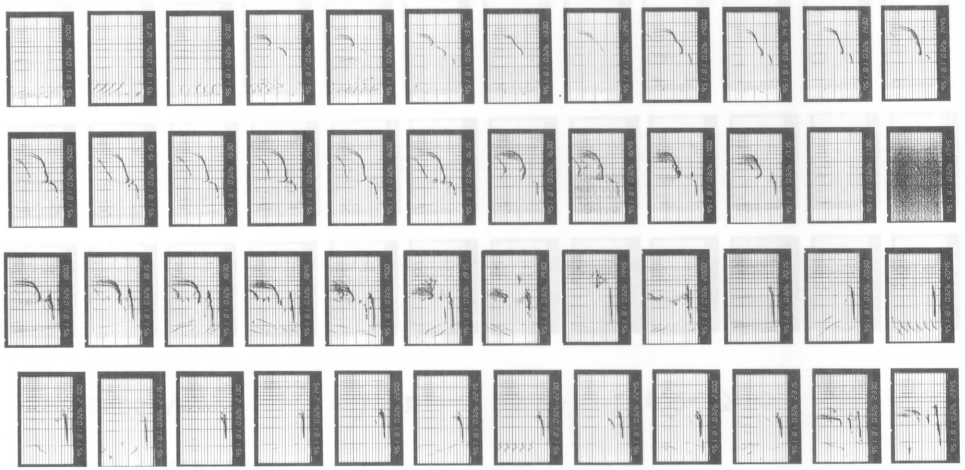
SYOWA STATION

IONOGRAM 1981 03 26 00;00-11;45



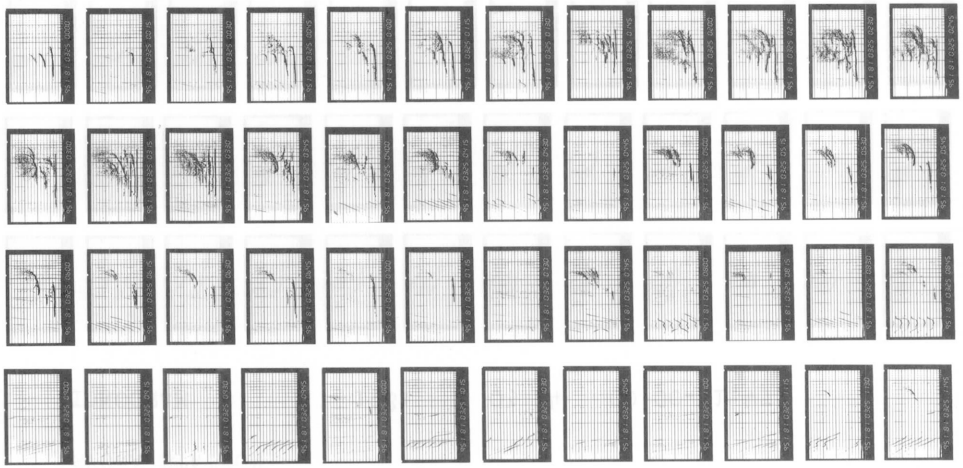
SYOWA STATION

IONOGRAM 1981 3 26 12;00-23;45



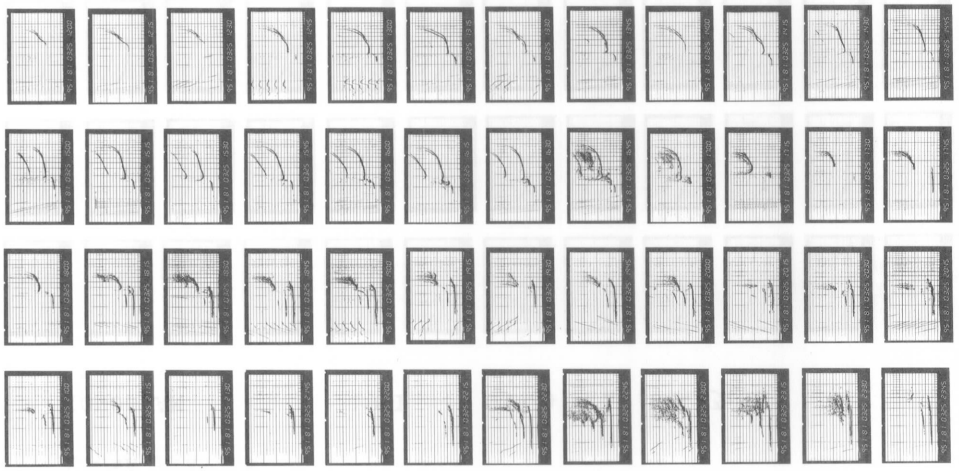
SYOWA STATION

IONOGRAM 1981 03 25 00;00-11;45



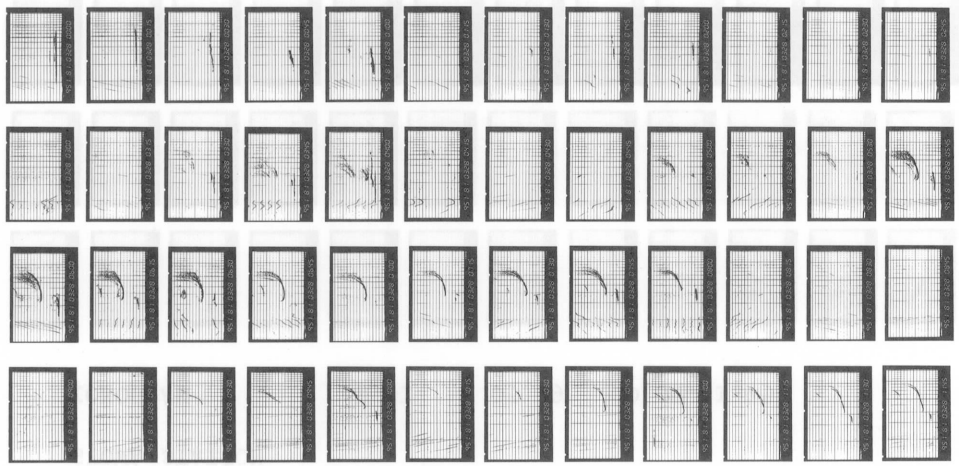
SYOWA STATION

IONOGRAM 1981 03 25 12;00-23;45



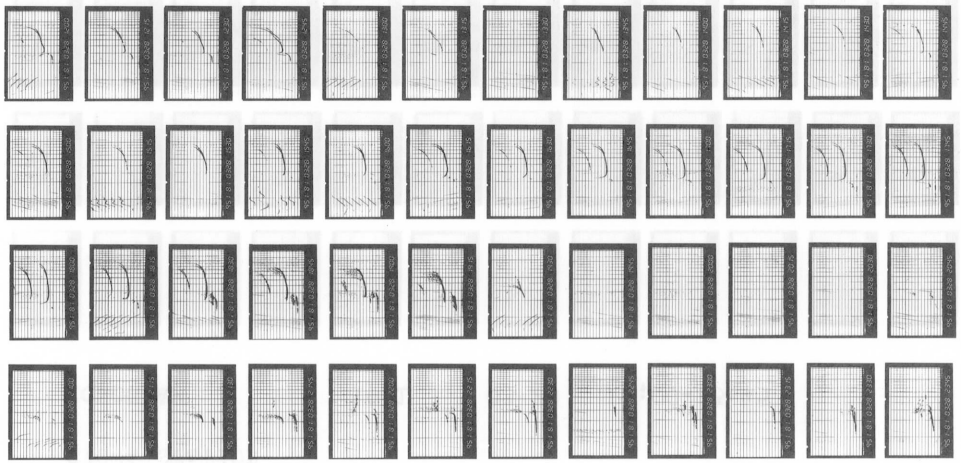
SYOWA STATION

IONOGRAM 1981 03 28 00;00-11;45



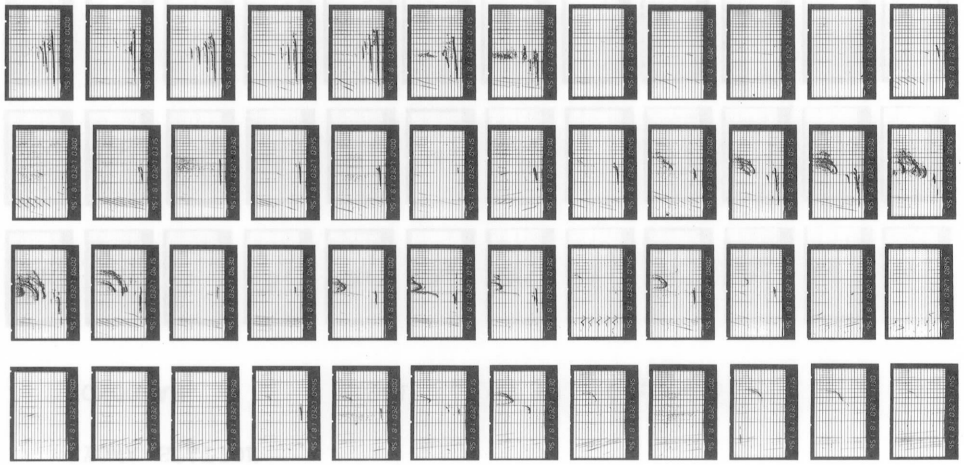
SYOWA STATION

IONOGRAM 1981 03 28 12;00-23;45



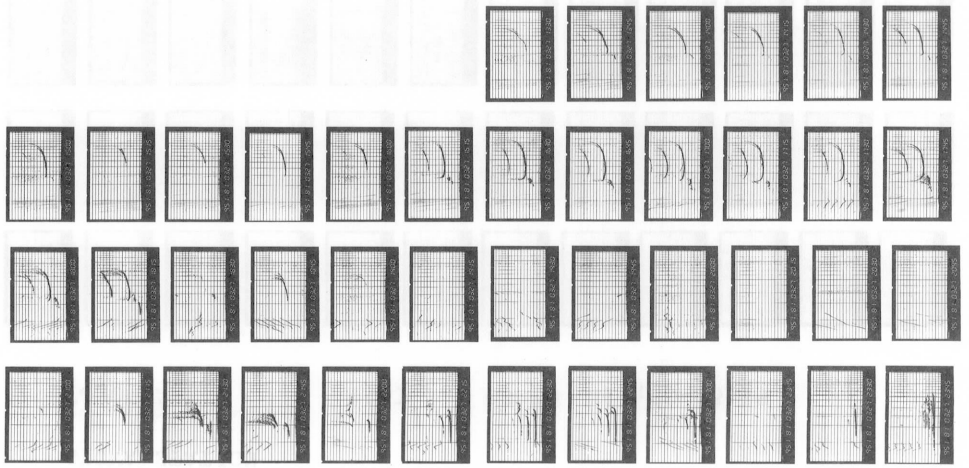
SYOWA STATION

IONOGRAM 1981 03 27 00;00-11;45



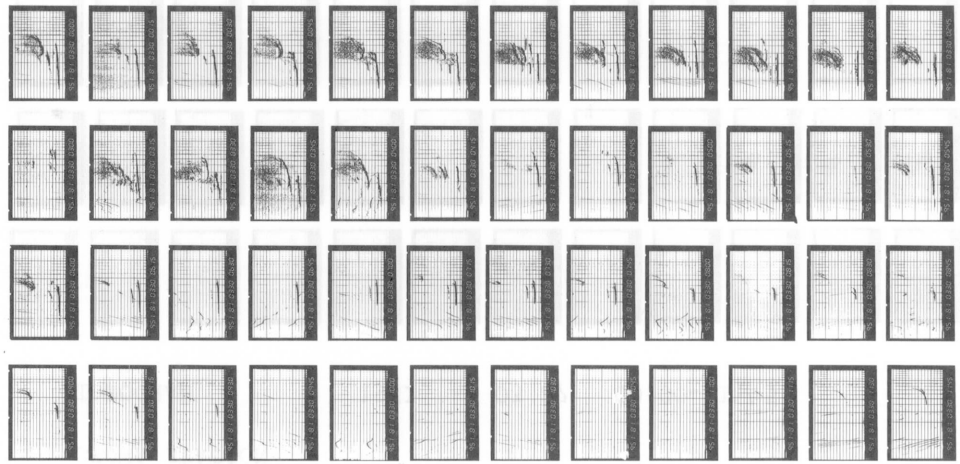
SYOWA STATION

IONOGRAM 1981 03 27 12;00-23;45



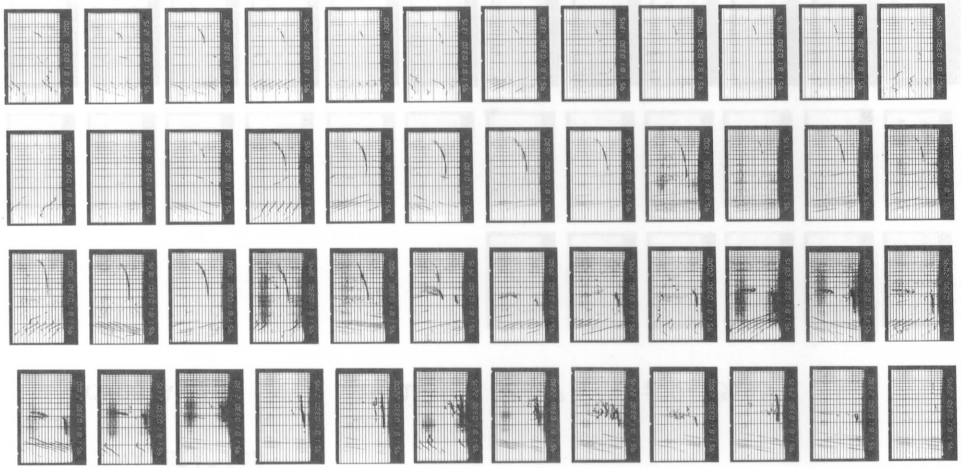
SYOWA STATION

IONOGRAM 1981 03 30 00;00-11;45



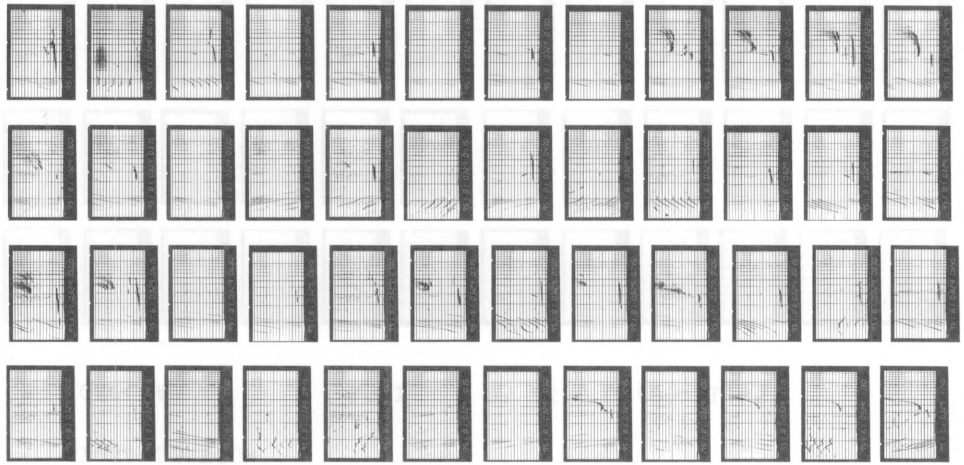
SYOWA STATION

IONOGRAM 1981 03 30 12;00-23;45



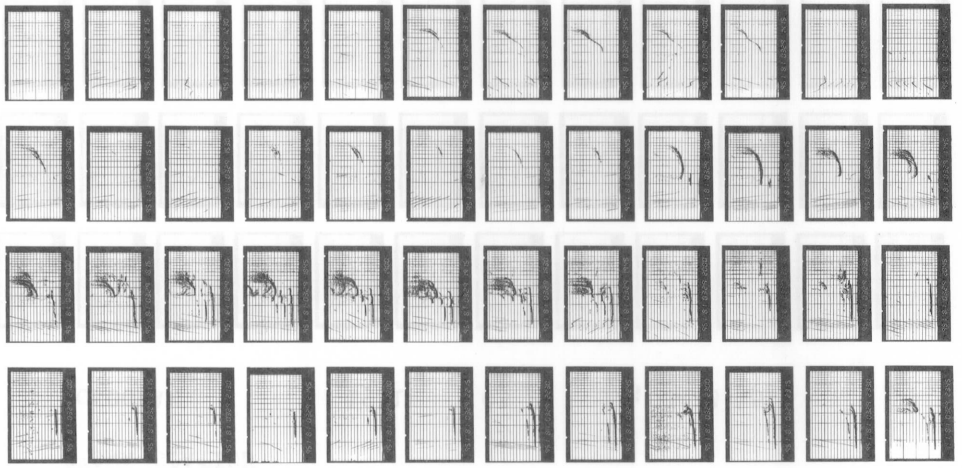
SYOWA STATION

IONOGRAM 1981 03 29 00;00-11;45



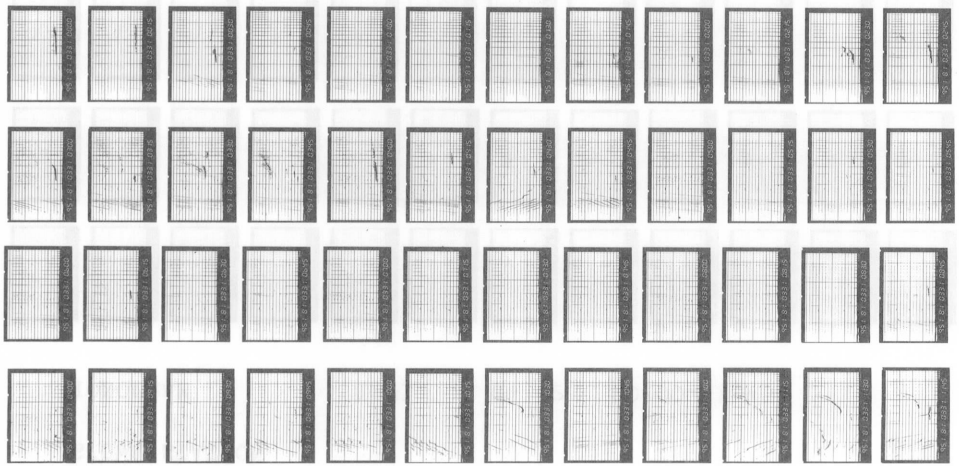
SYOWA STATION

IONOGRAM 1981 03 29 12;00-23;45



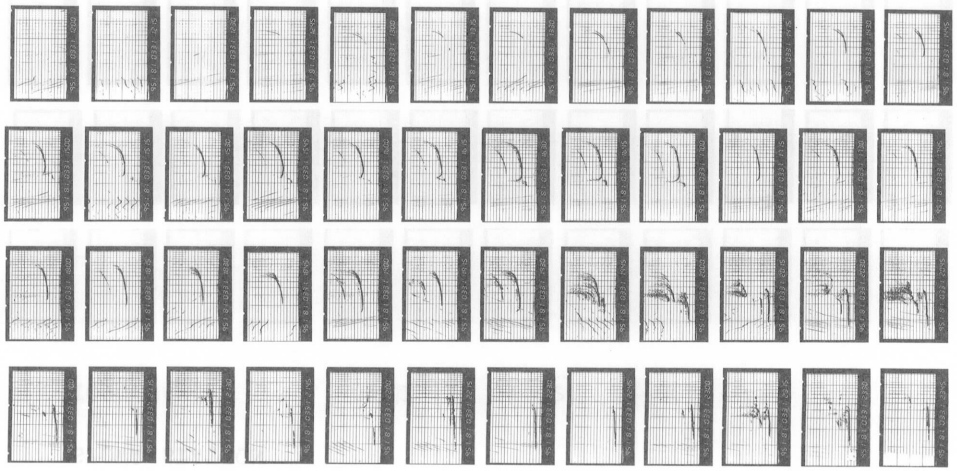
SYOWA STATION

IONOGRAM 1981 03 31 00;00-11;45



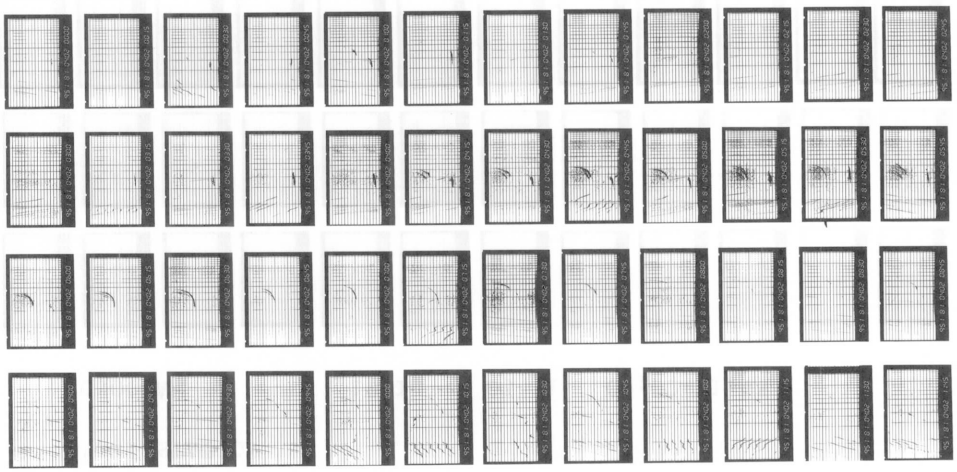
SYOWA STATION

IONOGRAM 1981 03 31 12;00-23;45



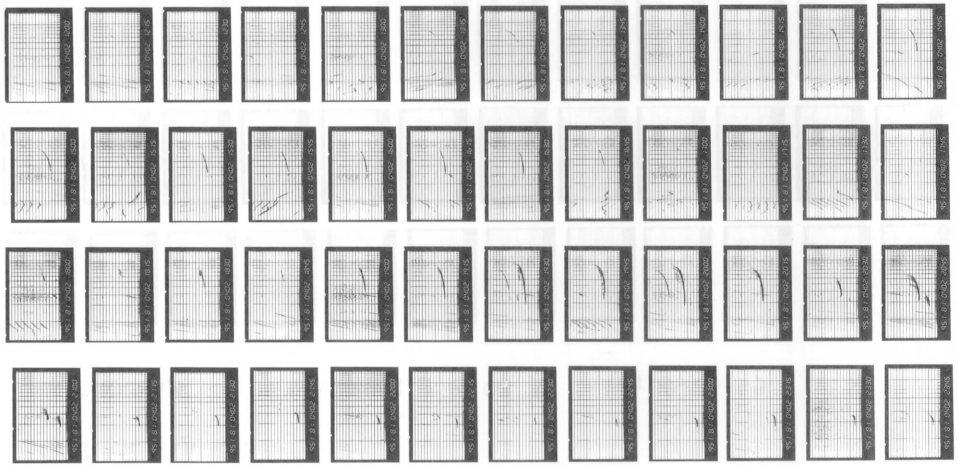
SYOWA STATION

IONOGRAM 1981 04 02 00;00-11;45



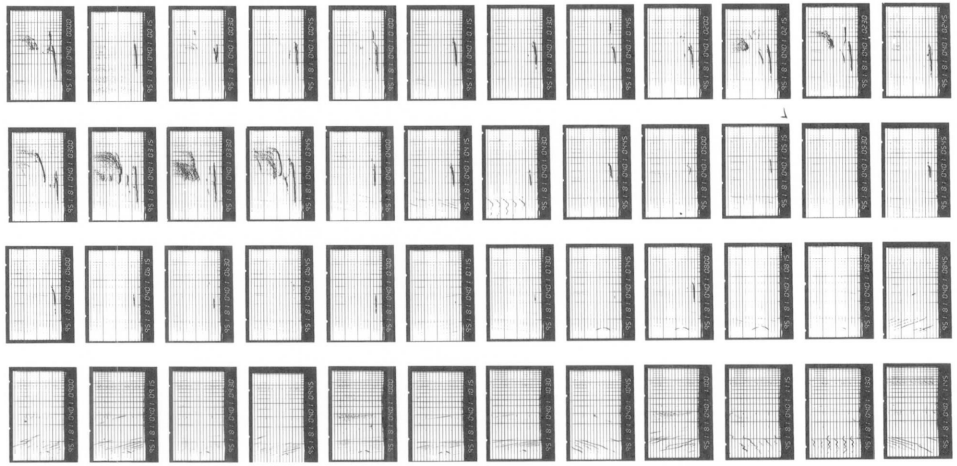
SYOWA STATION

IONOGRAM 1981 04 02 12;00-23;45



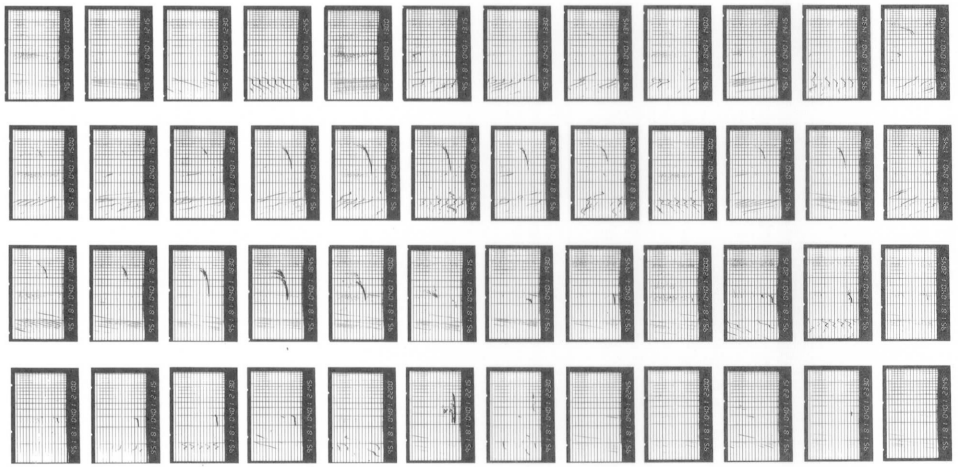
SYOWA STATION

IONOGRAM 1981 04 01 00;00-11;45



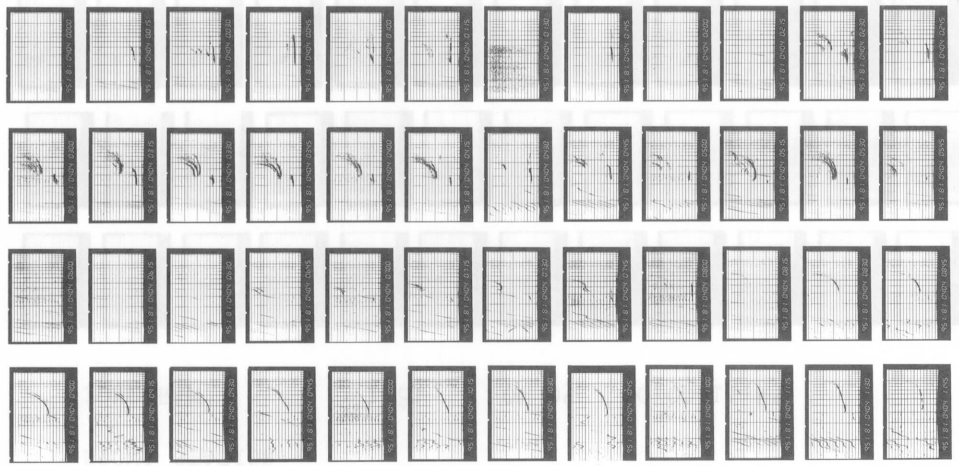
SYOWA STATION

IONOGRAM 1981 04 01 12;00-23;45



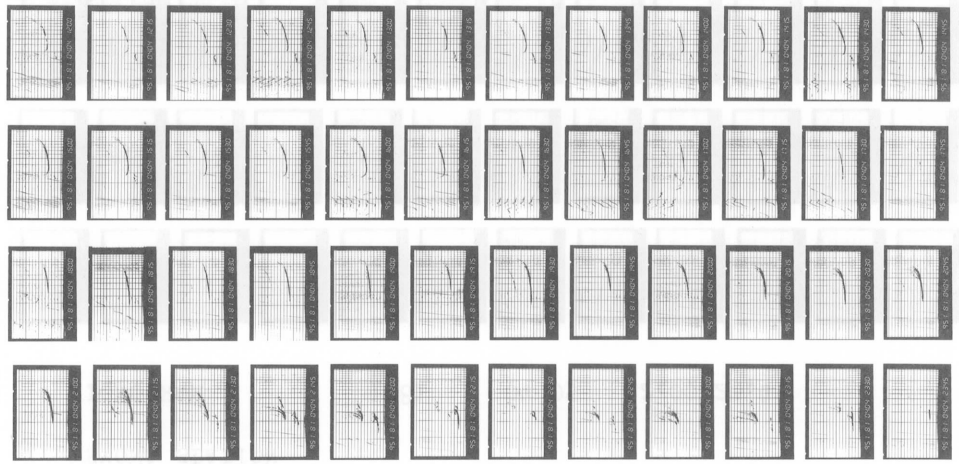
SYOWA STATION

IONOGRAM 1981 04 04 00;00-11;45



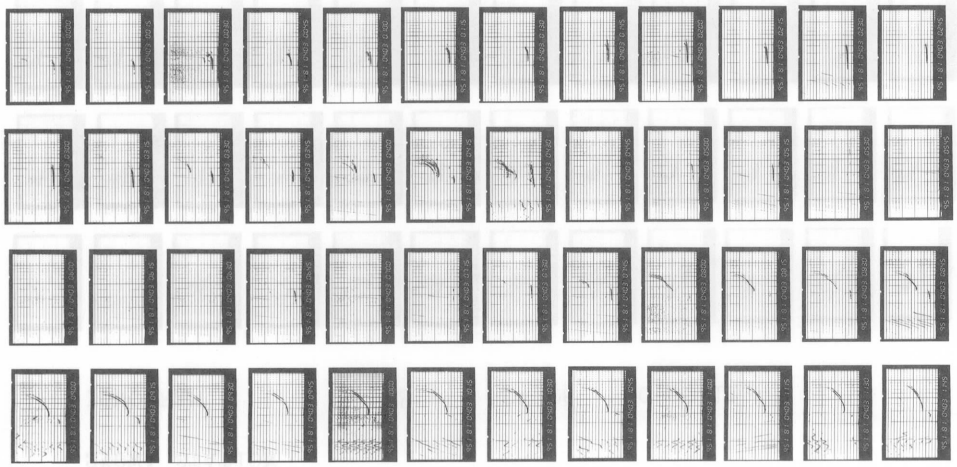
SYOWA STATION

IONOGRAM 1981 04 04 12;00-23;45



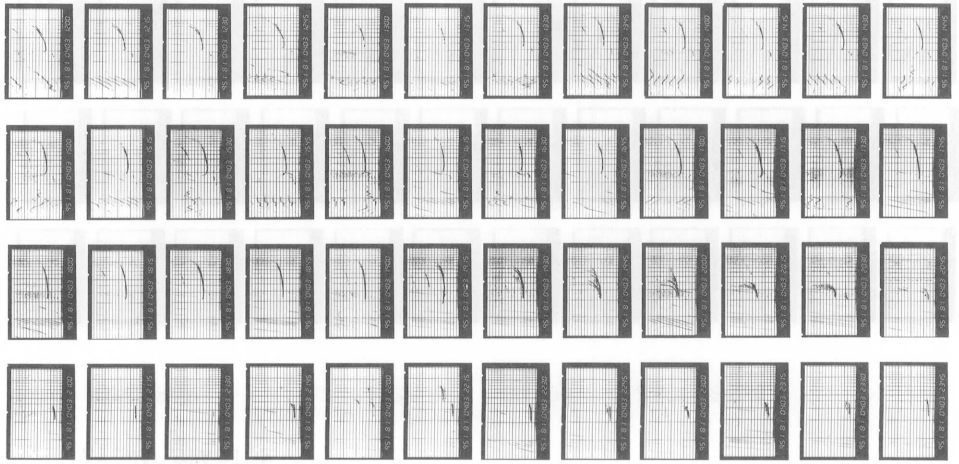
SYOWA STATION

IONOGRAM 1981 04 03 00;00-11;45



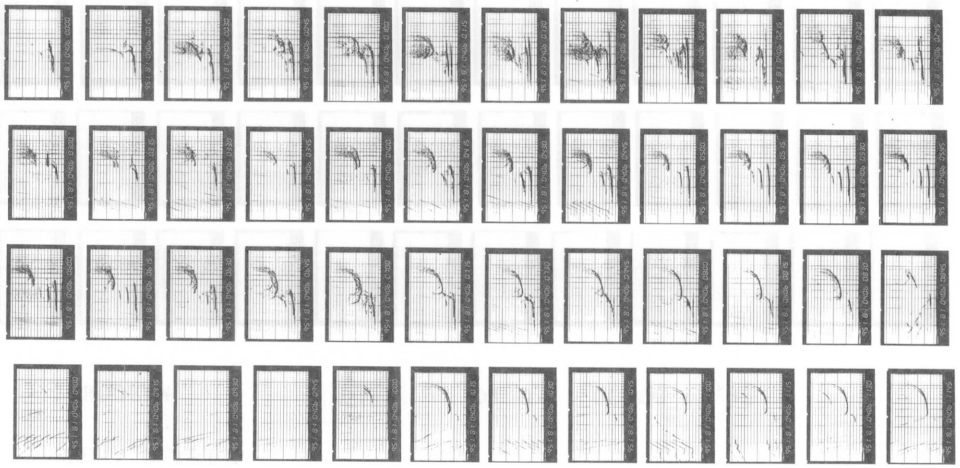
SYOWA STATION

IONOGRAM 1981 04 03 12;00-23;45



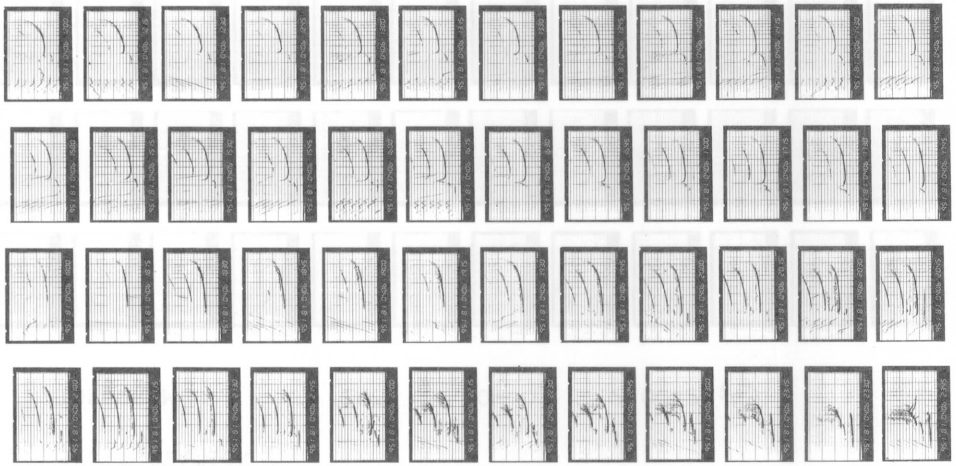
SYOWA STATION

IONOGRAM 1981 04 06 00;00-11;45



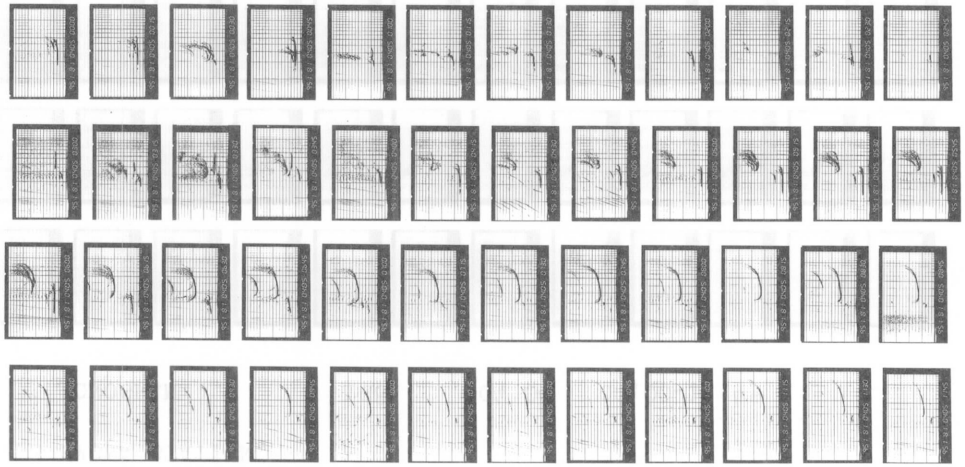
SYOWA STATION

IONOGRAM 1981 04 06 12;00-23;45



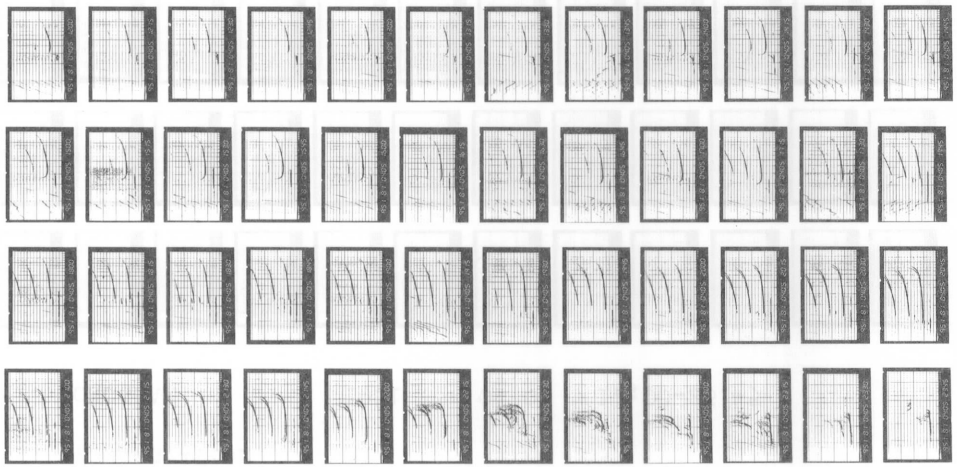
SYOWA STATION

IONOGRAM 1981 04 05 00;00-11;45



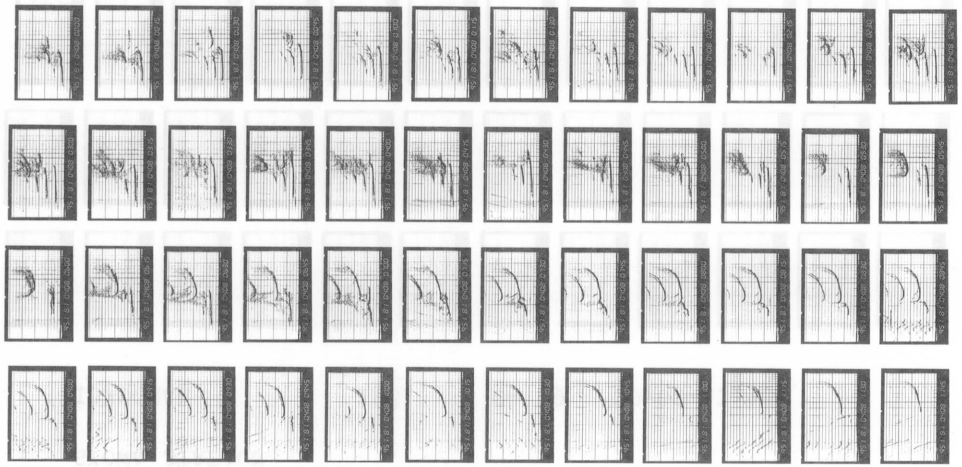
SYOWA STATION

IONOGRAM 1981 04 05 12;00-23;45



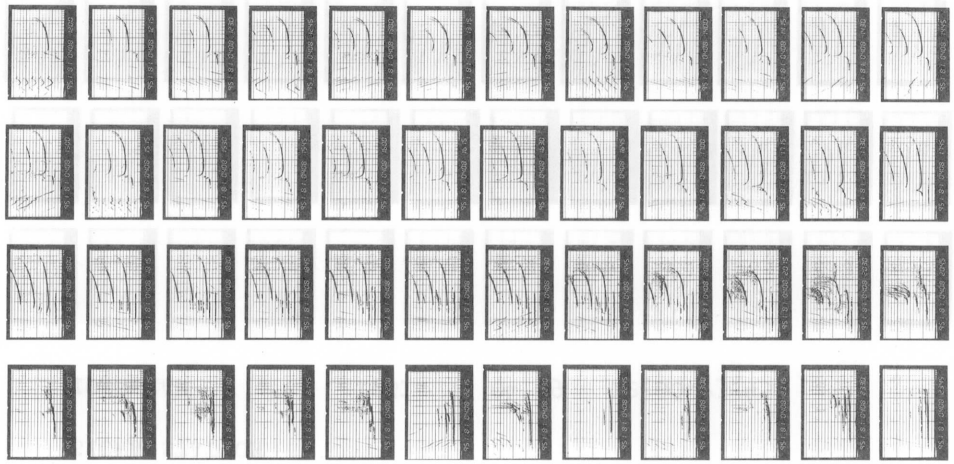
SYOWA STATION

IONOGRAM 1981 04 08 00;00-11;45



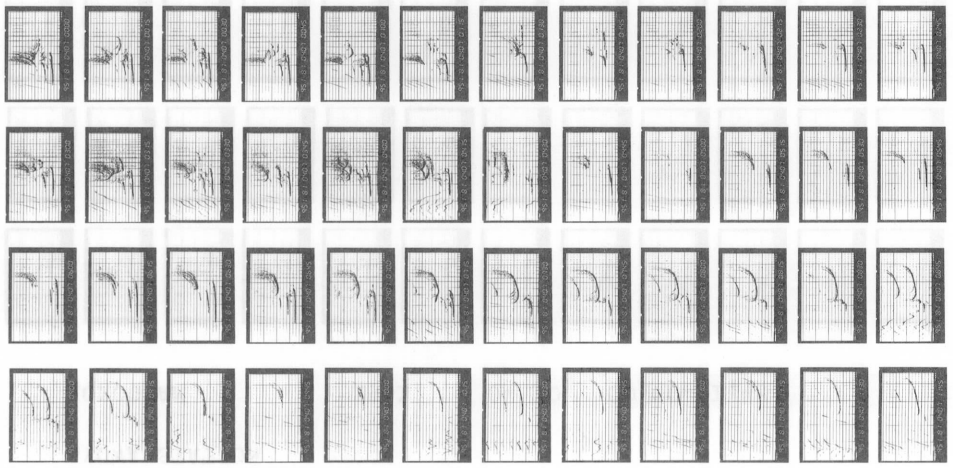
SYOWA STATION

IONOGRAM 1981 04 08 12;00-23;45



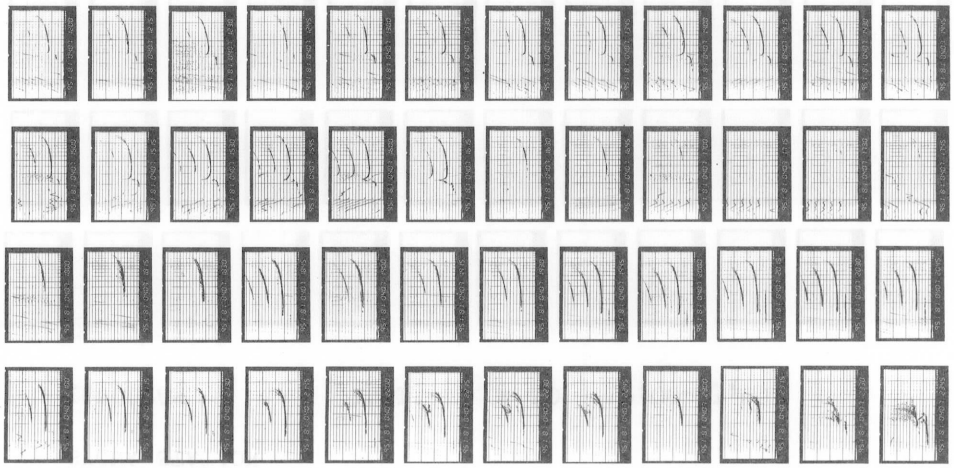
SYOWA STATION

IONOGRAM 1981 04 07 00;00-11;45



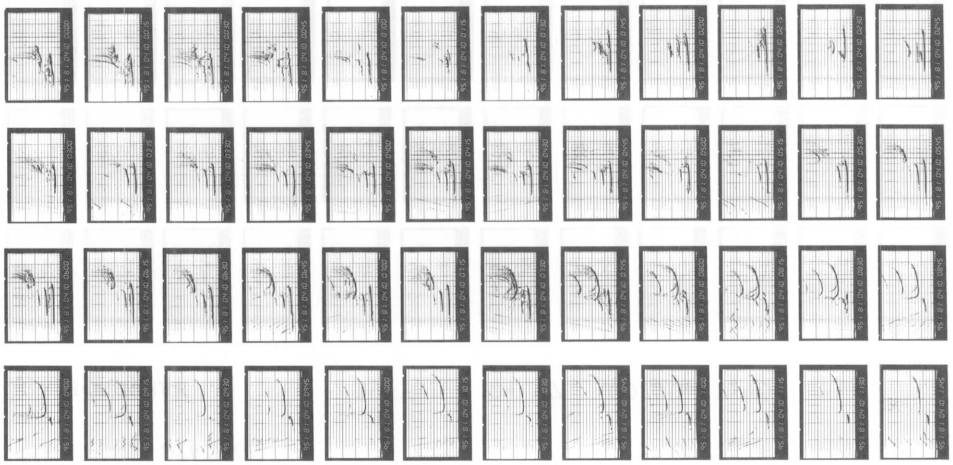
SYOWA STATION

IONOGRAM 1981 04 07 12;00-23;45



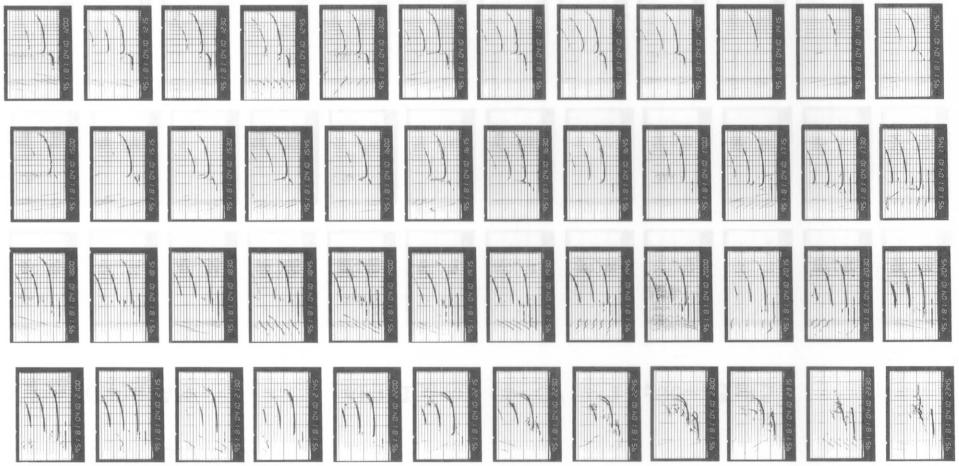
SYOWA STATION

IONOGRAM 1981 04 10 00;00-11;45



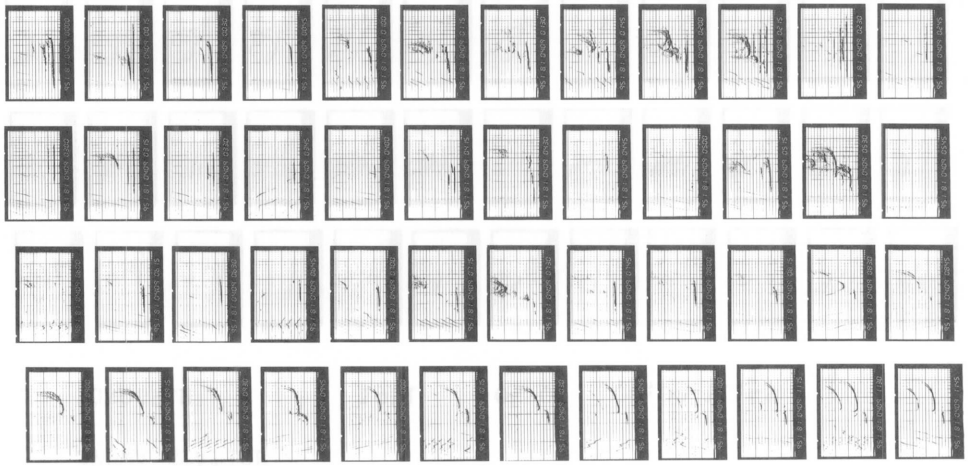
SYOWA STATION

IONOGRAM 1981 04 10 12;00-23;45



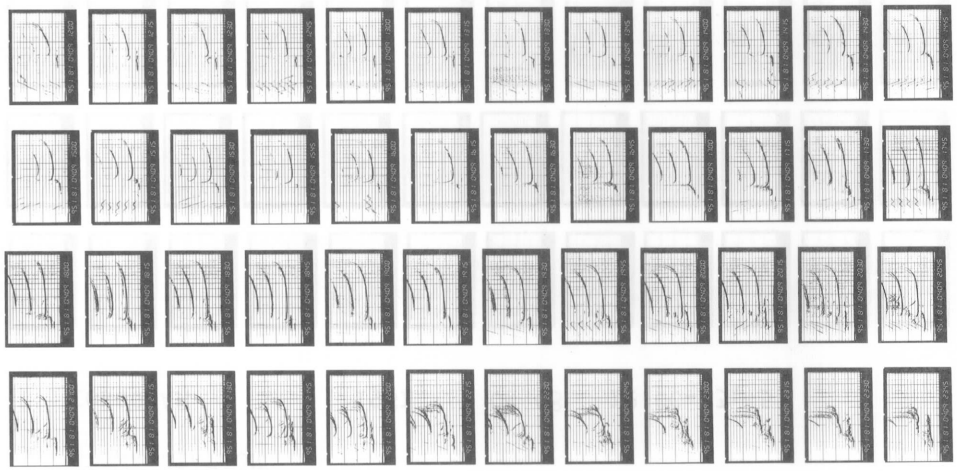
SYOWA STATION

IONOGRAM 1981 04 09 00;00-11;45



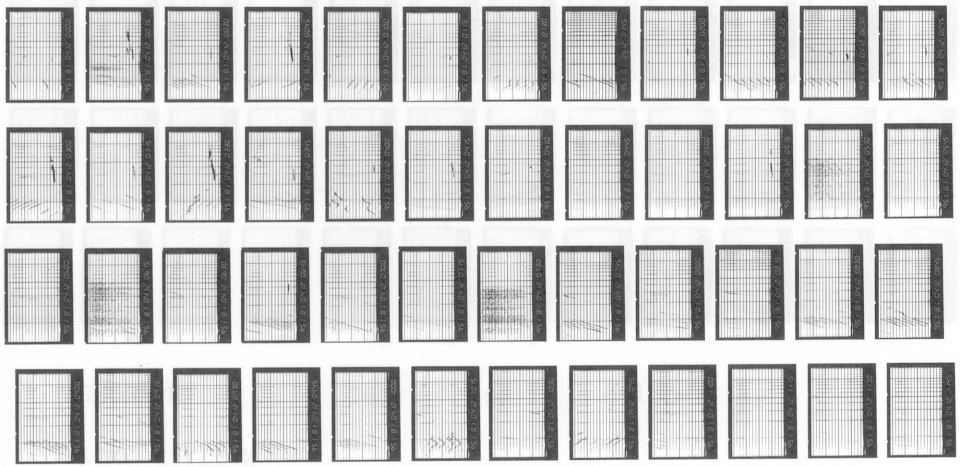
SYOWA STATION

IONOGRAM 1981 04 09 12;00-23;45



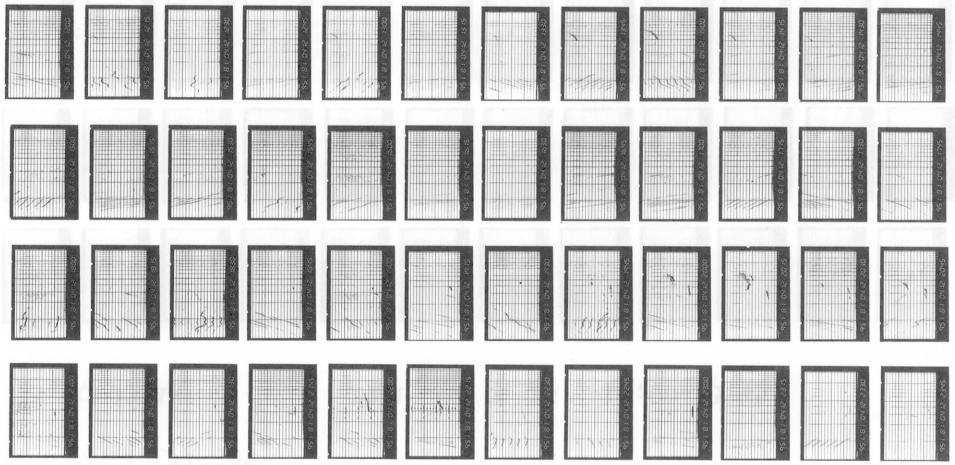
SYOWA STATION

IONOGRAM 1981 04 12 00;00-11;45



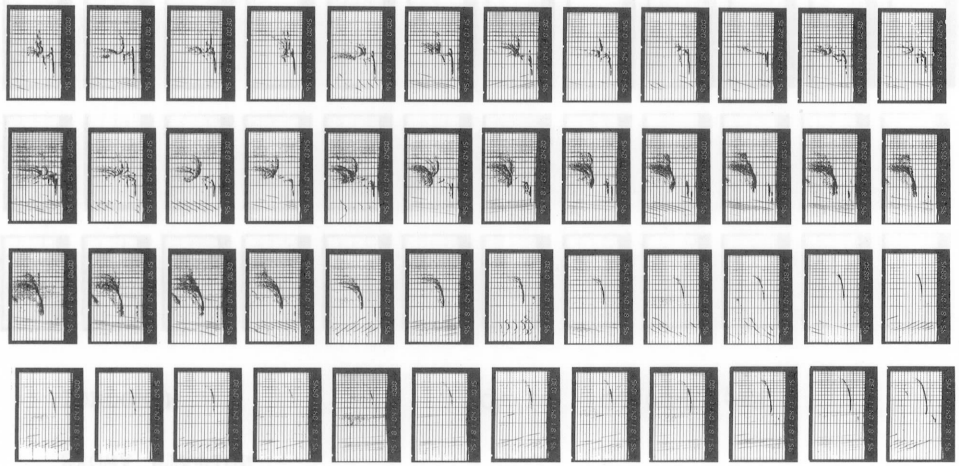
SYOWA STATION

IONOGRAM 1981 04 12 12;00-23;45



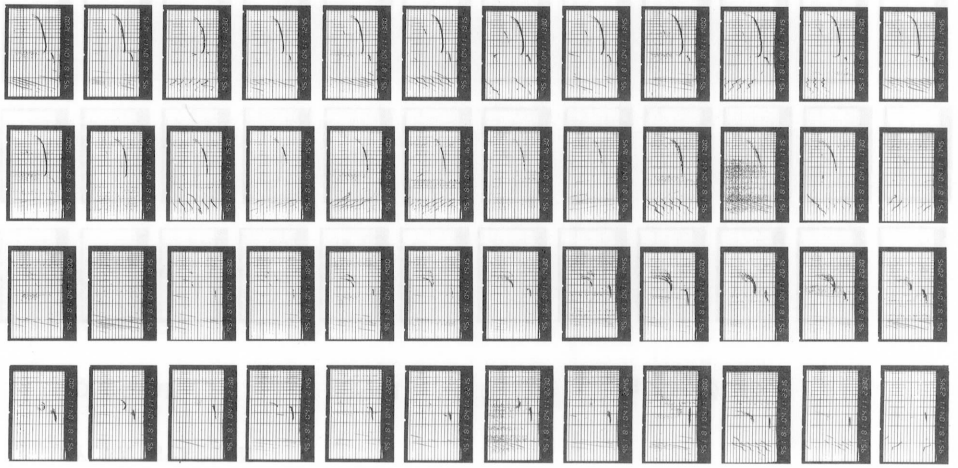
SYOWA STATION

IONOGRAM 1981 04 11 00;00-11;45



