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ION. ANT.— 42

IONOSPHERIC DATA AT SYOWA STATION

(ANTARCTICA)

January 1984—June 1984

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COMMUNICATIONS RESEARCH LABORATORY

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TOKYO, JAPAN

INTRODUCTION

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

LOCATION OF SYOWA STATION

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

SPECIFICATIONS OF THE IONOSONDE USED AT SYOWA STATION

Items	Specificatons
Frequency Range	400 kHz-15 MHz
Transmitting power	10 kW (peak value)
Duration of Sweep	20 sec
Transmitted Pulse Width	80 μsec
Recurrence Frequency of Transmitted Pulse	50 Hz (by power source frequency)
Frequency Scale	every 1 MHz
Height Range	900 km
Height Scale	every 50 km
Total Receiver Gain	120 dB
Recording Method	35 mm film and video fax for ionograms
Power Supply	100 volt AC, 2.0 kVA
Transmitting Antenna and Receiving Antenna	30 m height vertical delta terminated by 600 Ω respectively

DESCRIPTION

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

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

c. Characteristics of Ionosphere

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

Symbols

(i) Descriptive Letters.

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

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

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

C Measurement influenced by, or impossible because of, any non-ionospheric reason.

D Measurement influenced by, or impossible because of, the upper limit of the normal frequency range.

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

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

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

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

K Presence of particle E layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

W Measurement influenced or impossible because the echo lies outside the height range recorded.

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

D Greater than.

E Less than.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

O Extraordinary component characterisitic deduced from the ordinary component.

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

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

Definitions of the CNT, MED, UQ and LQ

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

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

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

SYOWA STATION

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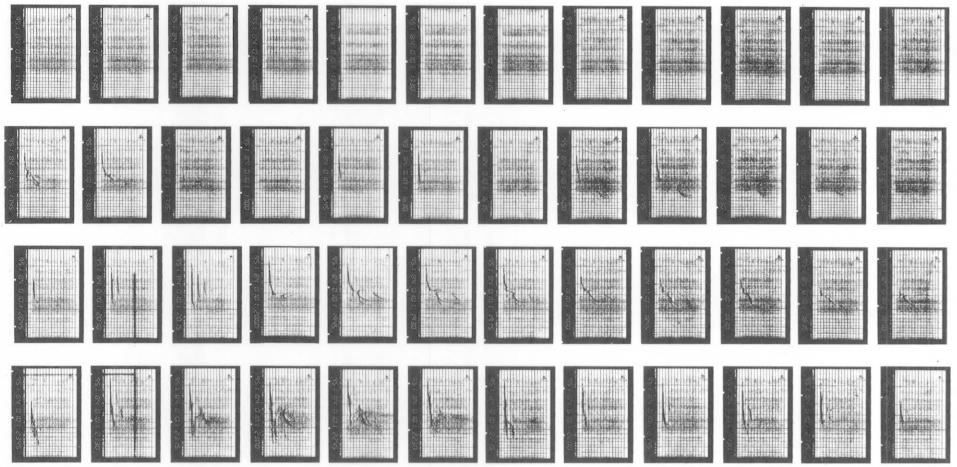

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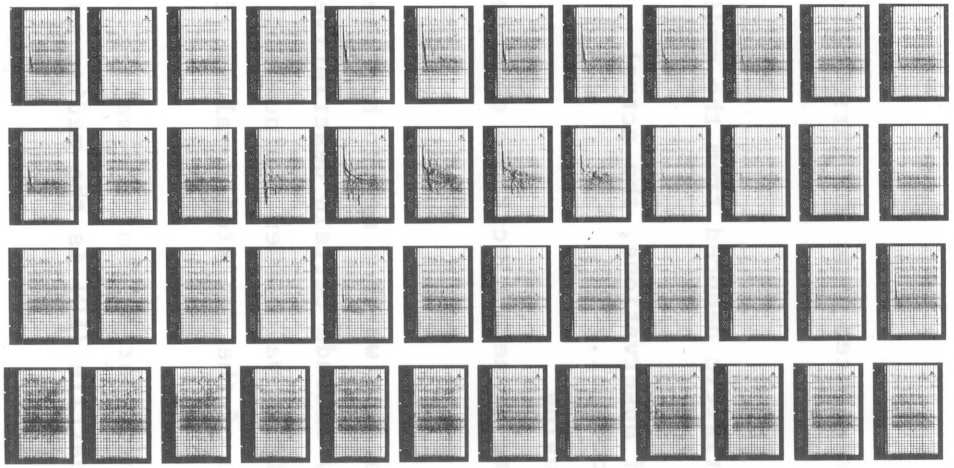

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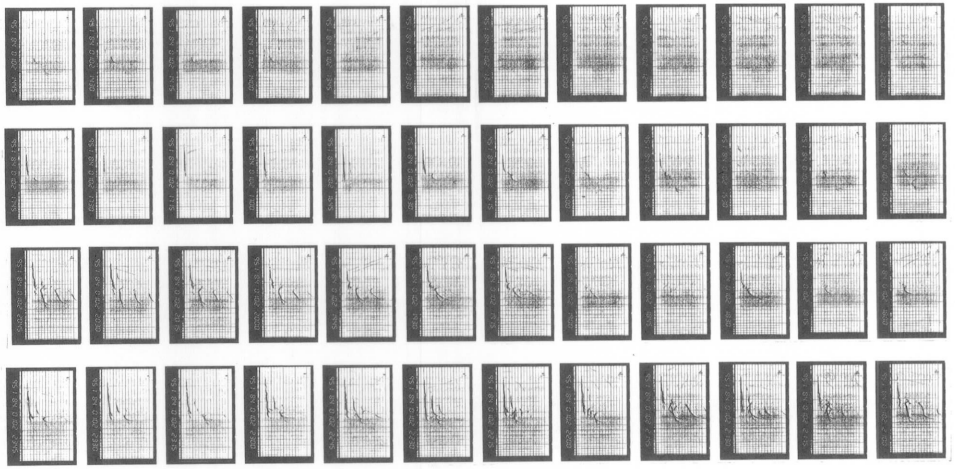

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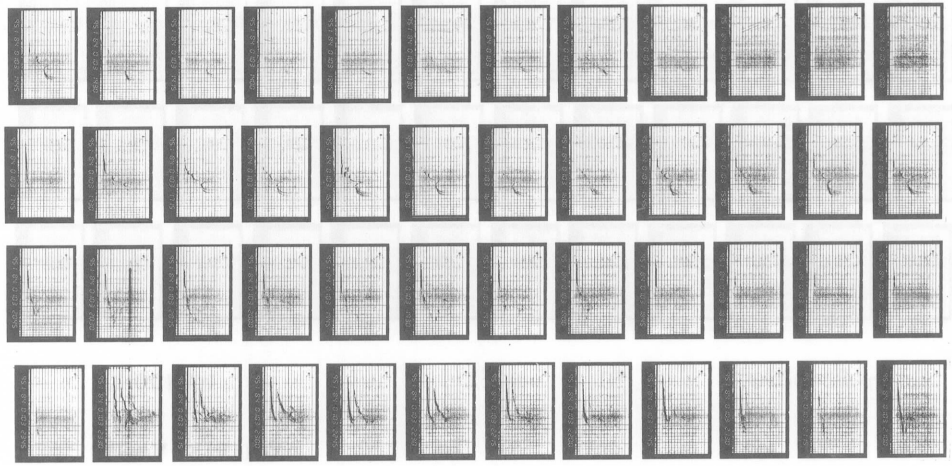

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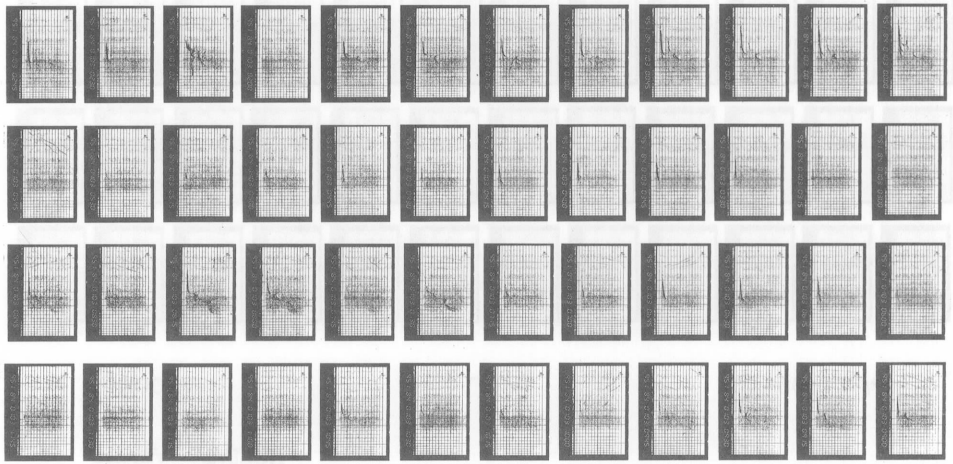

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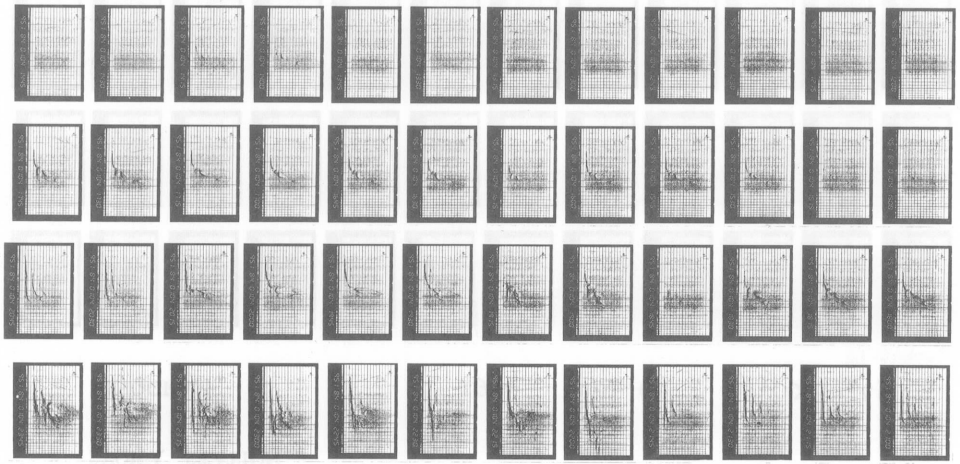

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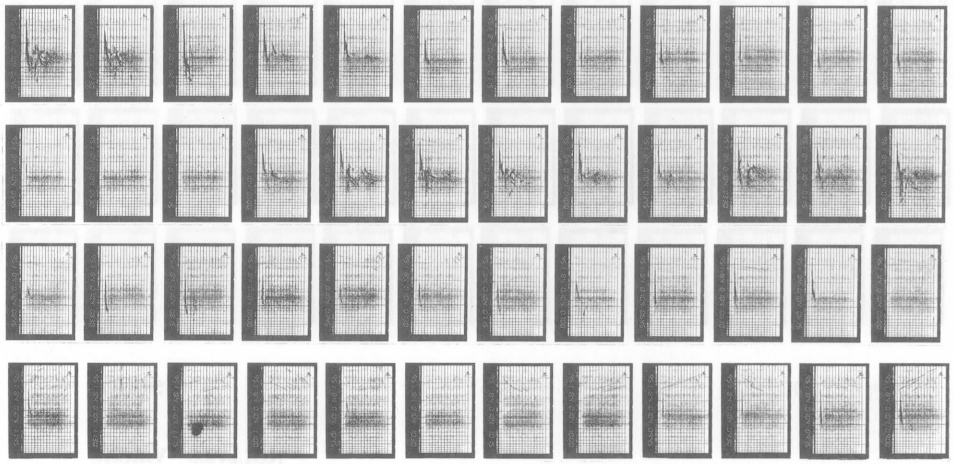

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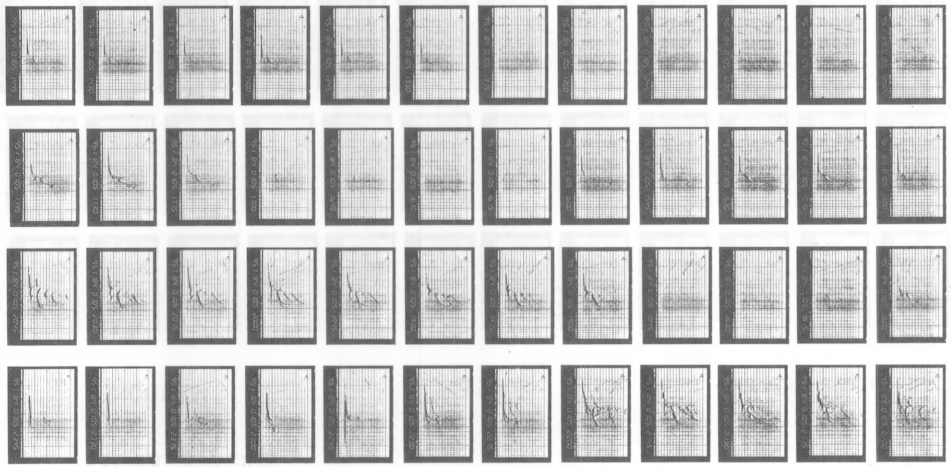

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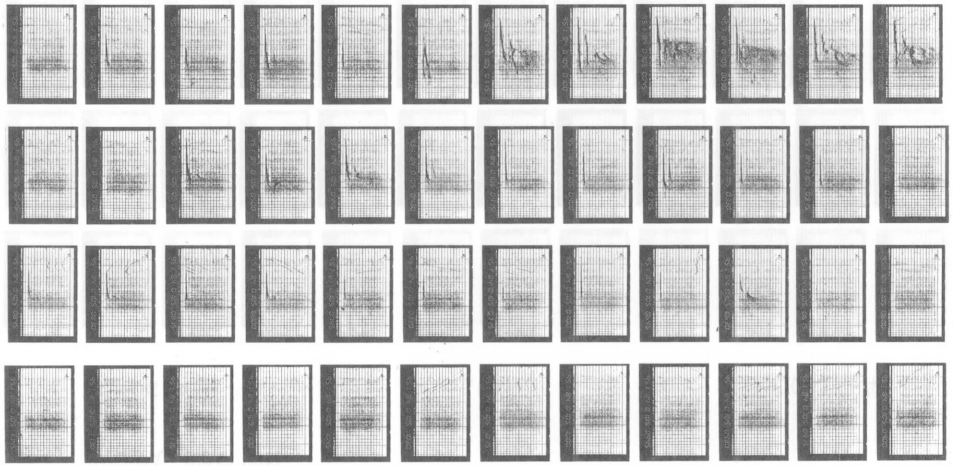

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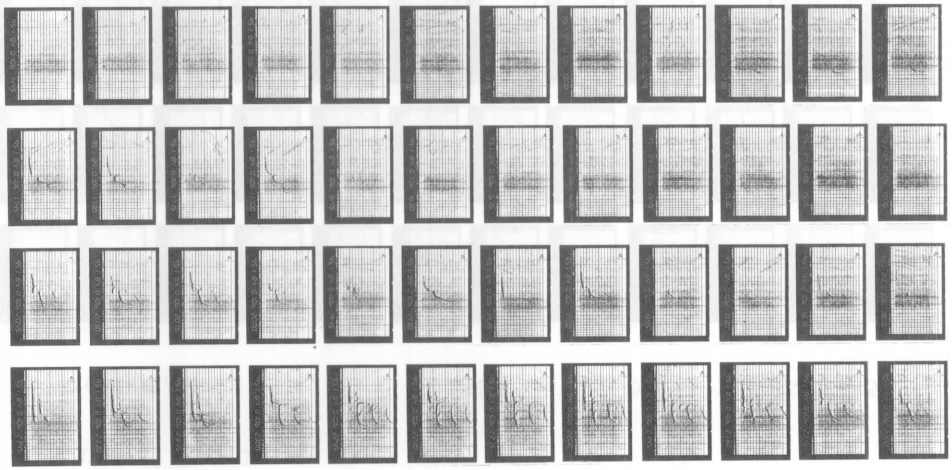

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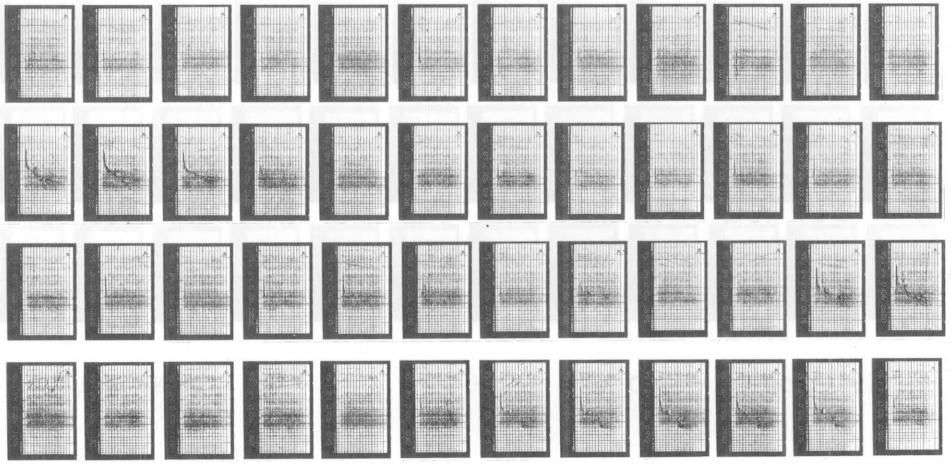

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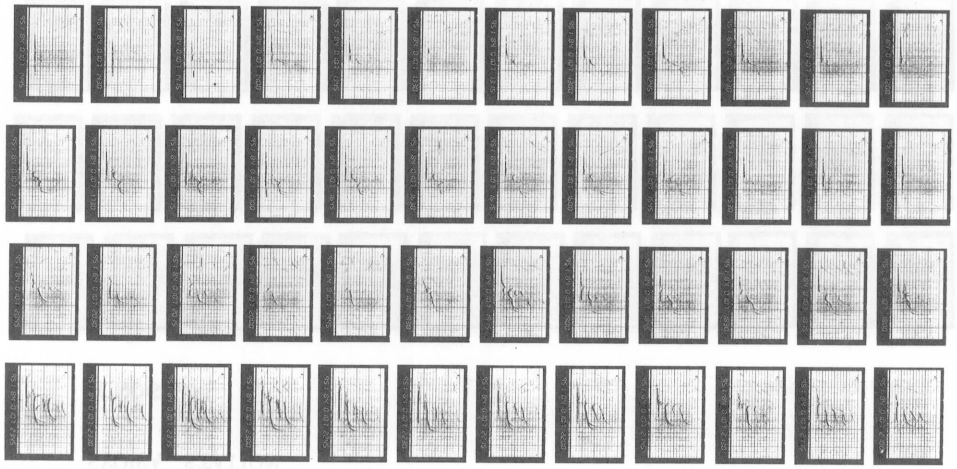

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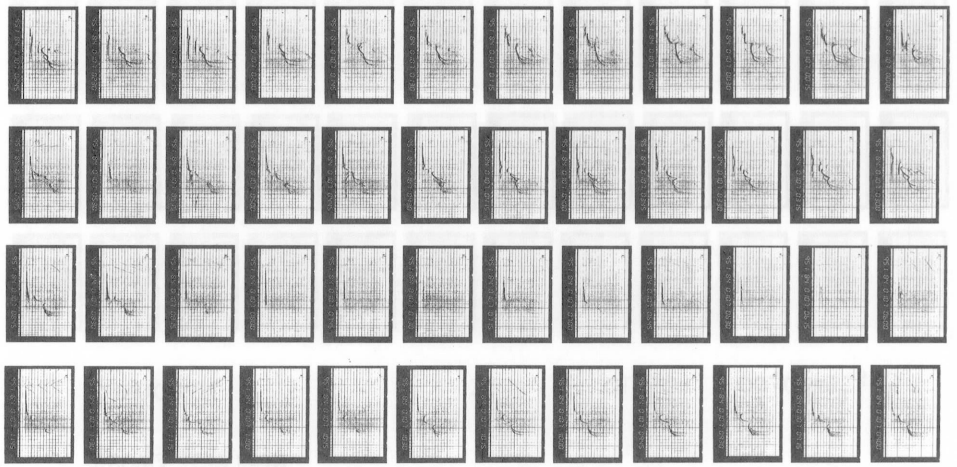

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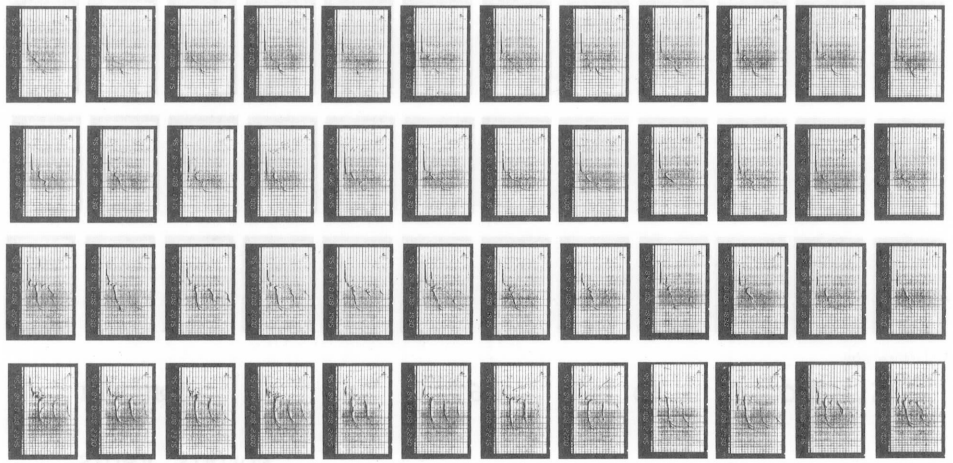

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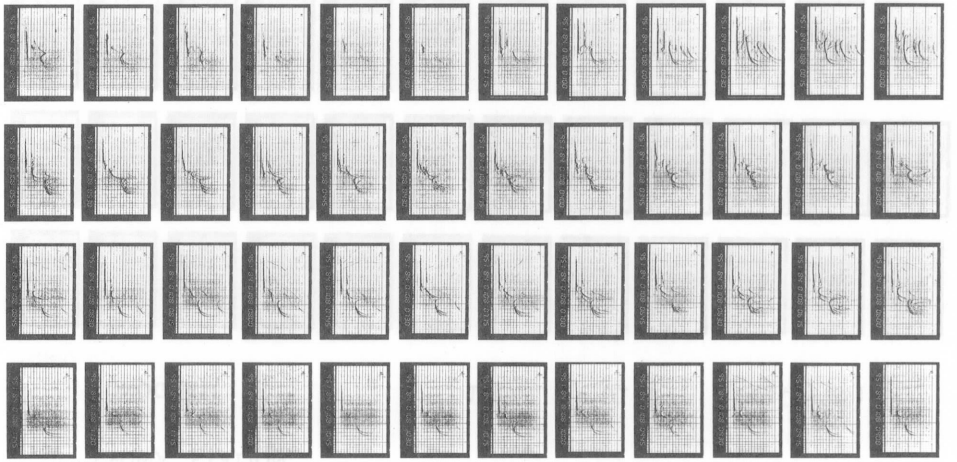

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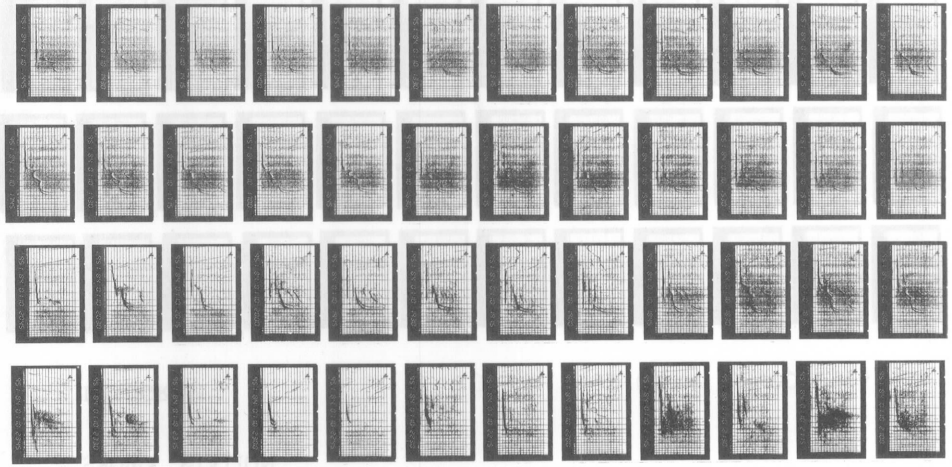

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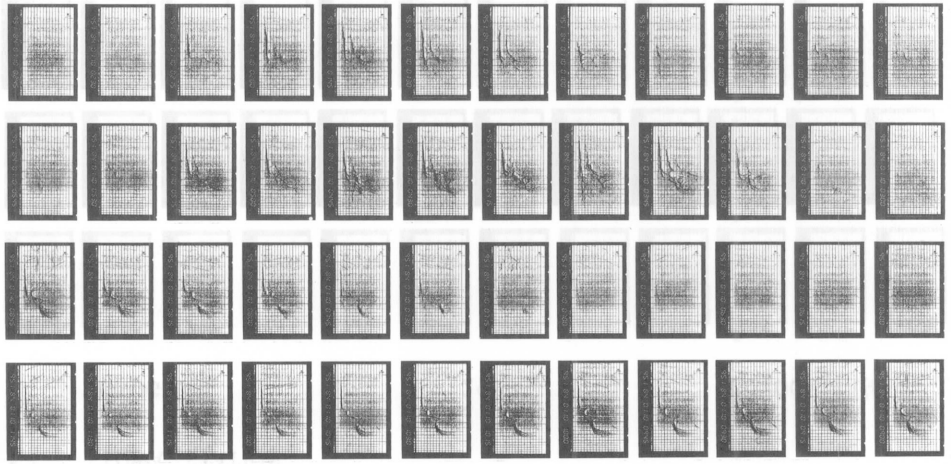

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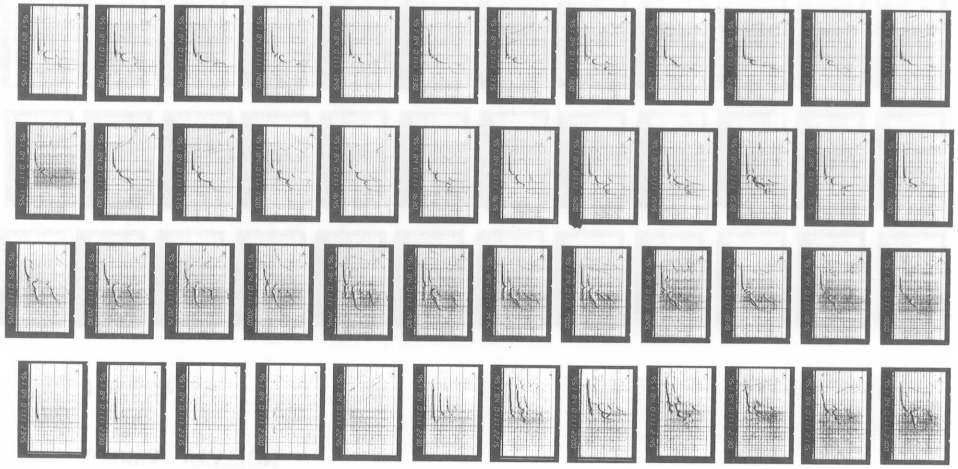

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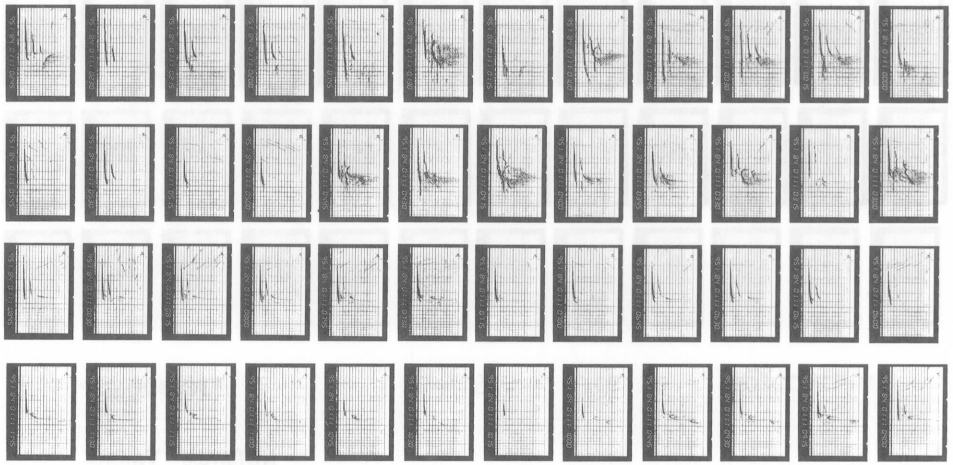

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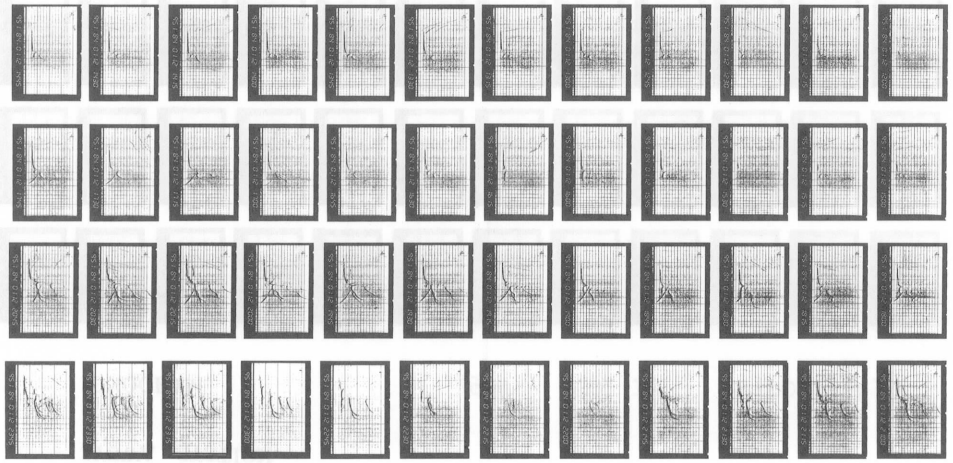

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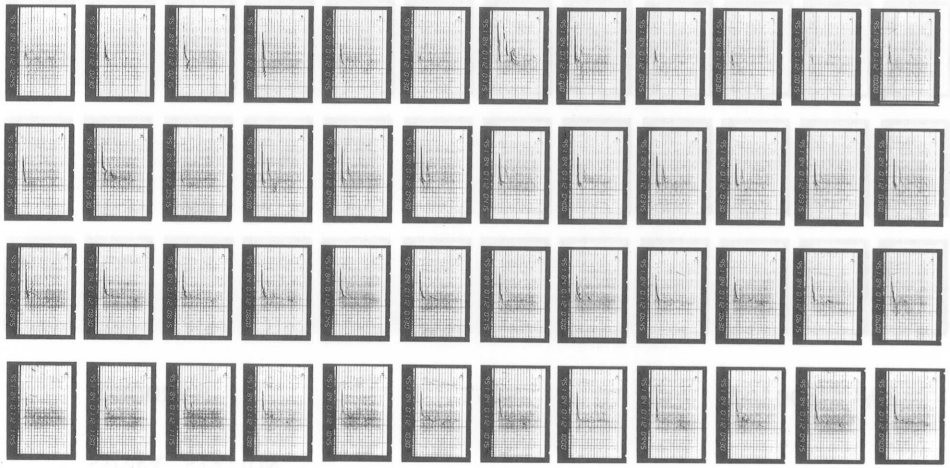

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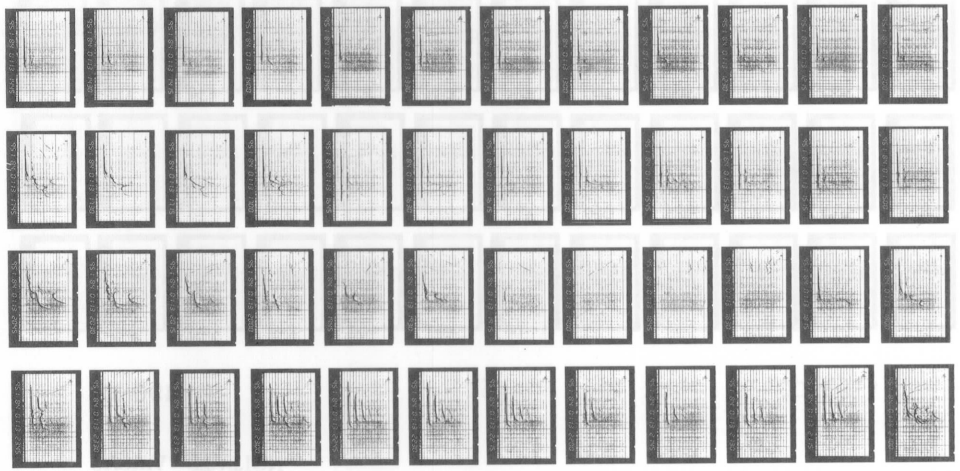

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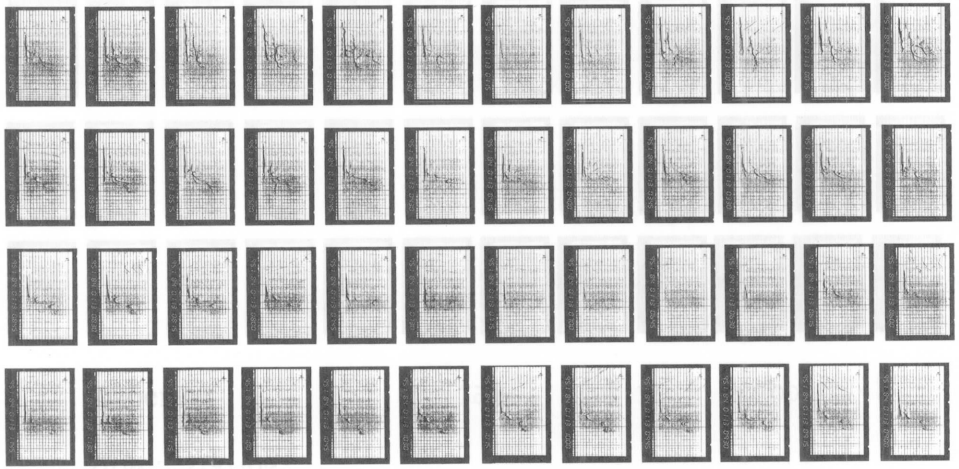

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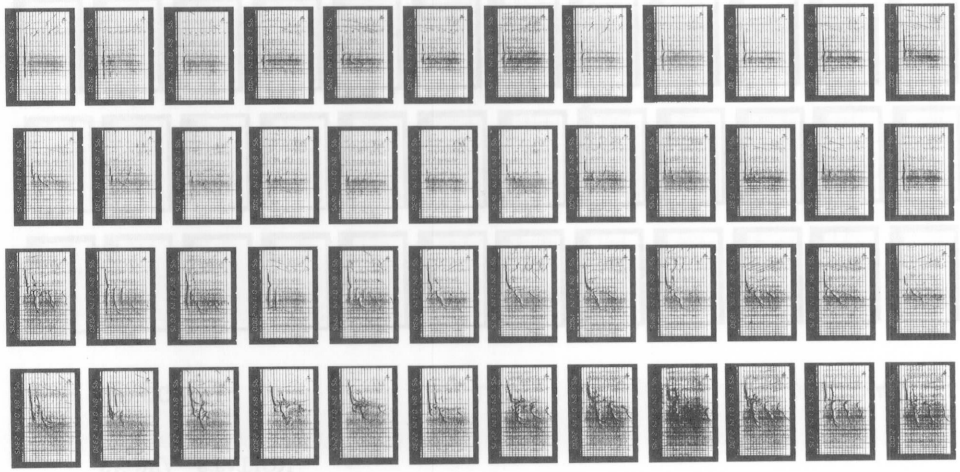

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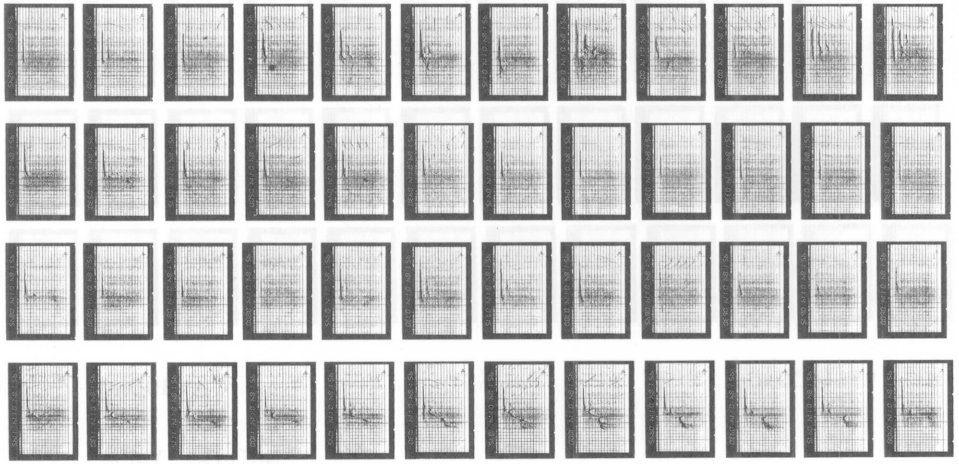

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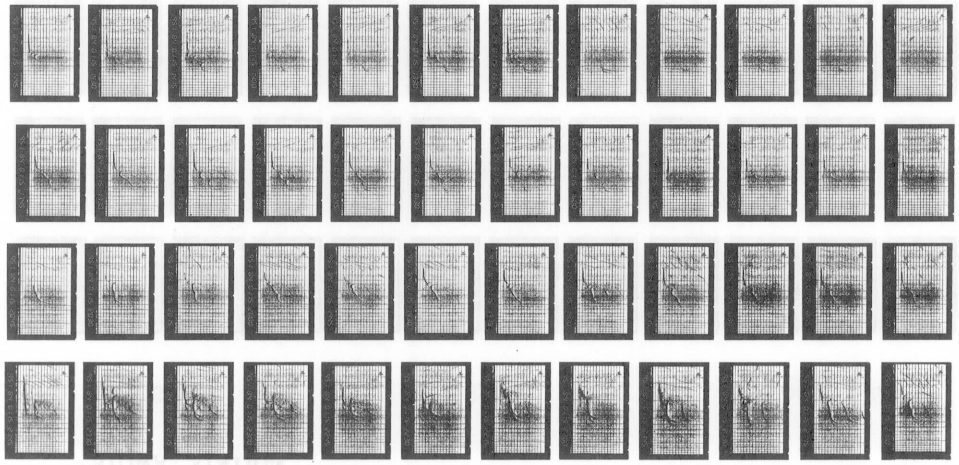

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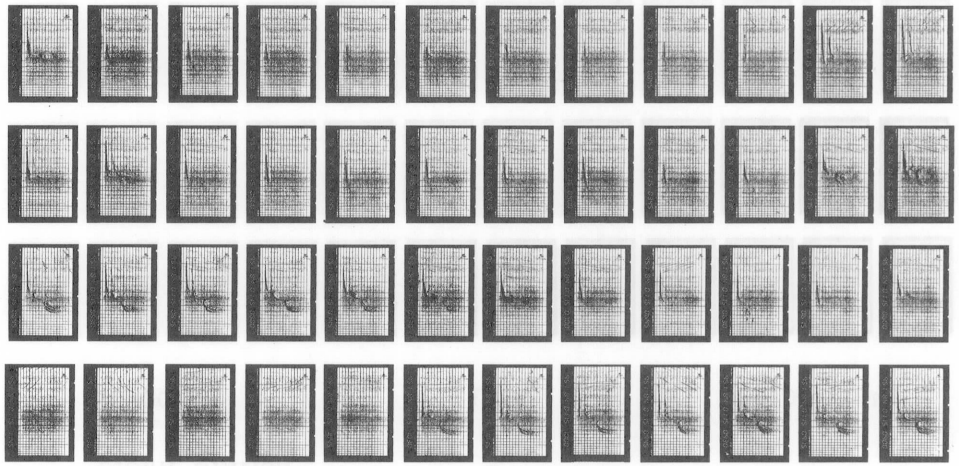

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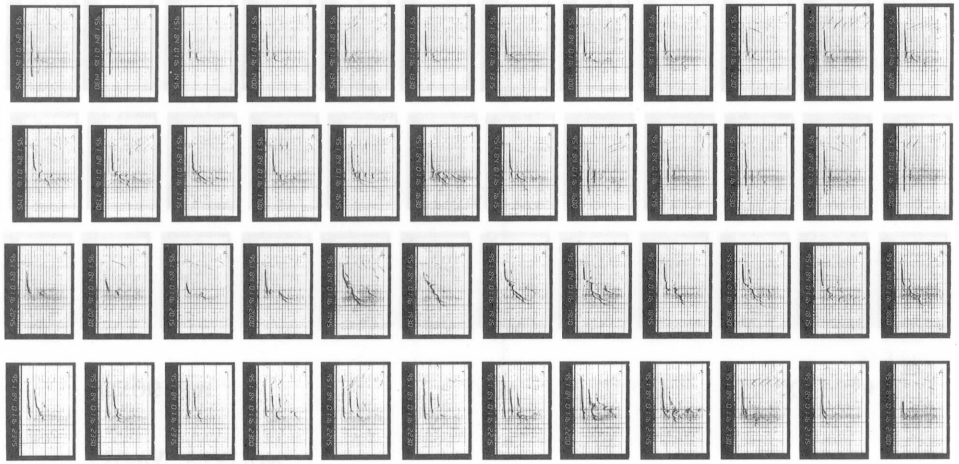

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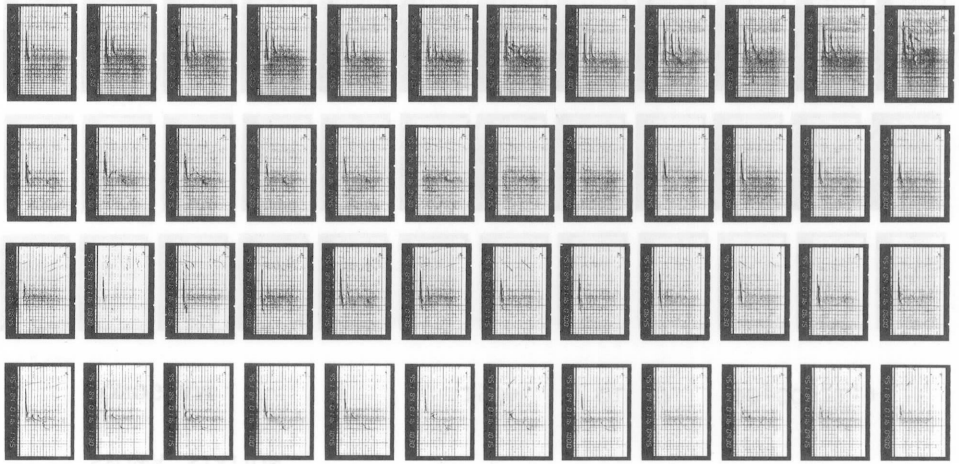

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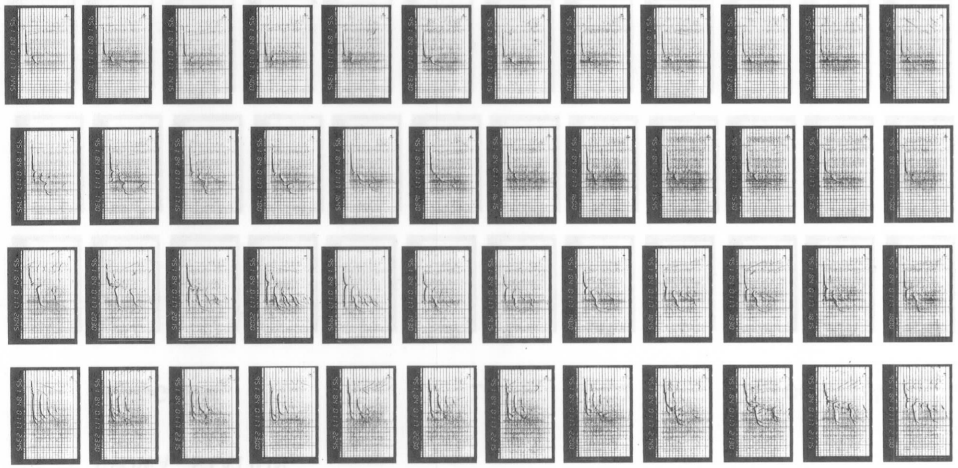

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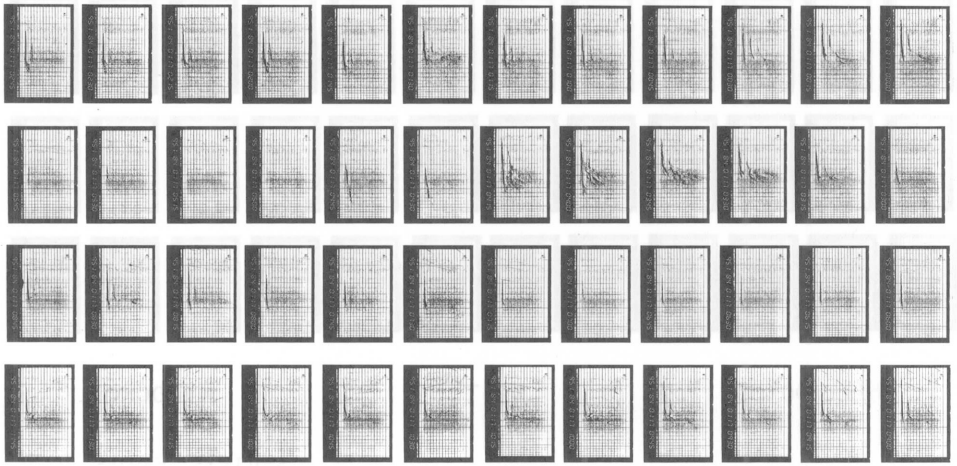

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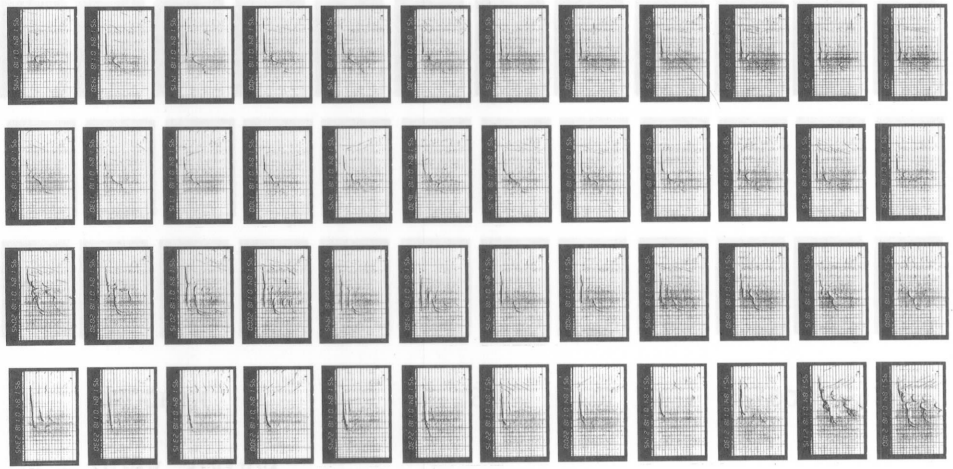

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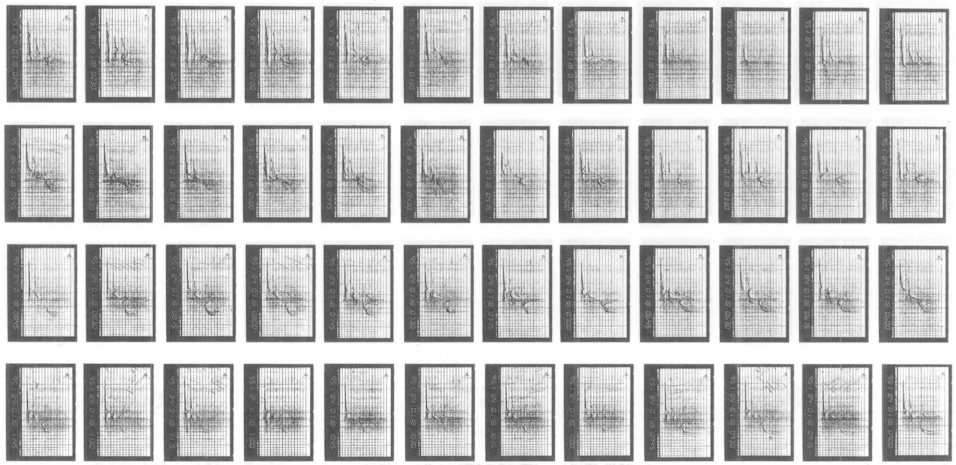

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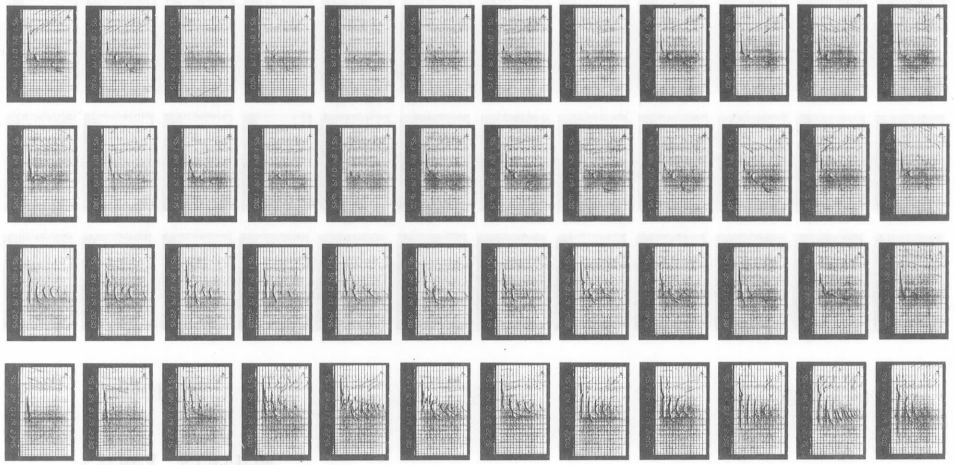

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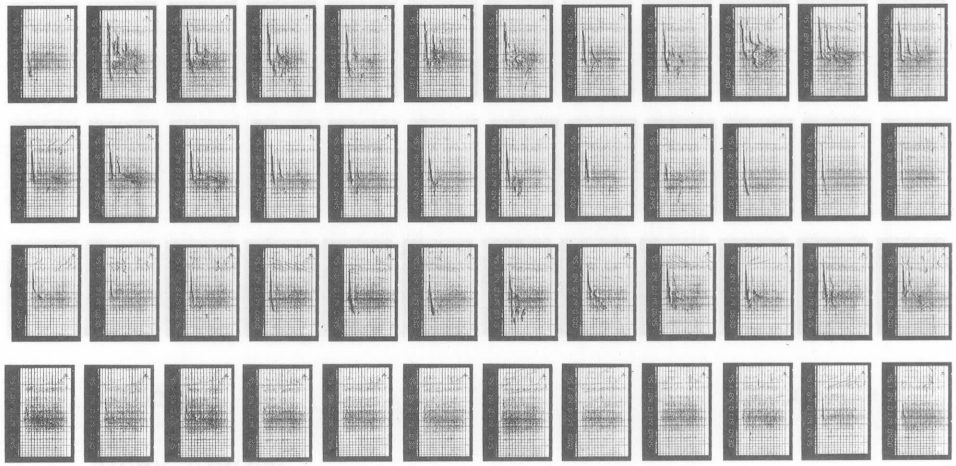

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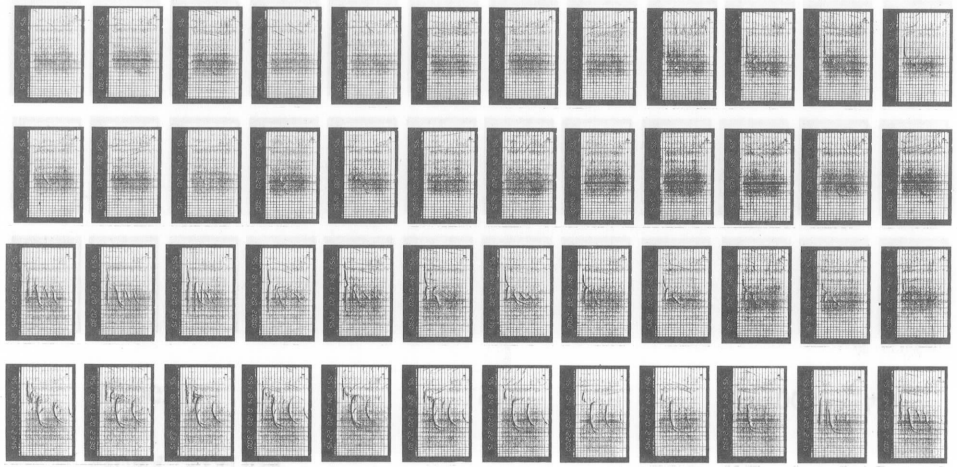

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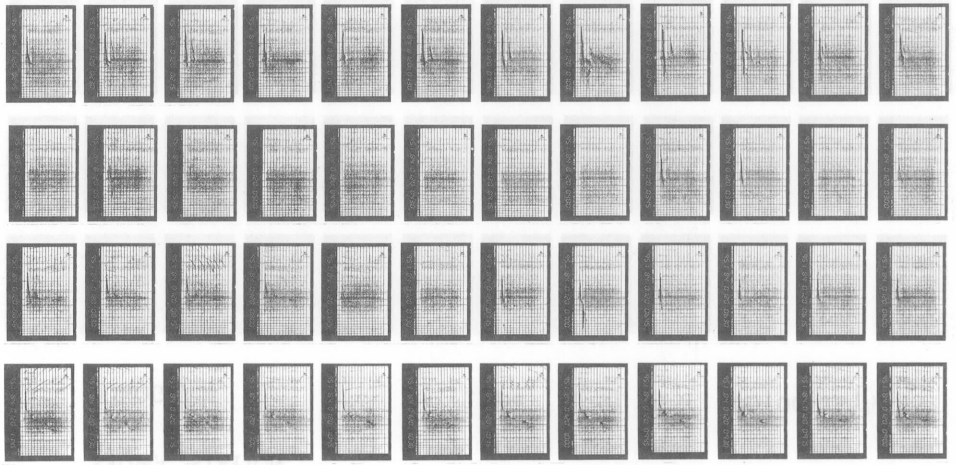

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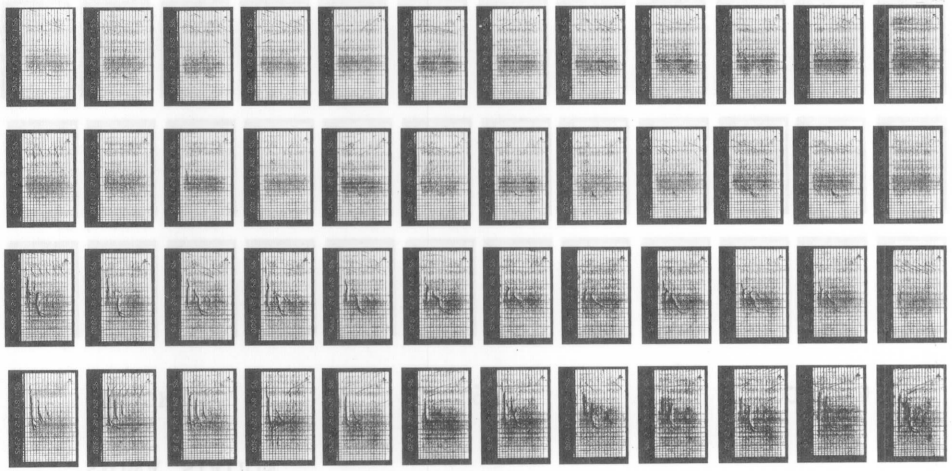

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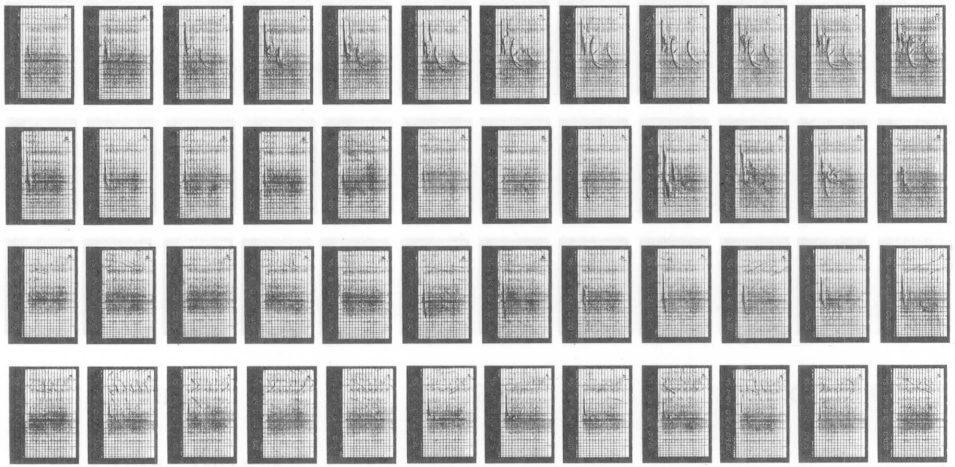

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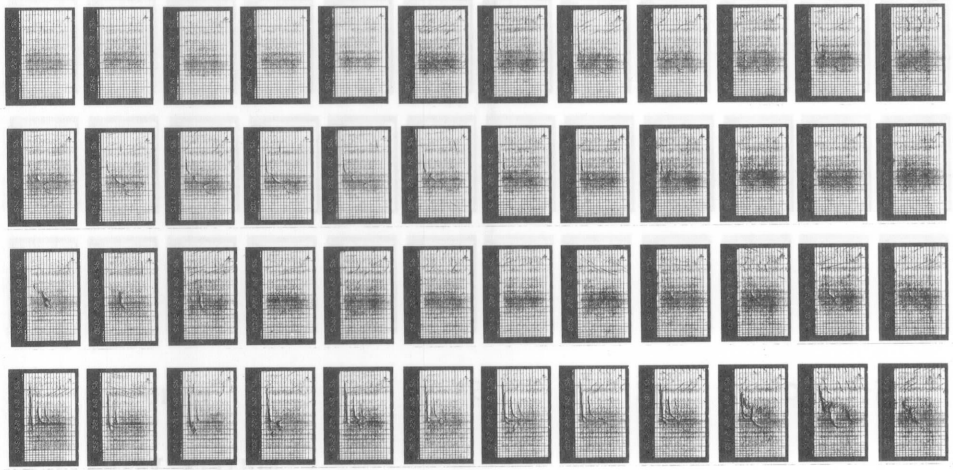