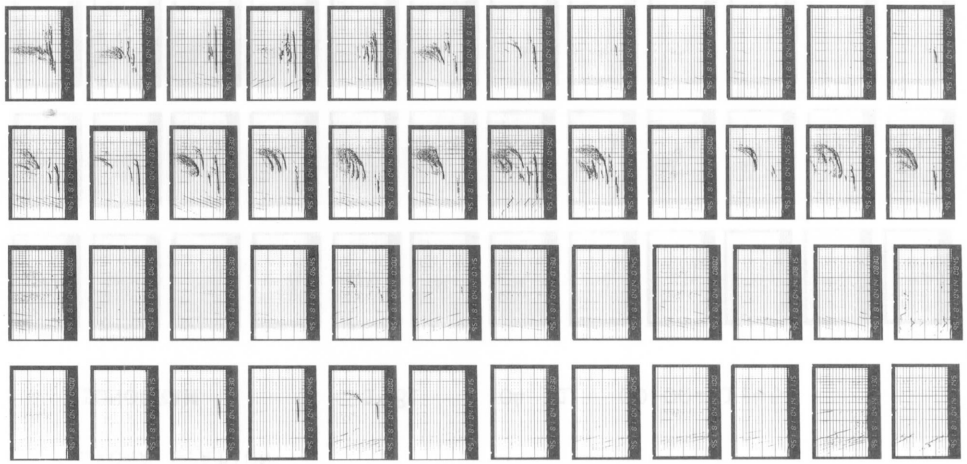
SYOWA STATION

IONOGRAM 1981 04 11 12;00-23;45



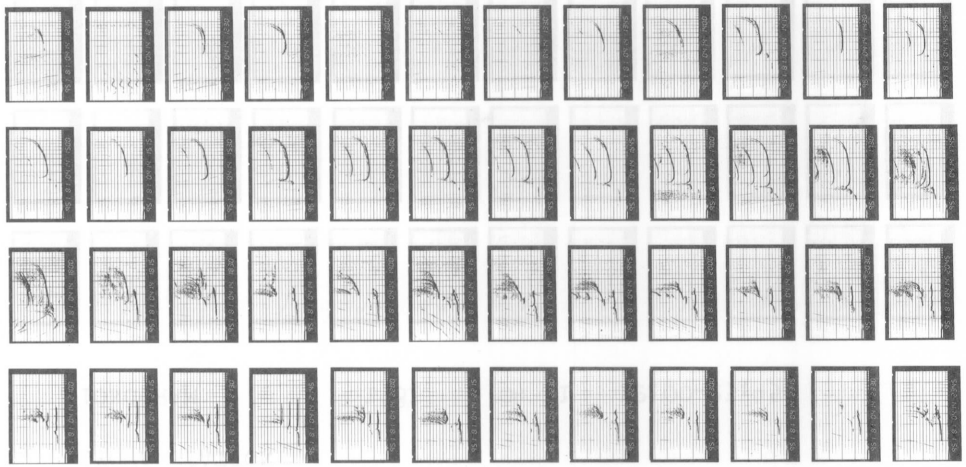
SYOWA STATION

IONOGRAM 1981 04 14 00;00-11;45



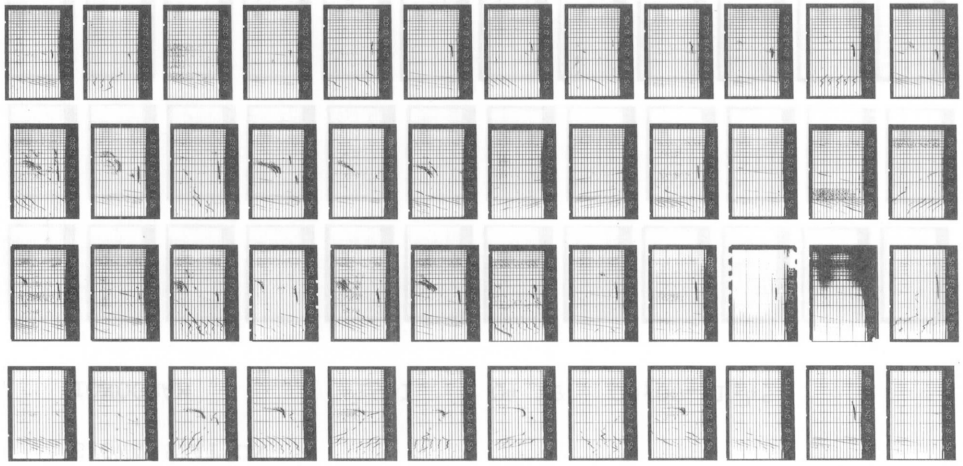
SYOWA STATION

IONOGRAM 1981 04 14 12;00-23;45



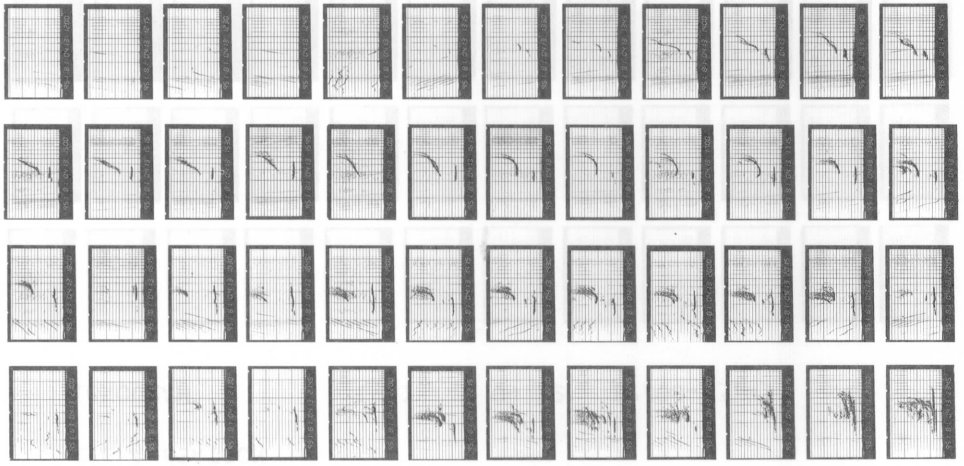
SYOWA STATION

IONOGRAM 1981 04 13 00;00-11;45



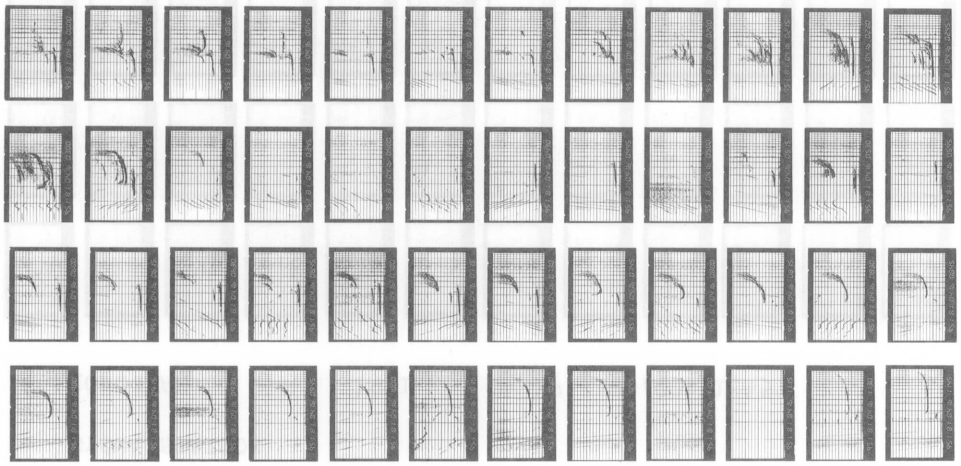
SYOWA STATION

IONOGRAM 1981 04 13 12;00-23;45



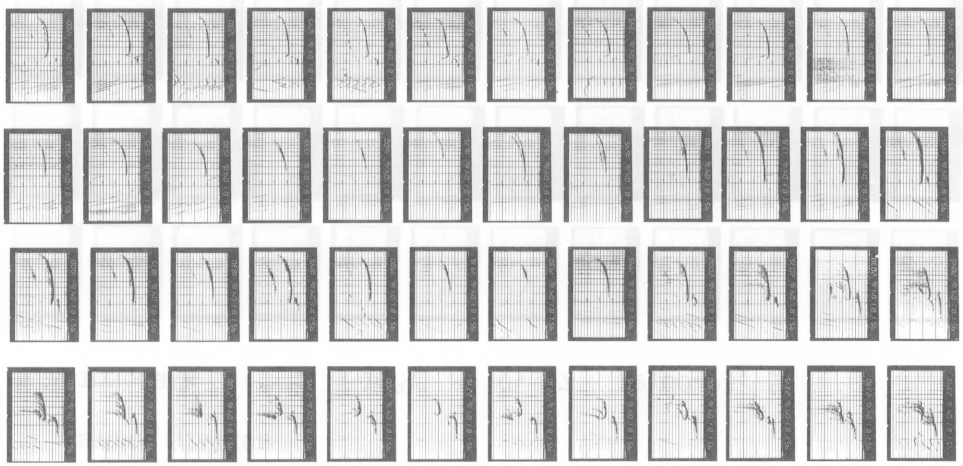
SYOWA STATION

IONOGRAM 1981 04 16 00;00-11;45



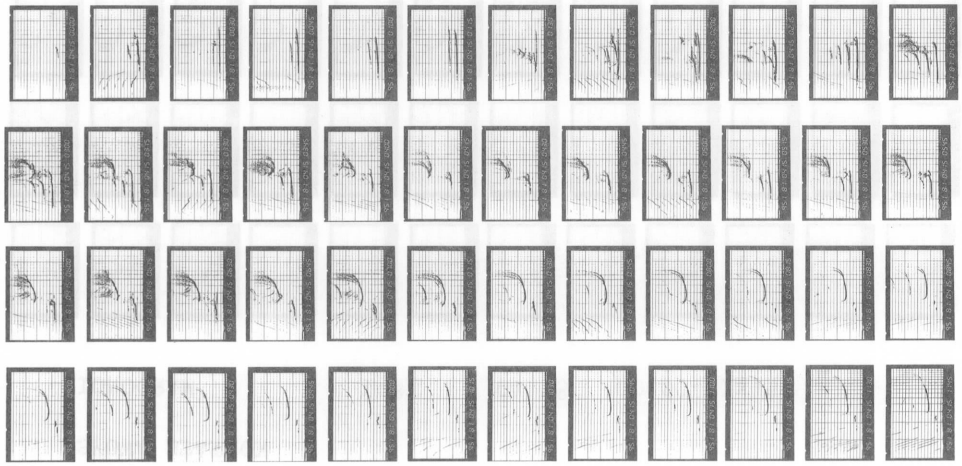
SYOWA STATION

IONOGRAM 1981 04 16 12;00-23;45



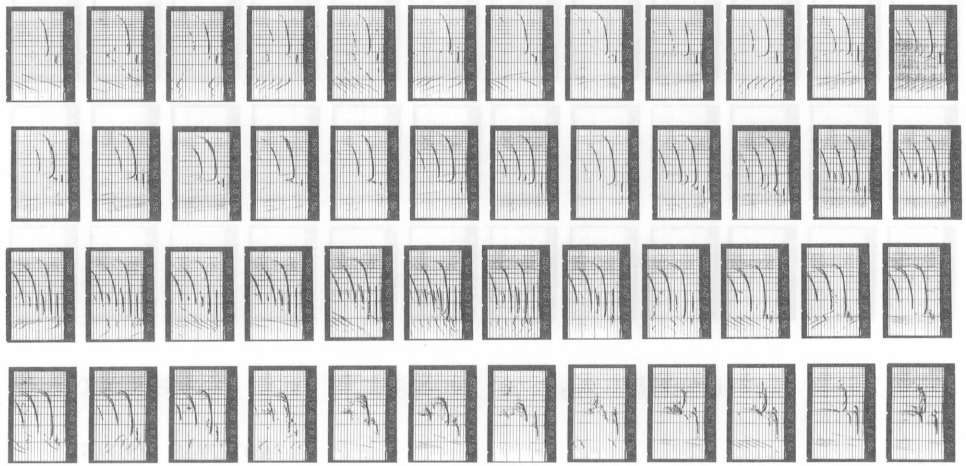
SYOWA STATION

IONOGRAM 1981 04 15 00;00-11;45



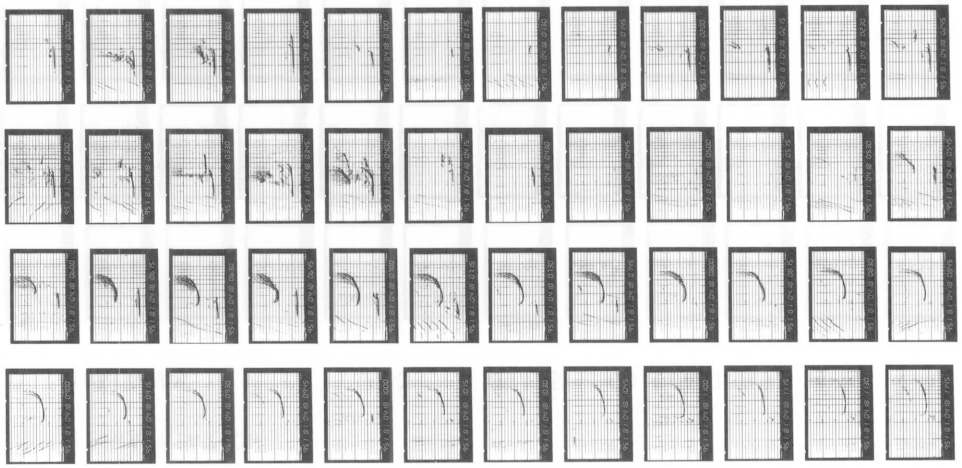
SYOWA STATION

IONOGRAM 1981 04 15 12;00-23;45



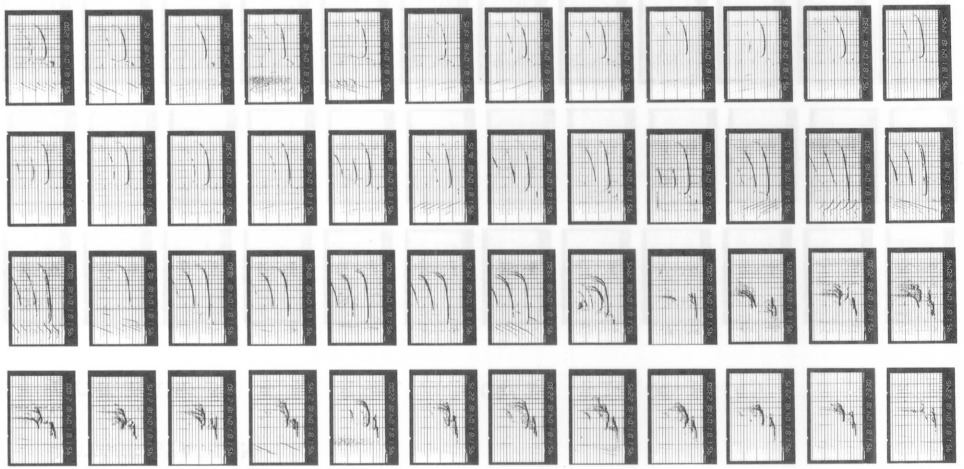
SYOWA STATION

IONOGRAM 1981 04 18 00;00-11;45



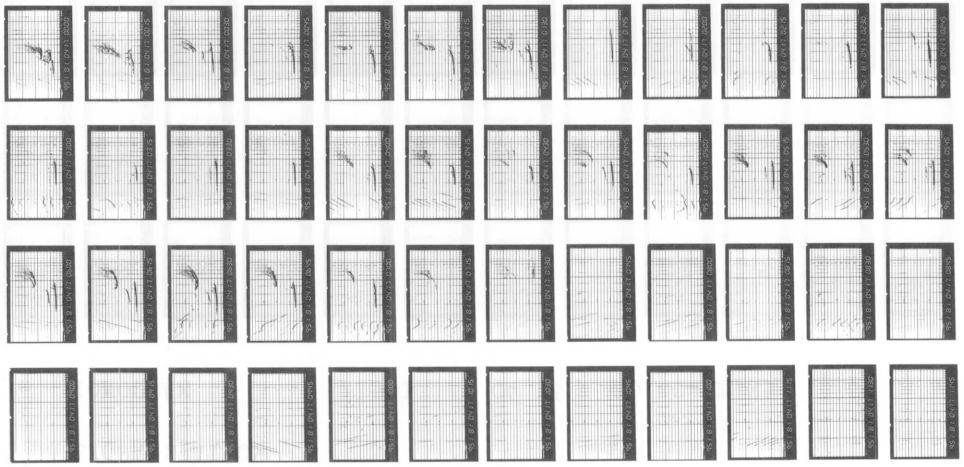
SYOWA STATION

IONOGRAM 1981 04 18 12;00-23;45



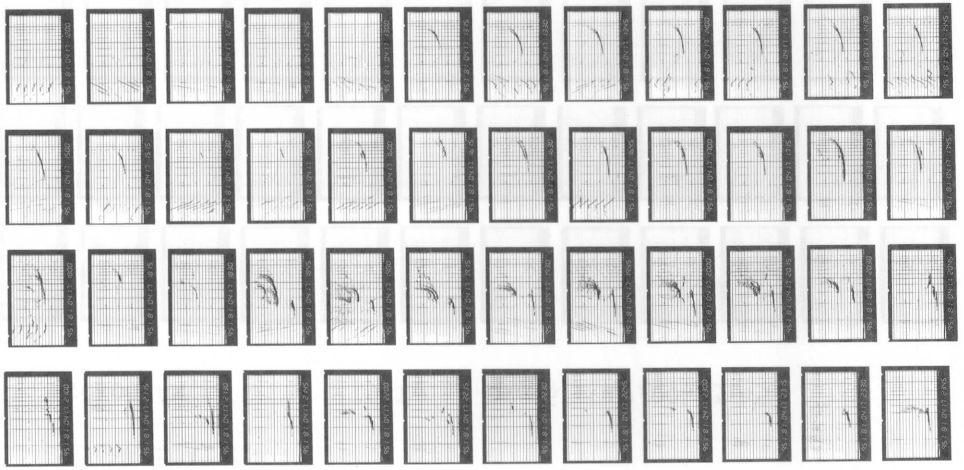
SYOWA STATION

IONOGRAM 1981 04 17 00;00-11;45



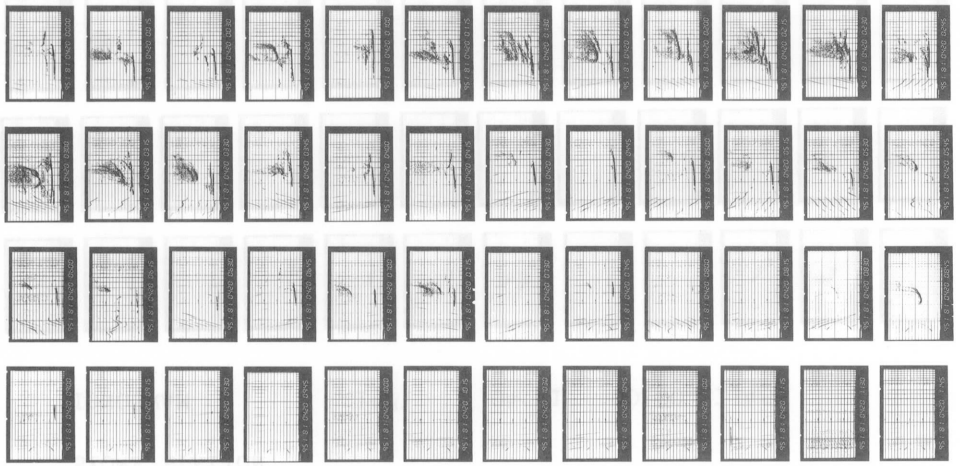
SYOWA STATION

IONOGRAM 1981 04 17 12;00-23;45



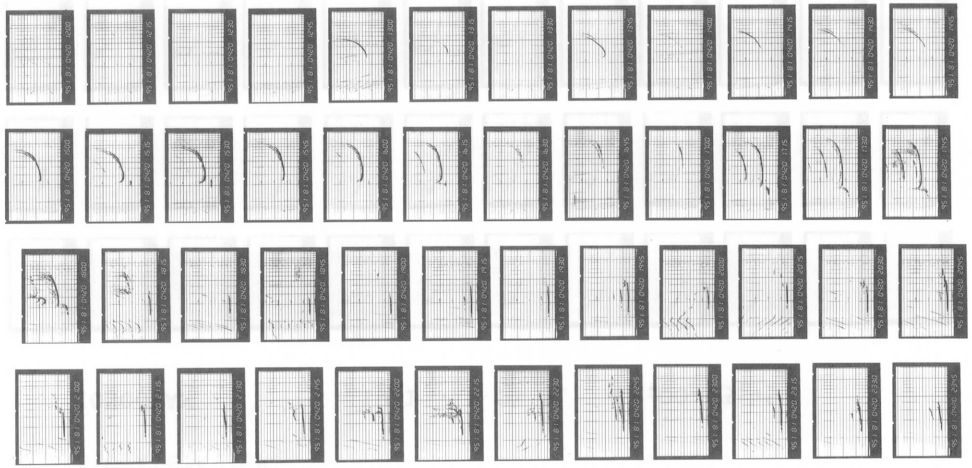
SYOWA STATION

IONOGRAM 1981 04 20 00;00-11;45



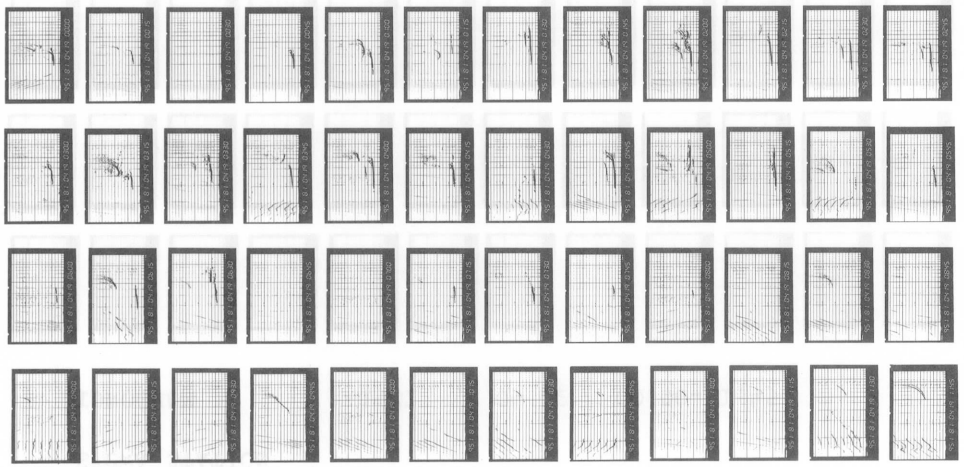
SYOWA STATION

IONOGRAM 1981 04 20 12;00-23;45



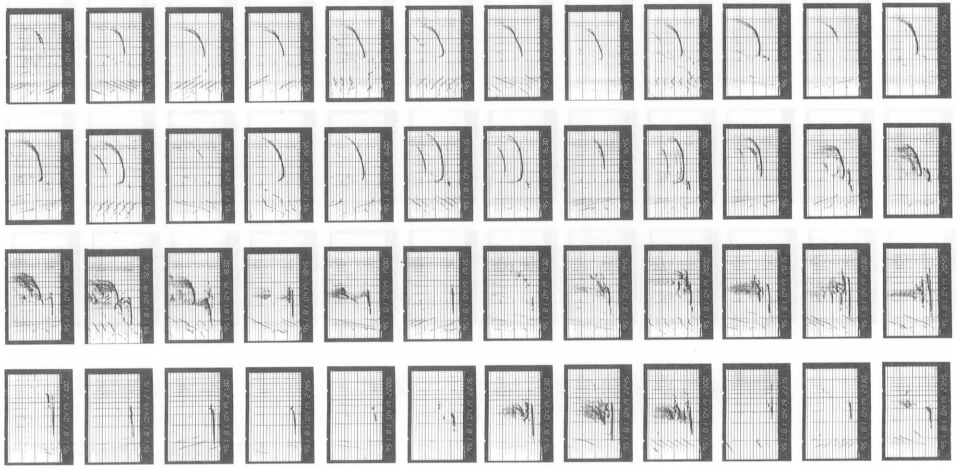
SYOWA STATION

IONOGRAM 1981 04 19 00;00-11;45



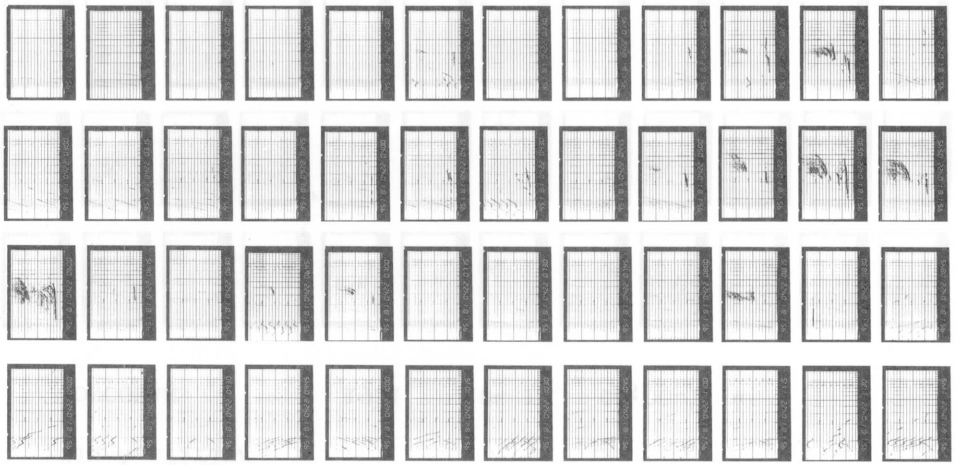
SYOWA STATION

IONOGRAM 1981 04 19 12;00-23;45



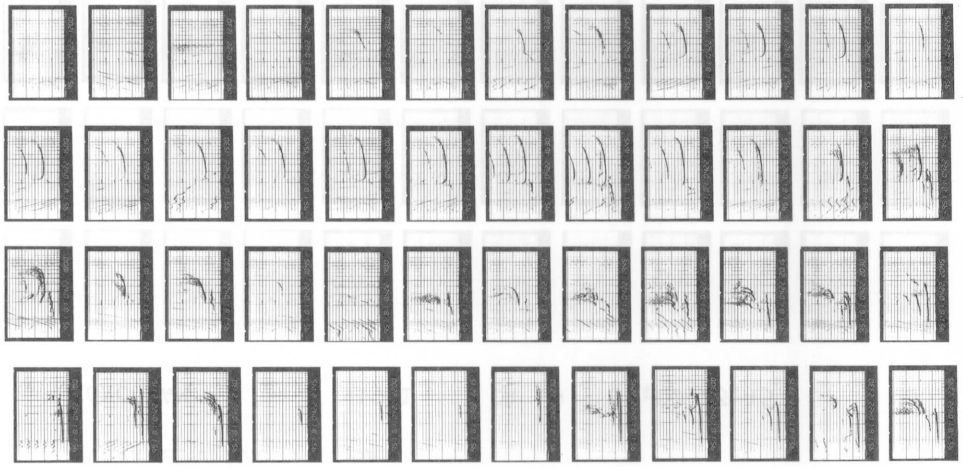
SYOWA STATION

IONOGRAM 1981 04 22 00;00-11;45



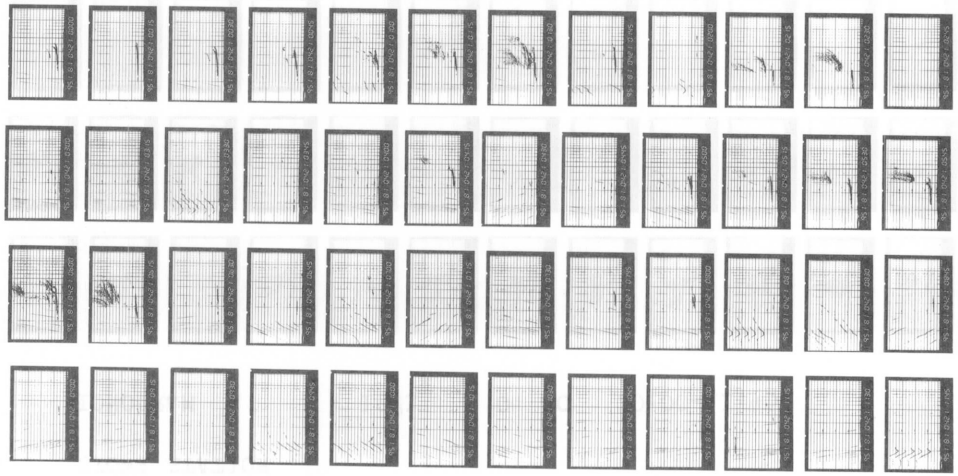
SYOWA STATION

IONOGRAM 1981 04 22 12;00-23;45



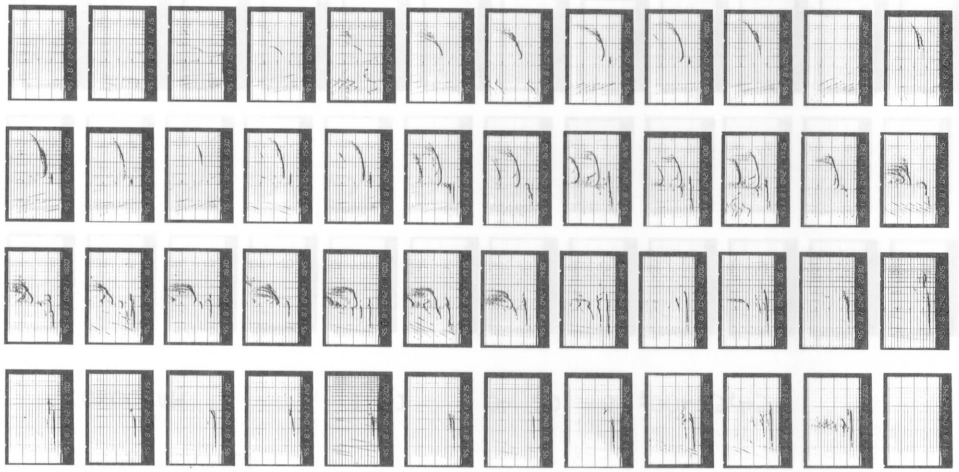
SYOWA STATION

IONOGRAM 1981 04 21 00;00-11;45



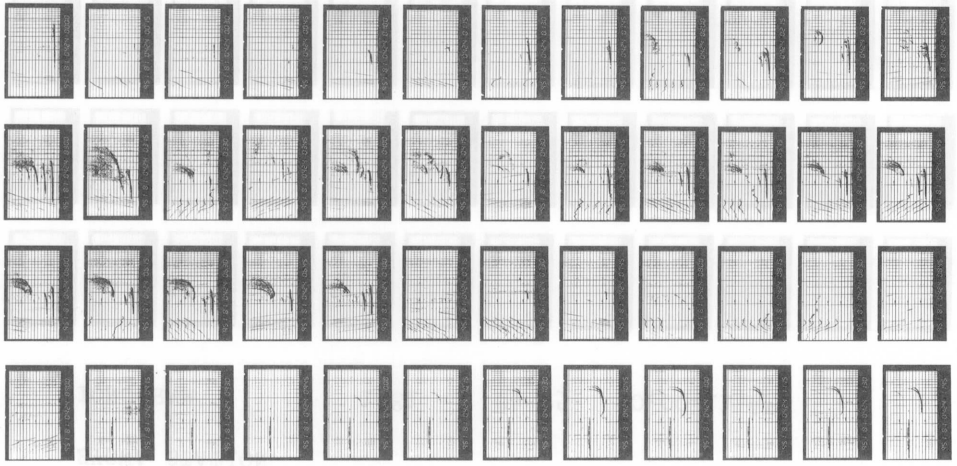
SYOWA STATION

IONOGRAM 1981 04 21 12;00-23;45



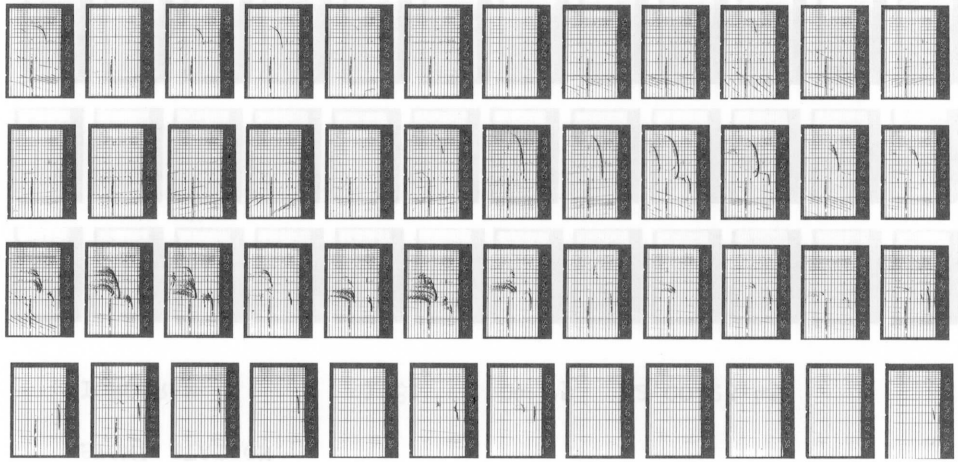
SYOWA STATION

IONOGRAM 1981 04 24 00;00-11;45



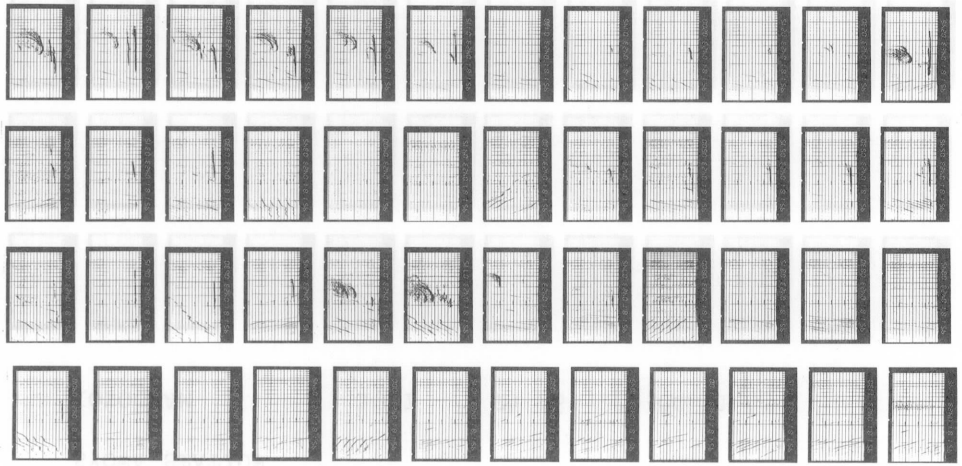
SYOWA STATION

IONOGRAM 1981 04 24 12;00-23;45



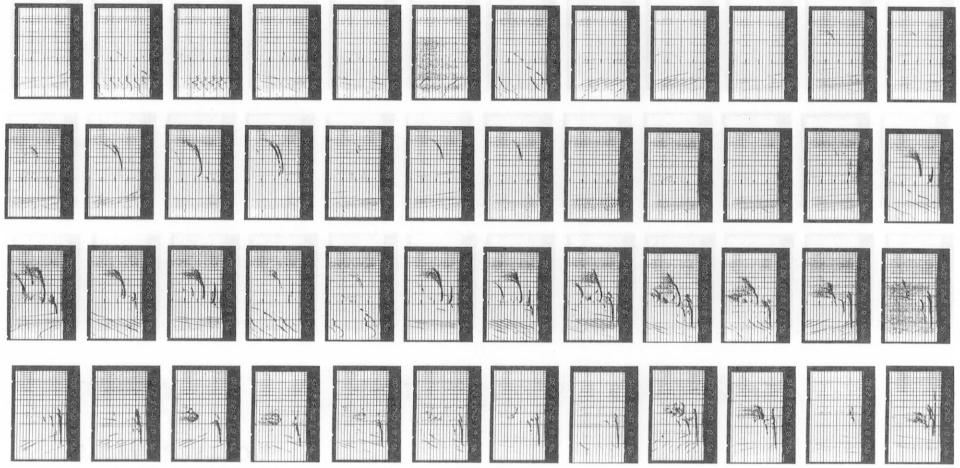
SYOWA STATION

IONOGRAM 1981 04 23 00;00-11;45



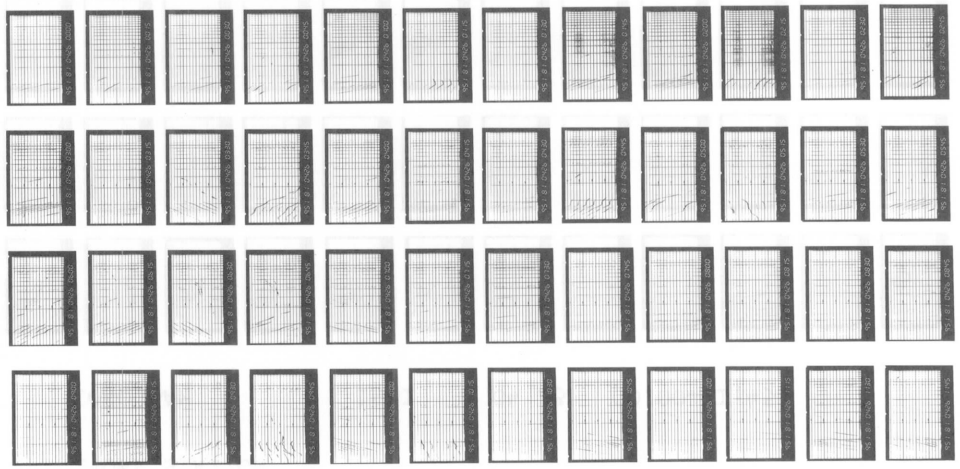
SYOWA STATION

IONOGRAM 1981 04 23 12;00-23;45



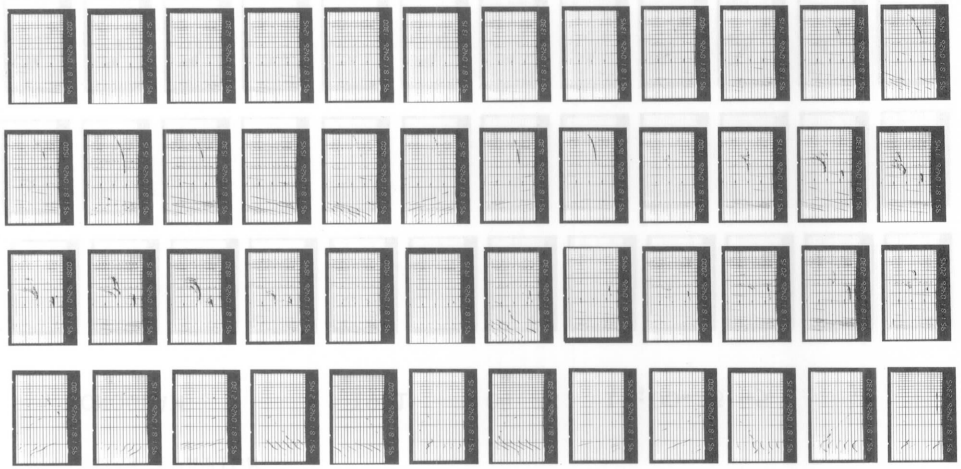
SYOWA STATION

IONOGRAM 1981 04 26 00;00-11;45



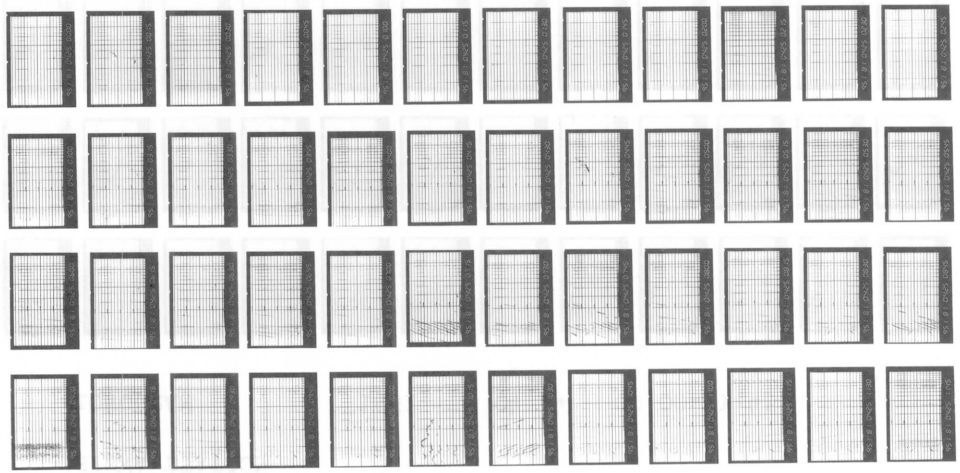
SYOWA STATION

IONOGRAM 1981 04 26 12;00-23;45



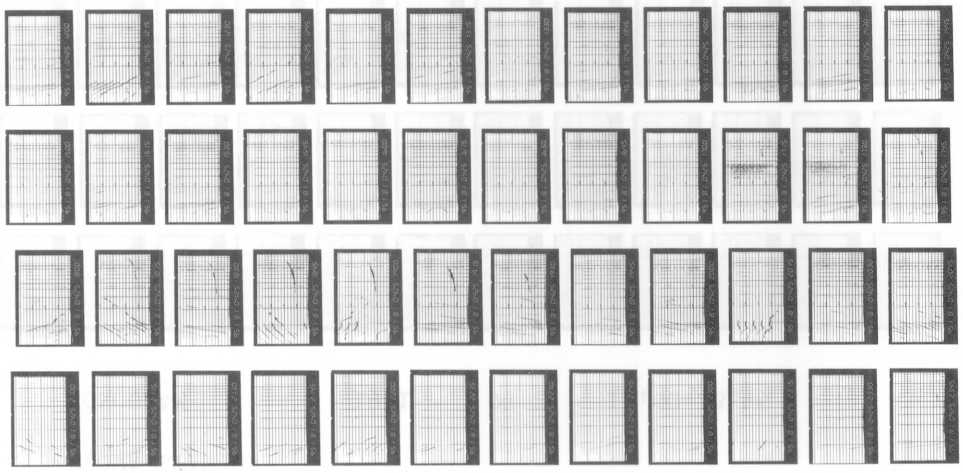
SYOWA STATION

IONOGRAM 1981 04 25 00;00-11;45



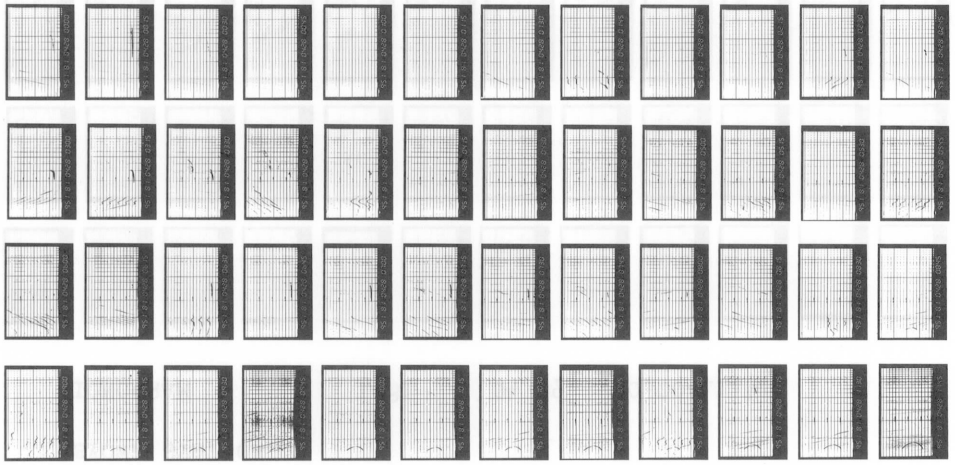
SYOWA STATION

IONOGRAM 1981 04 25 12;00-23;45



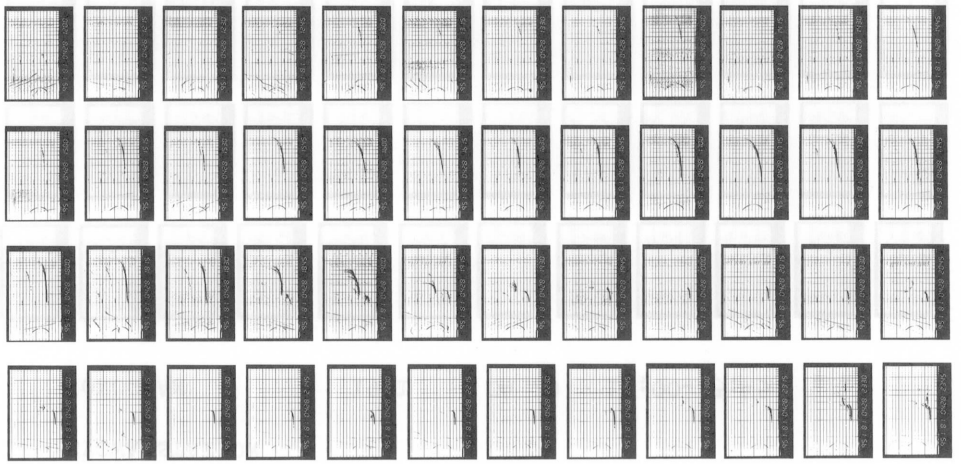
SYOWA STATION

IONOGRAM 1981 04 28 00;00-11;45



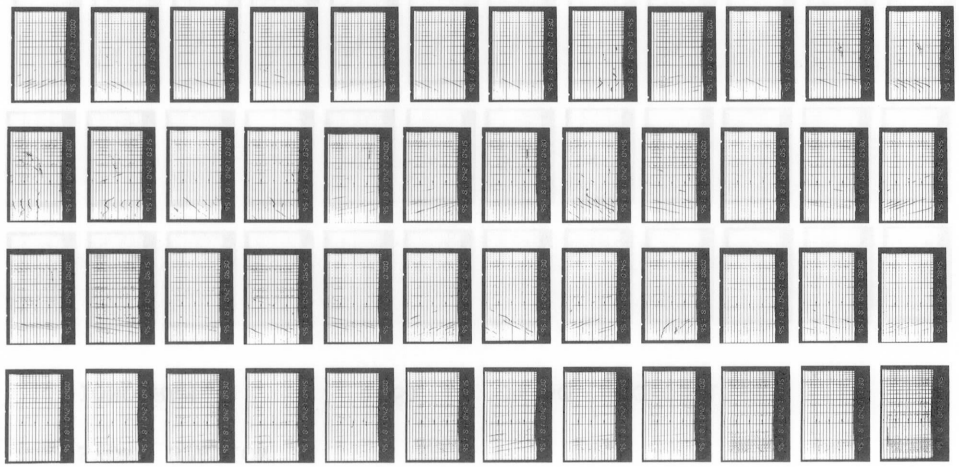
SYOWA STATION

IONOGRAM 1981 04 28 12;00-23;45



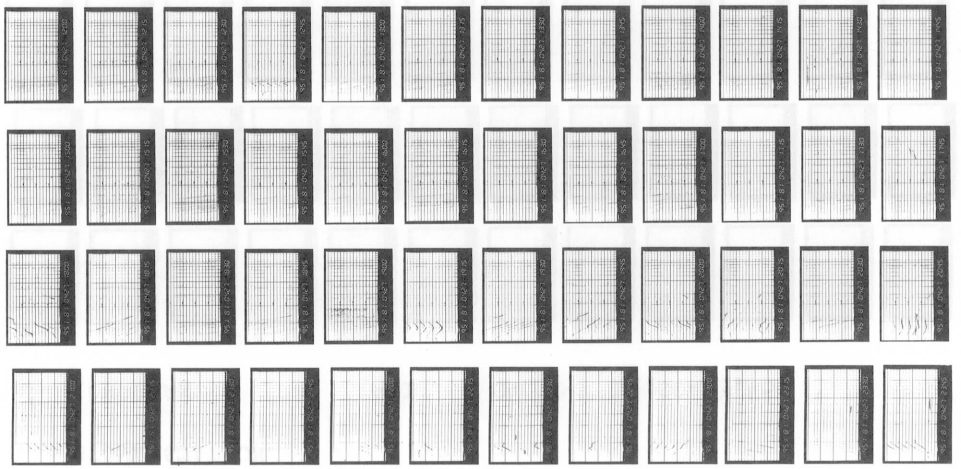
SYOWA STATION

IONOGRAM 1981 04 27 00;00-11;45



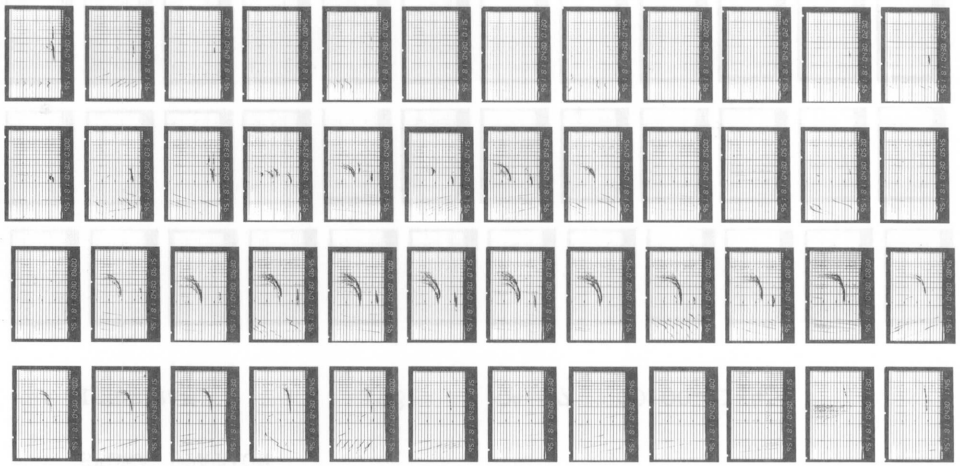
SYOWA STATION

IONOGRAM 1981 04 27 12;00-23;45



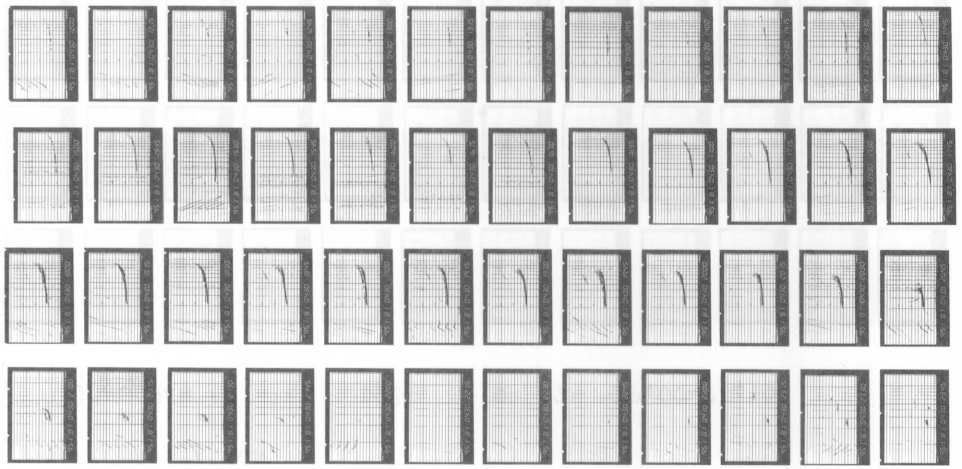
SYOWA STATION

IONOGRAM 1981 04 30 00;00-11;45



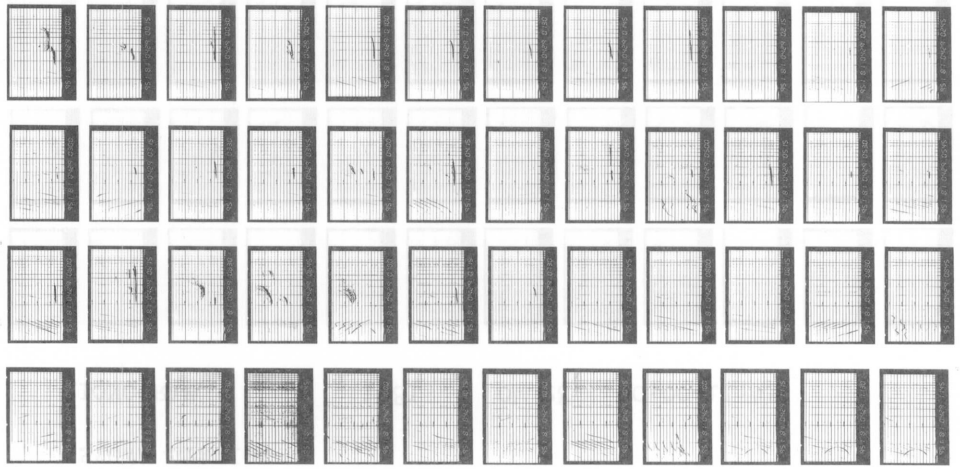
SYOWA STATION

IONOGRAM 1981 04 30 12;00-23;45



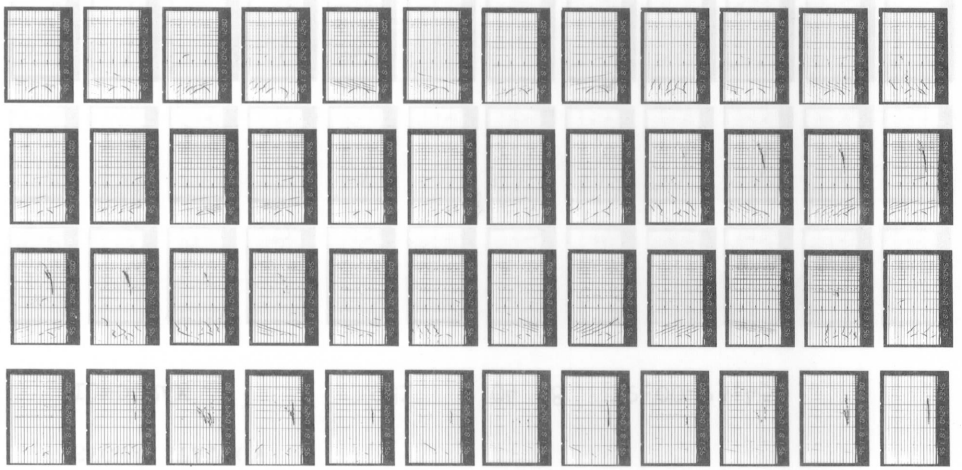
SYOWA STATION

IONOGRAM 1981 04 29 00;00-11;45



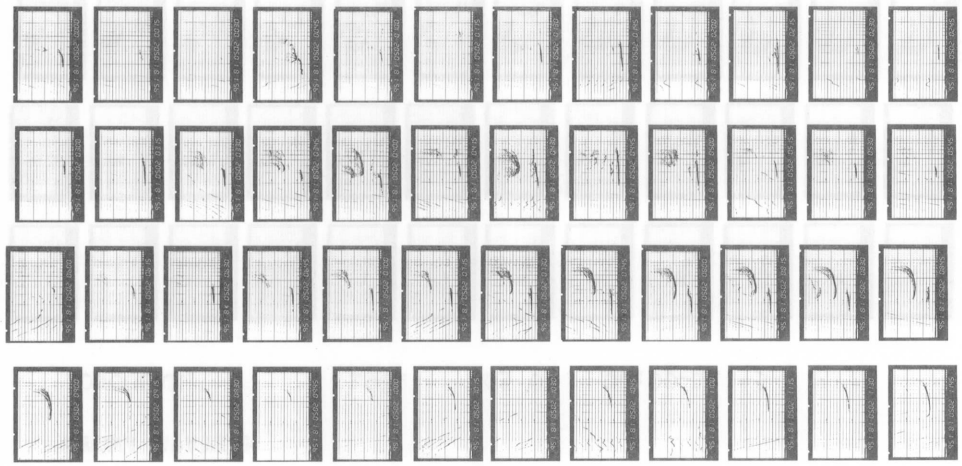
SYOWA STATION

IONOGRAM 1981 04 29 12;00-23;45



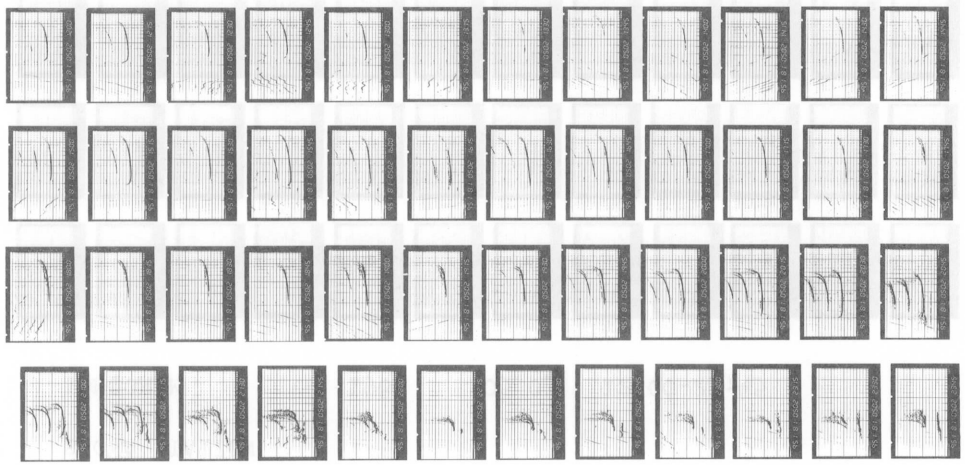
SYOWA STATION

IONOGRAM 1981 05 02 00;00-11;45



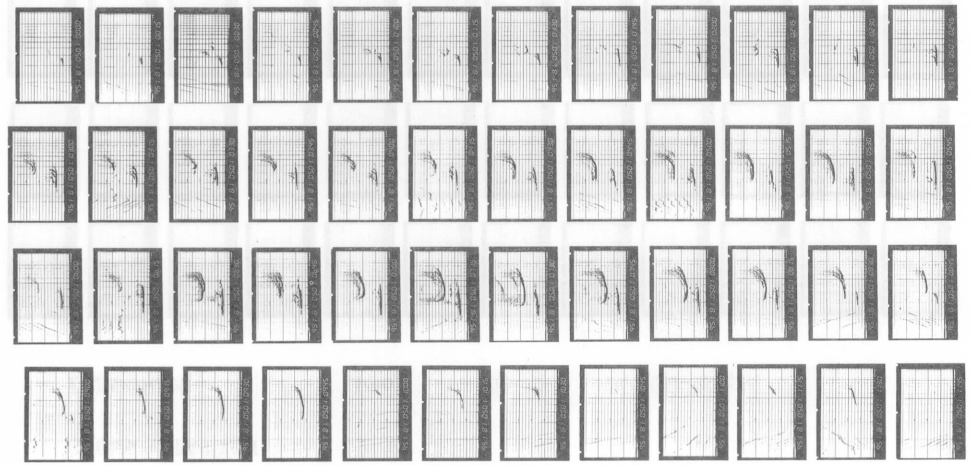
SYOWA STATION

IONOGRAM 1981 05 02 12;00-23;45



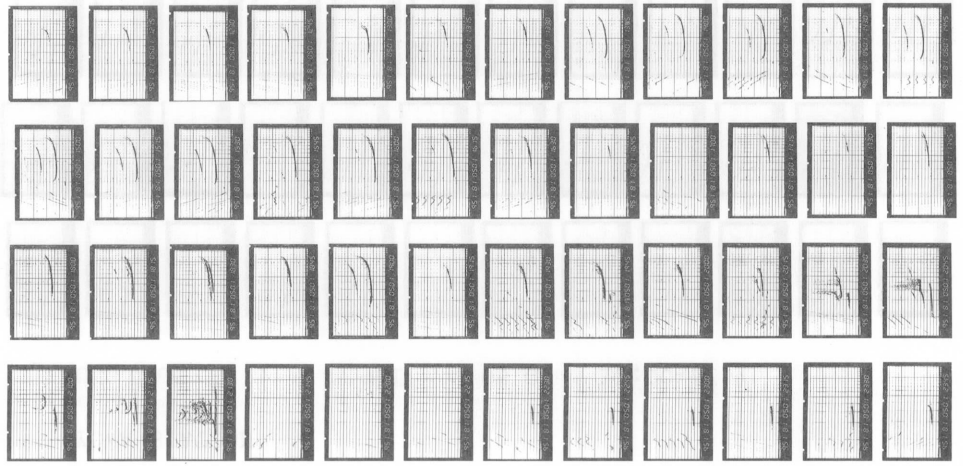
SYOWA STATION

IONOGRAM 1981 05 01 00;00-11;45



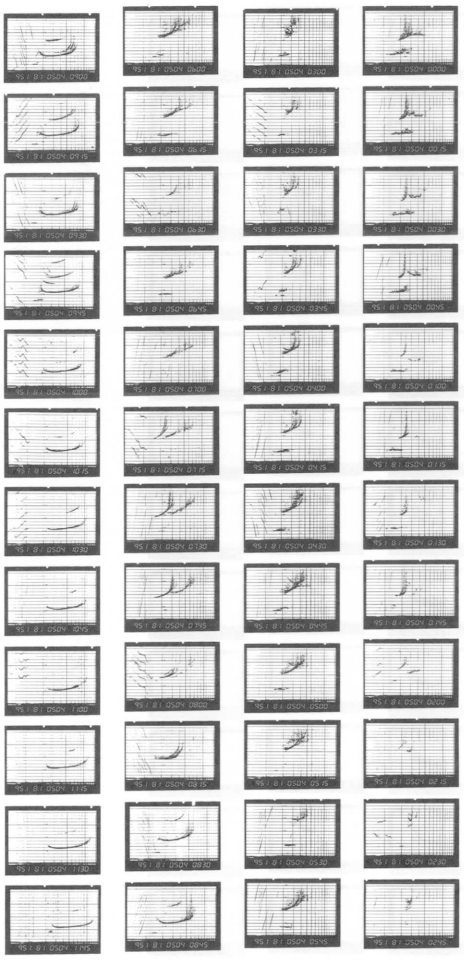
SYOWA STATION

IONOGRAM 1981 05 01 12;00-23;45



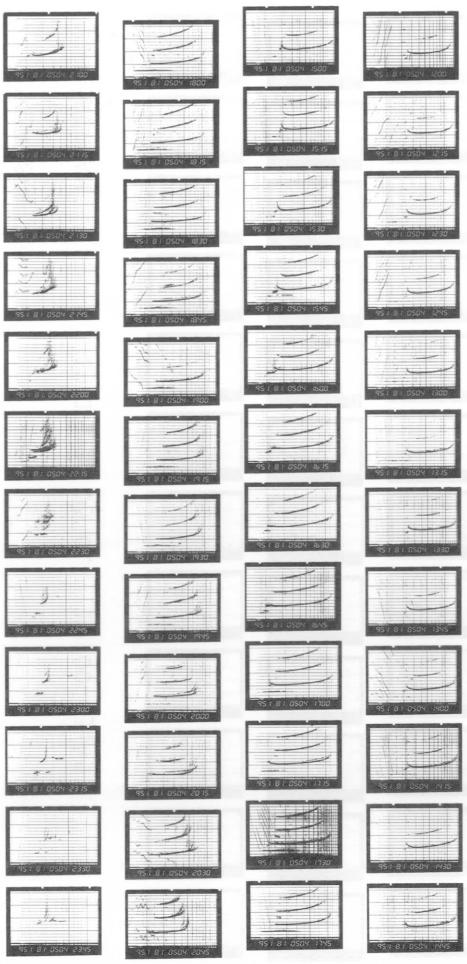
SYOWA STATION

IONOGRAM 1981 05 04 00;00-11;45



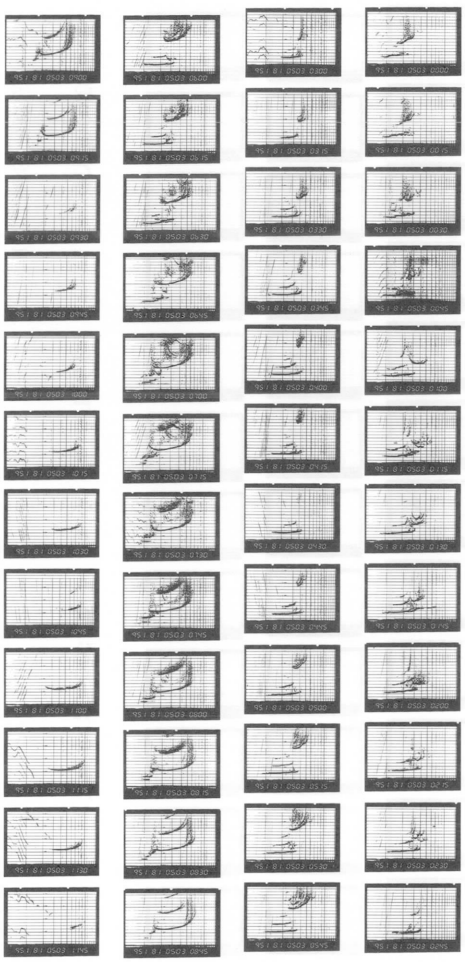
SYOWA STATION

IONOGRAM 1981 05 04 12;00-23;45



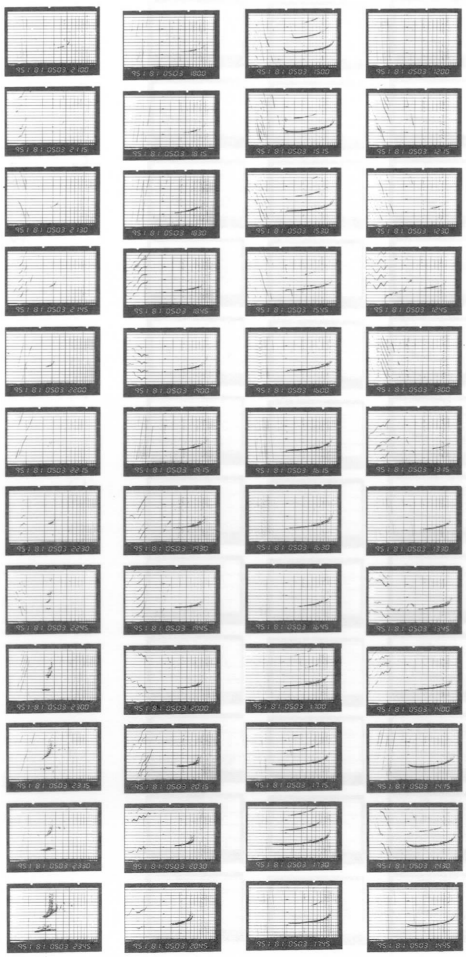
SYOWA STATION

IONOGRAM 1981 05 03 00;00-11;45



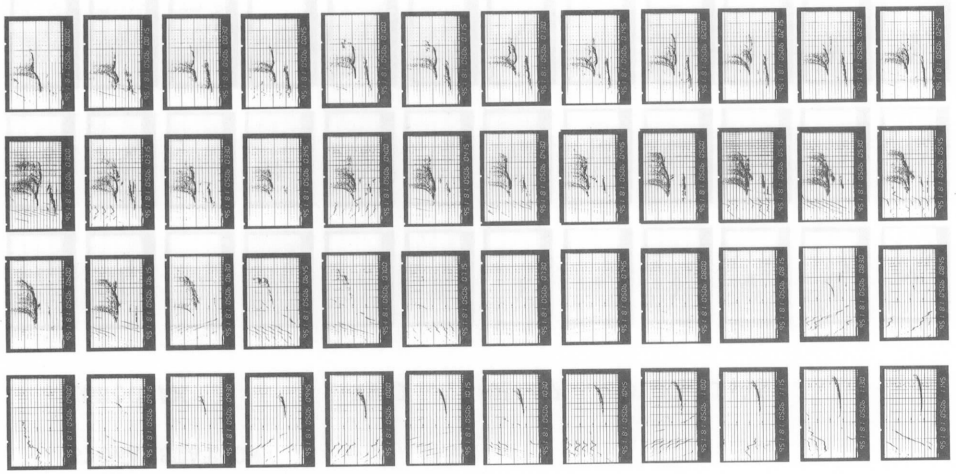
SYOWA STATION

IONOGRAM 1981 05 03 12;00-23;45



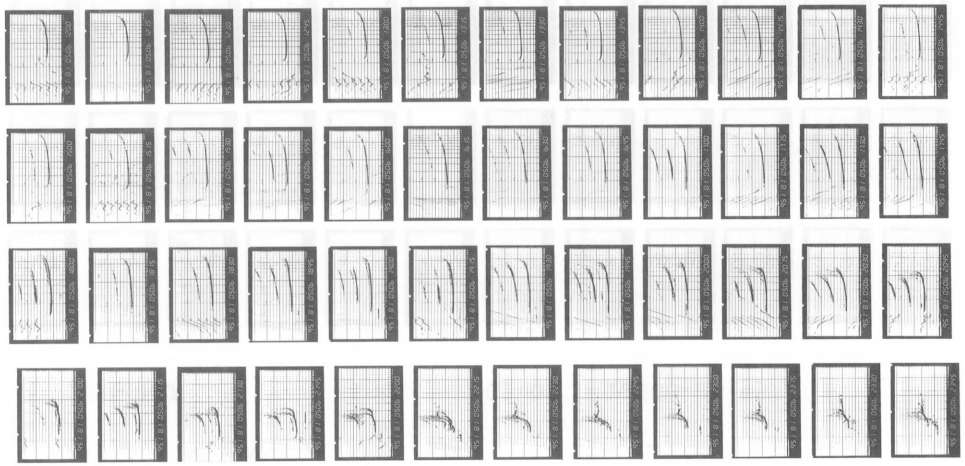
SYOWA STATION

IONOGRAM 1981 05 06 00;00-11;45



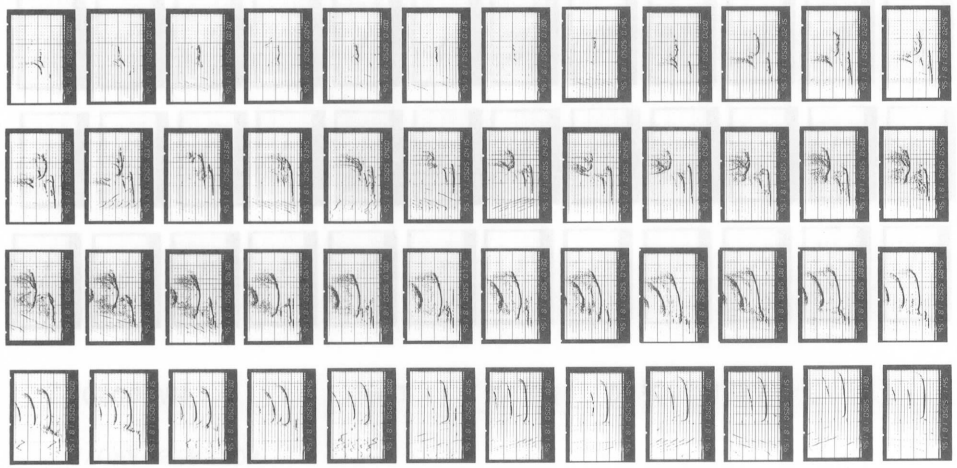
SYOWA STATION

IONOGRAM 1981 05 06 12;00-23;45



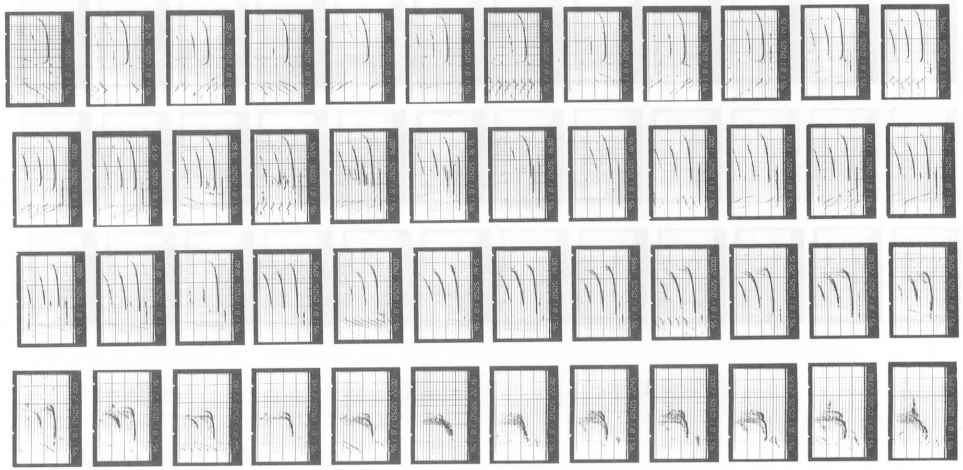
SYOWA STATION

IONOGRAM 1981 05 05 00;00-11;45



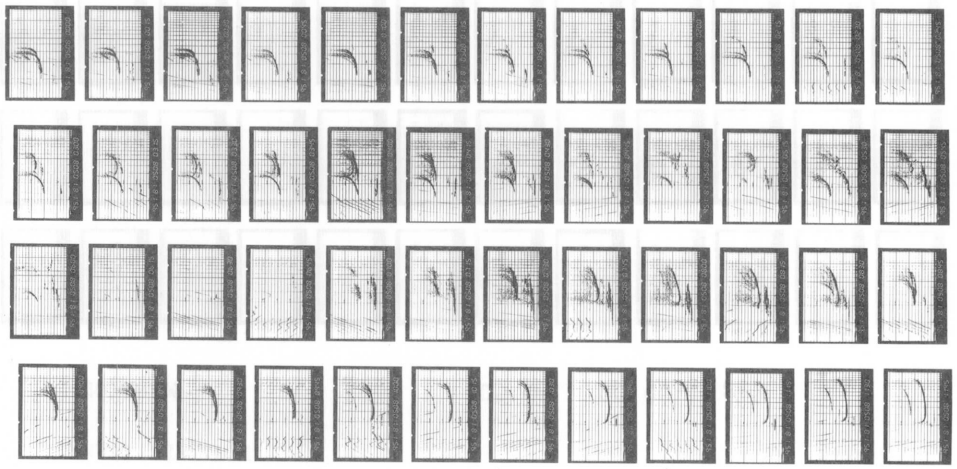
SYOWA STATION

IONOGRAM 1981 05 05 12;00-23;45



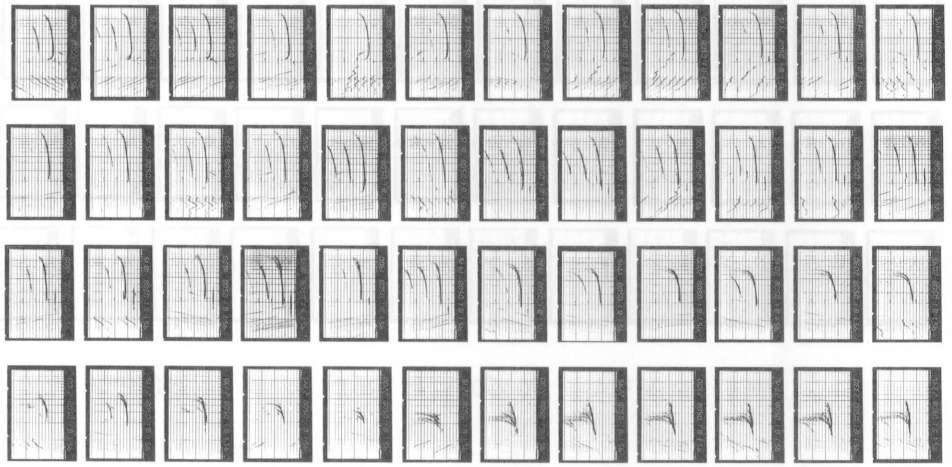
SYOWA STATION

IONOGRAM 1981 05 08 00;00-11;45



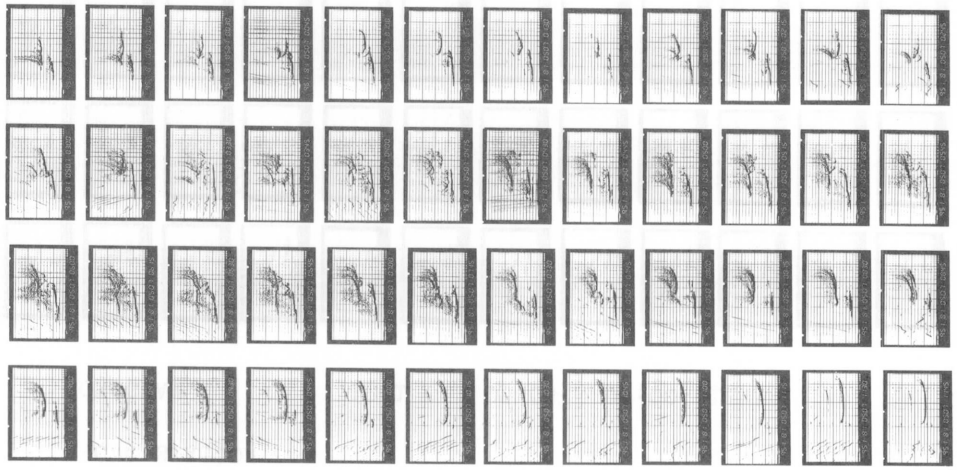
SYOWA STATION

IONOGRAM 1981 05 08 12;00-23;45



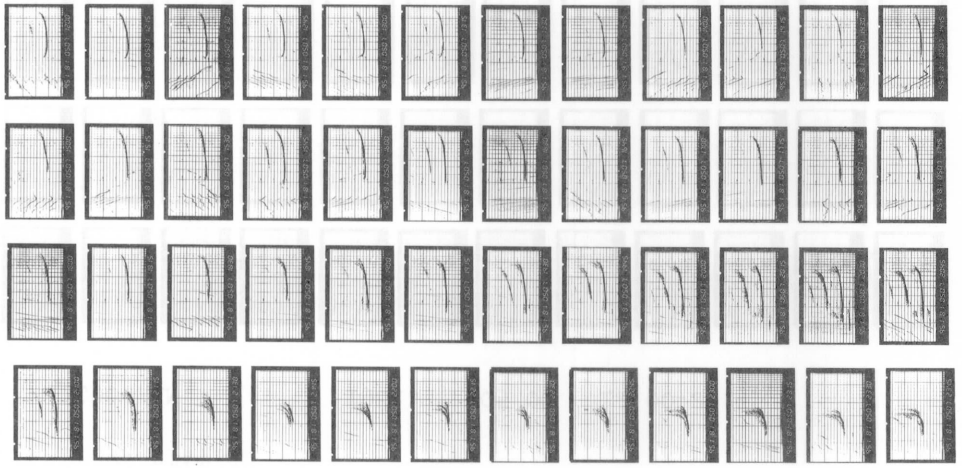
SYOWA STATION

IONOGRAM 1981 05 07 00;00-11;45



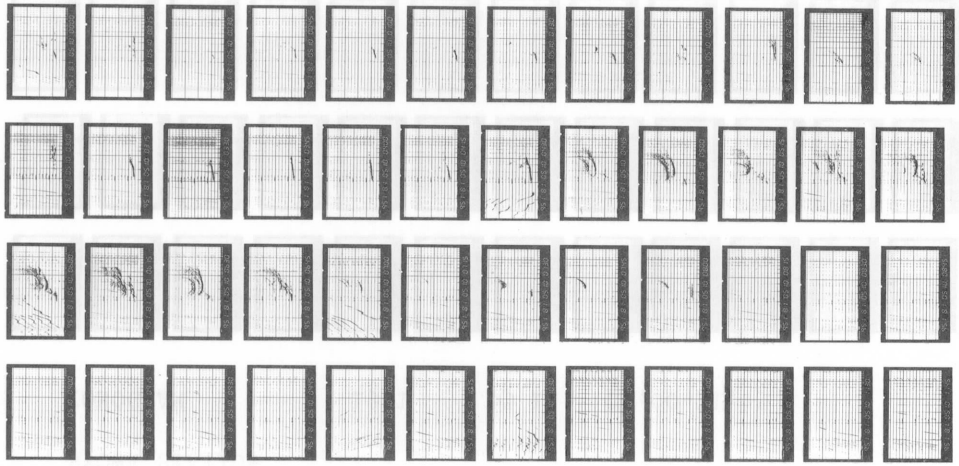
SYOWA STATION

IONOGRAM 1981 05 07 12;00-23;45



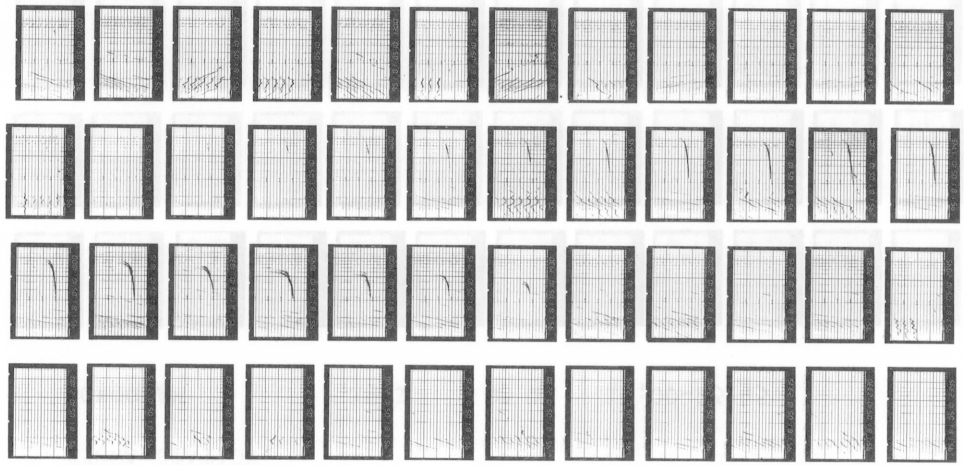
SYOWA STATION

IONOGRAM 1981 05 10 00;00-11;45



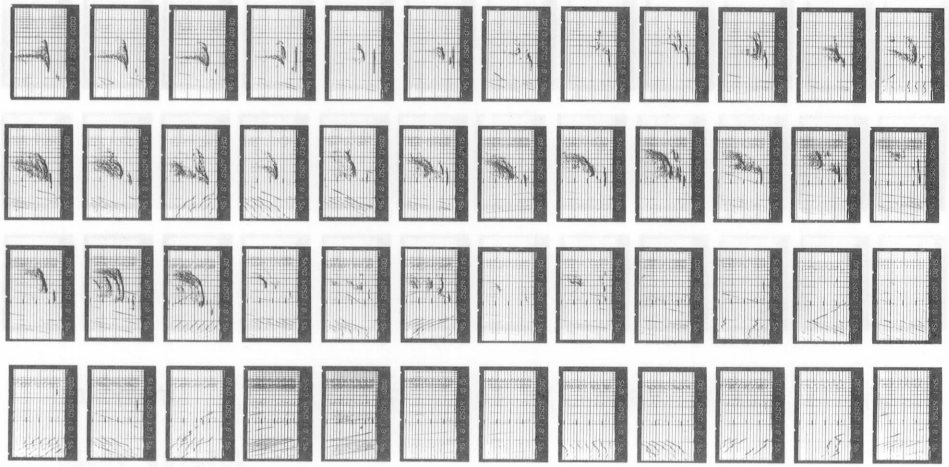
SYOWA STATION

IONOGRAM 1981 05 10 12;00-23;45



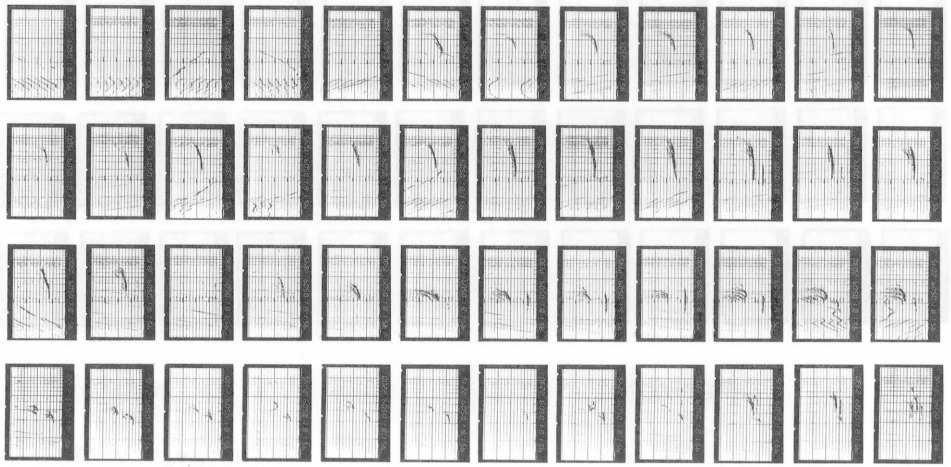
SYOWA STATION

IONOGRAM 1981 05 09 00;00-11;45



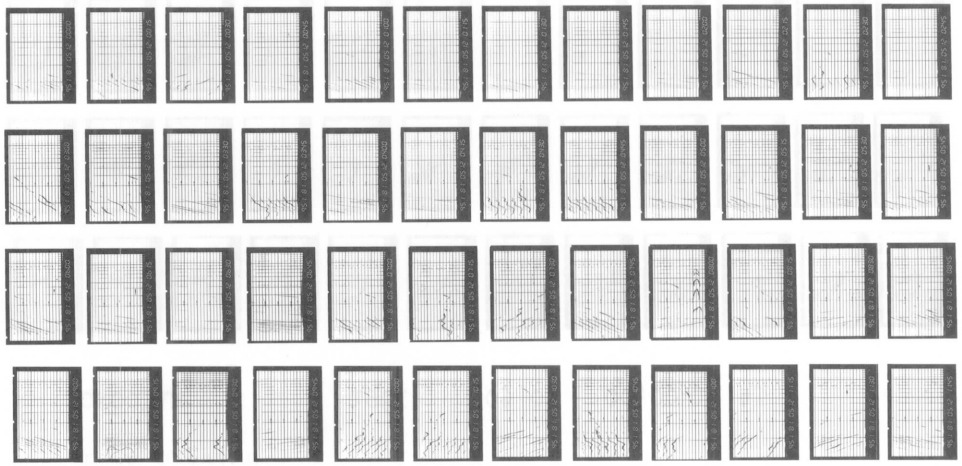
SYOWA STATION

IONOGRAM 1981 05 09 12;00-23;45



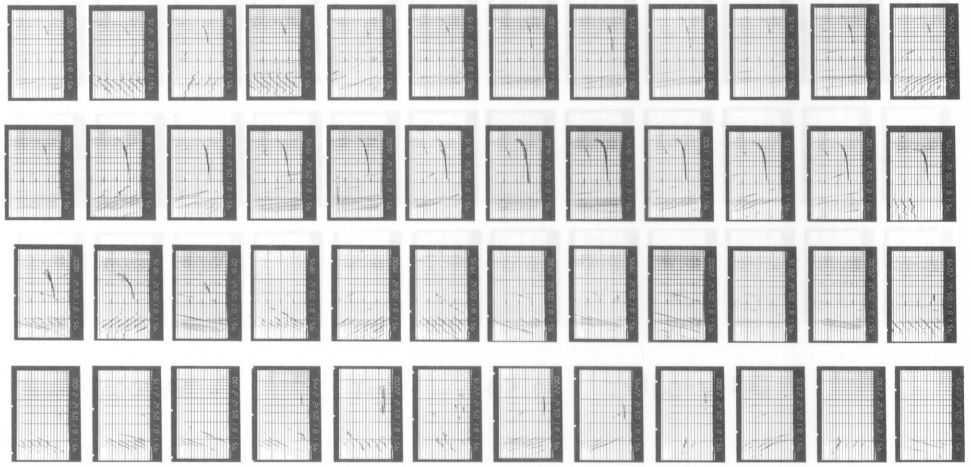
SYOWA STATION

IONOGRAM 1981 05 12 00;00-11;45



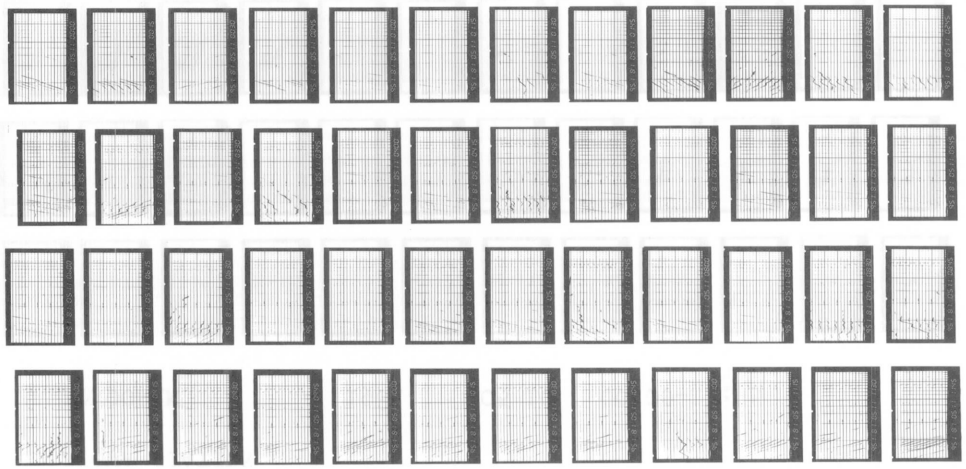
SYOWA STATION

IONOGRAM 1981 05 12 12;00-23;45



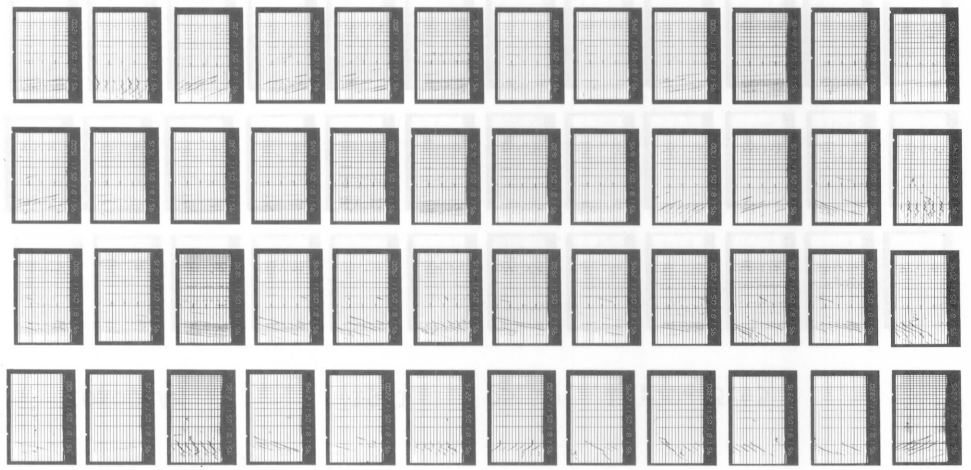
SYOWA STATION

IONOGRAM 1981 05 11 00;00-11;45



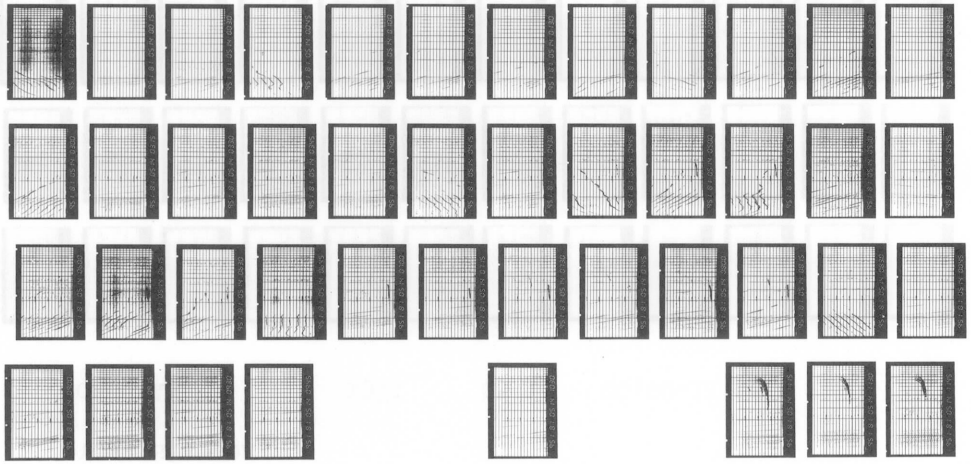
SYOWA STATION

IONOGRAM 1981 05 11 12;00-23;45



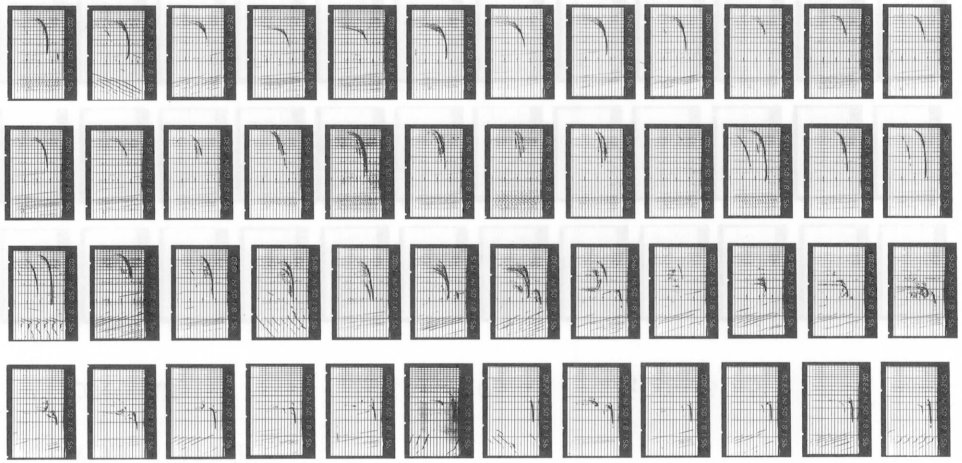
SYOWA STATION

IONOGRAM 1981 05 14 00;00-11;45



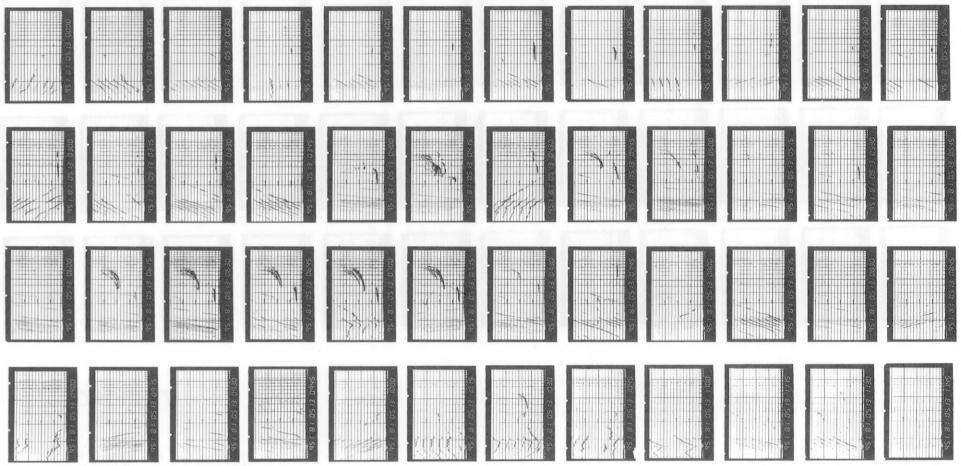
SYOWA STATION

IONOGRAM 1981 05 14 12;00-23;45



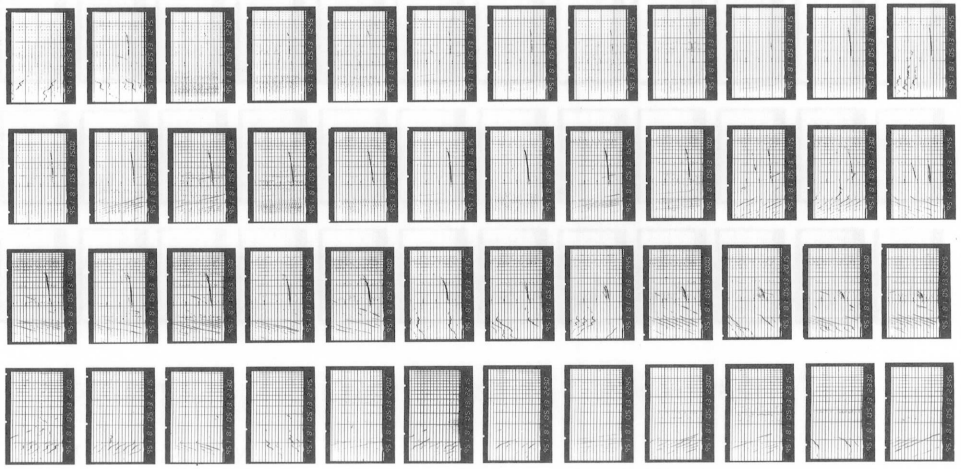
SYOWA STATION

IONOGRAM 1981 05 13 00;00-11;45



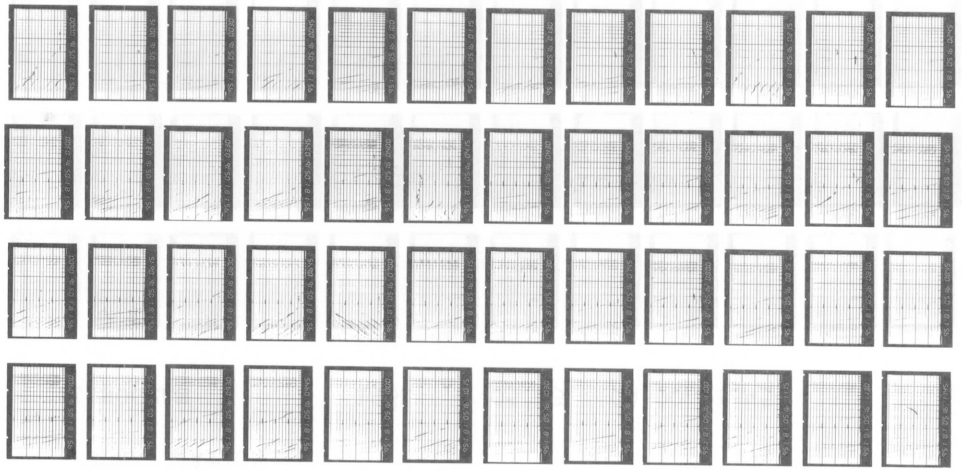
SYOWA STATION

IONOGRAM 1981 05 13 12;00-23;45



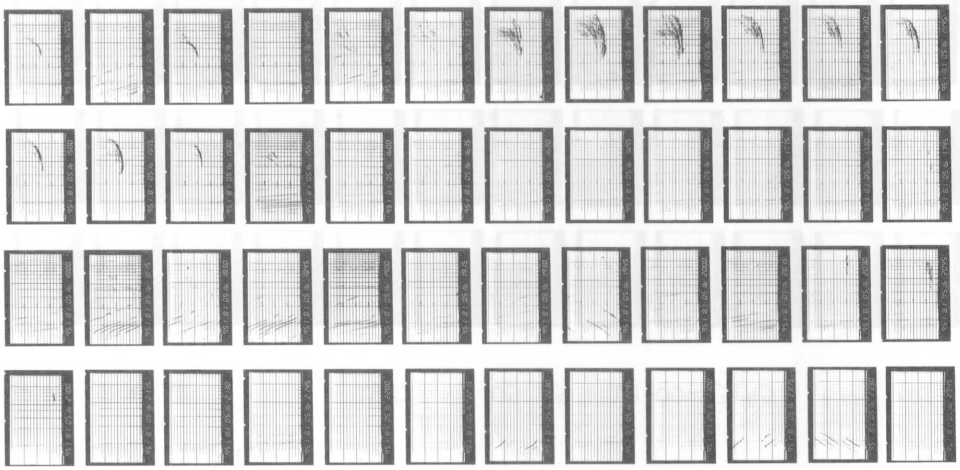
SYOWA STATION

IONOGRAM 1981 05 16 00;00-11;45



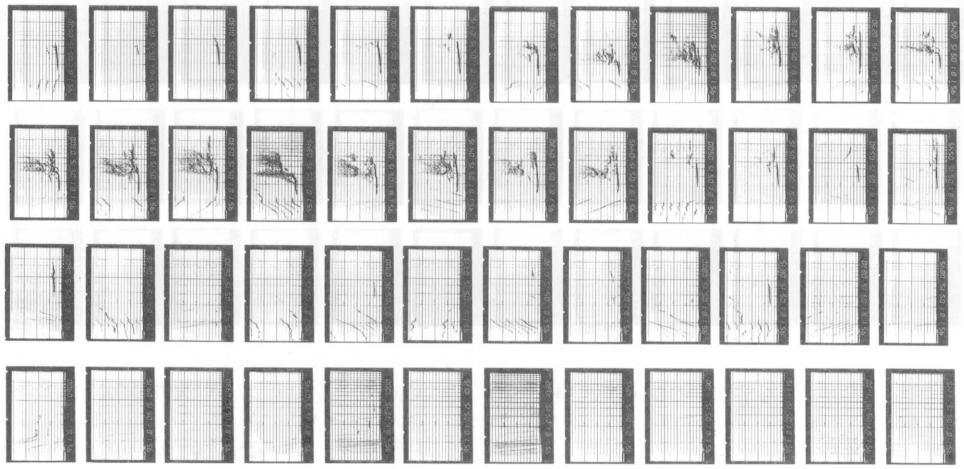
SYOWA STATION

IONOGRAM 1981 05 16 12;00-23;45



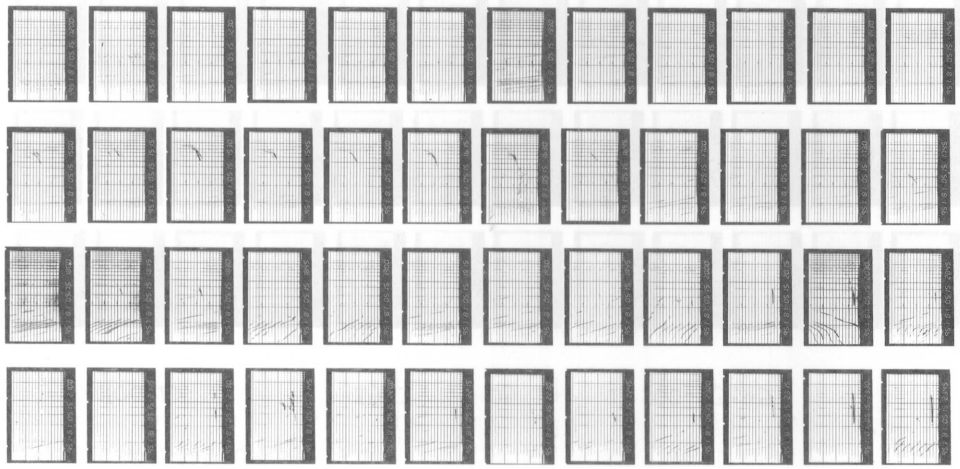
SYOWA STATION

IONOGRAM 1981 05 15 00;00-11;45



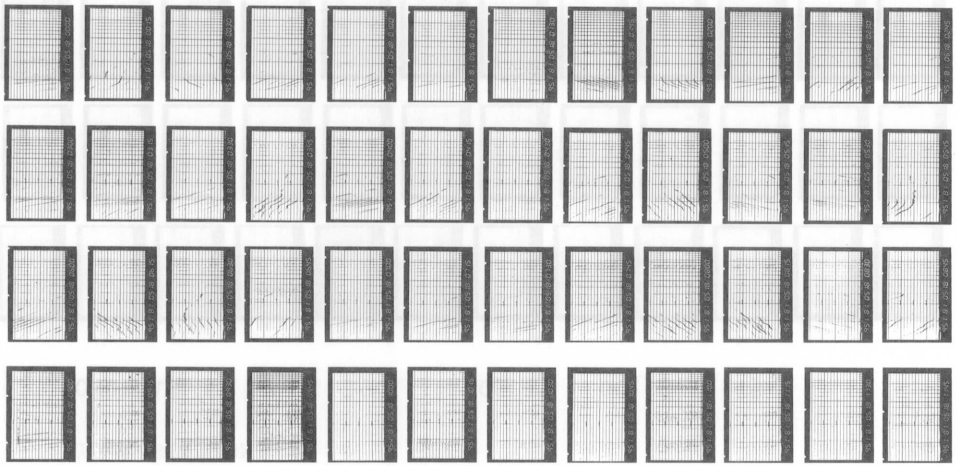
SYOWA STATION

IONOGRAM 1981 05 15 12;00-23;45



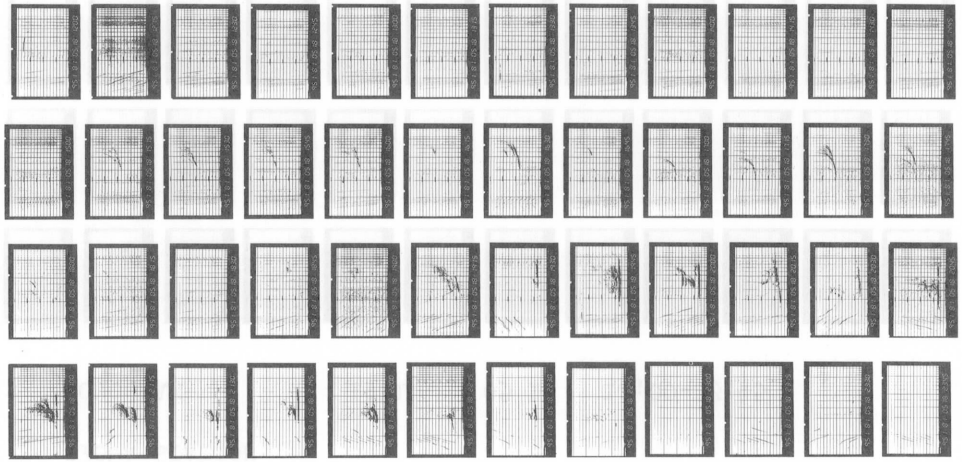
SYOWA STATION

IONOGRAM 1981 05 18 00;00-11;45



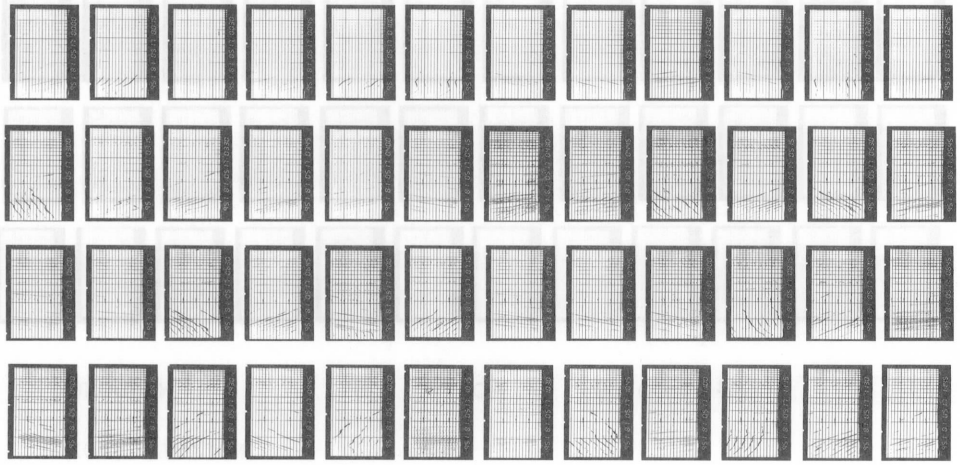
SYOWA STATION

IONOGRAM 1981 05 18 12;00-23;45



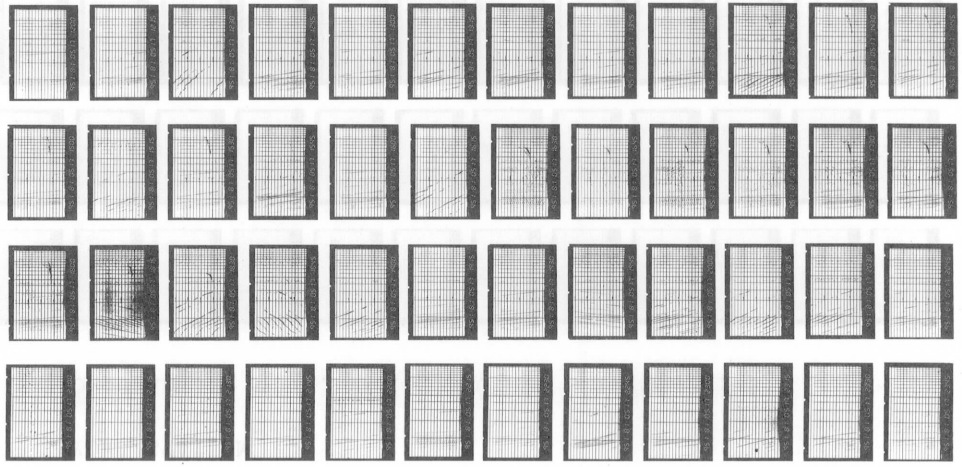
SYOWA STATION

IONOGRAM 1981 05 17 00;00-11;45

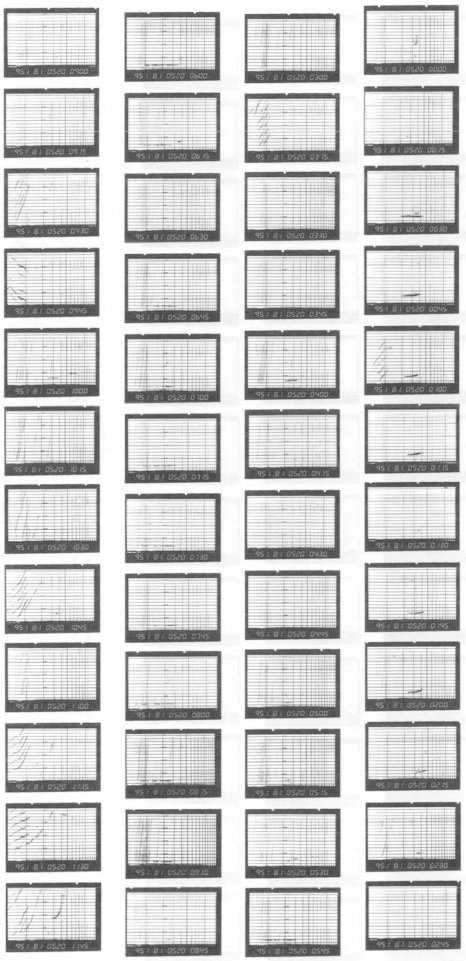


SYOWA STATION

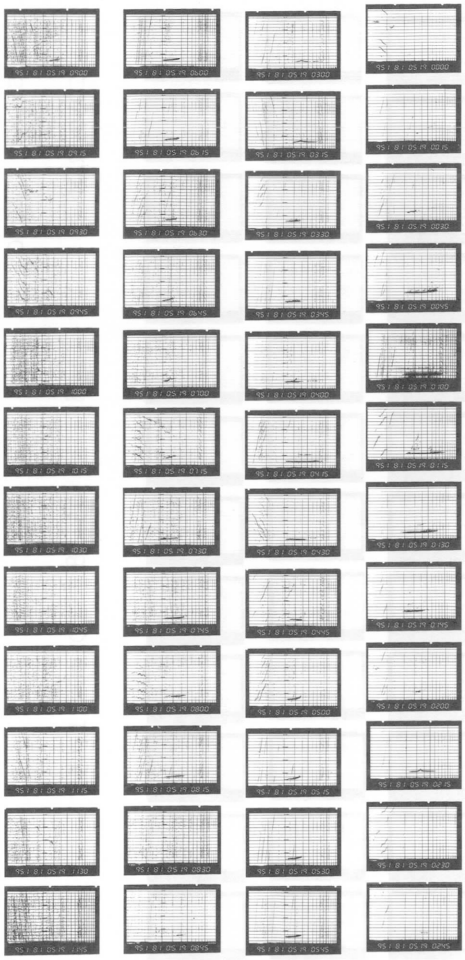
IONOGRAM 1981 05 17 12;00-23;45



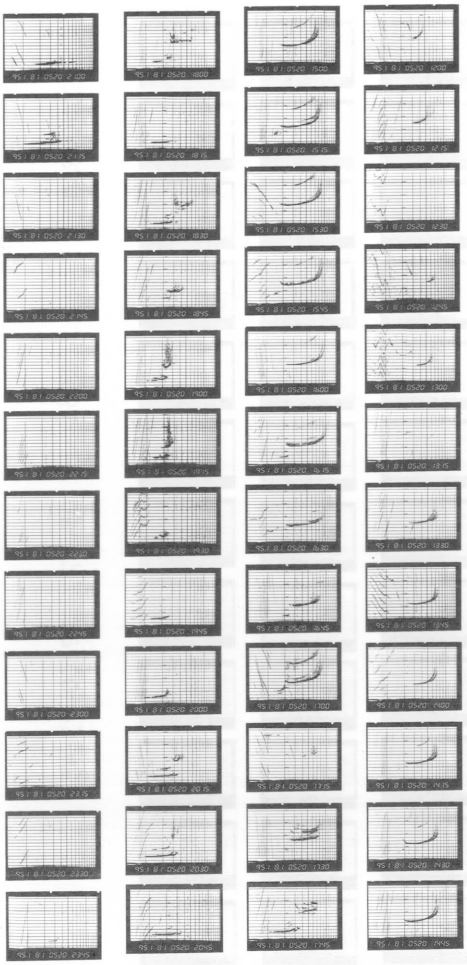
SYOWA STATION
IONOGRAM 1981 05 20 00:00-11:45