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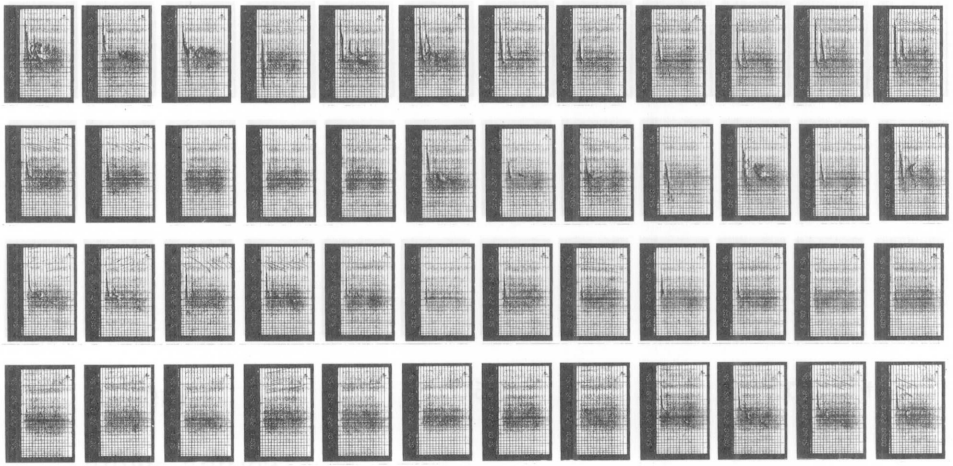

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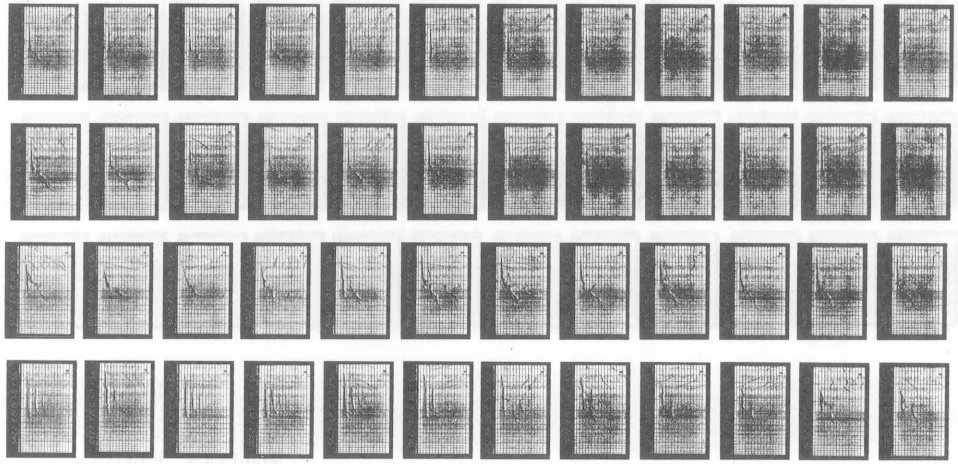

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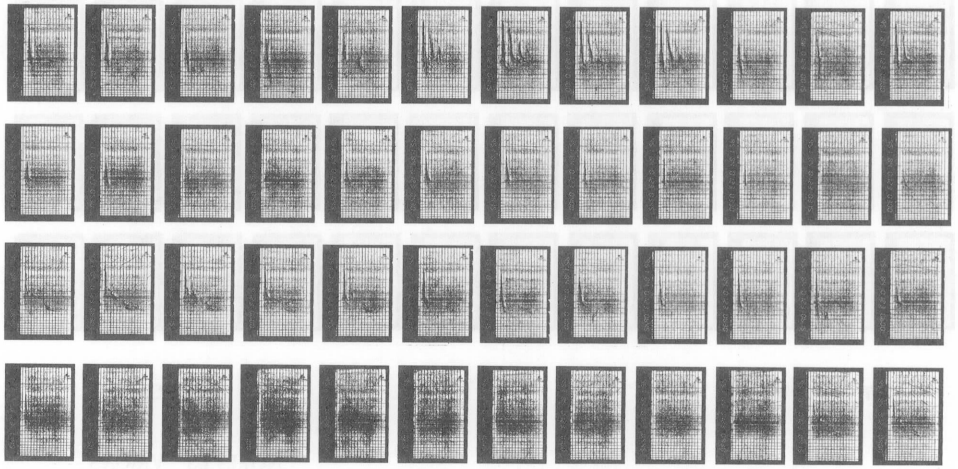
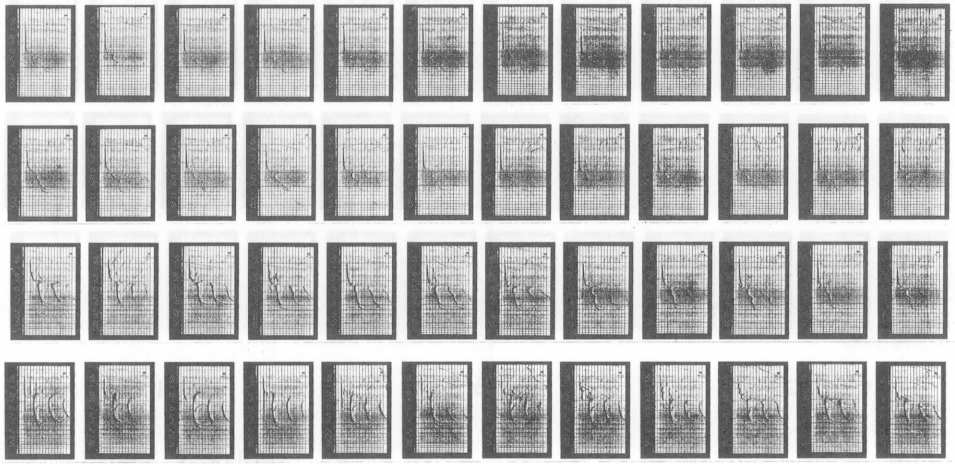


SYOWA STATION

IONOGRAM 1984 01 24 12;00-23;45



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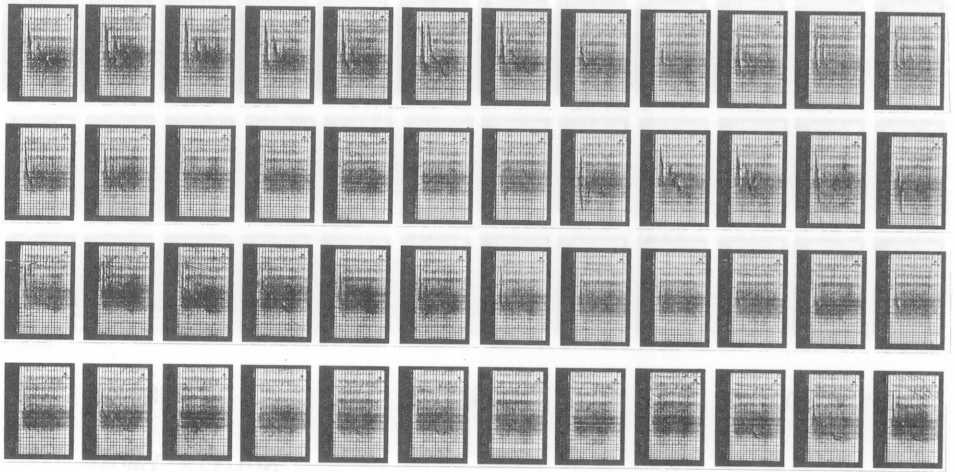

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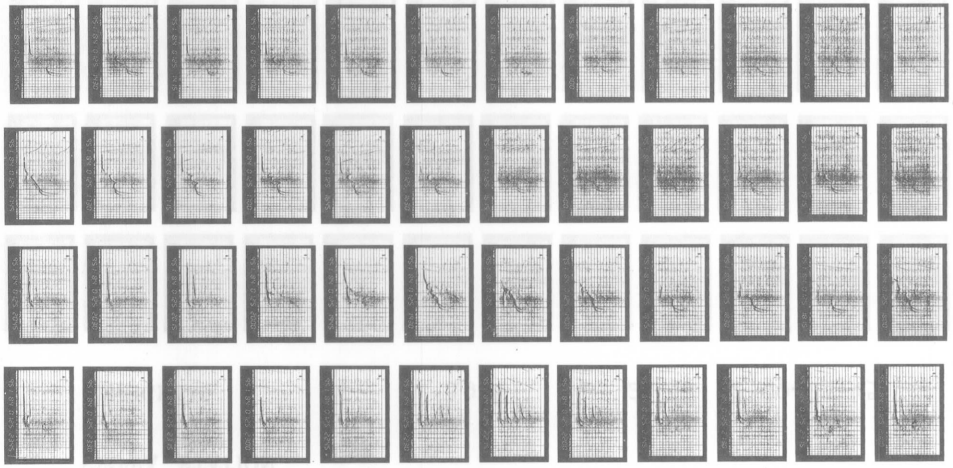

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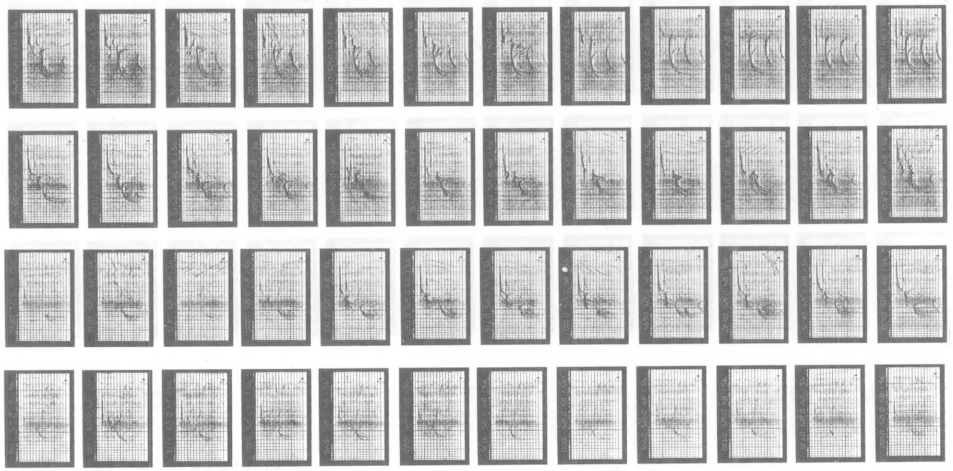

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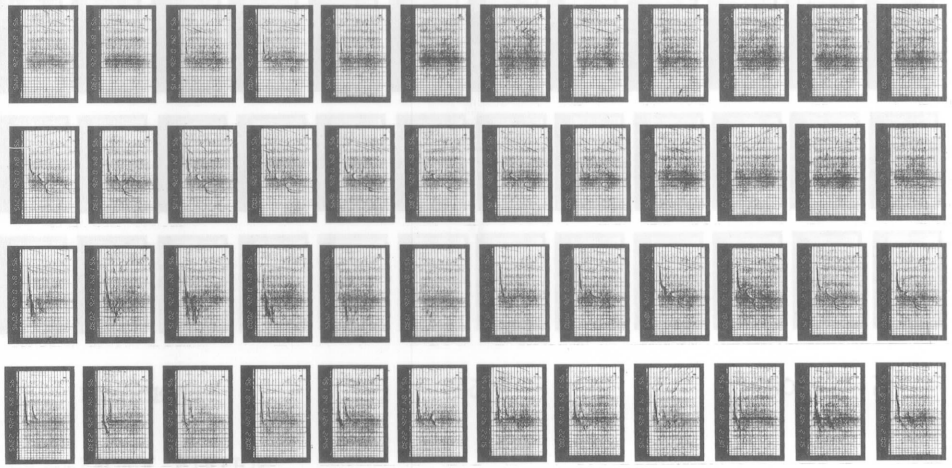

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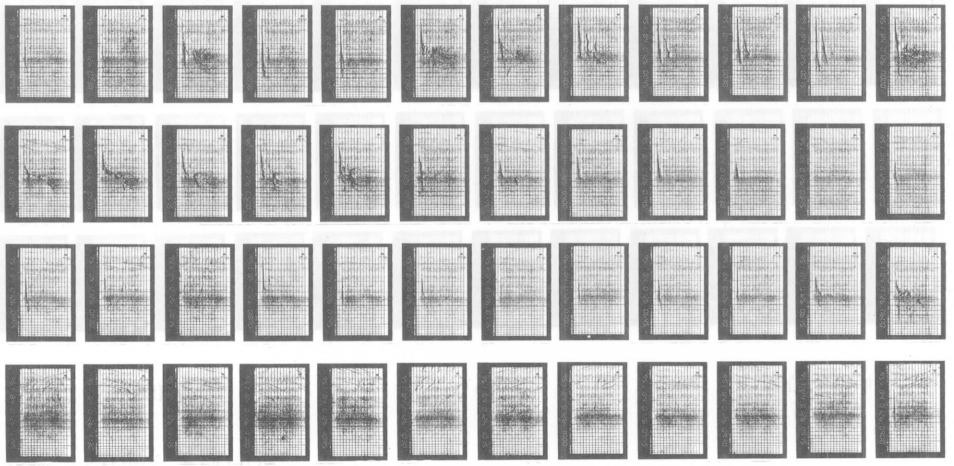

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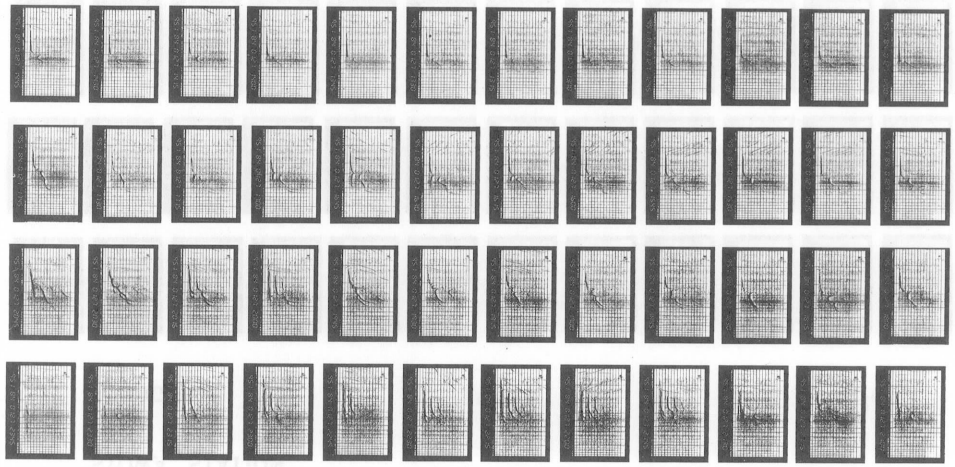

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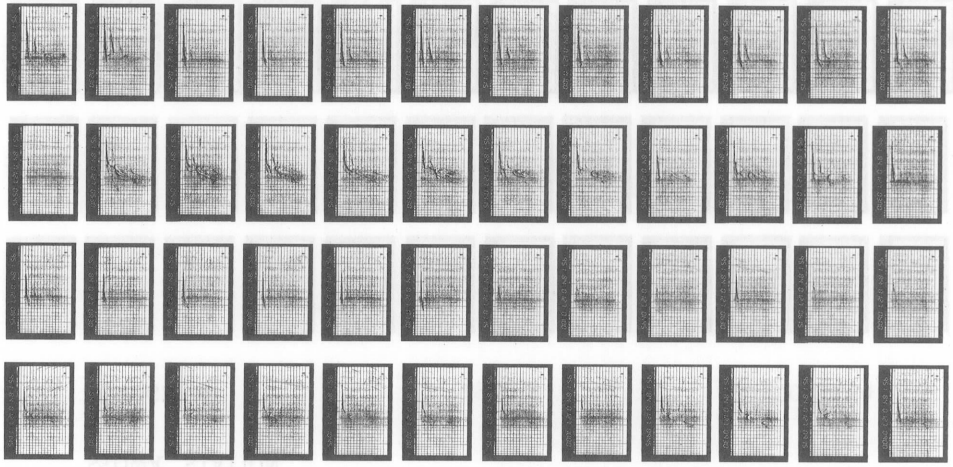

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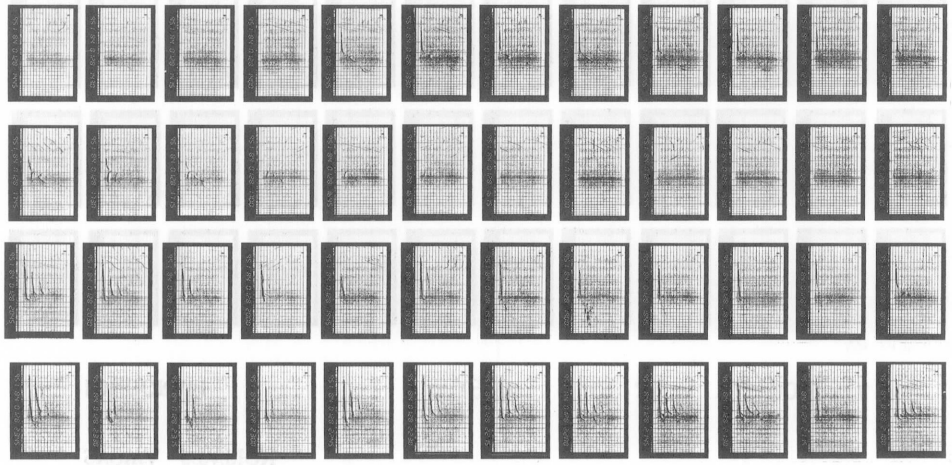

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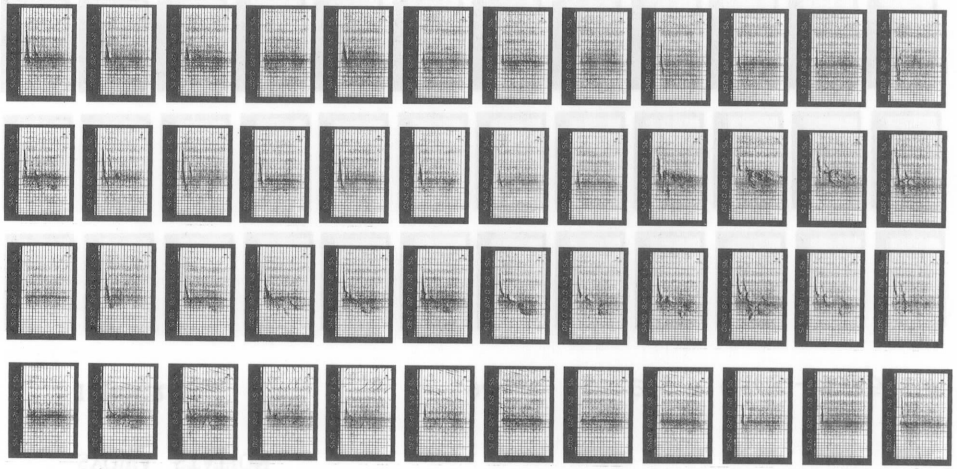

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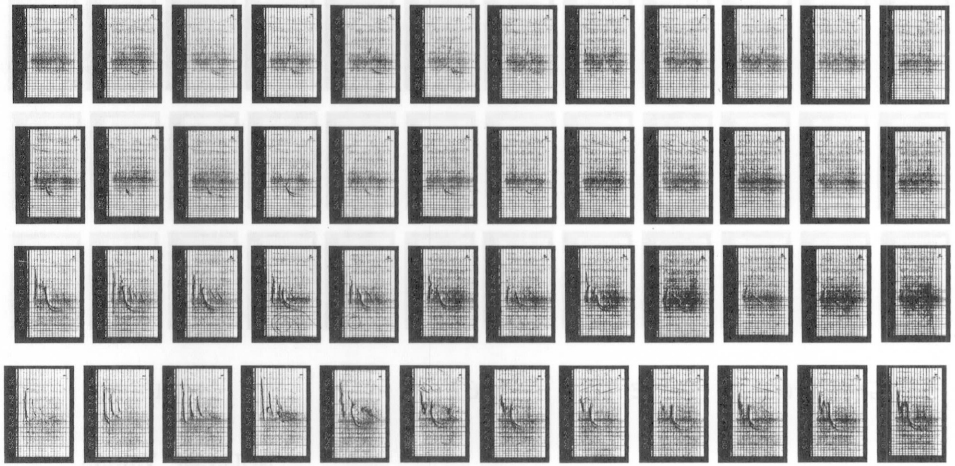

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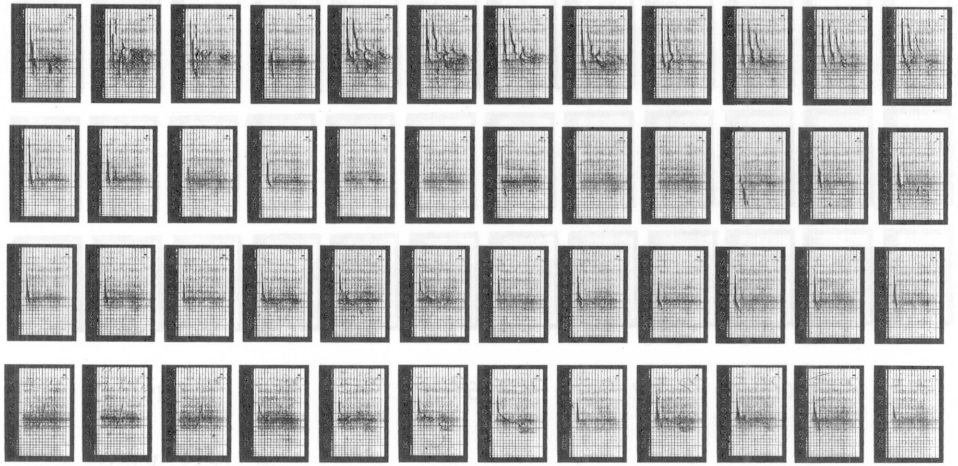

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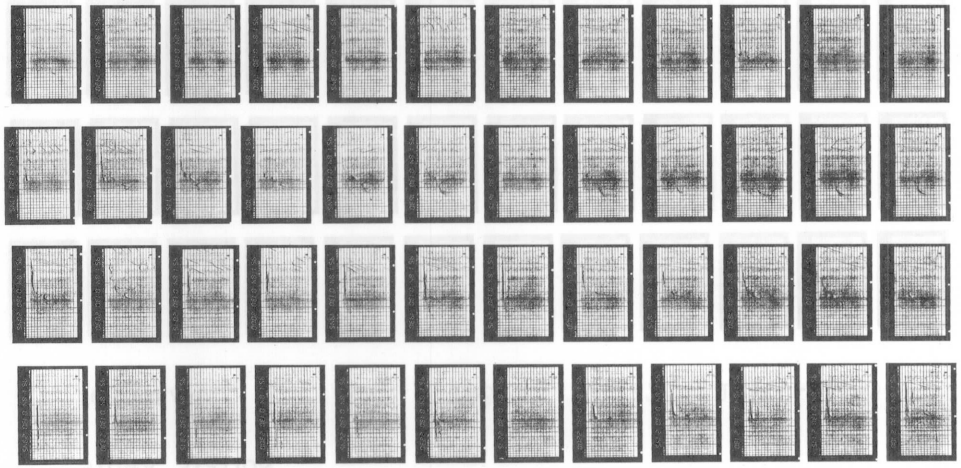

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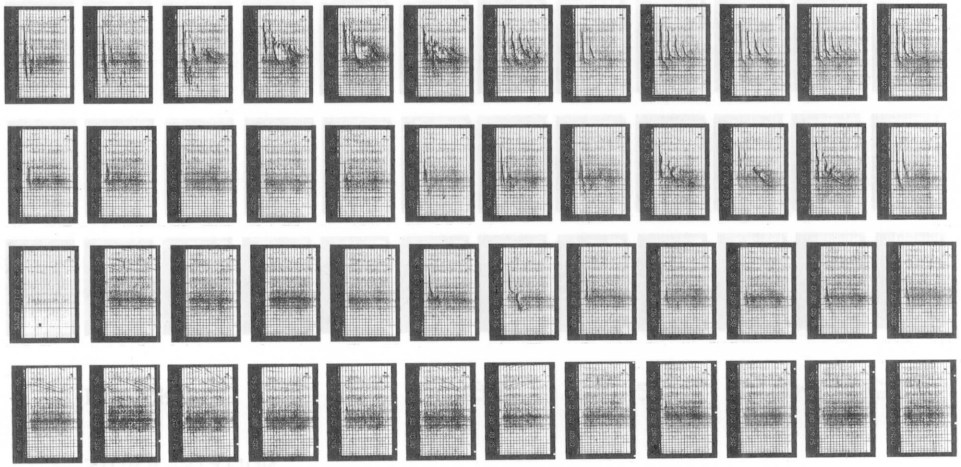

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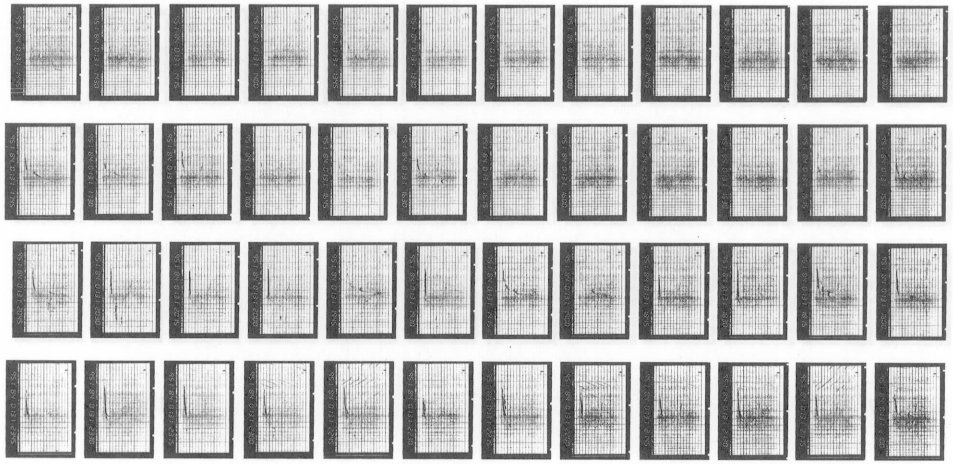

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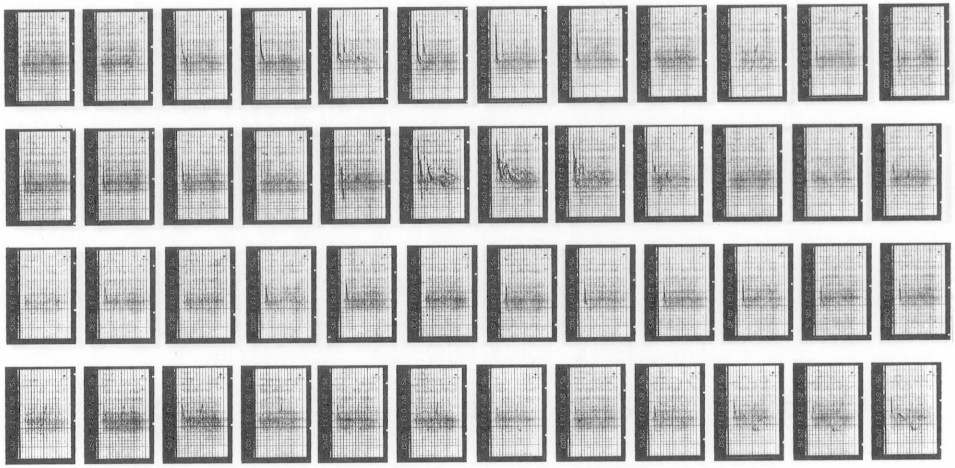

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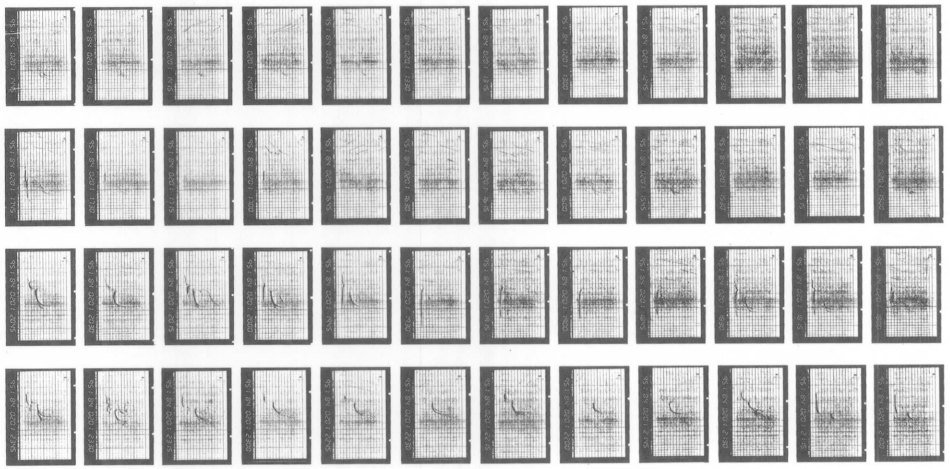

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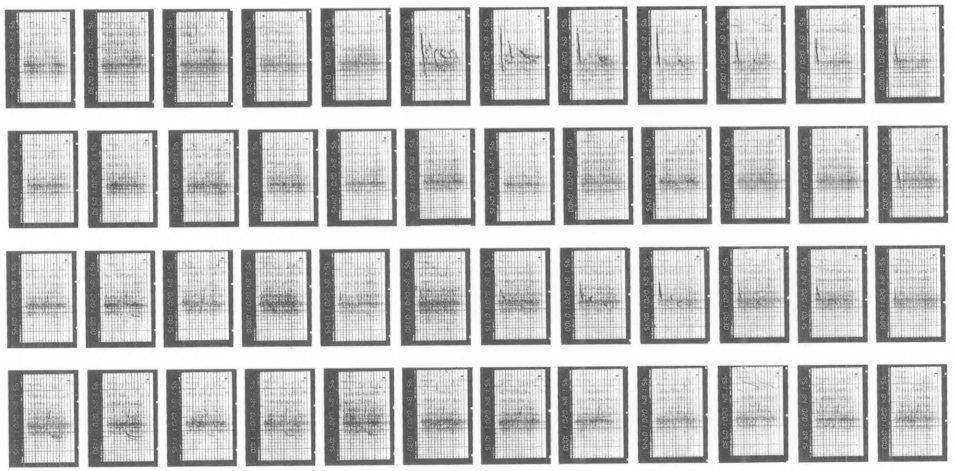

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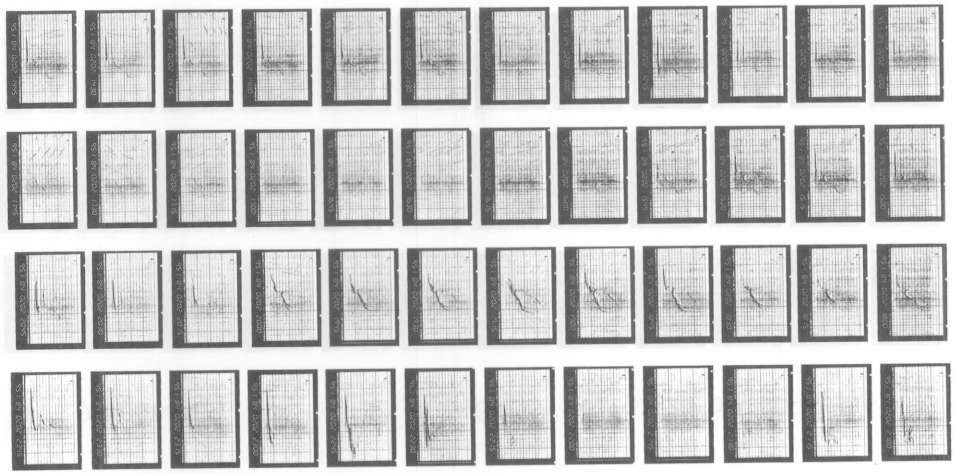

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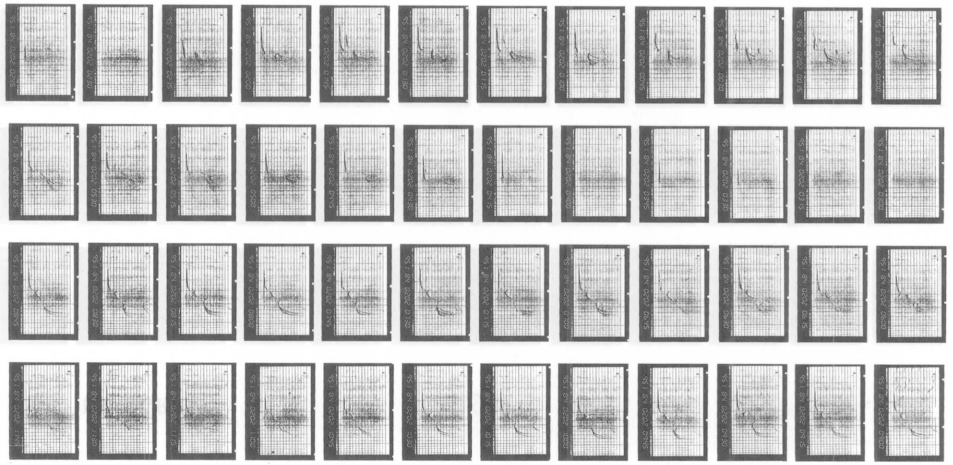

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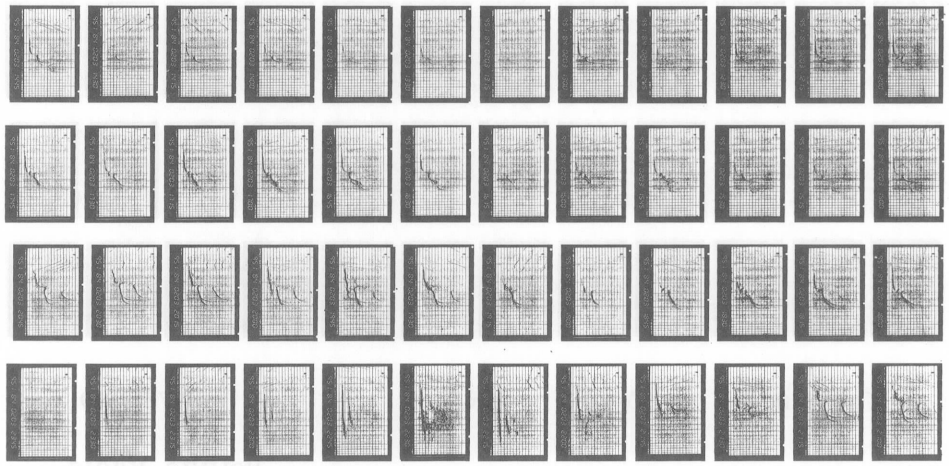

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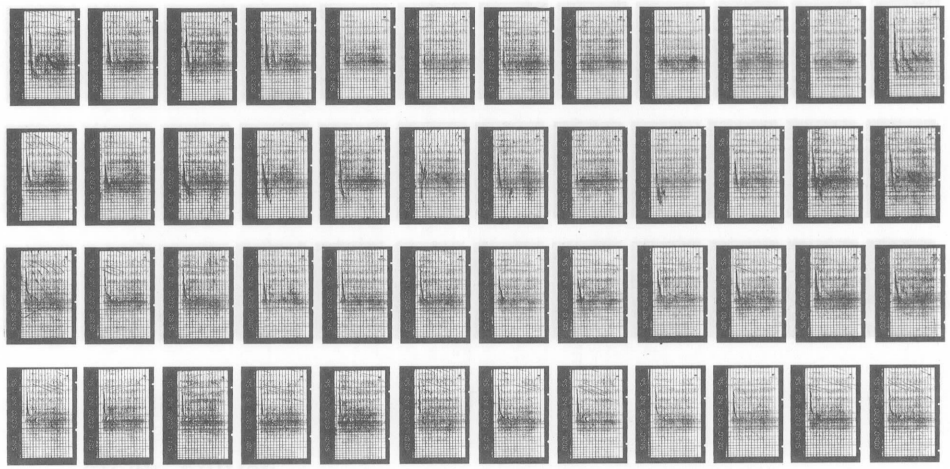

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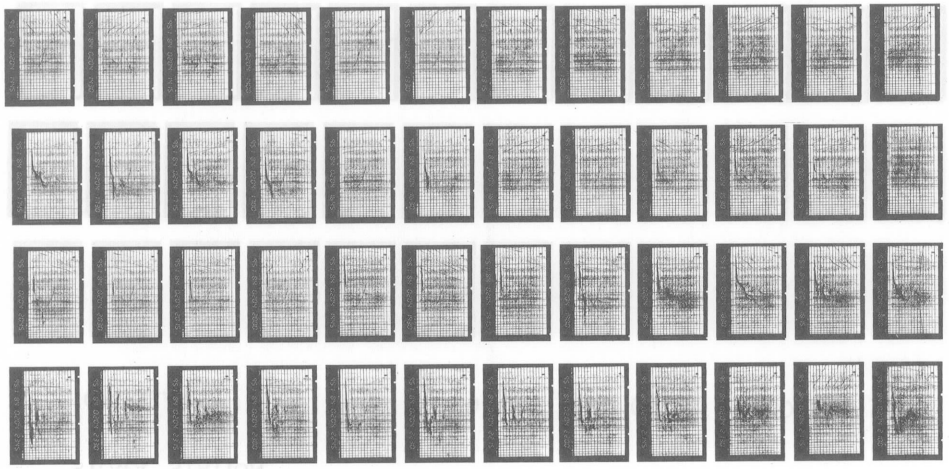

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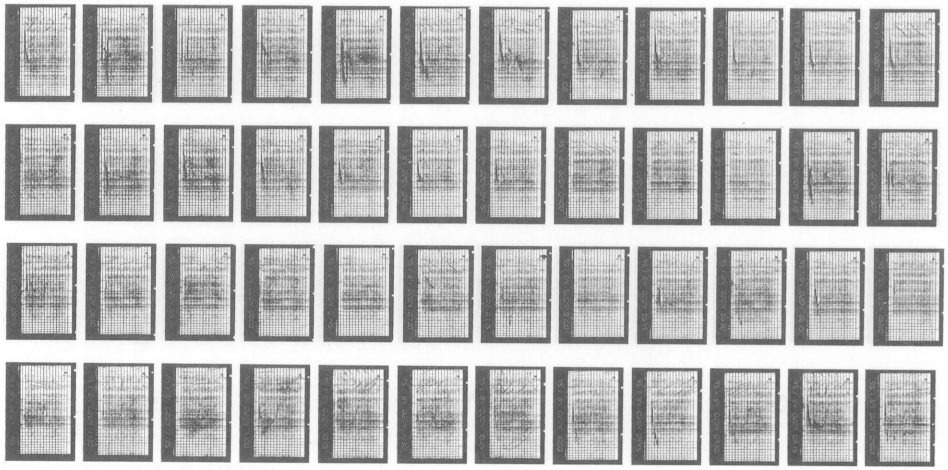

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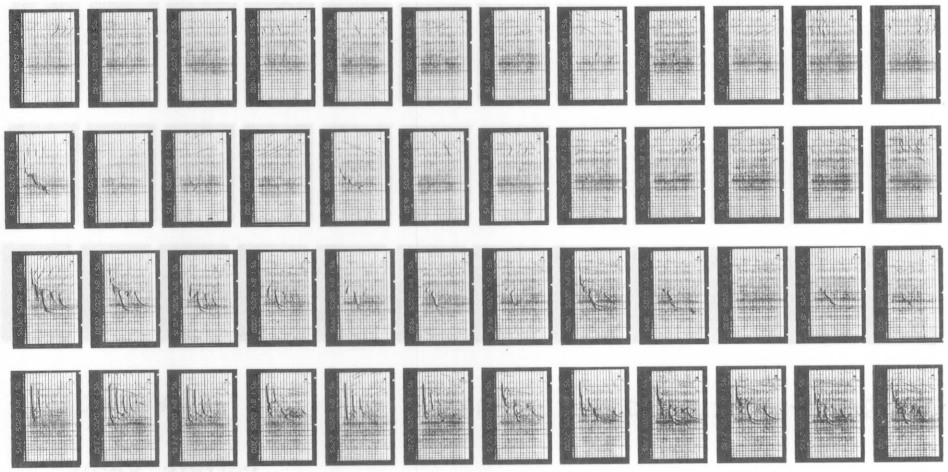

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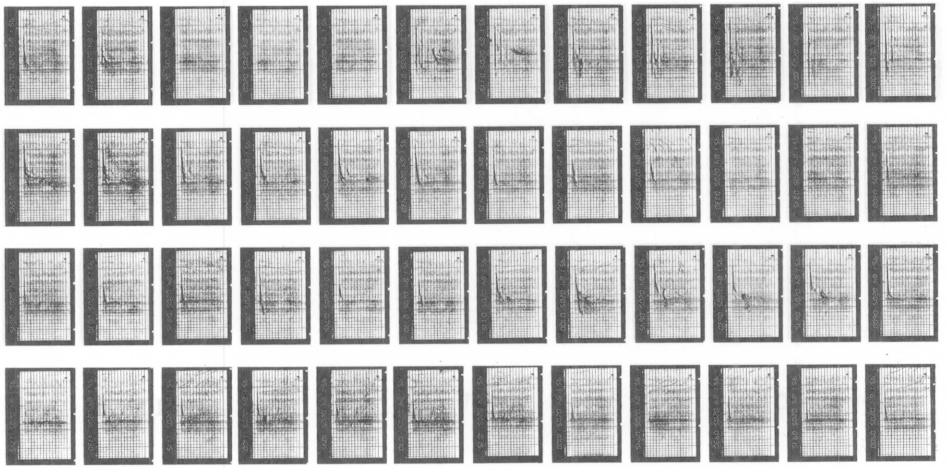

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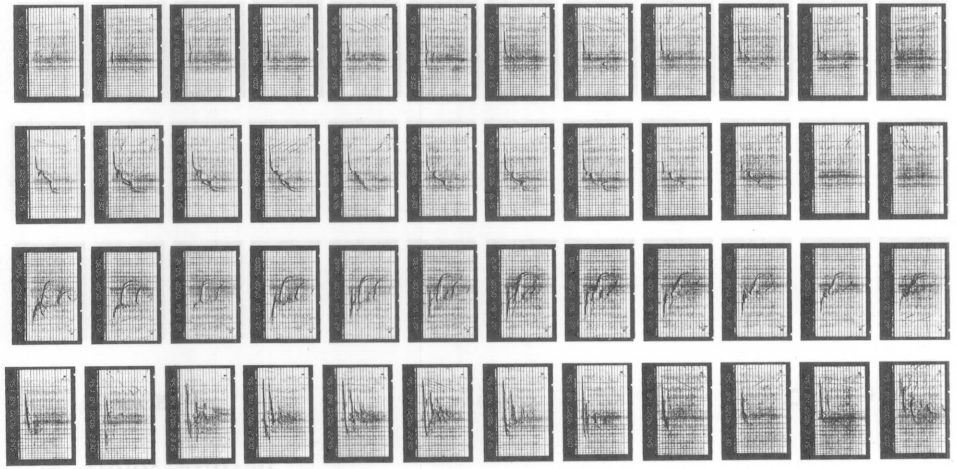

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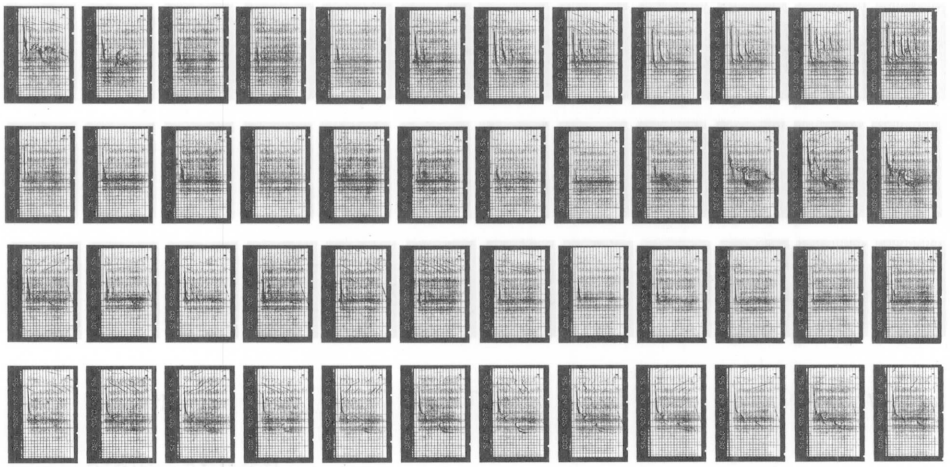

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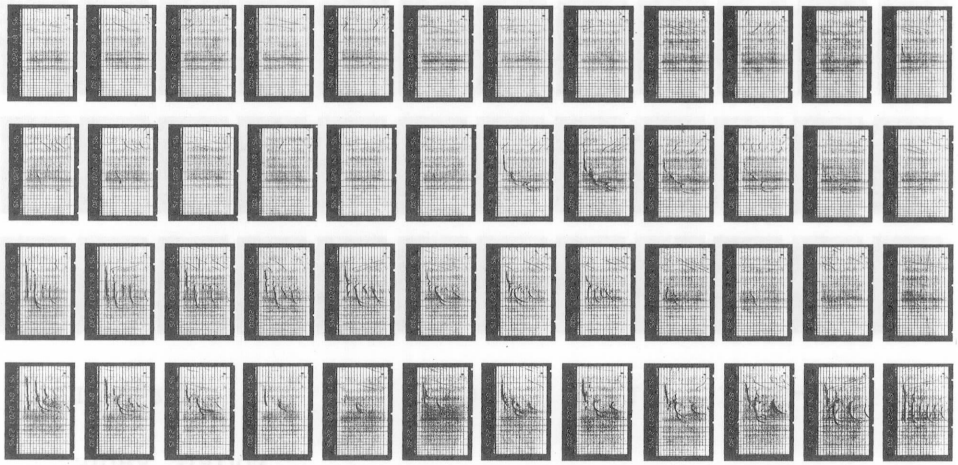

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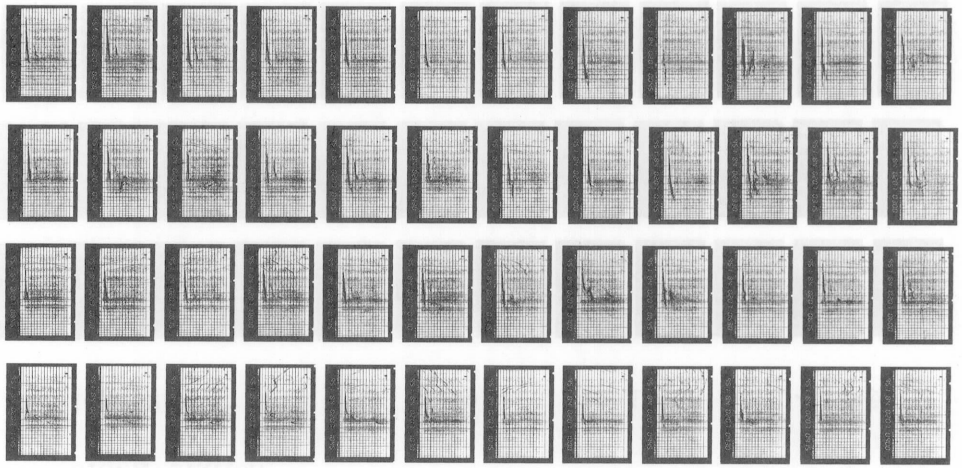

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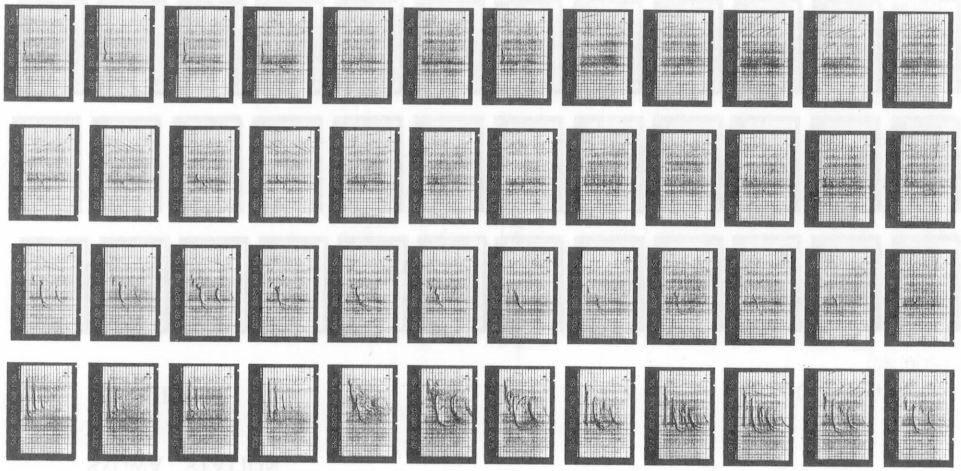

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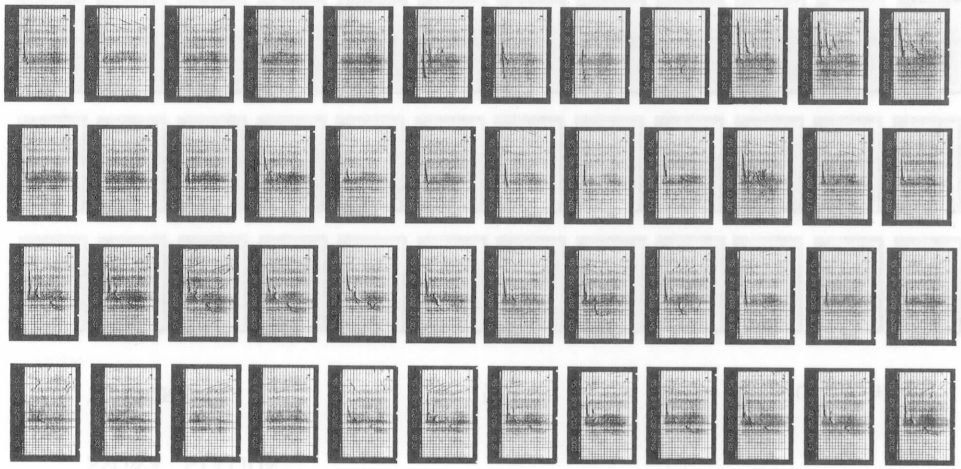

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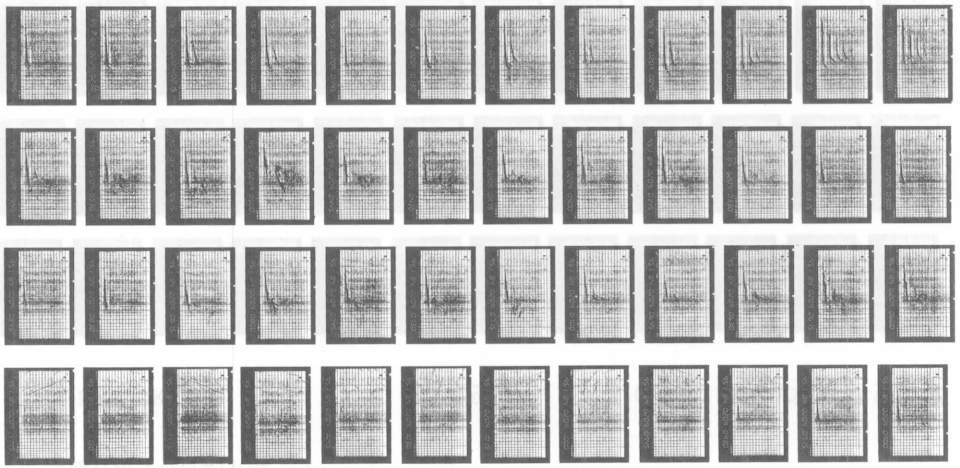

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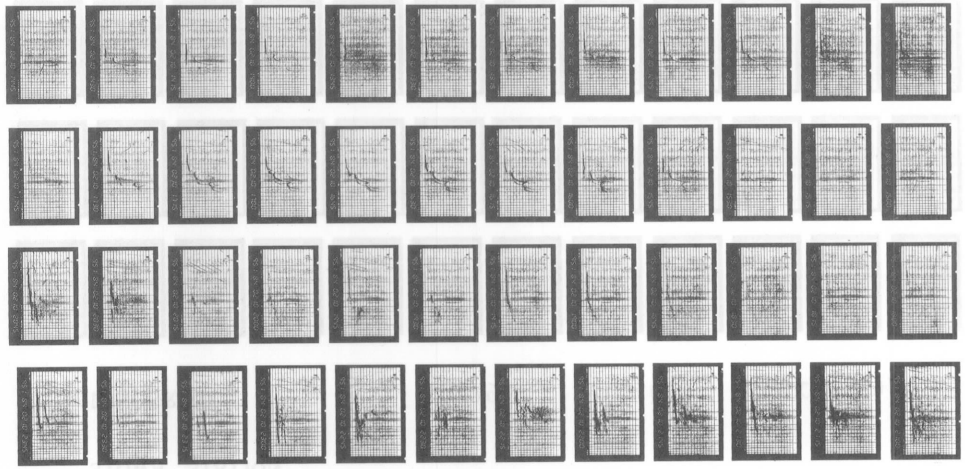

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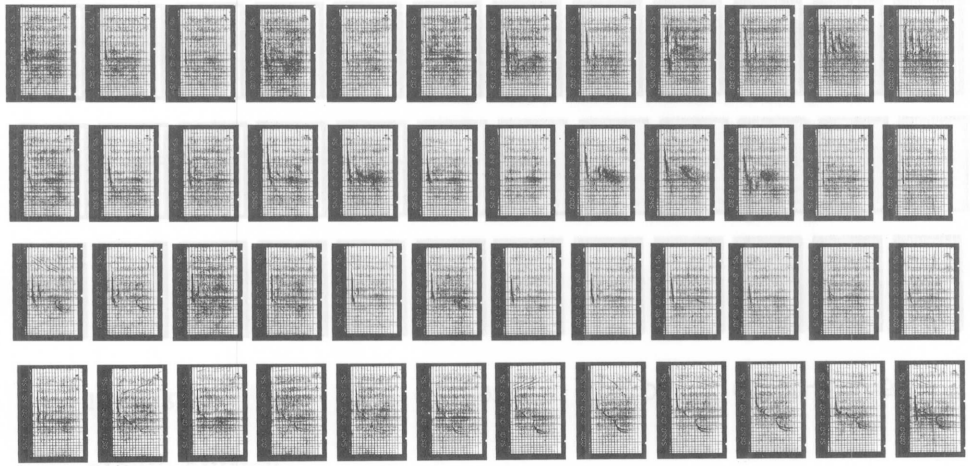

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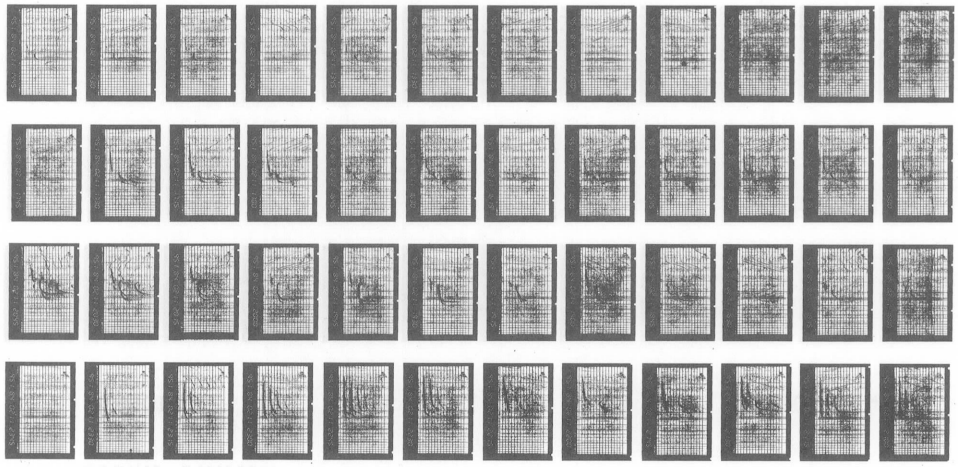

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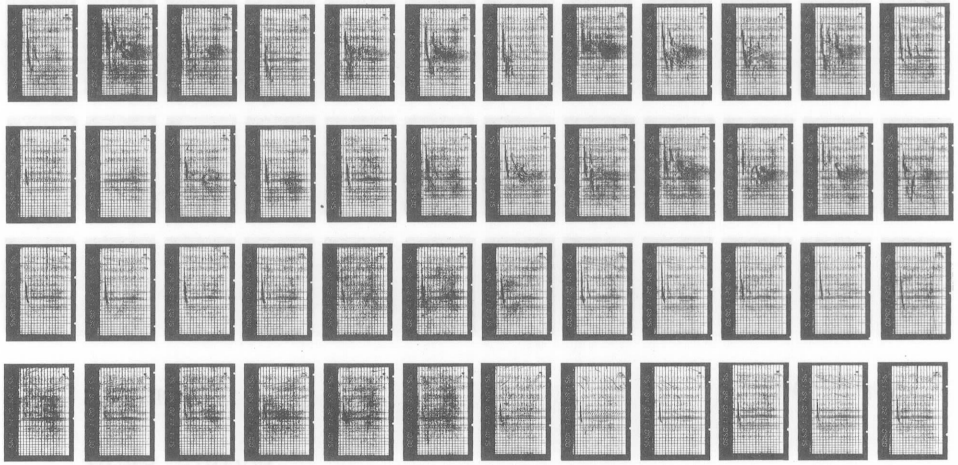

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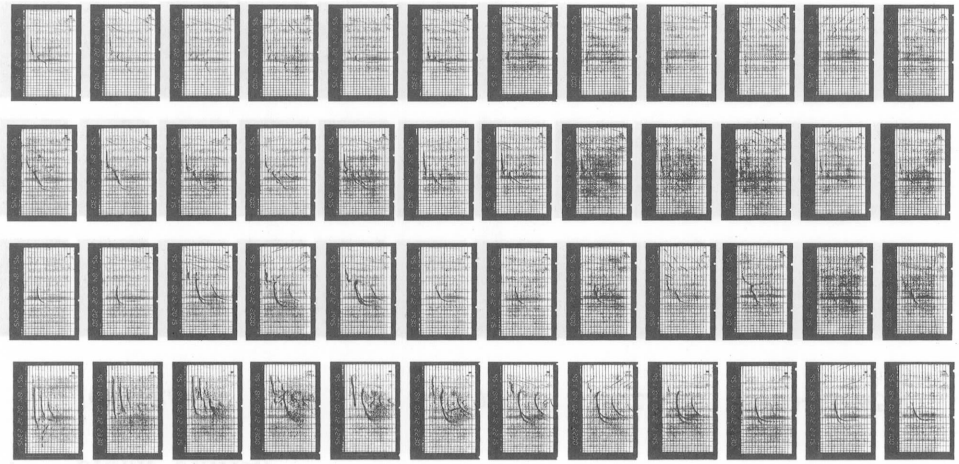