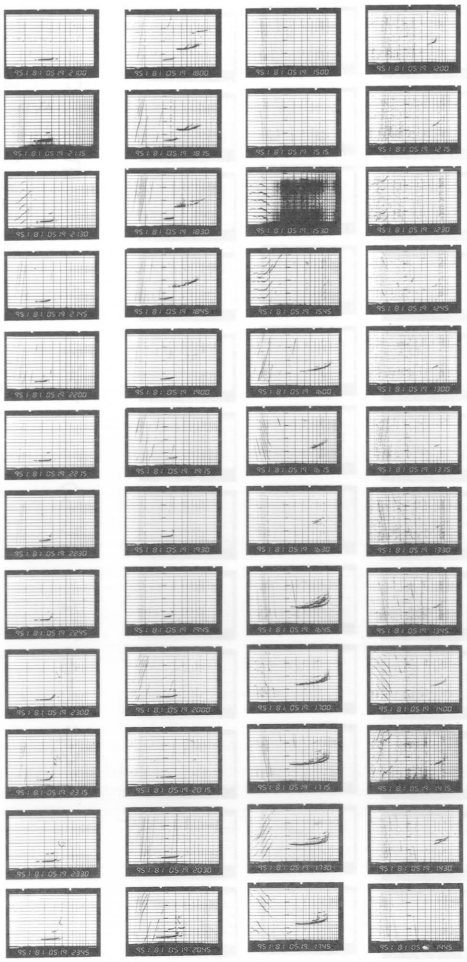
SYOWA STATION
IONOGRAM 1981 05 19 00:00-11:45



SYOWA STATION
IONOGRAM 1981 05 20 12:00-23:45

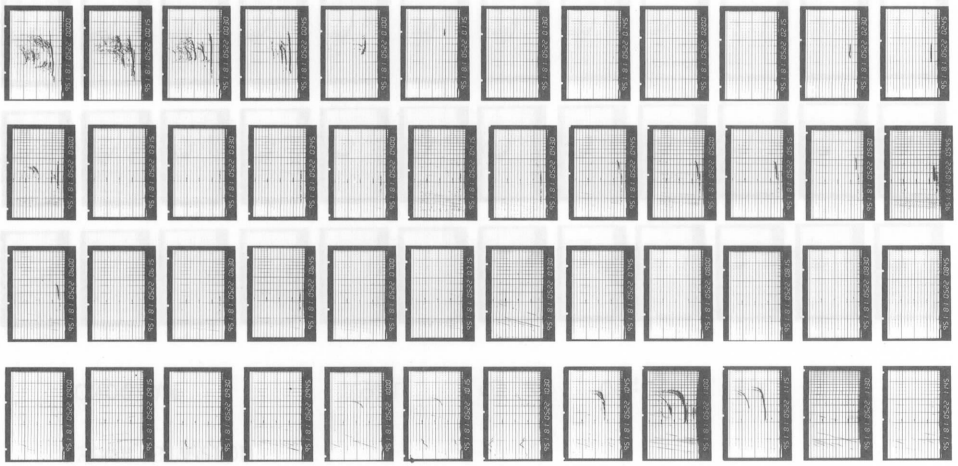


SYOWA STATION
IONOGRAM 1981 05 19 12:00-23:45



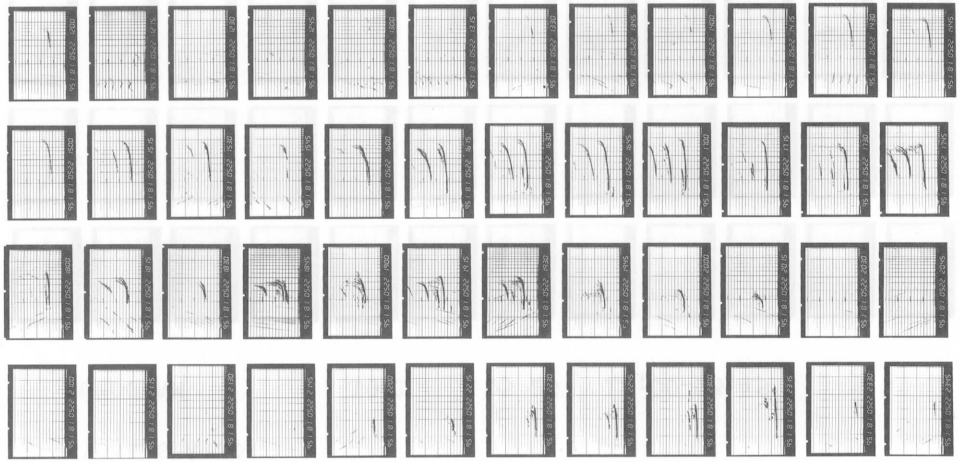
SYOWA STATION

IONOGRAM 1981 05 22 00;00-11;45



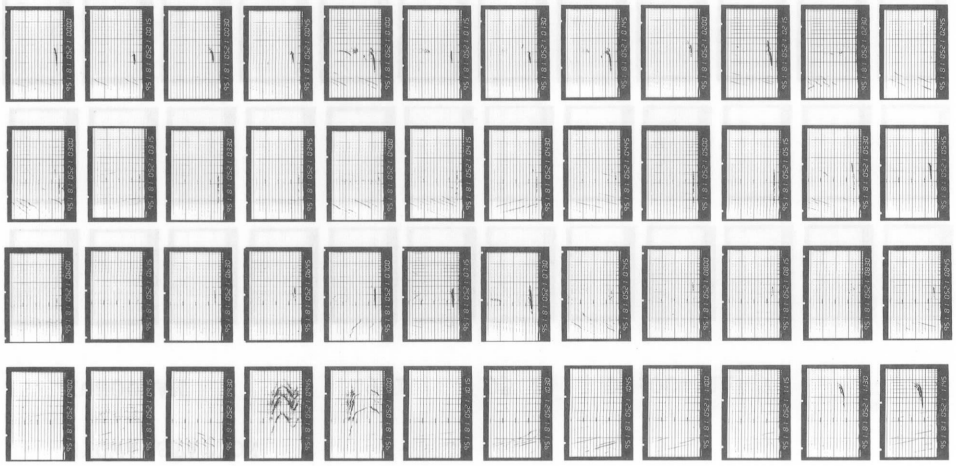
SYOWA STATION

IONOGRAM 1981 05 22 12;00-23;45



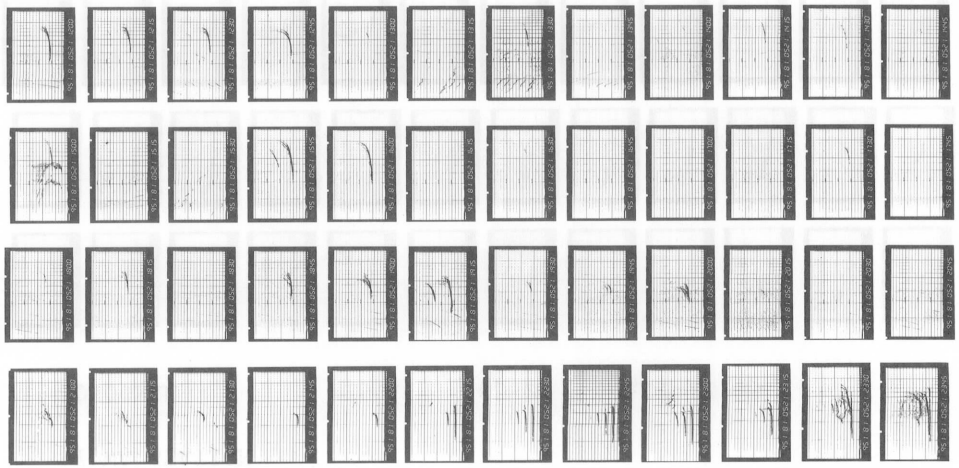
SYOWA STATION

IONOGRAM 1981 05 21 00;00-11;45



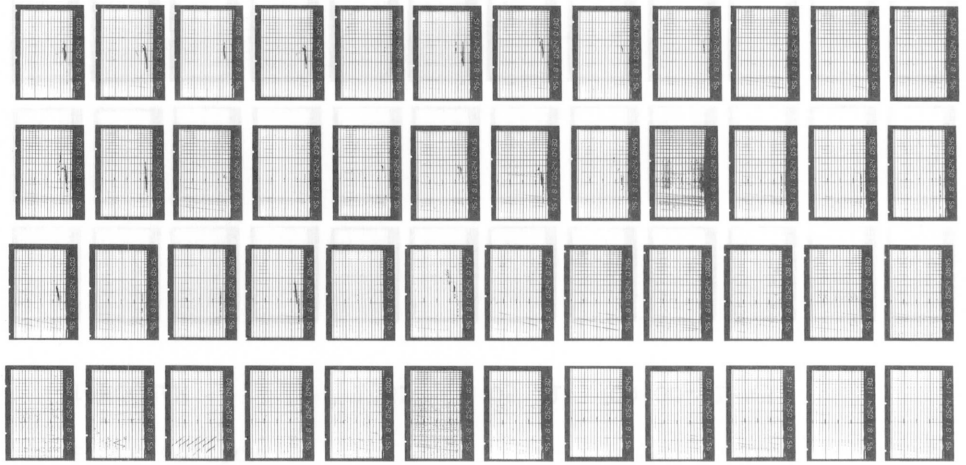
SYOWA STATION

IONOGRAM 1981 05 21 12;00-23;45



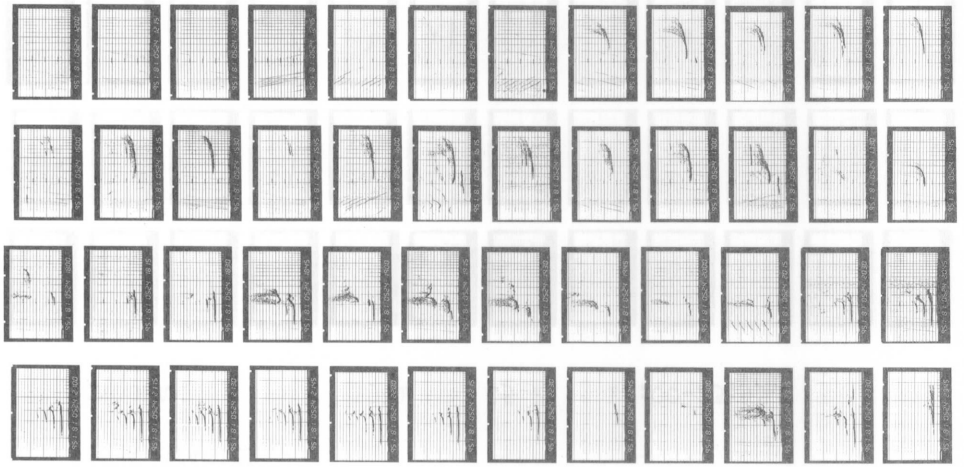
SYOWA STATION

IONOGRAM 1981 05 24 00;00-11;45



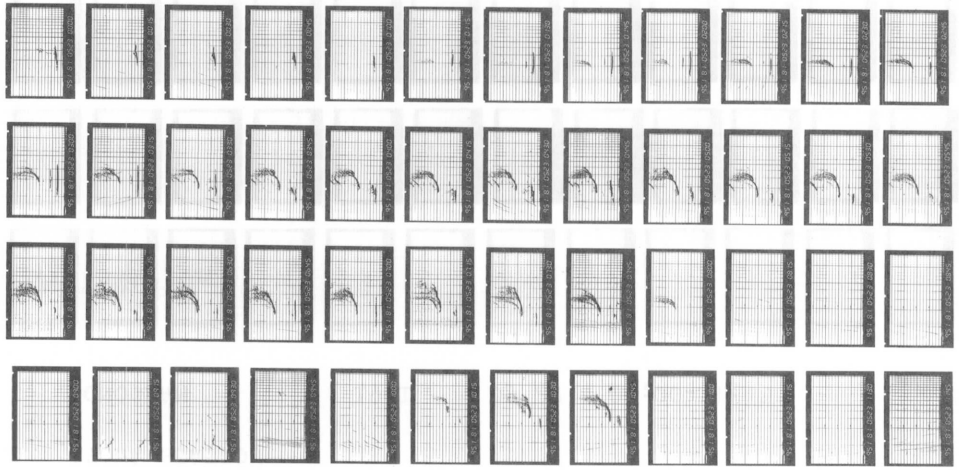
SYOWA STATION

IONOGRAM 1981 05 24 12;00-23;45



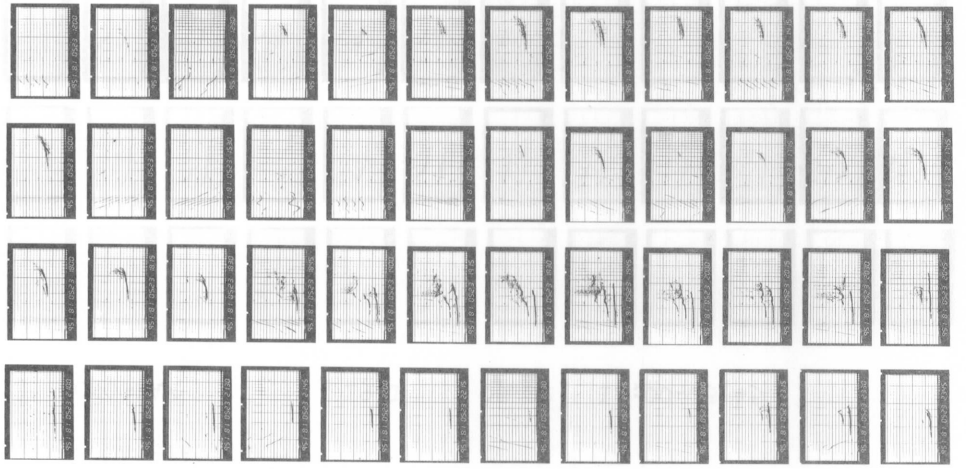
SYOWA STATION

IONOGRAM 1981 05 23 00;00-11;45



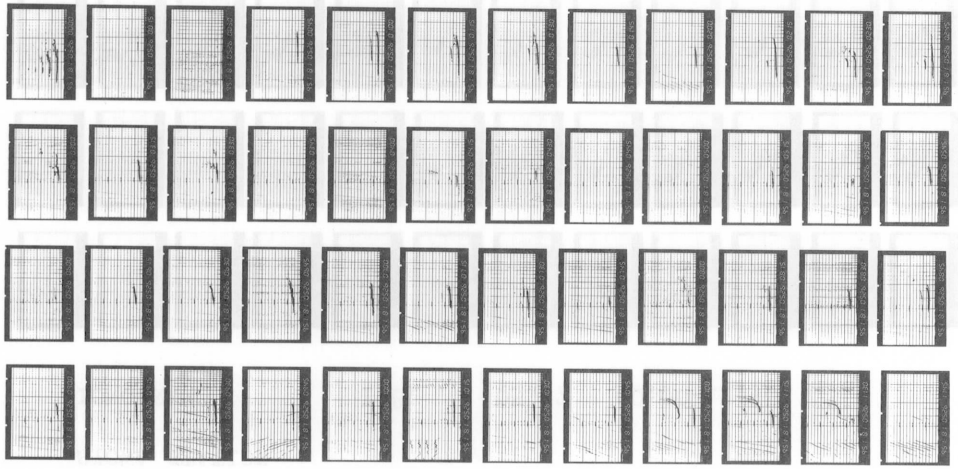
SYOWA STATION

IONOGRAM 1981 05 23 12;00-23;45



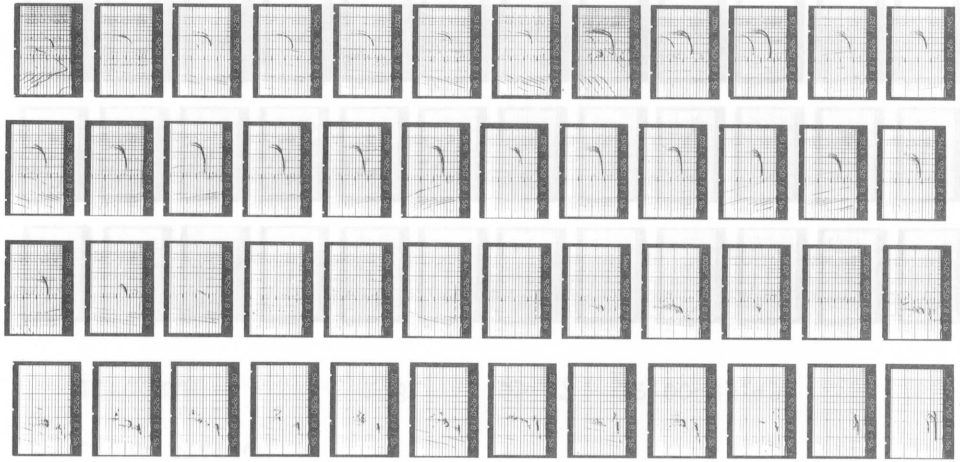
SYOWA STATION

IONOGRAM 1981 05 26 00;00-11;45



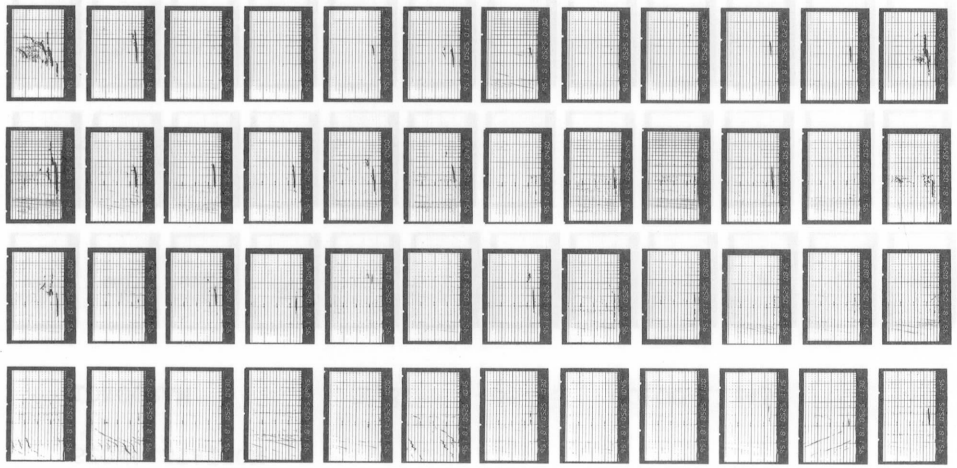
SYOWA STATION

IONOGRAM 1981 05 26 12;00-23;45



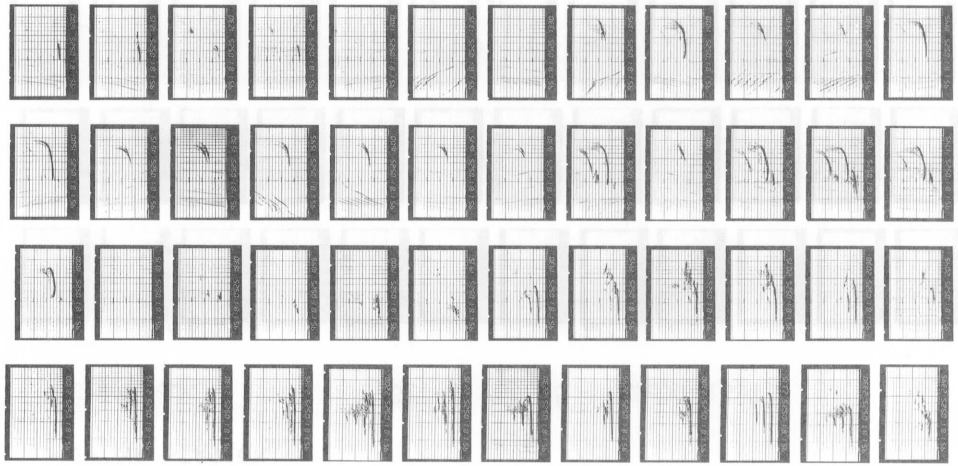
SYOWA STATION

IONOGRAM 1981 05 25 00;00-11;45



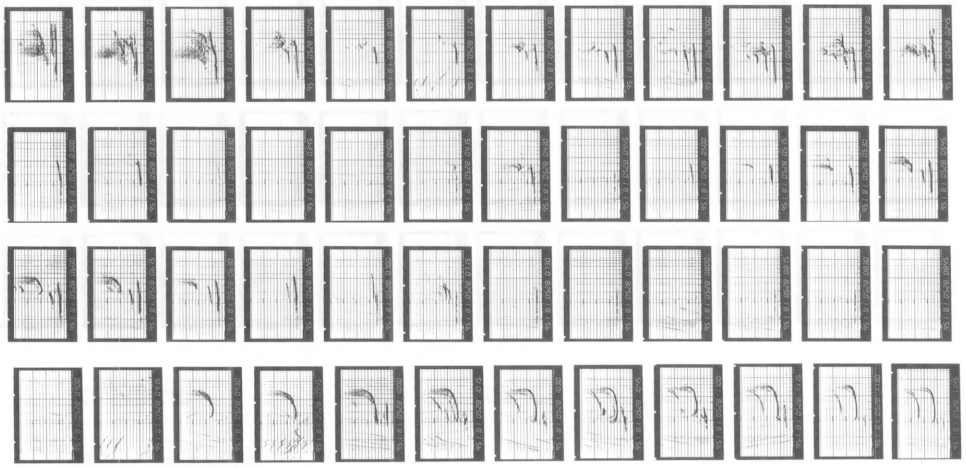
SYOWA STATION

IONOGRAM 1981 05 25 12;00-23;45



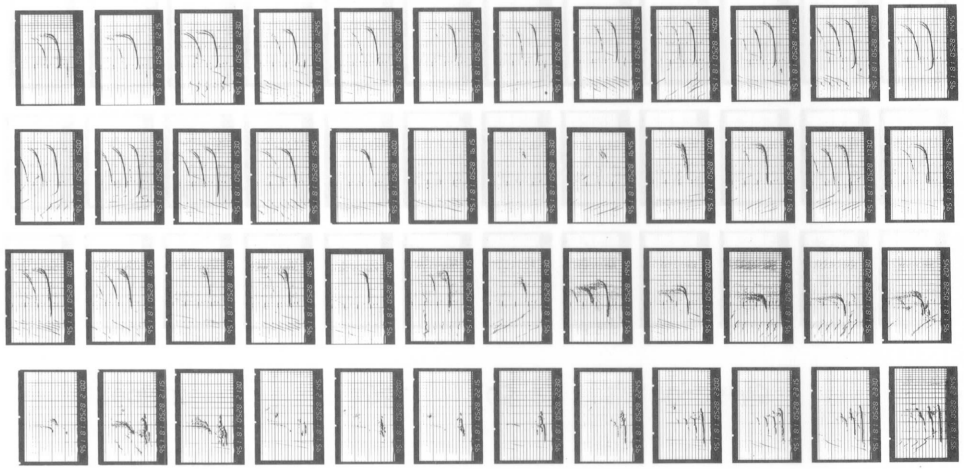
SYOWA STATION

IONOGRAM 1981 05 28 00;00-11;45



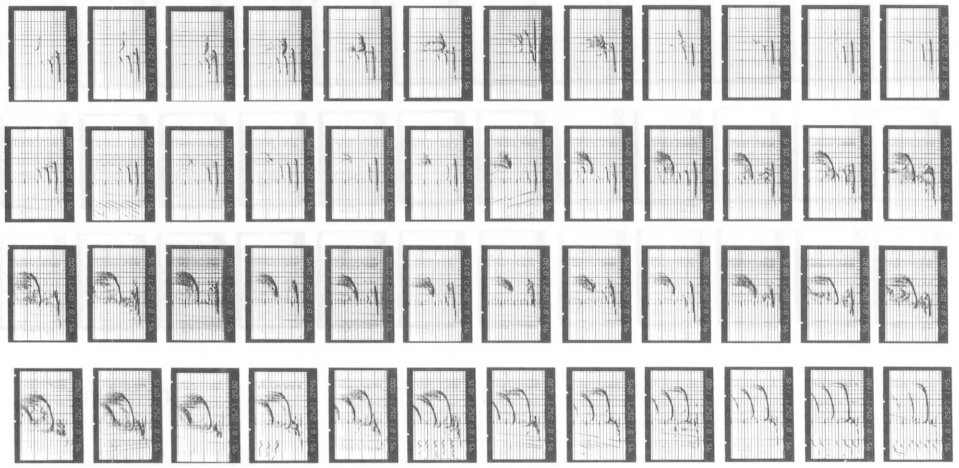
SYOWA STATION

IONOGRAM 1981 05 28 12;00-23;45



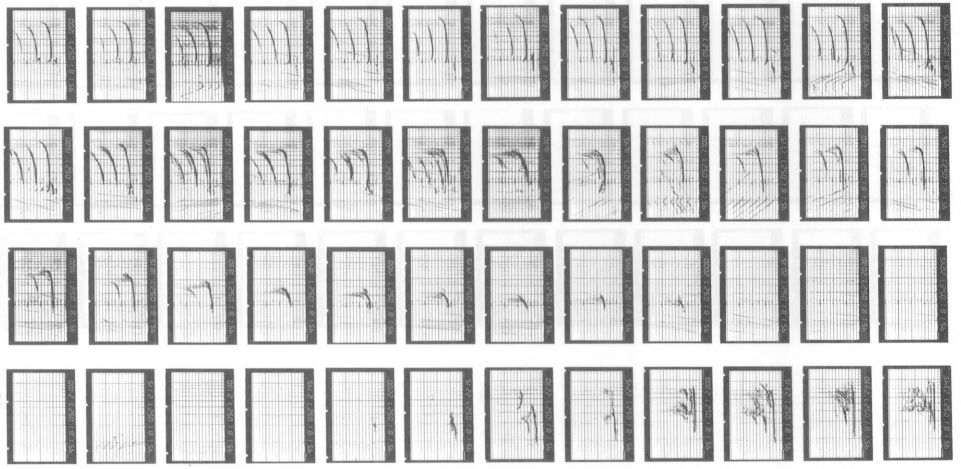
SYOWA STATION

IONOGRAM 1981 05 27 00;00-11;45



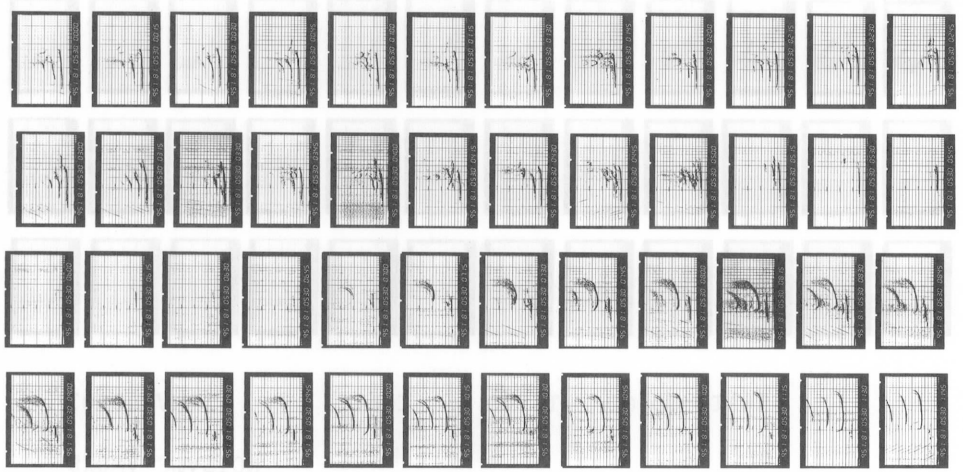
SYOWA STATION

IONOGRAM 1981 05 27 12;00-23;45



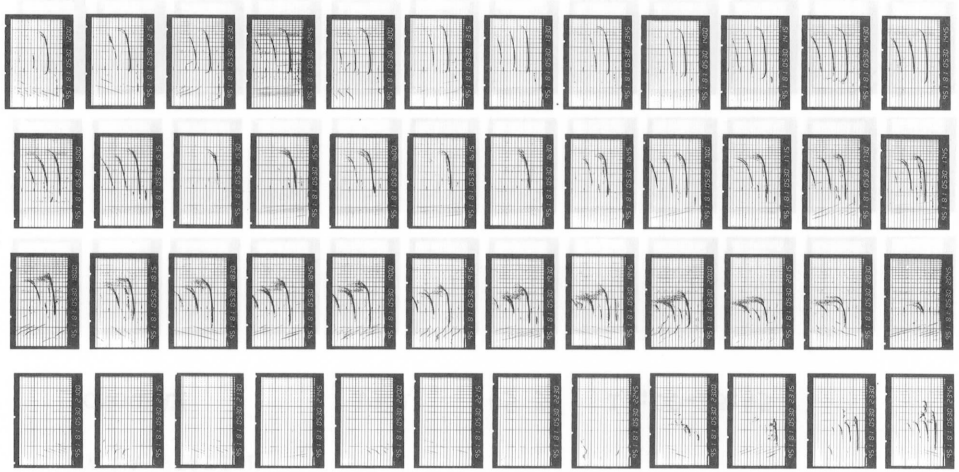
SYOWA STATION

IONOGRAM 1981 05 30 00;00-11;45



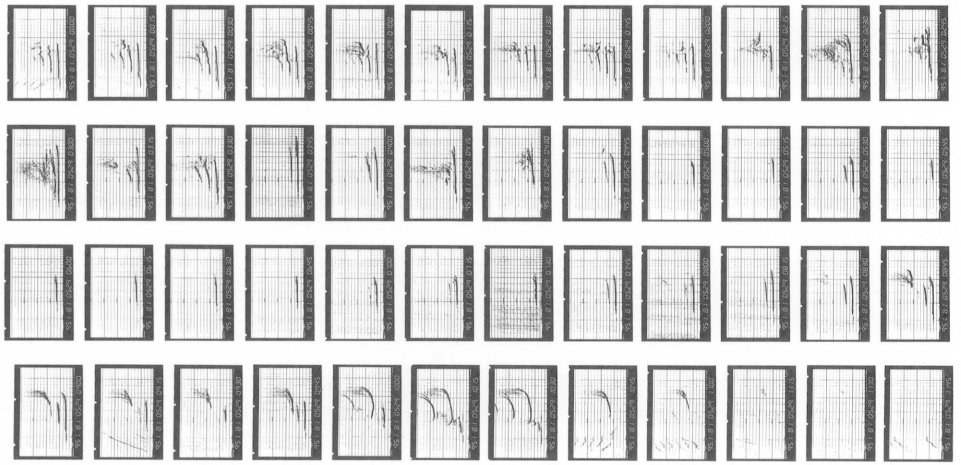
SYOWA STATION

IONOGRAM 1981 05 30 12;00-23;45



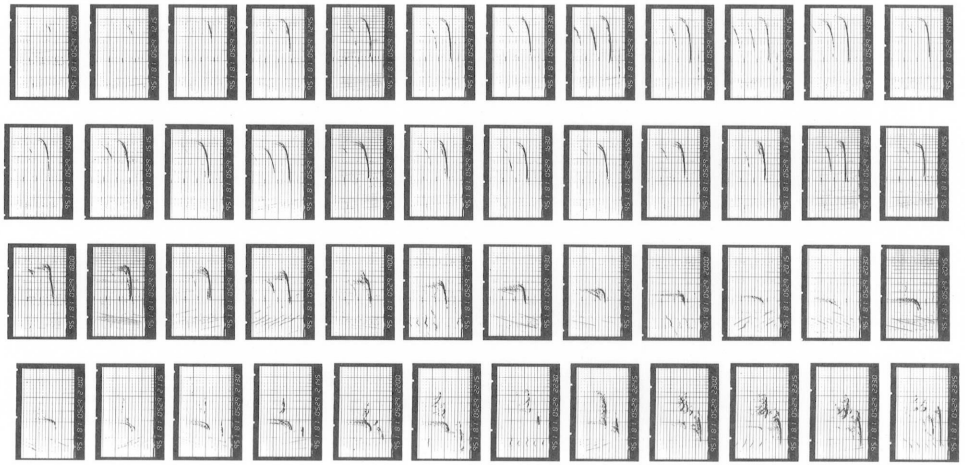
SYOWA STATION

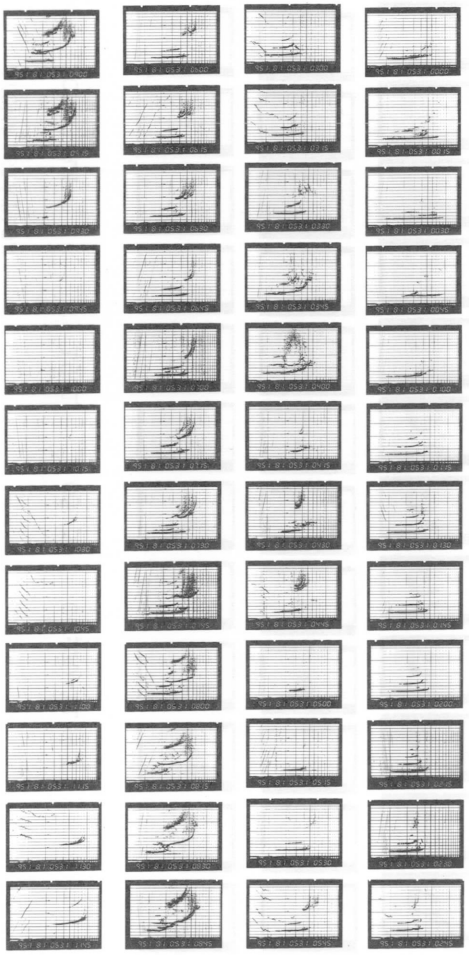
IONOGRAM 1981 05 29 00;00-11;45



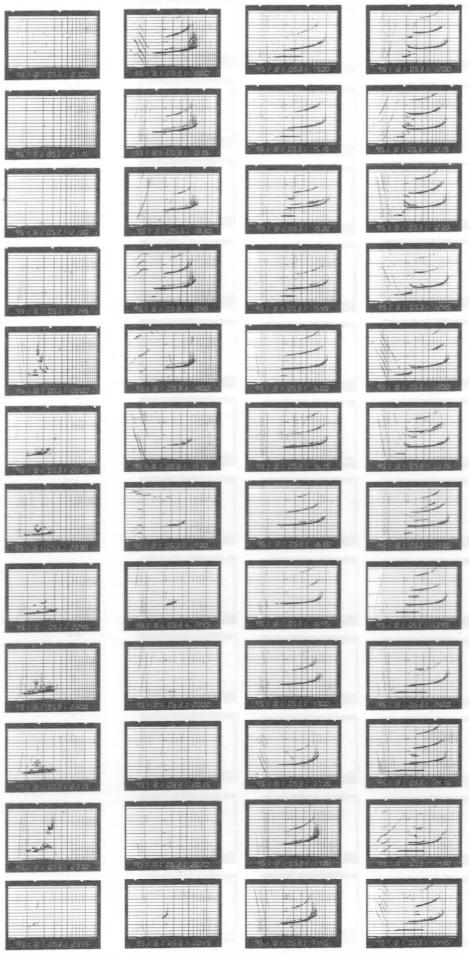
SYOWA STATION

IONOGRAM 1981 05 29 12;00-23;45





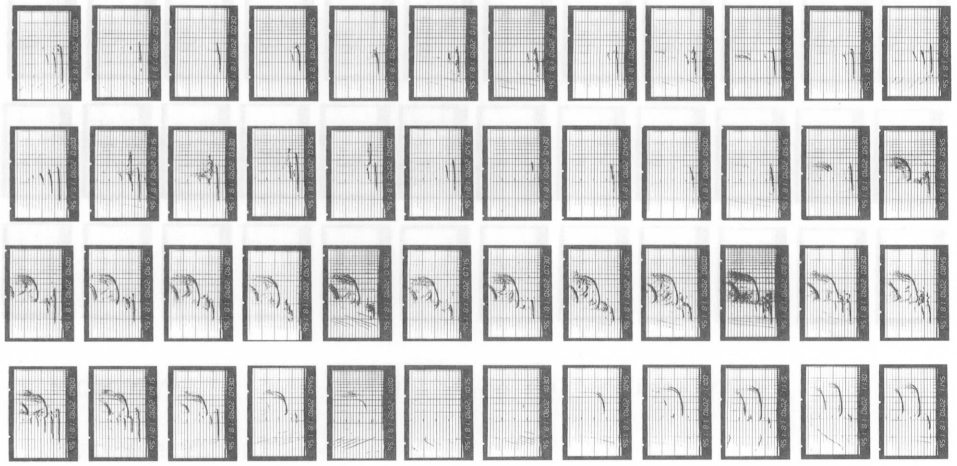
SYOWA STATION
IONOGRAM 1981 05 31 00:00-11:45