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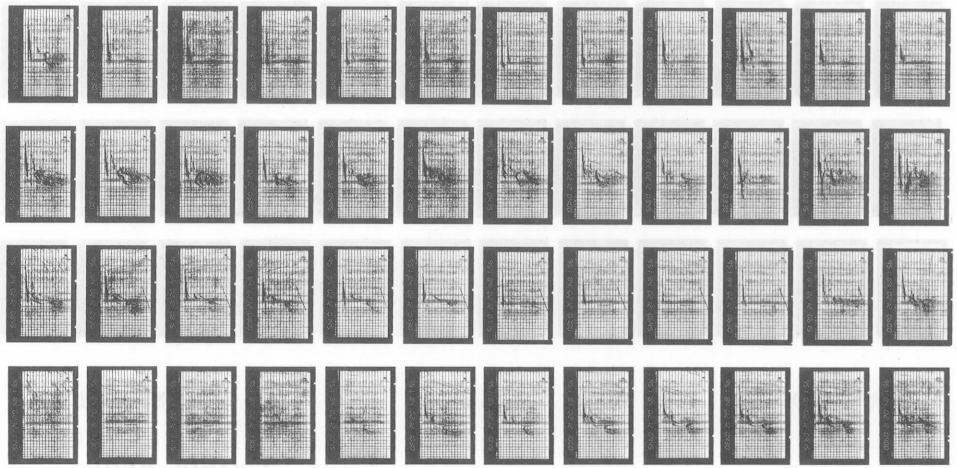

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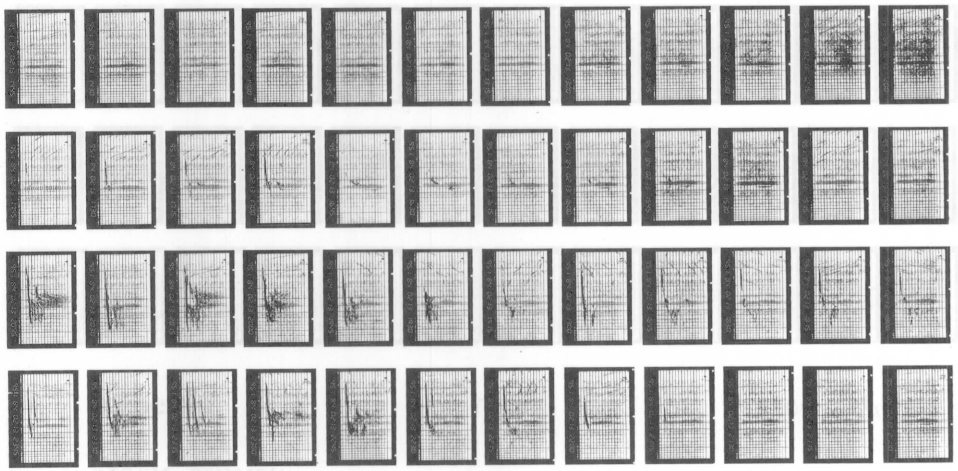

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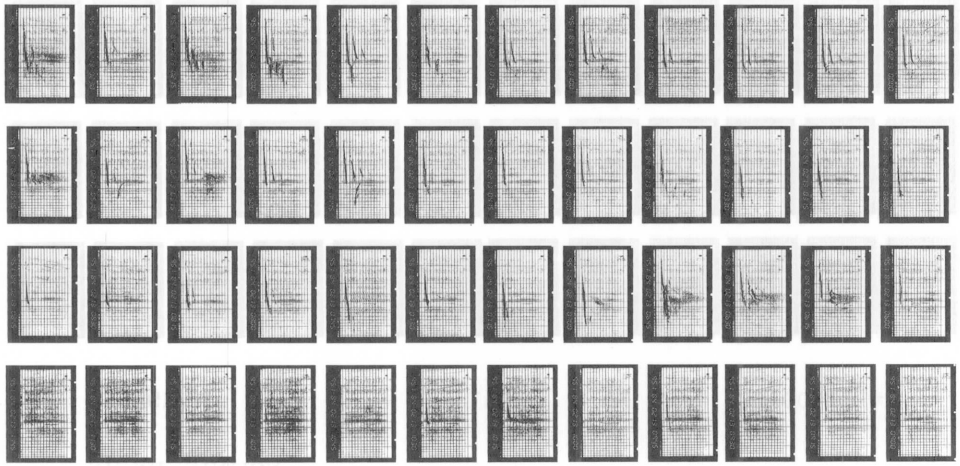

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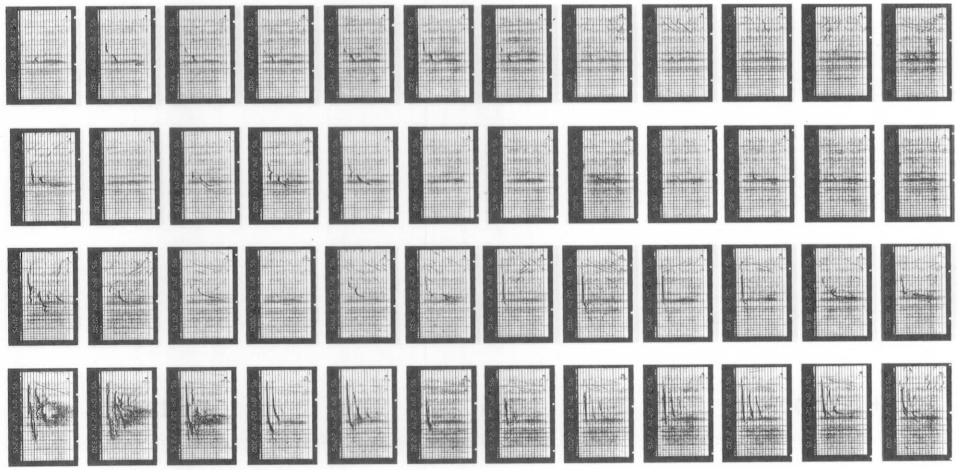

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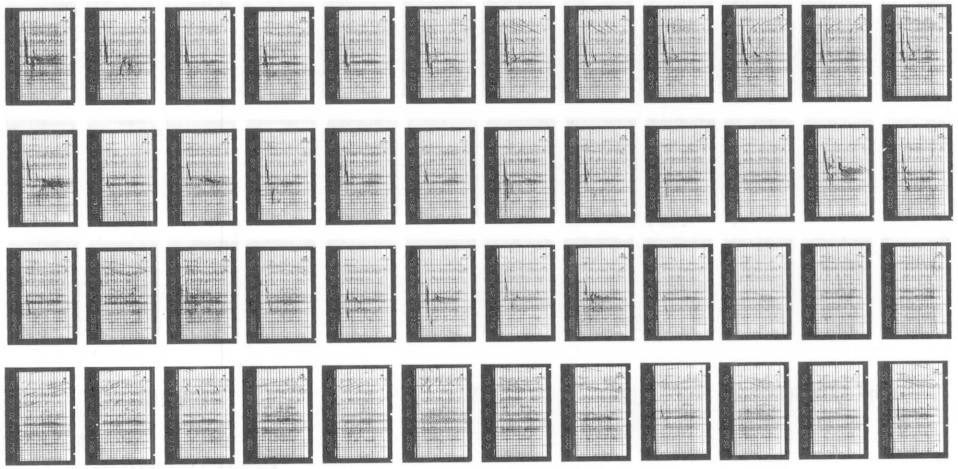

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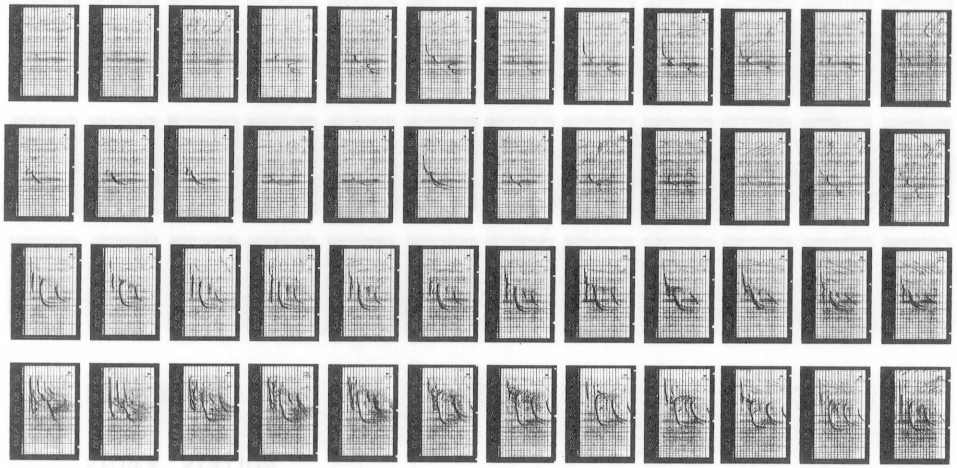

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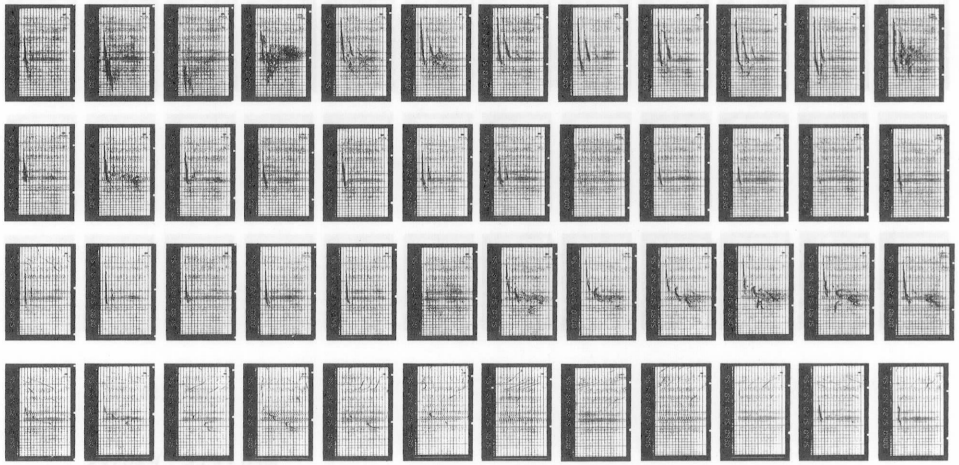

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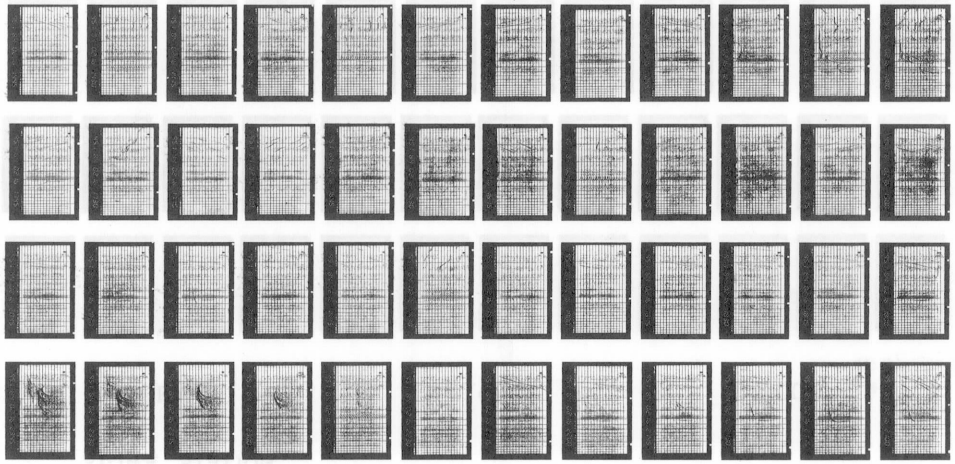

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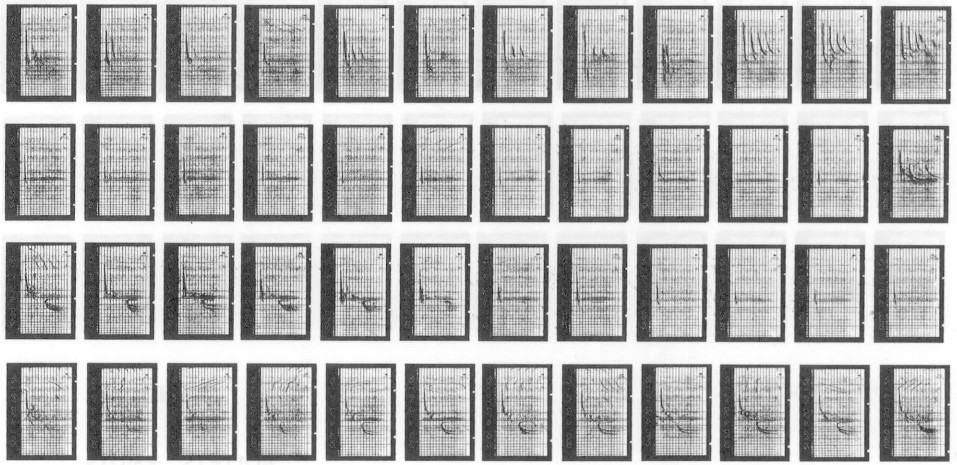

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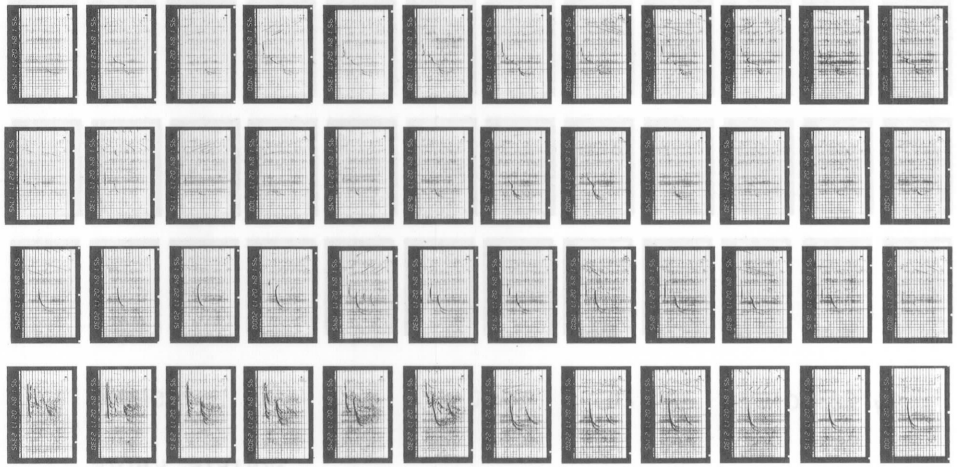

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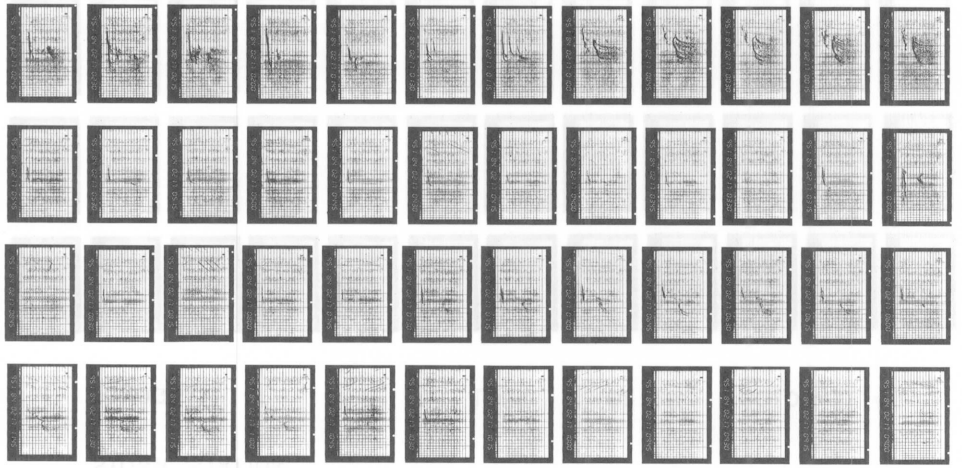

SYOWA STATION

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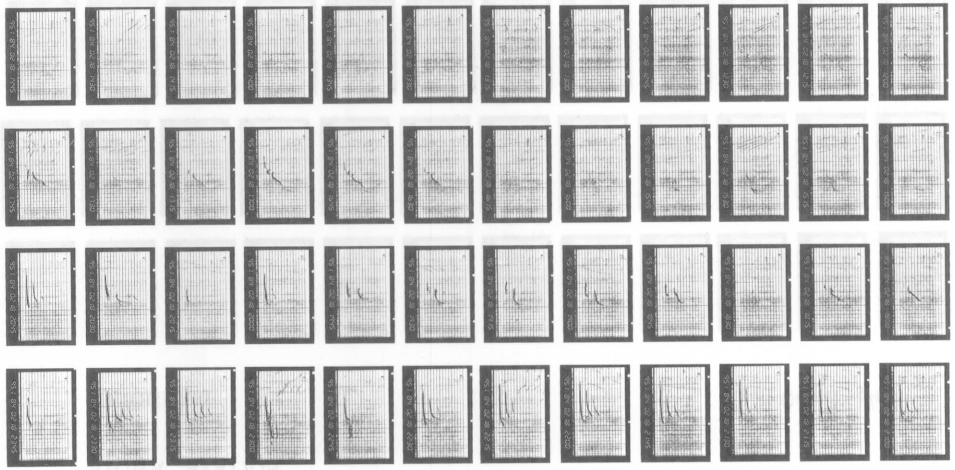
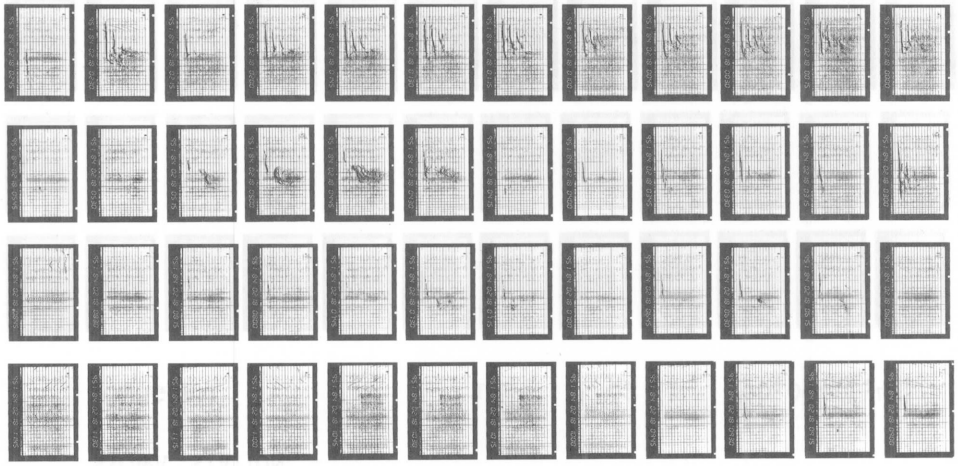


SYOWA STATION

IONOGRAM 1984 02 18 00;00-11;45



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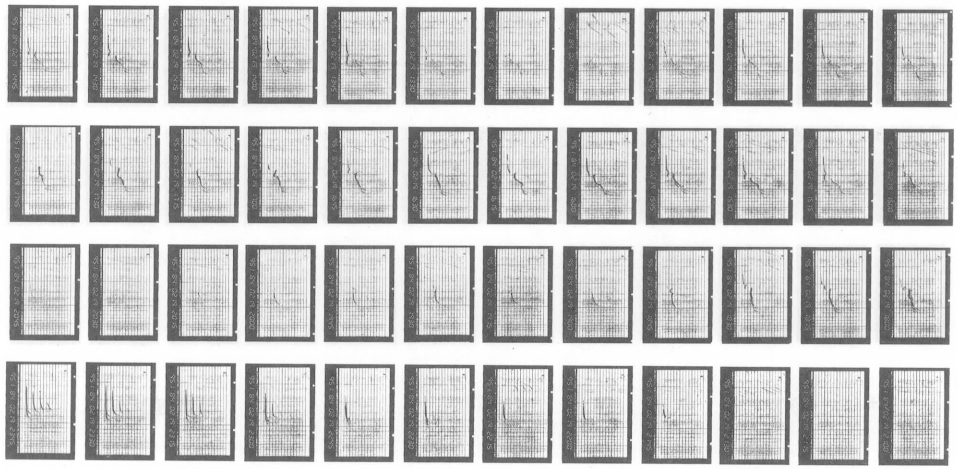

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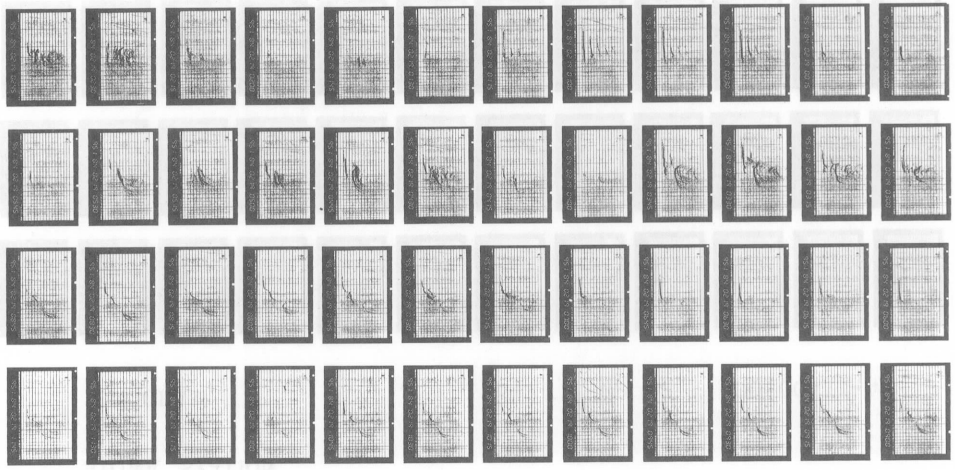

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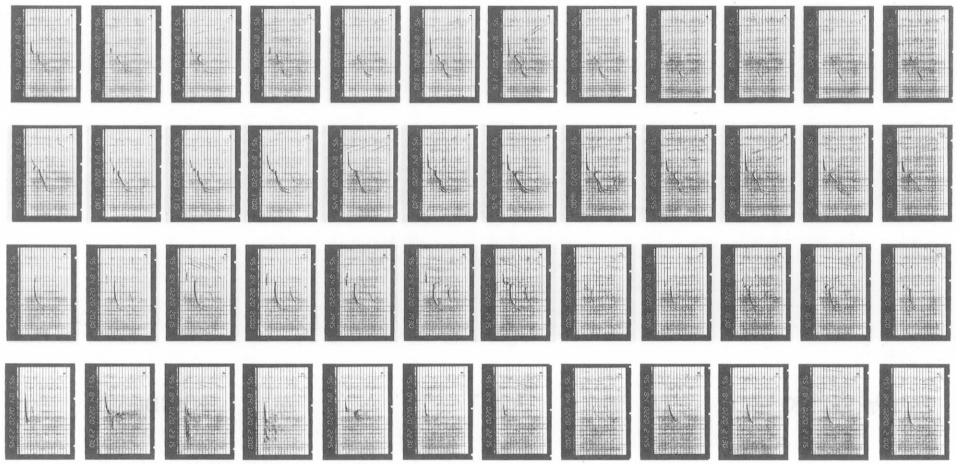

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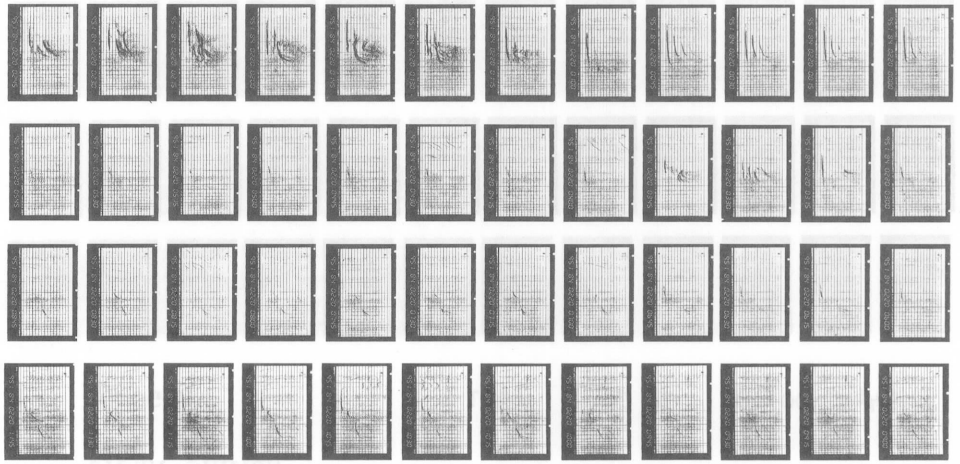

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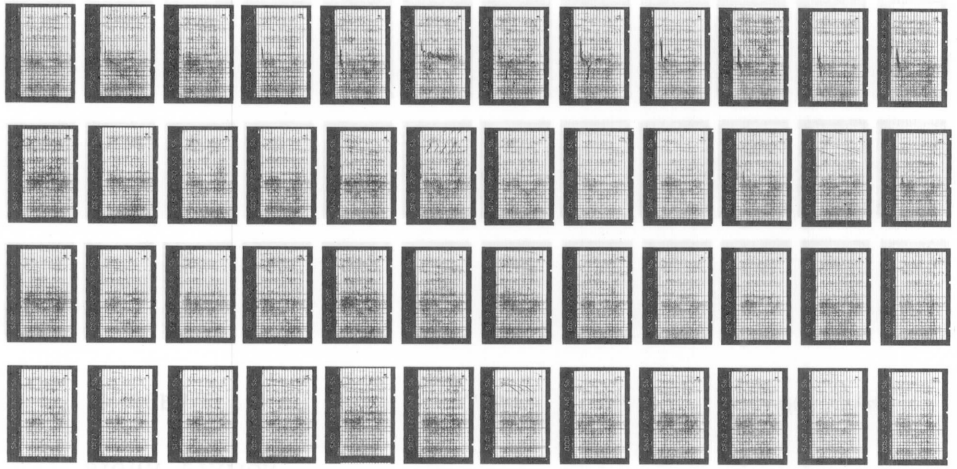

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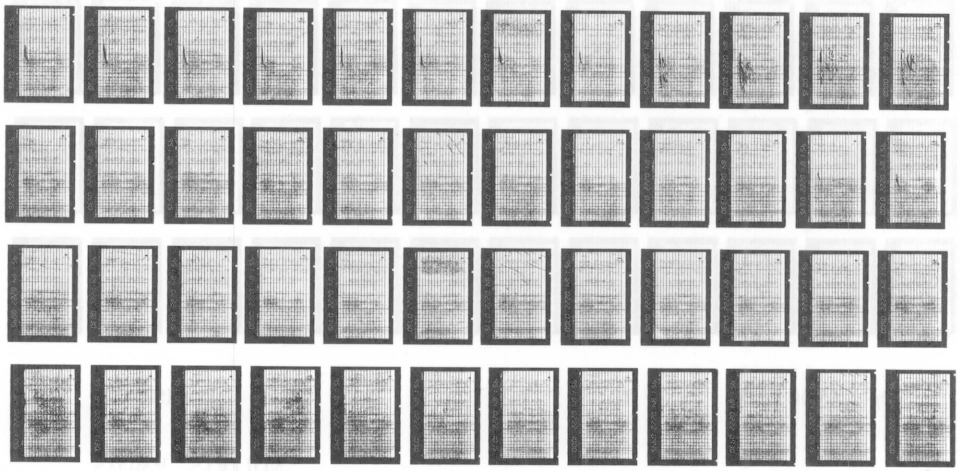

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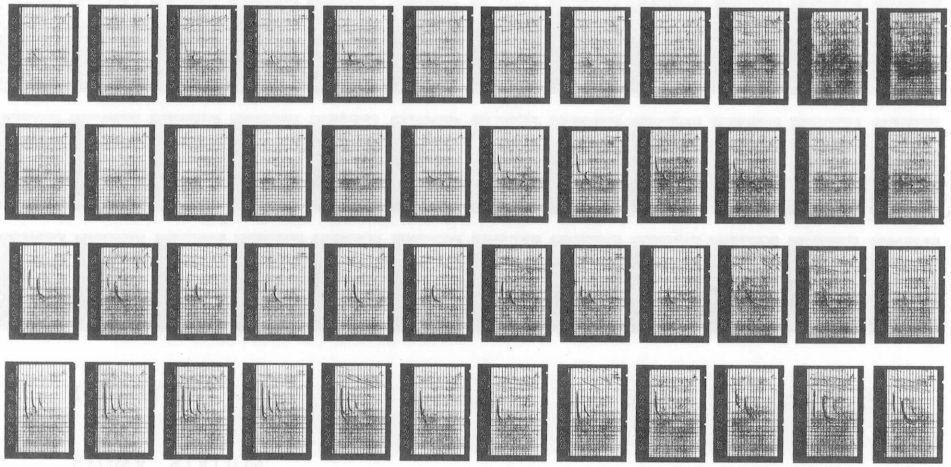

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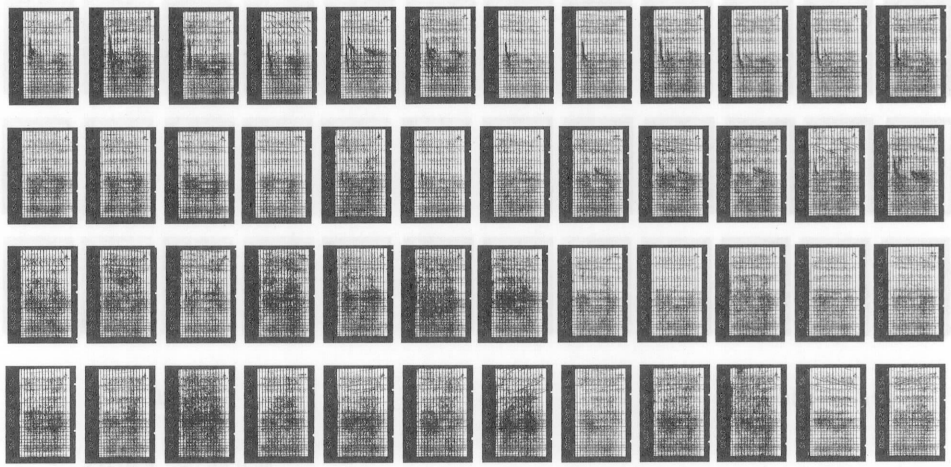

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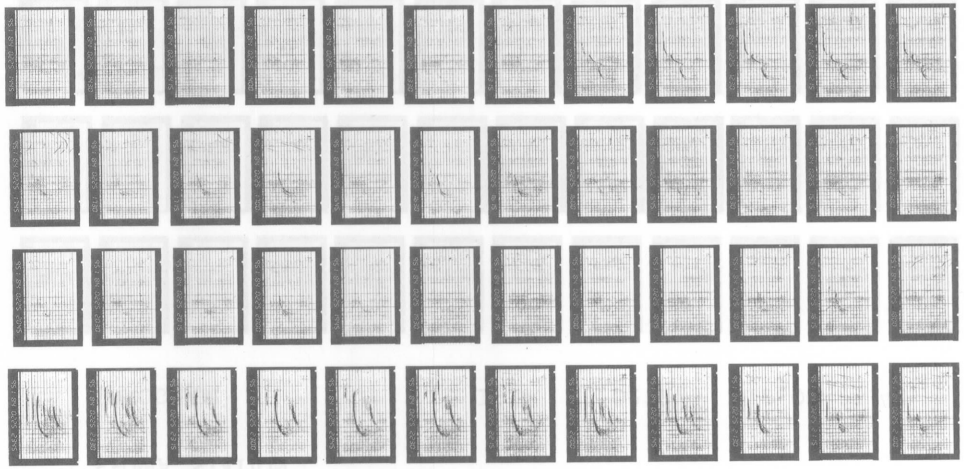

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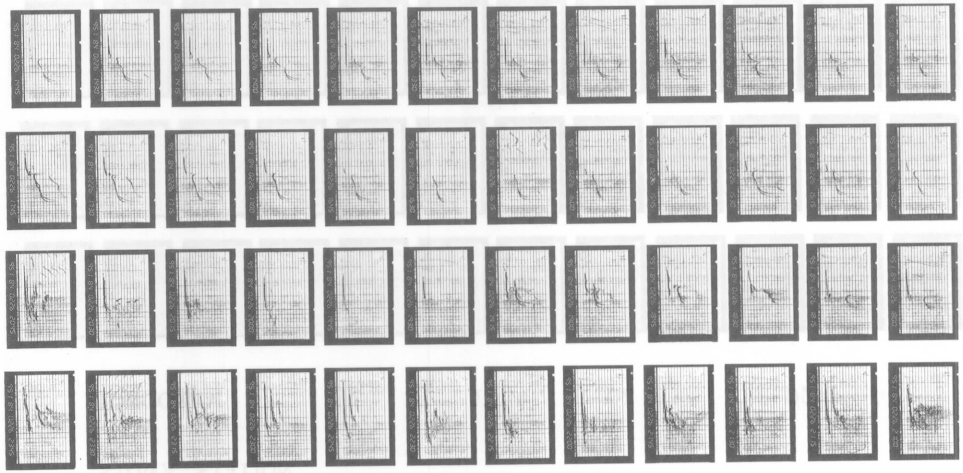

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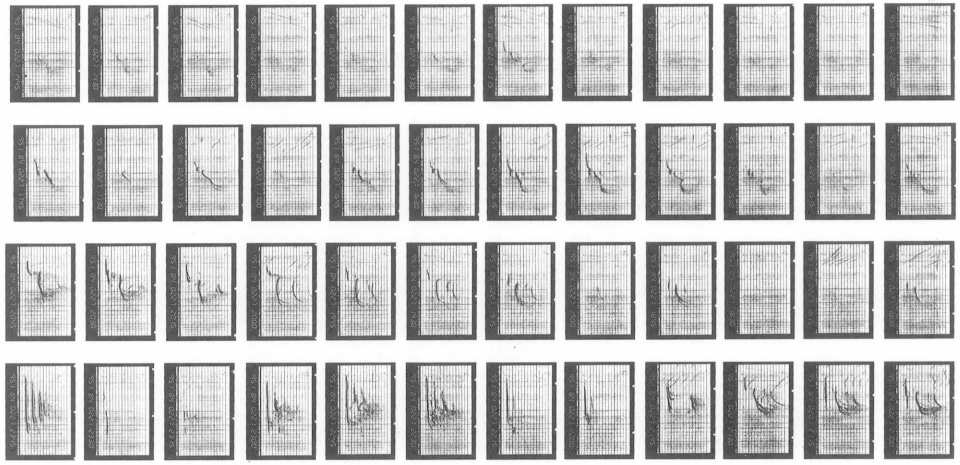

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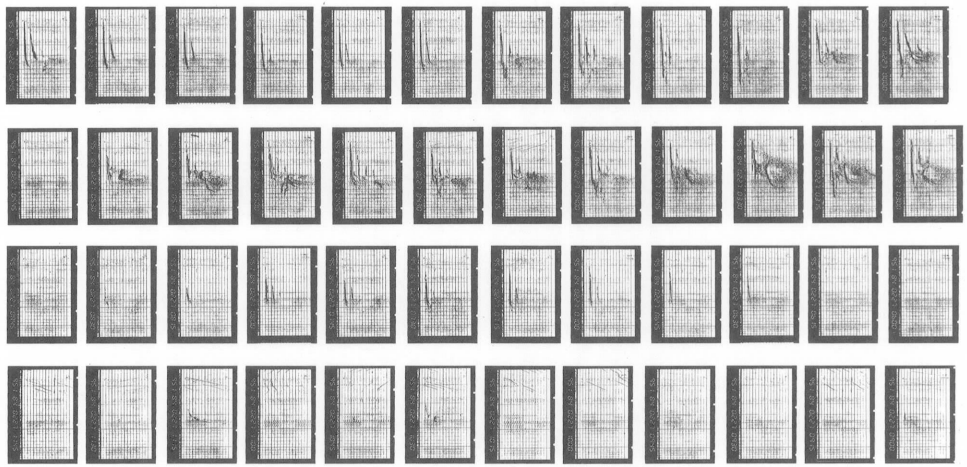

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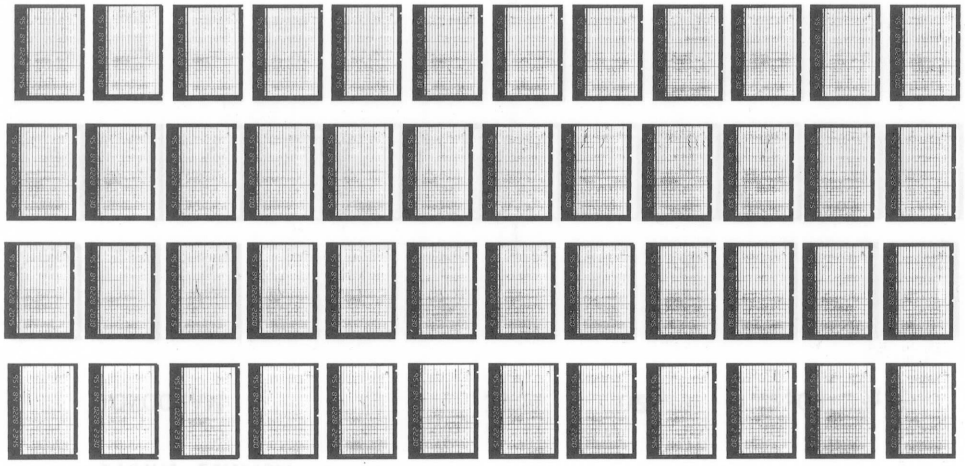

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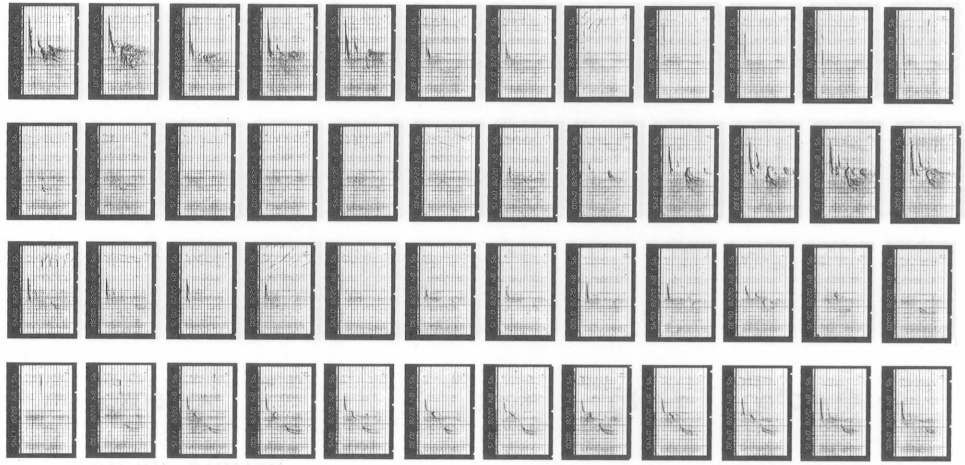

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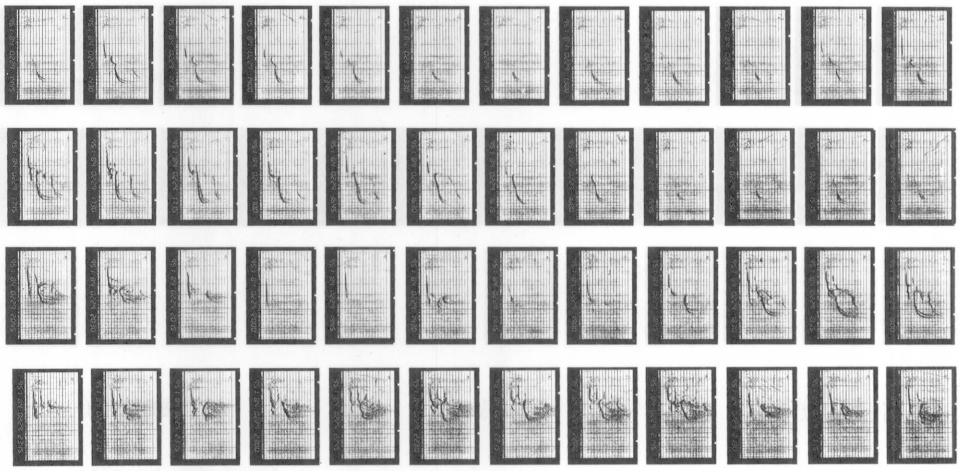

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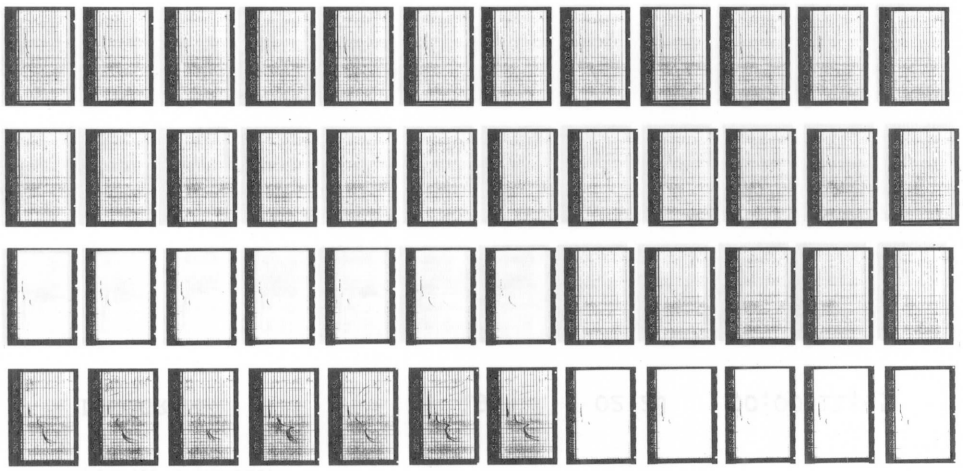

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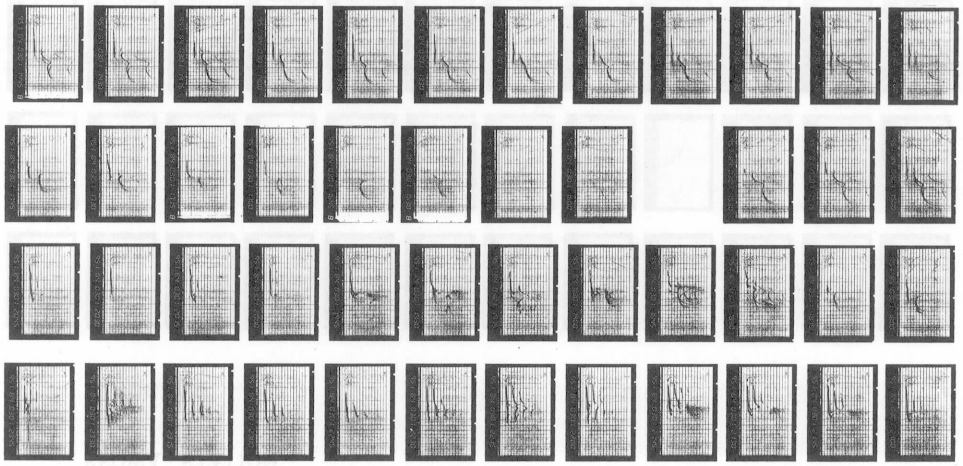

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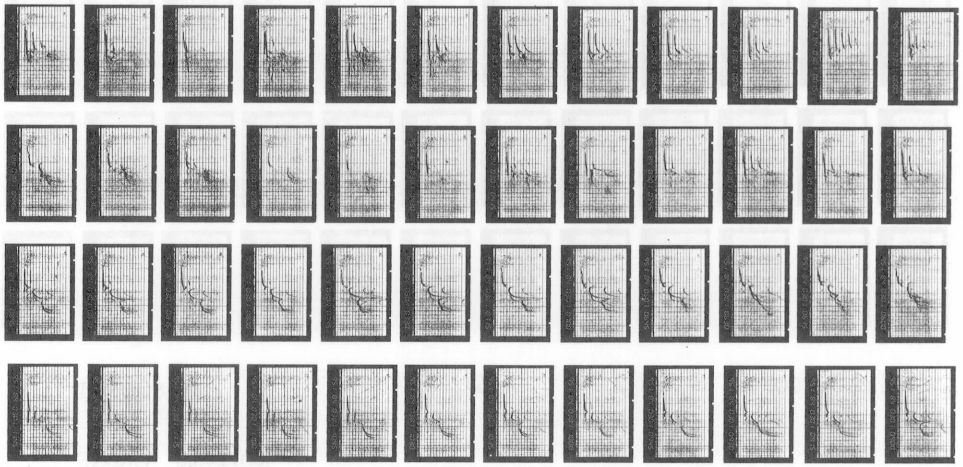

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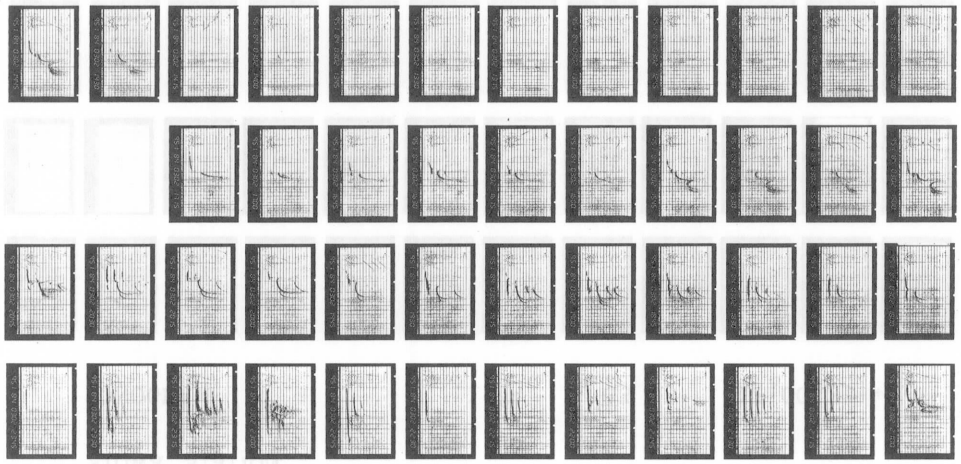

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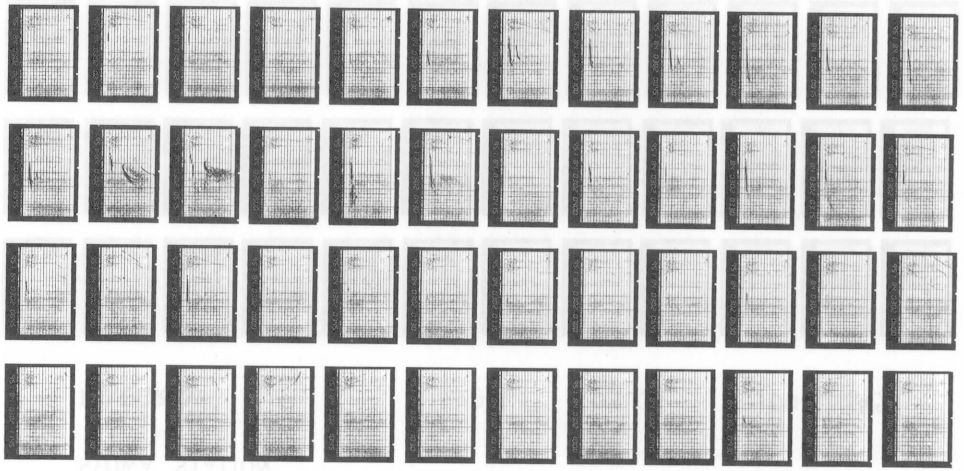

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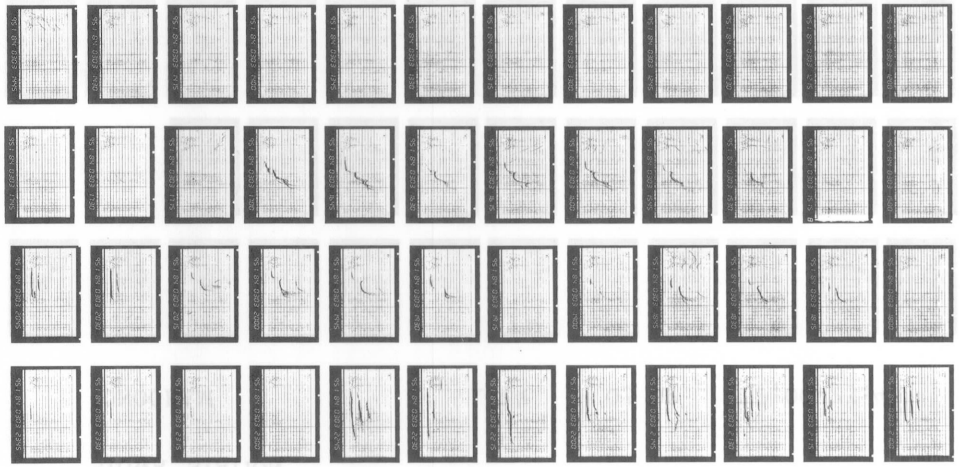

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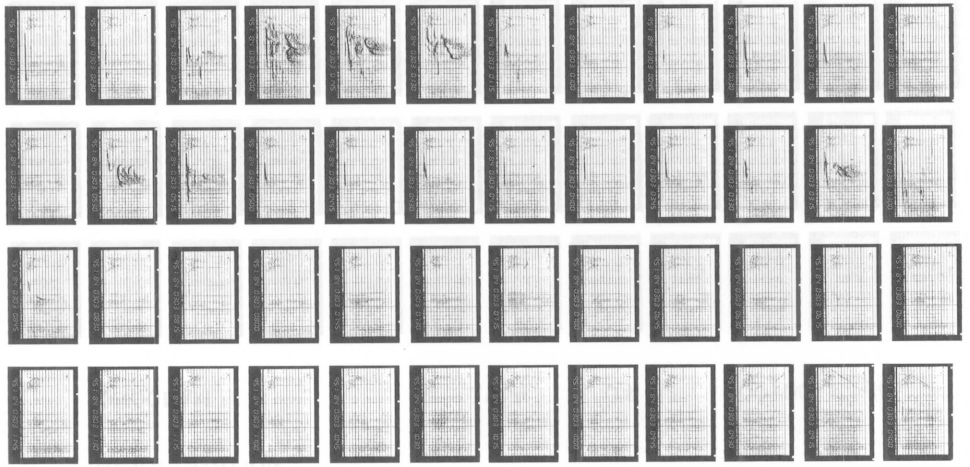

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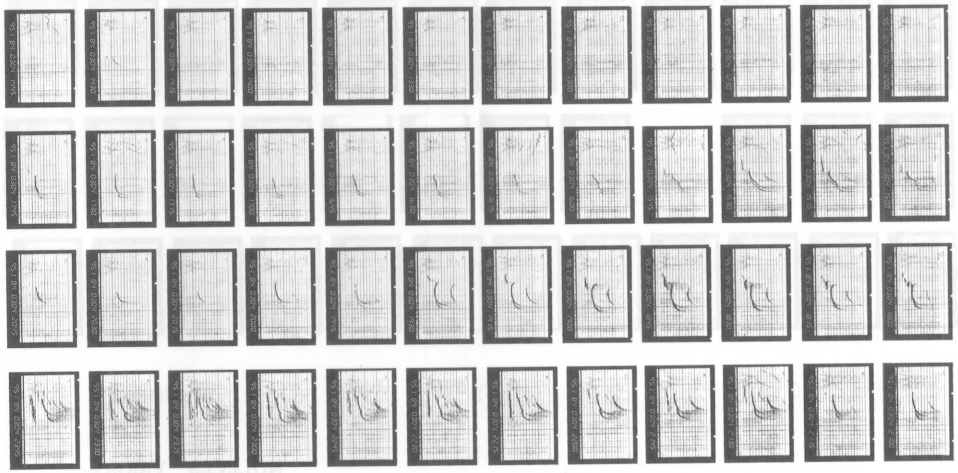

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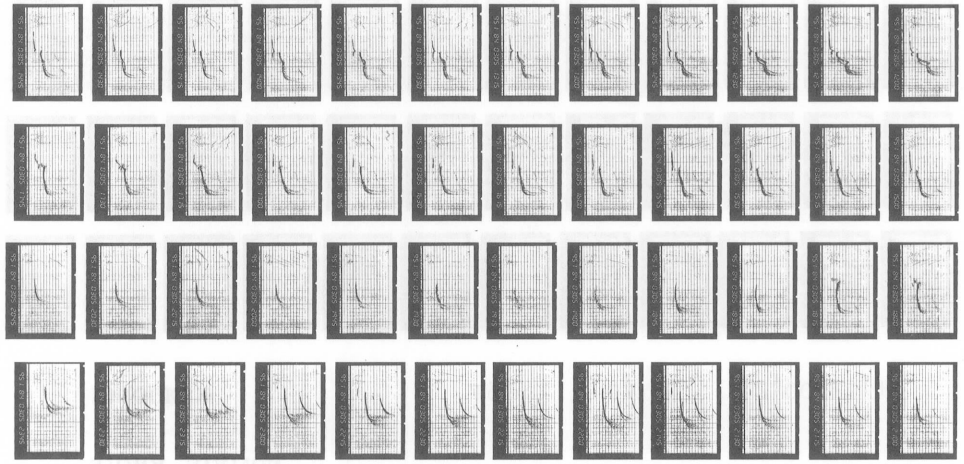

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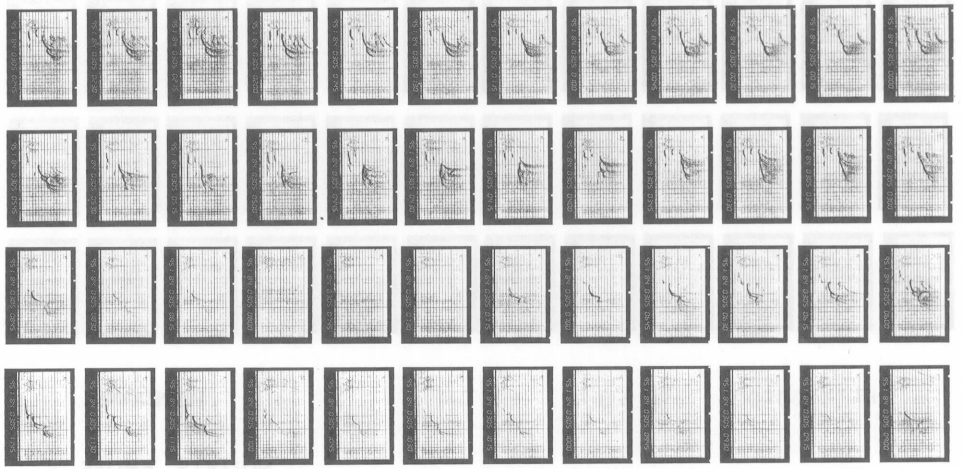

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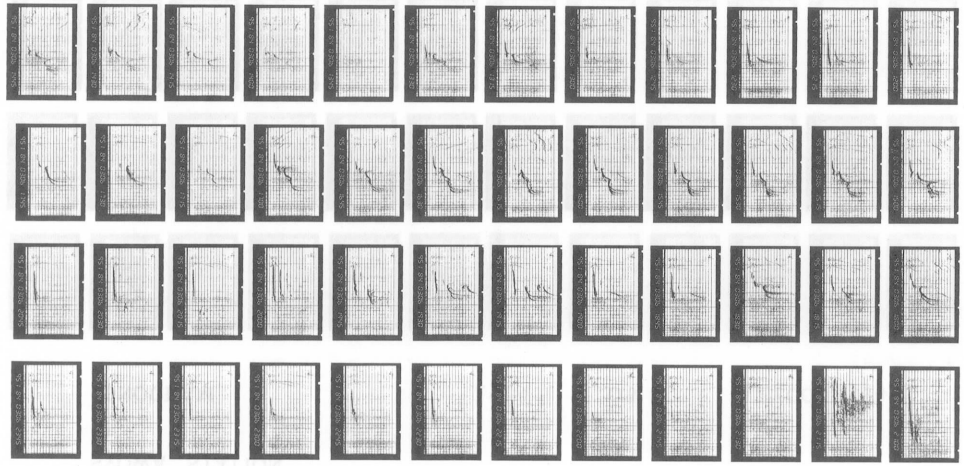

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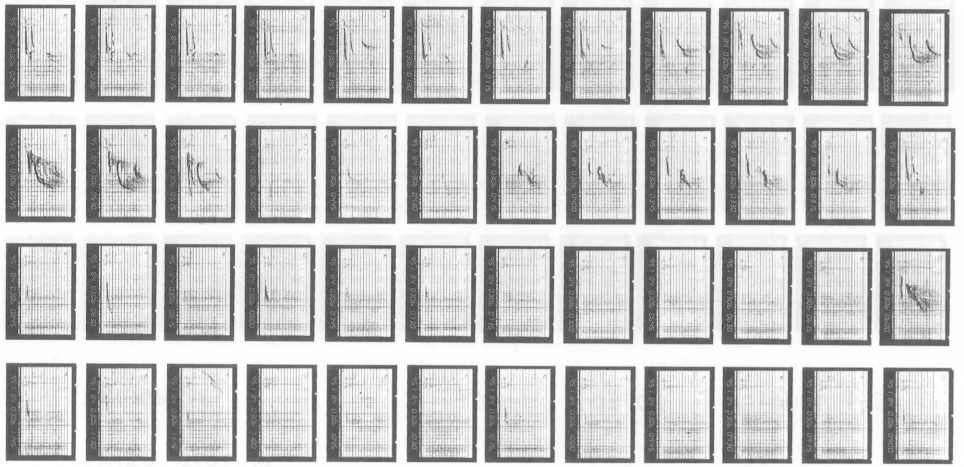

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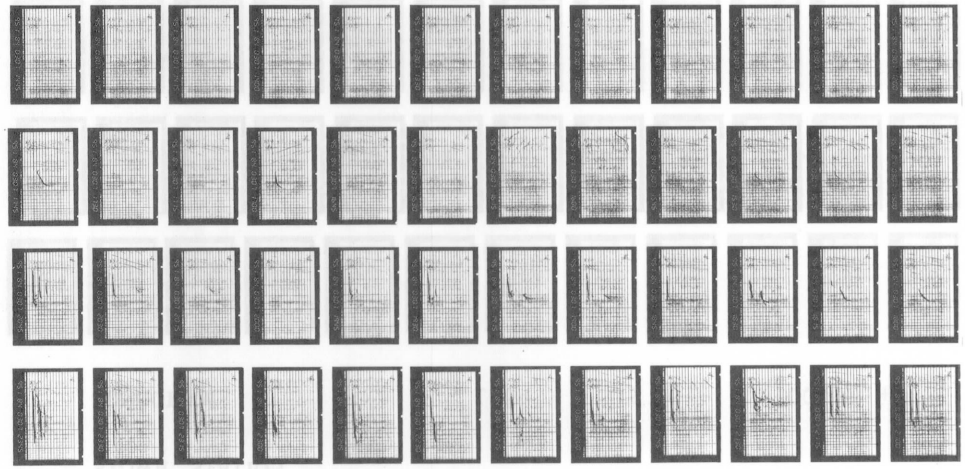

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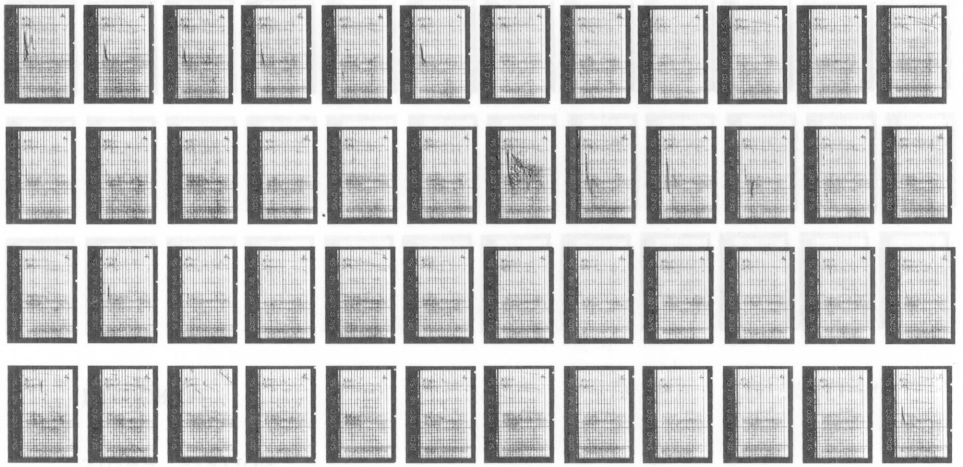

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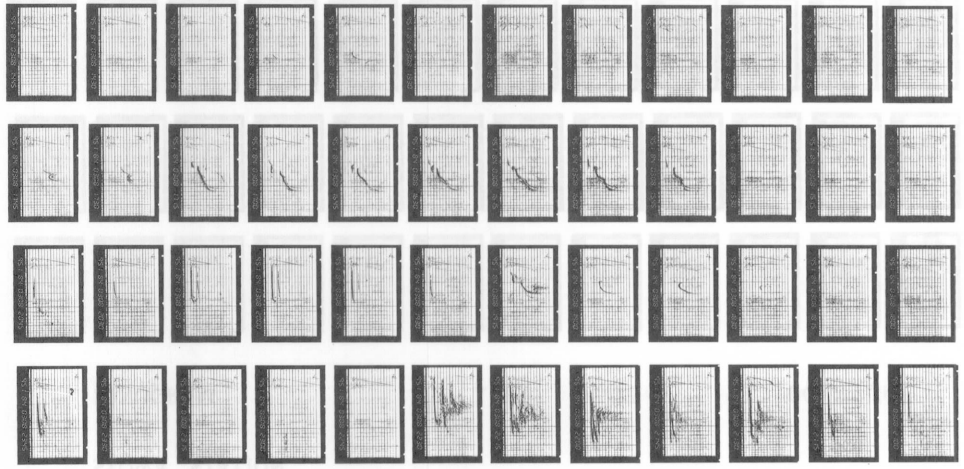

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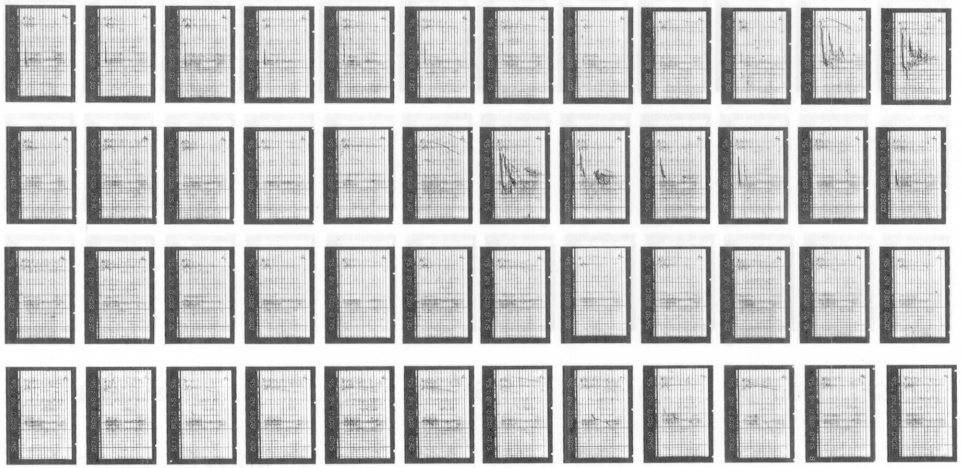

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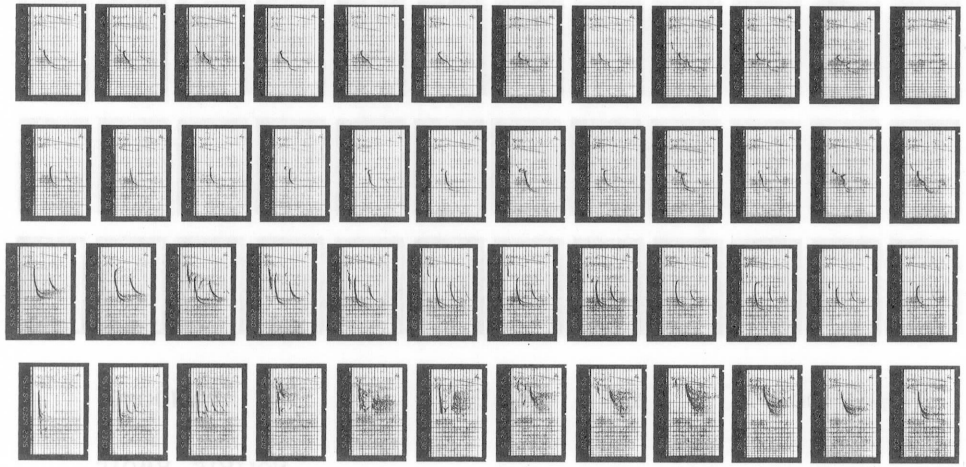

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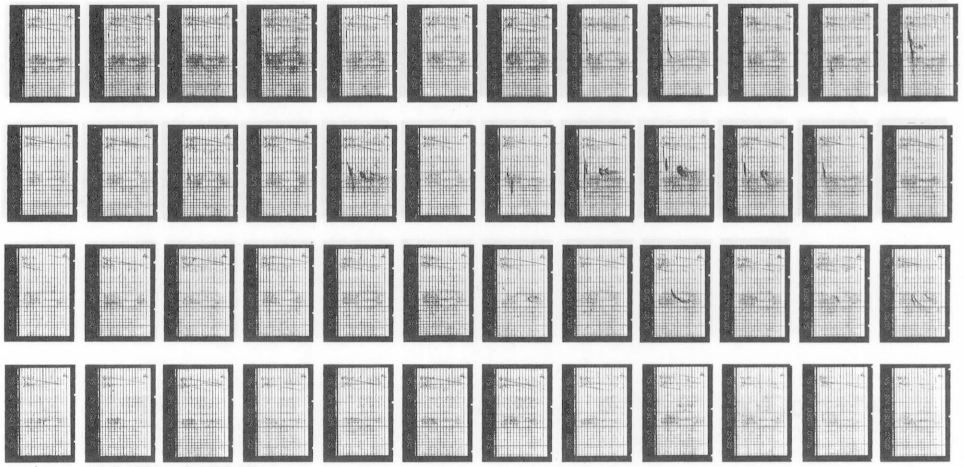

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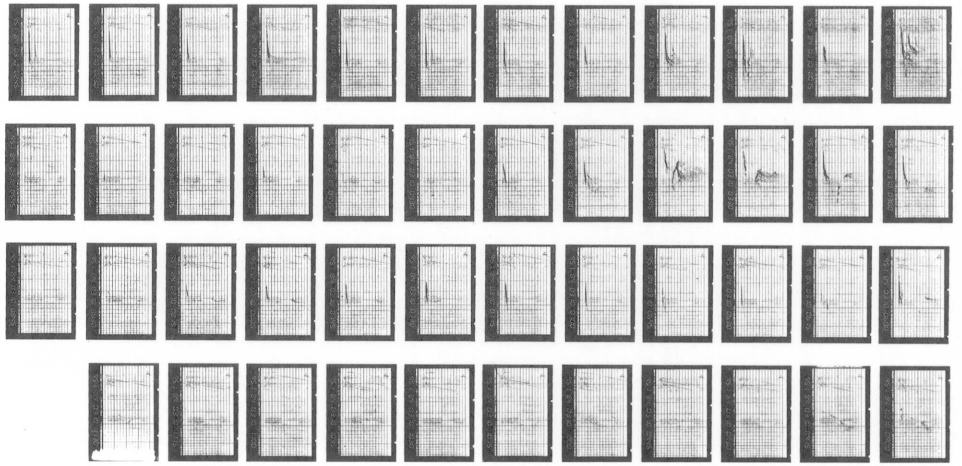

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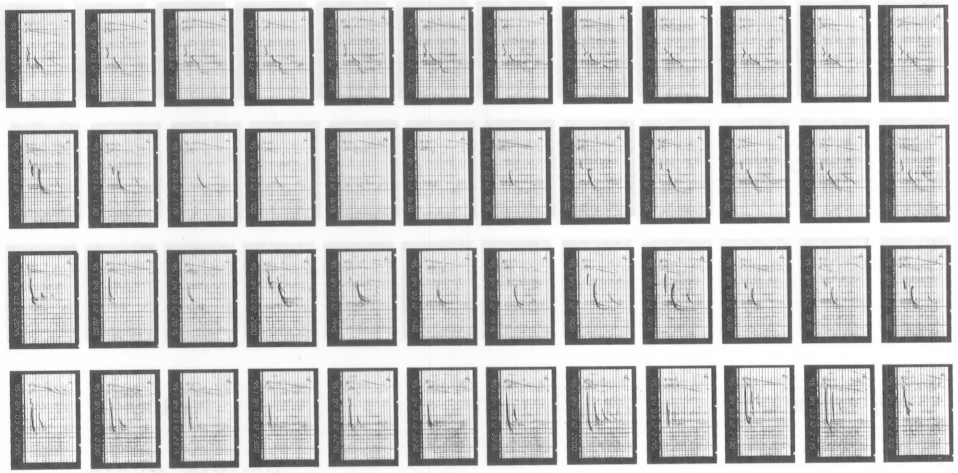

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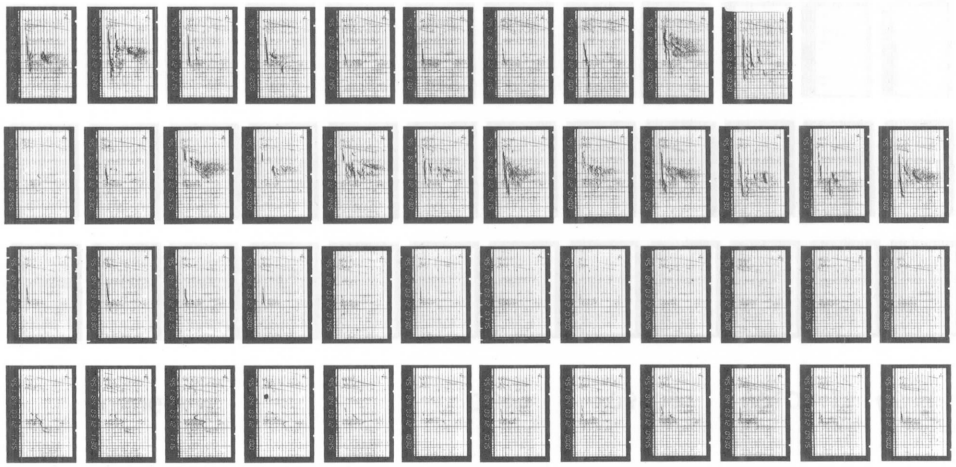

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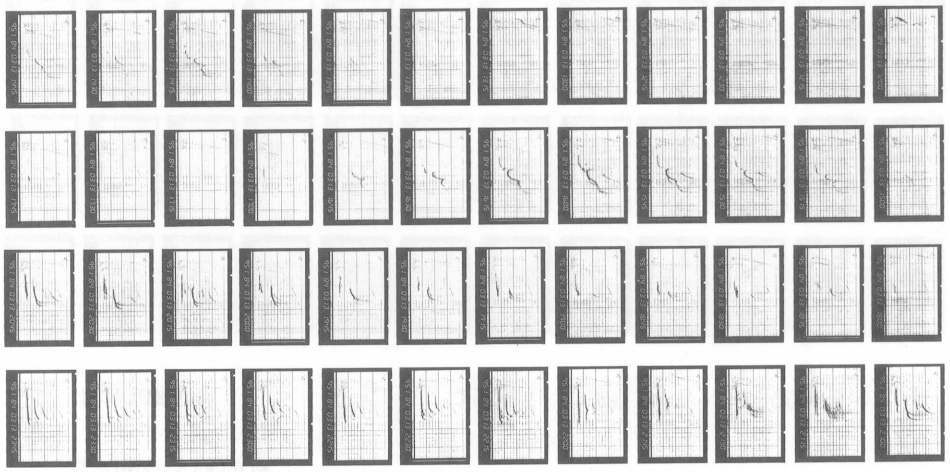

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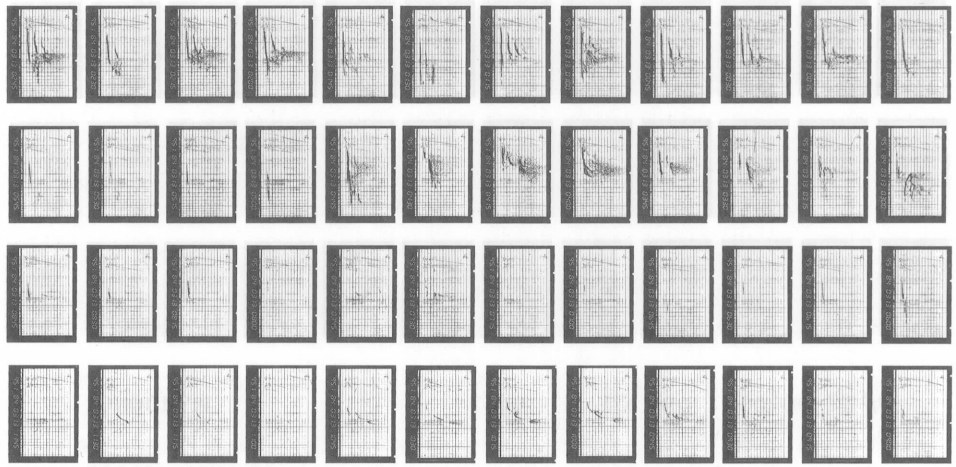

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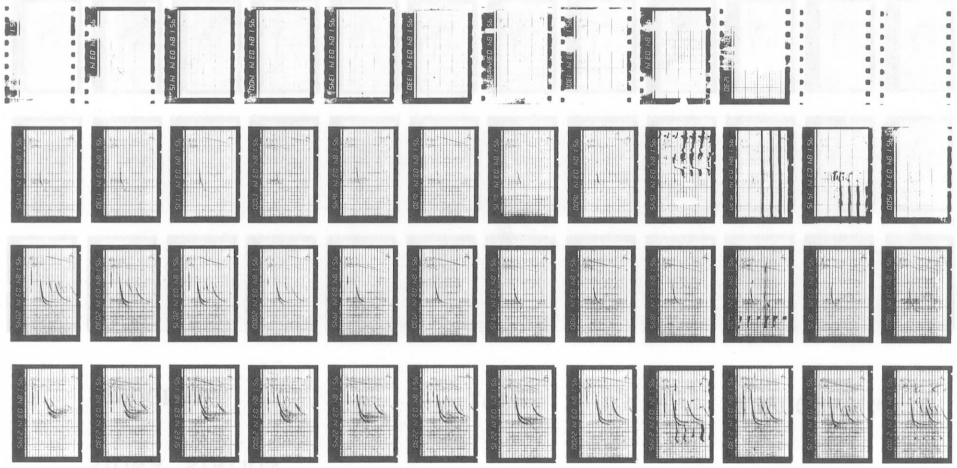

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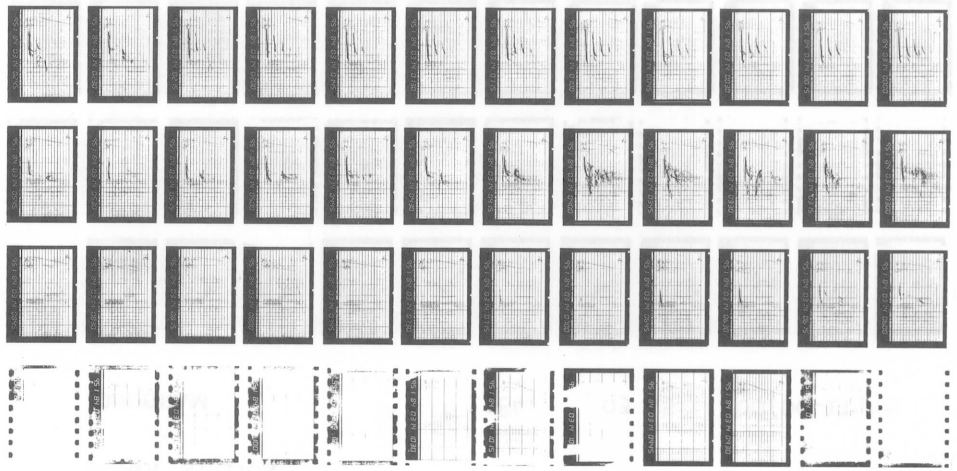

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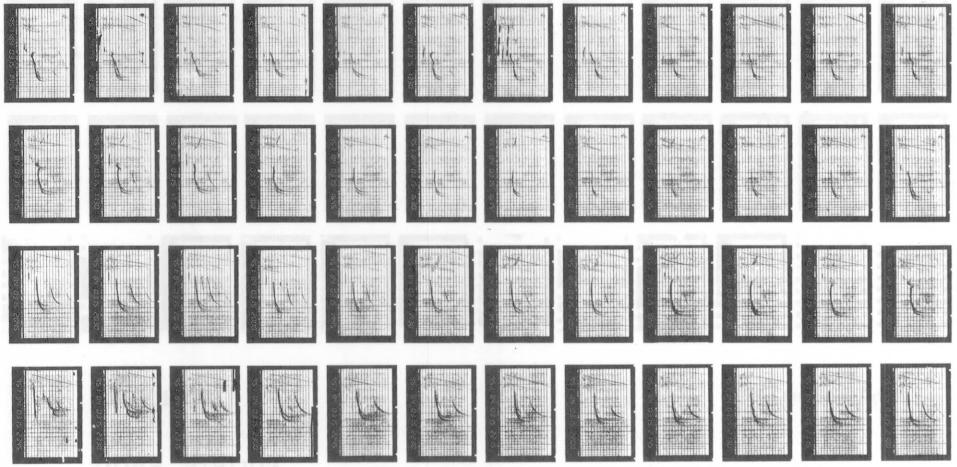

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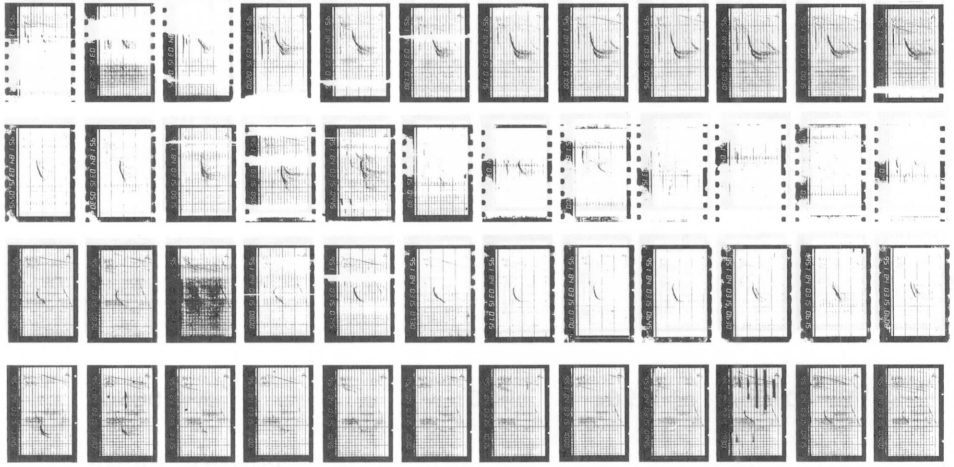

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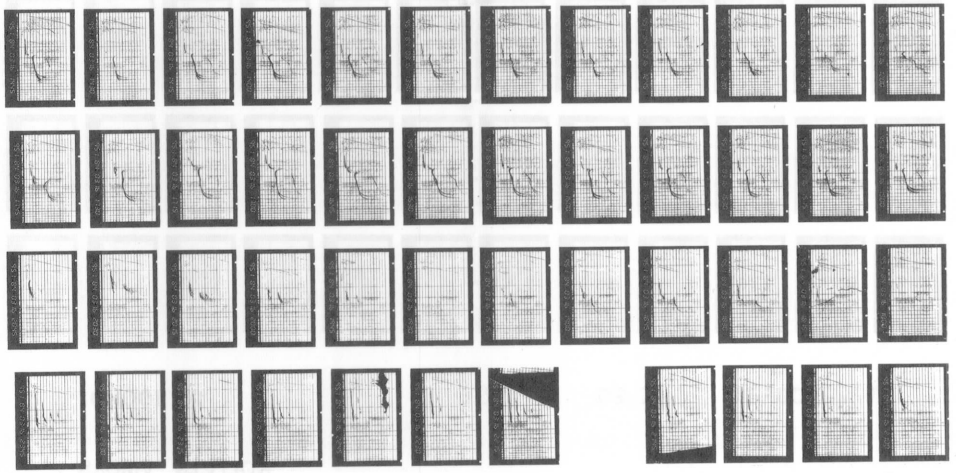

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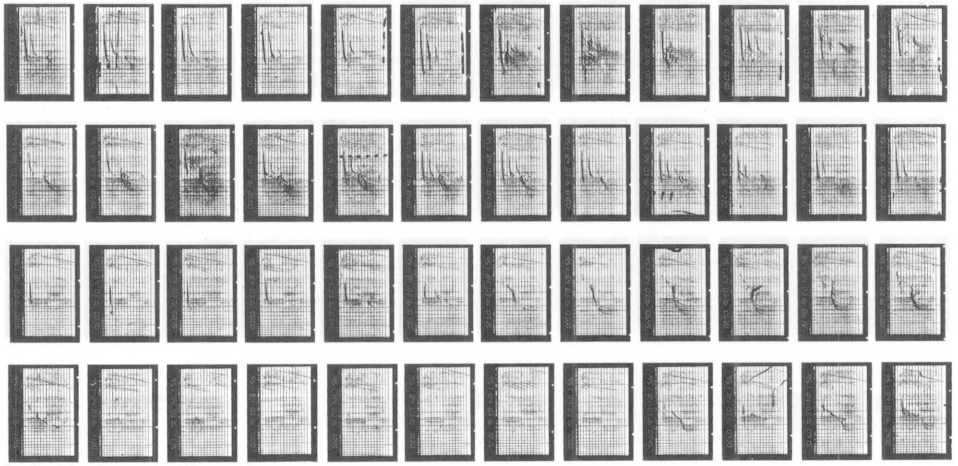
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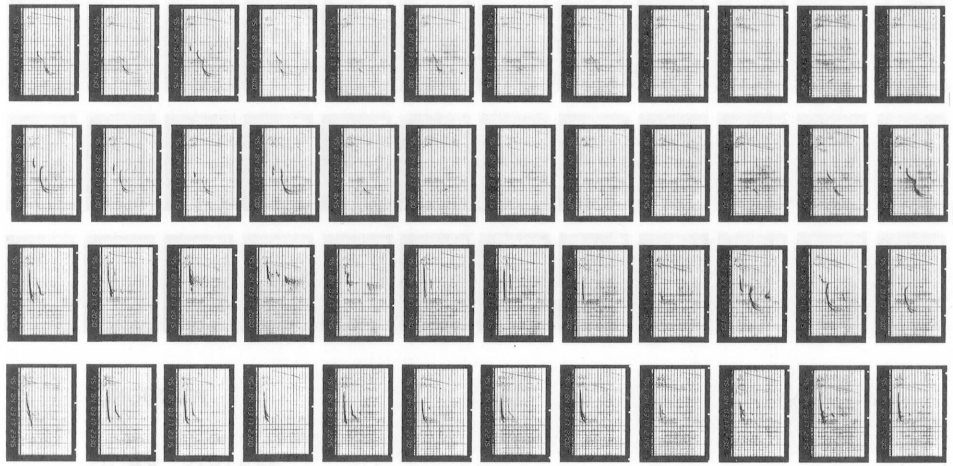

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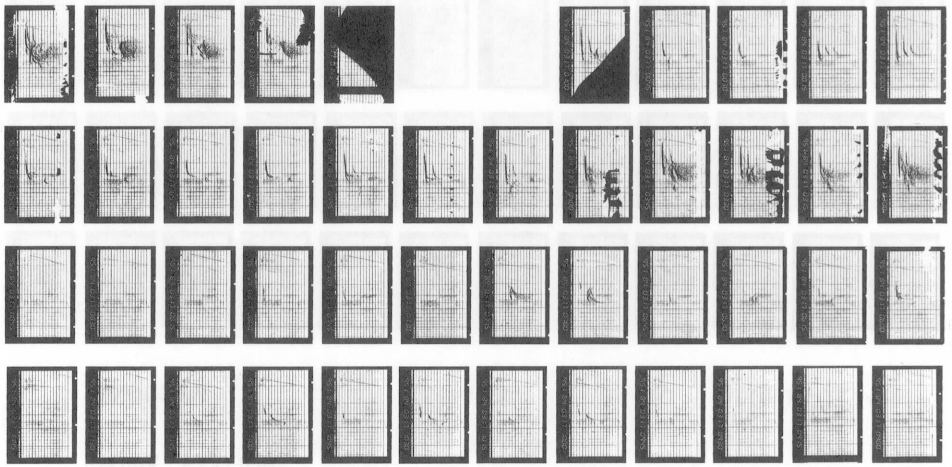

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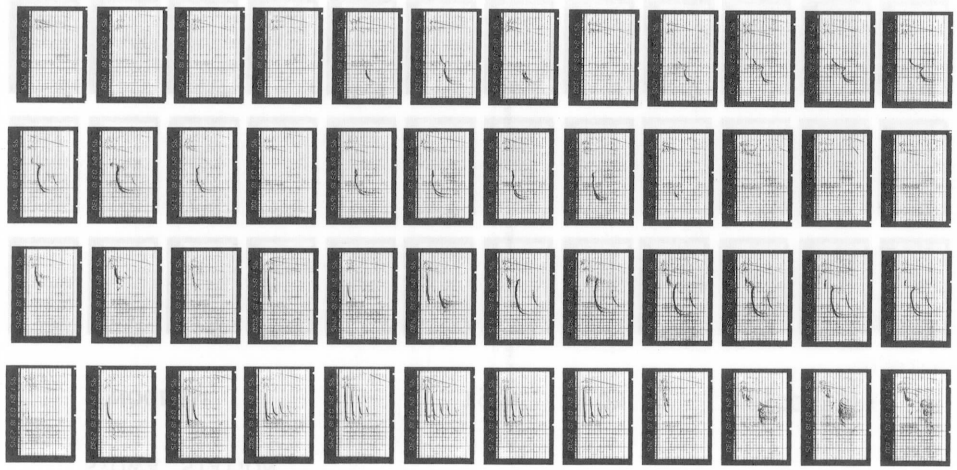

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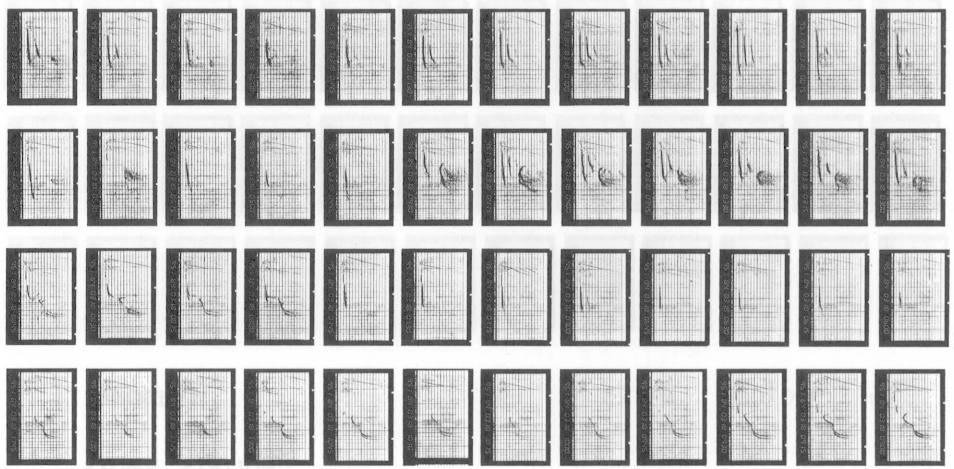

SYOWA STATION

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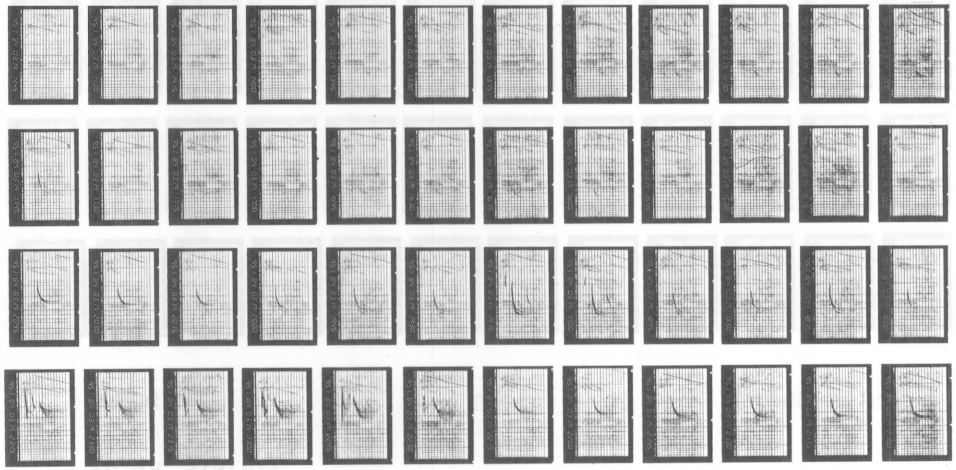

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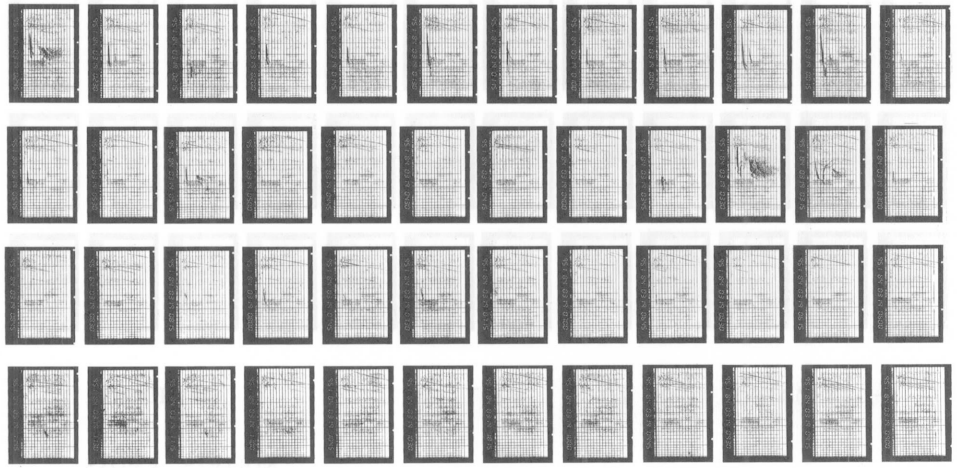

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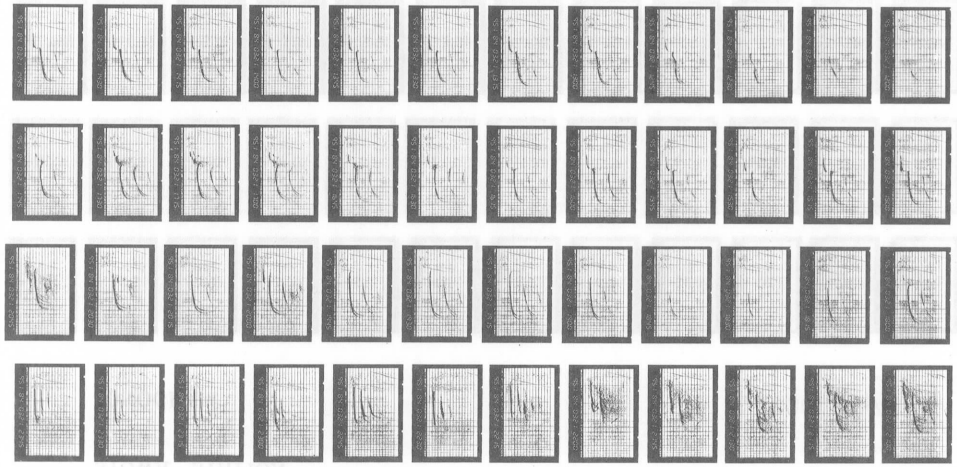

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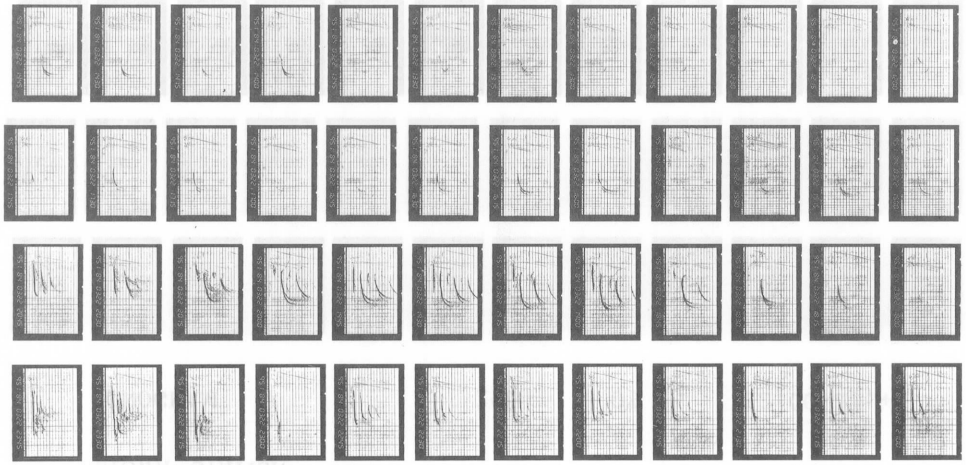

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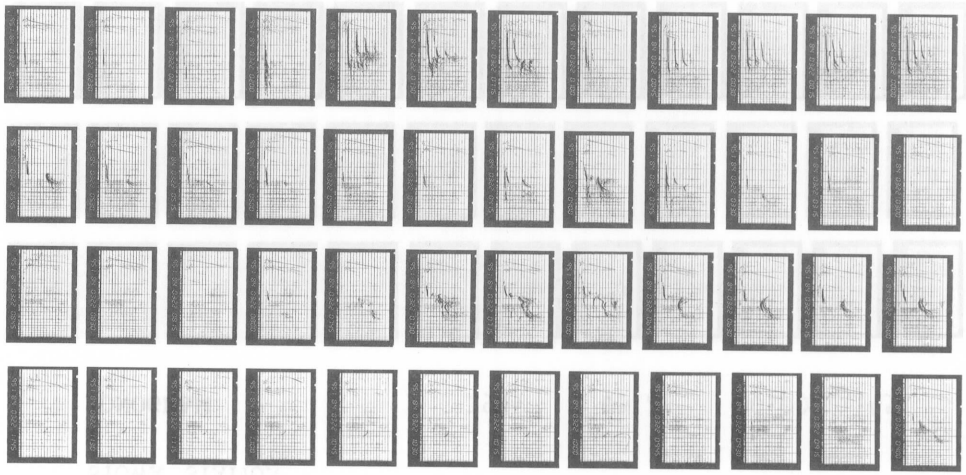

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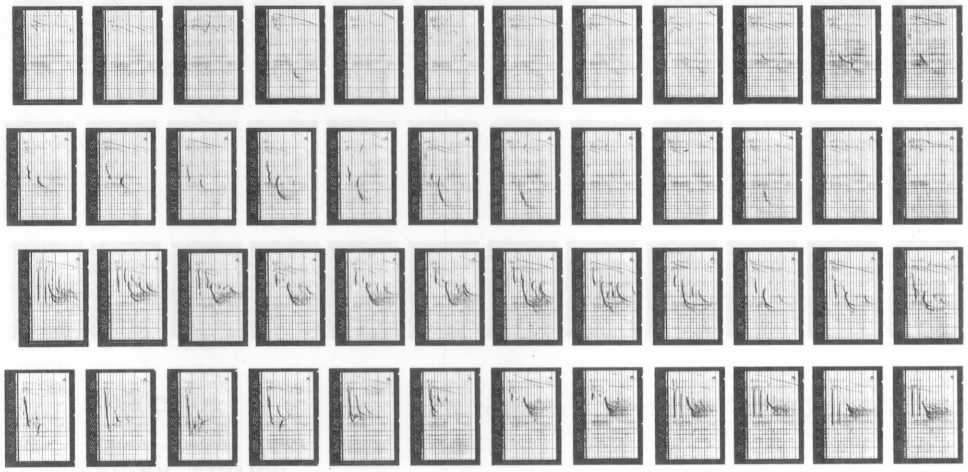

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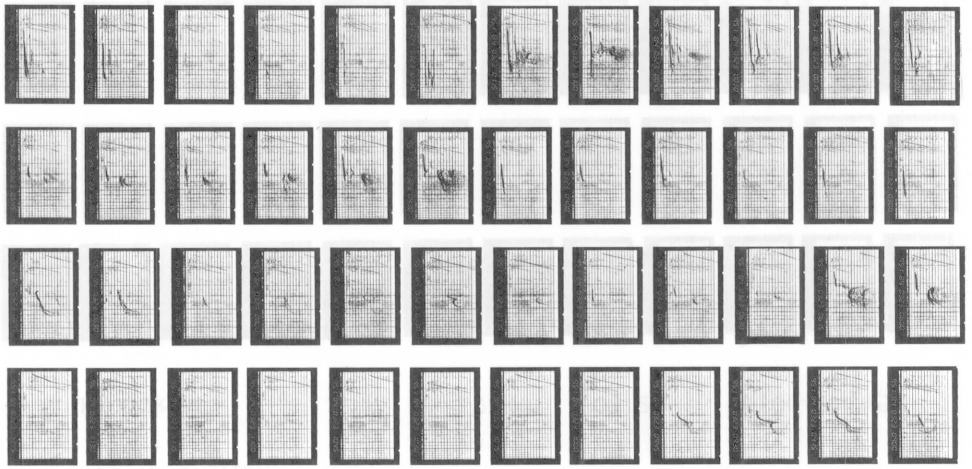

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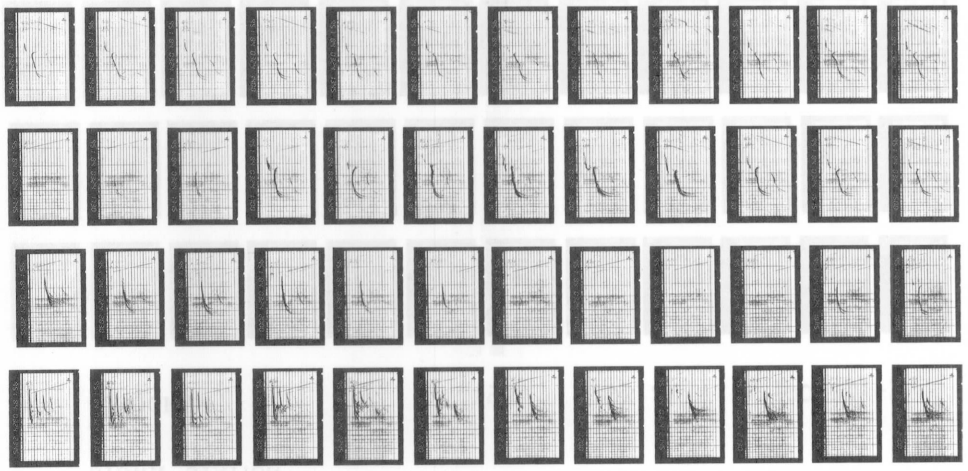

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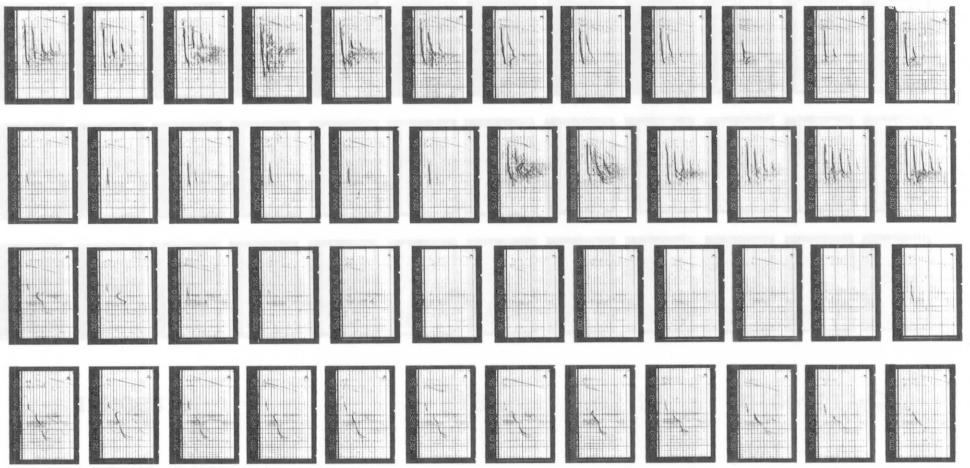

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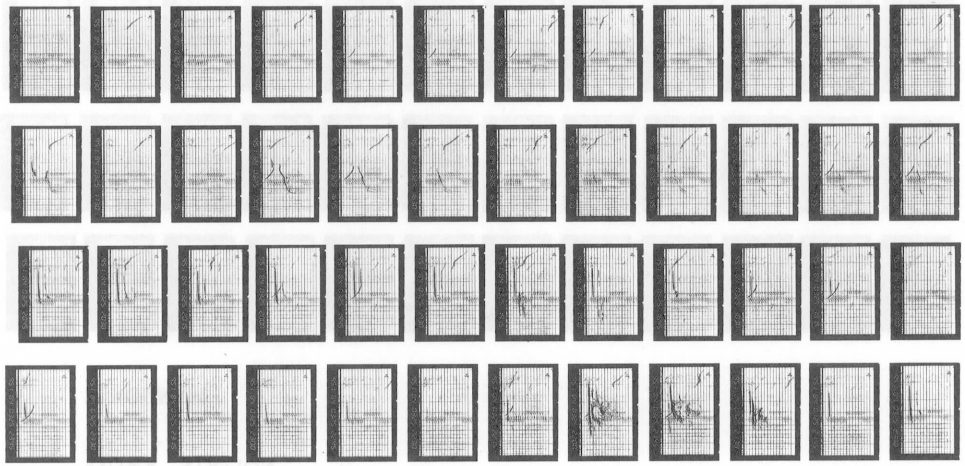

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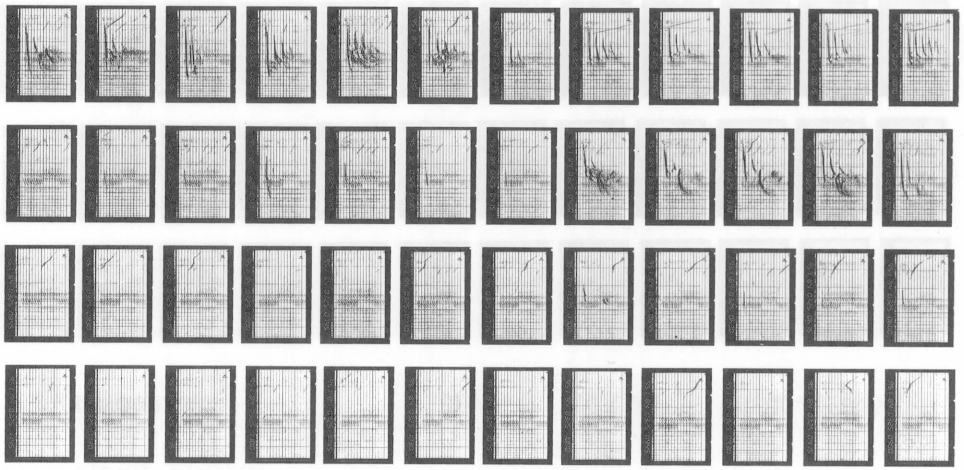

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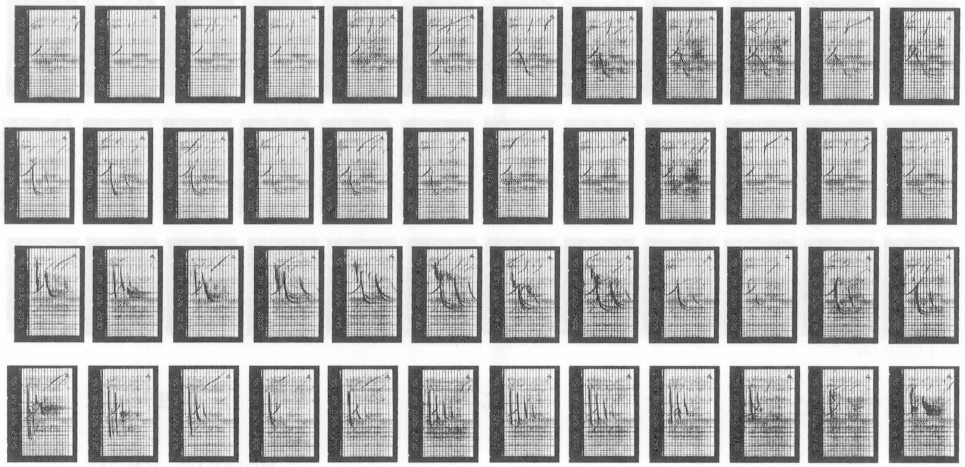

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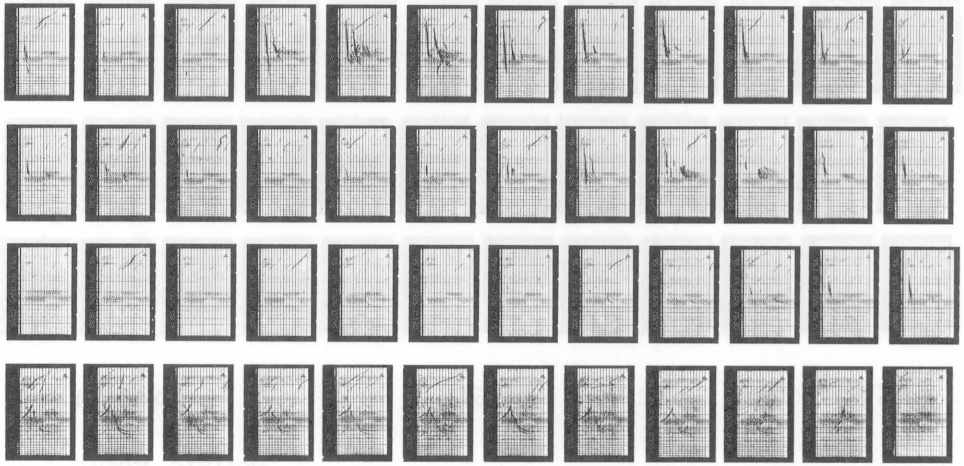

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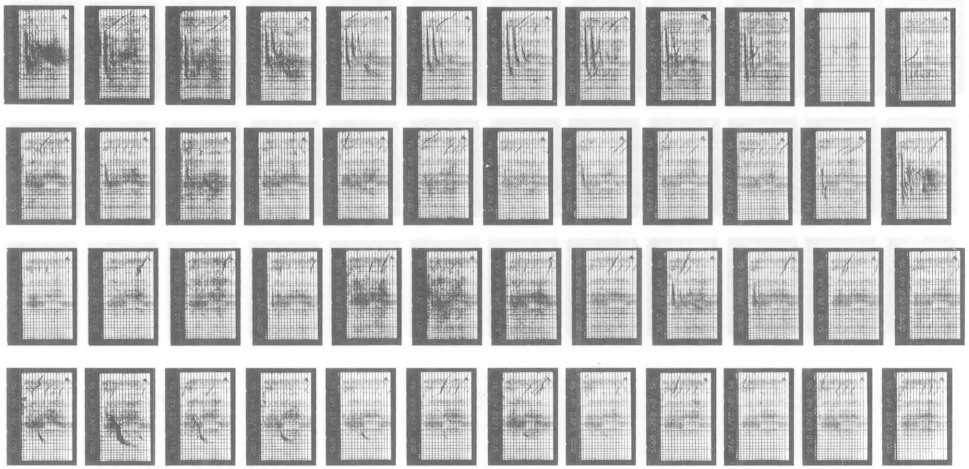

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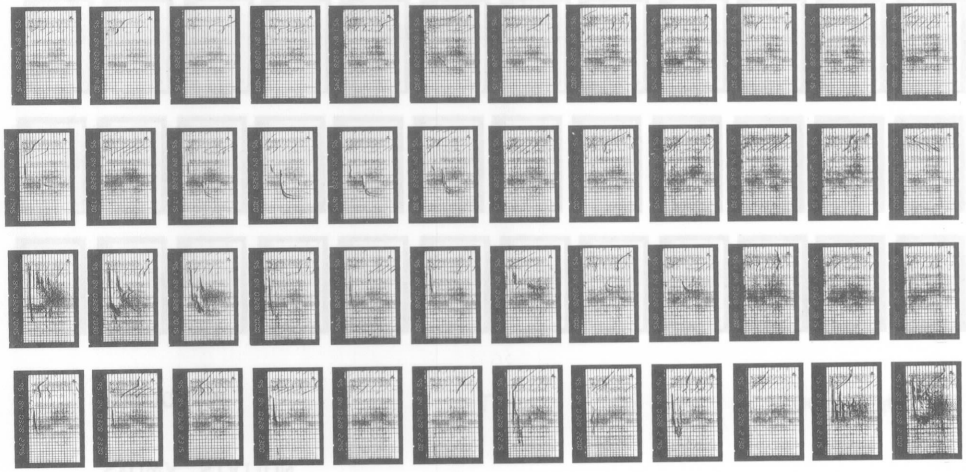
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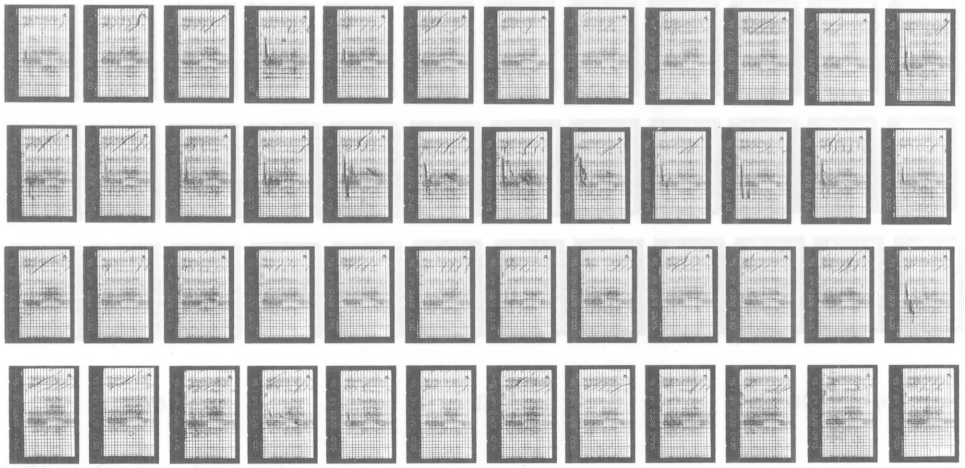
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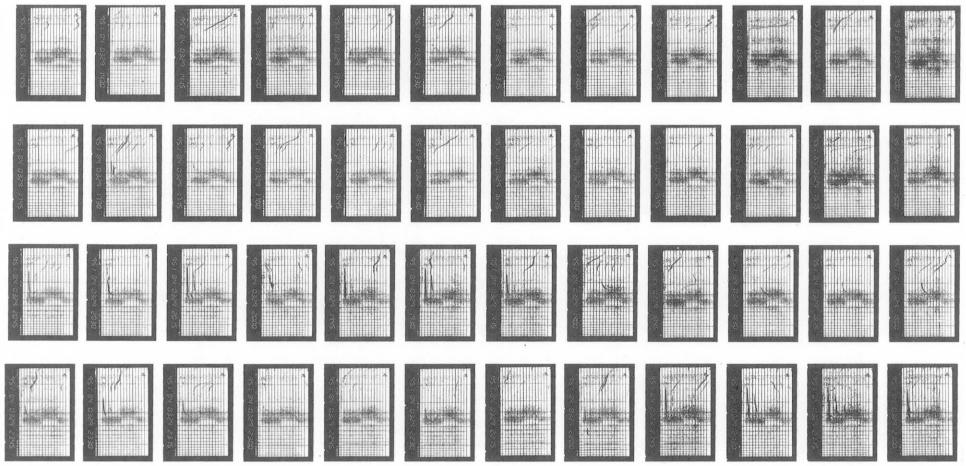

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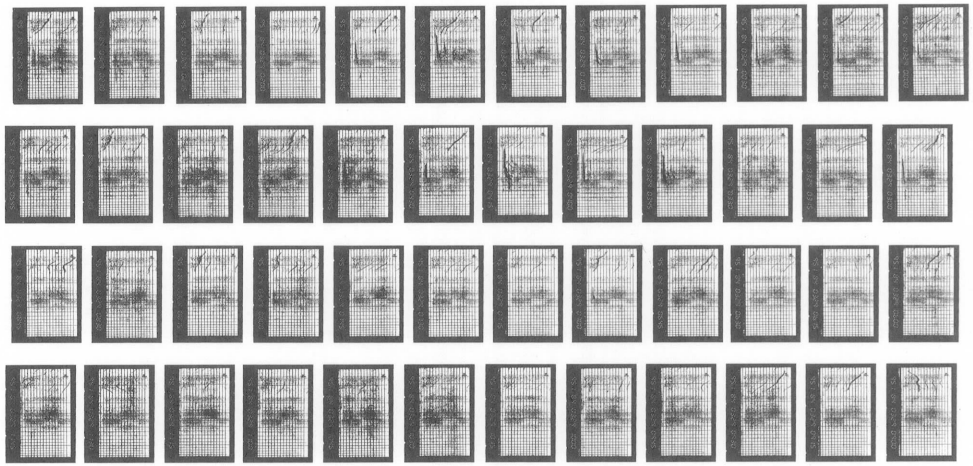

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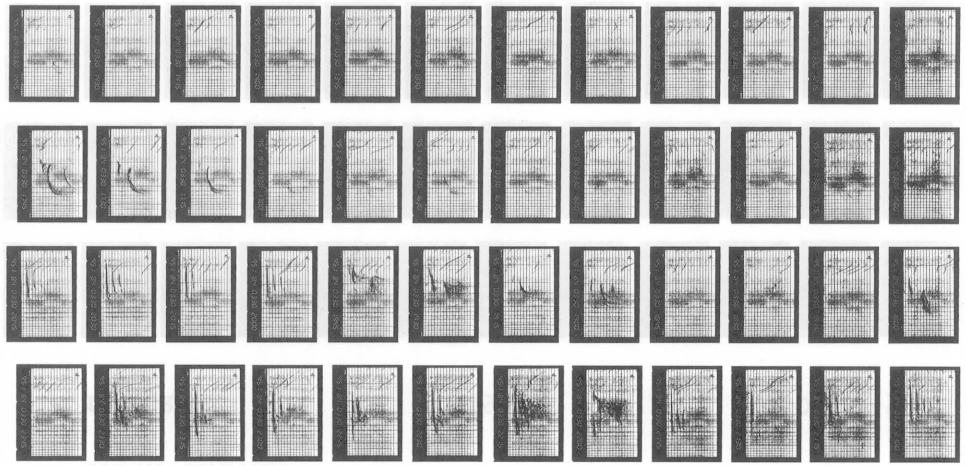

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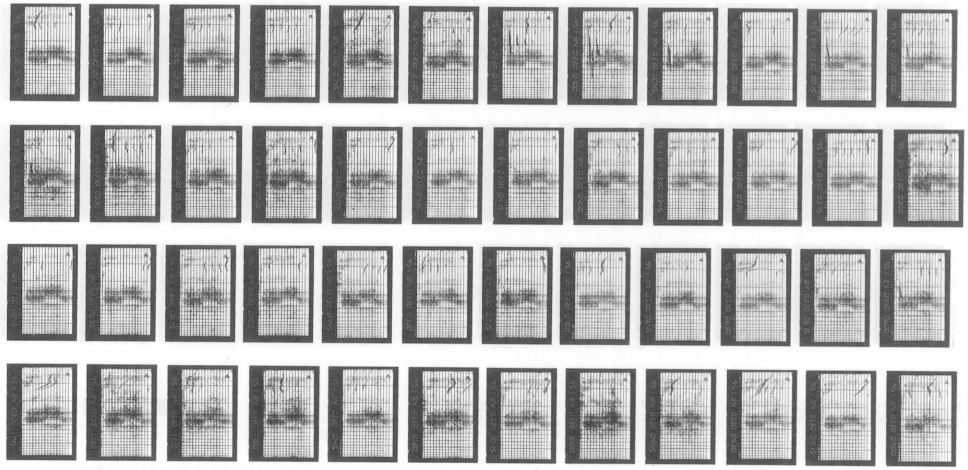