SYOWA STATION
IONOGRAM 1981 05 31 12:00-23:45

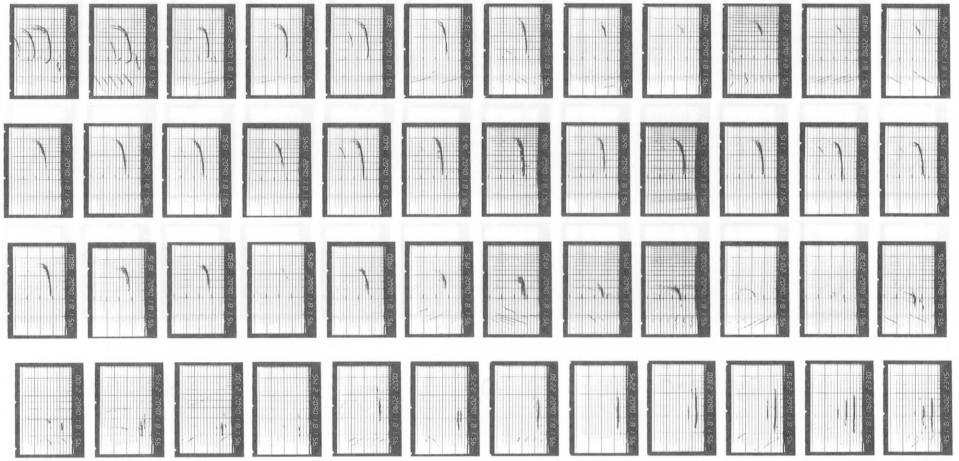
SYOWA STATION

IONOGRAM 1981 06 02 00;00-11;45



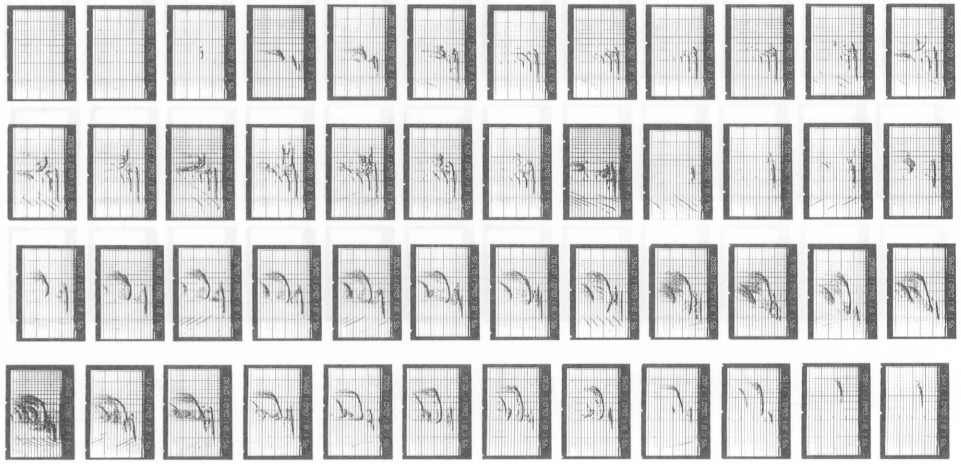
SYOWA STATION

IONOGRAM 1981 06 02 12;00-23;45



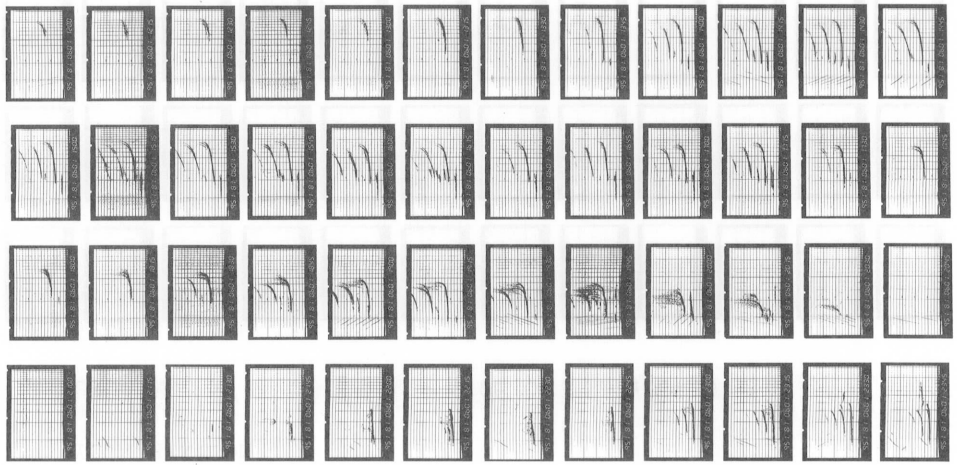
SYOWA STATION

IONOGRAM 1981 06 01 00;00-11;45



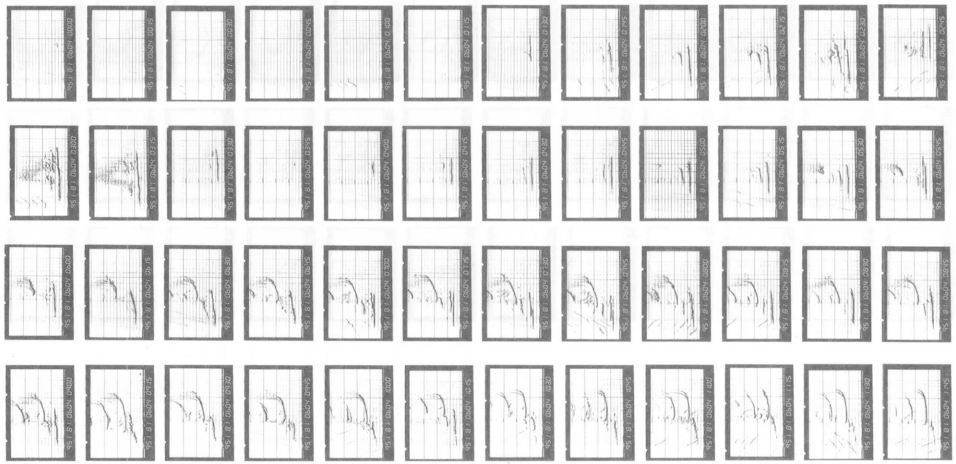
SYOWA STATION

IONOGRAM 1981 06 01 12;00-23;45



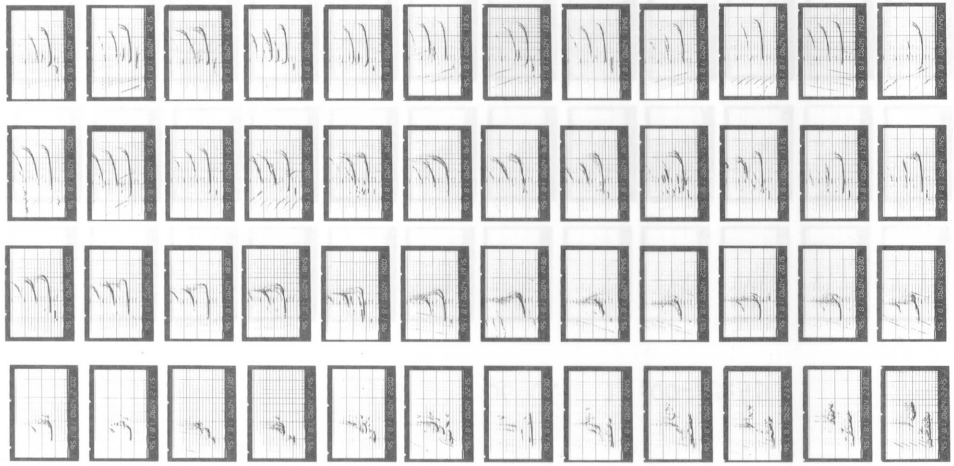
SYOWA STATION

IONOGRAM 1981 06 04 00;00-11;45



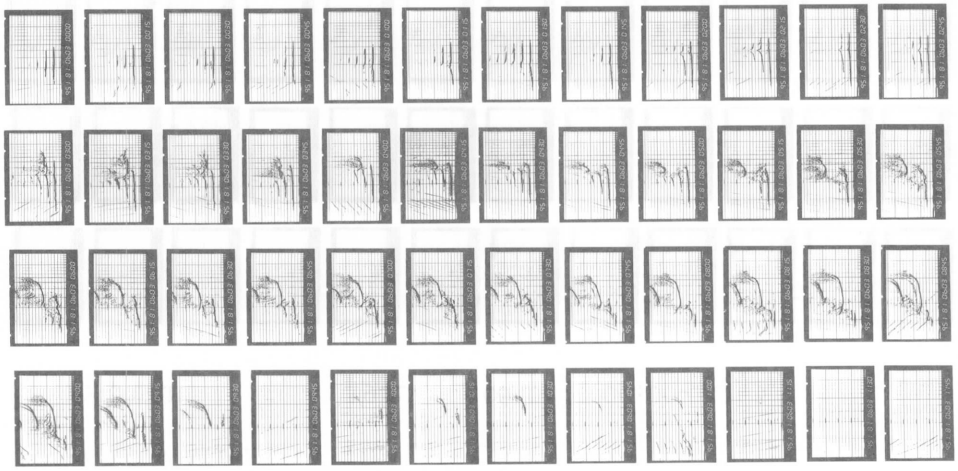
SYOWA STATION

IONOGRAM 1981 06 04 12;00-23;45



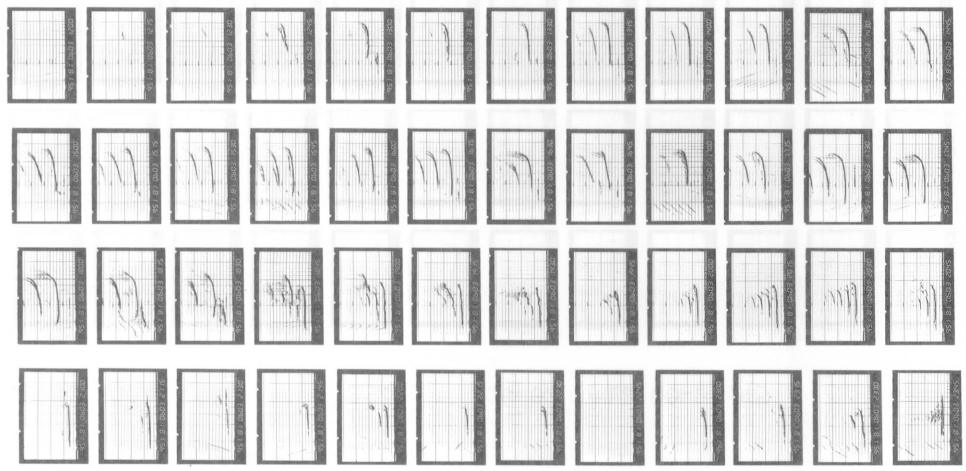
SYOWA STATION

IONOGRAM 1981 06 03 00;00-11;45



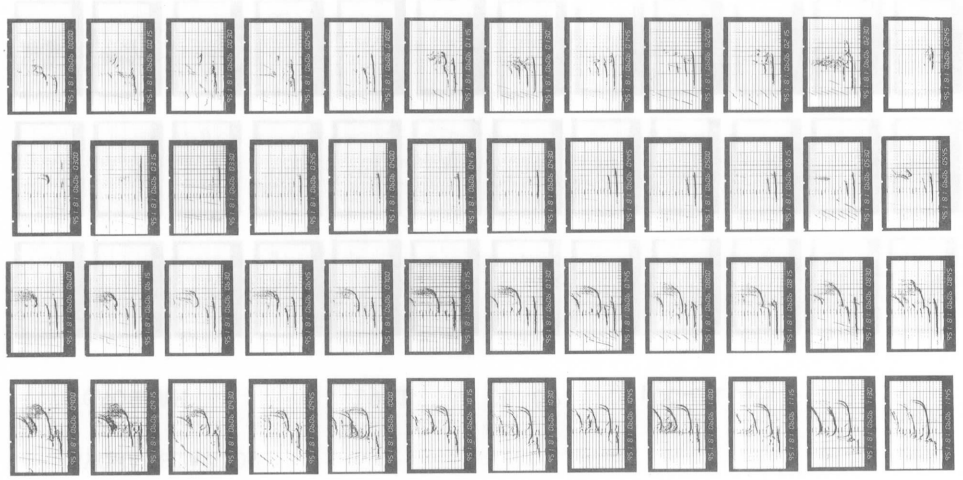
SYOWA STATION

IONOGRAM 1981 06 03 12;00-23;45



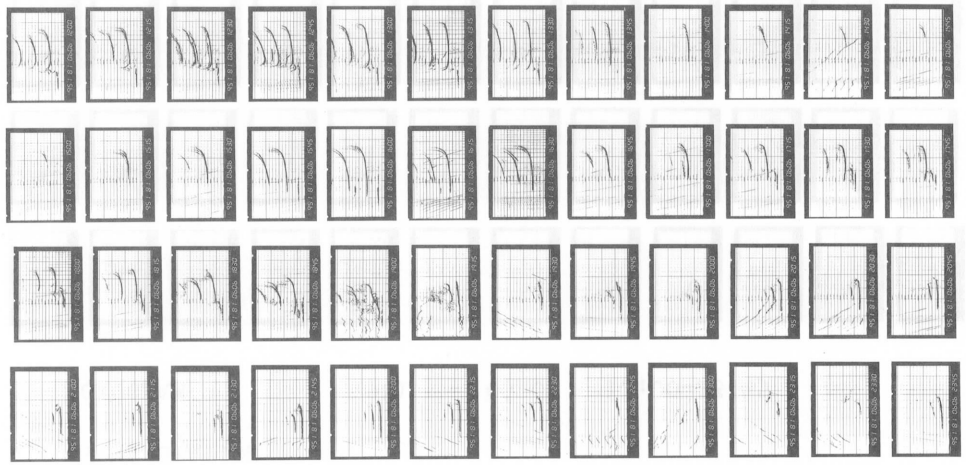
SYOWA STATION

IONOGRAM 1981 06 06 00;00-11;45



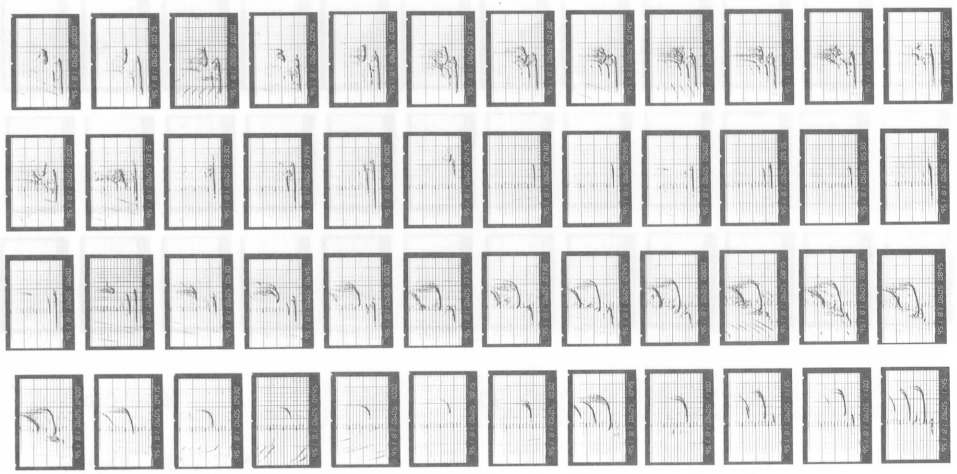
SYOWA STATION

IONOGRAM 1981 06 06 12;00-23;45



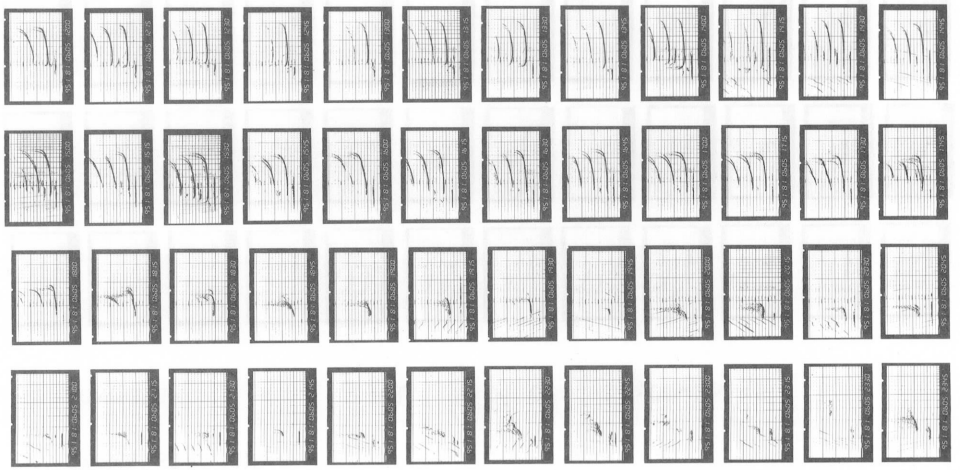
SYOWA STATION

IONOGRAM 1981 06 05 00;00-11;45



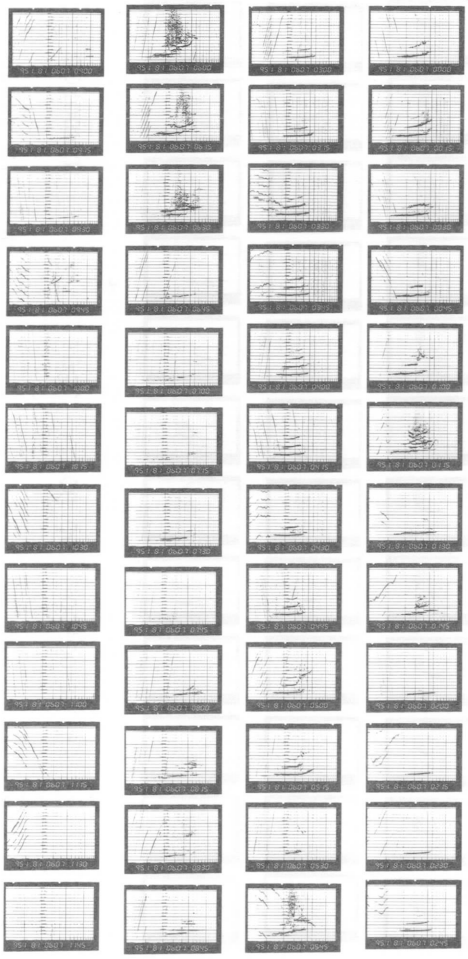
SYOWA STATION

IONOGRAM 1981 06 05 12;00-23;45



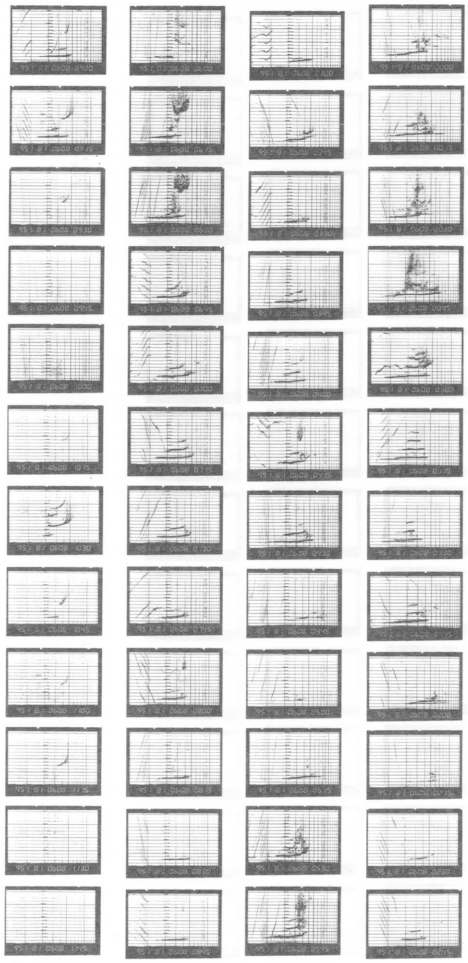
SYOWA STATION

IONOGRAM 1981 06 07 00:00-11:45



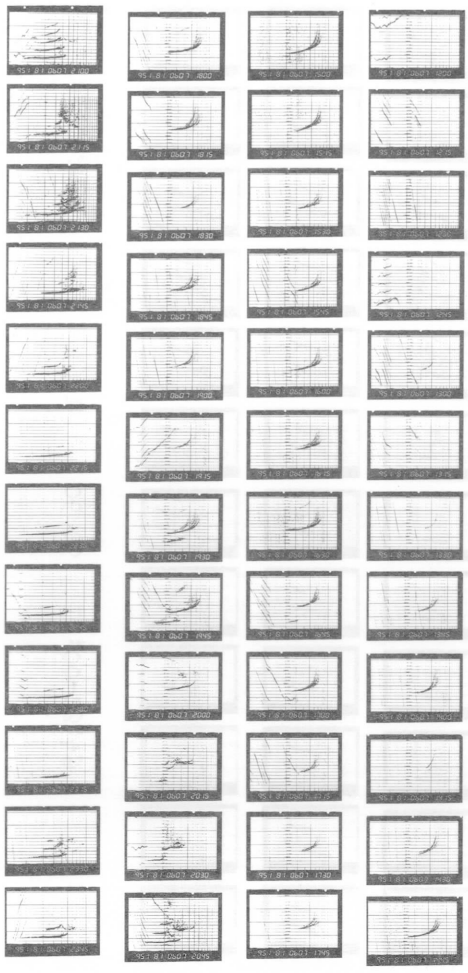
SYOWA STATION

IONOGRAM 1981 06 08 00:00-11:45



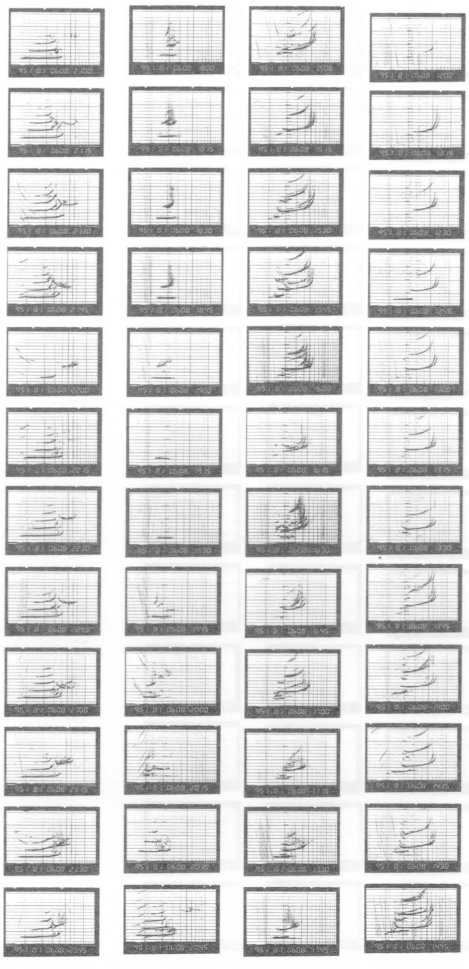
SYOWA STATION

IONOGRAM 1981 06 07 12:00-23:45



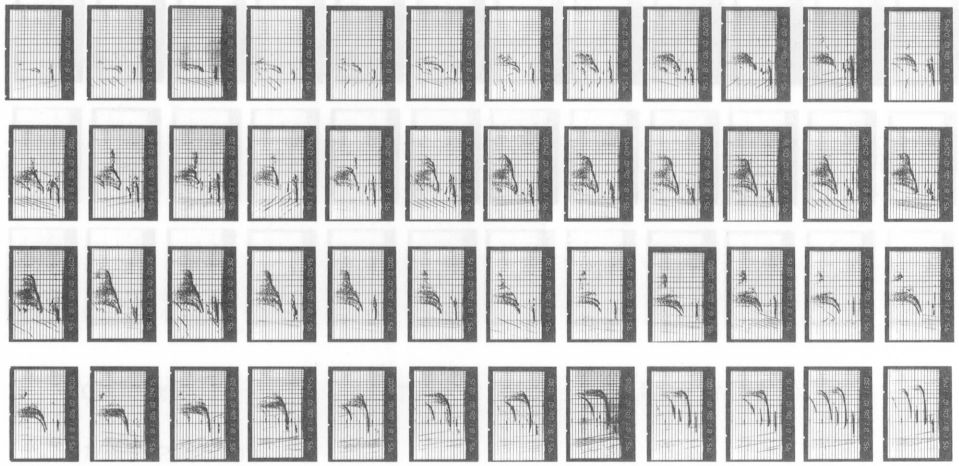
SYOWA STATION

IONOGRAM 1981 06 08 12:00-23:45



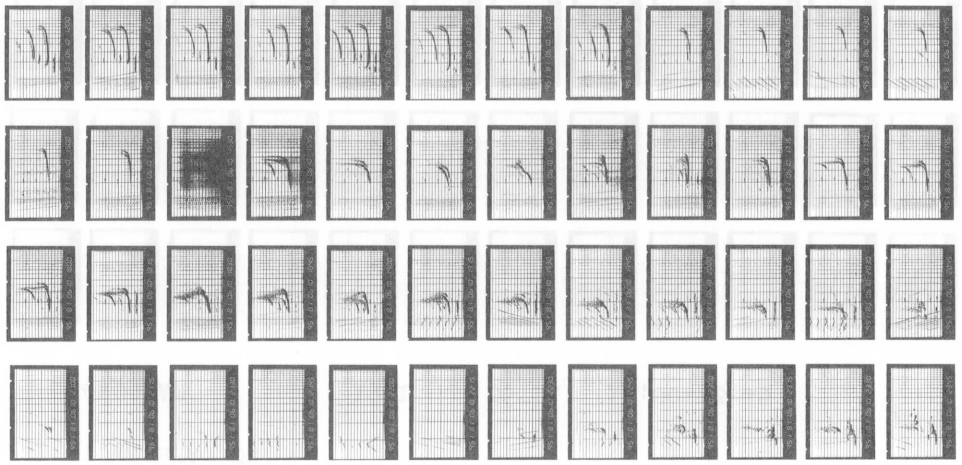
SYOWA STATION

IONOGRAM 1981 06 10 00;00-11;45



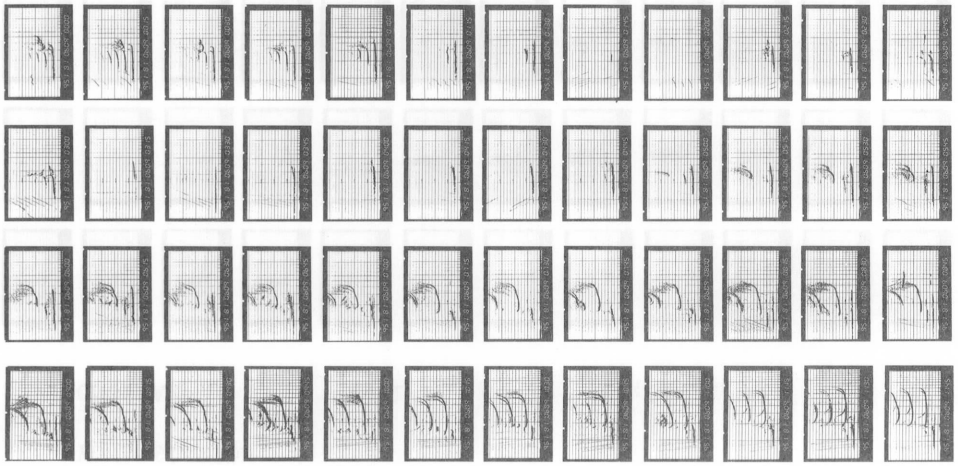
SYOWA STATION

IONOGRAM 1981 06 10 12;00-23;45



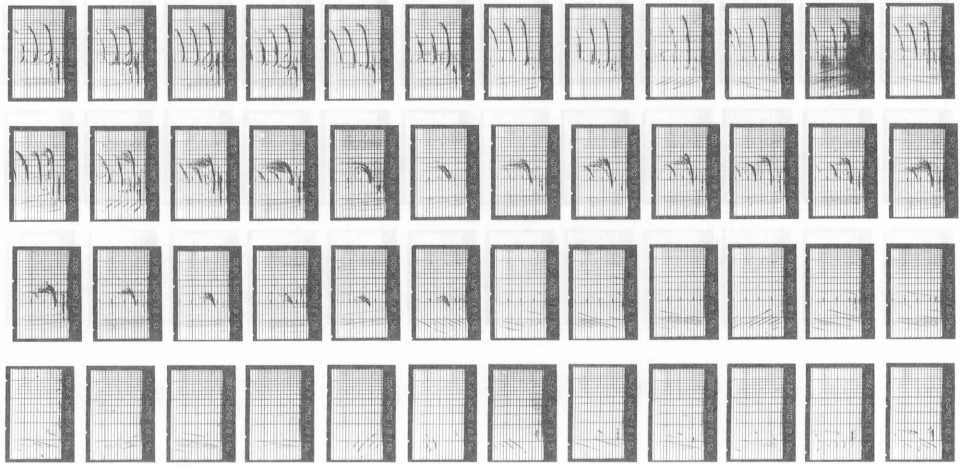
SYOWA STATION

IONOGRAM 1981 06 09 00;00-11;45



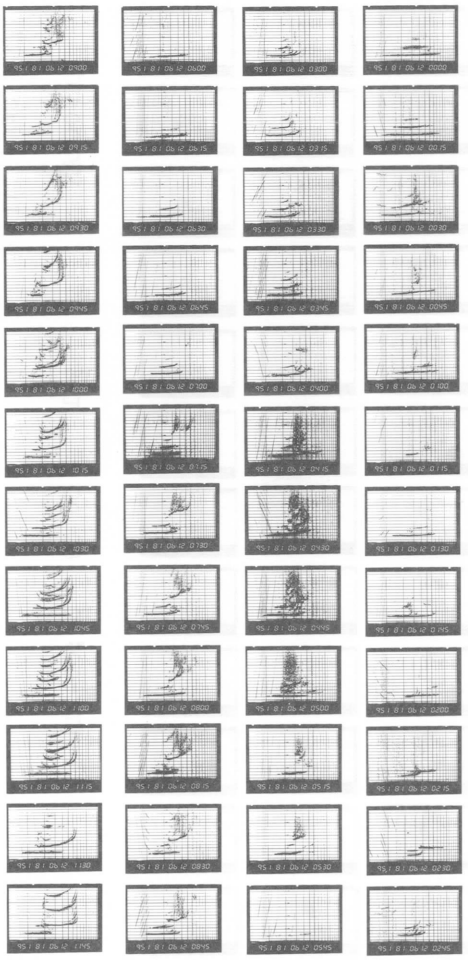
SYOWA STATION

IONOGRAM 1981 06 09 12;00-23;45



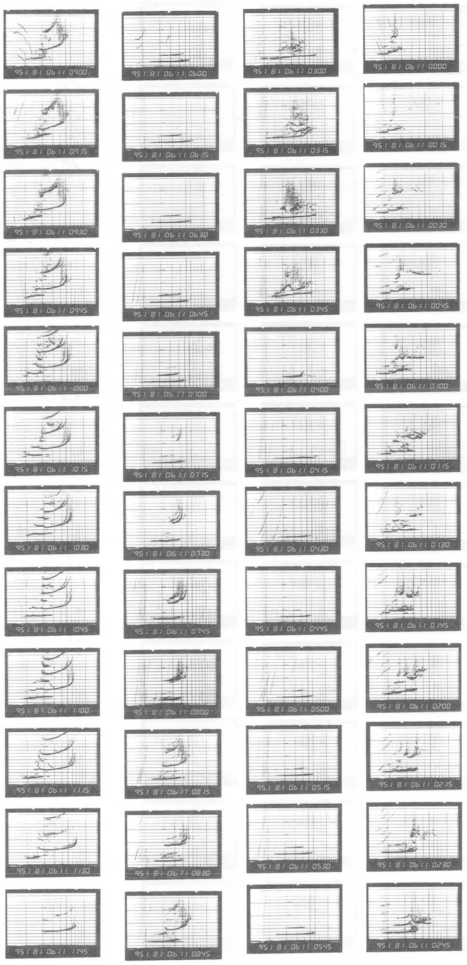
SYOWA STATION

IONOGRAM 1981 06 12 00;00-11;45



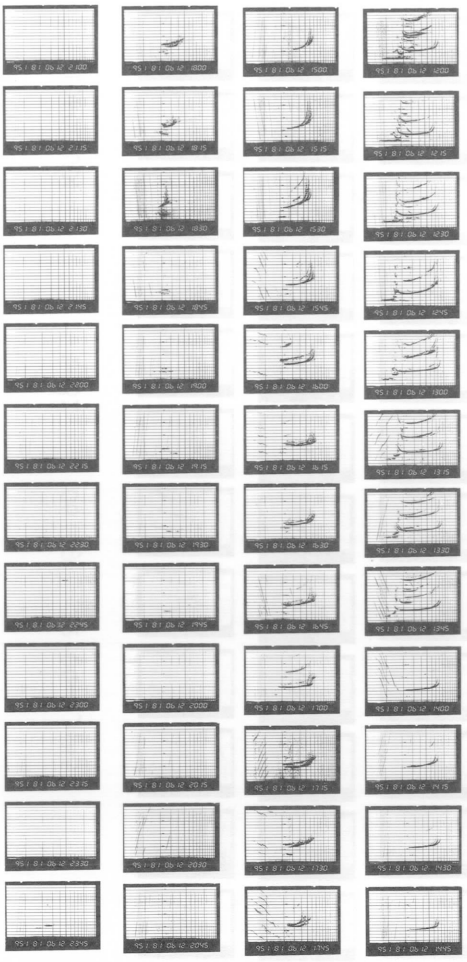
SYOWA STATION

IONOGRAM 1981 06 11 00;00-11;45



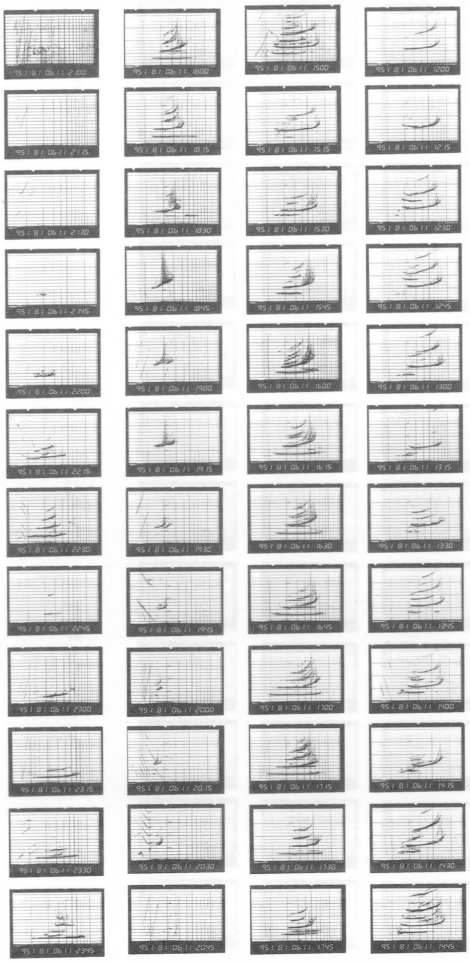
SYOWA STATION

IONOGRAM 1981 06 12 12;00-23;45



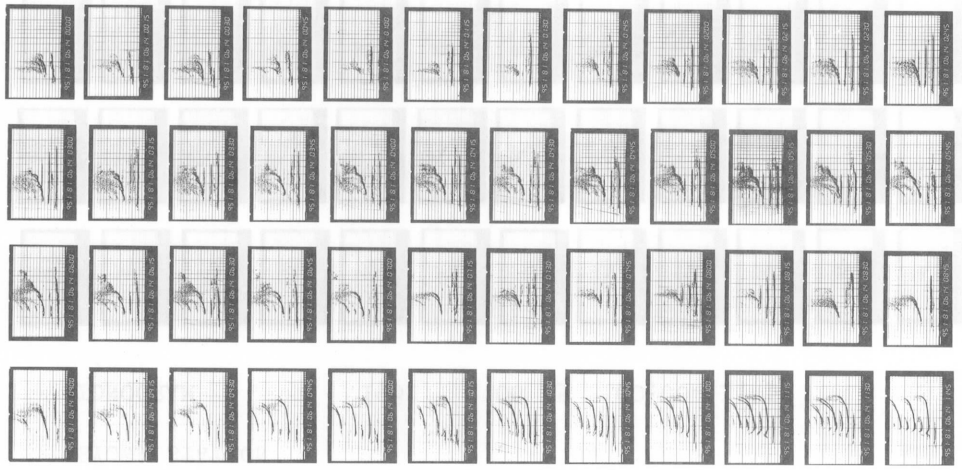
SYOWA STATION

IONOGRAM 1981 06 11 12;00-23;45



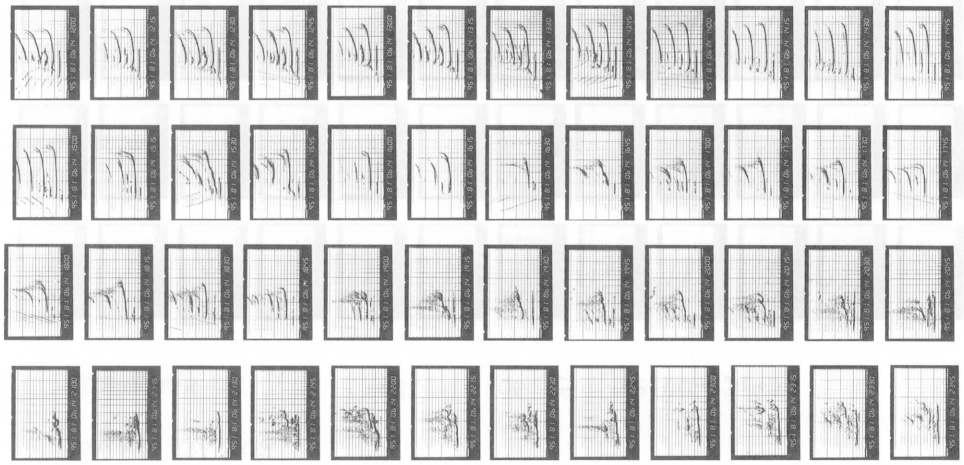
SYOWA STATION

IONOGRAM 1981 06 14 00;00-11;45



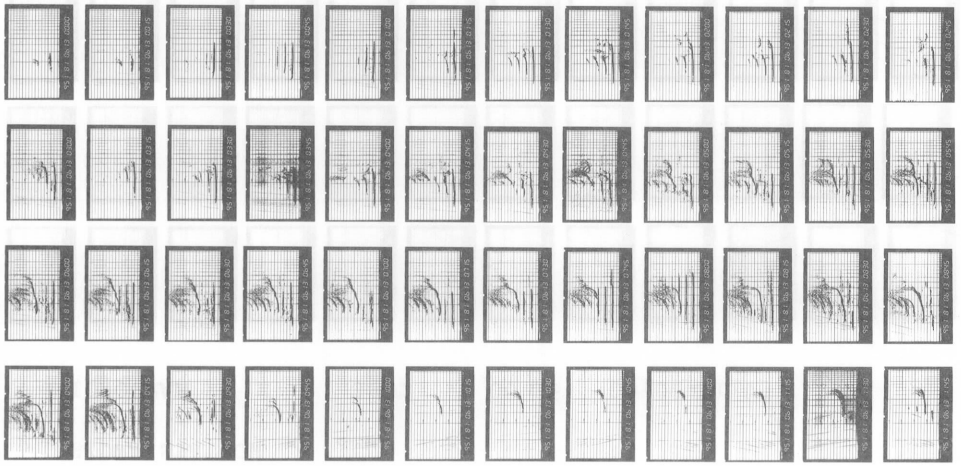
SYOWA STATION

IONOGRAM 1981 06 14 12;00-23;45



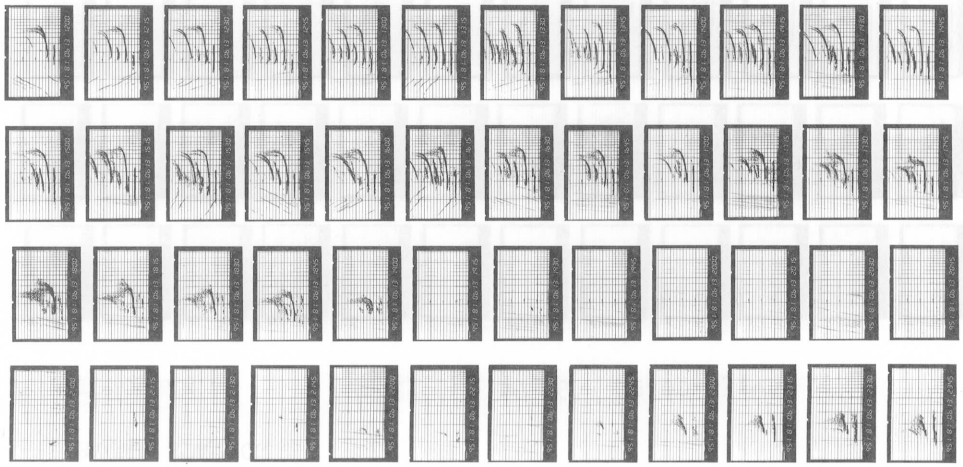
SYOWA STATION

IONOGRAM 1981 06 13 00;00-11;45



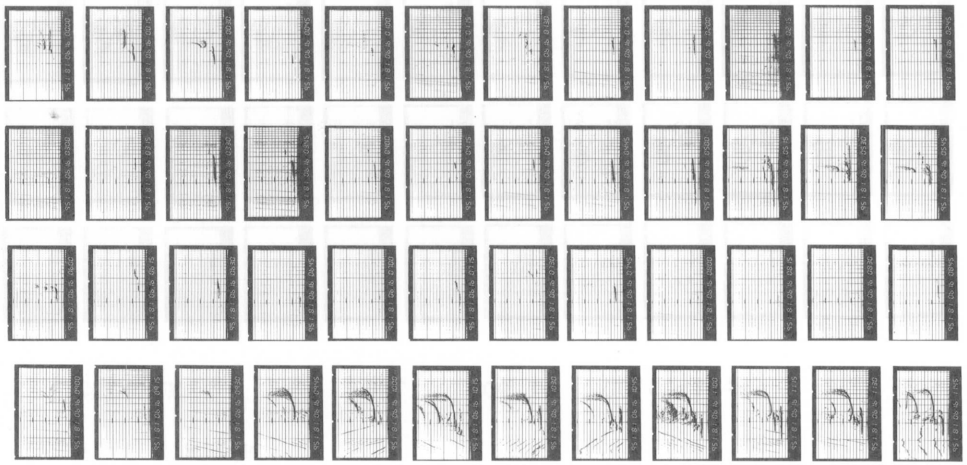
SYOWA STATION

IONOGRAM 1981 06 13 12;00-23;45



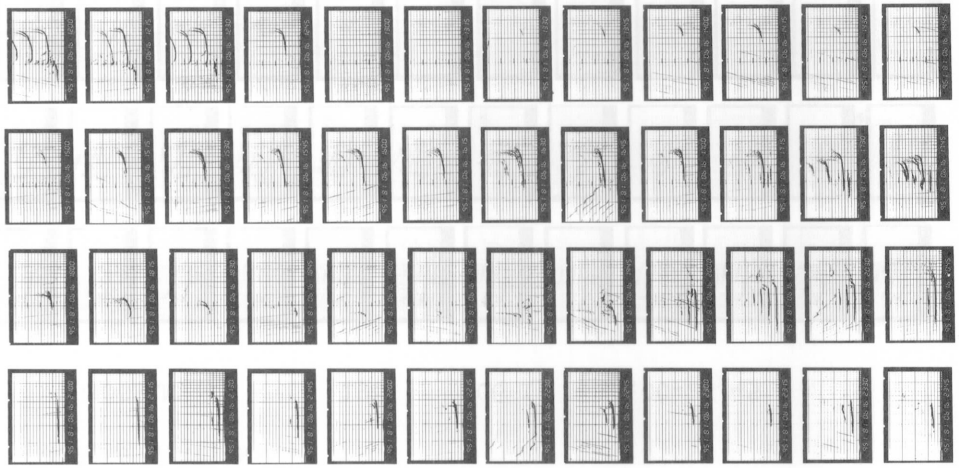
SYOWA STATION

IONOGRAM 1981 06 16 00;00-11;45



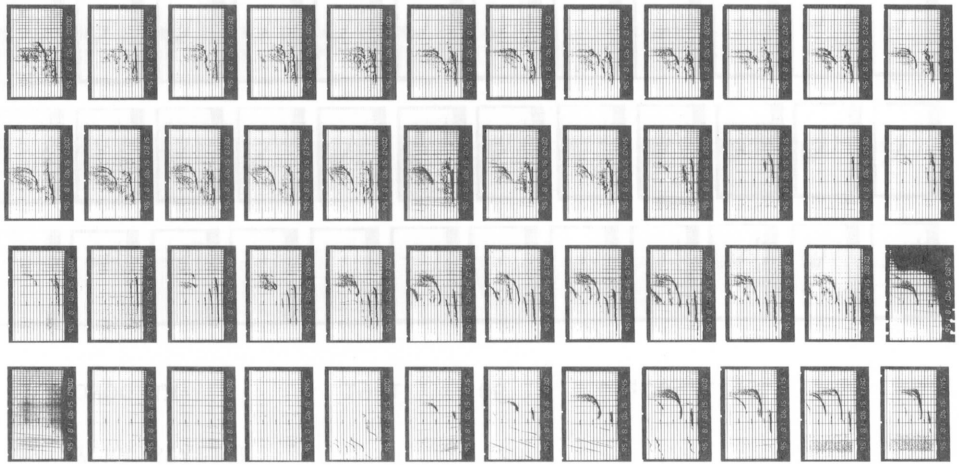
SYOWA STATION

IONOGRAM 1981 06 16 12;00-23;45



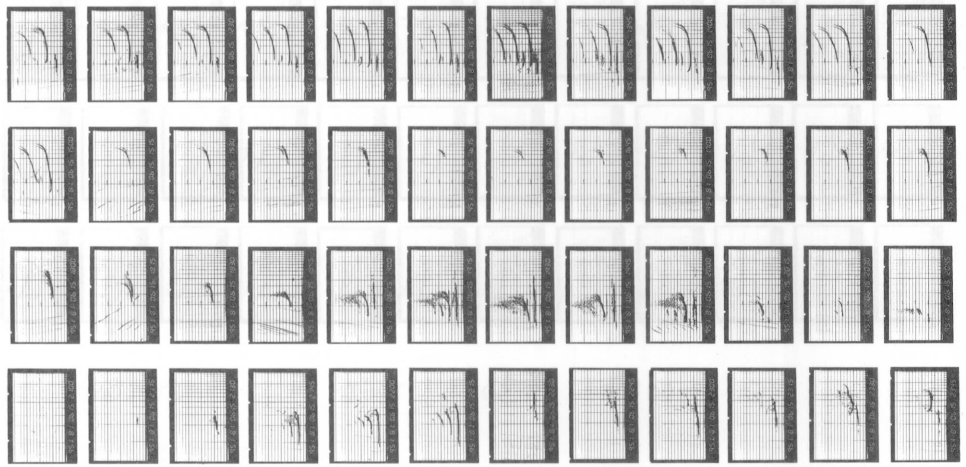
SYOWA STATION

IONOGRAM 1981 06 15 00;00-11;45



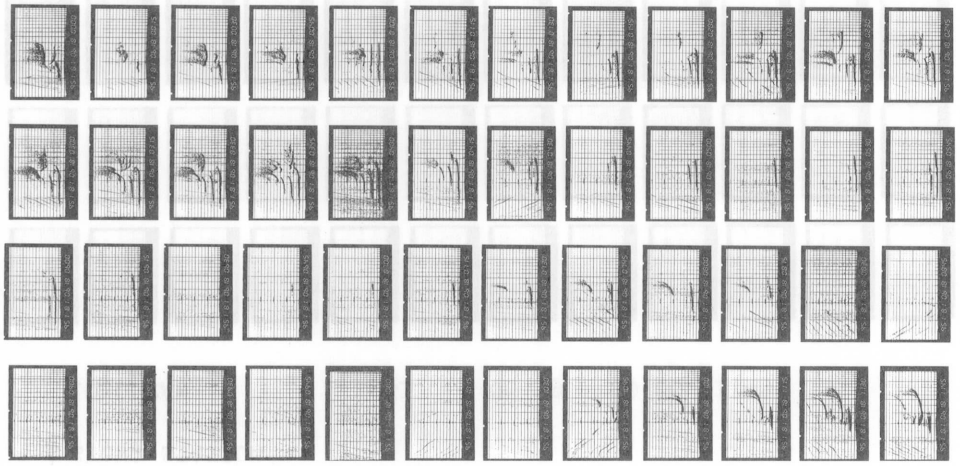
SYOWA STATION

IONOGRAM 1981 06 15 12;00-23;45



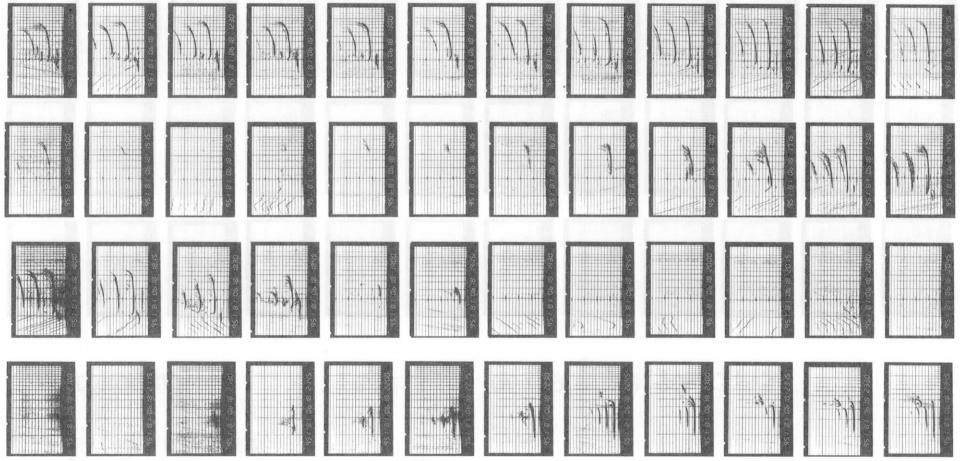
SYOWA STATION

IONOGRAM 1981 06 18 00;00-11;45



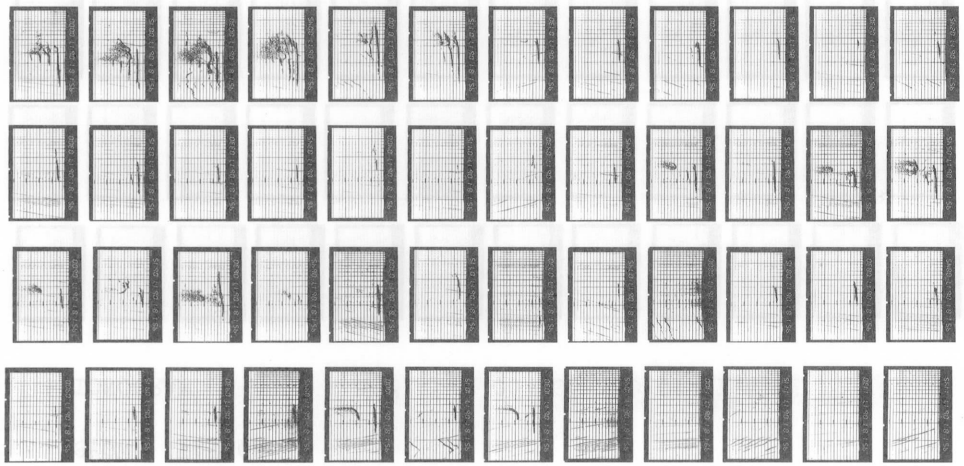
SYOWA STATION

IONOGRAM 1981 06 18 12;00-23;45



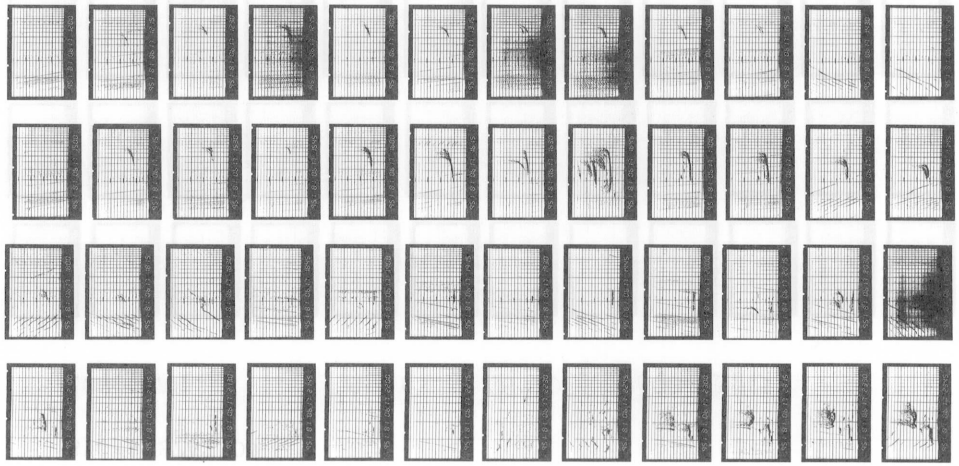
SYOWA STATION

IONOGRAM 1981 06 17 00;00-11;45



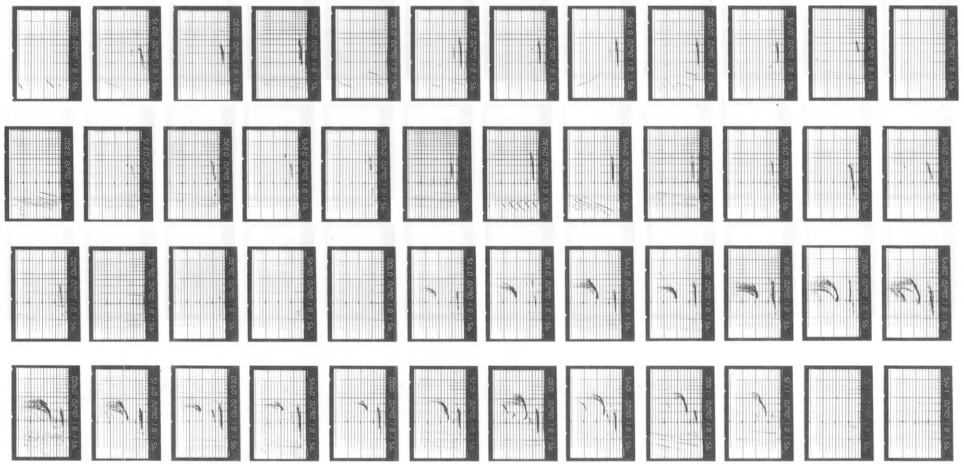
SYOWA STATION

IONOGRAM 1981 06 17 12;00-23;45



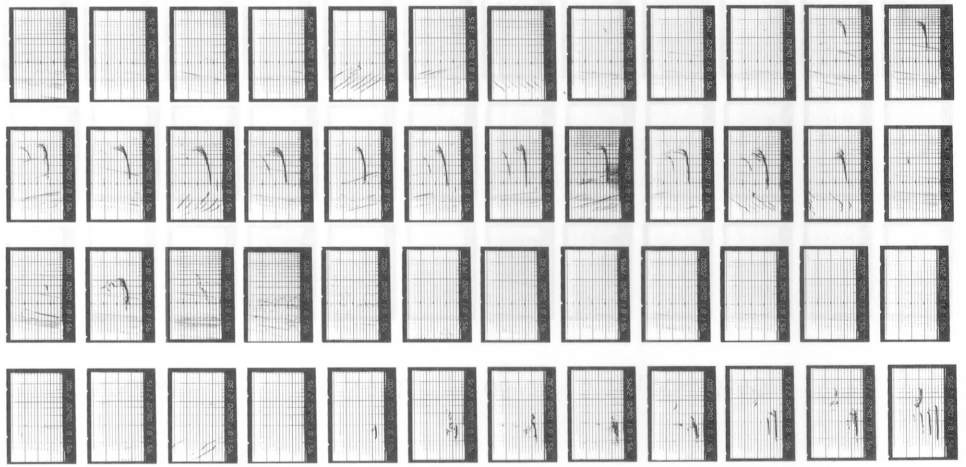
SYOWA STATION

IONOGRAM 1981 06 20 00;00-11;45



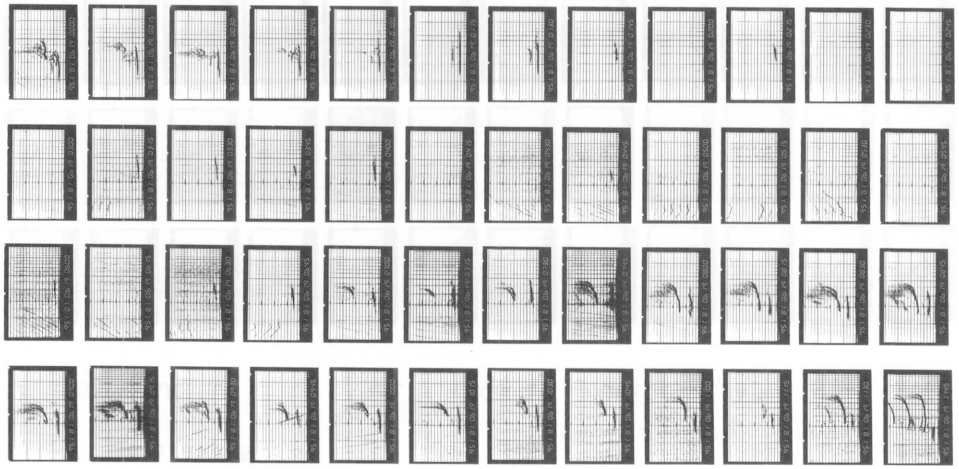
SYOWA STATION

IONOGRAM 1981 06 20 12;00-23;45



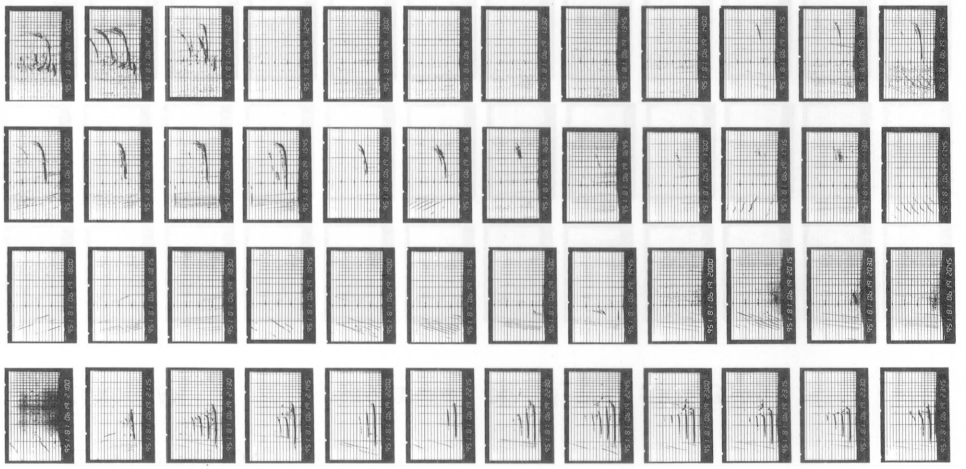
SYOWA STATION

IONOGRAM 1981 06 19 00;00-11;45



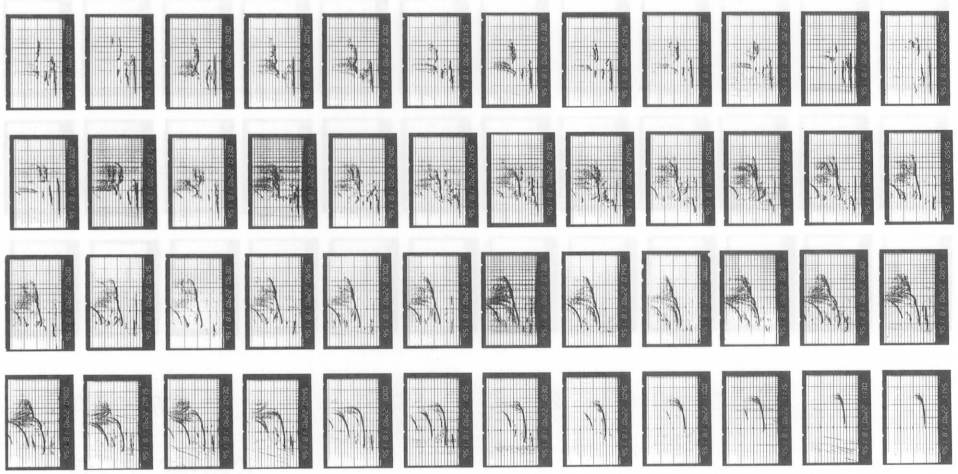
SYOWA STATION

IONOGRAM 1981 06 19 12;00-23;45



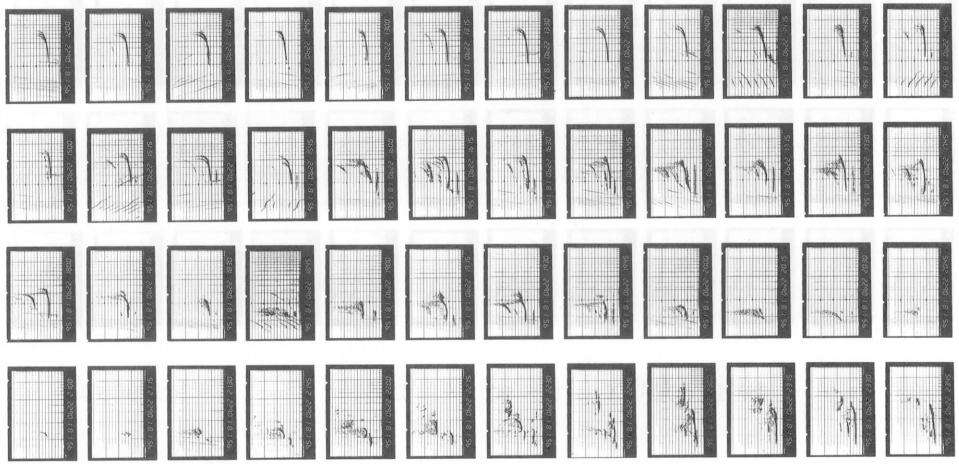
SYOWA STATION

IONOGRAM 1981 06 22 00;00-11;45



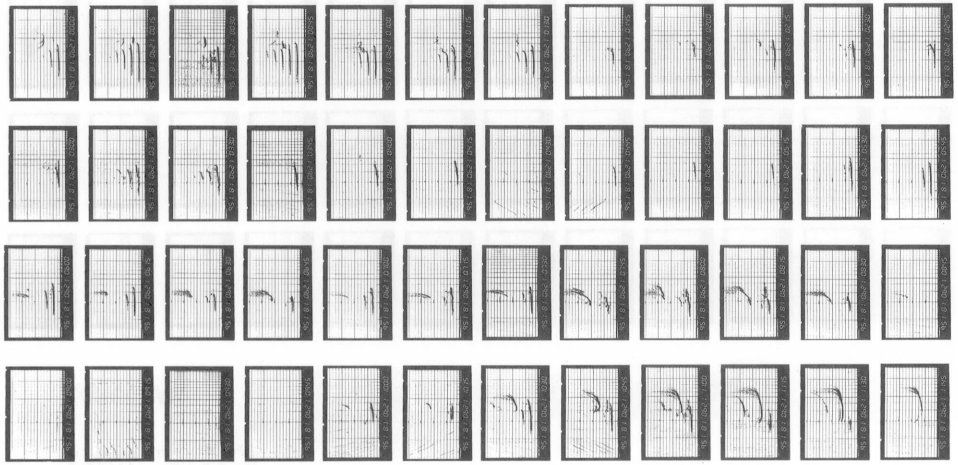
SYOWA STATION

IONOGRAM 1981 06 22 12;00-23;45



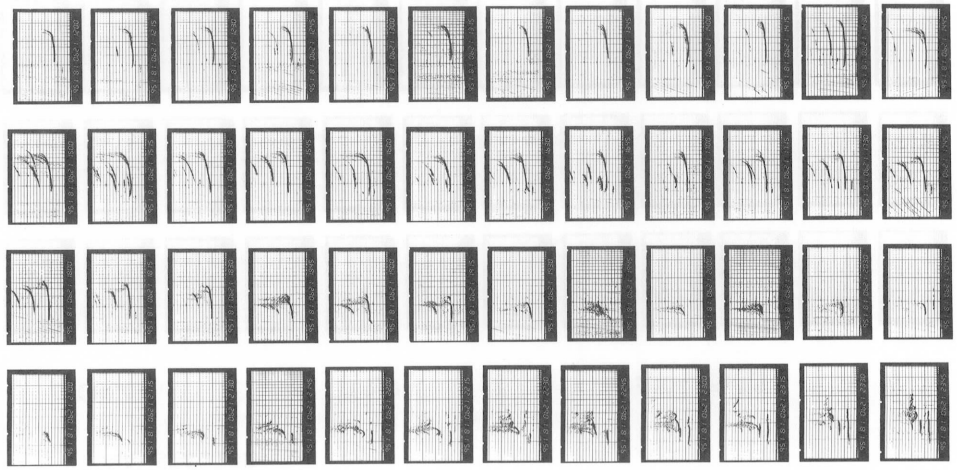
SYOWA STATION

IONOGRAM 1981 06 21 00;00-11;45



SYOWA STATION

IONOGRAM 1981 06 21 12;00-23;45



SYOWA STATION

IONOGRAM 1981 06 24 00:00-11:45

SYOWA STATION

IONOGRAM 1981 06 23 00:00-11:45

SYOWA STATION

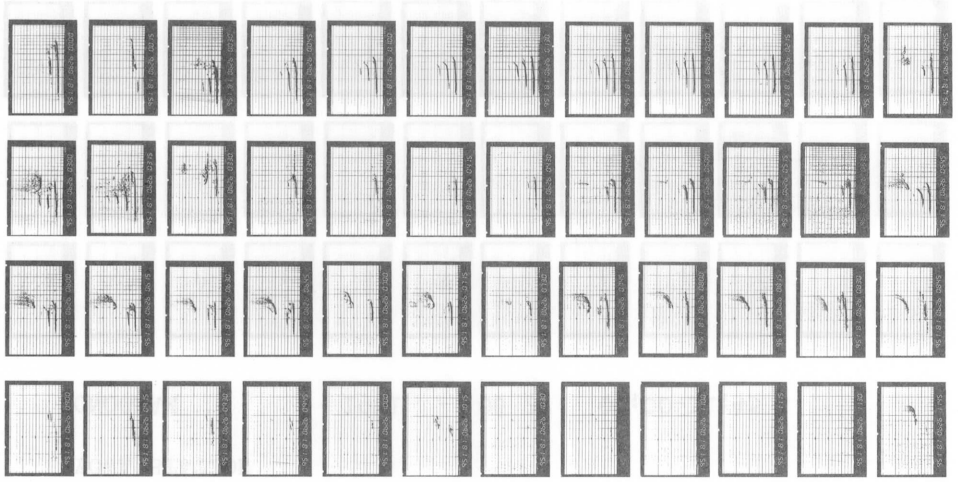
IONOGRAM 1981 06 24 12:00-23:45

SYOWA STATION

IONOGRAM 1981 06 23 12:00-23:45

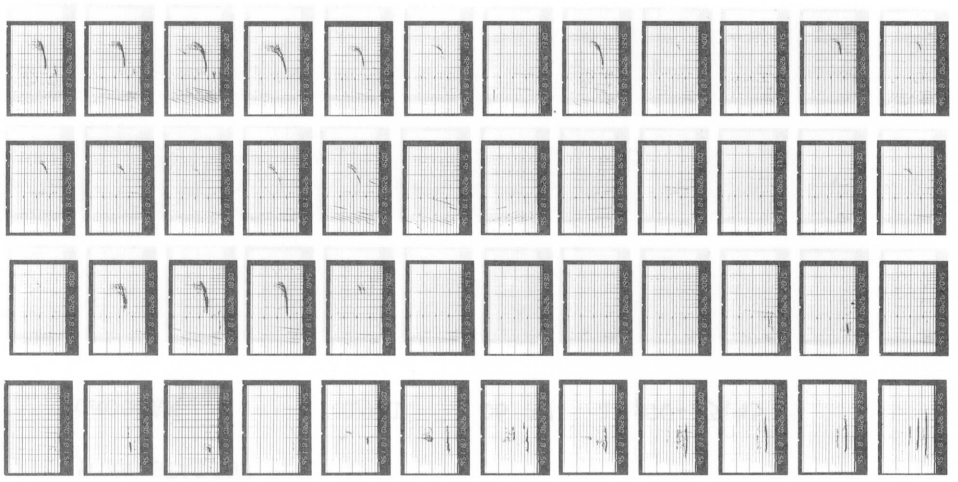
SYOWA STATION

IONOGRAM 1981 06 26 00;00-11;45



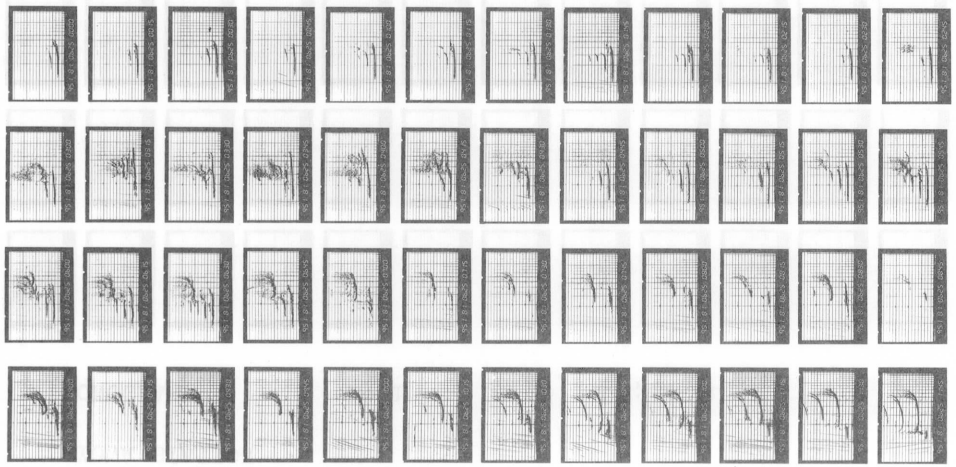
SYOWA STATION

IONOGRAM 1981 06 26 12;00-23;45



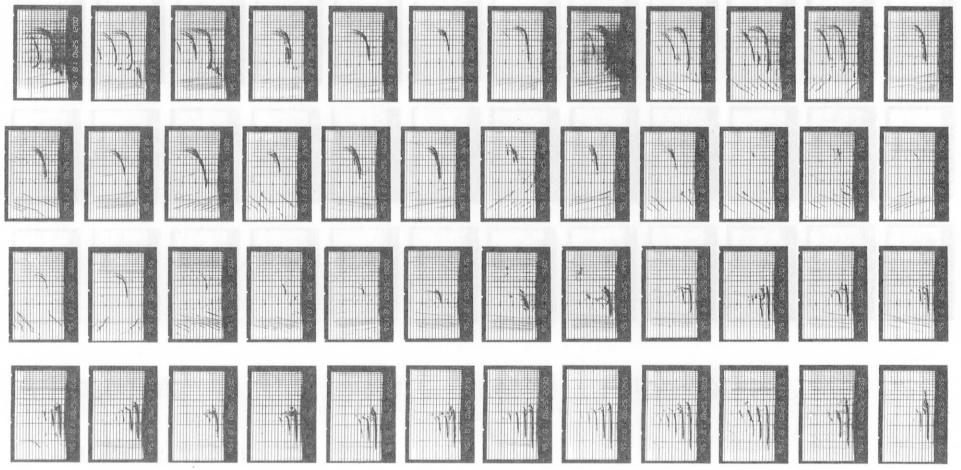
SYOWA STATION

IONOGRAM 1981 06 25 00;00-11;45



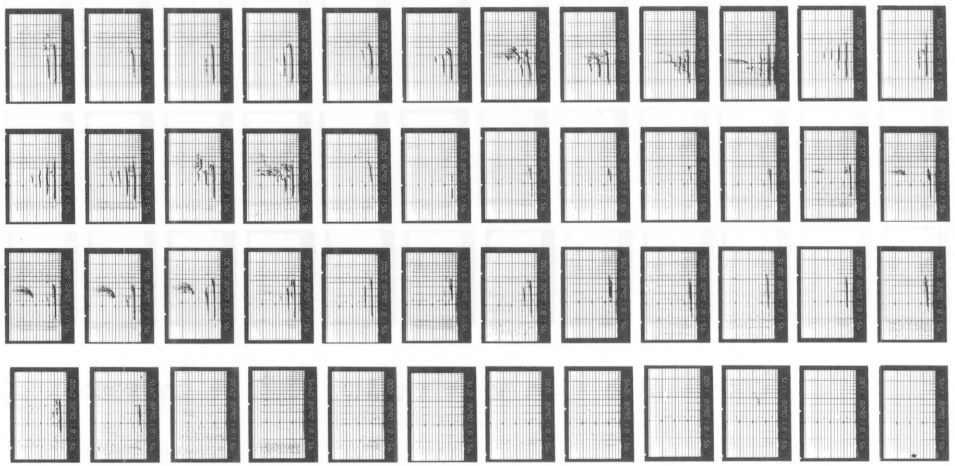
SYOWA STATION

IONOGRAM 1981 06 25 12;00-23;45



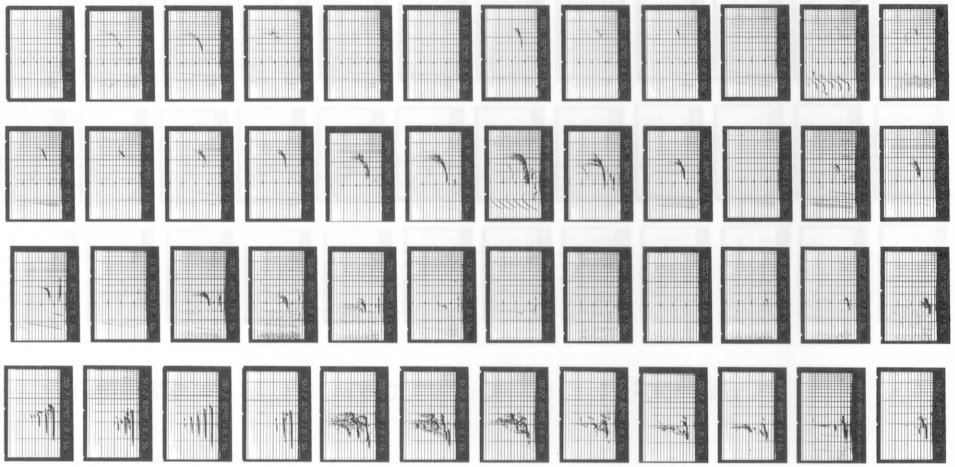
SYOWA STATION

IONOGRAM 1981 06 28 00;00-11;45



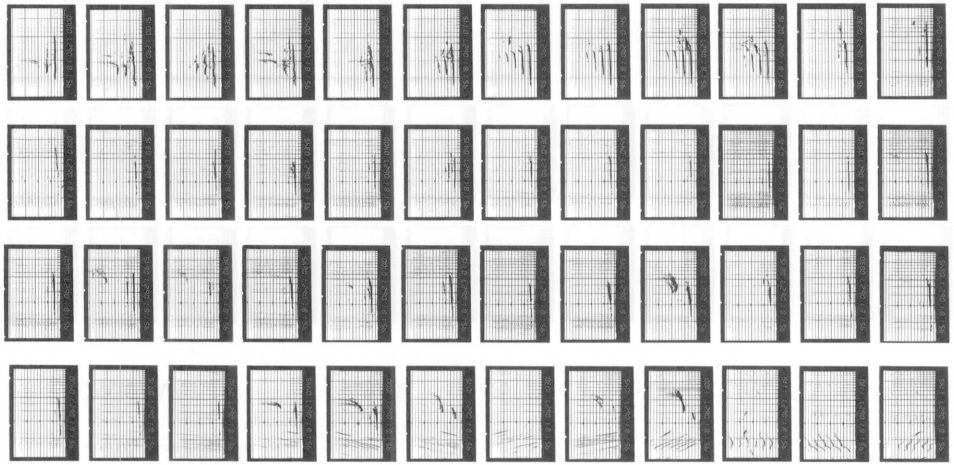
SYOWA STATION

IONOGRAM 1981 06 28 12;00-23;45



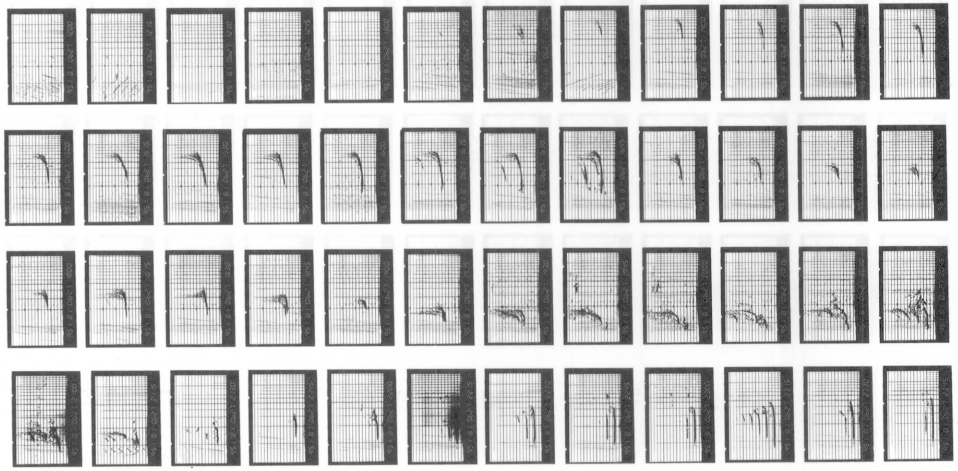
SYOWA STATION

IONOGRAM 1981 06 27 00;00-11;45



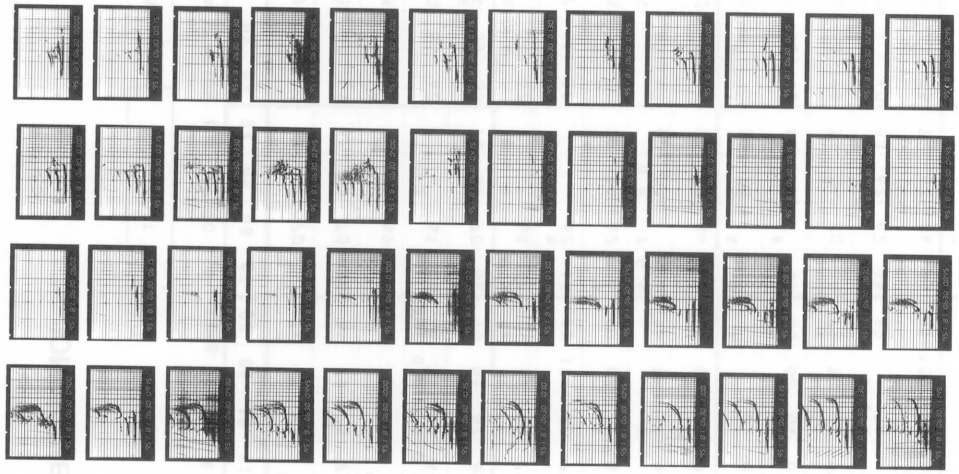
SYOWA STATION

IONOGRAM 1981 06 27 12;00-23;45



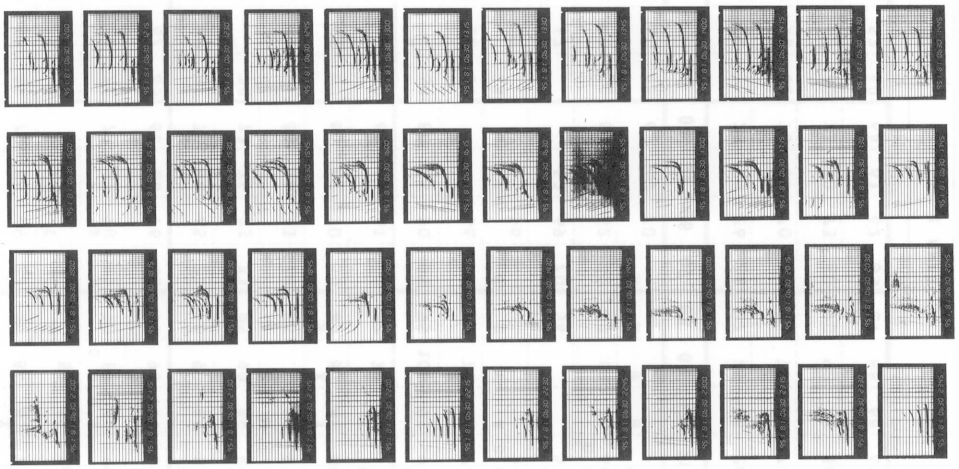
SYOWA STATION

IONOGRAM 1981 06 30 00;00-11;45



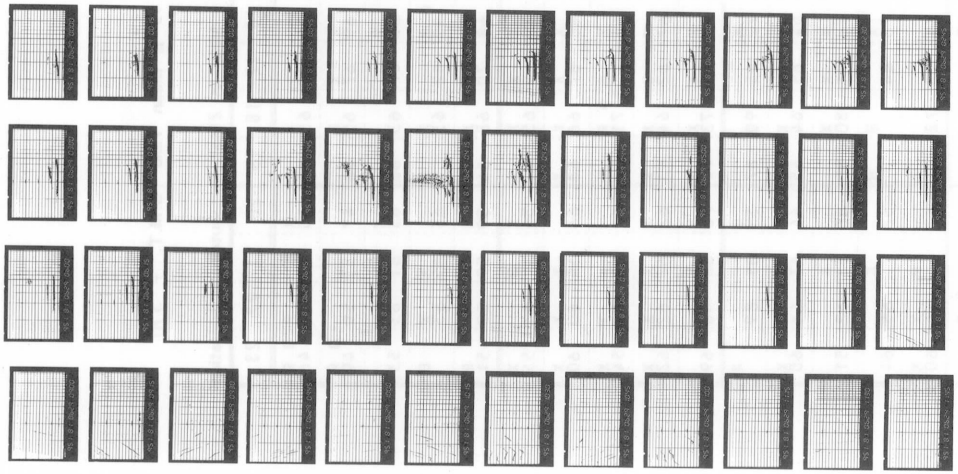
SYOWA STATION

IONOGRAM 1981 06 30 12;00-23;45



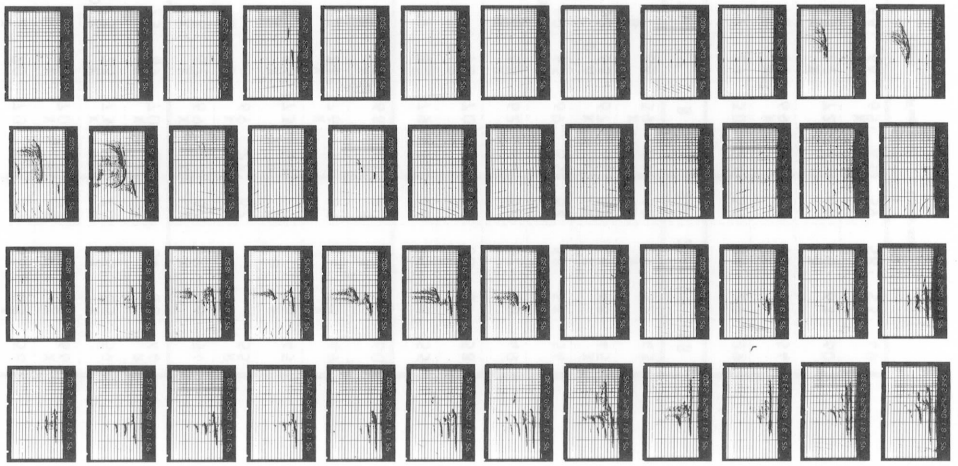
SYOWA STATION

IONOGRAM 1981 06 29 00;00-11;45



SYOWA STATION

IONOGRAM 1981 06 29 12;00-23;45



IONOSPHERIC DATA

JAN. 1981 | 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 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	R 47	61	B	64	68	61	70	O R 61	O R 51	68	71	B	68	65	B	B	73	71	X 65	62	X 50	90	R	O R 46
2	54	63	63	61	62	65	70	60	71	79	73	73	69	O R 63	X 69	O R 66	X 69	X 67	X 65	58	47	53	59	O R 49
3	R 54	58	A	A	A	61	69	69	70	70	71	B	B	R 70	O R 66	71	X 66	67	63	66	X 63	X 61	X 63	53
4	V 58	60	64	62	Y	Y	61	68	E G 48	O R 53	O R 53	O R 49	O R 53	E G 48	B	O R 55	O R 59	62	X 65	B	63	X 65	X 63	B
5	60	O R 54	X 59	60	70	68	70	62	O R 50	63	62	65	X 66	X 64	R 65	X 66	68	X 70	X 68	R 64	X 59	59	57	R 51
6	57	A	O R 54	57	Y	Y	68	X 61	X 71	X 75	X 74	X 71	X 71	X 68	X 70	X 65	X 70	X 69	X 65	X 61	X 56	B	53	X 55
7	60	57	54	52	B	Y	R 62	63	70	118	70	70	X 67	R 67	69	R 68	X 66	X 67	X 66	X 68	66	X 64	X 60	X 60
8	57	63	O R 56	70	70	70	62	A	90	67	X 66	R 66	B	63	O R 55	62	X 65	B	O R 71	X 58	57	62	X 49	X 54
9	58	A	61	61	65	O R 56	Y	O R 56	64	69	X 66	62	O R 61	X 64	O R 54	X 66	X 67	X 62	X 64	X 63	X 62	X 62	X 62	X 62
10	X 60	60	60	60	70	80	86	100	101	X 99	X 98	X 92	X 84	X 85	X 84	X 84	X 81	X 75	X 73	X 75	X 70	X 68	60	69
11	A	72	A	A	70	70	A	B	A	Y	65	64	X 61	X 61	B	O R 69	X 72	65	90	67	R 55	61	89	A
12	B	69	62	12	60	55	A	O R 49	O R 60	62	64	X 64	65	X 66	X 69	R 68	X 64	X 65	X 64	X 65	64	X 63	X 68	X 60
13	59	60	60	70	73	66	70	80	X 78	72	74	77	73	80	78	X 80	X 78	X 81	X 80	80	63	X 51	62	51
14	53	53	A	60	62	62	62	65	69	A	O R 54	B	B	77	X 71	X 72	X 76	64	B	B	62	C	65	64
15	64	70	U R 73	75	72	63	84	91	101	100	U R 99	O R 88	B	82	72	71	71	72	72	R 71	67	R	X 54	X 60
16	53	54	54	65	69	69	B	64	71	68	65	70	B	O R 69	X 70	R 74	B	69	69	68	64	62	O R 51	54
17	55	59	68	85	73	70	69	72	80	84	X 83	X 79	X 80	X 78	X 76	X 74	X 72	70	70	64	64	53	X 53	56
18	62	B	X 55	O R 59	C	C	C	C	C	86	88	X 86	X 82	X 80	X 76	X 72	71	X 70	X 70	R 70	X 71	X 73	X 71	X 66
19	64	61	67	70	78	X 82	X 90	X 91	90	O R 87	U R 94	99	83	X 76	O R 75	X 73	O R 73	X 73	X 73	X 73	X 70	X 66	X 63	59
20	56	57	67	65	62	68	76	80	94	98	94	X 92	X 81	X 81	X 79	X 76	X 73	X 69	X 70	X 68	X 70	69	60	O R 44
21	52	59	60	64	70	68	65	71	90	90	89	R 83	R 81	X 76	R 71	X 70	X 68	X 67	X 69	X 68	X 67	X 67	66	54
22	55	52	R	70	73	75	73	73	95	90	X 89	R 89	X 88	X 86	X 85	B	B	B	X 69	72	62	C	A	R 55
23	55	56	51	A	89	66	73	70	83	B	80	X 85	X 86	X 87	B	A	X 91	X 86	73	O R 59	B	B	X 56	45
24	50	59	45	60	65	67	70	80	R 83	X 85	X 84	80	O R 75	80	R 79	79	73	X 74	X 76	70	63	54	X 53	49
25	43	A	A	60	67	61	61	70	72	79	X 81	B	B	X 75	X 74	X 71	X 70	X 68	68	X 61	X 62	X 63	49	60
26	45	57	A	68	80	85	90	95	95	100	91	R 91	88	81	79	75	79	80	79	76	66	65	66	55
27	70	53	58	61	A	A	66	79	79	X 79	78	X 76	X 70	X 73	X 75	X 80	B	O R 76	70	67	64	66	O R 61	58
28	59	60	51	A	A	A	56	Y	B	Y	A	O R 54	O R 59	O R 58	O R 60	R 61	X 66	R 66	62	64	52	52	60	49
29	A	A	O R 47	A	B	52	69	70	O R 54	Y	B	O R 53	B	B	B	O R 63	O R 60	65	69	63	62	58	51	54
30	A	44	49	70	60	A	62	70	69	68	70	O R 66	X 65	X 66	69	66	62	O R 66	X 67	X 64	X 58	X 46	48	X 45
31	X 49	52	50	63	60	60	70	A	B	B	B	Y	O R 52	O R 53	O R 58	R	B	66	X 59	69	62	X 59	52	43
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	26	24	26	23	24	26	26	27	25	28	26	24	30	26	27	27	29	30	29	30	26	29	29
MED	56	59	58	62	70	66	70	70	72	79	74	74	70	X 72	71	71	X 70	X 69	X 69	67	63	62	60	54
UQ	60	61	62	70	72	70	73	80	90	90	88	86	X 82	X 80	X 76	X 74	X 73	X 72	72	70	66	X 66	63	60
LQ	53	54	52	60	64	61	62	63	69	68	66	65	65	64	R 69	66	X 66	66	X 65	63	59	58	53	49

JAN. 1981 | FXI (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JAN. 1981 | 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 20sec 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 40	F 48	B	F 50	F 55	F 56	F	R 56	E G 45	58	F 61	B	61	F 58	B	B	F 66	65	58	53	44	R 48	R	40
2	F 43	F	F 48	F 45	F	F	F 54	F 50	F	F 65	F 63	F 63	60	57	62	60	62	60	59	52	F	44	R 48	43
3	48	F	A	A	A	F 52	F	F	F 55	R	64	B	B	R 64	60	65	J R 60	F 60	F 56	F 59	57	54	57	42
4	V 48	F 51	F 57	F	Y	Y	F	F	E G 42	E G 47	E G 47	E G 43	E G 47	E G 42	B	E G 49	53	F 55	59	B	F 56	59	57	B
5	49	48	52	F	F 48	F	F	F	E G 44	F 55	F 53	F 55	60	58	59	60	60	64	60	58	52	51	48	R 41
6	F 47	A	R 48	F 50	Y	Y	F 60	55	65	69	68	65	65	62	63	59	63	62	59	54	49	B	45	58
7	F 52	F 48	F 47	F	B	Y	R 56	F 55	55	F 57	F 60	63	61	R 61	62	62	60	60	60	62	58	58	54	54
8	F 46	F 52	R 50	F 47	F 50	F 52	F 50	A	A	F 56	60	R 60	B	F	E G 49	F	59	B	65	52	F 47	47	42	48
9	51	A	54	F 50	F	50	Y	F 50	F 55	60	60	F 55	R 55	58	E G 48	60	61	56	58	57	56	56	56	56
10	54	F 50	51	F 51	F 59	F 70	F 79	F 89	92	92	J R 92	86	78	79	78	78	75	69	67	69	63	60	F 49	F
11	A	F 55	A	A	F	F	A	B	A	Y	F 56	F 55	55	55	B	63	66	F	Y	F	49	F 51	F 47	A
12	B	F	F	A	F	F 49	A	43	54	54	F 55	57	J R 60	60	63	62	58	59	58	59	F 56	57	62	53
13	F 50	F 51	52	F 55	F	F 58	F 59	F 69	72	F	F	F	F 65	F 68	70	73	72	75	73	70	F 55	46	45	42
14	42	F	A	F	F	F	58	55	62	A	E G 48	B	B	62	63	65	70	F 57	B	B	F 53	C	F 56	F 53
15	F 56	F 60	66	J F 69	F	F 60	F 68	F 80	F 90	J R 94	U R 89	U R 82	B	F	F	F 60	F 64	F 65	F 65	65	60	R	48	54
16	F 45	F 47	F 47	F	F 55	F	B	F 55	F 60	F 60	F 56	F 60	B	F 60	63	68	B	61	61	F 56	F 56	54	45	F 47
17	F 46	51	61	F	F	F	F 60	F 60	71	77	76	73	74	72	70	68	66	F 61	60	F 56	F 51	46	47	F 48
18	F 52	B	49	R 53	C	C	C	C	C	79	80	80	76	73	70	66	64	64	64	R 60	64	J R 67	65	60
19	55	F 48	F 58	F 60	F 70	75	83	R 84	78	U R 81	U R 83	89	76	70	69	67	67	67	67	67	64	60	57	50
20	48	50	48	F	F	F 59	F 60	F 70	F 70	87	J R 88	86	75	75	73	70	67	J R 63	64	62	64	61	45	38
21	44	F 50	F 50	F 56	F	F	F	F 62	F	J R 84	81	77	75	69	65	64	61	61	63	61	61	61	F 58	F 40
22	F 44	R 46	R	F	F	F	F	F	J F 89	J R 84	83	J R 83	82	80	79	B	B	B	63	63	55	C	A	48
23	46	F	F	A	F	F	F 58	F 68	F 74	B	F 72	79	80	81	B	A	85	80	61	F 52	B	B	50	F 38
24	F 40	F 46	F	F	F	F	F 60	F 71	77	79	78	71	69	71	R 73	71	66	68	70	F 61	F 50	F 46	47	F 40
25	F 34	A	A	F 50	F 48	F 52	F 52	F 57	F 64	71	75	B	B	69	68	65	64	62	60	55	56	57	F 40	F
26	F 37	F 44	A	F 57	F 60	F 70	75	J R 89	J R 89	J R 94	83	R 85	81	71	70	F 68	F 68	71	F 70	F 68	F 58	F 57	F 57	F 45
27	F	F	F 50	F 51	A	A	59	F 64	71	72	F 70	70	64	67	69	74	B	70	F 60	F 60	F 58	F 60	55	50
28	F 43	F	F 43	A	A	A	F	Y	B	Y	A	E G 48	53	52	54	55	60	60	55	F 55	F 43	43	F 48	42
29	A	A	41	A	B	F	F	F	48	Y	B	E G 47	B	B	B	R 57	54	F 58	F 61	F 55	F 50	F 47	43	R 45
30	A	F	F 42	F	F	A	F	F	F	F	F	60	59	60	F 61	J R 60	F	60	61	58	52	40	41	39
31	43	45	F	F	F 49	F 50	F	A	B	B	B	Y	R 46	E G 47	52	R	B	F 55	52	F 60	F 54	52	F 42	F 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	26	18	20	14	9	13	16	20	23	22	26	25	24	28	25	26	26	28	29	28	29	26	29	27
MED	F 46	F 49	50	F 51	F 55	F 56	F 60	F 61	65	72	69	65	64	63	63	64	64	62	61	59	56	54	48	45
UQ	50	F 51	53	F 56	F 59	F 60	F 64	F 70	76	84	81	80	76	71	70	68	67	66	64	62	58	59	56	52
LQ	F 43	F 47	F 48	F 50	F 49	F 52	F 57	F 55	55	58	F 60	57	60	58	61	60	60	60	59	55	F 51	47	45	40

JAN. 1981 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1981 | 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 20sec 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	90	83	B	36	36	36	36	37	E G 37	E G 34	36	B	33	36	B	B	40	43	38	37	39	41	45	K 41
2	37	32	29	35	51	35	41	38	36	36	40	36	41	39	35	36	36	41	36	33	36	40	46	43
3	41	51	70	51	44	40	36	42	40	36	38	B	B	35	40	50	41	35	41	37	29	45	40	K 39
4	33	29	30	46	43	42	41	44	E G 34	62	41	E G 36	35	32	B	E G 34	E B 35	45	70	B	25	36	28	B
5	41	41	40	40	33	34	39	37	46	36	34	38	40	39	45	E G 33	38	E G 31	E G 28	26	25	K 32	31	39
6	41	43	36	32	41	42	46	39	31	E G 32	32	E G 33	32	34	37	39	30	E G 29	E G 30	29	32	B	30	35
7	38	45	37	37	B	43	45	41	40	E G 38	39	42	38	36	35	35	35	38	35	29	E B 29	25	29	32
8	34	41	45	46	47	44	50	60	53	33	36	30	B	E G 35	31	33	41	B	E B 48	E G 28	40	39	29	43
9	39	70	48	45	45	45	48	40	40	36	35	37	37	33	36	35	32	36	35	E G 27	27	25	30	35
10	33	31	42	36	31	30	30	35	37	38	38	37	39	49	60	72	52	37	43	32	46	30	44	37
11	89	30	43	50	40	42	100	B	45	36	45	33	36	E B 55	B	E B 55	30	E G 31	31	43	43	48	45	50
12	B	38	70	90	105	60	47	42	44	40	38	38	35	35	42	35	50	45	36	33	35	30	E G 18	26
13	27	31	K 25	55	52	43	40	44	38	40	41	41	35	E G 35	E G 33	E G 32	E G 32	E G 31	E G 29	E G 25	35	38	39	42
14	38	39	70	60	71	49	41	45	48	42	51	B	B	35	E B 56	33	E G 32	40	B	B	33	C	E B 22	22
15	22	E B 27	E B 42	K 36	50	110	42	45	44	35	36	35	B	36	36	41	46	45	37	36	31	28	32	41
16	39	32	78	70	40	35	B	36	41	40	36	E G 36	B	32	E G 32	27	B	28	35	65	36	41	26	37
17	47	45	35	80	35	60	47	47	32	37	47	33	40	40	43	45	35	30	28	K 27	K 27	40	39	39