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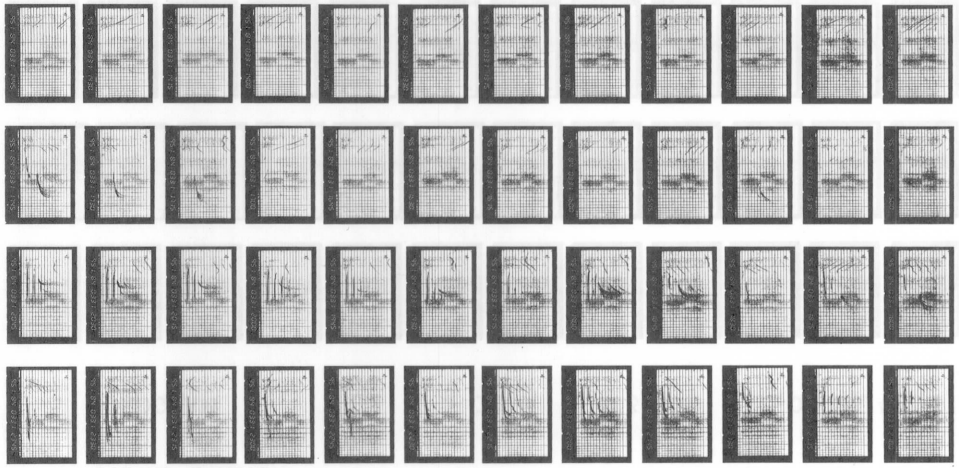

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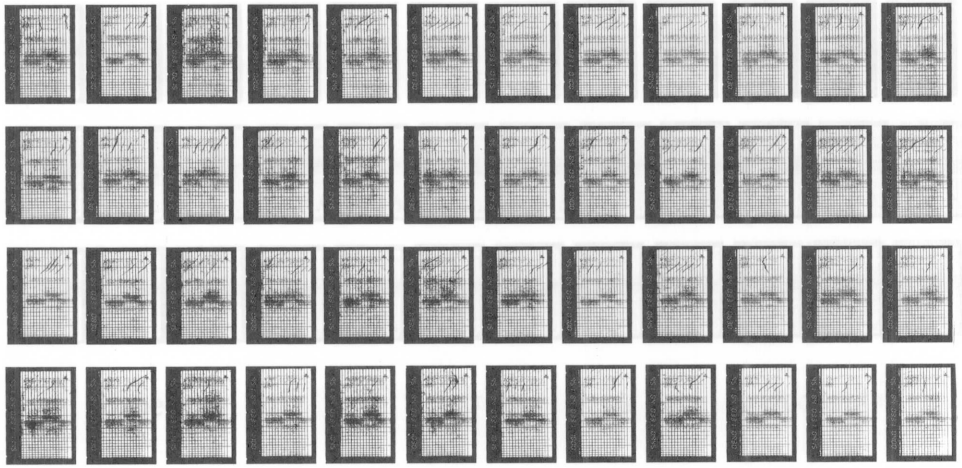

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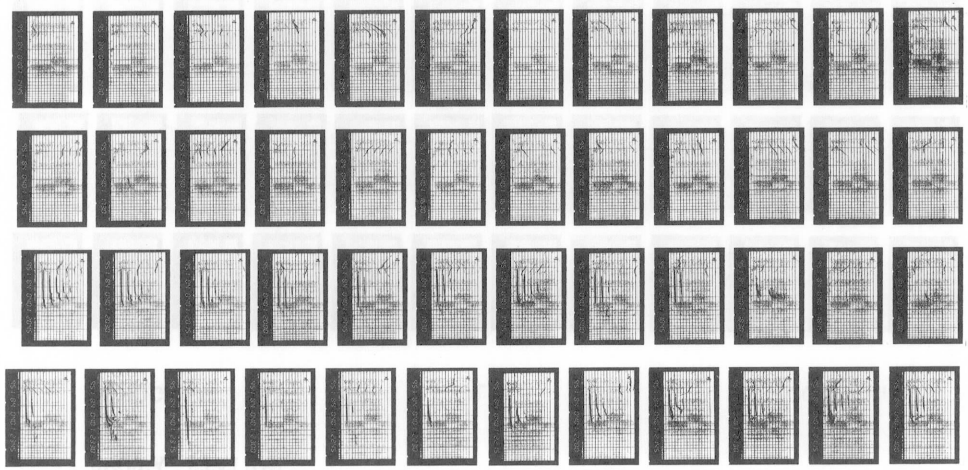

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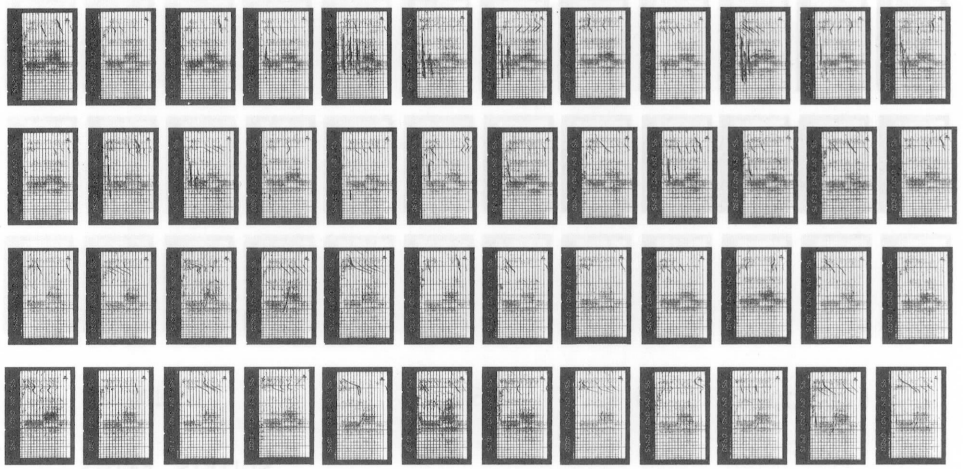

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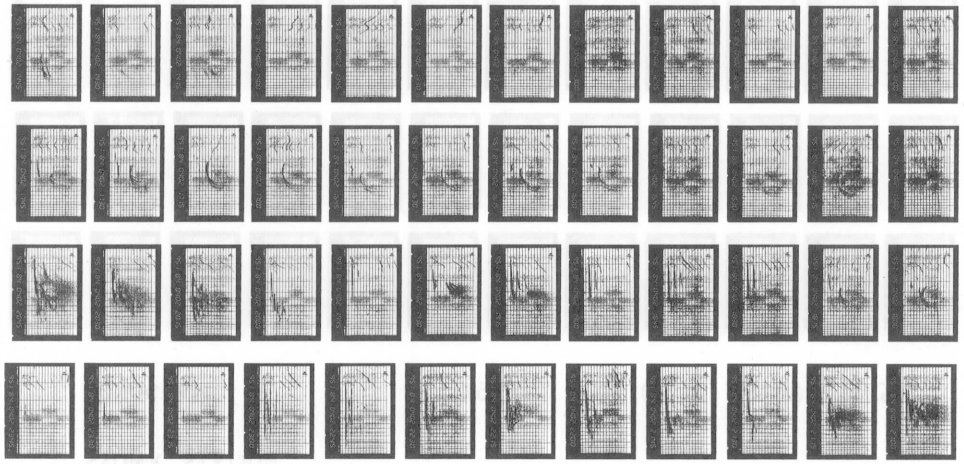

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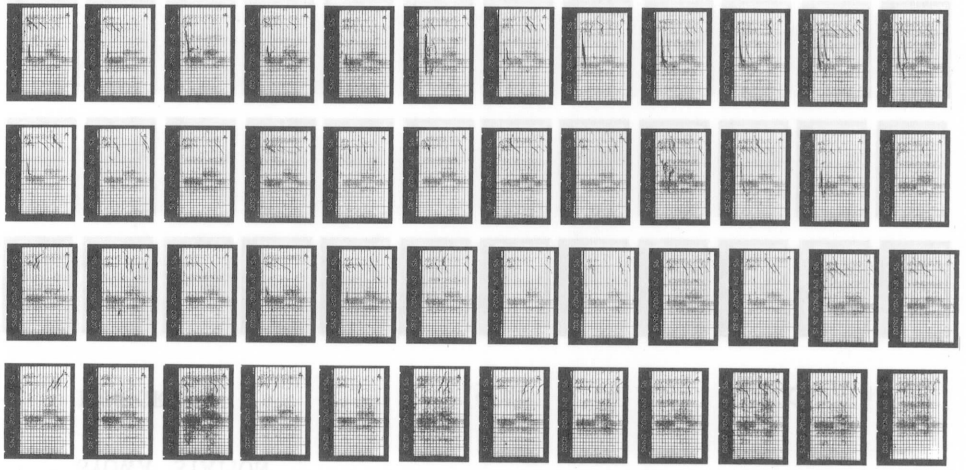

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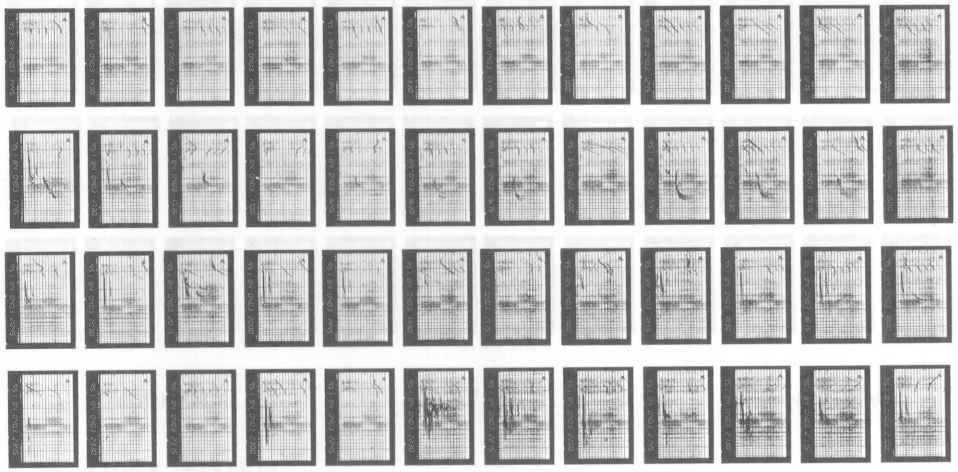

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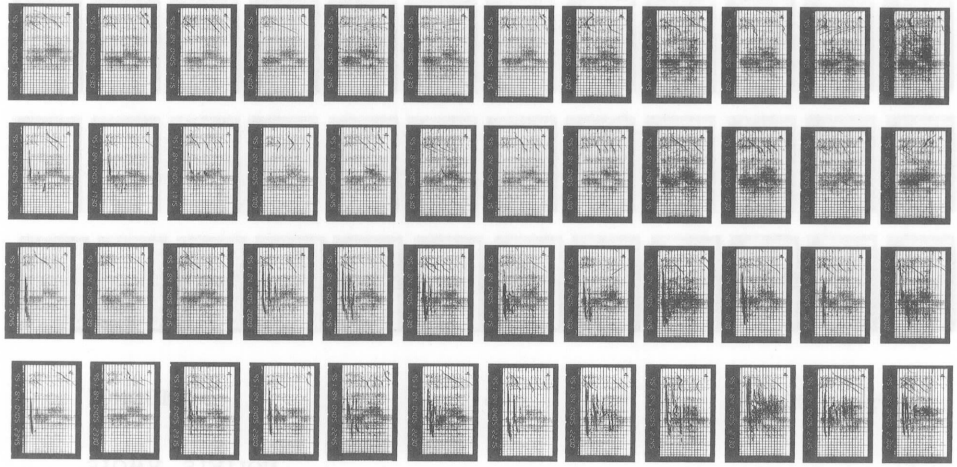

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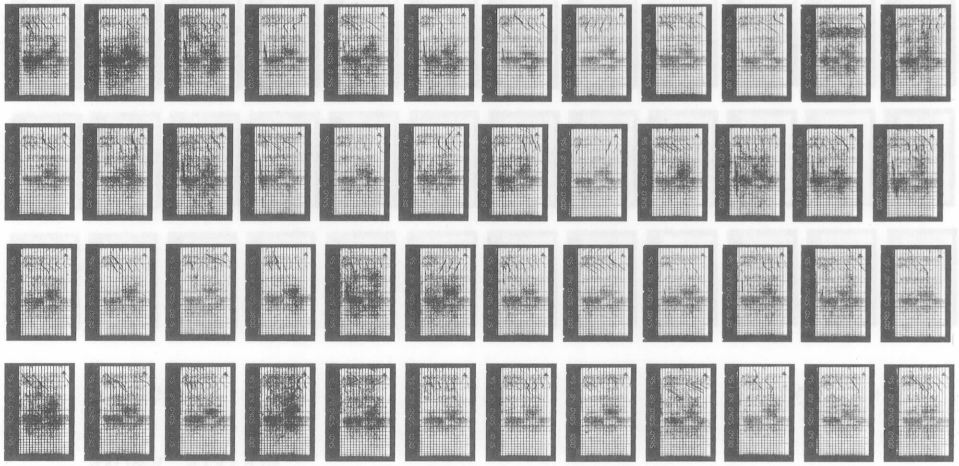

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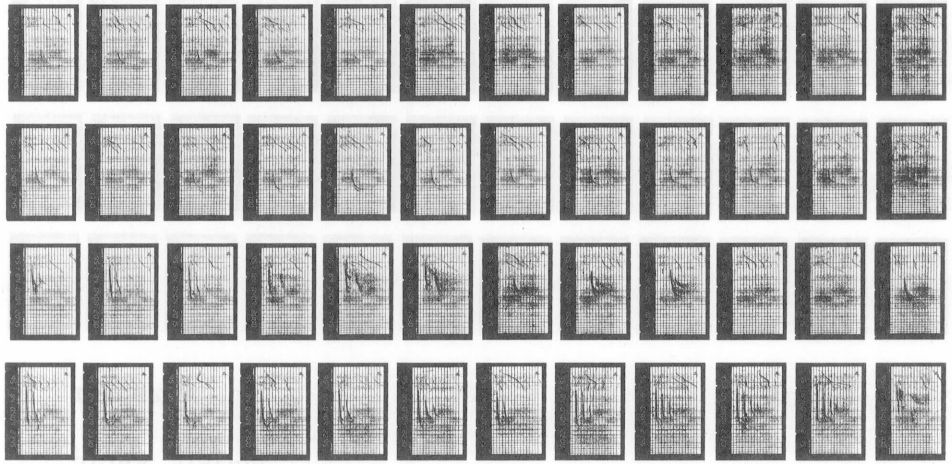

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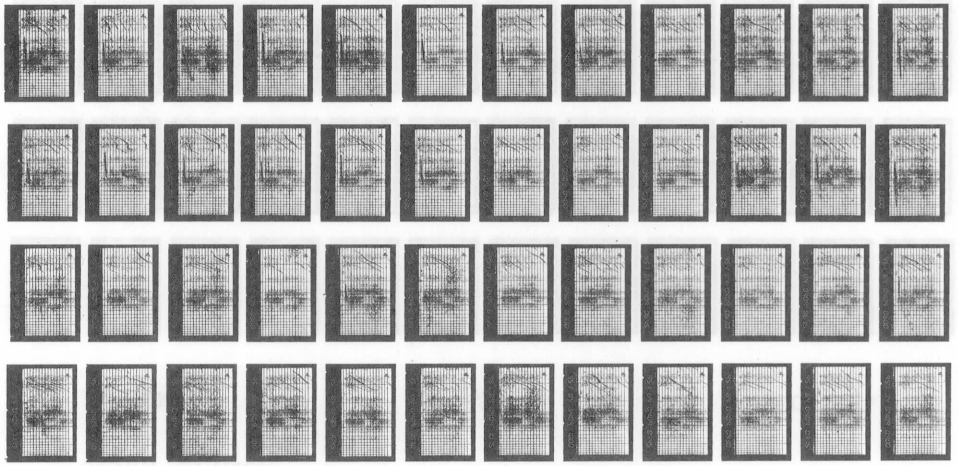

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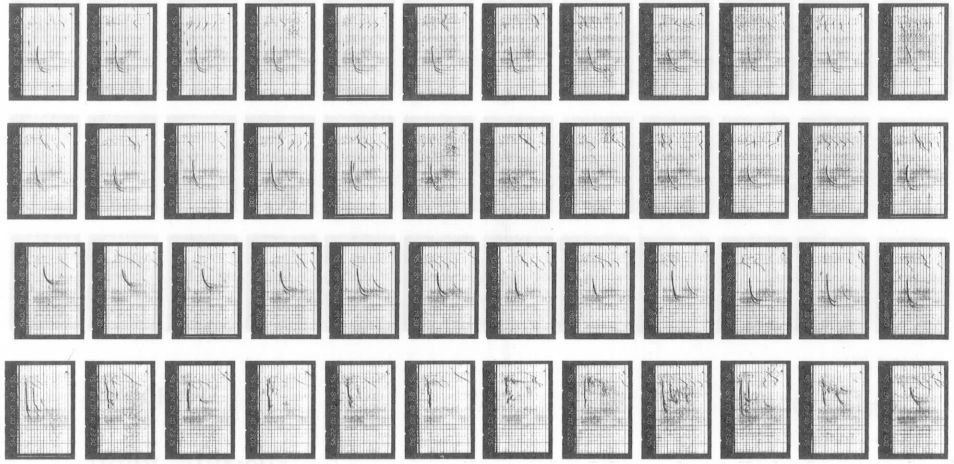

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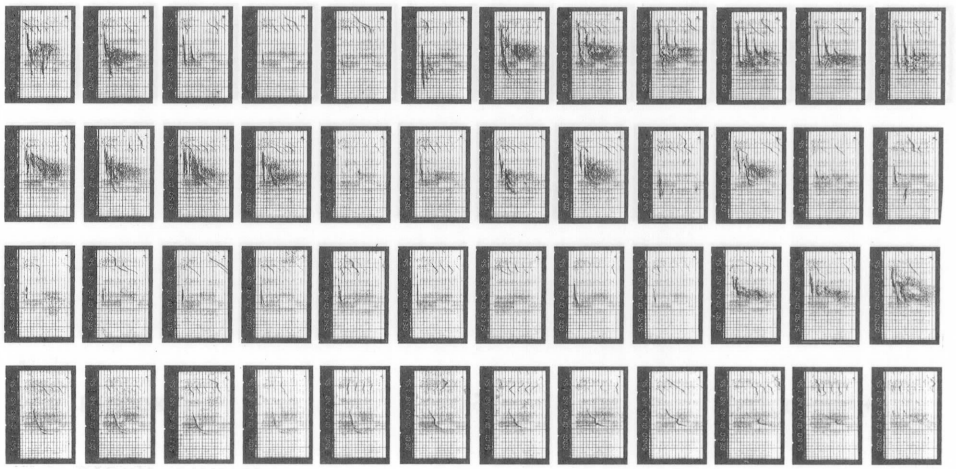

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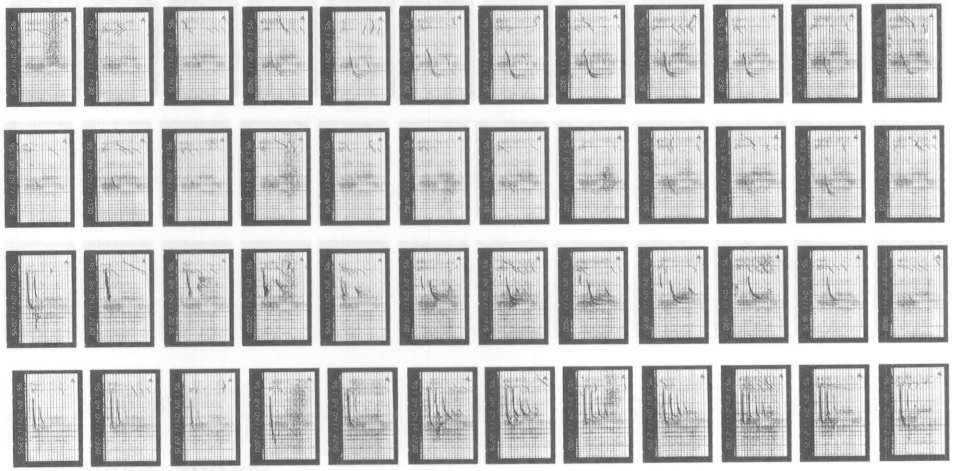

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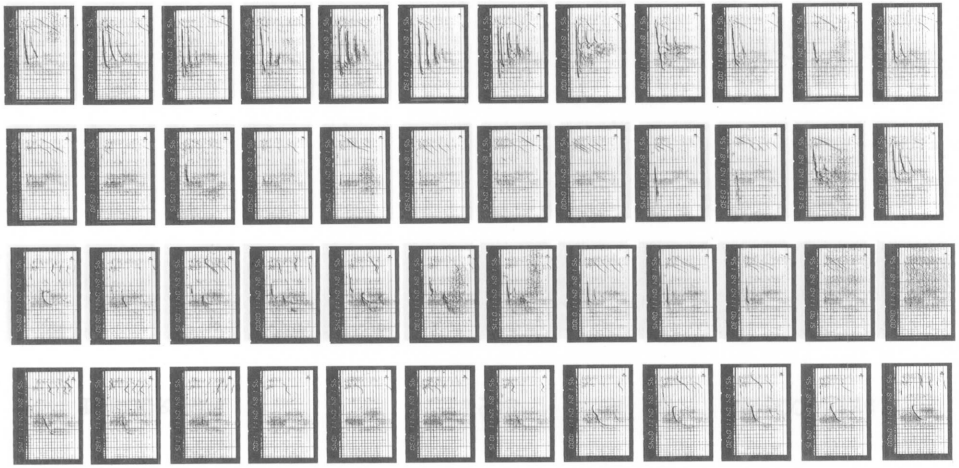

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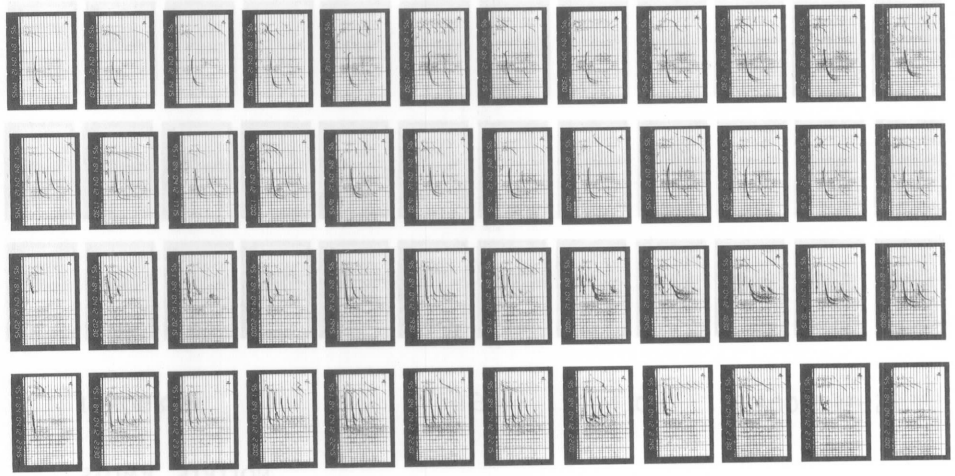

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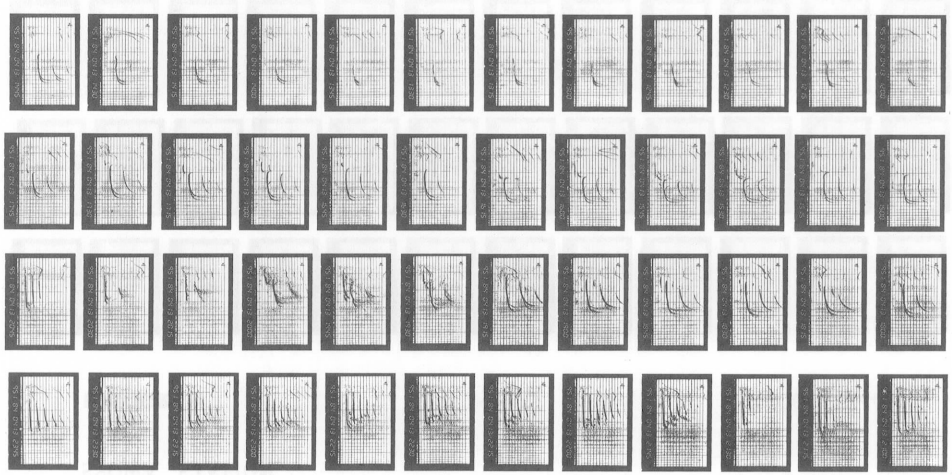

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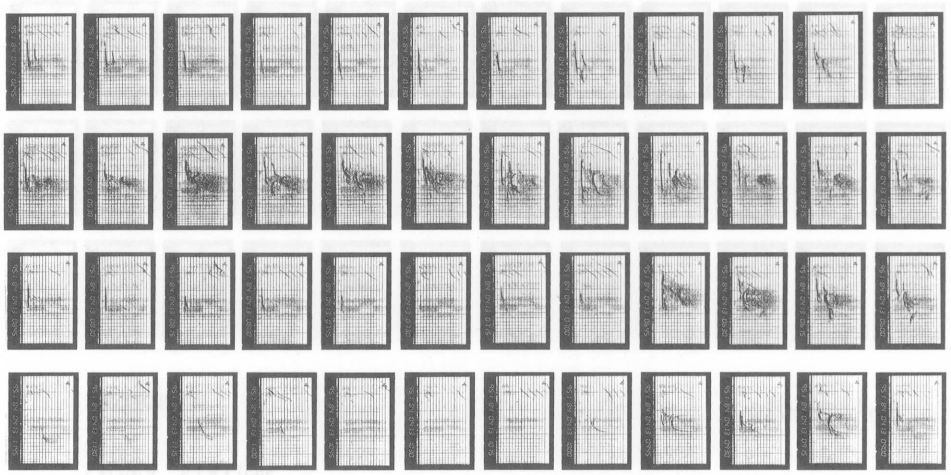

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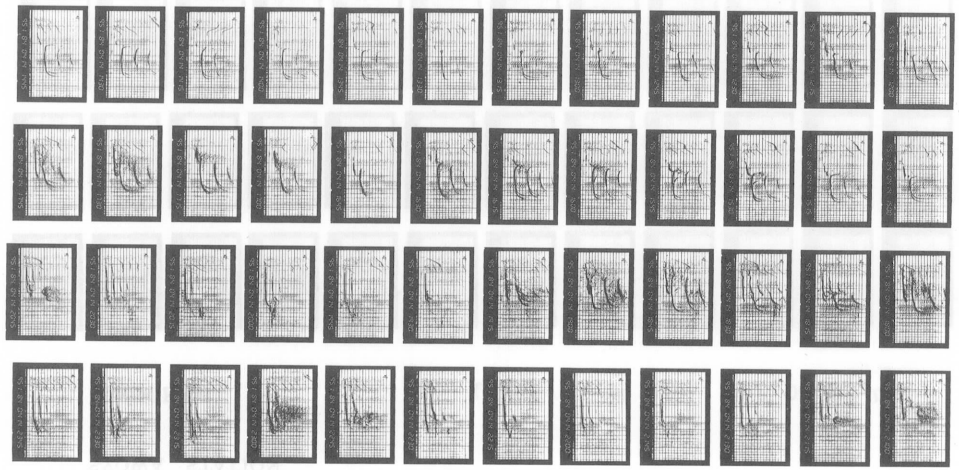

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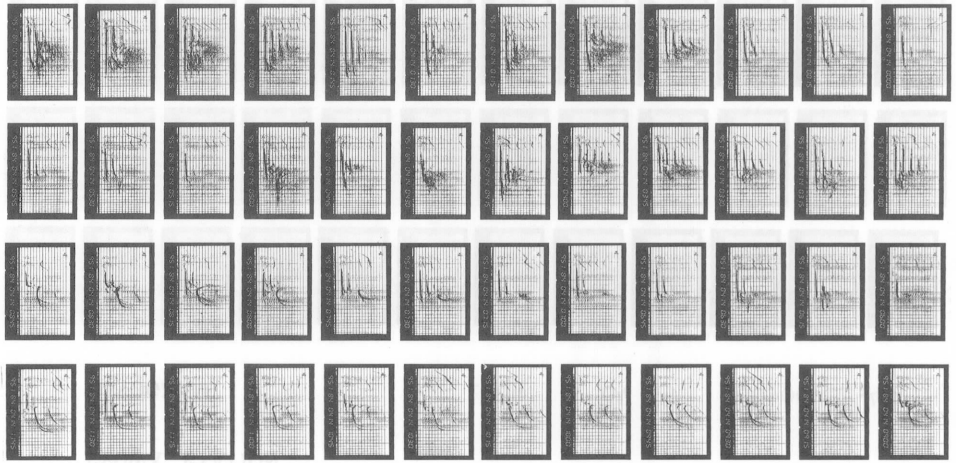

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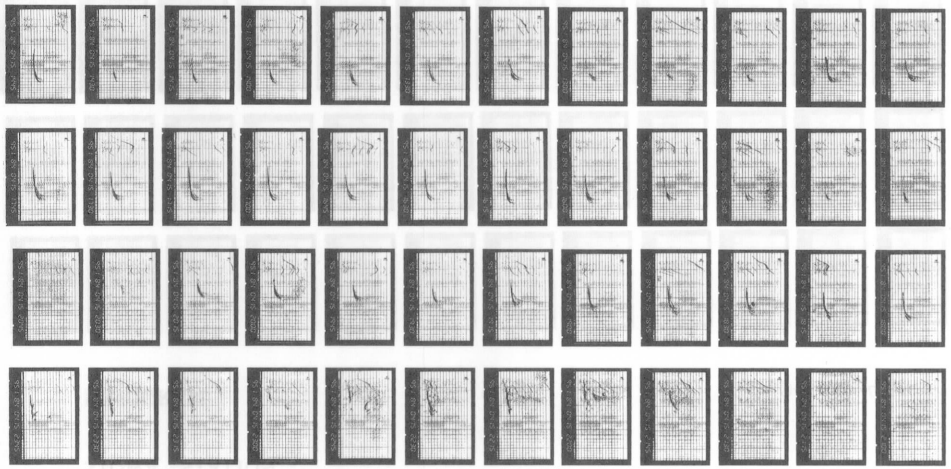

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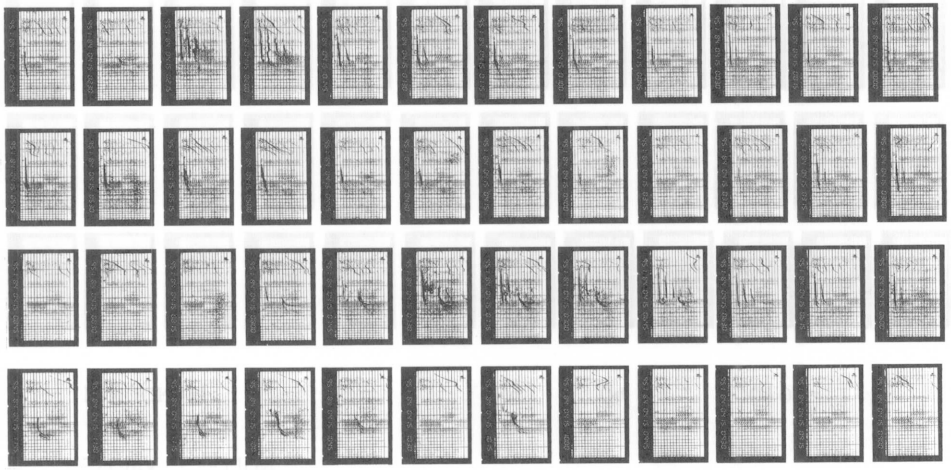

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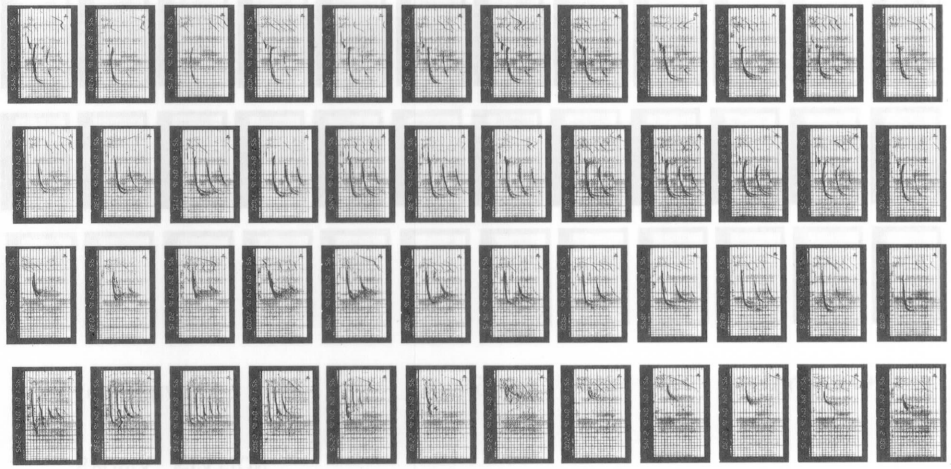

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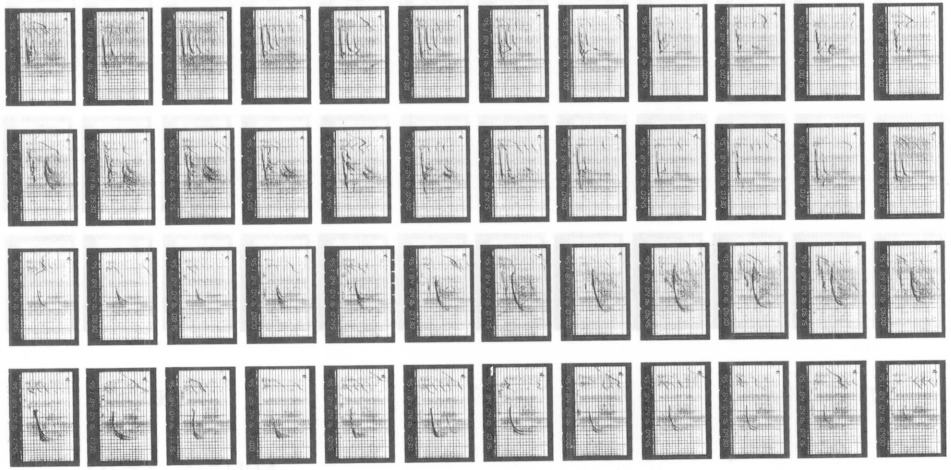

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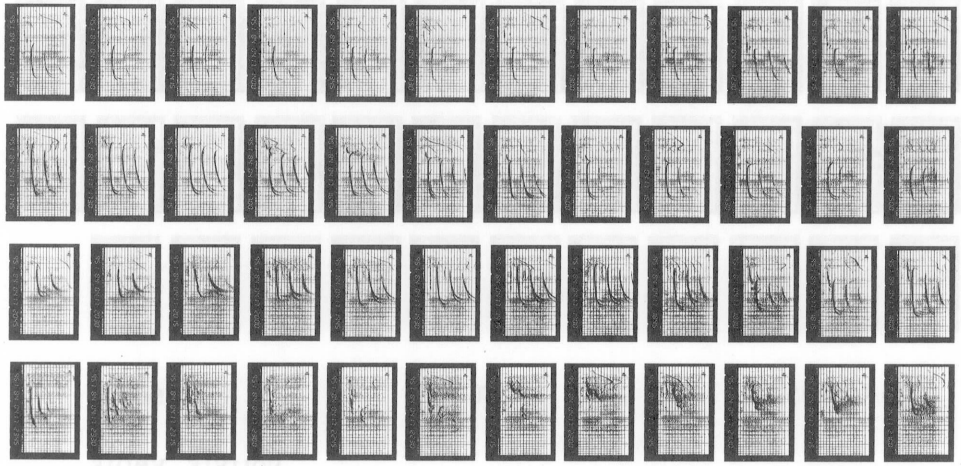

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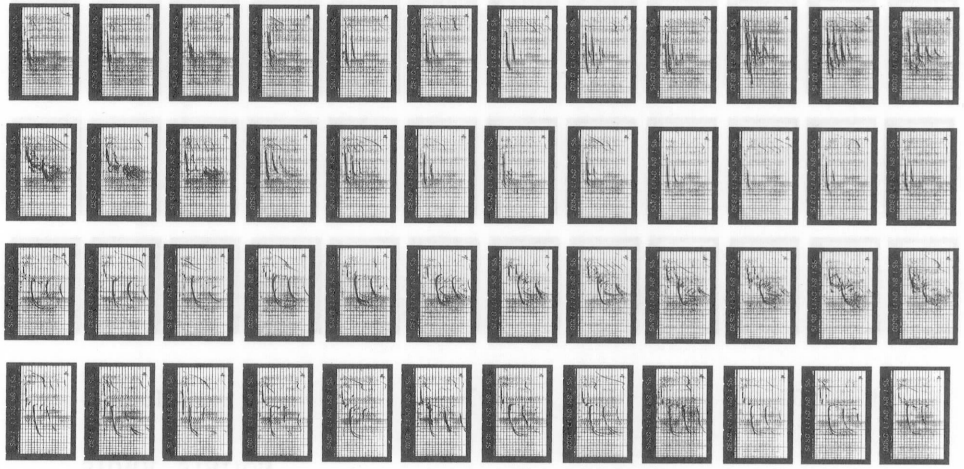

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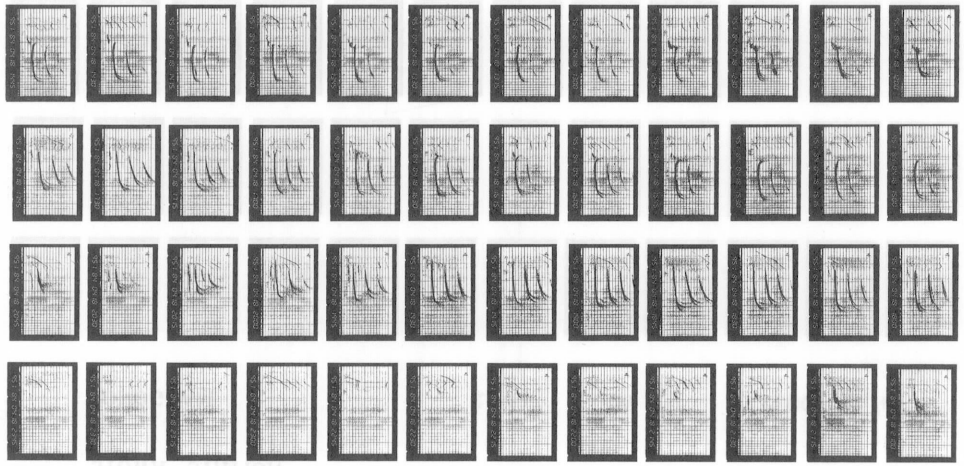

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SYOWA STATION

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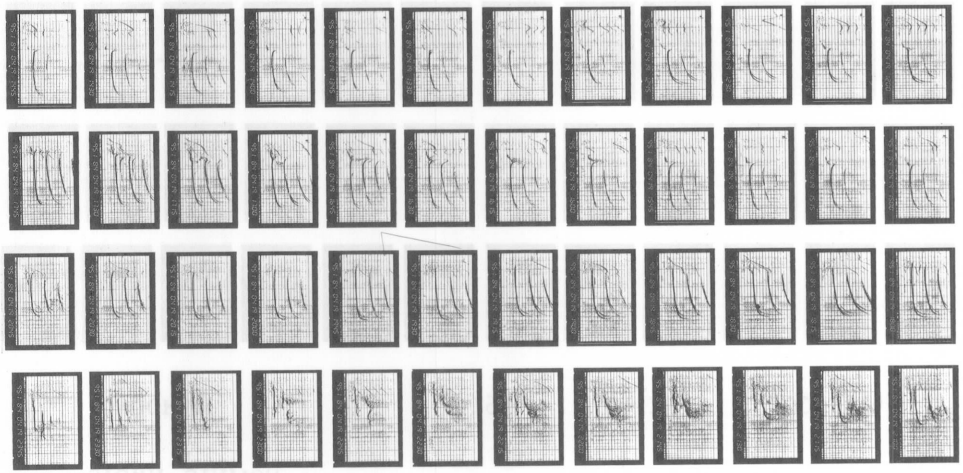

SYOWA STATION

IONOGRAM 1984 04 19 00;00-11;45

SYOWA STATION

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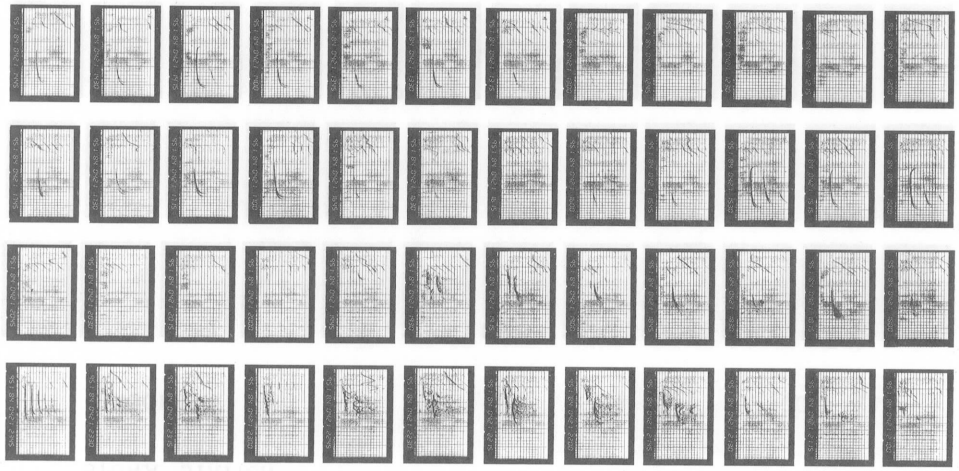
SYOWA STATION

IONOGRAM 1984 04 21 12;00-23;45



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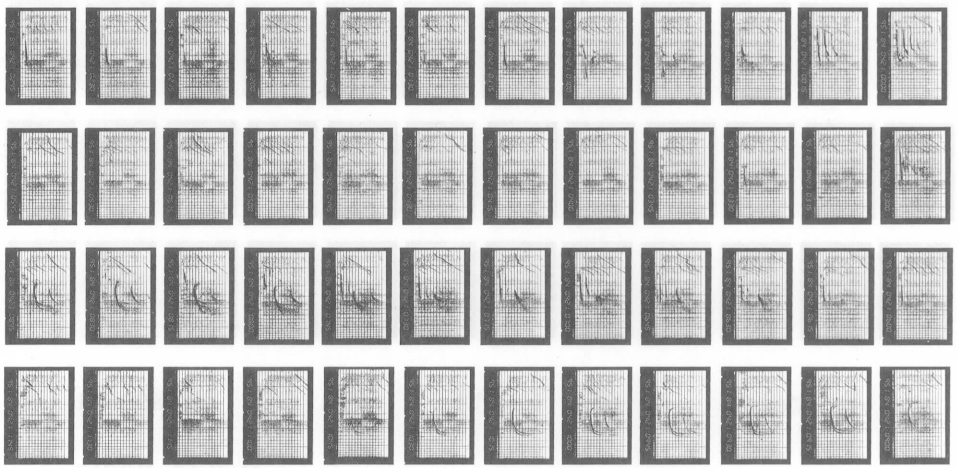

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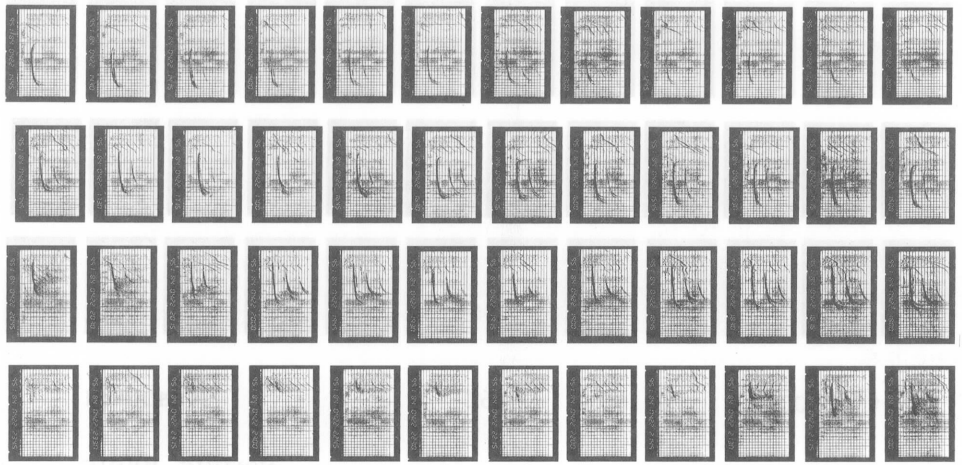

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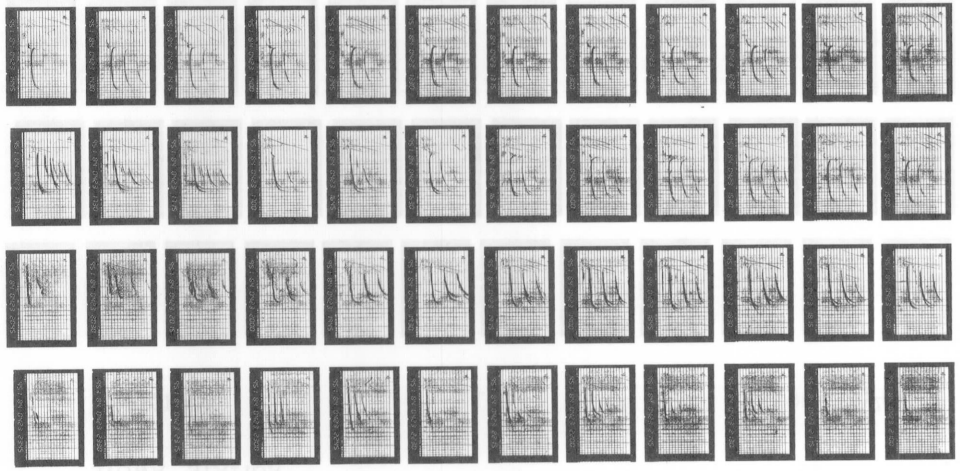

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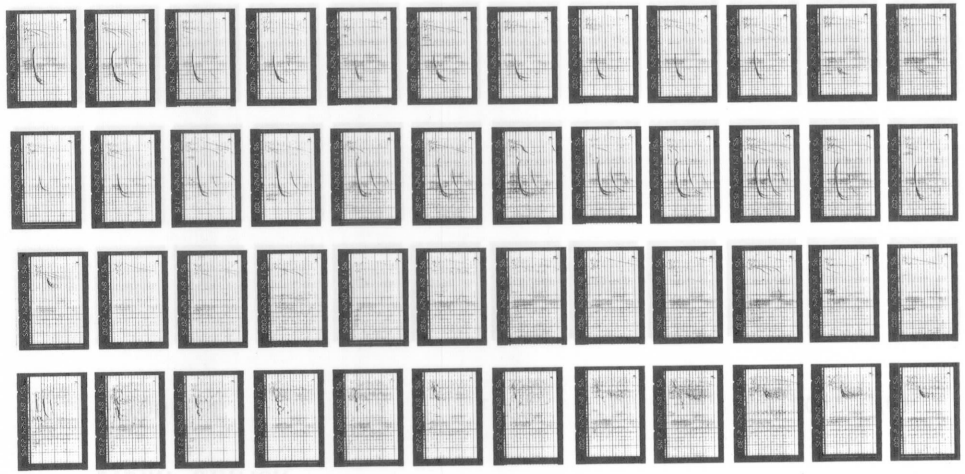

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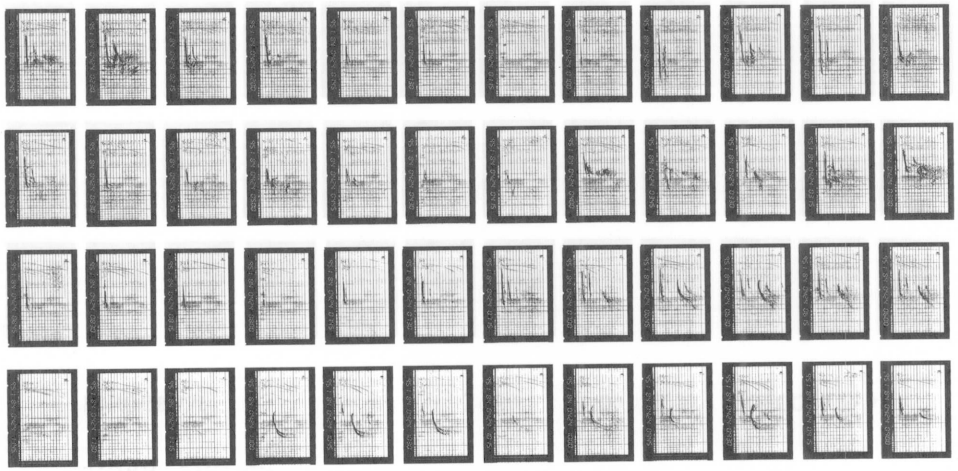

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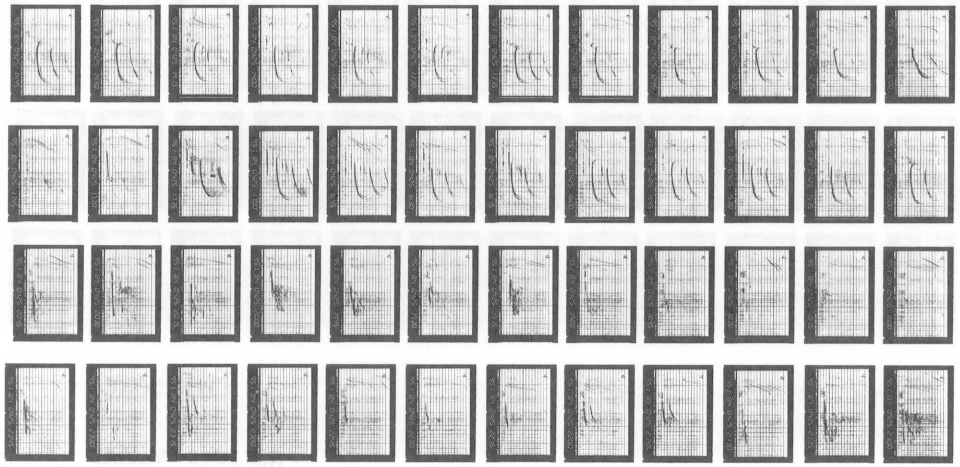

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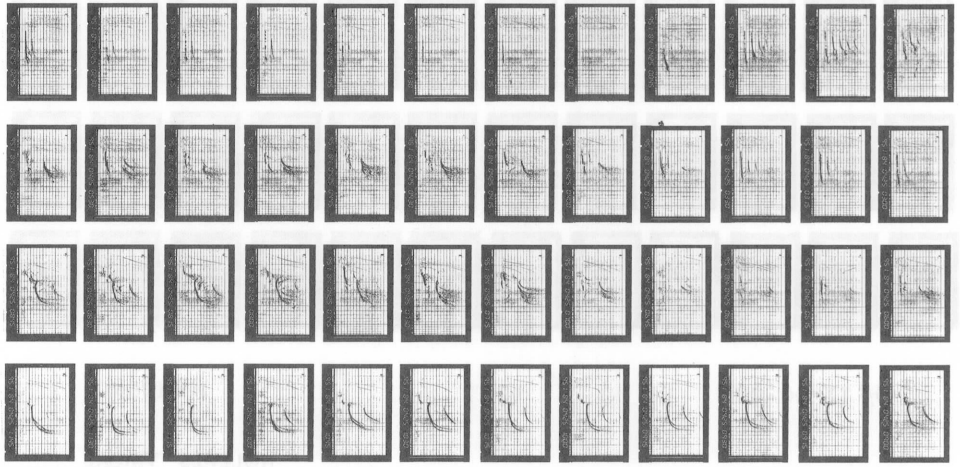

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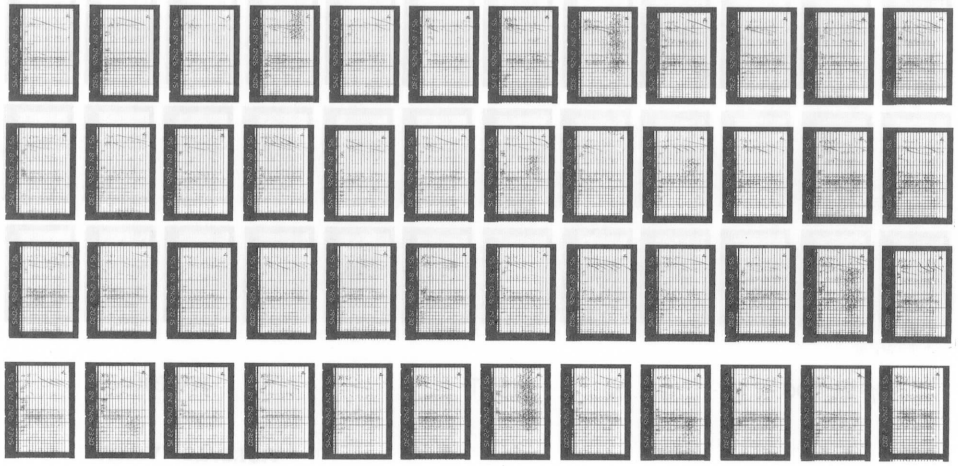

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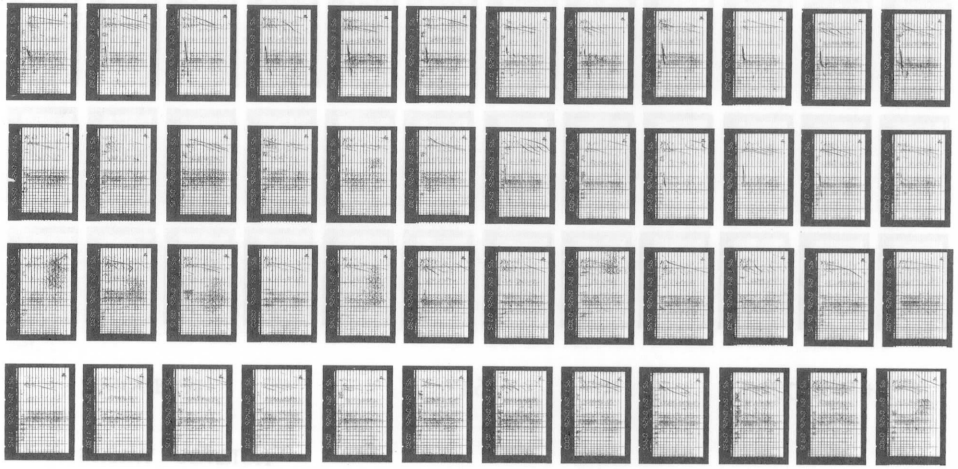

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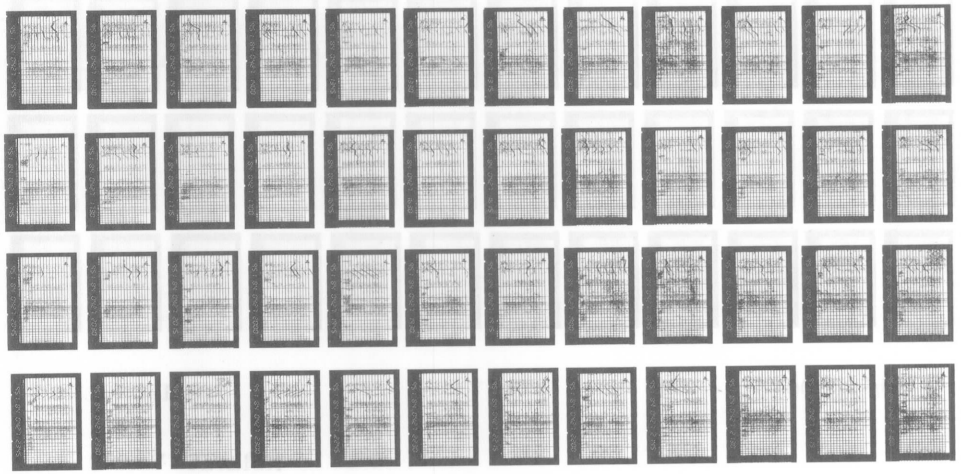
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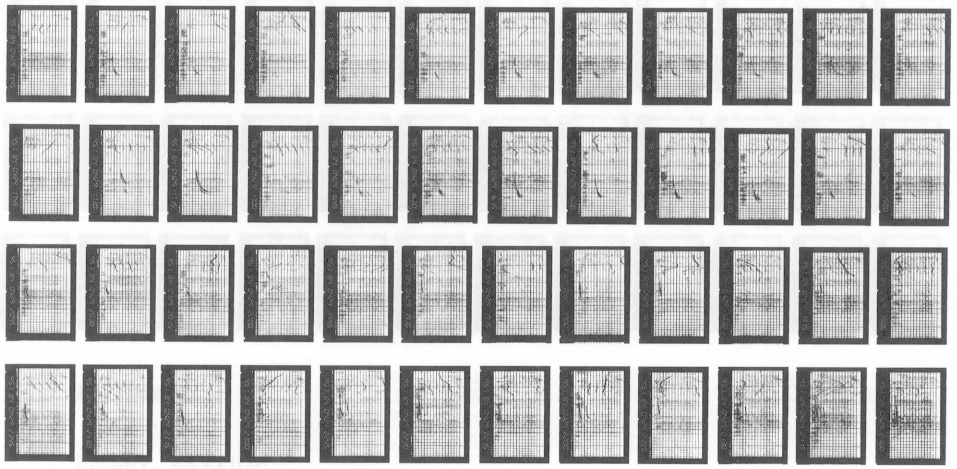

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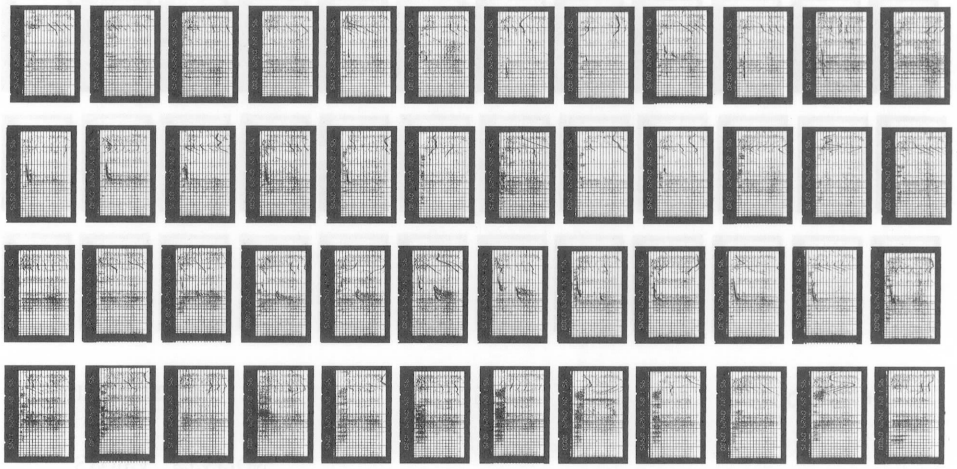

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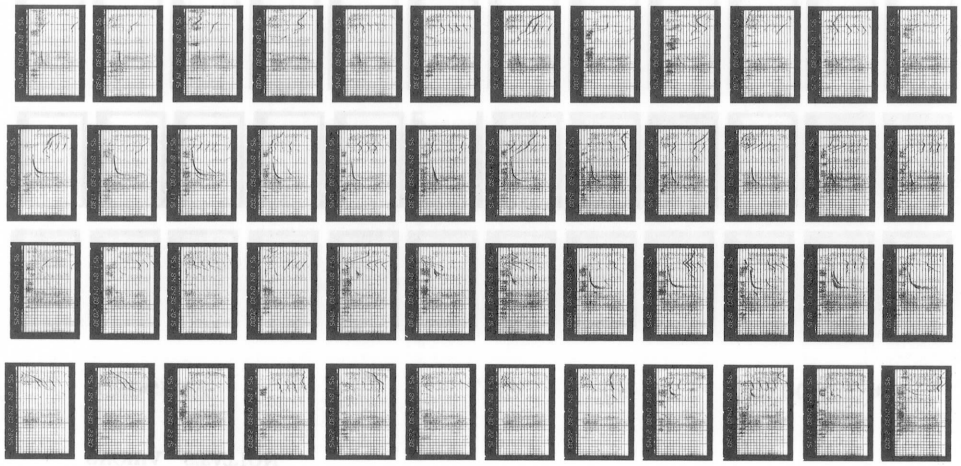

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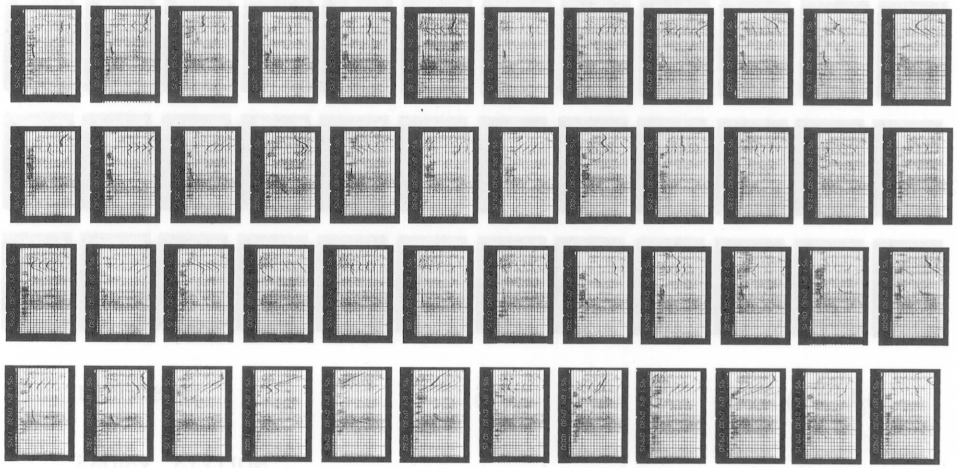

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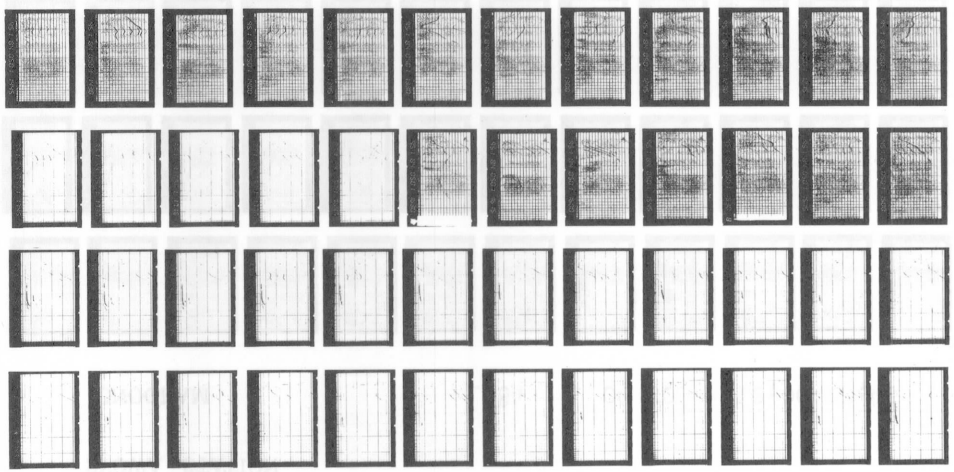

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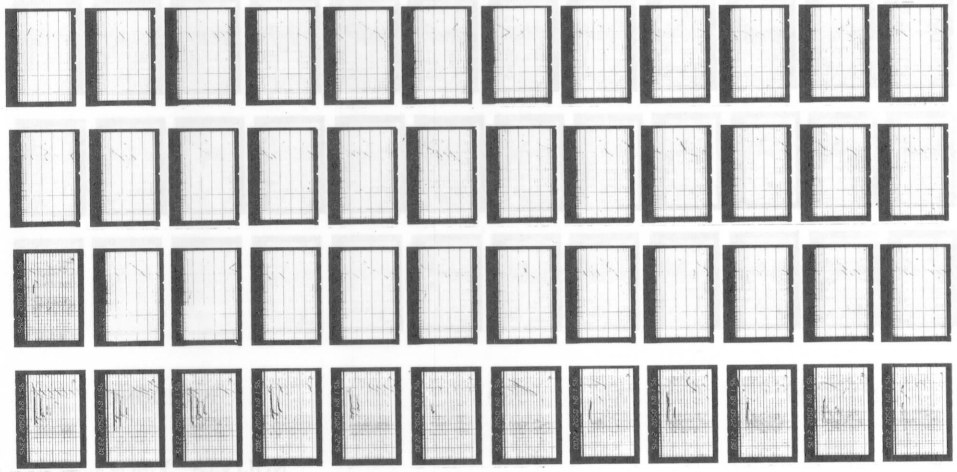

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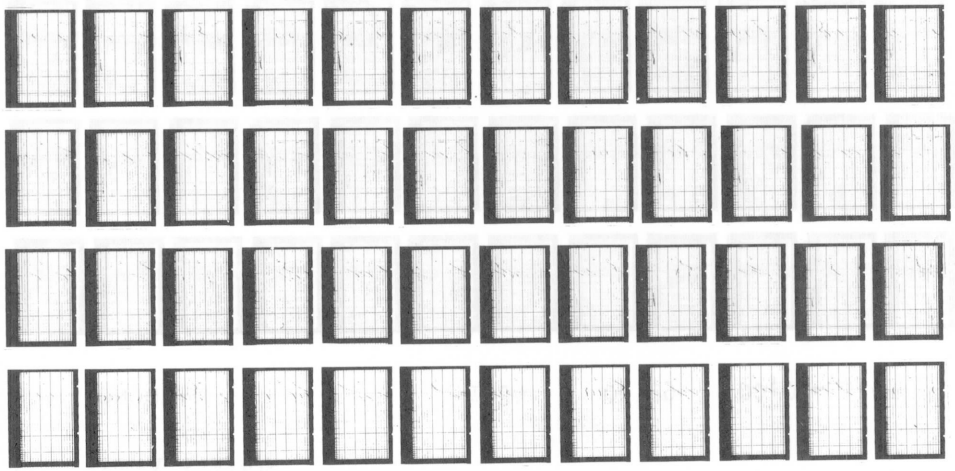

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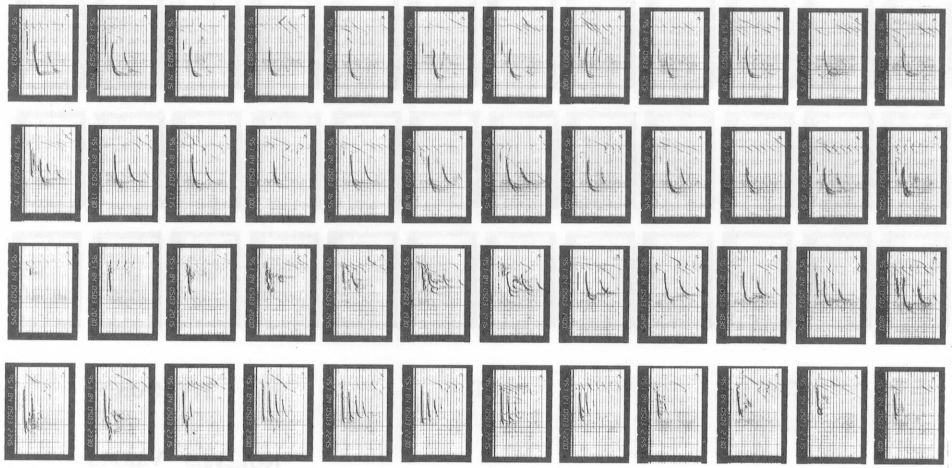

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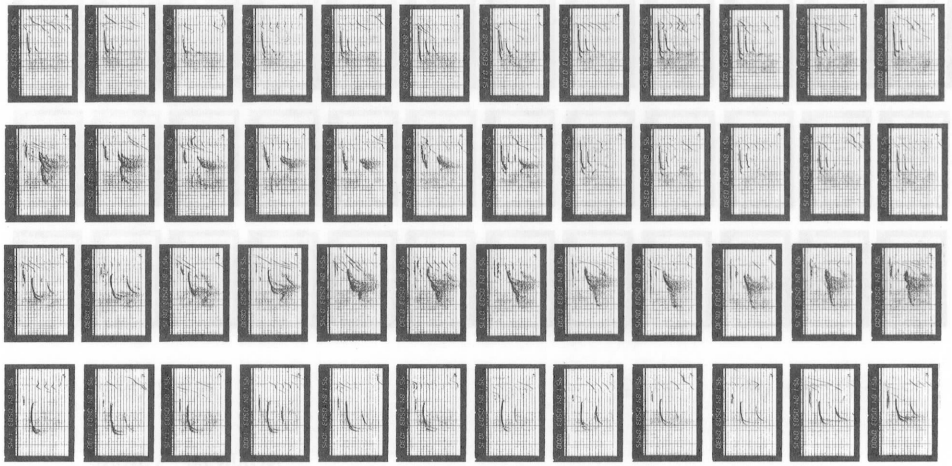

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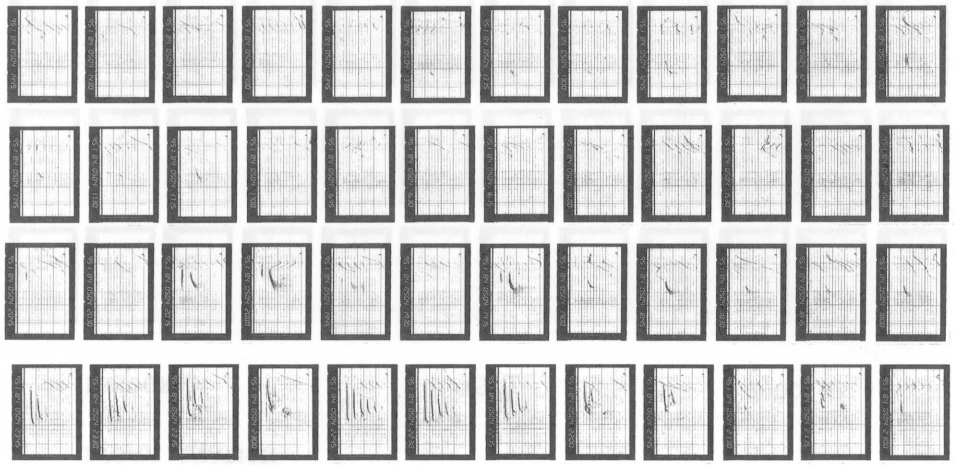

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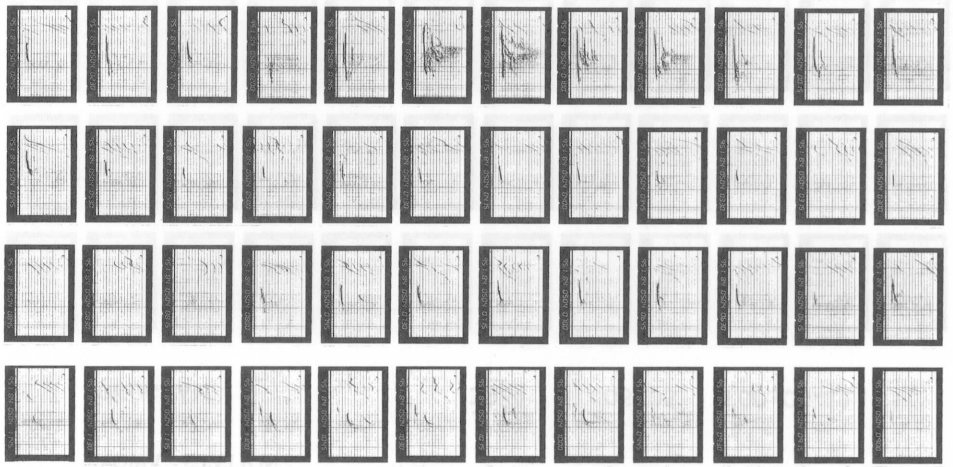

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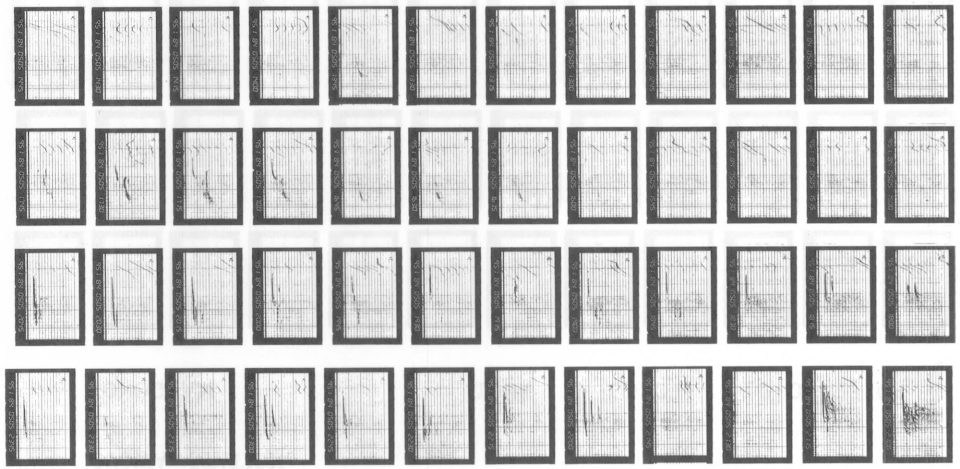

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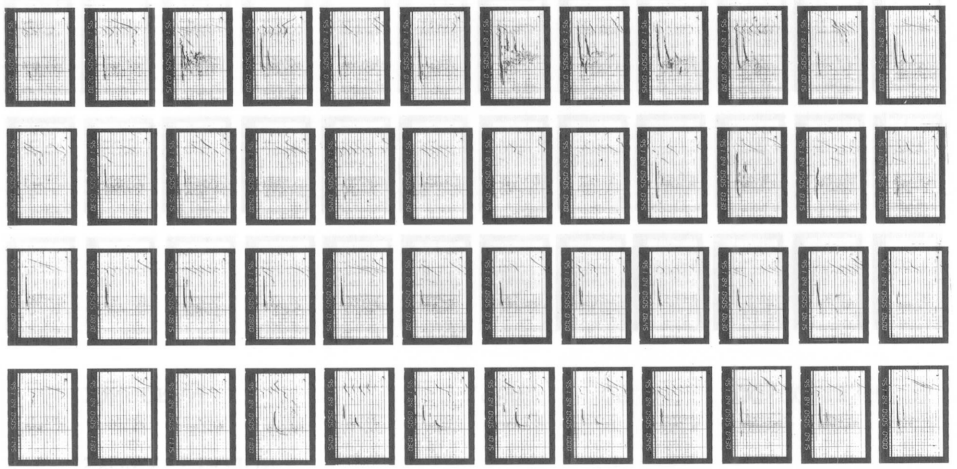

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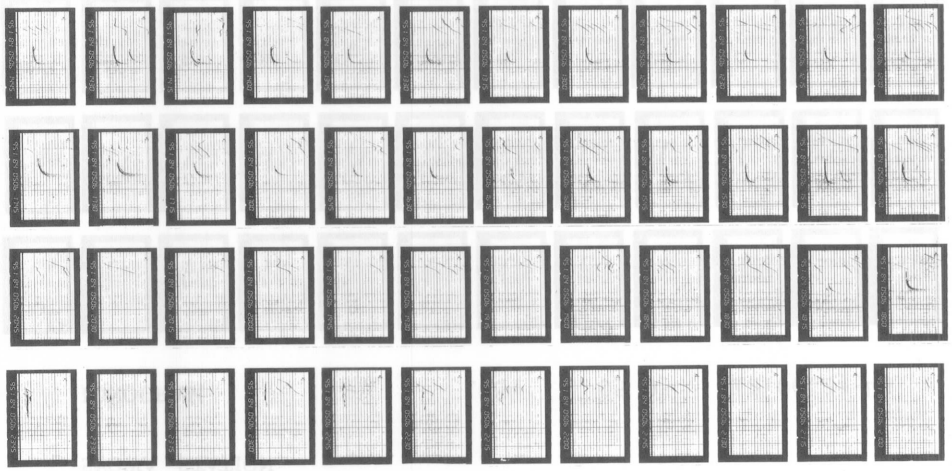

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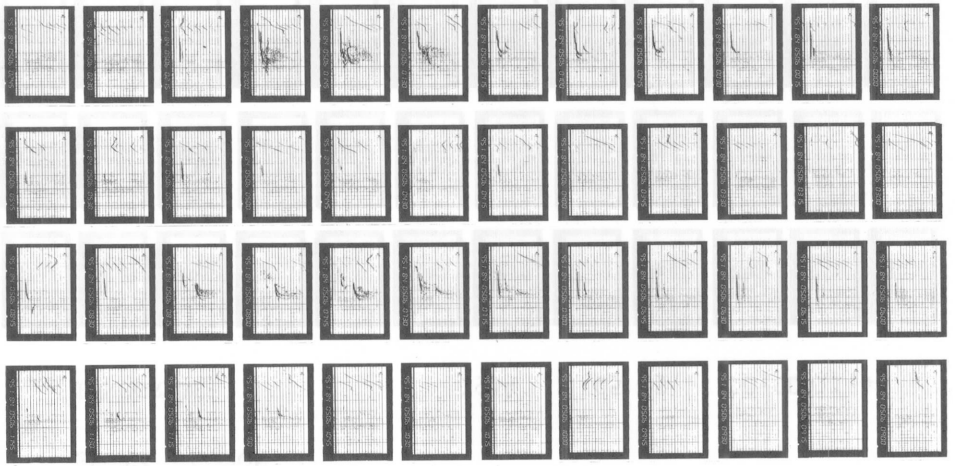

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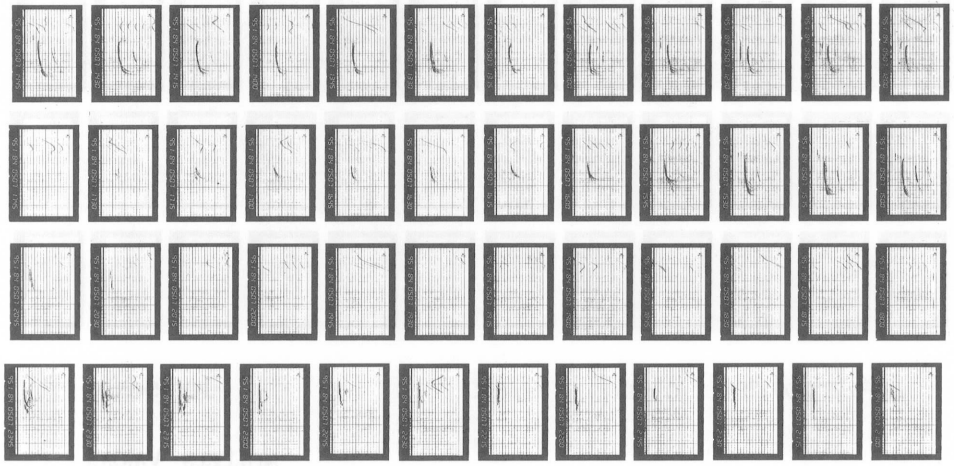

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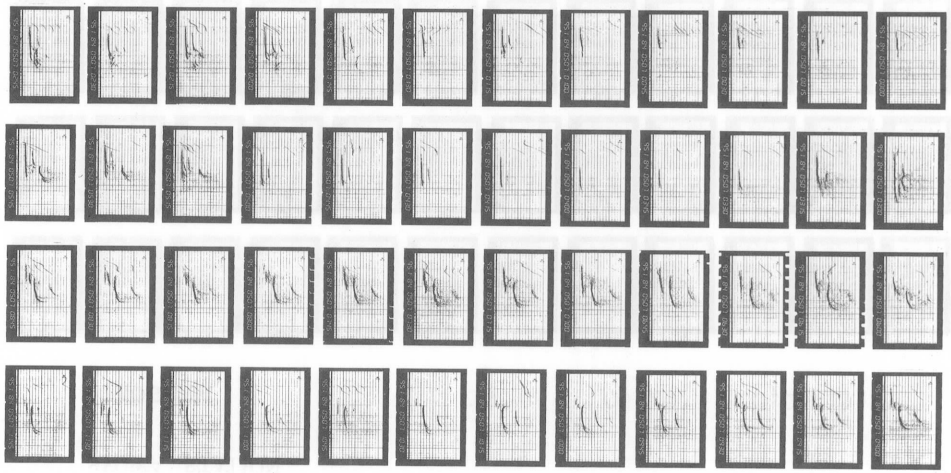

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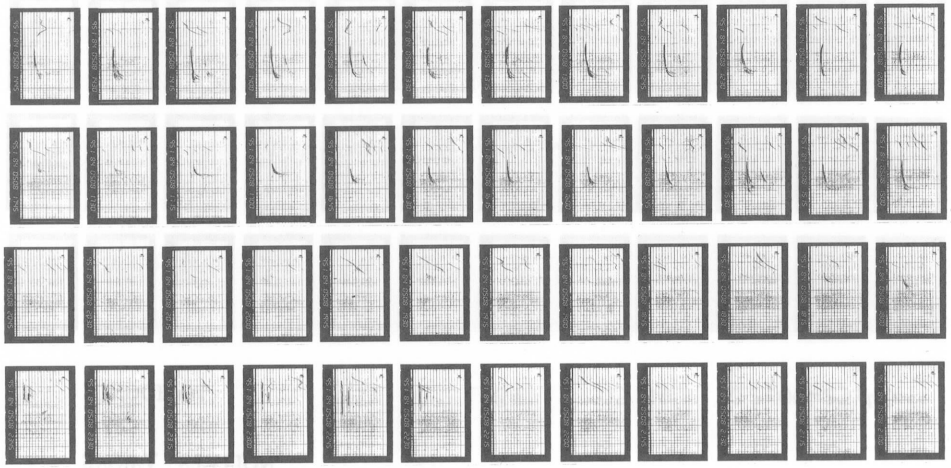

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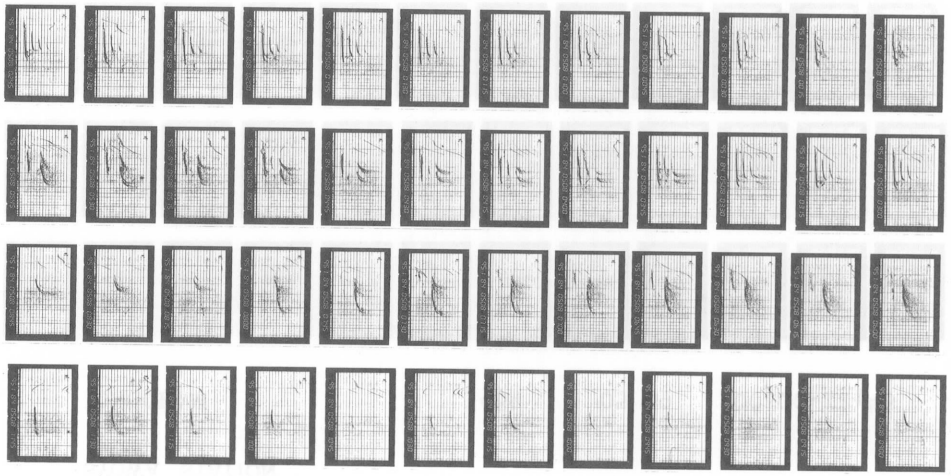

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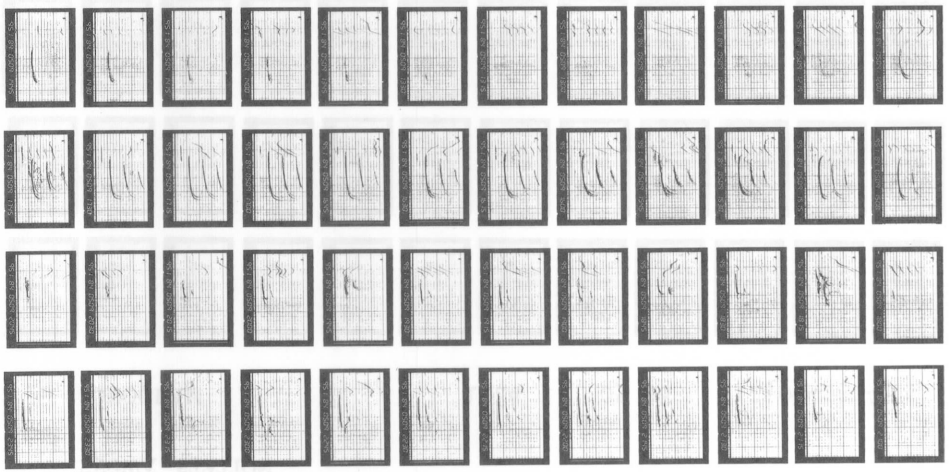

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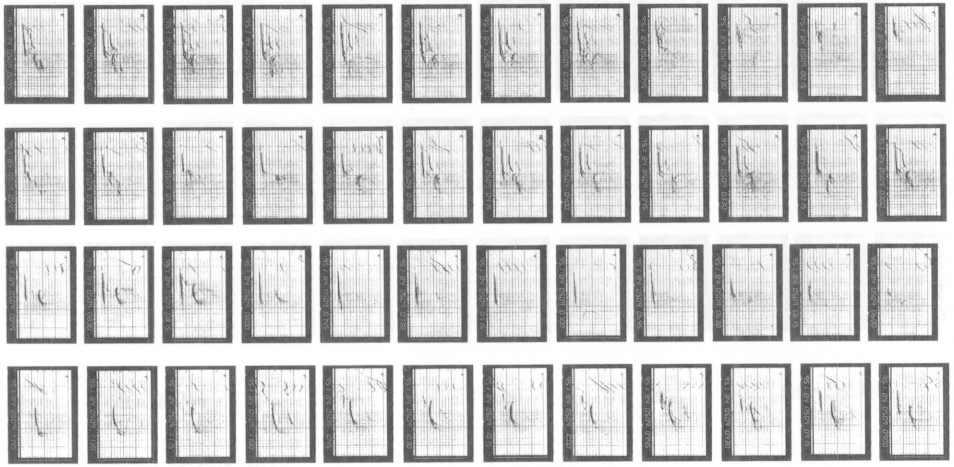

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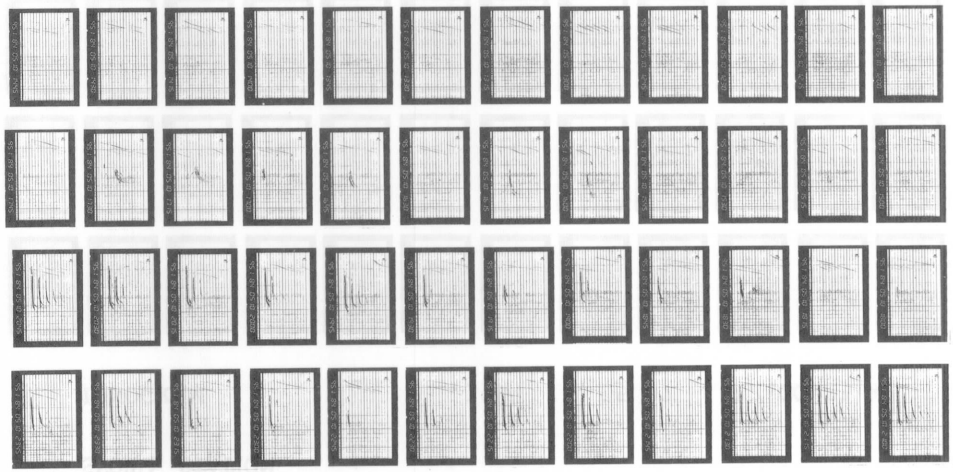

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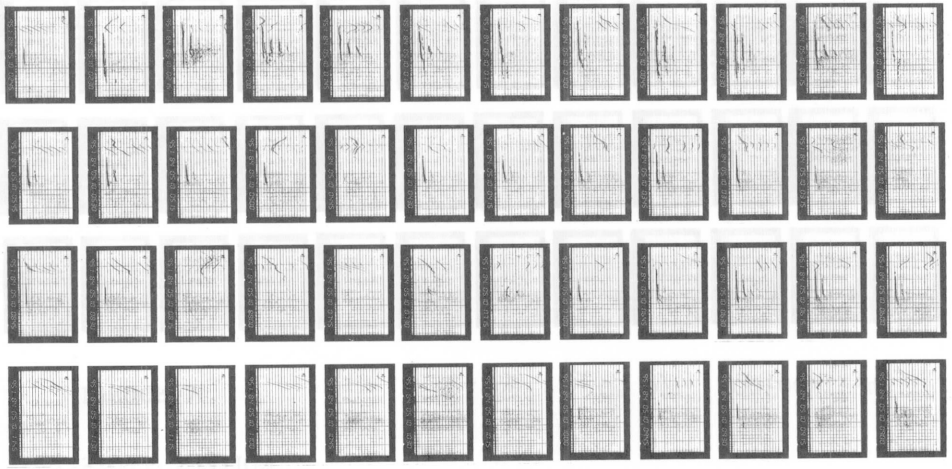

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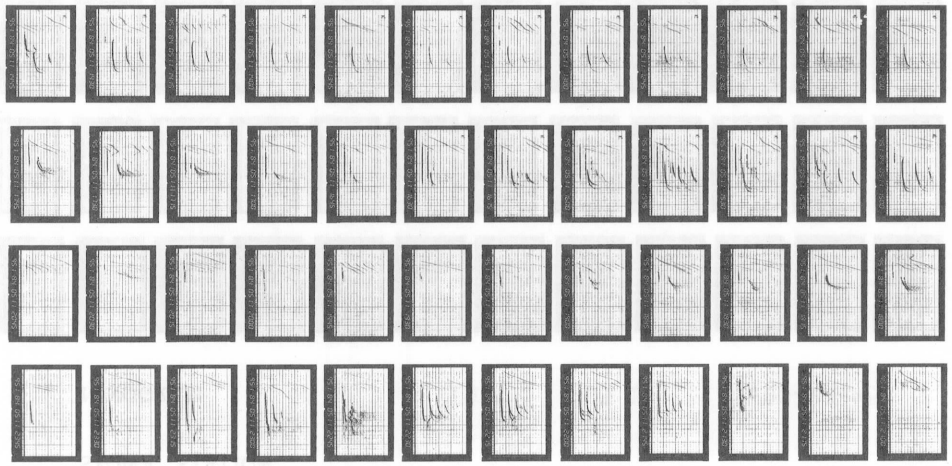

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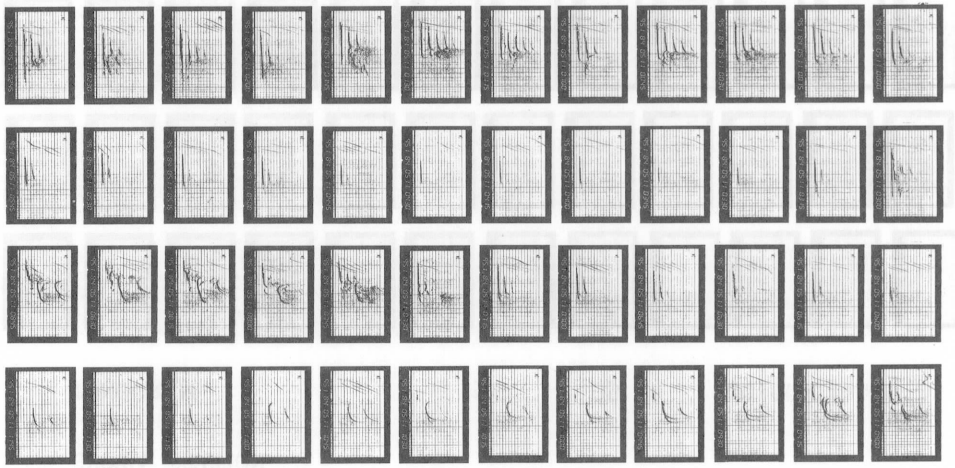

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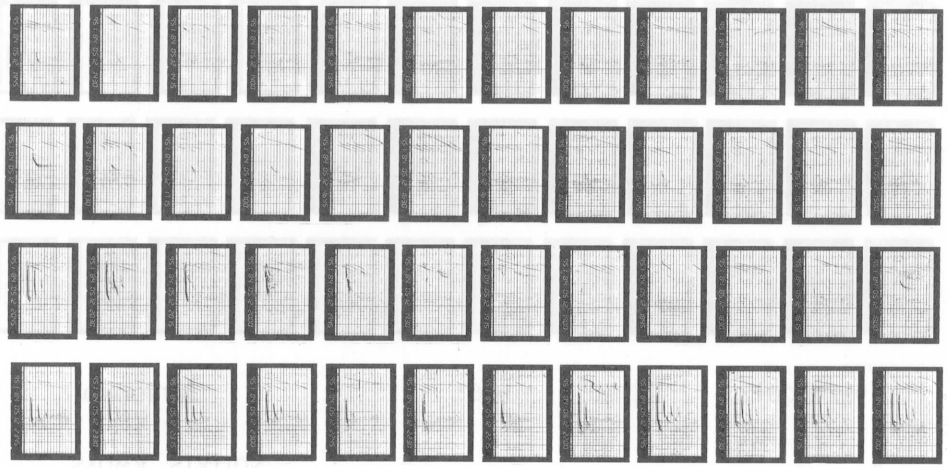

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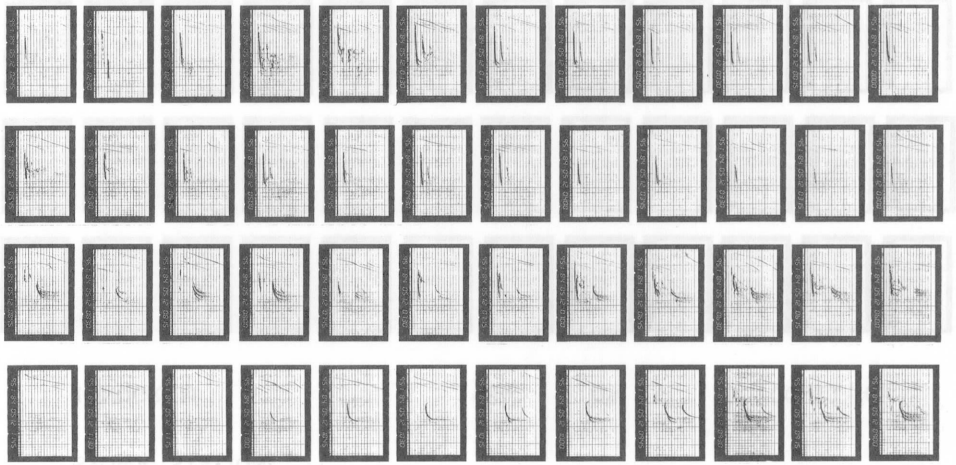

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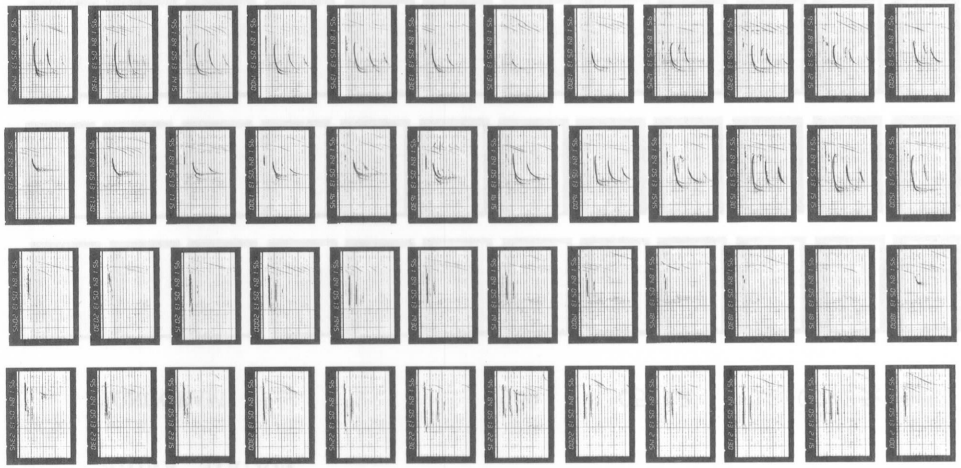

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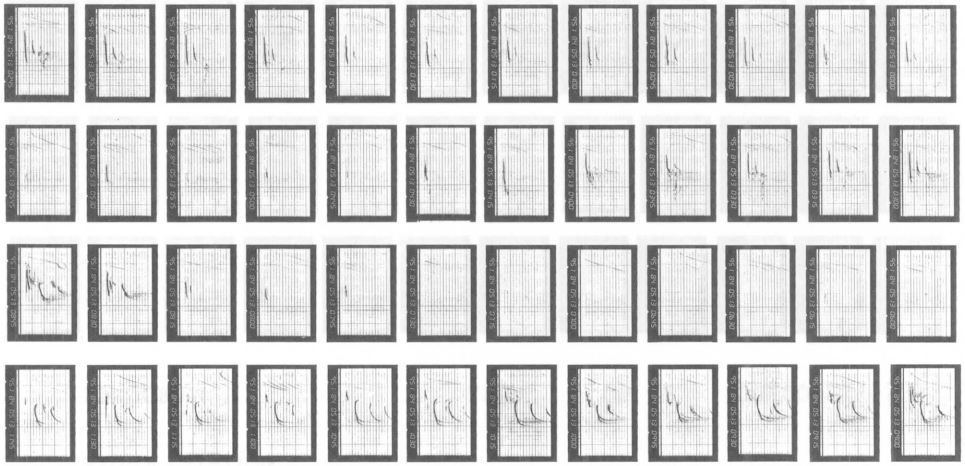

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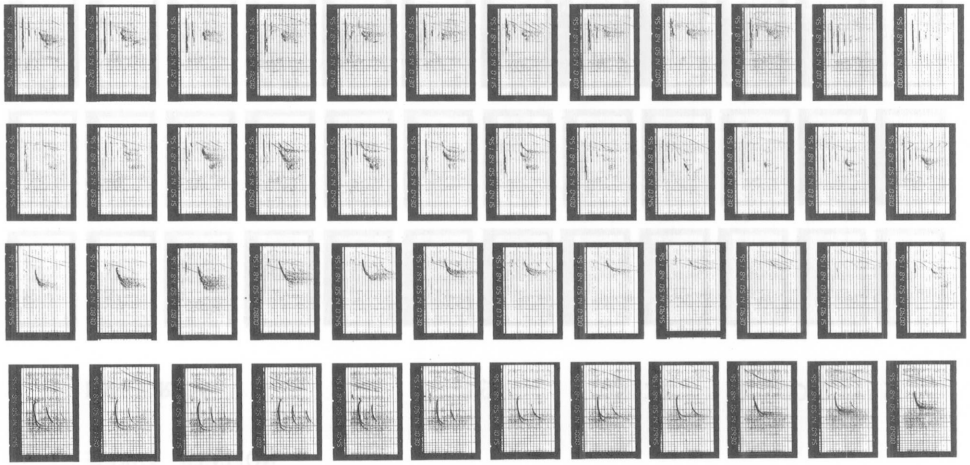

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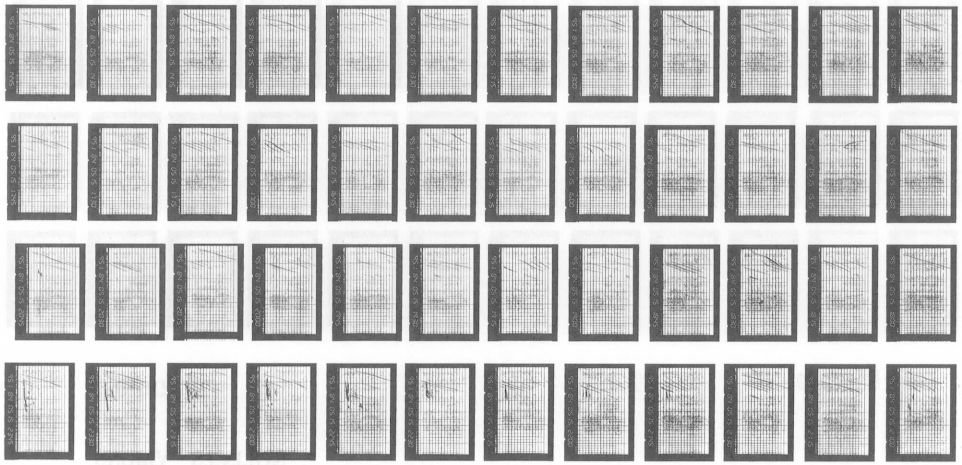

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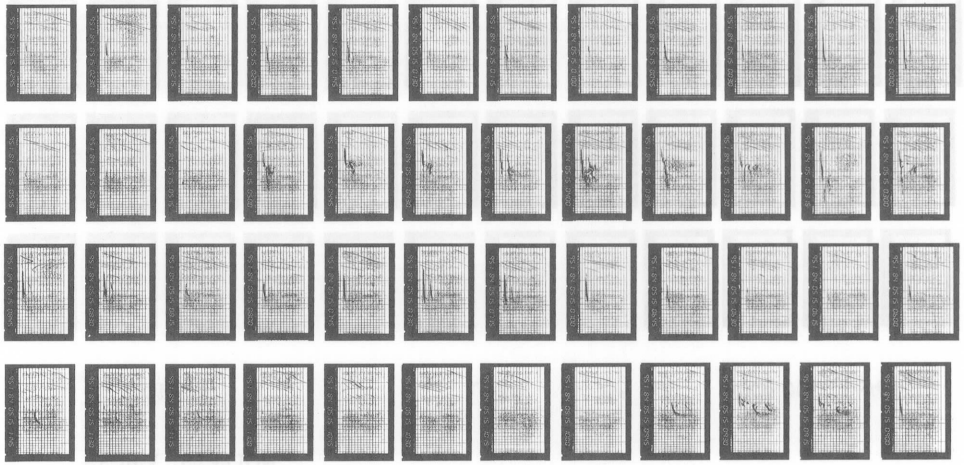

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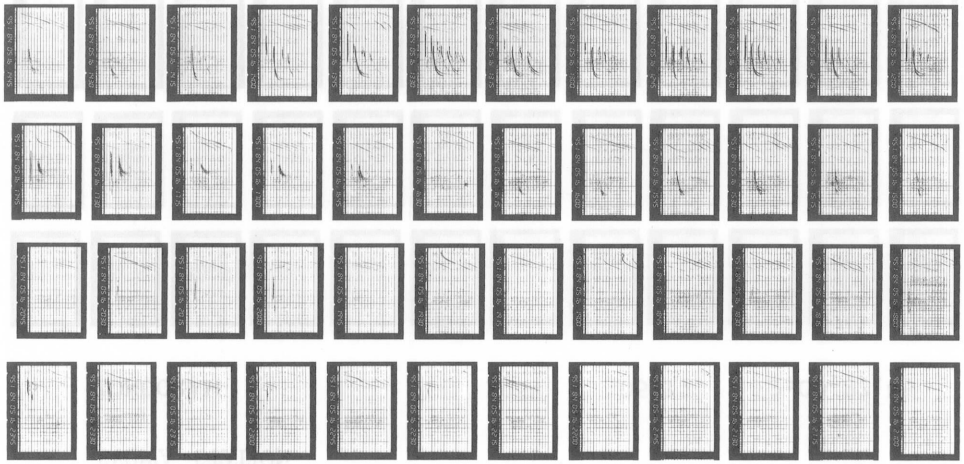

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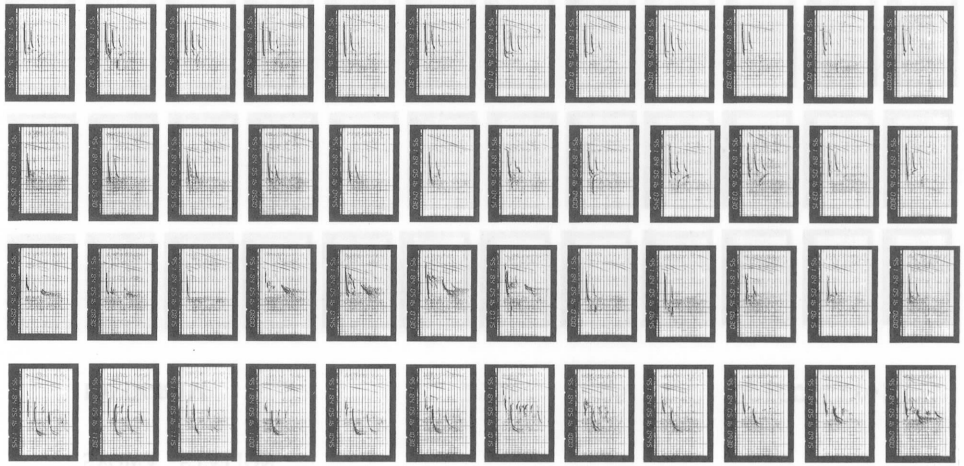

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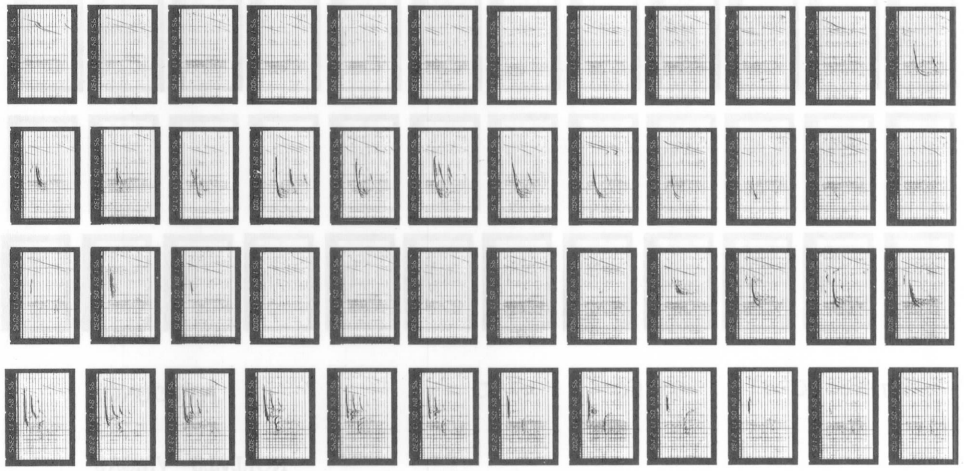

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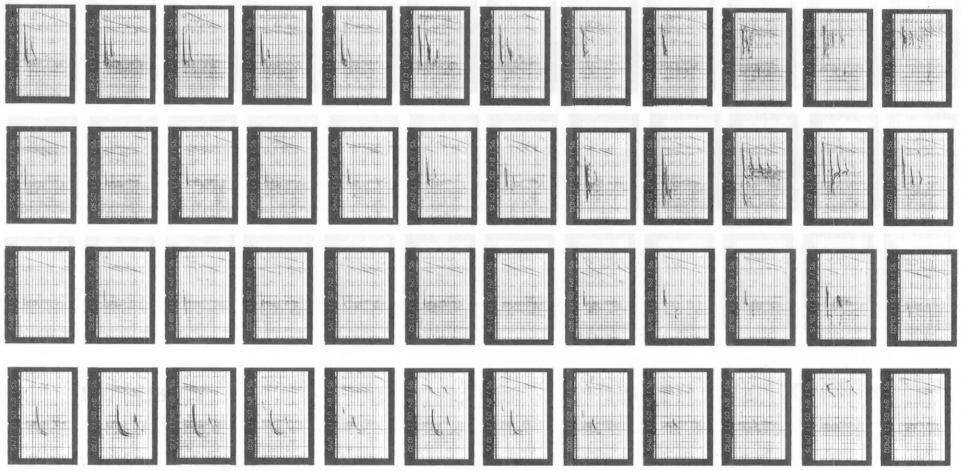

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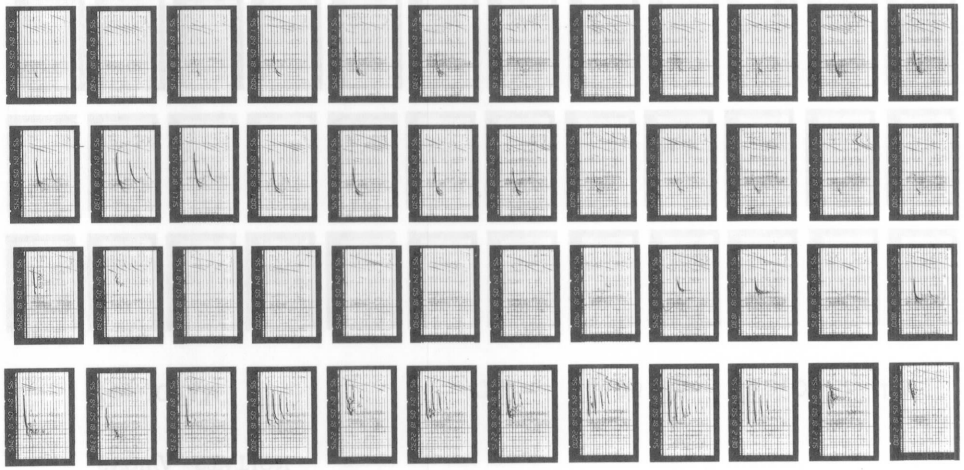

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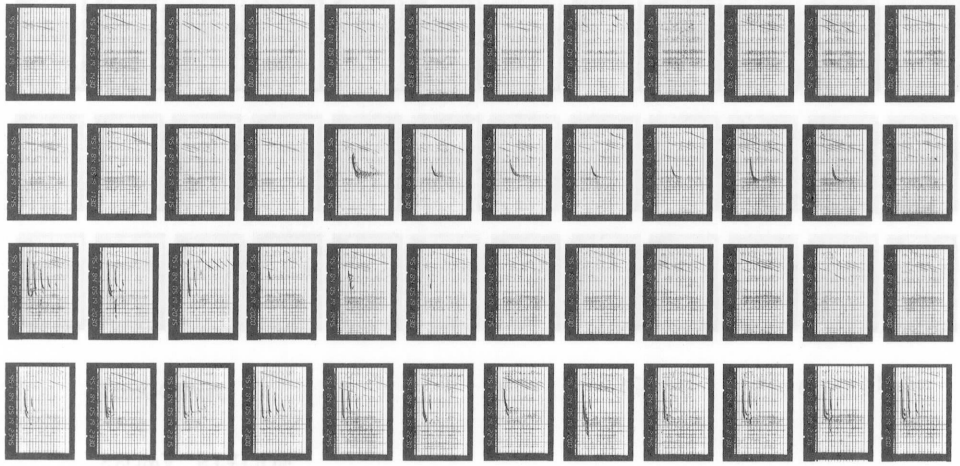

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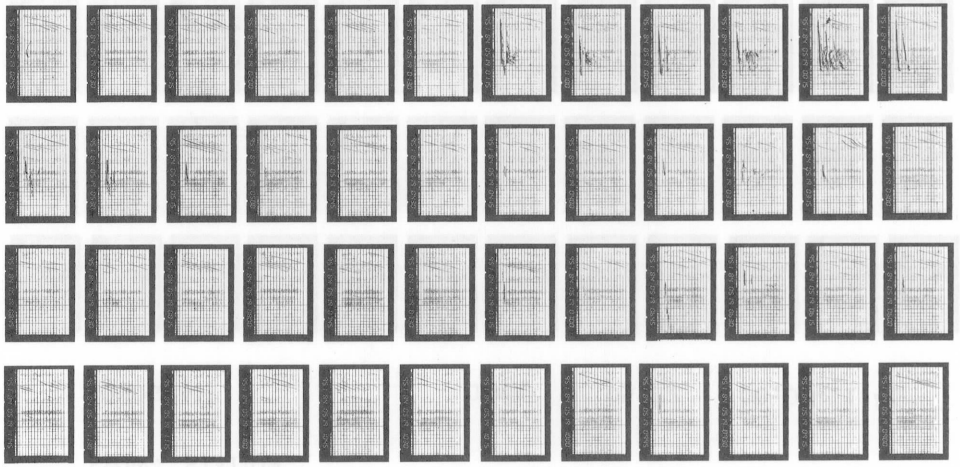

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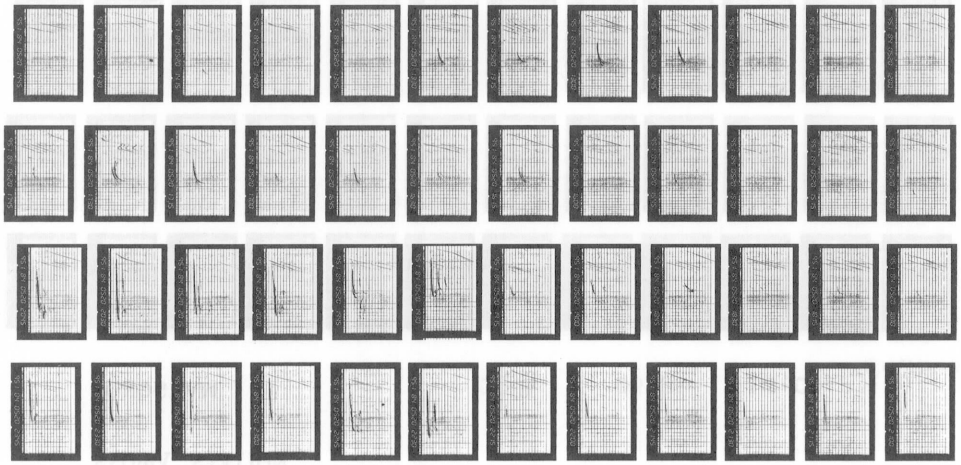

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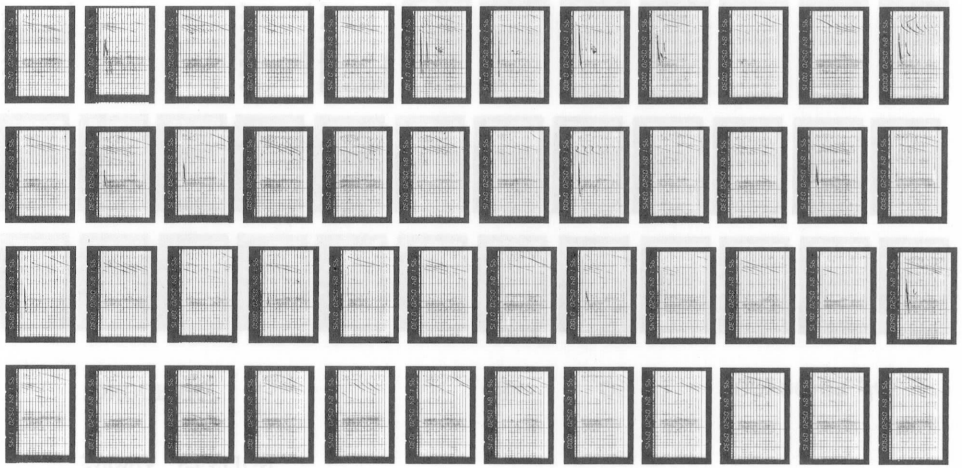

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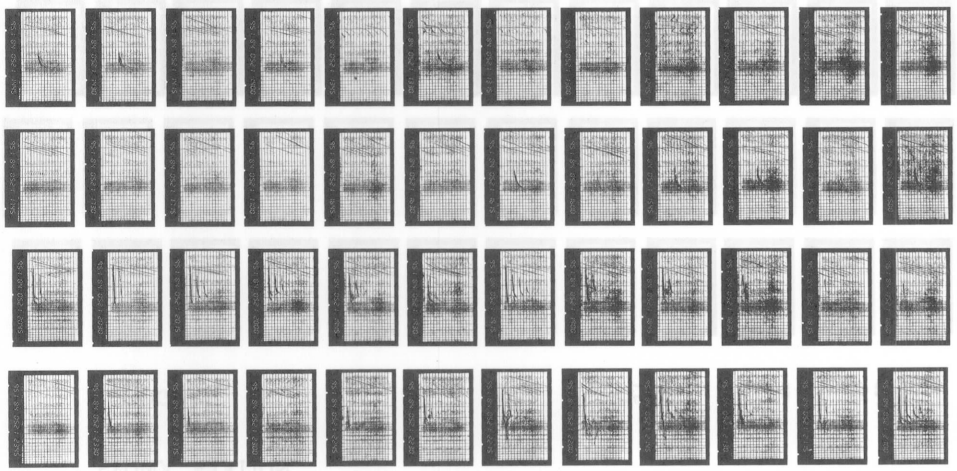

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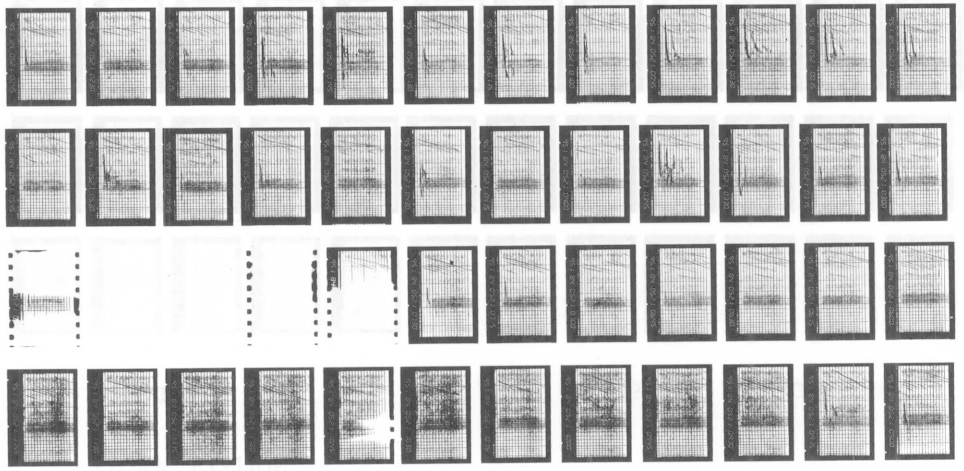