18	33	B	K 30	40	C	C	C	C	C	36	38	40	45	40	45	40	37	45	51	122	90	41	49	35
19	42	25	40	27	24	45	41	40	27	35	33	41	50	41	40	43	56	53	48	36	29	E B 24	27	25
20	29	32	39	70	45	48	41	34	32	E G 32	E G 33	36	41	39	38	E G 33	E G 32	33	41	50	31	26	33	39
21	45	40	39	45	45	55	46	48	52	37	E G 34	E G 34	51	37	41	37	36	E G 31	E G 30	37	35	36	55	29
22	47	45	45	34	41	35	35	45	E G 31	36	36	37	40	52	63	B	B	B	34	36	38	C	51	49
23	45	39	74	80	70	40	40	E G 29	38	B	39	39	40	39	B	89	36	E G 31	34	47	B	B	50	70
24	39	45	34	51	40	41	42	39	37	32	36	E G 35	E B 59	37	E B 40	31	E G 31	E G 31	56	37	28	32	35	50
25	46	48	44	42	37	47	47	45	36	35	E G 34	B	B	40	39	36	35	E G 32	35	35	32	24	38	40
26	40	60	63	45	41	38	29	36	E G 31	37	40	37	36	36	37	40	33	38	38	70	59	35	41	35
27	36	36	37	42	50	56	51	42	32	37	37	37	38	38	39	36	B	E B 54	35	70	45	25	35	56
28	43	29	51	80	90	45	43	26	B	41	50	39	32	25	36	37	33	E G 31	35	33	K 29	39	33	40
29	47	41	41	50	B	47	41	48	48	38	B	E B 41	B	B	B	E B 40	E G 31	E G 30	35	35	35	58	37	38
30	39	45	41	46	34	60	51	43	48	42	33	39	36	33	35	37	E G 33	E G 31	E G 28	31	32	30	38	35
31	35	36	69	48	48	41	35	70	B	B	B	36	31	32	E B 40	31	B	43	87	70	79	51	26	35
	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	31	28	30	29	29	28	29	29	27	24	30	26	29	27	29	30	29	30	27	31	30
MED	39	40	42	46	44	43	41	42	38	36	37	37	38	36	38	36	35	34	35	36	34	36	35	39
UQ	45	45	51	53	50	48	47	45	44	38	40	38	40	39	42	40	39	42	41	43	39	40	42	42
LQ	35	32	37	38	38	40	40	37	32	35	35	36	35	35	36	33	31	E G 31	34	31	29	29	30	35

JAN. 1981 | FES (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1981 | 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 20sec 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	9	10	B	9	10	9	8	18	15	14	13	B	24	20	B	B	13	14	11	11	13	13	22	14
2	9	20	14	7	8	8	10	9	10	8	8	9	8	11	13	11	11	7	9	8	3	15	8	11
3	8	9	14	14	13	13	8	13	14	10	13	B	B	14	10	8	9	10	8	7	13	9	7	15
4	12	7	8	13	21	23	13	10	7	10	13	13	14	18	B	15	35	9	10	B	20	13	15	B
5	17	15	14	7	17	13	10	11	14	10	8	9	9	10	13	16	14	8	13	23	14	9	7	7
6	8	23	35	23	31	23	13	13	11	10	10	14	13	14	12	13	10	15	19	8	11	B	8	7
7	12	13	14	21	B	21	20	17	13	18	15	11	11	11	14	13	15	10	7	13	29	22	20	7
8	7	16	13	14	10	9	10	13	13	10	8	27	B	21	23	13	13	B	48	18	7	7	15	7
9	18	20	10	9	7	11	13	13	13	8	10	9	9	13	10	10	9	8	10	14	10	13	14	8
10	6	8	10	10	8	7	8	7	9	8	10	11	10	10	11	11	13	9	7	8	8	9	8	7
11	7	7	8	13	5	8	11	B	22	24	13	11	12	55	B	55	24	16	10	10	9	8	14	10
12	B	9	8	20	19	8	14	10	11	9	11	8	9	10	10	10	13	13	11	8	9	8	7	6
13	7	5	19	13	21	13	9	7	20	13	8	11	11	21	20	18	10	10	15	21	7	7	13	16
14	14	9	24	6	8	8	18	13	14	14	18	B	B	34	56	23	20	13	B	B	18	C	22	8
15	9	27	42	8	6	11	8	7	8	21	34	33	B	13	18	9	13	19	23	16	14	22	10	8
16	11	15	8	E	11	8	B	13	13	18	21	14	B	22	11	22	B	20	31	19	13	9	23	7
17	7	8	17	27	7	18	11	8	8	8	9	10	9	8	11	11	9	11	12	20	7	14	7	13
18	8	B	25	8	C	C	C	C	C	10	10	9	11	8	10	8	9	8	11	11	8	7	7	7
19	8	7	9	7	13	7	7	10	20	21	22	14	13	13	13	12	12	11	10	10	19	24	21	12
20	7	13	15	12	12	10	13	9	10	10	13	13	10	9	10	13	10	13	11	7	9	8	13	20
21	18	14	7	18	10	7	14	9	8	9	10	10	13	10	11	11	9	7	8	8	9	7	6	7
22	8	21	20	8	15	9	10	17	10	7	11	12	10	13	10	B	B	B	8	13	14	C	14	17
23	17	9	8	15	E	8	13	14	9	B	8	11	10	13	B	13	11	14	20	42	B	B	12	13
24	9	7	7	13	13	14	14	12	14	28	13	14	59	21	40	21	14	17	12	26	18	8	15	8
25	8	23	21	15	16	14	17	9	10	17	17	B	B	21	18	15	13	11	8	10	8	8	12	15
26	12	15	20	18	13	8	14	13	13	13	13	15	15	31	15	15	19	9	8	11	8	18	14	7
27	8	7	9	8	20	17	19	13	13	11	8	11	11	13	13	13	B	54	17	22	19	20	25	14
28	8	15	12	14	13	23	15	21	B	20	18	21	24	20	17	20	13	23	13	20	16	17	9	17
29	16	13	8	17	B	7	8	12	9	21	B	41	B	B	B	40	22	14	18	17	13	9	8	9
30	22	15	14	10	11	17	9	9	10	15	15	9	11	13	11	19	15	13	14	10	8	10	9	9
31	11	12	22	13	14	19	11	21	B	B	B	33	30	29	40	30	B	32	15	14	16	13	7	8
	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	30	30	30	30	30	31	31	31	31	31	31	31	31	31	31	31	31	29	31	31
MED	9	13	14	13	13	10	12	12	13	13	13	13	13	13	13	13	13	13	11	13	13	10	12	9
UQ	13	17	20	15	17	17	14	13	14	19	16	24	44	21	32	20	20	16	16	20	16	17	15	14
LQ	8	8	8	8	8	8	9	9	10	10	10	10	10	11	11	11	10	10	10	10	8	8	8	7

JAN. 1981 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JAN. 1981 | H'F (KM) | 45° E Mean Time (G.M.T. + 3h)

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep 4 MHz to 15 MHz in 20sec 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	245	A 365	B	A 375	A 310	300	255	E A 300	270	235	205	B	Y 220	240	B	B	250	245	240	270	A 320	A 340	A	A
2	A	A	A 365	A 305	A	A	A 305	255	240	225	210	200	240	210	220	225	225	240	230	245	A 305	A 400	A	305
3	300	260	A	A	A	A	255	255	275	245	225	B	B	220	210	240	230	230	225	250	250	255	270	A
4	A 350	A 315	A 325	A 305	A	A	A 390	A	220	230	H 240	190	210	210	B	230	240	250	A 270	B	250	260	260	B
5	A 350	A	A	A	A	270	A	A	A 310	265	220	230	220	235	A 235	210	240	215	240	250	H 260	A	275	A
6	A	A	Y	E A 350	Y	Y	280	260	220	H 230	Y 225	205	205	240	215	225	215	240	240	225	260	B	285	310
7	A 300	A 380	A	A	B	A	A	A 280	280	260	215	220	225	205	215	225	220	220	230	240	250	270	260	270
8	325	310	A	A	A	A	335	A	A	235	215	270	B	225	215	205	215	B	380	240	300	A	360	275
9	310	A	310	A	A	A	A	E A 290	250	205	205	205	H 205	225	200	205	210	230	225	240	235	250	255	260
10	285	340	395	345	290	245	240	245	225	205	200	220	200	E A 250	A	A	E A 250	225	230	250	E A 265	255	A	A
11	A	250	A	A	A	A	A	B	A	Y	210	235	210	B	B	B	240	240	A	A 305	A 335	A	A	A
12	B	A	A	A	A 345	A	A	A 310	A 320	H 240	240	210	225	H 210	225	225	A 220	225	240	250	235	250	260	270
13	280	A 260	315	A	A	A	280	240	Y	270	200	175	240	240	210	215	210	235	210	235	H 240	A 305	A 340	A 335
14	350	A	A	A	A	325	240	210	350	A	A 240	B	B	Y 240	B	220	225	255	B	B	255	C	270	260
15	285	300	B	305	A	A	A	215	225	215	Y 380	A	B	205	200	215	225	E A 250	255	Y 290	260	320	260	A 300
16	A 325	340	A	A	A 330	A	B	255	230	200	200	225	B	240	210	225	B	215	240	250	245	290	290	280
17	A 290	305	290	A	A	A	A	A	220	205	215	195	H 205	235	225	240	200	205	225	235	255	A 315	A 335	A 280
18	305	B	350	A	C	C	C	C	C	205	205	200	A 235	E A 240	240	205	205	A 240	A 245	A	A 260	A 255	250	245
19	275	280	290	H 275	260	E A 260	E A 250	235	Y 225	Y	220	220	225	225	205	215	A	A	E A 270	230	245	255	250	255
20	A 300	A 325	340	A	A	A	A 295	A 235	220	195	230	225	205	200	210	225	205	215	235	250	245	280	A 320	A
21	A 340	340	A 290	290	A	A 270	A	285	280	205	205	200	E A 250	225	240	210	215	225	225	245	240	245	A	280
22	A 380	A	A	280	A	A	240	A	205	190	225	225	200	E A 260	205	B	B	B	250	255	280	C	A	A
23	A 295	A	A	A	A	A	H 255	225	220	B	240	220	200	220	B	A	225	230	280	270	B	B	335	A
24	A	A	350	A	A	A	A	A 275	205	240	E A 270	205	A	E A 220	E B 240	230	220	250	E A 270	E A 255	275	255	290	A
25	A	A	A	390	305	A	A	240	200	225	250	B	B	250	230	230	240	225	225	H 240	260	255	330	A
26	A	A 375	A	A 395	A	A 270	245	225	220	220	225	215	230	Y	225	220	225	225	230	250	265	255	275	A 330
27	A	A	A 380	A 390	A	A	A	260	210	210	205	225	230	210	225	230	B	E B 375	240	265	270	265	265	290
28	305	A	A	A	A	A	A	Y	B	Y	A	210	205	230	240	225	230	250	250	250	280	330	305	A
29	A	A	A	A	B	350	250	255	E A 310	Y	B	E B 255	B	B	B	245	240	240	255	260	275	290	A	A
30	A	A	A	A 350	A	A	270	A	A	230	210	210	225	220	230	235	230	230	225	245	250	330	335	A 355
31	350	355	A	A	A	A	260	A	B	B	B	Y	Y 225	Y 220	E B 275	250	B	255	E A 280	E A 290	E A 270	A 300	A 300	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	21	16	12	13	6	8	17	21	24	24	28	25	23	28	24	26	26	28	29	28	30	24	24	17
MED	305	320	332	U A 325	308	270	255	250	225	225	216	212	220	222	218	225	225	231	238	250	259	268	280	280
UQ	340	348	358	A 375	A 330	312	280	268	275	238	232	225	226	238	230	230	235	244	250	255	275	310	325	A 305
LQ	290	290	300	305	290	A 265	250	235	220	205	205	205	205	212	210	215	215	225	230	240	250	255	260	270

JAN. 1981 | H'F (KM)

IONOSPHERIC DATA

FEB. 1981 | 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 20sec 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	O R 51	A	B	64	B	68	Y	Y	A	O R 60	B	O R 65	B	O R 65	X 67	X 66	B	X 68	O R 64	60	62	59	50
2	58	A	51	56	53	B	63	47	68	O R 49	62	O R 63	B	B	65	63	63	X 64	B	B	A	A	X 46	51
3	A	A	A	51	A	A	B	69	78	80	78	X 77	O R 71	B	71	72	70	B	B	A	70	O R 47	51	O R 47
4	O R 57	50	51	Y	O R 64	65	71	X 83	X 91	93	93	90	90	O R 78	X 82	X 33	X 79	X 78	X 78	X 72	X 68	O R 48	B	50
5	60	60	Y	B	65	75	72	99	Y	B	B	63	65	61	X 76	91	B	70	80	60	90	63	52	55
6	69	A	Y	50	54	Y	58	62	70	78	72	X 66	R 63	O R 51	O R 66	O R 69	68	68	A	47	58	38	90	B
7	A	80	67	A	O R 42	O R 54	Y	Y	55	Y	Y	B	Y	O R 52	O R 53	60	60	62	62	61	62	58	X 56	54
8	55	57	61	64	65	73	80	81	85	89	90	X 87	X 63	X 84	X 83	82	80	78	X 76	78	60	53	60	46
9	A	A	A	A	43	110	60	A	A	59	Y	R	B	71	71	70	X 69	71	69	68	65	65	67	68
10	65	70	70	72	72	78	90	100	102	X 101	X 100	99	X 94	X 88	X 95	80	80	78	75	76	80	80	75	72
11	73	73	72	80	84	92	104	110	111	X 111	R 110	X 110	U R 102	104	X 100	95	X 87	X 83	88	79	X 64	47	60	52
12	67	63	A	120	72	81	88	83	80	99	80	83	R 87	R 87	R 87	33	R 83	X 80	X 75	76	71	69	65	55
13	68	O R 40	59	70	73	74	85	90	100	102	104	100	100	97	X 92	X 88	X 91	X 88	X 80	X 82	X 80	74	71	59
14	48	44	55	66	72	80	88	94	X 100	X 100	X 104	103	X 100	98	92	X 90	X 89	X 78	X 75	X 76	X 77	X 77	X 66	60
15	60	55	68	63	80	89	90	91	105	110	120	X 116	X 111	X 108	X 103	R 98	X 91	X 91	X 90	72	58	O R 49	50	A
16	A	48	70	70	90	70	69	62	O R 60	62	68	X 71	X 71	X 71	X 74	X 72	X 73	X 74	78	X 74	68	45	R 51	48
17	35	45	60	80	70	74	85	80	90	100	98	X 89	X 90	X 87	85	X 81	80	79	79	O R 76	67	57	46	48
18	40	A	50	70	70	72	82	91	91	X 96	X 94	X 90	X 91	X 90	88	X 84	X 81	X 84	X 84	X 90	90	X 84	O R 76	65
19	60	52	60	68	70	80	90	O R 91	90	71	80	90	90	90	90	84	80	75	X 73	X 72	X 77	X 74	70	70
20	70	68	65	S 50	S 50	71	84	X 93	X 100	X 97	O R 109	O R 111	111	O R 113	113	X 106	X 106	83	X 64	60	60	56	48	45
21	48	45	53	56	60	62	X 72	X 81	X 87	X 85	B	O R 85	X 90	X 85	X 87	X 85	X 81	X 85	X 84	X 82	X 81	X 79	X 76	81
22	70	63	60	70	72	80	30	90	X 95	102	R 106	R 105	X 108	X 105	X 104	100	X 99	X 91	87	85	X 80	X 74	70	66
23	60	60	A	90	70	Y	62	65	72	X 74	X 84	X 81	X 81	83	81	X 81	X 79	79	78	73	70	70	63	64
24	36	63	63	60	60	70	70	79	90	38	89	X 82	X 80	X 78	X 77	76	X 76	78	78	84	70	A	69	A
25	A	A	53	67	A	70	71	71	Y	O R 46	B	B	B	B	B	B	O R 74	66	62	49	72	A	A	A
26	A	50	39	45	O R 53	B	B	B	48	O R 46	47	A	O R 56	B	B	B	O R 63	69	64	54	45	A	32	40
27	B	60	68	99	Y	57	60	70	45	A	B	Y	B	B	B	B	71	71	64	64	66	40	A	A
28	A	A	A	60	63	A	63	59	63	O R 46	58	63	64	69	B	X 76	X 76	81	X 76	73	67	48	A	A
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	21	20	23	25	21	25	24	24	24	22	22	23	22	24	25	27	26	25	26	27	24	24	22
MED	60	57	60	67	65	74	72	82	88	88	90	88	90	86	84	82	X 79	78	76	73	68	60	62	54
UQ	68	63	68	71	72	80	85	91	98	100	104	100	X 97	97	92	88	X 82	X 83	80	78	77	74	70	65
LQ	52	50	53	58	60	70	68	70	69	66	72	X 77	70	71	72	72	70	71	X 69	64	63	48	51	48

FEB. 1981 | FXI (0.1 MHZ)

IONOSPHERIC DATA

FEB. 1981 | 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 20sec 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 43	A	B	F 57	B	F 50	Y	Y	A	54	B	59	B	59	61	60	B	61	R 58	F 52	F 53	F 49	F
2	F	A	F 40	F	F	B	F	F	F	43	F 55	F 55	B	B	F 56	F 54	F	58	B	B	A	A	40	F 42
3	A	A	A	J F 45	A	A	B	F 60	F 68	F 72	70	71	R 65	B	F	F 65	F 60	B	B	A	F 51	R 41	37	R 41
4	F 38	42	F 42	Y	58	F 57	F 64	77	85	85	R 85	82	82	R 72	75	77	72	71	71	66	62	42	B	F
5	F	F	Y	B	F	F	F	F	Y	B	B	F	F 58	F 51	70	F 81	B	F	F 60	F	F	F	F	F
6	F	A	Y	F	F 34	Y	F	F 50	F 55	69	63	60	R 57	E G 45	60	F 60	F 60	F	A	F	F	F 31	F	B
7	A	F	F	A	36	48	Y	Y	F 40	Y	Y	B	Y	E G 46	E G 47	F	53	53	53	53	F 52	51	50	F 47
8	F 47	F 48	F 50	F 48	F 53	F 60	F 67	F 74	F 78	78	81	81	62	78	77	73	72	70	69	F 70	F 51	F	F 51	F 39
9	A	A	A	A	F	F	F	A	A	F 42	Y	R	B	F	F	F 61	62	64	61	60	F 57	57	60	F 57
10	F 54	F 57	F 45	F 63	F 55	F 64	F 80	F 90	94	J R 95	J R 94	90	88	82	89	73	72	F 70	F 68	F 67	F 70	F 72	F 65	J F 66
11	F 60	F 65	53	F 55	F 66	76	F 80	101	104	104	R 104	J R 104	U R 84	U R 95	93	F 88	80	77	80	71	58	F 38	F 54	F
12	F	F	A	F	F	F	F 67	F	F	F 76	F 70	F 75	77	U R 73	R 81	76	R 77	73	69	69	F 63	F 60	F 56	47
13	A	R 34	F 46	F	F 56	F	F 77	F	F	F 88	F 84	J F 94	87	89	85	82	85	80	74	75	74	65	62	J F 53
14	F	F	F	F 48	F 55	F	78	U R 84	94	J R 94	98	94	94	J R 92	R 86	84	83	72	69	70	71	71	60	52
15	F 48	F	F	F	F	F 68	J F 84	J F 85	F 95	F 100	111	110	104	102	97	R 91	85	85	84	F 62	F	43	F	A
16	A	F	F	F 47	F	F	F	F	F 52	53	60	64	65	65	63	66	67	68	70	68	F 58	F 38	F 43	F
17	F	F	F	F	F	J F 66	F	F 70	F 76	F 90	82	81	R 84	80	78	75	72	71	F 70	U R 70	59	45	F 37	F
18	F	A	F 40	F	F	F	F 70	30	J R 85	90	88	84	85	84	80	78	75	78	78	84	82	78	70	F 55
19	F	F	F	F	F	F	F	85	J F 84	F	F 63	F 71	F 75	F 78	F 80	76	72	68	67	65	70	68	F 60	F 60
20	J F 64	J F 62	J F 59	F	48	F	F	J R 87	J R 94	91	R 103	105	102	107	105	100	J R 100	J F 77	58	F 49	F 48	45	F	J R 39
21	F 39	F	35	F 48	F 51	F 48	65	75	81	78	B	79	84	78	81	78	75	79	78	76	75	72	70	64
22	F	F 55	F	F	F	F	F	J R 84	89	J R 96	100	R 99	102	99	98	J R 94	92	85	80	J F 78	74	68	60	F 58
23	F	F	A	F	F	Y	F 50	F 55	F 61	68	78	75	75	73	72	75	73	71	F 70	65	F 60	F 53	F 50	F
24	F	F	F	F	F	F	F	F	F 80	F 76	F 80	76	74	72	70	F 69	70	F 70	F 68	F 64	F	A	F	A
25	A	A	F	F	A	F	Y	F	Y	40	B	B	B	B	B	B	68	F 57	F 50	F	F 34	A	A	A
26	A	F	F	F	F 44	B	B	B	36	F 40	F 40	A	50	B	B	B	57	61	55	F 46	35	A	F	F
27	B	F	F	F	Y	F 40	F	F	37	A	B	Y	B	B	B	B	F 64	F 65	53	F 53	33	33	A	A
28	A	A	A	F	F	A	F	F 50	F	E G 40	51	F 55	F 57	61	B	70	70	F 70	69	F 65	58	F 31	A	A
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	8	9	7	12	9	12	16	20	23	22	21	23	21	22	24	26	24	25	23	23	22	18	14
MED	F 48	F 52	F 45	F 48	F 54	F 60	F 68	78	80	78	80	81	77	78	79	76	72	70	69	66	58	52	55	F 52
UQ	F 57	F 60	F 50	F 52	F 56	F 66	F 79	85	92	90	94	94	86	89	86	82	77	77	71	70	70	68	60	F 58
LQ	F 43	42	F 40	F 48	F 46	F 48	F 64	F 65	F 58	60	63	71	64	72	70	68	64	66	61	61	F 52	41	F 49	42