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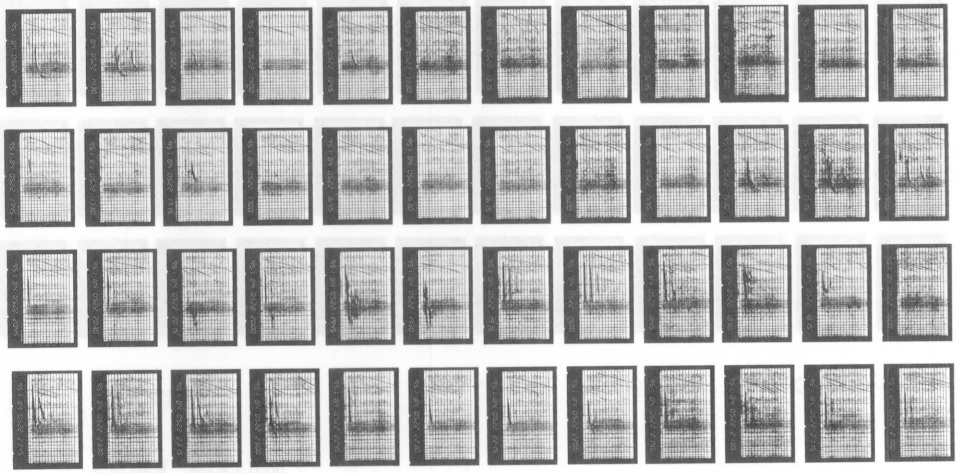

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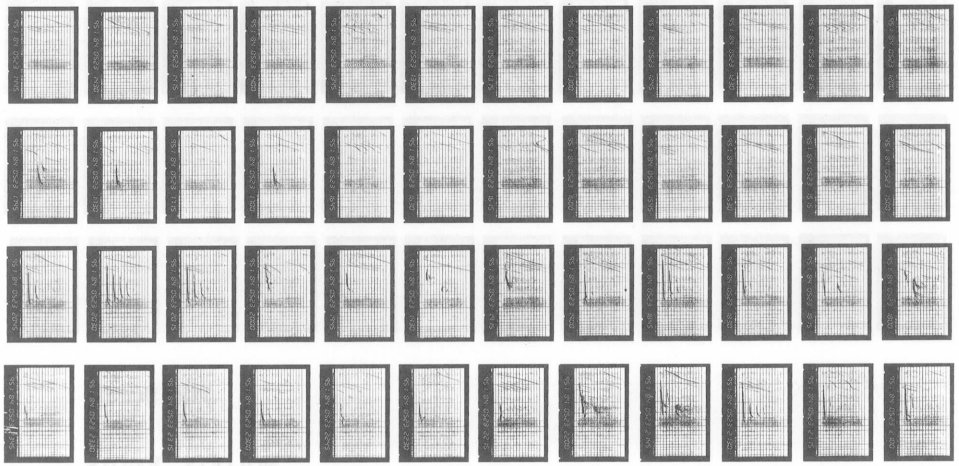

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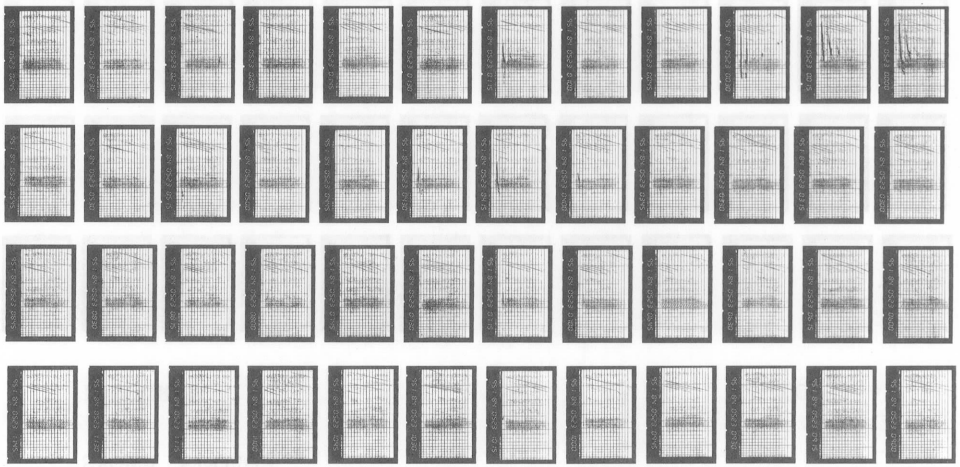

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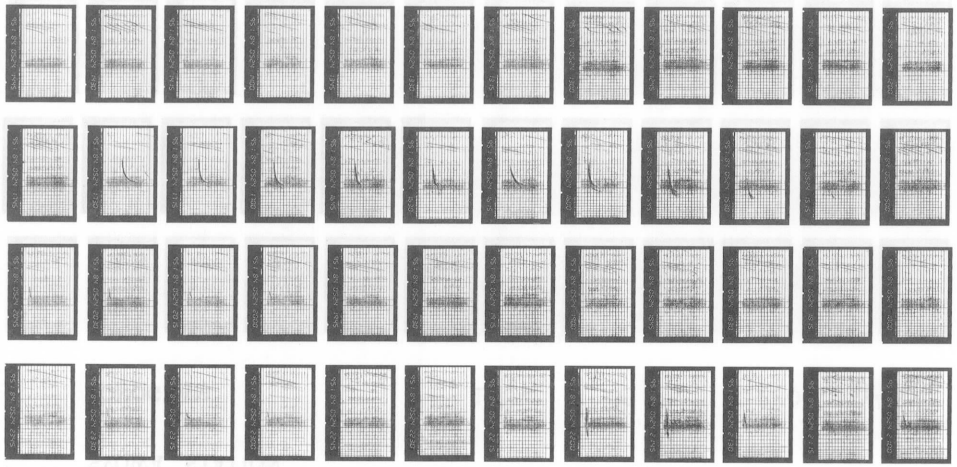

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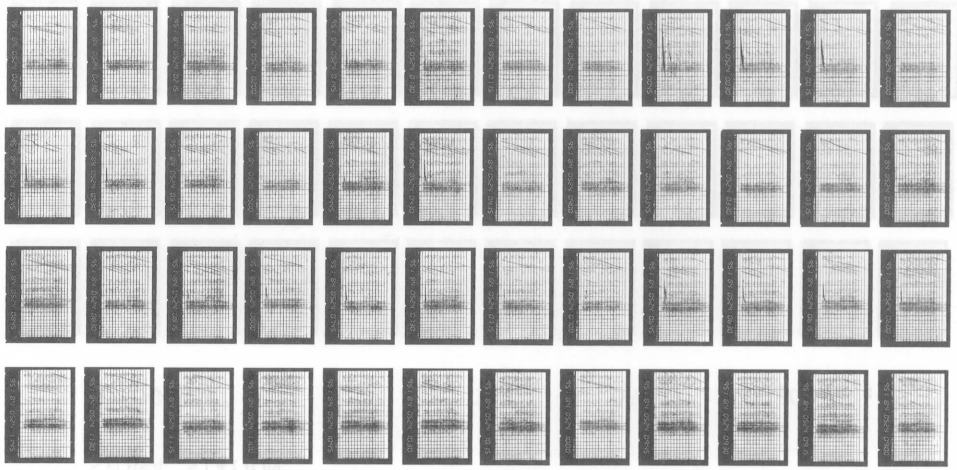

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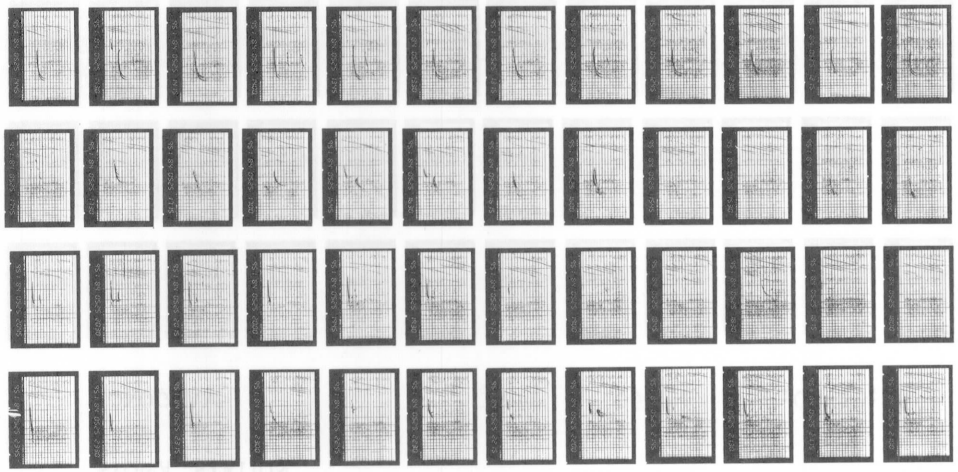

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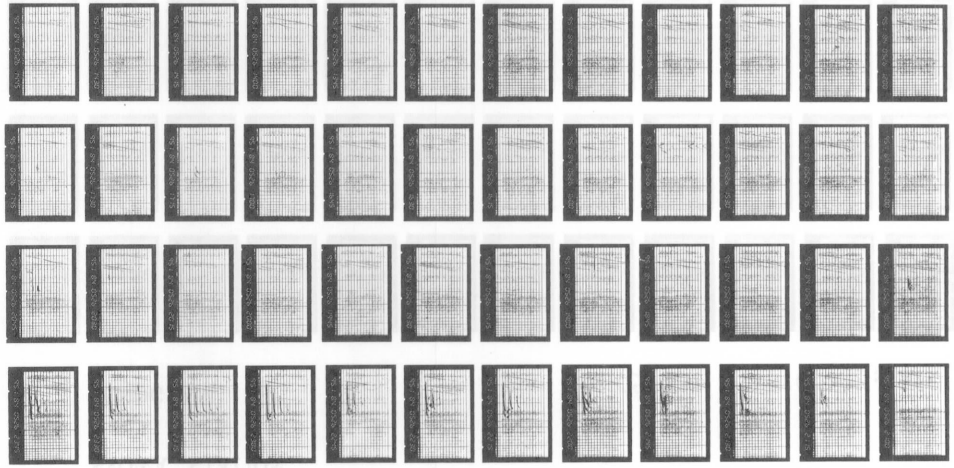

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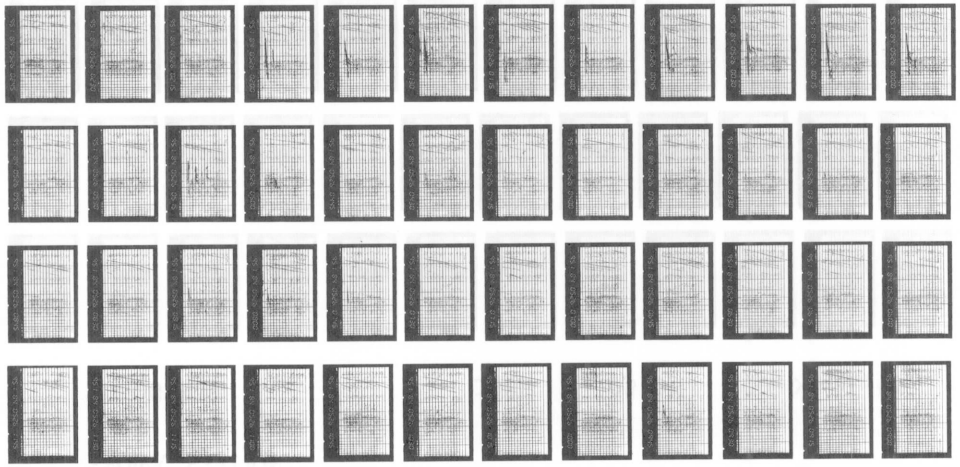

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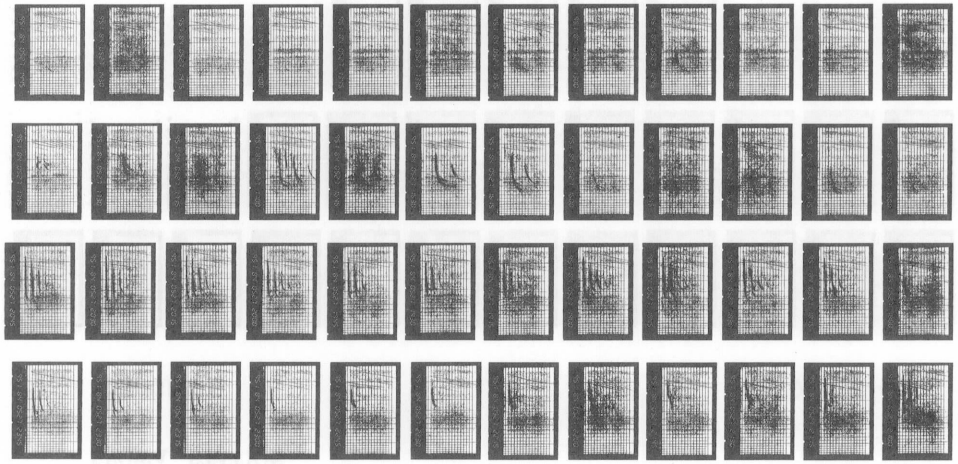

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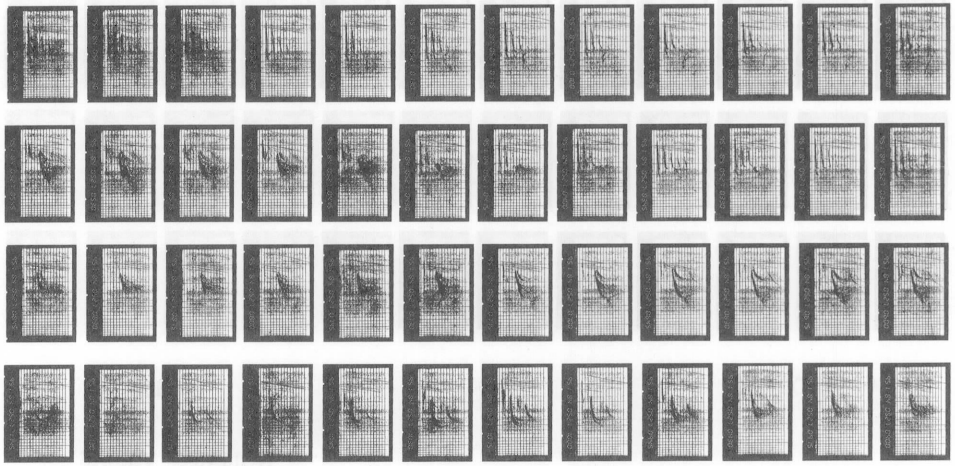

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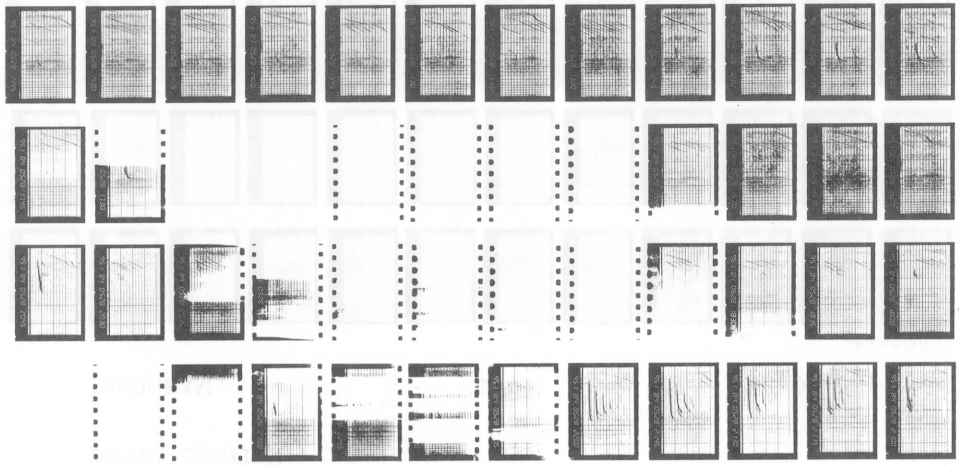

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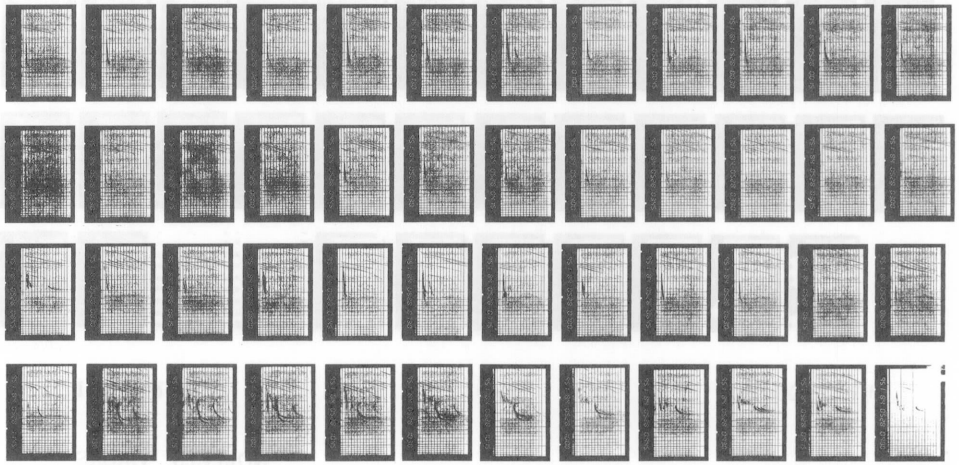

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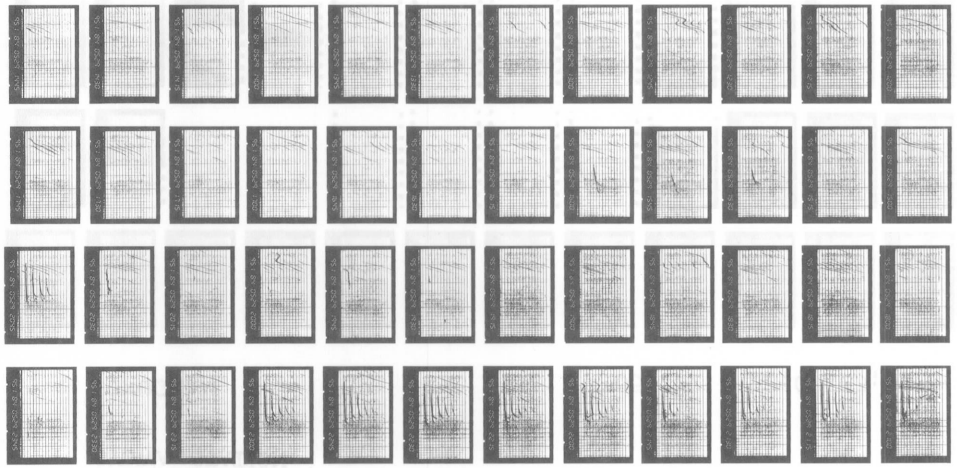

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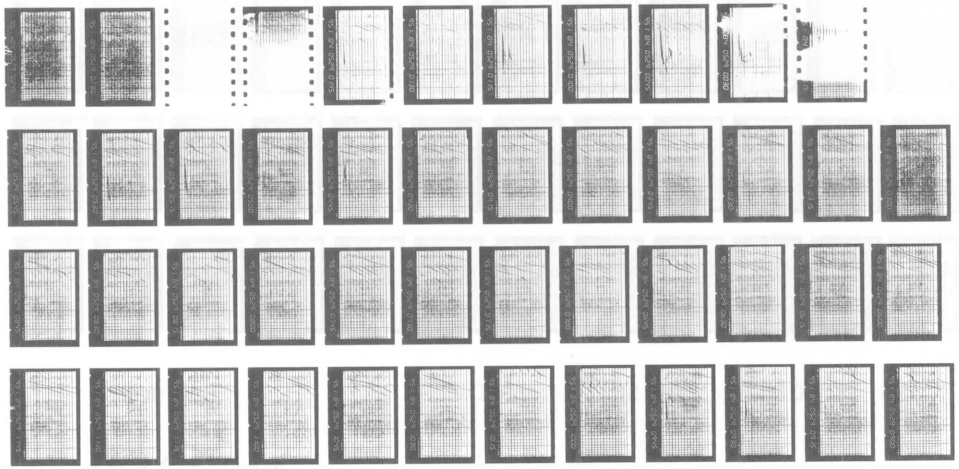

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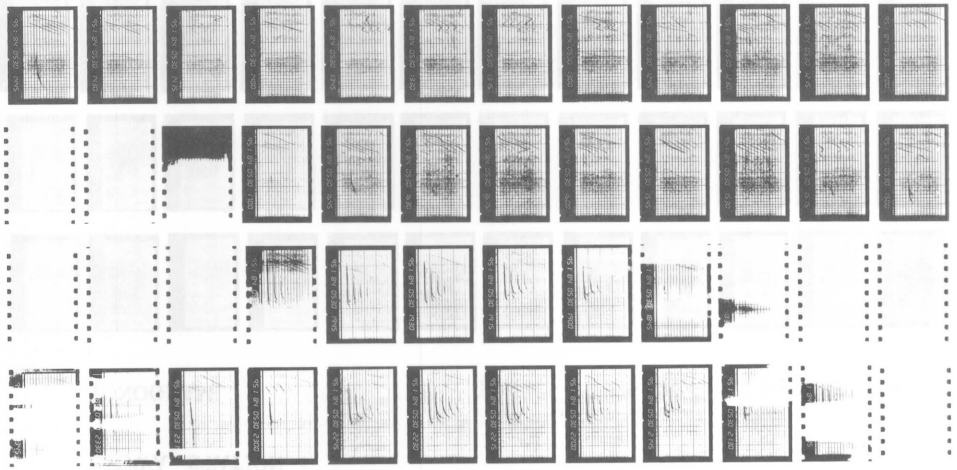

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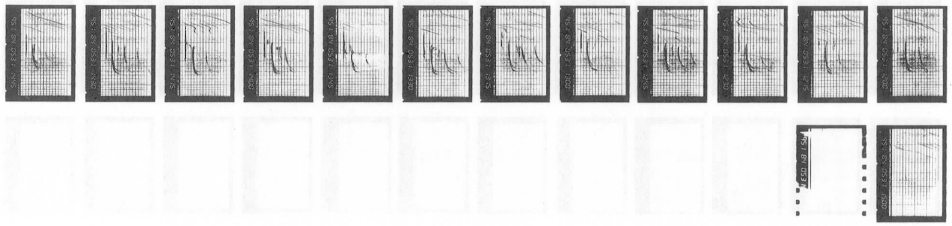

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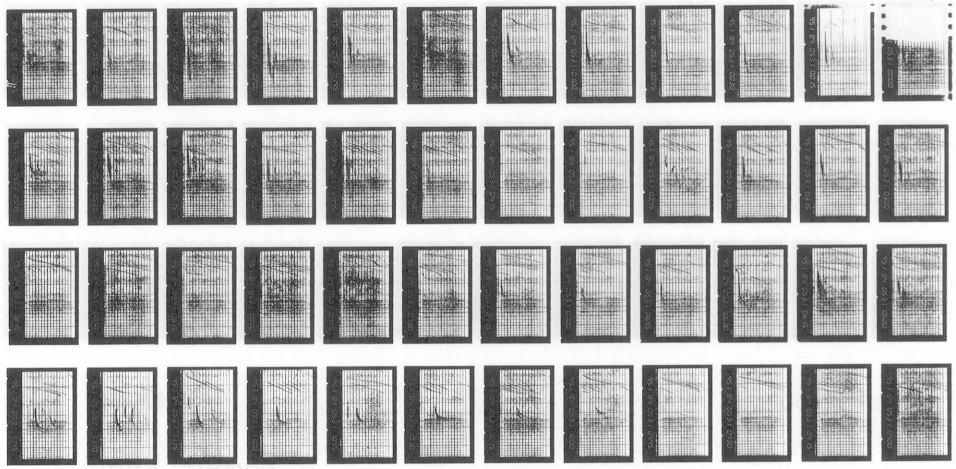

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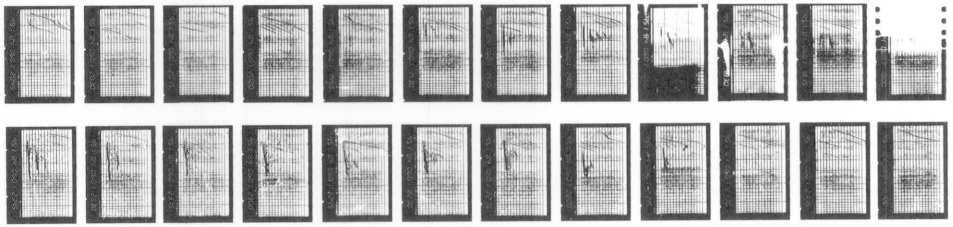

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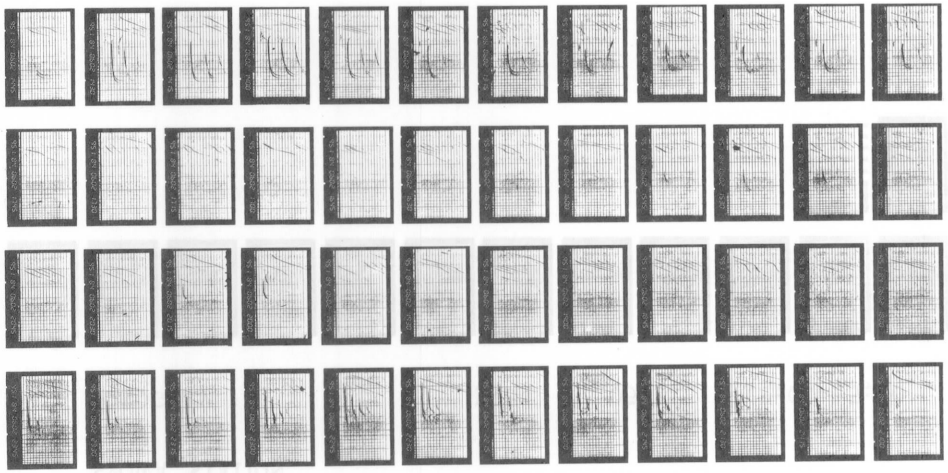

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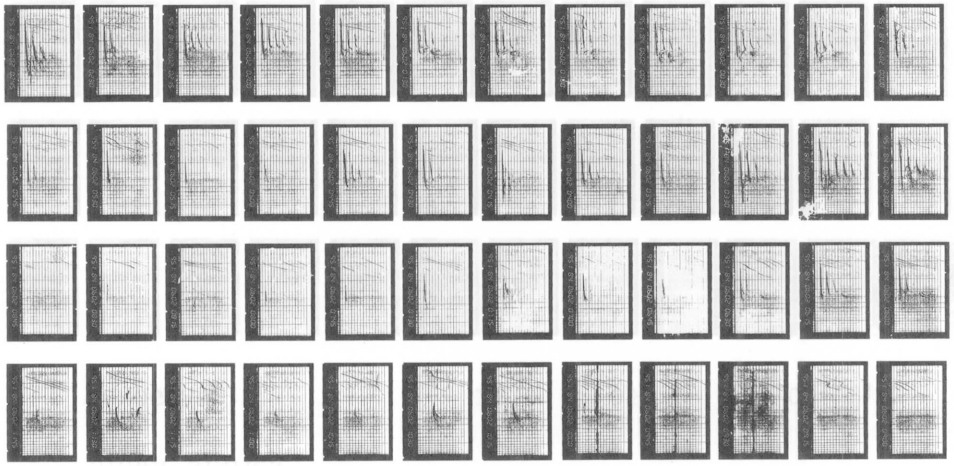

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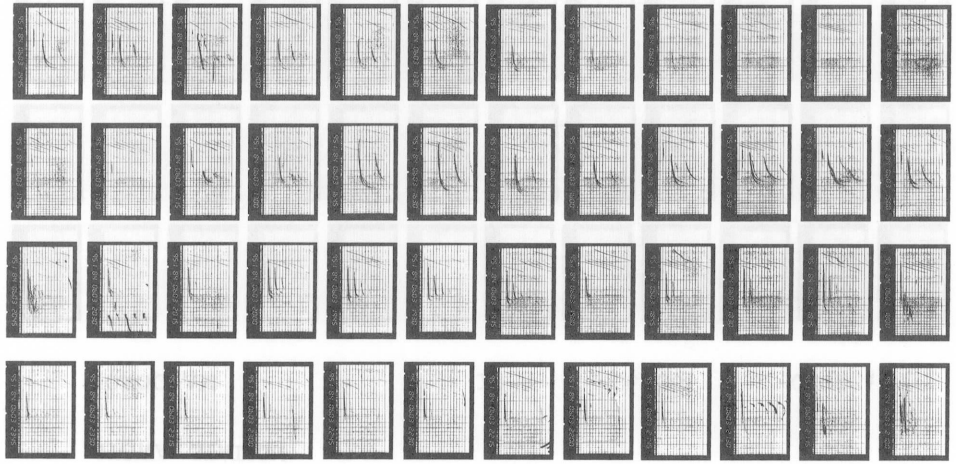

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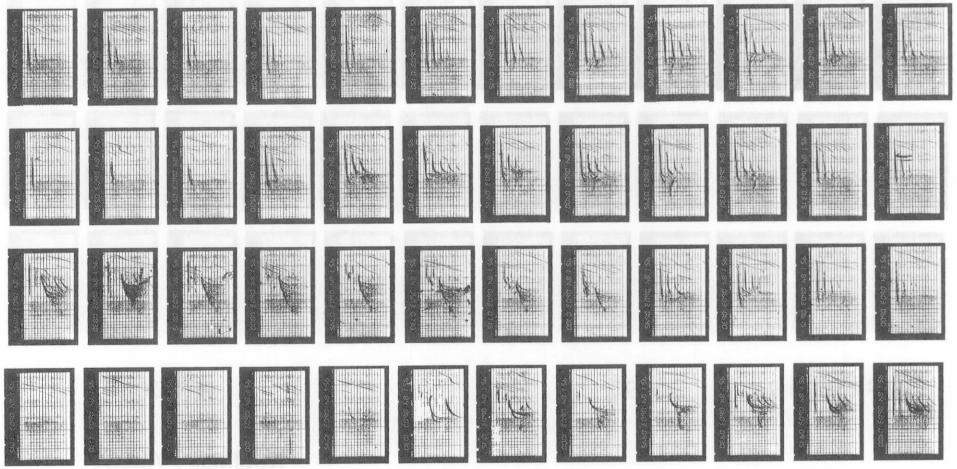

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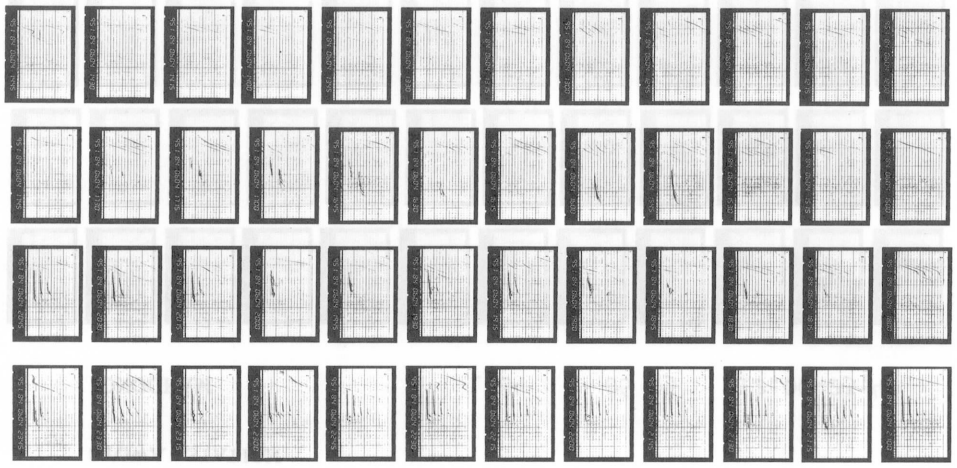

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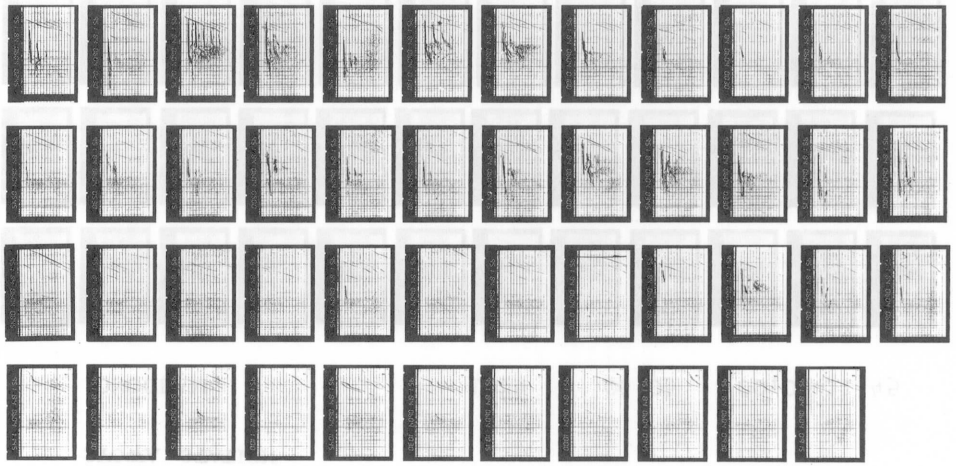

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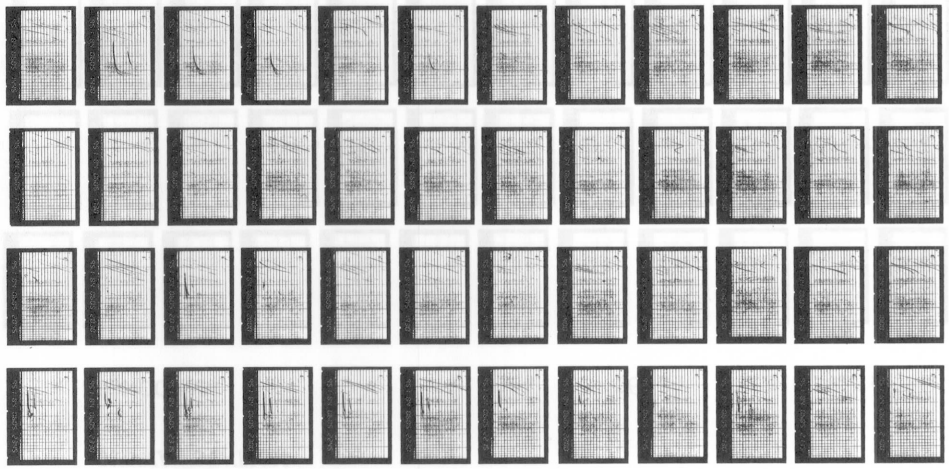

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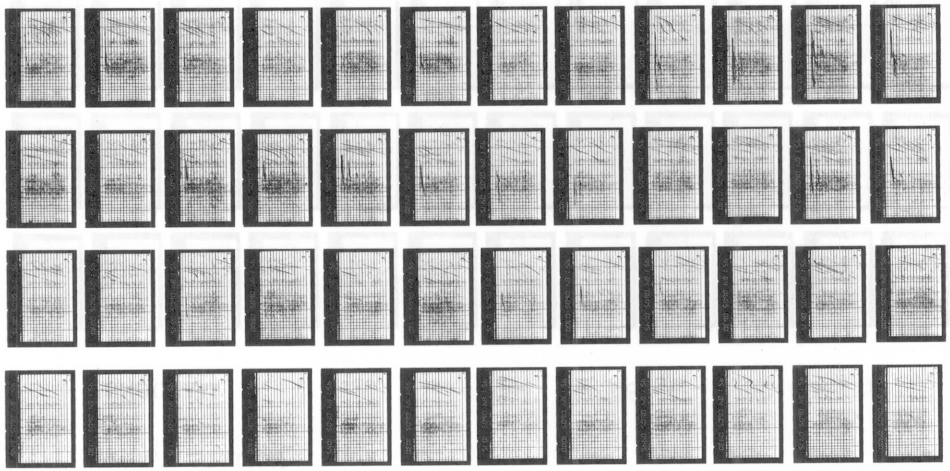

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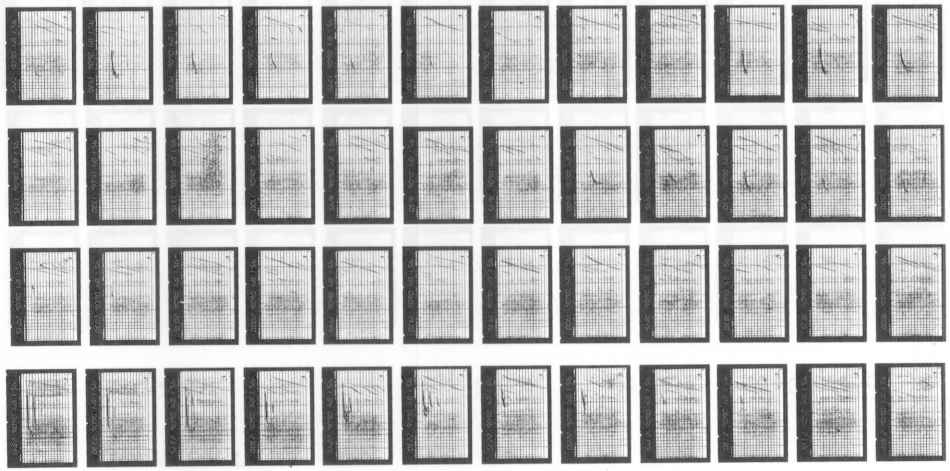

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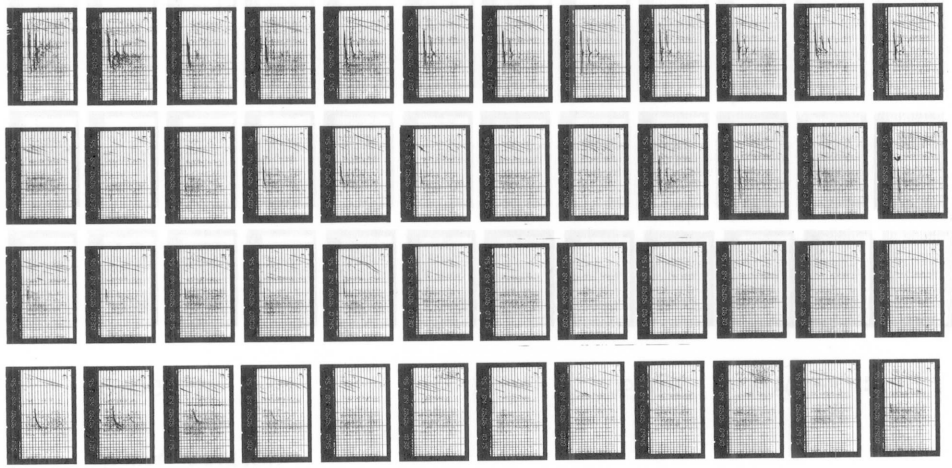

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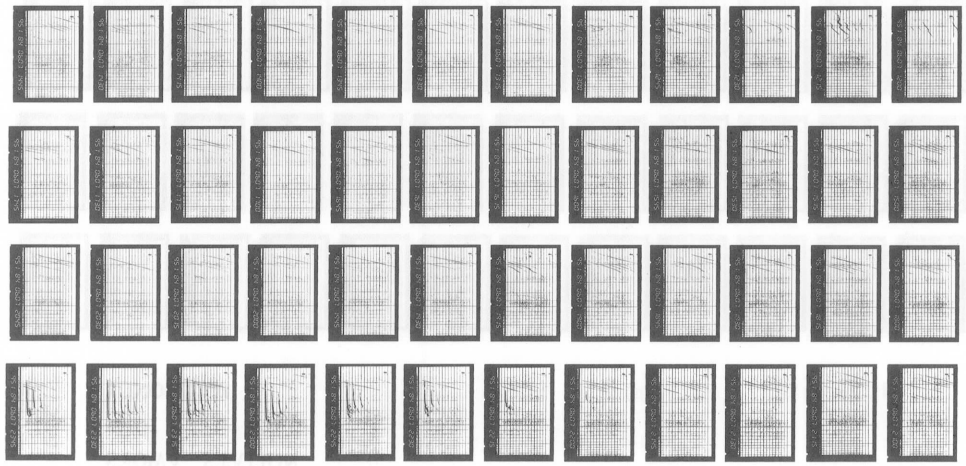

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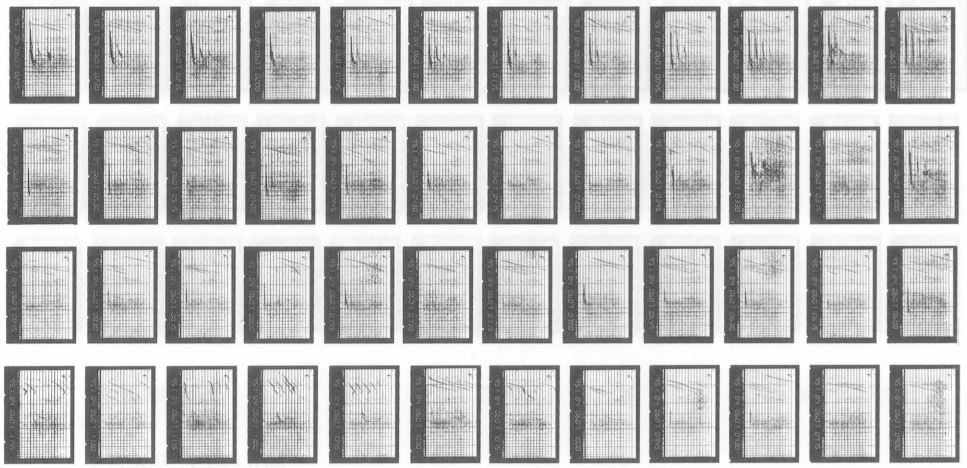

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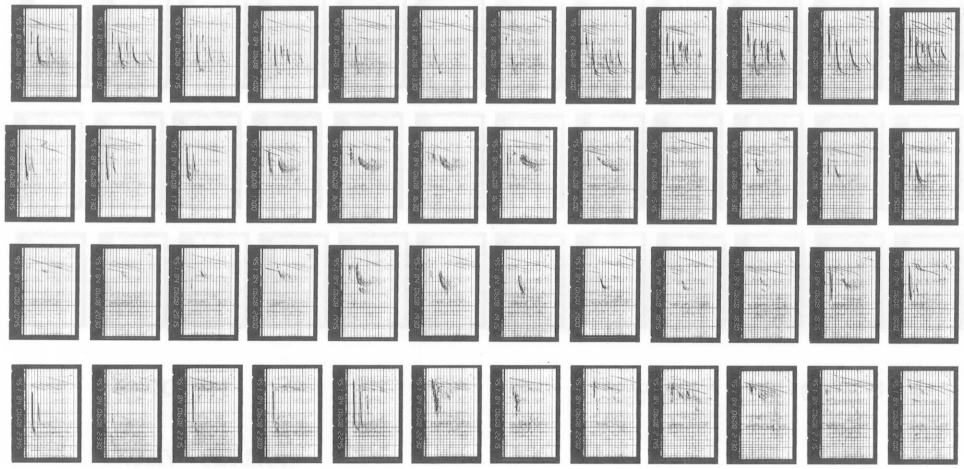

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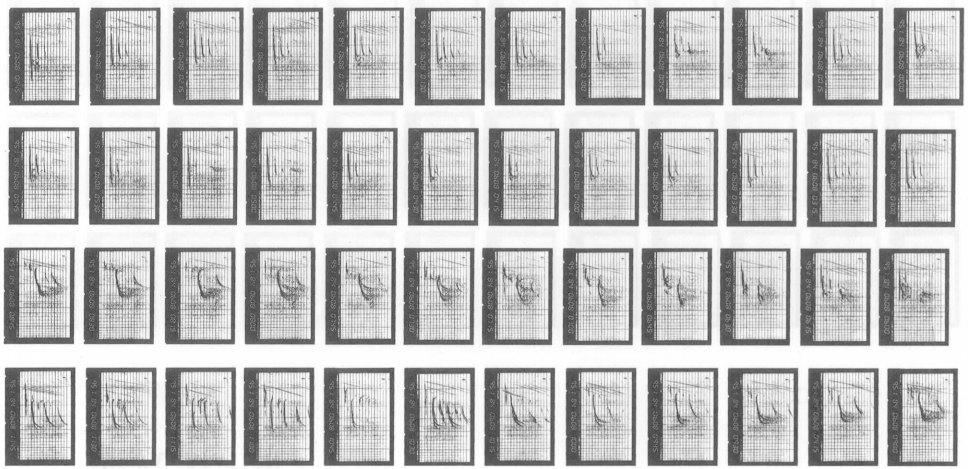

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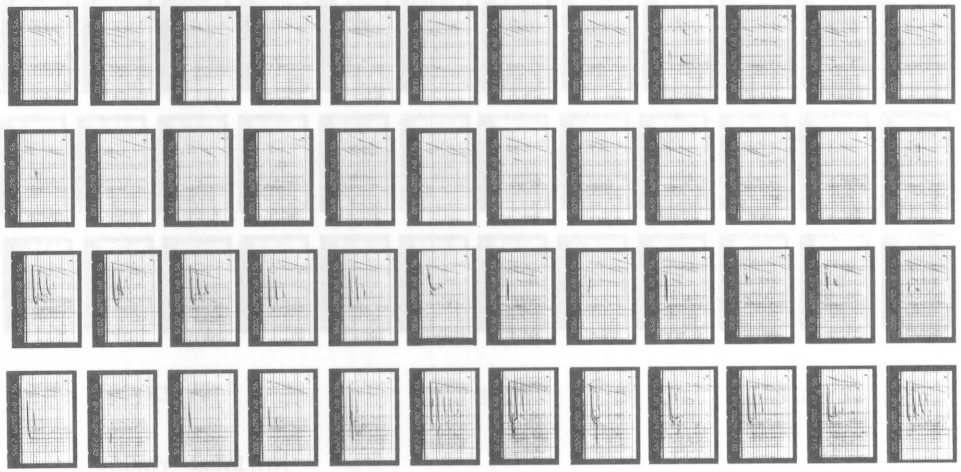

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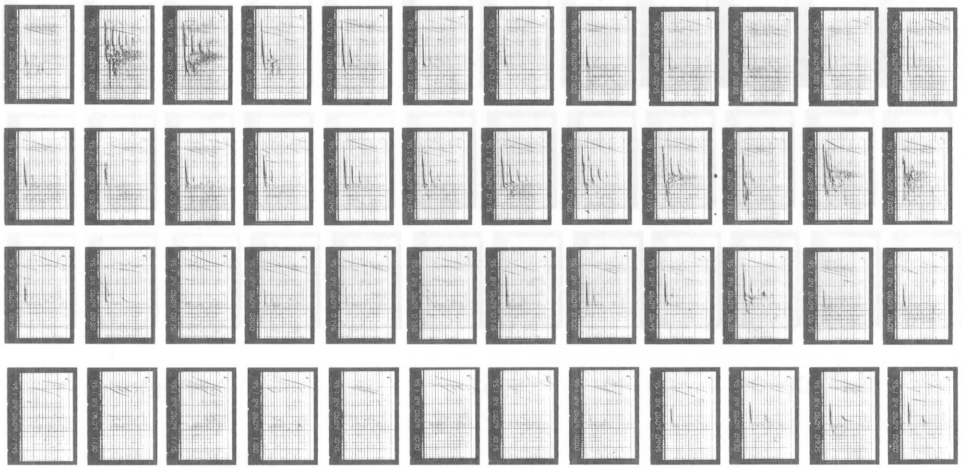

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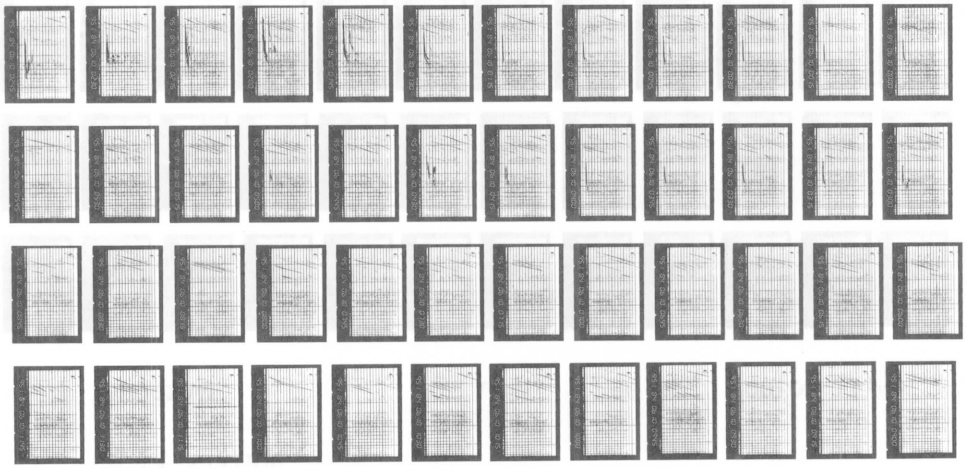

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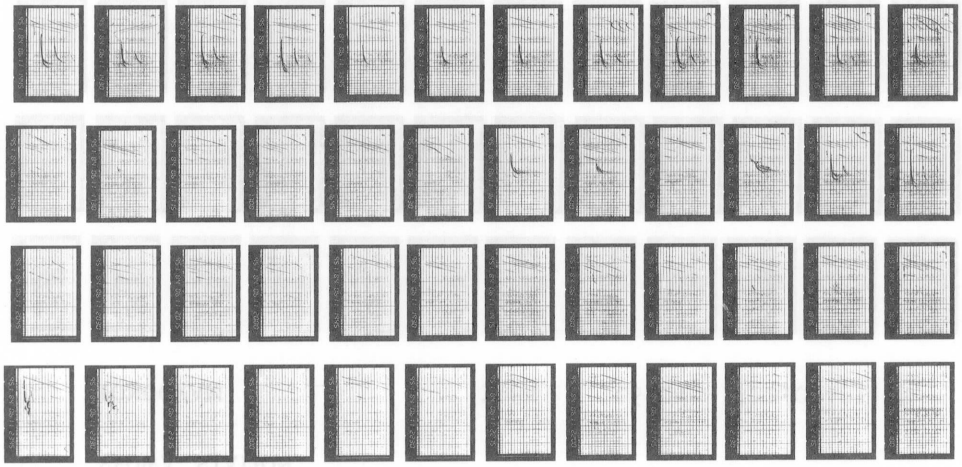

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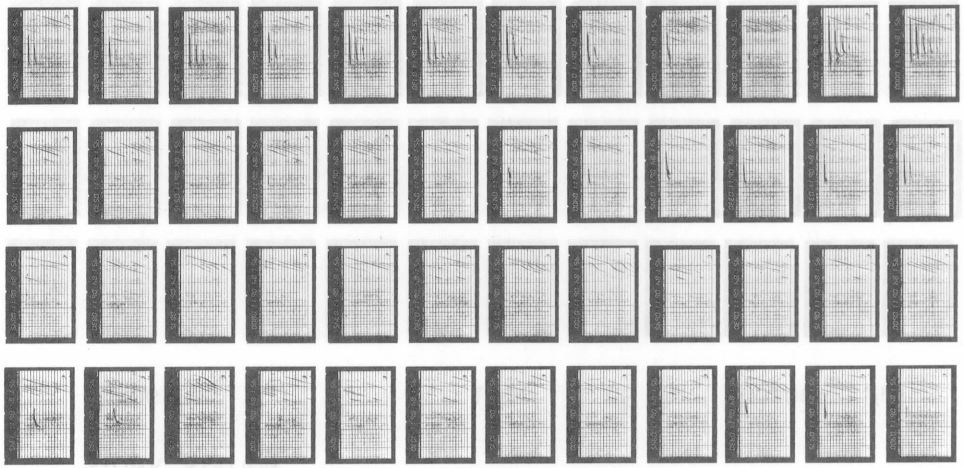

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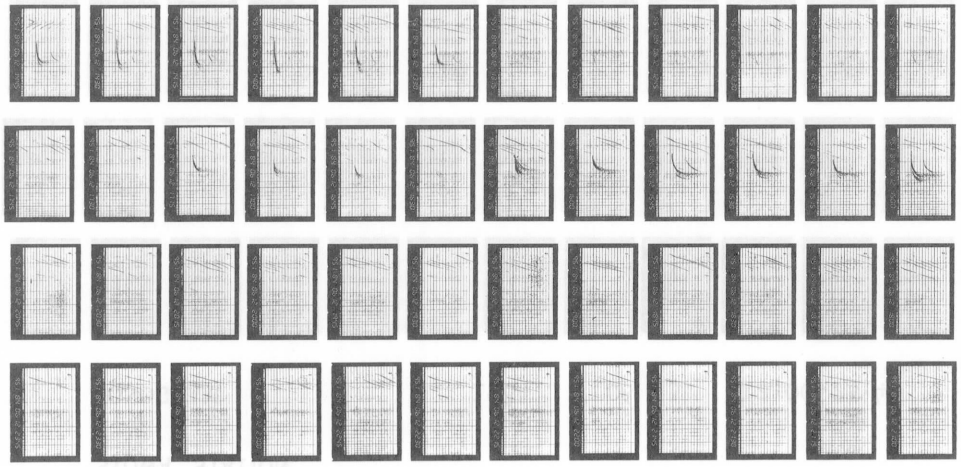

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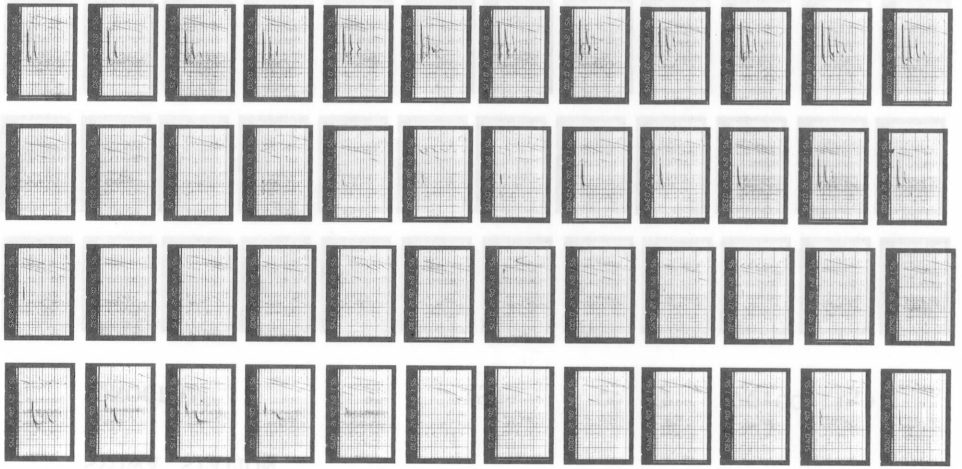

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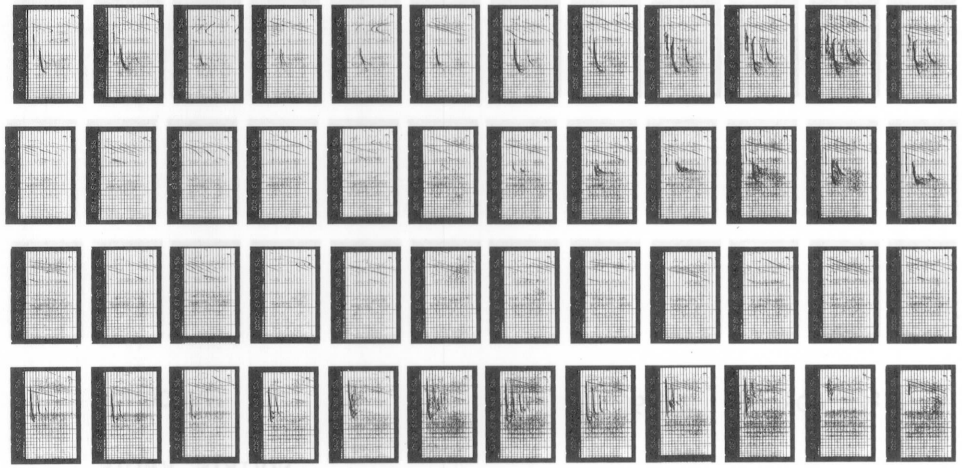

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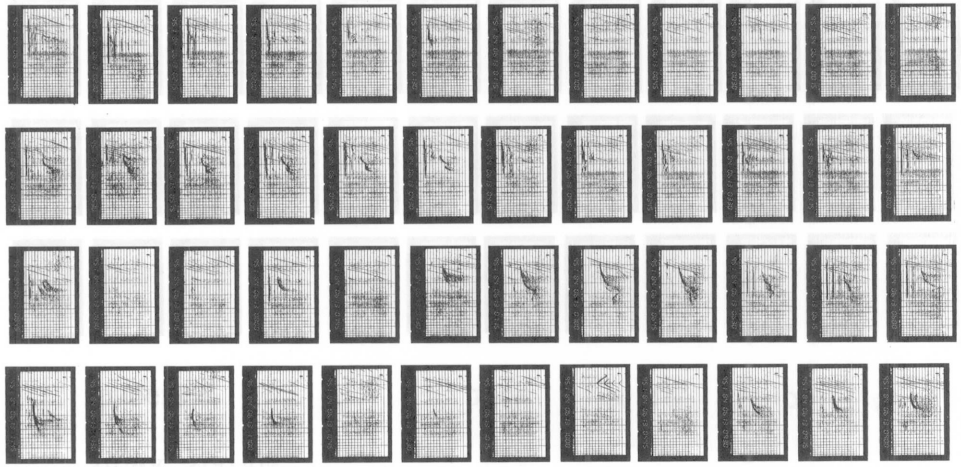
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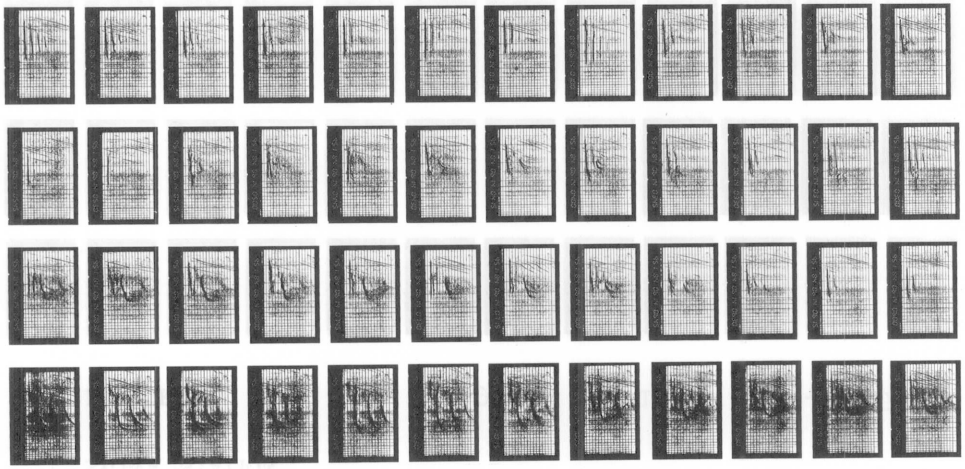