FEB. 1981 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

FEB. 1981 | 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 20sec 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	58	44	50	B	K 32	B	35	28	49	60	51	B	E B 51	B	E B 38	32	E G 32	B	39	34	30	43	30	38
2	28	50	40	33	36	B	42	45	51	40	36	E B 40	B	B	34	33	E G 30	E G 29	B	B	43	39	39	38
3	45	37	37	34	58	42	B	37	E G 31	32	33	E G 34	E B 60	B	27	E B 35	E G 32	B	B	70	32	E B 30	32	41
4	34	28	35	41	42	41	36	35	36	E G 32	E G 33	36	37	33	E G 34	33	32	30	E G 28	27	31	36	B	35
5	40	27	28	B	32	28	30	40	47	B	B	E G 32	E B 36	E B 50	E B 45	E G 33	B	E B 35	37	37	70	80	69	68
6	29	48	42	39	32	25	46	45	40	32	40	34	36	E B 42	E B 50	32	E G 33	36	46	50	32	28	25	B
7	42	44	35	40	90	78	42	27	47	38	E G 39	B	32	37	E B 36	33	E G 30	32	30	41	27	27	37	16
8	18	16	23	30	25	25	28	E G 28	E G 30	32	37	59	63	63	45	E G 33	E G 32	32	36	34	31	26	41	46
9	41	70	65	80	40	42	43	44	27	36	33	36	B	36	36	34	31	E B 31	34	37	42	30	23	29
10	34	32	32	27	27	34	32	34	34	33	35	42	37	36	36	38	37	36	34	32	26	25	15	28
11	33	30	29	36	29	30	31	28	30	E G 31	E G 32	35	37	48	34	38	E G 31	E G 29	34	40	31	24	90	42
12	38	80	45	100	45	36	37	35	45	46	41	E G 33	E B 50	E B 51	E B 44	33	E G 32	E G 32	29	25	24	17	24	39
13	38	80	35	42	37	42	41	46	45	41	33	34	E G 32	E G 32	45	36	32	E G 30	E G 27	25	35	32	17	29
14	37	41	35	38	28	28	31	32	35	35	40	37	38	37	41	43	38	31	31	29	21	17	14	10
15	25	32	30	30	32	45	42	37	35	37	37	37	36	37	E G 35	35	E G 31	E G 29	E G 28	37	35	40	70	44
16	45	44	45	39	41	38	34	52	50	59	E G 31	E G 32	35	E G 33	E G 32	E B 32	30	33	34	31	39	29	31	37
17	53	48	40	32	35	32	37	37	36	36	36	32	41	35	33	E G 32	35	35	33	E B 48	28	18	27	37
18	45	45	59	42	36	34	37	33	35	38	40	41	38	35	E G 33	32	36	E G 28	33	24	21	20	16	25
19	33	40	37	58	32	38	32	45	51	49	44	32	32	35	E G 34	38	32	33	28	31	28	16	11	14
20	30	28	28	56	60	32	27	32	48	30	36	34	34	33	33	38	27	33	34	36	43	34	43	45
21	37	53	70	42	36	36	28	26	33	30	B	E B 50	34	35	34	41	30	27	26	25	25	15	16	13
22	11	30	31	30	28	30	24	27	28	30	32	35	35	36	35	33	32	35	31	22	20	14	25	30
23	34	26	60	37	38	26	42	42	40	28	E G 32	36	35	36	35	32	E G 31	E G 30	30	32	29	29	40	36
24	32	49	36	35	30	45	37	46	34	36	37	34	41	41	46	40	36	35	32	32	60	70	48	50
25	73	32	41	66	70	46	21	38	30	38	B	B	B	B	B	B	E B 32	32	35	46	40	70	35	42
26	40	36	32	40	70	B	B	B	35	43	35	41	E B 36	B	B	B	E G 29	E B 30	29	33	E G 22	54	60	51
27	B	34	41	59	27	39	37	45	28	36	B	37	B	B	B	B	E B 31	31	32	37	37	35	38	70
28	40	35	45	38	42	80	37	41	44	E B 35	E G 37	E G 34	36	36	B	31	29	E G 27	29	K 23	E B 19	25	37	38
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	28	28	26	28	25	26	27	28	27	24	25	24	22	24	25	27	26	26	27	28	28	27	27
MED	37	38	37	39	36	36	36	37	36	36	36	34	36	36	34	33	30	31	32	32	31	28	32	38
UQ	42	48	45	42	42	42	41	44	46	39	40	37	38	39	39	38	32	33	34	37	38	38	40	43
LQ	32	31	32	34	31	30	31	32	32	32	33	34	34	35	32	32	E E 30	E G 30	29	28	26	22	24	29

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

FEB. 1981 | 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 20sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	25	19	21	B	19	B	11	18	22	17	22	B	51	B	38	16	9	B	30	32	23	13	10	8
2	13	14	18	7	8	B	10	7	8	16	19	40	B	B	31	15	11	13	B	B	13	8	11	16
3	13	23	18	6	22	30	B	13	14	10	15	24	60	B	22	35	16	B	B	35	8	30	8	15
4	15	18	17	25	29	15	14	8	13	11	15	14	13	27	11	12	11	13	15	7	13	15	B	22
5	13	22	19	B	20	18	27	11	31	B	B	21	36	50	45	21	B	35	15	15	10	11	7	9
6	10	23	28	8	8	22	15	9	12	8	14	11	22	42	50	21	21	13	8	8	15	9	8	B
7	24	10	7	9	8	12	11	9	13	8	15	B	27	22	36	20	10	17	23	19	19	18	9	10
8	12	8	9	9	6	15	15	11	20	14	22	11	15	15	14	13	13	14	14	8	8	8	14	9
9	6	8	13	15	9	9	E	19	9	15	22	22	B	22	28	15	25	31	21	22	18	18	16	13
10	7	8	7	12	20	12	9	10	13	15	16	16	15	14	13	10	14	8	7	10	10	9	7	5
11	E	E	6	E	5	8	6	9	13	15	17	15	15	15	11	8	13	8	20	13	9	10	11	5
12	8	21	13	13	13	8	8	9	9	10	10	13	50	51	44	22	18	32	20	21	15	10	8	8
13	9	22	20	24	23	20	11	13	19	21	11	13	8	11	11	13	12	19	14	13	13	12	10	7
14	7	8	10	8	7	6	8	8	9	9	10	17	17	15	15	16	15	15	13	12	11	10	9	8
15	7	6	7	6	8	17	11	15	8	8	8	9	11	13	8	13	15	8	11	7	13	15	15	17
16	9	6	8	7	6	E	9	7	13	14	9	14	11	14	14	32	15	8	14	10	7	13	11	8
17	9	8	7	6	5	8	7	13	10	10	10	10	14	14	15	13	9	9	8	48	12	8	6	7
18	7	20	14	8	12	13	7	8	10	11	11	10	13	15	13	11	10	11	7	12	13	12	8	6
19	6	7	13	11	7	17	13	22	16	15	13	8	27	17	25	13	10	13	9	11	11	8	8	7
20	8	8	6	12	14	13	7	11	10	15	35	28	15	17	14	13	23	13	15	14	15	13	9	10
21	8	8	9	16	15	14	13	13	13	12	B	50	20	14	13	15	15	13	18	13	11	13	7	7
22	8	7	9	8	9	11	15	15	19	18	13	22	19	22	15	15	14	12	11	11	13	8	8	7
23	9	6	13	7	19	19	13	15	13	22	20	13	14	14	15	13	13	11	10	9	9	7	9	6
24	6	15	8	7	7	18	12	11	10	9	11	13	12	11	14	13	15	10	7	9	13	8	8	15
25	13	22	7	13	10	10	9	10	22	25	B	B	B	B	B	B	32	22	15	11	9	13	22	18
26	8	9	13	7	10	B	B	B	13	15	18	21	36	B	B	B	23	30	14	13	15	9	8	8
27	B	9	15	7	15	7	13	13	11	20	B	22	B	B	B	B	31	24	13	14	11	8	8	16
28	14	19	13	8	8	13	7	15	15	35	21	17	14	18	B	16	23	19	18	18	19	13	7	24
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	9	9	13	8	10	14	11	11	13	15	16	16	18	18	15	15	15	13	14	13	13	10	8	8
UQ	13	20	16	13	17	18	14	15	16	18	22	23	43	50	41	21	22	23	19	18	15	13	11	16
LQ	7	8	8	7	8	10	8	9	10	10	11	13	14	14	14	13	12	11	10	10	10	8	8	7

FEB. 1981 | F-MIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

FEB. 1981 | 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 20sec 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	B	270	Y	A	A	245	B	B	B	E B 225	220	240	B	E A 270	Y	255	275	280	A
2	A	A	A	A	265	B	A	A	A	200	225	220	B	B	230	220	220	240	B	B	A	A	E A 390	340
3	A	A	A	330	A	A	B	380	260	230	230	225	B	B	240	230	240	B	B	A	290	E B 350	A	A
4	360	395	390	Y	Y	460	280	245	245	220	210	210	200	220	205	220	225	215	235	245	260	370	B	A
5	A	A	Y	B	B	330	280	A	A	B	B	210	240	B	E B 285	255	B	E B 255	250	A	A	A	A	A
6	A	A	A	A	A	Y	A	A	255	230	210	240	225	E B 270	B	250	230	240	A	A	A	A 290	A 330	B
7	A	A	A	A	A	A	Y	Y	E A 260	A	Y	B	Y	250	240	240	235	240	255	260	275	270	275	280
8	300	300	330	350	350	295	275	250	235	225	235	A	230	220	225	220	225	235	240	245	E A 290	A	350	A
9	A	A	A	A	A	A	A	A	A	200	Y	300	B	255	250	230	240	260	250	255	270	280	285	275
10	300	310	320	300	350	310	270	245	220	210	225	240	235	220	205	225	220	225	230	250	240	245	240	240
11	260	275	305	300	315	A	255	240	210	220	230	220	210	205	220	225	200	240	245	245	270	330	A	A 360
12	325	A	A	A	A	A	285	240	A 290	H 205	205	205	B	B	E B 280	230	240	250	240	255	255	245	255	345
13	A	A	350	380	A	A	A	260	260	235	225	210	H 200	245	230	225	220	H 230	250	245	245	250	245	275
14	A	A	A	A 380	380	A	255	225	230	220	205	210	220	230	225	225	225	H 240	235	260	245	245	230	220
15	280	350	330	320	325	A	275	255	230	230	210	210	240	215	225	225	230	230	225	270	425	A	A	A
16	A	A	Y	A	A	A	A	A	A	A	185	H 240	225	235	230	235	H 230	240	230	H 250	300	335	280	A
17	A	A	A	290	A	310	A	H 215	235	235	230	210	H 225	210	225	225	225	225	H 225	E B 300	255	265	310	A
18	A	A	A	A	A	A	300	H 250	230	235	220	225	220	230	225	225	225	H 230	250	240	245	260	230	250
19	A	A	A	A	A	295	280	Y	A	H 205	255	H 215	220	210	220	225	235	235	250	240	260	240	235	245
20	260	280	340	A	A	A	A	H 240	H 230	240	E Y 335	225	220	220	225	225	230	230	300	280	360	350	A	A
21	A	A	A	A	A	A	A	245	245	230	B	B	245	240	230	230	240	235	245	240	235	230	245	230
22	255	280	A	370	A	380	H 270	250	245	230	210	215	215	235	220	240	240	245	235	245	250	230	230	245
23	A	330	A	A	Y	Y	A	350	325	E B 515	270	240	240	225	225	225	240	250	250	275	265	250	E A 290	A 360
24	A	A	A 340	A 380	A 305	360	A	A	240	225	245	230	235	230	A 245	240	250	250	255	280	A	A	A	A
25	A	A	A	415	A	A	Y	A	Y	315	B	B	B	B	B	B	255	250	260	A	A	A	A	A
26	A	A	A	A	A	B	B	B	245	310	225	A	290	B	B	B	250	260	260	290	340	A	A	A
27	B	A	A	A	Y	A	A	A	210	A	B	Y	B	B	B	B	245	260	300	280	A	A	A	A
28	A	A	A	A	A	A	A	270	320	270	255	260	240	245	B	235	235	245	255	260	255	320	A	A
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	8	8	11	7	8	12	16	21	23	22	21	20	20	23	25	27	26	25	22	22	20	17	13
MED	290	305	335	350	325	320	275	248	242	230	225	220	225	229	225	225	235	240	250	254	259	265	U 260	275
UQ	312	340	345	380	350	370	280	258	260	235	240	240	240	240	232	235	240	250	255	272	290	315	285	340
LQ	260	280	325	310	310	302	270	240	230	220	210	210	220	220	225	225	225	230	235	245	250	245	240	245

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAR. 1981 | 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	B	A	60	B	B	47	B	A	66	65	67	B	B	70	B	89	75	X 65	60	63	36	A	42
2	A	A	A	60	48	B	A	A	45	60	O R 47	B	B	63	101	103	Y	61	72	71	63	50	A	49
3	52	60	A	A	A	A	61	64	73	X 80	X 85	U R 86	U R 86	X 86	X 91	X 89	X 89	88	81	73	64	43	A	A
4	A	A	83	A	73	73	70	64	62	Y	B	B	B	O R 71	90	U R 89	81	X 76	70	X 69	65	R 58	55	X 55
5	52	O R 33	A	72	72	63	70	B	B	B	B	B	O R 49	O R 61	U W 70	79	72	63	49	43	A	A	A	A
6	A	A	A	A	A	40	52	U W 52	X 47	57	64	X 64	X 64	X 65	X 64	X 61	X 60	X 60	X 60	X 57	X 56	X 55	X 50	X 44
7	40	41	52	70	90	80	90	90	105	105	105	105	90	90	U R 91	U R 90	B	O R 69	X 54	42	32	38	A	A
8	68	40	51	70	47	A	50	63	71	80	90	X 91	90	B	O R 84	90	74	U R 74	O R 76	68	57	61	52	50
9	46	51	39	70	72	80	88	X 92	105	105	105	107	106	112	109	109	113	114	114	X 99	X 90	80	72	68
10	62	53	45	44	80	90	92	73	80	90	R	X 105	108	108	108	X 114	X 120	X 114	X 84	70	65	46	45	43
11	43	43	35	43	72	63	70	79	90	93	93	92	99	X 94	X 90	X 90	X 100	X 101	X 92	87	77	59	55	57
12	52	47	43	42	72	86	86	99	109	107	102	O R 98	91	R 104	B	X 106	O R 108	X 95	X 97	X 99	X 100	90	72	59
13	37	45	70	65	74	67	70	80	85	91	92	X 98	X 106	X 110	X 114	110	X 111	X 102	73	O R 42	A	A	54	A
14	43	Y	A	60	80	79	73	75	70	76	Y	80	72	70	80	X 77	65	62	68	51	51	45	O R 36	O R 40
15	A	45	47	46	64	70	70	74	Y	Y	B	O R 68	O R 75	O R 75	X 79	X 79	X 78	78	79	X 76	43	A	A	A
16	A	A	A	A	B	79	73	Y	80	80	O R 85	89	99	95	X 85	90	X 86	X 87	X 88	88	85	65	54	A
17	51	58	52	B	A	78	74	O R 72	73	90	80	94	X 100	X 99	99	X 95	X 95	R 100	90	B	69	42	40	28
18	A	O R 48	70	B	A	A	A	70	B	B	B	B	O R 74	81	85	93	O R 96	100	82	70	70	A	A	A
19	A	60	62	78	63	62	72	80	X 82	88	X 85	X 90	O R 89	X 100	X 101	X 100	R 100	X 104	X 100	81	70	52	38	A
20	60	63	70	73	90	65	81	78	70	80	90	90	X 95	R 103	100	92	X 95	105	X 100	83	72	70	49	37
21	38	50	46	70	70	79	75	73	85	100	111	122	130	X 132	X 134	129	121	121	111	99	89	80	A	64
22	64	A	70	66	72	62	80	72	68	85	91	X 100	X 107	110	X 115	109	109	105	105	98	85	80	70	60
23	52	36	52	70	70	72	70	60	X 72	85	95	X 109	X 114	X 120	X 125	X 121	X 122	X 116	X 122	X 112	99	85	72	72
24	60	49	60	60	62	63	70	72	88	X 102	X 115	X 127	X 131	X 134	X 141	X 138	136	129	127	111	98	81	68	50
25	A	66	70	100	80	80	87	89	75	B	67	B	95	X 84	X 90	95	X 92	90	75	63	63	51	37	70
26	92	52	48	74	A	79	43	A	Y	A	Y	B	B	X 73	X 81	X 86	X 90	73	66	60	36	A	A	A
27	A	A	B	B	A	62	70	52	59	B	O R 64	B	C	C	X 90	X 100	X 102	X 105	82	O R 66	B	O R 44	59	A
28	A	52	A	B	63	64	78	73	79	O R 79	86	X 89	X 90	X 85	X 90	X 91	X 92	X 87	X 93	79	B	27	60	41
29	A	A	72	63	43	A	60	A	47	A	B	B	B	B	77	U R 92	106	100	72	70	67	A	A	A
30	60	56	40	A	72	63	63	A	61	69	Y	O R 70	O R 80	O R 91	X 111	O R 107	120	125	129	U R 110	56	37	A	41
31	A	B	Y	60	A	B	B	B	B	Y	O R 58	62	B	X 77	U R 86	95	103	107	98	72	70	R 42	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	18	21	21	22	22	24	28	23	25	22	22	23	24	27	30	30	29	31	31	30	27	25	19	19
MED	52	50	52	66	72	71	70	73	73	85	88	91	93	91	X 90	94	96	100	82	72	67	52	54	50
UQ	60	56	70	70	74	79	79	80	85	93	95	102	106	106	X 108	107	109	105	99	88	81	70	64	60
LQ	43	45	46	60	63	63	66	67	68	79	67	83	83	76	X 84	90	X 89	76	72	63	60	43	47	42

MAR. 1981 | FXI (0.1 MHZ)

The Radio Research Laboratories. Japan

IONOSPHERIC DATA

MAR. 1981 | 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 20sec 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	B	A	F	B	B	F	B	A	F 53	F 54	F 60	B	B	F 60	B	F	F	58	F 52	F 39	F 23	A	F
2	A	A	A	F	F	B	A	A	38	F 40	41	B	B	F	F 80	95	Y	51	64	63	F 53	F	A	R 41
3	F	F 25	A	A	A	A	F 52	F 55	F 65	74	79	80	80	80	R 85	83	83	79	F 72	F 62	F 56	F 27	A	A
4	A	A	F	A	F	F	F	F 50	F	Y	B	B	B	65	F 75	R 79	72	70	61	61	F 58	R 51	J F 49	48
5	F 44	F 27	A	F	F	F	F	B	B	B	B	B	E G 43	55	U W 60	F	F	F	F	F	A	A	A	A
6	A	A	A	A	A	F	F	F 44	41	F 49	F 54	58	58	59	53	55	54	53	53	51	50	49	44	36
7	F 32	36	33	F	F	F	F	F	F	F 90	F 85	F 85	F	82	U R 83	U R 82	B	63	48	F	F	F	A	A
8	F	F	F 23	F	F	A	F	F 56	65	F 70	F 78	85	81	B	78	80	F 66	68	70	F 58	F 46	F 51	45	F 40
9	F 35	J F 36	F 32	F	F	F	F	J R 86	F	F 82	F 90	F 100	F 99	104	101	100	106	107	106	91	J R 86	F 73	F 60	F 56
10	F 46	F 40	F 32	F 37	F	F 48	F 47	F 55	F 61	F 78	R	99	F 101	101	101	108	R 113	108	78	F 63	F 49	F 30	F 28	F 30
11	F 30	F 32	F	F 32	F	F 50	F 58	F 70	F 75	F 78	F 78	F 82	F 89	88	84	84	94	95	86	F 79	F 69	F 49	F 40	F 42
12	F 42	F 36	F 38	F	F 59	F	F 78	F 79	F 97	F 94	F 98	U R 92	R 84	R 98	B	R 99	102	87	89	92	93	F 80	F 63	F 40
13	F 24	F	F	F	F	F 53	F	J F 74	F 70	F 80	R 83	91	100	R 104	108	101	105	95	J F 67	U F 33	A	A	F	A
14	F 30	Y	A	F	F 61	F	F	F	F	F 63	Y	F 70	F 63	F 62	F 71	70	F 52	F 50	F 45	F 43	F 43	F 30	F 28	F 34
15	A	28	F	F	F	F	F	J F 68	Y	Y	B	62	F 66	69	73	73	71	F 70	F 70	70	F 25	A	A	A
16	A	A	A	A	B	F	F 56	Y	R 67	70	R 79	71	85	88	89	82	80	80	81	F 79	F 76	J F 59	F	A
17	F	F	F	B	A	F	F	66	F	F 79	73	87	J R 94	J R 93	90	89	89	94	81	B	F	F 35	F	F
18	A	42	F	B	A	A	A	F	B	B	B	B	68	72	F 77	F 84	90	91	J F 76	F	F	A	A	A
19	A	F	F	F	F	F	F	F	76	77	79	83	83	93	94	95	U R 93	98	92	70	F	F	F	A
20	F	F	F	F	F	F	F	F	F 55	J F 74	F 78	F 80	89	J R 97	91	R 86	89	97	93	J F 77	F	F 35	J F 40	F
21	F	F	F	F	F	F	F	F 53	70	92	100	111	121	J R 126	128	121	J F 115	J F 115	F 104	91	81	F 70	A	F
22	F	A	F	F 42	F	F	F	F	F	F 71	F 80	J R 93	J R 101	F 100	108	101	J F 103	J F 99	J F 99	89	J F 79	F 70	F 60	F 43
23	F	F 27	F	F	F	F	F	F 59	65	76	85	100	108	112	119	114	J R 116	110	J R 116	J R 106	90	F 78	F 60	F 56
24	F 43	F 40	F 40	F 39	F 38	F 40	F 48	F 60	80	95	J R 109	121	124	128	135	132	R 129	F 120	118	106	Z 92	F 71	F 54	F 37
25	A	F	F	F	F	F	F	F	F	B	F 60	B	78	78	84	87	85	J F 84	F 60	F 49	F 40	F 45	F	F
26	A	41	F	F	A	F	F	A	Y	A	Y	B	B	66	75	80	84	F	52	F	F	A	A	A
27	A	A	B	B	A	44	F	F	F	B	58	B	C	C	83	93	95	R 99	F 69	R 60	B	R 38	22	A
28	A	F	A	B	F	F	F	F 55	F 63	R 73	78	83	84	79	84	84	85	81	86	J F 73	B	F	F	F
29	A	A	F	F	F	A	F	A	F	A	B	B	B	B	70	F 79	F 89	F 85	F	F	F	A	A	A
30	F	F	F	A	F	F	F	A	F 50	F 60	Y	R 64	R 74	U R 85	105	U R 111	F 110	115	120	U R 103	F	F 30	A	F
31	A	B	Y	F	A	B	B	B	B	Y	52	55	B	71	R 79	88	96	100	91	Z 66	F	35	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	9	12	6	4	3	5	6	15	16	22	22	23	23	26	30	29	27	28	29	25	18	21	13	12
MED	F 35	F 36	F 32	F 38	F 59	F 48	F 54	F 59	65	F 75	78	83	84	86	84	87	90	92	78	70	F 57	F 49	F 45	F 40
UQ	F 43	40	F 38	F 40	F 60	F 50	F 58	F 69	72	F 80	85	92	100	100	101	100	104	100	92	89	81	F 70	F 60	F 46
LQ	F 30	F 28	F 32	F 34	F 48	F 44	F 48	F 55	58	F 70	F 60	70	76	71	75	82	84	74	64	F 60	F 46	F 35	F 40	F 36

MAR. 1981 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1981 | 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 20sec 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	43	B	36	31	B	B	32	B	45	36	E G 32	E G 32	B	B	33	B	E B 32	35	36	35	32	39	45	42
2	44	81	43	35	42	B	45	41	39	41	35	B	B	32	E B 35	E B 34	28	32	36	41	35	33	39	34
3	36	29	41	51	53	51	45	80	E G 31	31	31	33	35	E G 33	36	35	E G 31	30	26	25	K 18	17	45	43
4	17	40	36	61	35	58	31	36	51	42	B	B	B	E B 53	E B 50	E B 39	E B 51	E B 31	29	25	30	E B 20	18	E B 22
5	19	29	80	27	44	K 35	E B 31	B	B	B	B	B	E B 35	E B 35	27	32	30	35	39	47	65	70	80	43
6	64	36	49	39	36	22	31	33	30	28	E B 31	E G 30	35	41	37	E G 30	E G 28	E G 27	E G 23	20	29	24	29	27
7	23	15	28	70	47	50	41	37	45	E G 28	E G 30	E G 32	E B 41	E G 33	E G 31	E B 41	B	E B 35	24	38	43	35	29	34
8	35	51	28	42	36	41	42	46	43	34	31	35	33	B	E B 68	E B 31	26	E B 40	E B 50	22	22	E B 20	E B 21	E B 15
9	31	30	31	60	42	44	31	25	E G 25	E G 28	31	39	41	32	32	36	27	25	24	E B 21	12	12	12	13
10	13	24	33	34	42	37	23	37	E G 26	E B 30	E B 62	E B 35	34	42	39	E B 40	E B 35	34	26	41	29	26	29	28
11	29	40	33	31	37	50	42	G 16	36	36	29	G 16	30	G 27	G 28	G 28	G 24	42	G 18	E B 20	37	16	28	24
12	28	27	30	37	60	43	36	28	G 14	G 15	29	34	E B 44	E B 56	B	E B 31	E G 27	E G 25	30	22	36	27	E B 19	27
13	31	33	47	47	68	40	38	37	33	29	E G 32	35	40	37	36	E G 29	36	29	32	46	70	99	51	48
14	45	17	58	45	30	37	36	46	43	52	33	34	32	G 27	E B 34	30	37	36	36	33	34	34	41	44
15	45	29	27	65	54	30	27	28	36	36	B	E B 42	E B 38	E B 61	E B 46	E G 29	E G 27	G 22	E B 23	E G 18	39	48	45	41
16	31	80	67	53	B	22	30	48	38	35	E B 60	E B 32	E B 33	E G 31	33	29	26	26	21	16	15	23	37	45
17	43	39	30	65	27	40	22	43	50	31	E G 28	E G 29	32	29	31	27	E G 26	32	29	B	34	24	19	34
18	62	42	35	B	49	55	50	70	B	B	B	B	E B 50	E B 35	E G 28	E G 26	E B 48	27	26	30	46	70	71	42
19	40	42	45	68	71	50	27	32	32	26	27	30	30	36	53	38	29	E B 25	21	16	36	93	70	43
20	59	41	34	38	39	35	37	32	34	32	30	E G 29	E B 32	E B 35	E B 35	26	E G 25	E G 20	K 20	37	24	40	33	17
21	30	32	33	34	32	30	24	22	23	30	30	32	29	37	E G 30	E G 28	26	34	36	28	28	20	63	78
22	43	48	40	34	30	32	34	42	40	35	E G 30	32	32	33	32	27	29	26	28	28	30	15	21	19
23	26	40	18	23	15	14	31	17	26	E B 28	E B 32	29	32	31	E G 29	E G 28	E G 26	K 23	E B 22	E B 15	17	E B 14	16	15
24	22	17	14	12	16	E B 20	13	E B 20	21	25	29	E B 31	31	31	30	44	32	28	30	27	16	20	15	31
25	42	45	70	71	50	42	50	70	36	B	E G 41	B	E B 43	30	E B 31	E G 28	25	29	35	45	45	53	44	41
26	43	66	38	37	72	52	40	35	24	42	36	B	B	E B 35	29	E G 26	24	34	39	38	51	37	40	36
27	70	71	B	B	40	32	31	31	36	B	35	B	C	C	E G 29	E G 27	E B 33	23	27	E B 42	B	E B 30	24	36
28	79	39	49	B	70	31	32	23	35	E B 56	33	26	E G 30	E B 33	E B 35	E B 28	21	E G 21	E G 16	31	B	24	34	35
29	70	45	30	28	39	50	36	45	29	41	B	B	B	B	E B 35	26	E B 45	30	36	36	45	36	42	42
30	43	31	46	73	30	46	39	51	36	40	E G 35	E B 60	E B 60	E B 50	E B 46	E B 60	E B 27	E B 25	E B 32	E B 25	35	29	79	27
31	82	B	28	41	80	B	B	B	B	37	39	E B 45	B	E B 46	E B 37	27	E B 25	K 23	E B 23	E B 14	32	42	33	46
	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	29	30	28	29	28	30	28	28	27	26	23	24	27	30	30	30	31	31	30	29	31	31	31
MED	42	39	36	40	42	40	33	36	36	33	30	24	32	31	E E 34	E E 29	24	28	27	28	34	28	34	35
UQ	45	45	47	60	53	50	40	46	40	37	E E 35	34	E B 40	E B 39	E B 37	E E 35	E E 32	33	35	38	39	40	45	42
LQ	30	29	30	34	35	32	31	28	26	28	30	E E 30	31	30	29	E G 27	24	24	23	18	28	20	22	27

MAR. 1981 | FES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAR. 1981 | 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 20sec 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	B	7	10	B	B	22	B	25	19	18	21	B	B	23	B	32	28	17	15	10	8	11	13
2	11	13	20	9	12	B	20	14	11	13	25	B	B	21	35	34	15	16	16	8	9	8	7	7
3	8	13	15	15	16	20	13	19	15	20	8	26	25	14	15	9	13	13	13	10	9	9	10	13
4	9	14	16	19	14	18	19	21	19	38	B	B	B	53	50	39	51	31	24	23	15	20	13	22
5	15	14	21	15	23	22	31	B	B	B	B	B	35	35	23	20	17	14	15	20	20	19	11	13
6	9	9	10	11	11	10	8	15	12	11	31	8	9	10	13	13	11	14	9	7	7	8	8	8
7	8	8	8	10	13	18	19	18	13	13	17	21	41	18	18	41	B	35	19	14	9	9	8	20
8	10	8	11	14	8	19	15	19	20	14	14	16	25	B	68	31	15	40	50	18	13	20	21	15
9	8	8	8	8	12	14	9	6	13	7	15	11	15	10	15	10	21	12	13	21	11	8	7	9
10	10	9	E	E	8	13	7	9	10	30	62	35	20	18	14	40	35	14	14	20	10	9	8	7
11	6	7	11	10	8	17	19	8	14	11	13	13	13	13	17	18	20	13	14	20	11	9	7	9
12	8	5	E	E	11	13	8	6	6	10	9	23	44	56	B	31	22	19	11	14	10	14	19	8
13	9	10	15	6	8	10	15	13	10	5	27	15	10	11	14	15	9	12	13	15	9	23	14	29
14	8	9	15	8	E	8	11	15	23	12	26	16	14	11	34	9	18	16	13	9	7	6	6	11
15	18	7	6	15	8	13	13	18	28	23	B	42	38	61	46	22	20	15	23	13	10	13	14	13
16	19	9	19	20	B	13	19	31	19	24	60	32	33	21	24	19	18	15	15	15	13	7	6	10
17	13	13	7	31	14	23	13	27	23	15	17	18	31	27	23	15	13	13	15	B	8	9	14	9
18	13	17	14	B	21	22	34	23	B	B	B	B	50	35	15	22	48	24	18	11	10	10	18	7
19	6	E	9	7	7	13	15	18	14	14	13	17	21	22	15	15	20	25	13	7	6	10	10	19
20	23	8	9	7	21	21	13	18	30	16	17	19	32	35	35	23	15	15	15	12	22	9	9	8
21	8	8	8	7	7	8	13	8	21	19	23	20	21	15	11	14	14	12	8	9	10	8	8	8
22	8	23	23	18	24	14	13	15	33	15	13	13	21	22	19	21	18	9	7	7	7	7	6	6
23	5	8	10	8	7	7	7	10	11	28	32	22	20	21	22	23	20	19	22	15	12	14	9	8
24	7	6	5	7	9	20	10	20	15	20	21	31	28	22	18	14	9	10	14	15	9	7	E	7
25	11	8	8	8	15	7	14	13	33	B	31	B	43	22	31	13	10	22	19	10	12	16	13	8
26	7	10	10	13	11	11	9	14	20	15	23	B	B	35	19	19	15	13	13	8	10	10	13	6
27	7	7	B	B	16	21	8	18	19	B	24	B	C	C	25	23	33	15	17	42	B	30	15	9
28	9	10	24	B	9	27	13	20	22	56	22	23	19	33	35	28	19	18	15	13	B	19	11	14
29	11	25	22	22	20	27	8	20	17	31	B	B	B	B	35	23	45	18	9	8	8	13	13	7
30	6	7	11	26	8	13	10	18	20	13	31	60	60	50	46	60	27	25	32	25	15	15	18	18
31	25	B	23	23	22	B	B	B	B	34	35	45	B	46	37	23	25	19	23	14	11	9	9	13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	30	30	31	31	31	31	31	31	31	31	31	31
MED	9	9	11	11	12	17	13	18	19	19	24	23	32	22	23	22	19	15	15	14	10	9	10	9
UQ	11	13	18	20	18	22	19	20	24	30	34	D B 60	50	46	35	30	26	20	18	19	12	14	14	13
LQ	8	8	8	8	8	13	10	14	14	13	17	18	20	18	16	15	15	13	13	10	9	8	8	8

MAR. 1981 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

MAR. 1981 | 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 20sec 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	B	A	355	B	B	A	B	A	225	265	255	B	B	245	B	260	390	245	295	395	295	A	A
2	A	A	A	A	A	B	A	A	A 300	250	260	B	B	A	270	255	Y	270	265	250	270	A	A	A
3	A	A	A	A	A	A	A	A	290	250	230	225	225	230	230	240	245	245	240	240	255	315	A	A
4	A	A	A	A	A	A	A	A	A	Y	B	B	B	B	B	E B 260	B	270	260	290	265	290	310	305
5	280	260	A	A	A	A	350	B	B	B	B	B	245	300	Y	E A 310	265	E A 270	265	A	A	A	A	A
6	A	A	A	A	A	A	A	350	275	240	250	250	250	260	240	250	255	255	275	260	270	260	260	280
7	300	330	A	A	A	A	A	340	320	225	260	245	E B 290	235	240	E B 330	B	E B 280	E Y 350	A	A	A	A	A
8	A	A	A	A	A	A	A	A	A	240	250	270	270	B	B	245	260	E B 340	E B 300	275	270	E B 300	295	295
9	320	380	A	A	320	A	A	240	245	240	240	235	H 235	H 235	235	H 240	245	235	230	235	230	225	230	250
10	250	280	E A 410	E A 460	A	A	A 320	A 300	250	245	B	250	230	250	240	E B 275	250	250	260	250	230	360	E A 310	285
11	A 365	A	A	A 405	310	A	490	350	A 305	245	225	240	235	250	245	250	250	255	240	240	240	260	A 290	A 260
12	A 290	A 375	A 360	A 375	375	360	350	255	250	H 235	240	245	E B 390	E B 375	B	245	240	255	260	240	240	240	220	240
13	A 400	A	A 430	A	A	A	460	315	250	255	245	245	240	240	235	235	250	265	360	A	A	A	A 380	A
14	A	Y	A	A 400	A 330	A 300	A A 355	A	A	A	Y	A 255	A 250	Y 260	255	Y 250	A 320	A 300	A 350	A 340	A 300	A 320	A	A
15	A	350	A	A	A 355	A	A 350	300	Y	Y	B	E B 275	E B 270	B	E B 320	250	260	270	255	260	A	A	A	A
16	A	A	A	A	B	315	395	A	A	E A 300	B	250	255	245	260	230	250	250	255	250	250	250	A	A
17	A	A	A	B	A	Y	Y	Y	B	250	205	240	245	240	235	250	240	270	275	B	A	315	290	A
18	A	A	A	B	A	A	A	A	B	B	B	B	B	260	240	245	E B 335	260	300	A	A	A	A	A
19	A	A	A	A	A	A	A	A	310	250	250	235	250	250	E A 250	235	240	225	220	240	A	A	A	A
20	A	A	A	A	A	A	A	A	E A 350	260	250	230	255	255	250	245	255	260	250	255	275	300	275	320
21	A	A	A	A	A	A	A	275	260	235	240	225	225	240	240	230	225	240	210	215	215	230	A	A
22	A	A	Y	A	A	A	A	A	A	255	250	240	250	250	240	240	240	230	230	230	235	230	240	255
23	290	A	A	A	A	355	300	H 250	240	235	245	240	235	235	250	240	225	220	230	220	210	220	225	240
24	240	270	305	325	325	355	310	275	250	245	230	230	225	230	240	230	225	220	220	210	205	220	240	340
25	A	A	A	A	A	A	355	A	Y	B	H 310	B	E B 280	230	250	250	270	340	325	A	345	A	A	A
26	A	A	A	A	A	A	A	A	Y	A	Y	B	B	275	255	250	280	H 365	315	A	A	A	A	A
27	A	A	B	B	A	A	A	A	A	B	E Y 400	B	C	C	250	250	245	260	255	E B 325	B	E B 290	A	A
28	A	A	A	B	A	A	375	295	340	E B 375	290	245	250	E B 245	265	245	240	265	265	300	B	A	A	A
29	A	A	A	A	A	A	A	A	A	A	B	B	B	B	E B 275	270	310	270	390	350	A	A	A	A
30	A	A	A	A	285	A	A	A	A	A	Y	B	E B 300	260	260	E B 300	245	235	270	280	A	A	A	A
31	A	B	Y	A	A	B	B	B	B	Y	Y	B	B	E B 300	260	245	260	255	230	270	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	9	7	4	6	7	5	12	12	15	20	20	21	23	24	27	30	28	31	31	24	18	18	13	11
MED	290	330	U A 358	A 376	325	355	352	298	268	244	249	242	242	246	245	246	250	258	258	251	252	265	268	280
UQ	A 320	362	A 420	A 402	342	355	385	328	305	251	258	250	256	259	255	250	260	270	280	282	270	300	292	300
LQ	280	275	332	355	315	315	335	265	250	238	240	235	235	236	240	240	240	248	240	240	230	230	240	252

MAR. 1981 | H'F (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1981 | 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	60	70	A	80	63	A	A	Y	A	B	B	B	B	B	B	OR 86	98	B	102	63	Y	Y	B	B
2	Y	45	B	B	A	X 40	OR 44	OR 56	OR 60	OR 62	OR 74	OR 73	B	B	OR 84	OR 95	OR 87	R	R	OR 89	83	39	A	A
3	A	A	A	A	60	A	B	B	67	77	R 79	R 90	X 96	OR 106	X 111	X 116	X 120	119	UR 105	UR 105	70	A	OR 52	A
4	B	45	B	70	69	65	B	OR 47	OR 51	X 77	OR 86	UR 100	X 112	X 112	X 117	120	119	UR 120	S	113	R 95	75	41	33
5	A	30	A	40	A	72	80	75	81	91	X 100	X 114	X 122	X 132	X 141	X 136	UR 136	X 128	X 128	118	95	X 85	59	33
6	30	63	72	80	90	80	80	85	90	OR 91	R 104	98	110	121	X 126	X 127	X 126	OR 126	126	UR 120	108	93	77	60
7	54	51	50	60	58	60	72	80	85	UF 104	110	R 123	X 131	X 137	X 134	X 134	X 137	UR 125	OR 136	X 120	110	X 99	80	63
8	55	80	63	70	70	70	80	85	90	95	X 95	103	X 114	X 120	X 125	X 143	X 143	X 140	X 130	X 116	83	34	60	60
9	A	57	80	A	Y	70	60	OR 53	70	72	92	95	110	X 120	X 127	X 129	119	129	125	X 110	X 95	X 82	58	43
10	43	34	46	60	46	70	82	92	90	108	X 124	138	X 140	143	X 141	X 146	X 146	R 143	138	120	111	100	71	62
11	69	44	45	43	60	70	70	70	65	R	OR 110	X 120	X 125	X 131	X 137	130	X 126	138	B	65	72	45	43	57
12	Y	B	Y	A	A	B	B	B	B	B	B	B	B	OR 70	OR 78	B	B	B	B	Y	66	Y	X 62	A
13	Y	A	A	70	45	A	56	52	A	B	E G 39	E G 44	B	B	OR 52	OR 56	OR 61	58	44	35	39	A	OR 40	63
14	43	A	B	70	72	B	A	OR 51	B	B	70	B	90	B	105	111	120	X 116	X 104	65	45	41	48	41
15	A	A	25	59	70	59	90	62	X 71	X 86	X 102	X 115	X 130	X 134	X 140	X 135	X 131	X 129	X 121	X 105	89	X 76	60	70
16	92	33	70	73	B	A	62	60	68	70	X 99	121	OR 136	X 126	X 119	UR 121	UR 130	O 150	145	120	103	71	60	60
17	44	46	A	A	70	73	79	79	B	B	B	B	B	B	96	110	115	112	110	43	53	A	40	40
18	A	53	45	46	70	A	63	71	71	80	87	X 100	X 110	X 124	X 127	X 132	X 126	X 121	OR 121	X 87	OR 37	45	60	53
19	OR 49	53	45	A	79	70	A	B	A	OR 66	B	OR 84	X 95	X 140	X 141	112	X 135	122	70	36	70	A	A	58
20	48	48	72	45	45	70	48	43	A	A	B	B	B	OR 60	OR 64	81	83	UR 105	80	63	A	A	A	A
21	A	63	B	A	OR 51	A	43	A	Y	Y	B	B	B	74	115	X 136	X 111	85	62	45	A	A	A	A
22	B	B	A	B	A	45	63	45	B	B	B	B	B	OR 74	91	109	120	120	80	B	45	A	A	43
23	70	63	A	A	B	40	A	60	B	A	B	B	B	B	B	OR 89	R	B	80	78	72	A	40	44
24	A	A	63	51	70	48	53	51	B	B	OR 60	79	X 84	OR 89	B	B	B	X 130	70	45	39	A	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	X 106	B	B	B	B
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	OR 141	OR 151	63	64	B	A	OR 76	B	B
27	A	B	B	70	B	43	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	A	B	B	A	OR 51	B	B	A	OR 41	B	B	OR 89	B	R	OR 119	R	X 106	112	OR 115	73	Y	40	Y	R 54
29	R 74	A	A	64	43	A	A	51	B	B	B	B	B	B	B	B	B	OR 120	112	B	B	B	A	A
30	A	A	B	A	45	B	R 61	69	69	70	OR 85	R	R 112	R 122	OR 136	141	140	123	112	103	81	OR 44	25	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	13	17	12	17	20	17	18	21	15	14	17	17	16	19	23	24	24	24	24	25	22	16	18	18
MED	54	51	56	64	62	70	63	60	70	78	92	100	X 112	X 121	X 119	124	123	122	111	89	76	73	58	56
UQ	69	63	71	70	70	70	80	75	83	91	X 102	115	X 128	X 132	X 135	X 136	X 136	129	126	113	95	84	60	60
LQ	44	45	45	51	48	48	56	51	66	70	R 79	89	103	98	100	110	113	114	80	63	53	42	41	43

APR. 1981 | FXI (0.1 MHZ)

IONOSPHERIC DATA

APR. 1981 | 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	F	A	F	A	A	A	Y	A	B	B	B	B	B	B	80	90	B	93	F	Y	Y	B	B
2	Y	F	B	B	A	J R 34	38	50	54	56	68	67	B	B	R 78	R 89	U R 81	R	R	U R 83	75	F 32	A	A
3	A	A	A	A	48	A	B	B	F 59	67	R 72	U R 80	90	U R 100	105	110	114	110	U R 95	U R 99	36	A	46	A
4	B	F	B	F	F	45	B	41	R 45	70	U R 80	U R 93	106	105	110	U R 112	109	J R 114	D S 80	106	R 85	55	29	F 21
5	A	F	A	F	A	F	F	F	F 71	85	J R 94	108	J R 116	126	135	J R 130	U R 130	J R 126	J R 126	110	85	78	F 45	F 25
6	F	F	46	F	F	F	F	F	F 77	85	J R 98	91	103	114	120	121	120	121	R 121	J R 114	U F 95	J F 87	F 60	J F 45
7	F 26	F	F	F 38	40	F	F	F	F	F 97	J F 104	R 114	122	130	J R 123	128	J R 130	J R 119	130	J R 114	J F 104	J R 93	F 63	F 56
8	F	F	F	F	F	F	F	J F 79	J F 84	J F 89	89	J F 97	108	113	119	137	137	134	124	110	J F 76	F	F	F
9	A	F	F	A	Y	F	F	47	F	F 60	81	R 83	F 98	J R 114	120	123	111	R 123	J F 119	103	89	R 76	F 45	F 29
10	F 26	27	F	F	F	F 45	F	F	J F 84	J F 102	J R 118	R 132	J R 134	J F 137	135	140	J R 140	R 136	130	J F 114	R 105	J F 94	J F 65	F 50
11	F	F 24	F	F 36	F 37	F 35	F	F 45	F	D R 80	R 104	J R 114	119	124	J R 131	123	120	J F 132	B	55	F 57	F	F	F
12	Y	B	Y	A	A	B	B	B	B	B	B	B	B	R 64	72	B	B	B	B	Y	F	Y	J R 56	A
13	Y	A	A	F	F	A	F	F	A	B	E G 32	E G 35	B	B	46	50	55	50	F	F	F	A	34	F
14	F	A	B	F	F	B	A	46	B	B	F 61	B	F 80	B	U R 98	104	110	110	98	F	F 32	F 26	F	F
15	A	A	F	F	F	F	F 40	F 59	65	80	J R 96	109	124	128	134	J R 129	125	123	115	J R 99	82	70	J F 54	F
16	F	F	F	F	B	A	F 50	F	F	F 60	J R 93	111	130	120	113	U R 112	J R 124	F	J F 139	J F 114	J F 97	F 33	F 27	F
17	F	F	A	A	F	F	F	F	B	B	B	B	B	B	88	F	F	F	F	F	F	A	F	F
18	A	F	F	F	F	A	F	F	F 60	F 70	F 80	J R 94	J R 104	118	121	125	120	115	115	81	31	29	F	F
19	43	43	36	A	F	F	A	B	A	60	B	R 78	88	133	135	J F 106	129	J F 116	F	F	F	A	A	F
20	F	F	F	F	F	F	F	F	A	A	B	B	B	54	58	F 74	F 96	U R 98	F 65	Y	A	A	A	A
21	A	F	B	A	R 45	A	F	A	Y	Y	B	B	B	F	J F 109	J R 130	105	F 70	F	J F 39	A	A	A	A
22	B	B	A	B	A	F	F	F 35	B	B	B	B	B	68	82	100	109	110	J F 74	B	F	A	A	F
23	F 51	F	A	A	B	F	A	F	B	A	B	B	B	B	B	U R 82	D R 70	B	F 60	F	F 40	A	F	F
24	A	A	F	F	F	F	F 38	F	B	B	54	71	78	R 83	B	B	B	J R 124	F 41	F 23	F 30	A	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	J R 100	B	B	B	B
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	U R 135	U R 145	F	F 38	B	A	R 70	B	B
27	A	B	B	F 50	B	F	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	A	B	B	A	R 45	B	B	A	R 35	B	B	U R 83	B	D R 80	R 113	D R 80	100	103	109	55	Y	F	Y	R 48
29	R 68	A	A	F	F	A	A	F	B	B	B	B	B	B	B	B	B	U R 114	R 86	B	B	B	A	A
30	A	A	B	A	F 37	B	R 55	F 45	F 50	F 63	79	R	106	R 114	130	133	133	114	F 102	F 91	F 71	38	F	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	2	3	6	4	5	9	11	15	17	17	16	19	23	24	24	21	21	18	17	13	11	7
MED	F 43	27	41	F 38	42	40	F 40	F 46	F 60	70	81	R 93	106	114	113	119	118	115	106	100	F 76	70	F 46	F 45
UQ	51	35		F 44	R 45	45	F 50	50	F 74	86	J R 96	R 109	120	125	129	130	130	123	121	J 110	89	78	F 58	F 49
LQ	F 26	26		F 37	F 37	34	F 38	F 45	52	62	72	R 80	94	U R 97	93	98	104	110	F 80	81	F 40	33	40	F 27

APR. 1981 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1981 | 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	45	40	35	45	41	41	29	E G 41	B	B	B	B	B	B	E B 54	E B 27	B	E B 50	E B 23	29	K 29	B	B
2	32	K 31	B	B	36	29	25	E B 27	E B 49	E B 47	E B 43	E B 45	B	B	E B 35	E B 33	E B 25	E B 71	E B 43	E B 33	E B 17	28	26	25
3	25	35	50	46	32	43	B	B	E B 34	26	E B 30	E B 30	27	E B 35	28	28	E B 27	E B 24	E B 23	E B 21	E B 22	36	41	34
4	B	67	B	32	31	33	B	28	43	E B 30	E B 30	E B 29	29	30	28	K 27	E B 24	E B 22	E B 30	E B 24	E B 24	E B 20	29	E B 18
5	49	36	31	67	35	39	39	21	21	24	26	28	28	26	28	31	29	25	34	27	21	22	11	33
6	46	49	63	40	42	45	46	34	34	36	E B 44	E B 32	E G 28	E G 25	E G 23	G 19	22	K 20	E B 23	E B 17	14	16	24	30
7	31	30	37	41	43	37	57	45	31	25	E B 35	E B 30	27	28	G 26	E G 23	E G 21	E B 50	E B 35	E B 14	15	15	12	E B 20
8	34	41	42	37	62	60	40	39	23	24	27	28	E B 31	33	26	32	E G 19	E G 13	30	37	35	91	69	70
9	54	35	70	92	39	25	37	37	46	27	32	E G 27	36	28	27	26	22	K 20	14	13	18	14	25	28
10	32	32	60	50	47	44	48	43	34	25	E G 26	29	30	28	G	29	24	21	26	34	31	23	12	31
11	35	32	37	33	25	24	E B 13	20	E B 29	E B 31	E B 45	E B 31	27	28	26	K 25	E B 31	E B 27	B	35	37	35	35	39
12	26	B	35	61	41	B	B	B	B	B	B	B	B	E B 51	E B 50	B	B	B	B	36	42	28	32	36
13	33	43	42	70	26	37	42	33	44	B	E B 36	E B 27	B	B	30	36	E B 25	29	33	40	35	33	43	17
14	88	67	B	41	27	B	40	33	B	B	E G 41	B	E B 34	B	E B 30	23	G 16	G 15	20	35	34	42	33	32
15	37	53	64	33	37	33	30	20	20	23	27	27	27	28	26	26	20	17	30	36	29	12	26	34
16	34	28	51	55	B	42	43	46	26	25	E B 25	27	26	G 23	E B 31	E B 31	E B 35	E B 23	25	E B 22	29	29	32	26
17	33	41	70	50	43	39	47	51	B	B	B	B	B	B	E B 28	E B 30	E B 35	E B 29	E B 25	27	35	70	32	35
18	43	35	39	42	36	35	32	32	20	E B 23	30	24	25	E B 26	E B 29	E B 23	20	14	E B 22	E B 20	36	27	33	31
19	36	35	80	52	59	58	40	B	35	E B 51	B	E B 37	E B 35	E B 24	E B 25	E B 22	E B 25	20	32	33	41	70	38	60
20	42	70	52	70	70	52	37	35	40	41	B	B	B	E B 27	E B 35	E B 23	24	E B 35	23	29	36	43	39	69
21	41	38	75	32	29	36	48	65	40	41	B	B	B	E B 32	28	29	34	35	31	29	42	62	35	36
22	B	B	36	B	35	31	43	29	B	B	B	B	B	E B 31	E B 23	E B 22	K 20	17	30	B	29	62	47	60
23	48	58	36	78	B	45	51	27	B	50	B	B	B	B	B	E B 50	E B 60	B	27	E B 40	32	35	30	35
24	80	33	30	46	32	39	39	41	B	B	E B 38	E B 25	E B 39	E B 68	B	B	B	26	K 27	24	E B 27	35	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 32	B	B	B	B
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 56	E B 63	E B 40	31	B	33	36	B	B
27	39	B	B	E B 26	82	31	80	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	53	B	B	31	31	B	B	37	30	B	B	E B 57	B	E B 36	E B 43	E B 35	E B 25	E B 22	E B 21	27	35	31	30	35
29	35	50	70	35	36	35	41	20	B	B	B	B	B	B	B	B	B	E B 61	E B 33	B	B	B	45	63
30	80	59	B	27	31	B	E B 40	36	26	E B 32	E B 31	E B 60	E B 32	E B 35	E B 45	E B 30	E B 35	E B 25	E B 23	E B 20	E B 21	E B 22	E B 23	27
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	24	22	26	26	24	24	24	20	18	17	18	16	20	23	25	25	25	26	26	27	27	25	25
MED	38	40	46	42	36	38	40	34	31	26	E B 31	E B 29	27	E E 28	E E 28	E E 29	E B 25	E E 24	25	27	31	31	32	34
UQ	48	52	64	55	43	44	46	40	39	E B 41	E B 38	E B 32	E B 33	E B 34	E B 30	E B 32	E B 31	E B 29	31	34	35	39	38	36
LQ	33	34	37	33	31	33	38	28	24	25	E E 27	26	27	25	26	23	21	18	18	E B 22	20	22	26	28

APR. 1981 | FES (0.1 MHZ)

IONOSPHERIC DATA

APR. 1981 | 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	11	13	15	9	19	27	13	14	20	B	B	B	B	B	B	54	27	B	50	23	23	23	B	B
2	26	22	B	B	21	18	20	27	49	47	43	45	B	B	35	33	25	71	43	33	17	18	20	14
3	14	21	21	18	22	22	B	B	34	22	30	30	24	35	24	22	27	24	23	21	22	22	24	22
4	B	21	B	21	21	23	B	25	27	30	30	29	23	21	25	23	24	22	30	24	24	20	13	18
5	17	17	15	22	20	18	12	13	15	21	20	22	23	15	14	14	13	15	10	9	7	7	7	8
6	13	9	10	9	15	10	10	9	8	32	44	32	21	21	18	15	15	15	23	17	10	10	8	8
7	8	9	15	13	12	15	13	10	14	15	35	30	23	20	14	18	17	50	35	14	8	9	7	20
8	7	7	11	7	7	7	13	8	13	15	15	21	31	13	18	17	13	12	7	7	6	10	7	10
9	7	11	13	21	23	15	23	15	18	22	25	18	18	18	15	15	15	12	9	8	6	7	7	7
10	8	9	13	15	13	13	9	8	10	18	19	15	15	15	18	24	20	13	10	7	7	7	8	9
11	11	10	14	13	13	10	13	13	29	31	45	31	18	21	21	21	31	27	B	29	20	22	22	18
12	23	B	25	22	30	B	B	B	B	B	B	B	B	51	50	B	B	B	B	34	29	23	25	24
13	24	25	28	20	23	22	25	20	22	B	36	27	B	B	22	20	25	23	15	13	12	13	14	13
14	12	10	B	13	12	B	7	23	B	B	23	B	34	B	30	17	15	10	10	10	11	10	10	10
15	25	11	8	7	15	11	11	11	13	14	17	15	21	13	19	20	10	9	7	7	7	8	13	11
16	13	13	18	11	B	36	15	13	18	22	25	24	24	19	31	31	35	23	15	22	18	13	13	10
17	11	14	19	17	14	19	15	15	B	B	B	B	B	B	28	30	35	29	25	15	13	16	17	16
18	15	17	15	13	11	29	18	13	19	23	22	22	20	26	29	23	18	10	22	20	13	13	11	11
19	18	13	15	21	15	20	23	B	27	51	B	37	35	24	25	22	25	15	13	12	14	14	22	13
20	10	11	13	9	13	13	19	17	31	22	B	B	B	27	35	23	20	35	15	13	15	13	10	15
21	14	11	32	13	11	15	11	33	23	29	B	B	B	32	22	19	18	9	8	9	10	9	13	8
22	B	B	23	B	8	15	10	21	B	B	B	B	B	31	23	22	18	15	11	B	10	9	22	8
23	12	9	23	25	B	13	10	18	B	20	B	B	B	B	B	50	60	B	13	40	8	8	8	8
24	14	19	17	9	15	11	10	13	B	B	38	25	39	68	B	B	B	13	19	13	27	13	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	32	B	B	B	B
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	56	63	40	21	B	28	33	B	B
27	31	B	B	26	60	24	55	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	29	B	B	21	26	B	B	20	24	B	B	57	B	36	43	35	25	22	21	21	23	18	18	19
29	17	20	21	23	23	27	21	19	B	B	B	B	B	B	B	B	B	61	33	B	B	B	23	22
30	20	35	B	21	22	B	40	21	20	32	31	60	32	35	45	30	35	25	23	20	21	22	23	22
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	14	16	20	19	20	20	16	18	27	32	44	41	37	34	28	23	25	23	21	20	14	13	16	14
UQ	25	25	B	22	23	29	40	27	B	B	B	B	B	B	50	50	35	50	33	32	23	22	23	22
LQ	11	11	15	13	13	13	11	13	18	22	25	25	23	21	21	20	18	13	11	12	10	9	10	10

APR. 1981 | F-MIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

APR. 1981 | 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	300	A	A	A	A	A	B	B	B	B	B	B	E B 350	250	B	280	300	Y	Y	B	B
2	Y	E Y 370	B	B	A	A	A	B	B	B	E B 360	E B 320	B	B	E B 260	265	270	E B 330	250	250	235	325	A	A
3	A	A	A	A	A	A	B	B	E B 290	Y 280	260	255	240	250	250	250	250	230	260	250	340	A	360	A
4	B	A	B	A	A	A	B	A	A	275	250	250	255	250	250	240	240	245	250	255	255	260	380	370
5	A	A	A	A	A	A	A	300	260	250	245	240	225	240	235	225	230	210	235	215	205	220	220	E A 330
6	A	A	A	A	A	A	A	310	280	E Y 365	260	250	235	245	245	240	240	240	230	215	215	230	220	260
7	A	A	A	A	A	Y	A	360	290	250	260	240	240	240	235	250	240	260	250	220	215	220	235	250
8	A	A	A	A	A	A	A	310	250	250	240	250	250	240	230	240	225	225	215	225	240	A	A	A
9	A	A	A	A	Y	Y	A	A	A	385	260	250	240	240	240	235	235	225	230	210	230	250	240	H 275
10	A	A	A	A	A	A	A	A	A	240	240	240	240	240	230	240	215	230	215	230	220	210	225	270
11	A	A	A	A	A	360	330	295	250	250	250	235	240	240	235	250	235	250	B	A	A	A	Y	A
12	A	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	A	Y	H 225	A
13	A	A	A	A	A	A	A	A	A	B	E B 315	E B 300	B	B	300	E B 310	B	380	A	A	A	A	A	A
14	A	A	B	A	310	B	A	B	B	B	E B 360	B	270	B	250	235	260	250	260	A	A	A	A	A
15	A	A	A	A	A	A	A 415	380	260	240	245	245	240	230	235	225	225	225	205	A 225	225	215	260	A
16	A	A	A	A	B	A	A	A	A	A	255	240	240	260	255	255	240	235	220	255	260	305	355	260
17	A	A	A	A	A	A	A	A	B	B	B	B	B	B	275	275	280	275	300	A	A	A	A	A
18	A	330	A	A	A	A	A	A	310	280	250	245	230	235	235	235	220	215	220	240	A	A	250	A
19	A	255	A	A	A	A	A	B	A	B	B	290	275	260	275	300	260	240	325	A	A	A	A	A
20	A	A	A	A	A	A	A	A	A	A	B	B	B	285	E B 350	315	250	290	300	Y	A	A	A	A
21	A	A	B	A	350	A	A	A	Y	Y	B	B	B	E B 350	280	240	260	280	A	340	A	A	A	A
22	B	B	A	B	A	B	A	A	B	B	B	B	B	270	255	260	260	250	245	B	A	A	A	A
23	305	A	A	A	B	A	A	A	B	A	B	B	B	B	B	E B 360	B	B	290	E B 295	290	A	A	A
24	A	A	A	A	A	A	A	A	B	B	280	230	250	E B 345	B	B	B	290	B	A	B	A	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	225	B	B	B	B
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	240	260	B	A	B	A	E Y 290	B	B
27	A	B	B	E B 325	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	A	B	B	A	Y	B	B	A	A	B	B	E B 290	B	250	250	250	205	215	235	285	Y	B	Y	A
29	H 200	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	270	220	B	B	B	A	A
30	A	A	B	A	A	B	B	A	A	270	240	255	230	225	215	220	220	200	220	220	205	225	B	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	3		2	2	1	2	6	8	12	17	18	16	19	22	25	23	24	22	18	13	11	11	7
MED	252	U 292		306	330	360	372	310	265	255	252	246	240	242	246	245	240	241	240	232	230	228	240	265
UQ		340						360	290	279	260	252	250	255	258	258	260	268	260	255	255	265	308	U 287
LQ		292						300	255	250	245	240	238	240	235	240	228	225	220	220	215	220	225	260

APR. 1981 | H'F (KM)

IONOSPHERIC DATA

MAY. 1981 | 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	O R 43	50	57	67	72	74	80	86	88	85	O R 86	O R 80	X 102	X 126	125	X 130	B	132	110	89	60	R	A
2	40	42	A	A	80	72	Y	72	81	82	J R 88	100	114	122	X 126	131	X 127	X 125	121	100	71	45	32	29
3	31	52	47	52	47	52	63	69	62	68	72	103	B	B	124	138	X 131	X 125	120	X 107	95	O R 63	O R 39	28
4	51	42	43	42	44	51	62	70	71	79	O R 96	111	X 136	X 149	D 151	X 151	X 140	X 132	X 113	X 104	77	46	34	60
5	40	46	64	70	66	78	80	70	80	86	X 105	X 126	X 137	X 141	X 146	X 148	X 140	X 130	125	100	80	51	33	33
6	52	60	70	70	70	71	75	90	B	B	90	110	133	X 144	X 150	X 147	X 140	X 132	X 131	115	85	51	33	51
7	52	70	71	72	65	71	90	85	90	90	115	129	X 132	X 140	R 130	X 141	X 150	X 127	X 125	110	95	76	45	43
8	35	36	46	50	70	70	70	80	83	90	92	112	X 125	X 132	X 142	X 140	X 134	X 125	X 122	113	79	61	35	46
9	45	45	80	60	70	71	80	62	B	B	B	B	B	B	71	O R 77	S	100	80	42	31	35	43	O R 43
10	50	Y	41	B	A	64	70	45	O R 53	B	B	B	O R 88	B	B	R	X 114	114	100	61	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	A	B	O R 46	B	O R 74	O R 84	X 100	R	X 116	X 106	O R 111	111	73	B	B	A	A	A
13	B	A	A	A	44	70	B	80	B	B	B	B	B	R	R	R	R	R	77	62	O R 44	O R 30	B	B
14	B	B	B	B	B	A	B	A	A	B	B	B	110	O R 84	105	114	136	B	128	90	78	58	43	A
15	A	44	66	55	68	83	A	A	A	B	B	B	B	B	B	83	O R 84	B	B	B	A	B	A	A
16	A	B	A	B	A	B	B	A	A	B	B	B	62	75	135	110	B	B	B	B	B	B	B	B
17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	111	B	O R 86	100	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	71	O R 53	46	70	68	45	41	B
19	B	A	A	A	A	A	A	A	A	A	B	B	O R 77	S	U R 100	B	120	110	110	A	A	A	A	40
20	38	A	A	B	A	B	A	A	A	B	A	B	O R 56	O R 71	73	82	100	87	62	O R 36	A	A	B	B
21	A	O R 37	A	A	B	A	A	A	A	B	B	B	90	R	R	X 111	101	B	O R 71	64	42	43	A	A
22	60	41	B	37	A	A	A	B	B	B	O R 57	74	89	O R 116	O R 124	X 110	85	100	68	60	30	B	A	A
23	33	A	26	33	35	42	37	37	30	B	B	B	B	80	130	121	B	75	90	58	57	A	A	A
24	A	B	A	A	A	A	A	B	B	B	B	B	B	B	115	121	125	100	75	50	24	A	A	45
25	56	A	B	A	38	A	60	B	A	B	B	B	A	68	100	90	88	90	73	28	99	A	70	50
26	A	A	A	A	B	B	A	A	A	A	A	58	O R 51	X 60	67	70	75	73	46	B	O R 24	O R 21	25	25
27	54	60	69	A	60	67	64	55	63	63	71	82	X 96	110	111	X 99	74	80	72	38	29	B	A	70
28	90	51	50	A	B	A	53	A	B	B	70	75	74	89	100	X 93	X 85	100	88	80	41	27	35	A
29	43	43	43	60	53	A	A	A	55	64	72	71	O R 86	105	110	104	96	90	91	60	32	O R 30	37	60
30	41	37	37	A	43	50	A	57	67	69	73	82	99	X 110	X 111	X 100	94	91	83	63	44	B	B	35
31	A	A	A	A	48	52	70	70	70	70	B	X 80	101	111	X 106	105	111	85	80	66	Y	B	O R 22	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	17	16	15	12	17	16	14	15	14	11	14	16	21	19	24	26	25	24	28	24	22	16	15	15
MED	45	44	50	56	60	70	70	70	68	79	80	85	96	110	116	110	111	100	89	65	62	46	35	43
UQ	52	52	68	65	68	72	75	80	81	87	92	110	X 114	X 127	130	131	X 131	X 125	120	102	80	59	42	50
LQ	40	42	43	46	44	52	62	60	55	68	72	78	O R 80	82	102	99	88	86	73	59	32	32	33	34

MAY. 1981 | FXI (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAY. 1981 | 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	R 37	42	F	F	F	F	F	F 60	F 78	F 70	80	74	J R 96	120	115	124	B	R 122	F 90	J F 83	F	R	A
2	F	F	A	A	F 33	F	Y	J F 59	J F 75	F 72	R 82	90	105	114	119	121	121	119	112	J F 94	J F 65	F 35	F 22	F 21
3	F 21	F 21	25	F 41	F	47	F	J F 54	J F 57	J F 59	F 62	Z 96	B	B	F	132	124	J R 119	J S 114	J R 102	87	57	R 33	F
4	F 23	23	25	F	F 35	F 36	F 37	F	35	F 60	R 90	103	130	143	151	145	J R 134	126	107	J R 98	J F 71	F 34	F 24	F 23
5	22	27	F 21	F 22	F 42	F	F	F 52	J F 67	J F 80	J R 99	120	J R 131	135	141	142	134	J R 124	118	92	F 63	F 37	F 26	F 20
6	F 19	F 21	F 21	F 21	F 21	F 20	F 21	F	B	B	F 80	100	F 125	J R 138	144	141	132	125	125	J F 109	J F 79	F 42	F 26	F 21
7	F 21	R 30	F 35	F 36	F 45	F	F	F	F	F	J F 109	J F 123	126	J R 134	R 123	J R 135	J R 144	121	J R 119	F 96	F 83	J F 70	F 35	F 30
8	F 26	F 27	28	F 26	F 26	F 26	F 25	F	J F 77	F 52	F 70	Z 106	J R 119	125	135	J R 134	124	119	115	J F 107	F 70	F 51	27	F 23
9	F 23	23	43	F	F	F	F	F	B	B	B	B	B	B	F	U R 71	D S 80	F	F	F 35	F	29	R 36	R 37
10	R 35	Y	F	B	A	F	F	F	F 45	B	B	B	R 82	B	B	R	J R 108	105	90	54	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	A	B	40	B	68	78	J R 94	D R 80	110	100	105	103	F	B	B	A	A	A
13	B	A	A	A	F	60	B	F	B	B	B	B	B	D R 78	D R 80	D R 80	D R 72	D R 80	U R 70	54	38	24	B	B
14	B	B	B	B	B	A	B	A	A	B	B	B	J F 104	78	F 90	F 100	F	B	121	J F 83	F	F	35	A
15	A	F	F	F	F	F	A	A	A	B	B	B	B	B	B	F	78	B	B	B	A	B	A	A
16	A	B	A	B	A	B	B	A	A	B	B	B	52	F	F	F	B	B	B	B	B	B	B	B
17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F	B	80	90	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F	47	R 32	F	F	F	F	B
19	B	A	A	A	A	A	A	A	A	A	B	B	71	D S 73	U R 92	B	J F 114	F 100	55	A	A	A	A	F
20	F	A	A	B	A	B	A	A	A	B	A	B	F 46	F 60	F 65	F 70	91	F 79	F	30	A	A	B	B
21	A	31	A	A	B	A	A	A	A	B	B	B	73	D R 68	R	105	92	B	R 65	F 46	F 34	26	A	A
22	F	33	B	F	A	A	A	B	B	B	51	F 65	R 81	110	118	103	F 75	J F 94	58	F 34	F 21	B	A	A
23	F	A	F	F 22	F	F 26	F 24	F 23	• F 24	B	B	B	B	F	F	F	B	F	F	F	F	A	A	A
24	A	B	A	A	A	A	A	B	B	B	B	B	B	B	F 65	F	F	F	F	F	F	A	A	F
25	F	A	B	A	F	A	F	B	A	B	B	B	A	F	F 80	F 80	80	F	F 63	F 20	F	A	F	F
26	A	A	A	A	B	B	A	A	A	A	A	F 50	45	53	F 55	60	67	F 63	F 38	B	F 15	15	F	F 16
27	A	F	R 37	A	F	F	F	F 39	F	F	F 50	F 69	J R 90	102	101	J R 93	F 62	F 55	F 58	F 29	F 20	B	A	F 26
28	F	F	F	A	B	A	F 41	A	B	B	F 55	F 64	F 65	80	F 93	86	78	F 82	F 76	70	F 33	19	19	A
29	F	F	F	F	F	A	A	A	48	F 51	F 54	F 61	R 80	95	101	96	Z 90	79	F 68	F 36	F 25	F 22	F 17	F
30	F	F	F	A	F	F	A	F 45	F	J F 63	J F 67	F 72	80	104	105	J R 94	F 82	J F 84	J F 77	J F 57	J F 38	B	B	F
31	A	A	A	A	F	F	F	F 57	J F 64	J F 54	B	J R 74	91	F 98	100	F 93	103	73	F 55	F 51	Y	B	F 15	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	10	9	6	6	6	5	7	11	9	14	16	21	20	21	22	24	21	23	21	16	13	12	9
MED	F 22	27	28	F 24	F 34	F 31	F 25	F 52	F 57	F 60	F 69	79	82	U 104	103	101	102	97	77	F 57	F 50	F 34	F 26	F 23
UQ	F 24	31	37	F 36	F 42	47	F 37	F 56	J F 66	F 72	F 82	102	105	120	120	132	124	119	114	J F 94	F 75	F 42	34	F 26
LQ	F 21	F 23	25	F 22	F 26	F 26	F 24	F 42	42	F 54	F 55	F 67	73	U 87	F 91	90	80	F 79	F 60	F 36	F 29	24	F 20	F 21

MAY. 1981 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAY. 1981 | 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	26	31	37	42	45	37	42	44	36	30	E B 56	E B 51	E B 46	E B 25	E B 22	21	E B 19	B	E B 25	E B 15	E B 22	39	36	35
2	36	36	45	57	35	70	38	35	42	E B 23	E B 50	E B 35	E B 23	E B 24	E B 35	E B 21	19	E B 24	E B 23	E B 18	E B 13	15	15	16
3	24	32	34	41	42	42	33	20	16	17	E B 35	E B 23	B	B	E B 31	E B 19	E B 23	E B 22	E B 45	E B 31	E B 36	E B 35	E B 24	26
4	31	24	17	27	27	25	23	E B 23	E B 18	16	20	E B 24	25	25	25	20	15	27	32	35	26	K 12	13	19
5	15	22	23	30	42	40	32	25	26	17	19	20	K 24	E B 23	E B 22	29	36	40	30	16	12	E B 10	E B 13	12
6	15	30	29	30	24	32	25	E B 32	B	B	E B 28	E B 30	E B 23	E B 23	E B 22	E B 19	E B 14	E B 14	E B 12	16	E B 13	E B 12	12	15
7	27	37	32	31	40	40	41	42	51	44	25	21	E B 22	E B 22	E B 25	E B 30	E B 22	E B 20	E B 21	E B 15	11	E B 11	E B 15	E B 13
8	E B 10	16	E B 12	17	25	E B 18	45	57	45	E B 20	26	21	20	21	E B 21	E B 22	E B 14	19	32	24	E B 20	E B 23	E B 20	E B 13
9	11	35	42	28	27	26	32	34	B	B	B	B	B	B	E B 33	E B 35	E B 34	E B 24	E B 23	E B 20	34	28	28	29
10	29	34	E B 23	71	55	24	30	E B 27	41	B	B	B	E B 60	B	B	E B 50	E B 46	E B 23	E B 25	E B 22	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	41	B	E B 33	B	E B 57	E B 45	E B 57	E B 50	E B 33	E B 47	E B 29	E B 31	E B 23	B	B	29	80	68
13	B	36	41	70	K 35	39	B	38	B	B	B	B	B	E B 36	E B 30	E B 23	E B 22	E B 24	E B 23	E B 18	E B 21	E B 22	B	B
14	B	B	B	B	B	39	B	38	37	B	B	B	29	E B 46	E B 28	E B 35	E B 23	B	E B 19	E B 20	E B 43	31	46	41
15	45	50	40	68	60	55	90	48	30	B	B	B	B	B	B	E B 45	E B 51	B	B	B	26	B	45	32
16	65	B	39	B	63	B	B	28	33	B	B	B	E B 31	E B 31	E B 24	E B 32	B	B	B	B	B	79	B	B
17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 61	B	E B 53	E B 45	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 34	E B 28	E B 25	E B 50	76	52	E B 14	B
19	B	85	37	72	72	37	27	31	46	38	B	B	E B 50	E B 59	E B 51	B	E B 35	E B 29	32	30	33	38	25	35
20	35	36	41	B	34	B	36	31	29	B	71	B	E B 30	E B 34	E B 28	E B 18	E B 22	20	28	25	25	78	B	B
21	36	34	44	27	B	31	27	39	42	B	B	B	E B 22	E B 45	E B 60	E B 33	E B 20	B	E B 46	E B 22	E B 18	E B 18	31	39
22	71	57	B	39	30	45	41	B	B	B	E B 39	38	E B 36	E B 70	E B 60	E B 29	E B 17	E B 11	E B 15	E B 14	12	B	21	35
23	35	28	35	36	19	20	16	28	E B 18	B	B	B	B	E B 60	E B 50	E B 31	B	E B 60	E B 26	36	39	76	37	40
24	41	B	45	39	35	29	39	B	B	B	B	B	B	B	23	E B 50	E B 22	E B 20	30	14	26	42	41	34
25	20	40	B	45	39	30	33	69	30	B	B	B	37	E B 50	E B 22	21	E B 35	E B 45	23	27	46	50	69	51
26	47	71	40	70	B	B	30	45	37	39	50	39	E B 30	E B 35	E B 26	E B 29	E B 25	E B 25	E B 23	B	13	15	17	18
27	33	36	43	44	51	48	34	38	43	23	29	42	25	27	18	20	15	E B 20	E B 15	E B 18	E B 15	B	22	78
28	100	36	40	52	B	40	42	60	31	B	42	33	25	E B 20	E B 19	E B 14	E B 30	E B 23	E B 13	E B 24	E B 13	16	28	34
29	40	41	39	81	72	49	54	52	57	60	32	E B 32	E B 60	E B 23	34	E B 23	E B 23	E B 23	E B 23	E B 17	E B 17	E B 15	20	30
30	40	37	41	45	40	68	35	37	36	22	19	18	26	27	16	E B 17	E B 17	16	E B 17	E B 9	E B 10	B	B	16
31	60	60	45	38	60	43	50	51	40	31	B	E B 45	29	26	45	40	23	E B 17	E B 14	E B 22	31	B	16	31
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	24	24	24	23	24	25	25	23	13	16	16	22	23	26	28	27	25	28	25	26	23	24	24
MED	35	36	40	42	40	39	35	38	36	23	27	25	E B 29	E B 27	E B 27	E B 29	E B 23	E B 23	E B 23	E B 20	17	22	22	32
UQ	43	40	42	62	53	44	41	45	42	38	E B 50	36	E B 37	E B 46	E B 34	E B 35	E B 32	E B 28	26	E B 25	30	40	36	37
LQ	25	32	33	30	32	30	30	30	30	18	24	20	24	E B 24	E B 22	E B 20	E B 19	E B 20	E B 20	E B 16	E B 13	E B 15	15	17

MAY. 1981 | FES (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAY. 1981 | 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	20	18	20	15	15	15	18	13	13	21	56	51	46	25	22	17	19	B	25	15	22	13	32	16
2	18	23	20	26	13	15	25	15	13	23	50	35	23	24	35	21	13	24	23	18	13	7	10	12
3	8	8	9	19	11	11	10	9	9	14	35	23	B	B	31	19	23	22	45	31	36	35	24	19
4	11	13	15	19	14	14	15	23	18	13	15	24	22	10	10	14	10	7	6	9	10	10	11	14
5	13	18	14	8	14	9	8	8	6	7	17	19	21	23	22	10	6	7	10	10	9	10	13	8
6	8	7	7	8	13	10	10	32	B	B	28	30	23	23	22	19	14	14	12	11	13	12	8	11
7	9	9	9	10	8	8	9	10	11	15	18	19	22	22	25	30	22	20	21	15	8	11	15	13
8	10	11	12	13	12	18	15	15	10	20	17	18	18	19	21	22	14	14	14	18	20	23	20	13
9	9	13	18	15	18	17	21	24	B	B	B	B	B	B	33	35	34	24	23	20	13	18	20	21
10	21	23	23	33	20	19	18	27	24	B	B	B	60	B	B	60	46	23	25	22	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	31	B	33	B	57	45	57	50	33	47	29	31	23	B	B	25	26	33
13	B	26	32	23	20	30	B	21	B	B	B	B	B	36	30	23	22	24	23	18	21	22	B	B
14	B	B	B	B	B	23	B	20	21	B	B	B	23	46	28	35	23	B	19	20	43	18	20	19
15	16	13	14	14	14	20	25	27	23	B	B	B	B	B	B	45	51	B	B	B	21	B	24	23
16	31	B	22	B	26	B	B	14	27	B	B	B	31	31	24	32	B	B	B	B	B	50	B	B
17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	61	B	53	45	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	34	28	25	50	15	14	14	B
19	B	19	32	30	21	21	20	20	26	25	B	B	50	59	51	B	35	29	21	18	15	15	14	14
20	33	22	24	B	21	B	10	10	7	B	25	B	30	34	28	18	22	15	13	11	10	16	B	B
21	15	13	24	13	B	7	11	17	31	B	B	B	22	45	60	33	20	B	46	22	18	18	18	9
22	9	27	B	15	9	10	23	B	B	B	39	20	36	70	60	29	17	11	15	14	9	B	11	9
23	13	14	13	11	8	9	10	8	18	B	B	B	B	60	50	31	B	60	26	9	9	10	15	23
24	21	B	28	13	30	13	21	B	B	B	B	B	B	B	19	50	22	20	18	10	13	11	8	29
25	11	25	B	13	15	14	12	49	11	B	B	B	20	50	22	18	35	45	21	11	13	11	7	9
26	9	13	18	12	B	B	22	13	21	14	15	18	30	35	26	29	25	25	23	B	10	8	11	7
27	9	10	17	13	14	11	7	11	9	8	7	8	14	14	7	10	13	20	15	18	15	B	15	13
28	10	19	8	11	B	20	10	8	15	B	17	15	14	20	19	14	30	23	13	24	13	14	12	8
29	6	6	9	7	10	15	14	14	14	8	15	32	60	23	10	23	23	23	23	17	17	15	9	9
30	8	8	9	8	10	15	22	8	13	11	13	10	7	14	14	17	17	11	17	9	10	B	B	13
31	11	9	11	10	7	23	13	15	11	10	B	45	17	13	13	13	18	17	14	22	23	B	11	8
	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	13	18	20	15	15	17	18	17	21	B	57	51	31	36	28	29	23	24	23	18	15	18	15	14
UQ	32	26	32	32	D B 30	26	25	30	D B 33	B	B	B	B	D B 70	50	40	34	49	25	28	22	D B 50	29	31
LQ	9	12	12	12	12	12	10	12	12	14	18	22	22	23	22	18	18	18	15	12	12	12	11	10

MAY. 1981 | F-MIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

MAY. 1981 | 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	300	255	E B 300	E B 300	255	225	240	240	235	B	225	220	270	A	Y	A
2	A	B	A	A	A	A	Y	A	350	E B 295	275	255	245	240	225	225	220	240	215	220	210	210	A	290
3	320	A	A	A	A	A	A	350	260	265	255	240	B	B	225	215	220	235	250	240	225	250	E B 275	A
4	A	A	A	A	A	A	A	A	335	235	225	210	230	225	210	210	200	205	205	205	215	210	A	A
5	A	A	A	A	A	A	A	310	220	240	225	225	205	215	220	215	220	230	225	195	205	215	235	290
6	330	350	A	A	A	A	A	A	B	B	255	245	230	210	215	225	210	215	225	210	200	225	250	A
7	315	A	A	A	A	A	A	A	A	A	245	220	E B 220	E B 230	E B 225	220	235	230	230	210	215	215	250	275
8	315	320	325	A	A	A	A	A	275	270	255	230	230	215	230	215	215	225	235	225	220	270	250	300
9	290	270	A	A	A	A	A	A	B	B	B	B	B	B	E B 330	270	305	255	250	305	A	A	B	365
10	B	Y	A	B	A	A	260	290	A	B	B	B	E B 300	B	B	E B 255	250	235	205	240	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
12	B	B	B	B	B	B	A	B	E B 410	B	E B 330	E B 265	E B 260	230	230	235	235	240	255	B	B	A	A	A
13	B	A	A	A	A	A	B	315	B	B	B	B	B	235	220	225	220	230	230	205	240	265	B	B
14	B	B	B	B	B	A	B	A	A	B	B	B	275	300	265	250	250	B	215	255	B	A	A	A
15	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	E B 370	E B 395	B	B	B	A	B	A	A
16	A	B	A	B	A	B	B	A	A	B	B	B	325	B	B	E B 330	B	B	B	B	B	B	B	B
17	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	250	B	E B 290	245	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	355	B	B	B	A	A	B	B
19	B	A	A	A	A	A	A	A	A	A	B	B	280	E B 240	275	B	240	265	280	A	A	A	A	A
20	A	A	A	B	A	B	A	A	A	B	A	B	E B 360	255	240	275	300	280	A	A	A	A	B	B
21	A	A	A	A	B	A	A	A	A	B	B	B	230	E B 275	E B 275	250	205	B	275	235	B	235	A	A
22	A	A	B	A	A	A	A	B	B	B	E B 300	225	E B 205	260	235	215	195	230	200	B	245	B	A	A
23	A	A	A	A	A	355	350	400	B	B	B	B	B	B	B	B	B	B	270	A	A	A	A	A
24	A	B	A	A	A	A	A	B	B	B	B	B	B	B	270	290	280	270	A	A	A	A	A	A
25	A	A	B	A	A	A	A	B	A	B	B	B	A	A	260	230	270	280	270	A	A	A	A	A
26	A	A	A	A	B	B	A	A	A	A	A	340	305	280	270	280	260	240	235	B	260	A	A	A
27	A	A	A	A	A	A	A	A	A	305	250	240	230	230	205	200	H 200	245	215	240	255	B	A	A
28	A	A	A	A	B	A	A	A	B	B	255	250	215	240	235	235	E B 250	265	205	235	230	A	A	A
29	A	A	A	A	A	A	A	A	A	A 330	270	260	E B 290	215	210	215	235	245	210	210	250	290	320	A
30	A	A	A	A	A	A	A	A	290	250	230	235	225	225	210	200	H 210	230	210	230	230	B	B	A
31	A	A	A	A	A	A	A	A	295	A 240	B	270	245	210	220	225	210	205	230	240	Y	B	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	5	3	1			1	2	5	9	10	14	16	21	20	24	27	27	23	25	18	15	10	6	5
MED	315	320	325			355	305	315	292	256	252	240	238	228	228	228	228	238	230	228	230	230	250	290
UQ	320	335						350	U 318	295	265	257	U 262	244	251	248	252	255	250	240	248	265	275	300
LQ	315	295						310	275	240	245	228	230	218	219	215	212	230	215	210	215	215	250	290

MAY. 1981 | H'F (KM)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1981 | 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	B	37	A	52	60	A	70	70	65	58	70	80	104	110	110	98	X 85	85	73	51	32	B	A	A
2	A	A	X 30	A	A	A	58	60	60	70	68	X 74	80	100	O R 96	99	102	X 96	81	U R 69	O R 37	19	A	A
3	A	A	A	78	62	46	60	69	68	70	64	62	B	O R 107	O R 106	86	86	79	70	63	A	A	58	A
4	B	B	A	45	A	40	48	52	60	63	67	X 68	80	X 89	X 89	X 83	62	64	54	37	29	27	27	43
5	45	47	43	62	A	O R 49	O R 50	60	58	50	O R 56	64	86	X 99	X 100	X 82	69	63	45	O R 24	O R 22	O R 21	O R 23	26
6	36	43	51	48	A	A	57	60	70	70	62	62	78	85	82	R 76	80	81	80	39	A	A	A	A
7	A	60	A	A	A	60	63	B	62	B	B	B	B	O R 61	68	78	80	74	75	60	X 65	70	66	A
8	92	52	A	A	40	A	45	A	43	O R 51	B	O R 56	63	67	X 67	62	56	53	30	25	28	63	75	70
9	51	O R 42	B	27	A	O R 37	44	43	45	55	61	69	X 83	89	X 110	80	41	55	45	25	B	B	B	O R 20
10	O R 22	O R 25	O R 31	45	54	58	60	70	70	65	63	73	82	88	80	X 74	48	56	42	31	21	18	B	24
11	O R 22	45	45	50	A	A	A	A	49	55	58	64	X 80	86	80	80	62	70	51	30	O R 22	B	A	A
12	A	35	A	33	53	52	A	57	60	68	58	51	X 76	X 88	X 80	69	70	73	51	A	B	B	B	B
13	O R 28	A	54	52	O R 32	52	59	57	57	50	52	73	80	X 82	92	79	75	75	52	O R 30	B	B	O R 22	29
14	28	23	29	34	44	45	63	70	36	43	65	65	75	85	X 95	79	X 63	51	44	30	35	16	34	39
15	42	35	35	35	40	43	60	63	62	B	B	74	85	100	90	90	85	80	73	35	31	16	A	A
16	66	70	A	B	A	A	50	B	B	64	72	68	X 76	B	O R 86	O R 81	80	73	36	O R 21	A	A	A	A
17	60	61	A	A	A	45	44	A	A	A	O R 43	B	B	O R 84	79	B	71	64	O R 37	A	A	26	A	29
18	40	43	67	75	52	A	A	A	45	B	B	57	80	90	X 101	X 86	90	75	62	36	B	B	21	A
19	51	O R 36	B	B	A	B	A	41	47	42	46	62	69	B	B	100	X 90	80	B	B	B	B	A	A
20	B	B	A	B	A	A	A	B	48	46	49	61	B	B	B	91	80	73	51	B	B	B	A	45
21	63	61	A	A	A	A	O R 34	O R 35	39	A	O R 43	68	79	89	90	71	67	65	53	30	O R 22	O R 24	23	51
22	65	67	60	58	60	65	70	70	70	70	52	65	79	79	80	X 76	50	45	36	31	O R 23	O R 20	22	85
23	45	40	35	36	45	49	52	54	55	55	70	80	80	85	78	71	65	70	50	27	O R 24	O R 23	O R 20	O R 24
24	O R 21	30	39	39	45	50	57	70	70	70	70	68	67	84	91	80	O R 64	89	60	O R 36	A	A	A	A
25	A	O R 47	A	48	70	70	88	70	70	73	74	79	77	78	88	81	89	89	X 71	X 45	A	A	A	A
26	A	A	A	51	A	O R 46	56	56	54	A	A	B	85	73	80	O R 82	O R 71	B	71	70	B	B	O R 30	A
27	O R 26	A	A	A	A	A	A	O R 49	63	A	50	72	B	B	108	73	75	65	41	O R 34	53	25	A	A
28	A	A	29	A	A	A	O R 46	A	A	A	B	B	B	B	U R 81	30	69	52	O R 45	O R 27	B	A	32	O R 25
29	A	A	A	A	50	A	52	A	A	B	B	B	B	B	B	109	50	B	51	38	B	A	A	35
30	A	A	A	A	55	A	A	O R 36	34	40	52	58	83	X 85	X 100	76	54	48	43	34	21	65	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	18	20	13	18	15	16	23	21	26	21	23	25	23	24	27	29	30	28	29	26	15	14	13	14
MED	44	43	39	48	52	49	57	60	59	58	61	68	80	86	89	80	70	72	51	34	28	24	27	32
UQ	60	56	51	52	58	55	60	70	65	70	68	73	82	90	98	86	80	80	70	39	34	27	34	45
LQ	O R 28	36	31	36	44	45	49	52	47	50	52	62	76	83	80	76	62	60	44	30	O R 22	19	22	25

JUN. 1981 | FXI (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1981 | 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	B	F 21	A	F 25	35	A	F	F	F	F 42	F 51	F 70	R 98	F 100	F 98	90	78	75	F 62	F 36	J F 24	B	A	A
2	A	A	J R 24	A	A	A	J F 52	J F 54	J F 54	J F 59	R 56	67	F 68	91	R 90	F 39	F 87	J R 90	F 70	F 61	U F 31	F	A	A
3	A	A	A	F	F	F	F	F	J F 47	F	F	55	B	101	100	F 71	J F 80	F 66	F 50	F	A	A	F	A
4	B	B	A	F	A	F	F	F	J F 42	J F 44	F 48	62	J F 74	J R 83	83	77	F 55	F 51	F 47	F 31	F	F 18	F 20	F 20
5	F	F	F	F	A	F 41	F 41	J F 54	J F 52	J F 44	49	F 55	77	J R 93	93	75	60	F 55	38	F 18	F 15	F 14	16	F
6	23	F	F	41	A	A	F	F 41	F 44	J F 54	F 50	54	70	J F 79	70	70	F 70	72	J F 74	J F 33	A	A	A	A
7	A	F	A	A	A	F	F	B	F	B	B	B	B	55	F 58	F 65	F 67	F 65	F 60	50	J R 56	A	F	A
8	F	F	A	A	F	A	F	A	F	F 43	B	F 48	55	59	61	F	J F 50	44	F 19	F	F	F	F	F
9	F	36	B	F	A	31	F 36	J F 37	J F 39	F 39	J F 51	J F 63	J R 77	81	J R 104	J F 74	32	J F 42	F	F	B	B	B	14
10	15	19	25	F	F	F	F	F	F 20	F 25	F	J F 67	J F 76	F 80	F 71	68	40	J F 50	F 33	F	F	F	B	F
11	F 15	F	F 15	F	A	A	A	A	F	F	F 46	F 51	72	J F 80	J F 74	J F 74	F	F	F 36	F 20	R 16	B	A	A
12	A	F	A	F	F	F	A	F	F	F	F 38	40	70	81	74	F 58	F 60	F	F	A	B	B	B	B
13	22	A	F	F	26	F	F	F	F	F 40	42	F	F 63	76	F 74	J F 73	F 52	J F 69	F	F 24	B	B	16	F
14	F	F	F	F	F	F	F	F	F	F	J F 50	F 51	J F 69	F 70	88	70	57	F 34	F 30	F	F	F	F	F
15	F	F	F 24	J F 29	F	F	F	F	F 48	B	B	F 52	F 71	F 91	79	81	F 75	F 70	F	29	F	F	A	A
16	F	F	A	B	A	A	F	B	B	56	F 50	F 50	70	B	80	75	F 70	F 61	F 30	16	A	A	A	A
17	F	F	A	A	A	F	F	A	A	A	37	B	B	78	73	B	F 63	F 53	31	A	A	A	F	A	F 15
18	F	F	F	F	F	A	A	A	F 37	B	B	F 49	F 62	F 80	95	80	73	F	F 65	F	B	B	F	A
19	F	30	B	B	A	B	A	F 34	J F 41	J F 36	F 35	F 50	F 60	B	B	J F 94	J R 84	F	B	B	B	B	A	A
20	B	B	A	B	A	A	A	B	F	F 31	40	50	B	B	B	81	F 70	F 61	R 41	B	B	B	A	F 19
21	F	F	A	A	A	A	28	F 26	F 27	A	37	F 51	70	80	78	F	F 58	F 53	J F 47	F	16	18	F 16	F
22	F	F	F 20	F 23	F	F	F	F	F	J F 29	F 42	F 50	Z 72	71	70	70	F	F	F 29	F	F 17	14	15	F
23	F	F	F	F	F	F	F	J F 48	F 47	F	F	J F 74	J F 74	F 77	J F 72	J F 65	F 53	J F 52	F	F	18	F 15	14	18
24	15	21	21	F 20	F 19	F 20	F	F 21	F 23	F 27	F 38	F 58	F 60	F	F	F	R 58	F	J F 54	30	A	A	A	A
25	A	41	A	F	F	F 51	F	F	F	F 50	F 55	F 60	F 60	69	F 80	72	F	F	64	39	A	A	A	A
26	A	A	A	F	A	40	F	F	F	A	A	B	F	F 62	F	76	65	B	F	F	B	B	24	A
27	20	A	A	A	A	A	A	F 40	F	A	42	F 58	B	B	100	F 63	J F 69	F 50	F 34	28	18	F 17	A	A
28	A	A	21	A	A	A	40	A	A	A	B	B	B	B	U R 73	F	F	44	39	22	B	A	F	19
29	A	A	A	A	F	A	F	A	A	B	B	B	B	B	B	F	R 43	B	F	F	B	A	A	F 24
30	A	A	A	A	F	A	A	30	F 26	F	F 40	50	76	79	J R 94	Z 70	F 43	F 38	F 35	F 24	F 15	F	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	6	6	7	5	3	5	5	10	14	15	20	24	22	23	25	24	26	21	22	15	10	6	7	7
MED	18	26	21	F 25	26	F 40	F 40	F 38	F 42	F 42	F 44	F 53	70	80	79	74	F 62	F 53	F 40	F 29	18	F 16	16	F 19
UQ	22	36	24	F 29	30	F 41	F 41	J F 48	J F 47	47	F 50	F 61	74	82	93	78	F 70	F 66	F 60	34	24	F 18	18	F 20
LQ	15	21	20	F 23	22	31	36	F 30	F 27	F 34	39	F 50	F 63	74	73	70	F 53	F 50	F 33	23	F 16	F 14	16	16

JUN. 1981 | FOF2 (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1981 | 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	B	18	35	33	75	40	40	32	28	20	30	33	E B 55	E B 45	26	27	30	30	24	E B 9	28	B	32	38
2	42	34	36	37	45	38	34	19	28	34	E B 34	23	18	E B 20	E B 56	E B 32	E B 20	E B 23	E B 22	E B 23	E B 15	17	42	60
3	45	43	47	52	43	39	35	28	24	15	39	37	B	31	26	15	15	E B 20	27	45	42	71	45	42
4	49	B	39	72	48	51	40	29	38	33	20	23	18	17	E B 21	E B 14	15	21	14	11	10	E B 8	15	28
5	32	37	39	44	64	46	49	31	19	14	E B 29	E B 25	28	22	26	24	27	28	14	E B 12	12	16	14	15
6	20	45	48	78	48	48	40	42	34	30	20	29	15	16	E B 20	E B 28	16	E B 20	37	26	40	42	43	45
7	50	43	64	60	48	42	35	61	83	B	B	B	B	E B 35	E B 24	E B 22	E B 24	E B 25	E B 22	E B 27	E B 21	45	55	61
8	42	46	100	50	42	45	25	60	42	48	B	E B 36	E B 38	15	22	24	20	20	27	29	28	36	31	39
9	38	45	B	36	48	39	35	30	17	26	14	24	25	19	E B 14	26	17	18	28	E B 16	B	B	B	12
10	15	16	17	23	26	17	20	28	22	22	15	32	24	30	E B 22	E B 24	E B 20	24	16	18	27	E B 13	B	14
11	20	29	31	75	69	60	58	51	39	28	19	28	E B 20	28	38	43	50	70	62	E B 13	E B 13	B	30	45
12	90	80	80	42	60	48	58	44	45	30	31	37	28	17	E B 20	E B 31	E B 21	16	26	32	B	B	B	B
13	29	48	46	41	36	30	48	32	70	70	E B 26	E B 30	38	46	45	37	38	46	24	23	B	B	15	25
14	29	36	48	80	62	59	70	69	80	16	18	31	32	39	31	12	20	21	16	22	17	30	25	33
15	36	33	31	41	47	50	60	37	32	B	B	35	29	27	25	E B 14	E B 26	E B 48	E B 26	62	31	E B 15	37	60
16	34	35	60	B	39	49	40	B	B	45	25	24	23	B	E B 52	E B 45	E B 21	E B 22	E B 17	E B 13	35	55	51	44
17	40	90	45	70	80	39	37	43	50	40	42	B	B	E B 50	E B 47	B	E B 30	E B 21	E B 21	28	28	15	15	28
18	19	41	34	36	42	50	47	37	42	B	B	36	30	25	30	E B 25	E B 50	19	12	35	B	B	30	45
19	32	69	B	B	59	B	42	35	39	34	36	31	19	B	B	E B 20	E B 28	E B 40	B	B	B	B	45	39
20	B	B	50	B	52	53	39	B	42	34	35	31	B	B	B	E B 25	E B 20	E B 21	E B 32	B	B	B	19	26
21	39	38	41	48	39	42	42	35	34	31	40	43	E B 23	E B 20	18	E B 16	16	E B 14	E B 11	E B 9	E B 11	E B 11	21	25
22	36	30	30	33	28	30	25	10	10	E B 8	17	E B 17	E B 24	E B 23	E B 23	E B 26	35	39	13	14	E B 9	E B 11	12	30
23	39	35	45	50	45	32	23	22	12	50	34	30	17	29	18	17	20	31	29	21	17	E B 10	E B 11	20
24	16	23	31	29	25	18	25	28	20	13	14	32	E B 25	E B 27	E B 26	E B 19	E B 50	E B 32	13	E B 13	31	15	43	36
25	50	48	45	36	48	48	42	39	40	45	33	24	18	E B 23	15	E B 26	E B 23	E B 35	E B 32	E B 29	40	40	39	45
26	84	47	51	39	51	45	40	40	53	50	41	B	31	E B 30	E B 61	E B 50	E B 35	B	E B 45	E B 50	B	B	20	33
27	51	41	50	75	58	51	58	52	45	49	45	30	B	B	E B 50	E B 23	E B 15	E B 23	E B 20	E B 20	13	26	39	40
28	48	45	33	60	51	40	43	59	47	51	B	B	B	B	E B 56	E B 50	E B 26	E B 23	58	26	B	39	27	29
29	33	31	43	50	45	74	60	48	50	B	B	B	B	B	B	19	29	B	31	30	B	33	31	98
30	70	50	39	38	32	42	36	38	30	27	26	31	29	50	29	16	17	13	35	18	11	23	39	31
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	28	28	28	27	30	29	30	28	29	26	24	25	23	24	27	29	30	28	29	28	21	21	27	29
MED	38	41	44	44	48	45	40	37	39	32	28	30	22	22	E B 26	E B 24	18	18	19	19	21	23	31	36
UQ	48	46	49	60	58	50	48	46	45	45	36	32	29	30	34	E B 28	E B 30	28	29	28	31	39	40	45
LQ	30	34	34	36	42	39	35	30	28	22	19	24	19	18	E B 22	E B 19	18	16	14	E B 14	12	E B 15	20	28

JUN. 1981 | FES (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1981 | 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	B	10	9	8	10	20	13	10	8	9	13	18	55	45	13	12	11	9	19	9	8	B	8	8
2	9	12	10	9	15	7	8	10	9	9	34	22	12	20	56	32	20	23	22	23	15	11	18	12
3	10	9	7	6	10	8	7	8	7	7	25	21	B	14	11	13	13	20	8	7	8	7	13	10
4	35	B	7	8	25	13	9	7	6	7	7	7	11	14	21	14	13	9	8	9	9	8	8	7
5	7	7	8	12	8	14	10	10	9	12	29	25	14	11	9	7	7	7	11	12	9	9	8	9
6	10	9	11	13	14	13	8	12	6	E	8	9	7	7	20	28	7	20	17	7	10	13	10	18
7	14	10	22	20	14	13	9	34	29	B	B	B	B	35	24	22	24	25	22	27	21	8	10	6
8	8	7	20	22	11	30	8	12	15	14	B	36	38	13	12	13	15	13	13	10	9	6	17	6
9	8	8	B	10	9	12	6	5	8	E	8	8	9	8	14	10	13	13	8	16	B	B	B	10
10	10	10	7	6	7	8	9	10	11	14	13	14	13	13	22	24	20	15	14	11	8	13	B	8
11	7	7	8	8	19	15	13	9	14	10	8	7	20	11	13	10	13	9	14	13	13	B	13	18
12	9	14	20	11	9	10	13	13	8	10	11	9	8	9	20	31	21	15	19	15	B	B	B	B
13	13	9	10	10	8	7	8	7	7	7	26	30	18	13	6	9	13	13	11	13	B	B	13	13
14	8	9	7	6	6	6	6	9	13	8	9	7	11	8	11	8	12	13	9	9	7	6	5	7
15	7	8	7	8	7	9	14	7	E	B	B	15	13	14	8	14	26	48	26	13	7	15	8	13
16	30	26	27	B	13	8	21	B	B	29	18	11	10	B	52	45	21	22	17	13	6	10	17	20
17	8	11	17	21	31	13	17	13	30	30	14	B	B	50	47	B	30	21	21	20	13	11	12	10
18	9	8	7	E	6	13	7	15	10	B	E	19	14	14	11	25	50	18	8	15	B	B	9	9
19	9	13	B	B	22	B	26	17	13	13	14	16	12	B	B	20	28	40	B	B	B	B	7	10
20	B	B	18	B	32	20	20	B	17	17	15	21	B	B	B	25	20	21	32	B	B	B	11	9
21	11	10	22	17	17	21	12	12	11	14	19	12	23	20	14	16	13	14	11	9	11	11	9	8
22	7	8	9	7	5	7	E	7	7	8	9	17	24	23	23	26	11	11	11	9	9	11	6	6
23	6	6	8	9	10	8	8	6	10	18	10	12	8	7	9	8	9	8	7	11	10	10	11	9
24	11	12	11	11	12	12	11	8	9	11	8	11	25	27	26	19	50	32	11	13	17	13	6	10
25	12	11	11	8	12	9	9	13	13	12	12	12	11	23	13	26	23	35	32	29	13	12	7	7
26	9	9	11	9	18	13	12	17	15	12	29	B	20	30	61	50	35	B	45	50	B	B	15	7
27	9	7	7	31	15	23	14	15	12	11	15	23	B	B	50	23	15	23	20	20	7	7	11	9
28	9	13	8	12	23	22	12	14	11	15	B	B	B	B	56	50	26	23	22	14	B	9	7	11
29	11	12	11	11	11	17	15	15	20	B	B	B	B	B	B	13	23	B	20	11	B	9	6	11
30	11	7	10	10	6	23	11	7	8	9	9	12	7	8	8	8	11	11	15	11	7	8	7	6
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	9	10	10	10	12	13	10	11	10	12	14	16	16	17	20	20	18	19	16	13	12	11	10	9
UQ	11	12	18	17	17	20	13	15	14	17	29	25	55	45	50	26	24	23	22	20	B	B	13	11
LQ	8	8	8	8	8	8	8	8	8	9	9	11	11	11	11	12	13	13	11	10	8	9	7	7

JUN. 1981 | F-MIN (0.1 MHZ)

The Radio Research Laboratories, Japan

IONOSPHERIC DATA

JUN. 1981 | 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	B	A	A	A	A	A	A	305	250	270	275	245	285	240	200	205	220	225	240	240	285	B	A	A
2	A	A	A	A	A	A	380	330	325	300	295	265	250	235	260	245	250	220	230	250	220	A	A	A
3	A	A	A	A	A	A	A	A	330	265	Y	E A 340	B	245	205	215	220	255	265	A	A	A	A	A
4	B	B	A	A	A	A	A	370	350	305	240	230	205	215	215	205	200	215	205	225	250	245	290	A
5	A	A	A	A	A	A	A	335	280	260	290	250	225	205	225	230	210	200	205	250	240	260	315	A
6	300	A	A	A	A	A	A	350	300	H 270	245	230	215	240	200	245	270	225	245	A	A	A	A	A
7	A	A	A	A	A	A	A	B	A	B	B	B	B	300	290	250	260	290	275	E B 360	310	A	A	A
8	A	A	A	A	A	A	A	A	A	A	B	E B 315	E B 290	Y 230	230	200	230	230	A	A	A	A	A	A
9	A	A	B	A	A	A	A	340	315	265	245	225	215	205	205	200	250	250	230	E B 290	B	B	B	A
10	A	A	A	A	A	A	A	A	A		260	215	205	215	205	210	205	250	220	230	H 240	245	B	A
11	A	A	A	A	A	A	A	A	A	260	240	240	230	230	215	230	205	E A 250	E A 230	E B 270	230	B	A	A
12	A	A	A	A	A	A	A	Y	A 340	290	255	230	230	230	205	230	255	235	' A	A	B	B	B	B
13	A	A	A	A	A	A	A	325	A	265	E B 330	265	210	225	205	190	200	215	210	A	B	B	A	A
14	250	A	A	315	325	A	A	A	A	275	220	200	210	205	215	190	205	235	210	200	250	A	A	A
15	A	A	A	A	A	A	A	A	355	B	B	275	255	230	205	215	250	270	215	235	250	B	A	A
16	255	A	A	B	A	A	A	B	B	B	225	A	250	B	275	255	235	225	230	300	A	A	A	A
17	A	A	A	A	A	A	A	A	A	A	E A 355	B	B	255	250	B	230	225	240	A	A	270	A	A
18	A	A	A	A	A	A	A	A	A	B	B	275	240	225	225	200	250	210	235	A	B	B	A	A
19	A	A	B	B	A	B	A	A	295	280	295	260	195	B	B	245	200	B	B	B	B	B	A	A
20	B	B	A	B	A	A	A	B	A	E A 290	300	260	B	B	B	240	250	210	E B 250	B	B	B	A	A
21	A	A	A	A	A	A	A	A	A	A	A	260	245	210	215	210	205	230	230	220	E B 290	220	280	A 300
22	A	A	A	A	A	A	A	310	280	255	230	215	215	220	215	210	220	H 200	210	A	205	260	250	A
23	A	A	A	A	A	A	A 330	330	340	A	270	250	220	215	210	200	190	215	200	225	225	300	B	250
24	A	A	A	A	A	A	A	A	A	280	245	240	E B 260	250	235	230	B	B	225	240	A	A	A	A
25	A	A	A	A	A	A	A	A	A	275	270	230	245	250	210	240	H 270	310	280	270	A	A	A	A
26	A	A	A	A	A	A	A	A	E A 350	A	A	B	270	270	B	E B 250	E B 300	B	B	B	B	B	B	A
27	A	A	A	A	A	A	A	A	A	A	E A 325	260	B	B	240	200	225	215	250	245	A	A	A	A
28	A	A	A	A	A	A	A	A	A	A	B	B	B	B	E B 295	E B 260	210	250	275	300	B	A	A	A
29	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	370	B	B	Y	A	B	A	A	A
30	A	A	A	A	A	A	A	A	A	A	230	E A 250	215	210	210	190	205	215	240	210	330	A	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	3			1	1		2	9	13	16	21	24	23	24	26	29	28	26	25	18	13	7	4	2
MED	255			315	325		355	330	320	271	252	245	225	230	215	212	221	225	230	237	245	260	285	275
UQ	278							340	340	282	282	261	248	242	232	242	250	250	242	260	U 268	265	302	
LQ	252							325	295	265	240	230	215	215	205	200	205	215	212	225	230	245	265	

JUN. 1981 | H'F (KM)

IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)
ION. ANT. —36 January 1981—June 1981 (Not for Sale)

昭和基地電離層資料（南極）

（1981年1月—1981年6月）

1986年3月24日 印刷
1986年3月29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.