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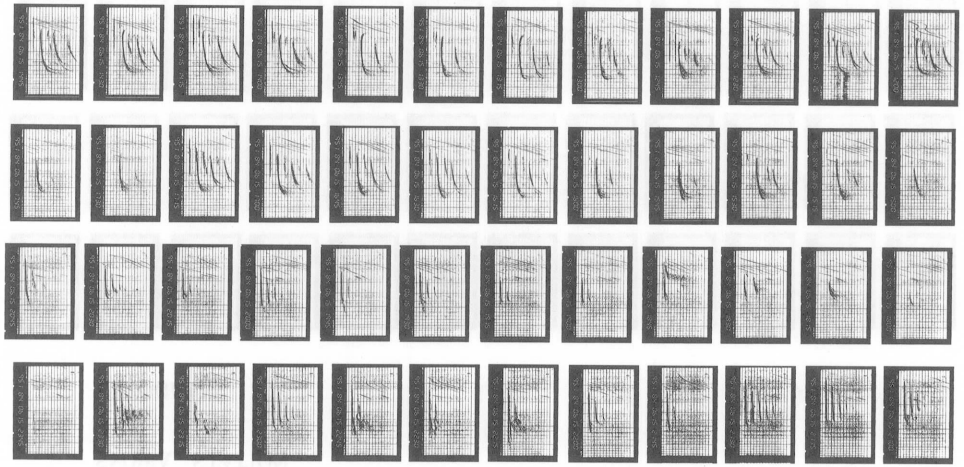

SYOWA STATION

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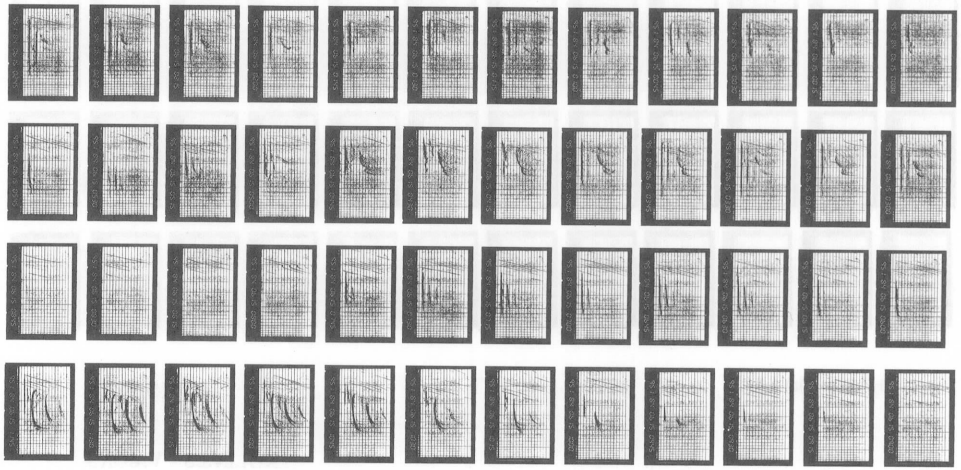
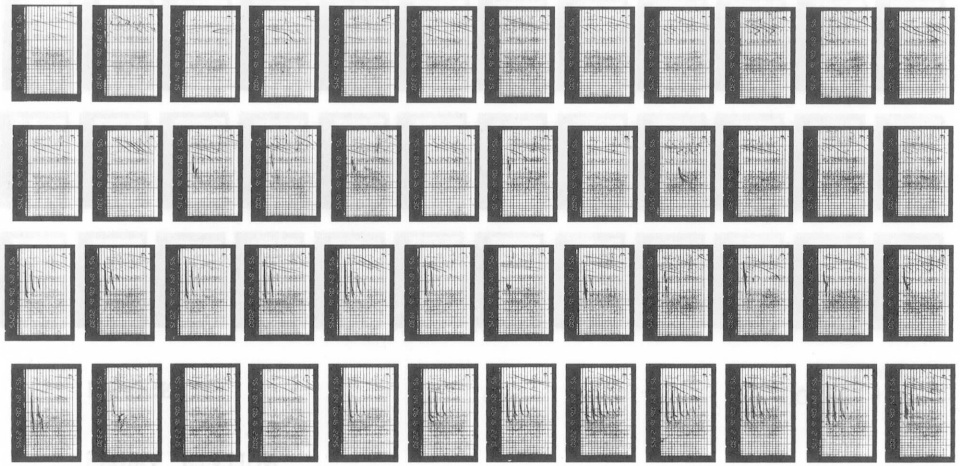


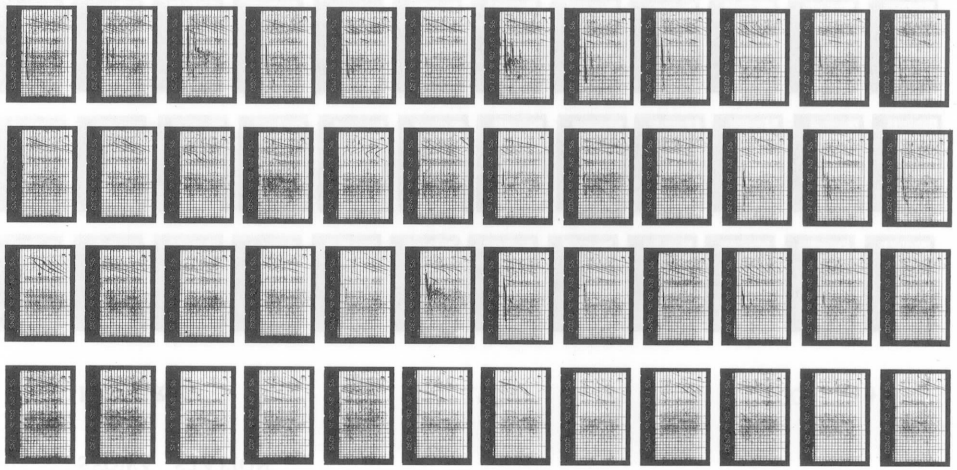
SYOWA STATION

IONOGRAM 1984 06 16 12;00-23;45



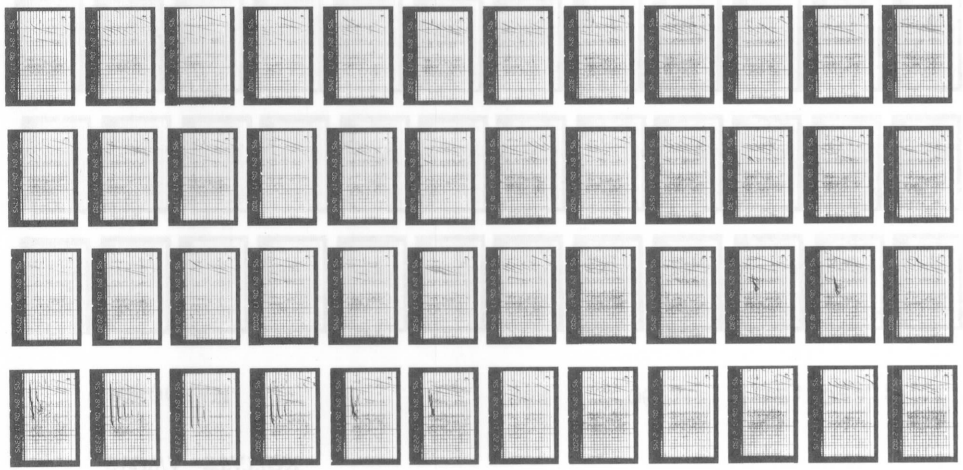
SYOWA STATION

IONOGRAM 1984 06 16 00;00-11;45



SYOWA STATION

IONOGRAM 1984 06 17 12;00-23;45



SYOWA STATION

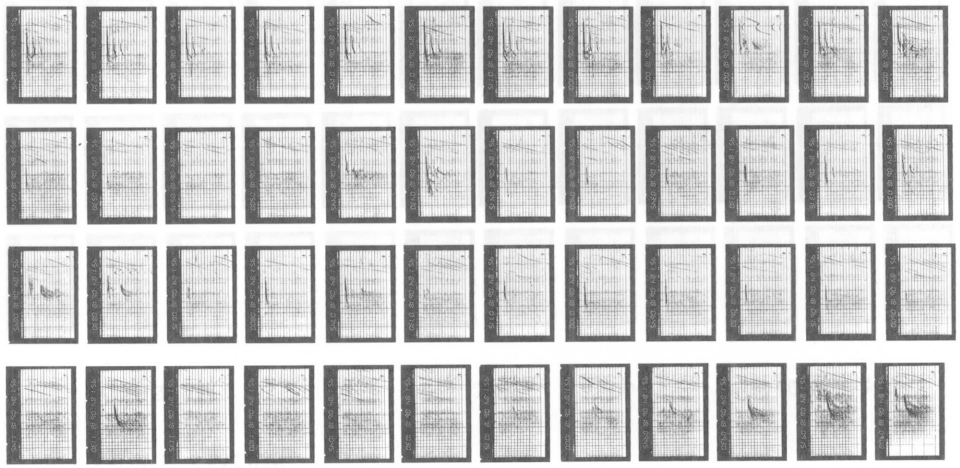
IONOGRAM 1984 06 17 00;00-11;45

SYOWA STATION

IONOGRAM 1984 06 18 12;00-23;45

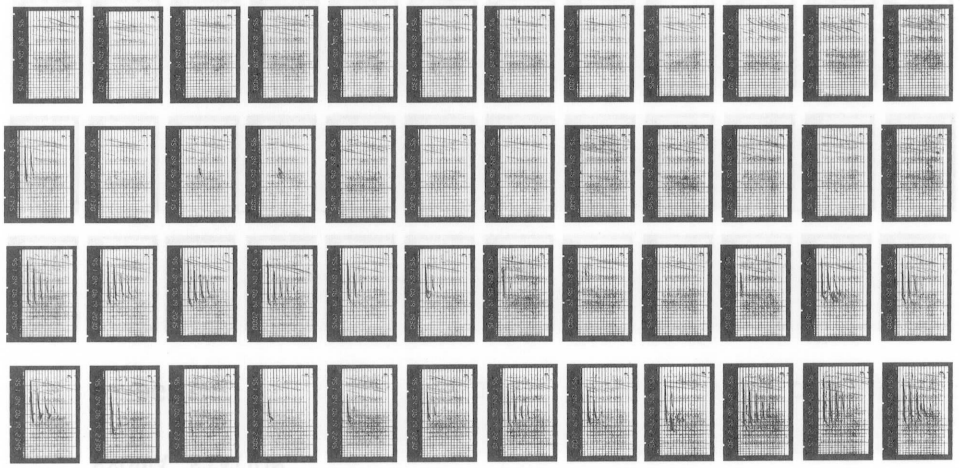
SYOWA STATION

IONOGRAM 1984 06 18 00;00-11;45



SYOWA STATION

IONOGRAM 1984 06 19 12;00-23;45



SYOWA STATION

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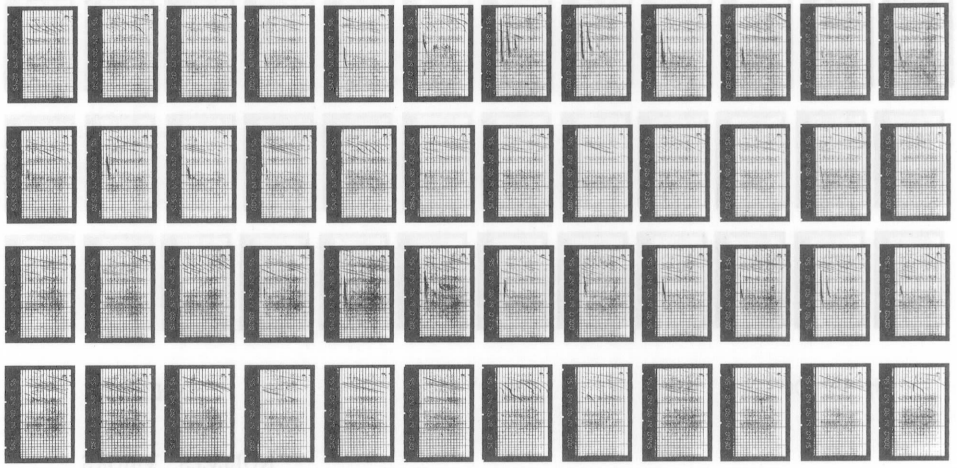
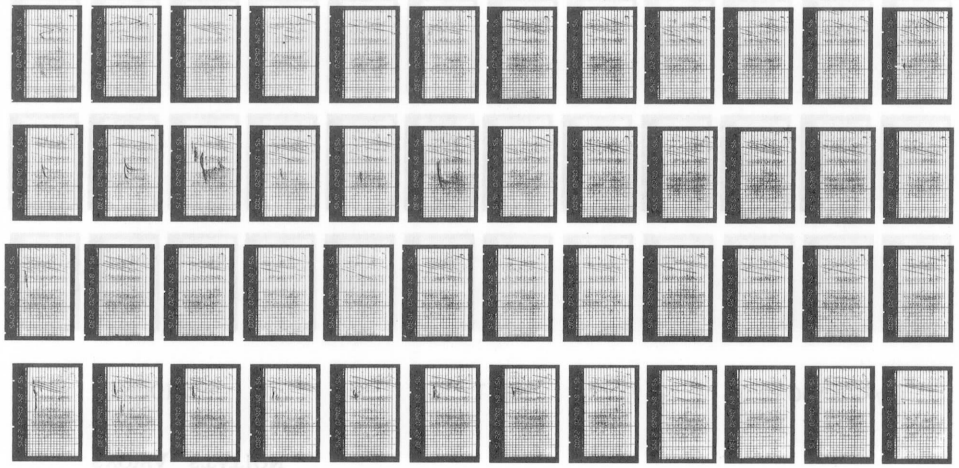


SYOWA STATION

IONOGRAM 1984 06 20 12;00-23;45



SYOWA STATION

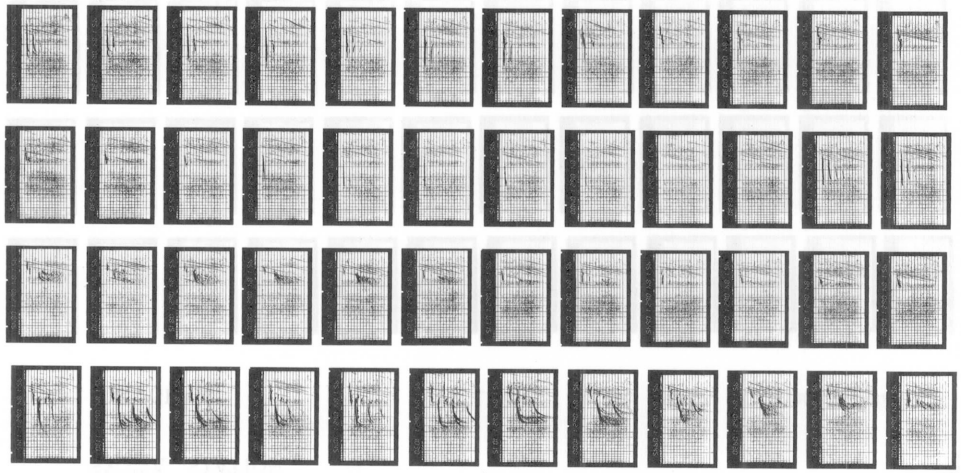
IONOGRAM 1984 06 20 00;00-11;45

SYOWA STATION

IONOGRAM 1984 06 21 12;00-23;45

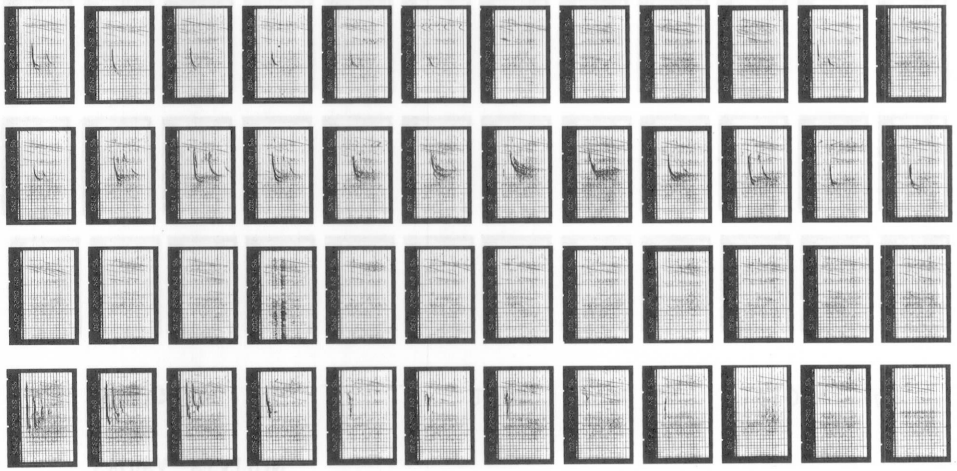
SYOWA STATION

IONOGRAM 1984 06 21 00;00-11;45



SYOWA STATION

IONOGRAM 1984 06 22 12;00-23;45

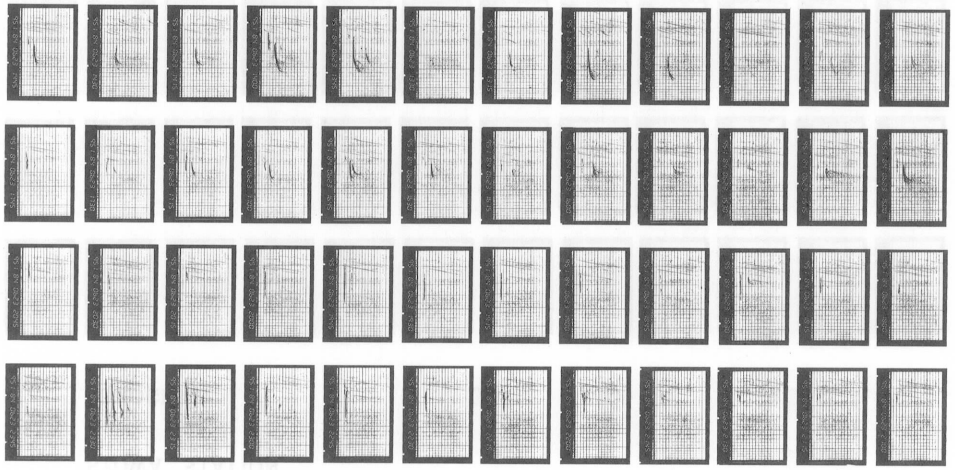


SYOWA STATION

IONOGRAM 1984 06 22 00;00-11;45

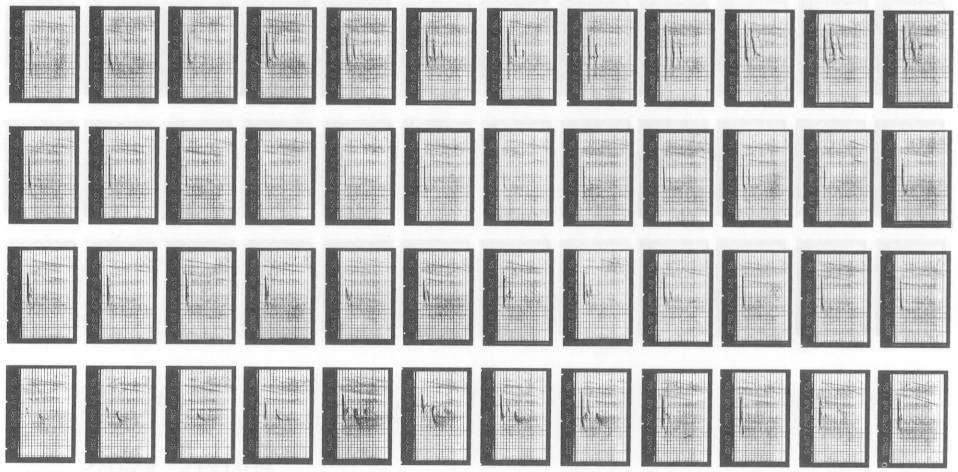
SYOWA STATION

IONOGRAM 1984 06 23 12;00-23;45



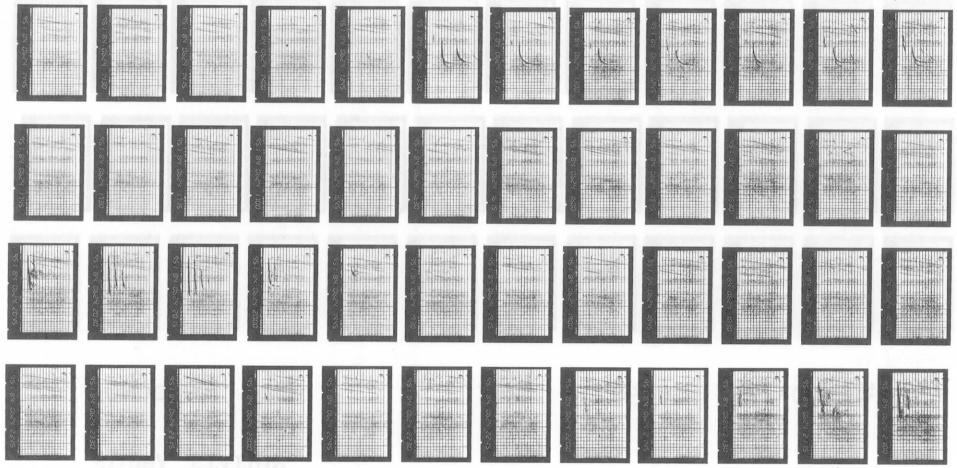
SYOWA STATION

IONOGRAM 1984 06 23 00;00-11;45



SYOWA STATION

IONOGRAM 1984 06 24 12;00-23;45



SYOWA STATION

IONOGRAM 1984 06 24 00;00-11;45

SYOWA STATION

IONOGRAM 1984 06 25 12;00-23;45

SYOWA STATION

IONOGRAM 1984 06 25 00;00-11;45

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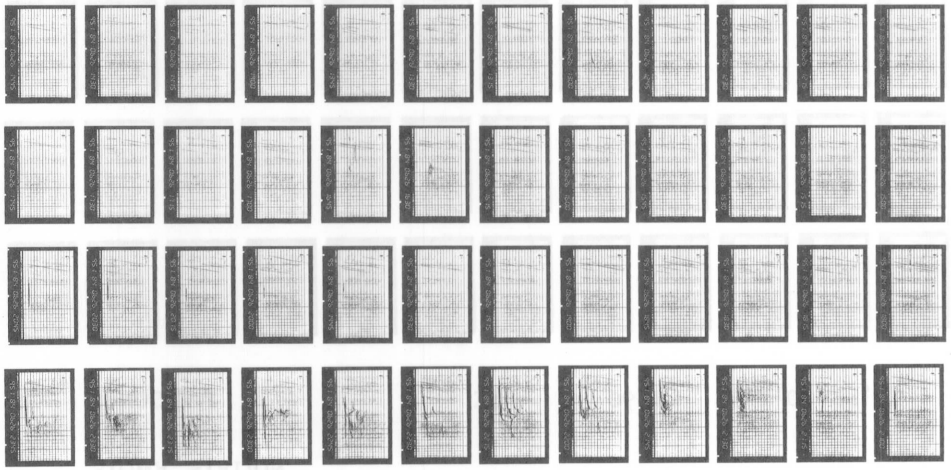

SYOWA STATION

IONOGRAM 1984 06 26 00;00-11;45

SYOWA STATION

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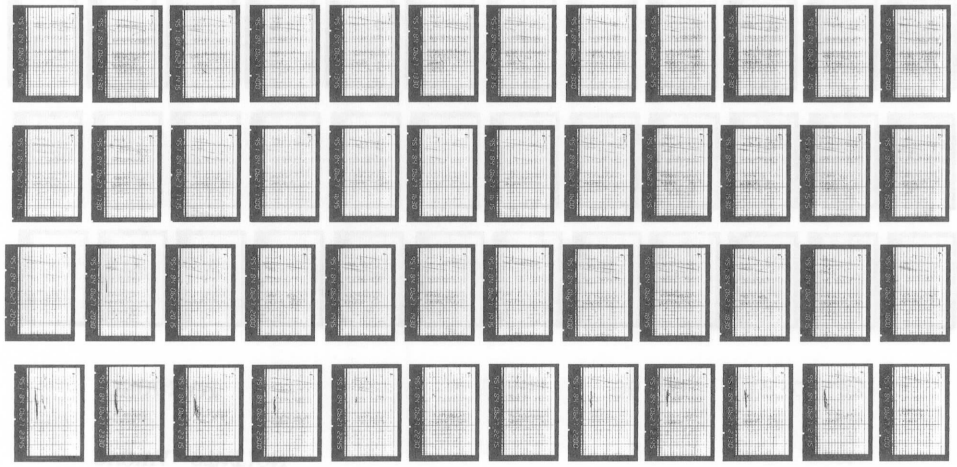
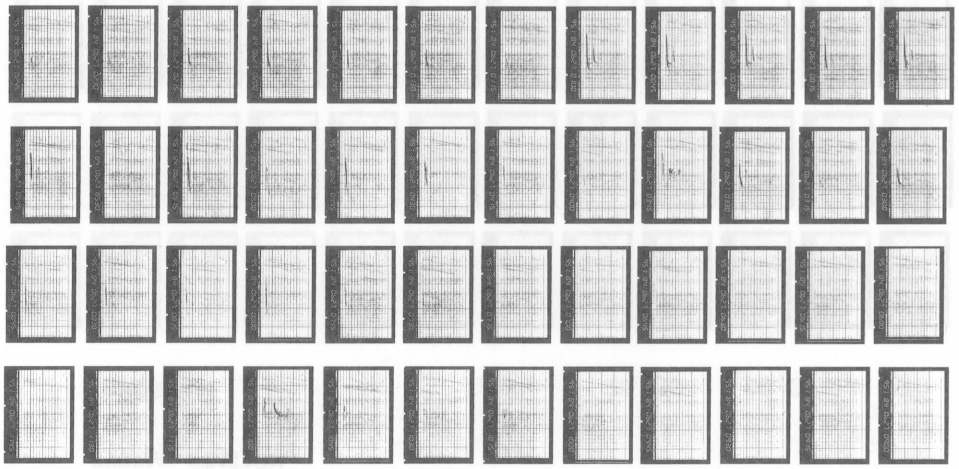


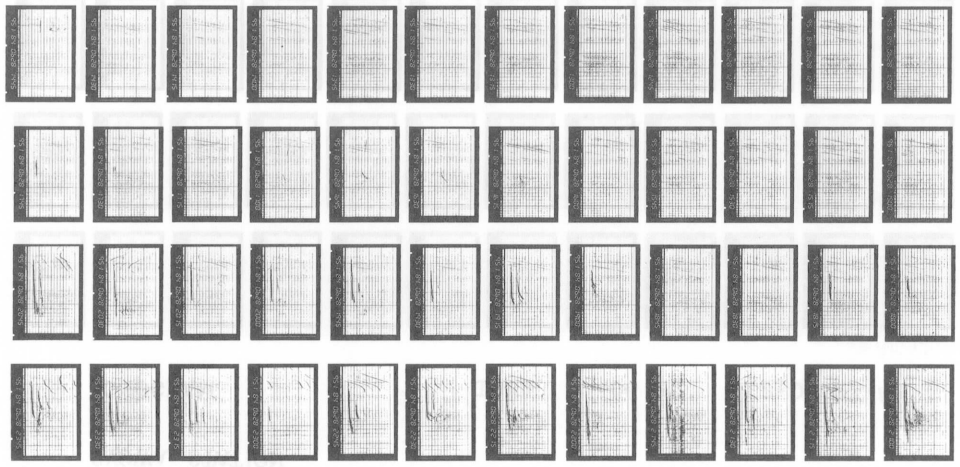
SYOWA STATION

IONOGRAM 1984 06 27 00;00-11;45



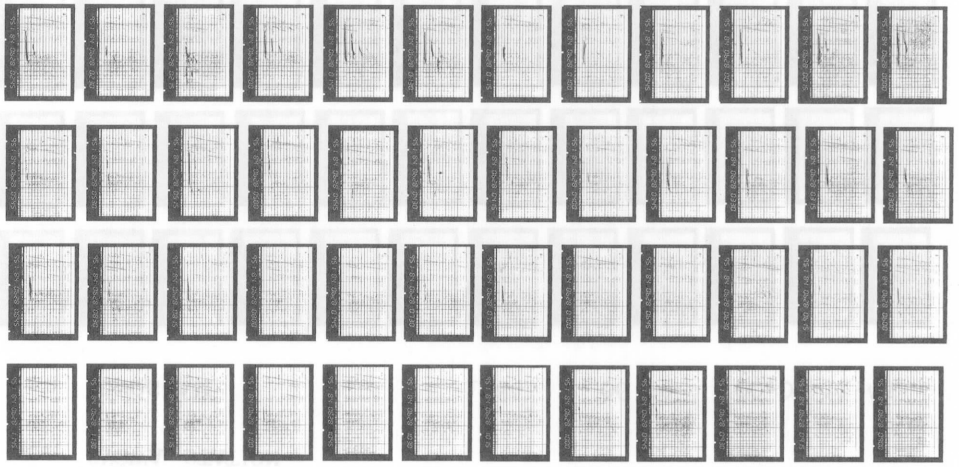
SYOWA STATION

IONOGRAM 1984 06 28 12;00-23;45



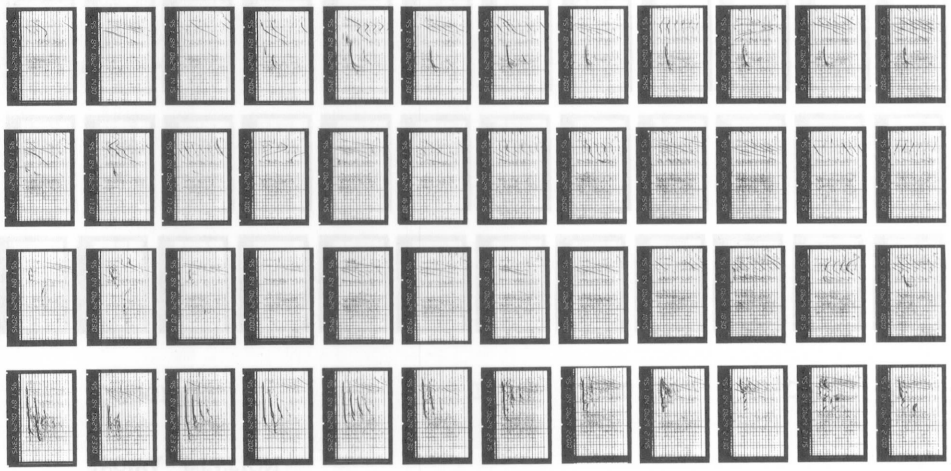
SYOWA STATION

IONOGRAM 1984 06 28 00;00-11;45



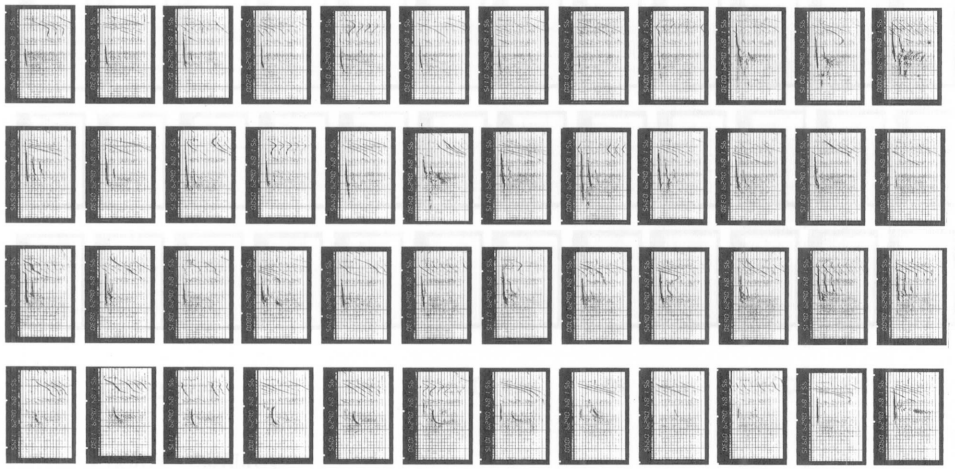
SYOWA STATION

IONOGRAM 1984 06 29 12;00-23;45



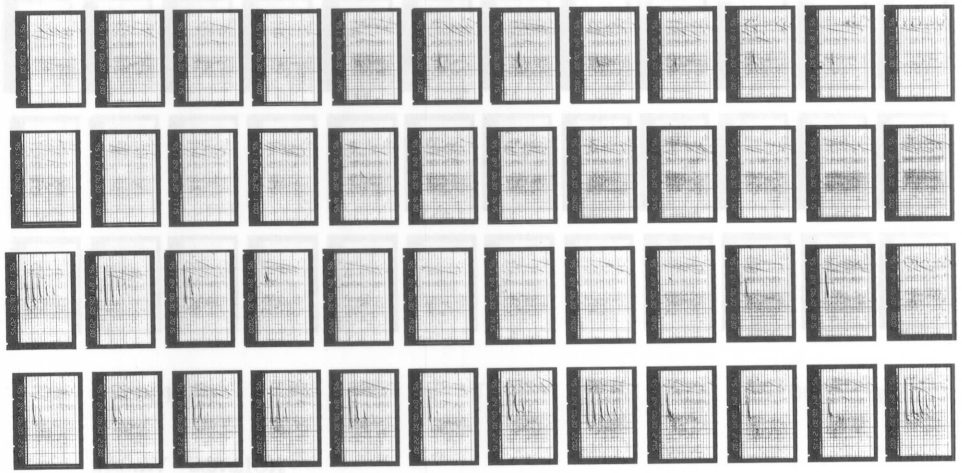
SYOWA STATION

IONOGRAM 1984 06 29 00;00-11;45



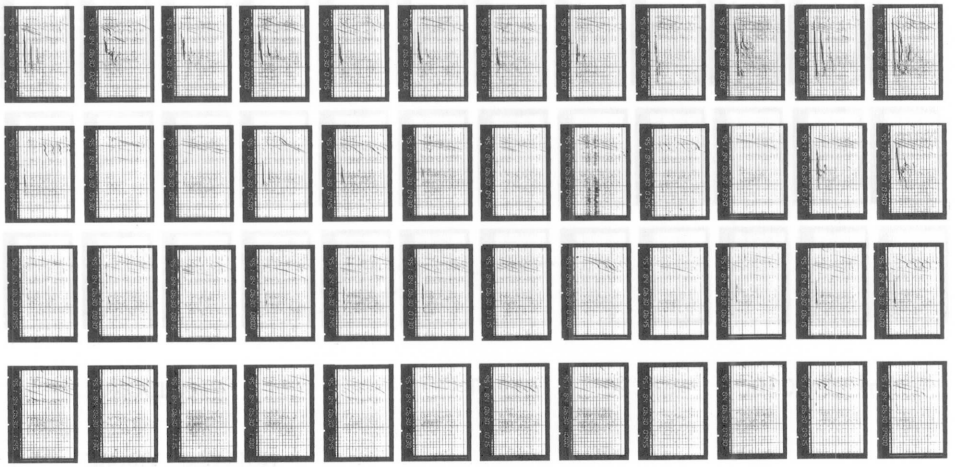
SYOWA STATION

IONOGRAM 1984 06 30 12;00-23;45



SYOWA STATION

IONOGRAM 1984 06 30 00;00-11;45



IONOSPHERIC DATA

JAN. 1984 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	B	B	45	O X 44	Y	B	B	B	B	B	B	B	B	B	69	B	O X 51	X 45	O X 44	A	A	50
2	40	37	A	45	A	45	45	Y	B	B	Y	B	B	B	O X 47	63	O X 67	Y	O X 43	O X 47	X 49	X 50	X 50	X 44
3	O X 44	51	B	B	A	Y	A	Y	65	O X 49	Y	B	B	69	70	75	72	X 67	Y	Y	46	60	45	45
4	A	A	43	51	44	O X 47	B	O X 47	A	A	B	B	Y	B	O X 54	O R 49	O X 51	O X 49	X 55	X 55	42	O X 51	S	59
5	49	X 43	A	B	A	A	B	Y	Y	B	B	B	B	B	O X 43	O X 53	Y	O X 44	S	O X 51	X 49	O X 48	O X 51	A
6	B	B	B	B	B	Y	59	59	Y	67	64	B	69	B	B	B	B	X 58	B	X 48	X 48	X 47	X 54	X 51
7	45	45	X 45	X 51	59	60	63	O X 65	A	71	71	68	X 64	X 64	X 63	X 61	X 66	X 66	X 60	X 61	O X 56	O X 52	X 54	58
8	X 51	X 48	44	56	63	70	72	80	82	X 81	X 81	X 80	X 75	X 71	X 68	X 66	X 59	X 60	X 61	X 60	X 63	X 61	O X 65	X 57
9	X 54	X 54	X 59	63	70	70	71	89	R	90	80	73	72	70	X 68	70	65	X 64	X 60	A	60	60	63	X 58
10	Y	52	44	B	70	60	B	B	90	85	88	81	79	X 69	X 65	X 64	X 66	X 67	X 71	X 66	X 60	70	A	A
11	70	45	A	46	43	A	A	A	O X 46	O X 49	O X 52	O X 49	O X 50	X 57	O X 56	Y	X 61	X 57	X 58	X 55	X 58	X 51	X 47	B
12	A	A	A	A	A	A	A	O X 46	O X 49	45	O X 47	O X 52	B	X 57	R 56	Y	O X 54	O X 51	X 56	X 56	X 50	X 46	O X 46	X 42
13	X 42	A	X 48	O X 44	O X 46	X 50	O X 52	Y	O X 52	61	62	65	X 56	X 59	Y	A	O X 55	X 60	O X 55	B	X 51	46	A	44
14	X 44	40	A	A	Y	X 49	Y	A	Y	58	67	52	Y	A	Y	A	X 61	X 58	O X 55	X 57	X 57	X 56	X 48	45
15	A	A	A	47	A	A	O X 41	45	62	66	68	O X 65	B	X 65	X 61	O X 54	X 61	X 58	X 58	O X 54	O X 54	X 53	49	45
16	X 47	A	O R 47	A	B	X 51	A	A	A	Y	X 59	X 61	X 56	X 56	E G 49	A	A	E G 47	X 55	X 53	49	Y	45	O X 46
17	39	O X 43	A	A	45	B	A	Y	A	O X 53	O X 51	O X 51	O X 46	X 59	O X 48	O X 47	O X 47	X 61	X 61	X 57	X 55	X 51	X 41	A
18	41	O X 42	47	47	X 52	50	60	61	70	X 68	X 66	O X 65	X 60	X 61	X 60	O X 48	X 60	X 58	X 60	X 59	X 65	56	O X 47	A
19	45	A	70	A	A	A	60	59	A	Y	B	B	O X 51	O X 56	X 61	X 58	X 64	O X 46	O X 42	X 48	O X 51	X 48	X 45	X 44
20	A	45	A	A	B	B	A	A	50	O X 51	56	55	X 57	B	B	70	B	X 59	X 51	X 53	X 55	X 58	X 59	X 53
21	X 52	X 52	50	A	B	A	X 58	58	B	B	45	B	B	X 64	B	B	71	Y	Y	X 56	X 59	X 63	X 52	A
22	A	A	A	58	39	B	B	Y	57	X 57	B	B	X 64	X 59	B	B	O X 54	X 57	O X 57	B	Y	45	X 42	X 51
23	A	43	A	B	A	B	A	A	60	63	O X 66	X 64	X 62	X 59	X 56	Y	X 59	X 56	X 59	X 53	X 48	X 44	44	A
24	A	A	45	41	60	B	A	A	63	65	B	O X 65	X 59	X 61	X 61	X 59	X 59	X 60	X 61	X 61	X 58	X 54	X 55	X 55
25	X 56	X 59	59	60	61	68	X 68	70	69	73	O R 76	X 68	68	64	X 65	X 56	X 61	X 65	X 64	X 61	49	60	46	A
26	54	45	A	A	Y	55	55	Y	Y	A	B	B	B	B	O X 43	B	X 59	X 64	X 60	51	A	53	A	A
27	A	A	A	41	43	46	Y	B	A	54	O X 53	R 51	O X 52	O X 48	O X 55	X 57	X 59	X 58	X 55	X 54	X 49	U R 45	53	50
28	A	B	A	47	A	A	53	61	60	Y	B	57	48	X 57	B	B	B	O X 51	Y	Y	A	A	X 46	A
29	48	50	A	59	B	A	A	44	45	Y	Y	O X 55	B	X 59	66	B	B	X 71	X 61	59	X 55	X 56	X 55	43
30	88	A	59	A	A	B	A	Y	B	B	B	B	B	B	B	O X 75	73	51	X 51	O R 40	Y	O R 40	Y	A
31	A	A	52	43	A	B	A	A	Y	62	B	B	B	B	B	X 56	B	Y	38	O X 41	A	37	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	17	14	16	14	14	13	13	15	20	18	19	18	21	21	18	24	27	26	26	26	28	24	19
MED	48	45	48	47	49	50	59	59	60	62	65	X 64	X 60	X 59	X 60	X 58	X 61	X 58	X 58	X 54	X 52	X 52	X 48	X 50
UQ	54	51	59	57	61	60	63	55	67	70	71	X 66	X 68	X 64	X 65	X 66	X 66	X 62	X 60	X 59	X 53	X 57	X 54	X 54
LQ	44	43	45	44	44	X 47	53	47	51	54	X 53	X 54	X 52	X 57	O X 54	O X 54	X 59	X 54	X 55	X 51	X 49	X 46	X 46	44

JAN. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JAN. 1984 | 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

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	B	B	F	38	Y	B	B	B	B	B	B	B	B	B	60	B	45	39	38	A	A	F
2	F	F	A	F	A	F	F	Y	B	B	Y	B	B	B	E G 41	F	61	Y	E G 37	41	43	44	44	38
3	38	F	B	B	A	Y	A	Y	F	E G 43	Y	B	B	F	F 61	F 66	F	61	Y	Y	F	F	F	F
4	A	A	F	F	F	41	B	41	A	A	B	B	Y	B	48	F 42	45	43	49	49	F	45	S	F
5	F	37	A	B	A	A	B	Y	Y	B	B	B	B	B	E G 42	47	Y	E G 38	S	45	43	42	45	A
6	B	B	B	B	B	Y	F 50	F	Y	F	F	B	F 61	B	B	B	B	52	B	42	42	41	48	45
7	F	F 34	38	45	F 51	F	F	59	A	F	F	F	58	58	57	55	60	60	54	55	50	46	48	50
8	45	42	F	F	F	F	F	F	75	75	75	73	69	65	62	60	J R 53	J R 54	J R 55	J R 54	57	55	59	51
9	48	48	52	F	F	F	F	F	R	F	F	F	F	F	62	F	F	58	54	A	F	F	F 55	52
10	Y	F	F	B	F	F	B	B	F	F	F	F 69	F 69	62	59	58	60	61	65	60	53	F	A	A
11	F	F	A	F	F	A	A	A	E G 40	43	46	43	44	51	50	Y	55	51	52	49	52	45	41	B
12	A	A	A	A	A	A	A	E G 40	43	F	E G 41	46	B	51	R 50	Y	48	45	50	50	44	40	40	35
13	36	A	42	38	40	44	46	Y	46	F	F	F 55	50	J R 53	Y	A	49	54	49	B	44	F	A	F 36
14	38	F	A	A	Y	43	Y	A	Y	F	F 52	F	Y	A	Y	A	J R 55	52	49	51	51	50	42	F
15	A	A	A	F	A	A	35	F	F	F	F 59	59	B	59	55	48	55	52	J R 52	48	48	47	F 40	F 37
16	41	A	F 38	A	B	45	A	A	A	Y	53	55	50	50	E G 43	A	A	E G 41	49	47	F 41	Y	F 38	40
17	F 32	37	A	A	F	B	A	Y	A	47	45	45	E G 40	J R 53	E G 42	E G 41	E G 41	J R 55	55	51	49	46	36	A
18	F	36	F 40	F 40	46	F	F	F 53	F 60	62	60	59	J R 54	J R 55	J R 54	E G 42	J R 54	J R 52	J R 54	53	59	F 49	41	A
19	F	A	F	A	A	A	F	F	A	Y	B	B	46	50	55	52	58	E G 40	E G 37	42	44	42	39	38
20	A	F	A	A	B	B	A	A	F	45	F 48	F	51	B	B	F	B	53	45	47	49	52	53	47
21	45	45	F	A	B	A	52	F	B	B	F	B	B	58	B	B	F	Y	Y	50	53	57	45	A
22	A	A	A	F	F	B	B	Y	F	51	B	B	58	53	B	B	48	51	51	B	Y	F	35	45
23	A	F	A	B	A	B	A	A	F	F 55	60	58	56	53	50	Y	J R 53	50	53	47	42	38	F 36	A
24	A	A	F	F	F	B	A	A	F 51	F 56	B	59	53	55	55	J R 53	53	54	55	55	52	48	49	49
25	50	J R 53	J F 53	J F 54	F	F	60	F	F	F	F 68	62	F	F	59	50	55	59	58	55	F	F	F	A
26	F	F	A	A	Y	F 40	F	Y	Y	A	B	B	B	B	E G 42	B	53	58	54	F	A	F	A	A
27	A	A	A	F	F	F	Y	B	A	47	47	R 45	46	E G 42	49	51	J R 53	52	49	48	43	U R 39	F	F
28	A	B	A	F	A	A	F	F	F	Y	B	F	F	51	B	B	B	46	Y	Y	A	A	40	A
29	F	F	A	F	B	A	A	F	F	Y	Y	49	B	52	F	B	B	65	55	51	49	50	49	F
30	F	A	F	A	A	B	A	Y	B	B	B	B	B	B	B	69	F	F	45	F 32	Y	34	Y	A
31	A	A	F	F	A	B	A	A	Y	F	B	B	B	B	B	50	B	Y	F	35	A	F	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	8	6	4	3	6	5	4	6	10	12	14	15	18	20	15	20	26	25	25	22	20	21	13
MED	41	40	41	42	46	42	50	47	48	49	52	56	53	53	52	51	54	52	52	49	48	46	42	45
UQ	45	46	52	50	48	44	52	56	F 60	56	60	59	58	58	58	56	56	53	54	51	52	50	48	49
LQ	38	36	F 38	39	43	40	46	40	43	45	46	46	48	51	46	48	51	50	49	45	43	42	40	38

JAN. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JAN. 1984 | 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	41	42	B	B	30	100	38	B	B	B	B	B	B	B	B	B	40	B	32	25	32	37	44	90
2	33	41	70	23	71	45	45	31	B	B	32	B	B	B	E B 33	E B 31	E G 32	32	K 27	28	35	30	35	35
3	34	33	B	B	41	35	45	40	E G 31	36	32	B	B	E B 35	E B 57	27	31	E G 30	27	24	32	70	47	42
4	59	48	42	33	41	31	B	33	45	49	B	B	35	B	32	E B 31	32	31	36	37	31	43	70	60
5	45	52	49	B	41	41	B	38	35	B	B	B	B	B	32	28	30	E B 27	33	33	41	31	33	42
6	B	B	B	B	B	32	32	31	36	31	33	B	E B 55	B	B	B	B	K 27	B	25	25	23	28	20
7	27	21	25	35	32	27	42	42	45	31	E G 30	31	43	31	40	57	30	70	25	37	26	37	42	32
8	25	35	35	37	31	35	31	31	31	36	35	35	32	30	27	31	E G 30	35	25	25	23	29	19	18
9	18	25	31	28	30	26	30	31	E B 60	34	31	32	31	32	34	60	36	62	47	91	69	59	29	17
10	33	52	43	B	36	36	B	B	34	33	31	29	E G 32	E G 31	31	48	41	E G 28	31	59	42	52	52	50
11	52	70	47	39	50	50	47	43	43	41	88	33	33	35	34	34	31	E G 28	E G 28	42	36	30	31	B
12	36	41	70	44	45	45	35	37	36	34	34	E G 33	B	35	35	34	42	E G 29	33	32	27	E G 19	E B 23	26
13	28	32	34	33	34	32	32	34	34	36	31	44	32	70	40	49	60	41	32	B	36	35	45	35
14	42	70	46	42	37	36	35	45	36	38	31	33	41	63	48	60	36	70	33	28	54	26	20	26
15	38	32	41	31	42	45	32	39	33	28	35	E B 56	B	E B 33	34	31	25	E G 29	E G 26	25	K 24	K 21	25	28
16	35	44	42	43	B	33	46	62	70	34	E G 34	36	37	32	34	67	70	31	E G 25	E G 21	37	35	41	36
17	36	43	60	41	63	B	55	32	51	41	35	35	32	30	31	E G 31	E G 29	30	41	35	43	30	33	40
18	42	36	45	36	36	37	25	34	29	32	32	41	42	34	30	E G 30	30	29	30	42	49	K 21	44	45
19	41	47	45	45	42	42	47	36	59	34	B	B	31	26	E G 32	28	E B 20	E B 30	36	33	38	70	36	28
20	45	56	42	41	B	B	41	45	34	36	29	E G 30	E G 31	B	B	E B 55	B	E B 31	31	41	63	35	17	45
21	20	31	32	42	B	44	43	42	B	B	E G 33	B	B	E B 40	B	B	E B 56	E B 33	45	37	42	60	32	45
22	48	41	57	42	34	B	B	35	35	E G 31	B	B	E G 32	E G 32	B	B	E G 29	E G 29	E B 30	B	E B 30	27	41	51
23	48	43	80	B	42	B	42	45	41	31	E B 57	26	33	37	33	31	42	32	30	33	25	30	29	42
24	42	35	45	46	93	B	40	40	E G 23	E G 31	B	26	31	30	E G 31	E G 31	E G 30	E G 27	28	E G 23	E G 22	G 16	19	31
25	22	28	25	31	32	34	26	E G 26	G 23	32	E B 50	32	E B 56	E B 53	E G 32	32	33	E G 27	31	33	42	48	45	47
26	70	36	70	45	35	33	81	40	36	61	B	B	B	B	34	B	E G 30	30	E G 30	28	70	42	44	42
27	45	48	46	35	31	32	26	B	55	35	27	E G 32	34	E G 32	E G 32	E G 31	33	37	E G 28	E G 24	41	34	41	40
28	70	B	41	37	49	49	32	33	35	32	B	33	E G 32	29	B	B	B	36	26	35	45	45	43	50
29	50	42	71	80	B	43	49	45	41	35	39	31	B	26	E B 51	B	B	E B 30	42	42	42	30	30	40
30	41	42	29	51	59	B	51	39	B	B	B	B	B	B	B	E B 50	35	33	E B 30	25	31	35	35	42
31	65	37	35	31	50	B	42	45	36	33	B	B	B	B	B	31	B	25	30	E B 28	41	31	41	41
	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	29	28	25	26	24	27	28	27	26	21	19	20	22	23	24	26	30	30	29	31	31	31	30
MED	41	41	44	39	41	36	41	38	36	34	32	32	32	31	32	31	32	29	30	33	37	34	35	40
UQ	48	47	53	43	49	44	46	42	43	36	34	34	36	34	34	46	38	33	33	37	42	42	44	45
LQ	33	35	35	33	34	32	32	33	34	32	31	30	32	30	30	31	E E 30	E G 29	26	25	30	30	29	31

JAN. 1984 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JAN. 1984 | 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	18	8	B	B	7	14	15	B	B	B	B	B	B	B	B	B	14	B	25	15	9	20	9	9
2	14	7	18	7	10	8	18	24	B	B	23	B	B	B	33	31	25	13	24	24	11	9	9	8
3	8	14	B	B	21	28	30	21	15	13	20	B	B	35	57	15	30	23	15	9	11	11	8	7
4	14	17	7	9	8	10	B	13	20	16	B	B	13	B	25	31	13	15	13	15	7	5	9	8
5	9	7	11	B	12	13	B	11	12	B	B	B	B	B	13	11	15	27	14	12	9	8	8	13
6	B	B	B	B	B	24	12	24	19	23	13	B	55	B	B	B	B	15	B	10	21	16	9	10
7	7	9	11	10	8	9	20	19	13	13	13	12	13	13	13	13	13	13	10	13	24	13	11	8
8	8	7	13	11	10	9	7	7	7	8	9	10	10	13	10	10	10	13	13	15	10	8	10	8
9	8	8	8	7	8	8	9	7	60	20	23	14	13	13	12	15	23	19	15	15	18	11	8	12
10	23	20	11	B	8	9	B	B	12	8	9	10	11	13	13	9	9	9	7	13	9	13	7	13
11	13	7	8	8	9	16	13	9	10	9	18	13	13	9	12	8	13	13	14	8	13	8	7	B
12	15	9	13	15	15	9	11	15	11	10	13	13	B	13	13	23	13	13	11	11	8	9	23	8
13	8	11	9	10	10	9	13	21	21	10	9	9	13	12	13	9	9	9	8	B	13	8	13	7
14	7	9	14	20	13	9	13	10	17	8	11	13	11	13	17	14	16	24	18	9	13	8	9	10
15	7	20	21	9	17	15	14	13	10	9	10	56	B	33	23	16	18	13	15	12	16	13	11	13
16	8	13	13	20	B	9	13	17	13	21	15	11	11	13	13	9	13	11	8	11	11	22	8	8
17	7	13	12	19	8	B	13	18	15	8	9	9	11	10	13	13	11	9	9	12	9	8	7	8
18	7	13	8	7	12	10	9	8	9	9	10	10	8	11	8	15	13	13	15	16	11	8	13	13
19	9	12	9	11	12	9	11	13	12	22	B	B	11	22	22	11	20	30	13	9	13	8	7	8
20	15	11	13	21	B	B	16	20	16	14	9	11	13	B	B	55	B	31	21	14	10	13	13	9
21	7	7	7	23	B	23	15	22	B	B	14	B	B	40	B	B	56	33	25	25	9	14	14	8
22	8	18	14	8	16	B	B	23	14	8	B	B	17	8	B	B	13	11	30	B	30	19	8	10
23	8	7	20	B	16	B	21	15	11	15	57	20	16	15	13	11	11	11	9	10	11	13	8	11
24	10	16	8	21	13	B	11	15	9	10	B	25	13	10	13	13	8	10	9	11	8	8	10	7
25	7	7	7	7	8	8	9	9	15	20	50	19	56	53	13	18	21	13	16	21	11	9	10	16
26	8	8	9	23	16	11	19	22	8	14	B	B	B	B	14	B	23	9	14	10	15	11	10	10
27	13	10	10	8	8	8	19	B	14	13	17	10	12	12	13	12	10	13	11	13	7	13	9	8
28	15	B	19	8	22	10	13	13	14	13	B	15	13	10	B	B	B	31	11	13	11	9	9	11
29	7	7	18	13	B	18	11	14	10	21	20	21	B	23	51	B	B	30	30	13	14	13	15	7
30	8	13	9	7	14	B	16	13	B	B	B	B	B	B	B	50	30	30	30	10	8	10	20	14
31	21	11	13	23	8	B	21	21	22	19	B	B	B	B	B	15	B	21	13	28	13	15	15	14
	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	8	11	12	13	12	11	14	15	14	14	20	20	13	15	17	15	15	13	14	13	11	11	9	9
UQ	14	14	16	23	16	26	20	22	20	21	B	B	B	B	D B 57	52	28	26	20	15	13	13	12	12
LQ	8	8	9	8	8	9	12	13	11	10	12	12	12	12	13	12	13	12	11	10	9	8	8	8

JAN. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JAN. 1984 | 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	B	B	A	A	A	B	B	B	B	B	B	B	B	B	A	B	205	220	A	A	A	A
2	A	A	A	275	A	A	240	Y	B	B	Y	B	B	B	210	210	240	Y	205	220	250	230	A	A
3	A	A	B	B	A	A	A	A	200	220	A	B	B	B	B	Y 230	225	220	Y	Y	Y	A	A	A
4	A	A	A	A	A	250	B	A	A	A	B	B	A	B	200	200	240	225	E A 220	250	270	A 220	A	A
5	A	A	A	B	A	A	B	A	240	B	B	B	B	B	205	H 190	Y	240	255	250	250	240	270	A
6	B	B	B	B	B	Y	225	240	A	Y 250	210	B	B	B	B	B	B	H 220	B	240	240	230	255	250
7	290	275	310	E A 270	E A 290	A	A	A	A	205	200	190	190	200	E A 235	A	210	E A 255	210	230	215	250	240	235
8	245	A	A	A	E A 280	A 250	200	190	190	200	190	205	205	200	Y 200	205	200	220	210	H 210	H 220	210	245	240
9	240	240	260	240	255	230	H 200	200	B	200	A	190	200	200	A	A	A	A	A	A	A	220	230	240
10	A	A	A	B	A	A	B	B	220	200	195	185	180	200	210	A	225	205	210	A	250	A	A	A
11	A	A	A	A	A	A	A	A	E A 300	E A 280	290	210	220	230	230	205	H 205	H 200	220	240	245	280	290	B
12	A	A	A	A	A	A	A	A	A	220	A	240	B	225	H 225	220	245	220	250	240	245	230	290	270
13	300	A	A	A	A	230	290	A	215	220	200	210	205	210	210	A	210	200	270	B	280	280	A	A
14	A	A	A	A	A	A	A	A	A	220	190	205	250	A	A	A	225	A	220	240	A	200	H 220	A
15	A	A	A	A	A	A	A	A	210	200	200	B	B	200	230	200	225	205	220	240	240	235	240	275
16	A	A	A	A	B	A	A	A	A	A	250	200	200	200	230	A	A	220	220	225	A	A	A	A
17	A	A	A	A	A	B	A	A	A	210	190	220	200	H 205	205	205	200	230	230	230	E A 250	240	A	A
18	A	A	A	A	A	A	245	210	H 205	220	210	230	200	205	215	200	205	215	245	A	A	240	A	A
19	A	A	A	A	A	A	A	200	A	A	B	B	210	Y 210	240	Y 205	240	245	A	235	250	260	230	250
20	A	A	A	A	B	B	A	A	250	220	H 190	205	200	B	B	B	B	240	240	A	260	240	250	255
21	270	260	290	A	B	A	A	A	B	B	200	B	B	250	B	B	B	250	A	240	260	250	270	A
22	A	A	A	260	A	B	B	A	275	245	B	B	210	200	B	B	205	210	250	B	250	265	A	A
23	A	A	A	B	A	B	A	A	A	200	B	Y	A	220	205	210	200	220	250	250	A	300	260	A
24	A	A	A	A	A	B	A	A	210	215	B	Y 230	240	Y 200	H 200	200	210	240	230	230	215	240	250	240
25	255	270	275	290	290	290	225	210	225	Y	B	240	B	B	220	220	230	H 200	H 240	220	340	A	A	A
26	A	A	A	A	A	A	A	A	A	A	B	B	B	B	215	B	220	240	240	270	A	A	A	A
27	A	A	A	A	A	260	Y	B	A	250	Y 200	200	200	210	H 205	225	225	240	225	205	A	A	A	A
28	A	B	A	A	A	A	260	230	200	A	B	210	200	Y 200	B	B	B	250	Y	A	A	A	A	A
29	A	A	A	A	B	A	A	A	A	A	A	240	B	Y 250	B	B	B	250	E A 260	E A 270	E A 270	260	260	A
30	A	A	260	A	A	B	A	A	B	B	B	B	B	B	B	B	240	280	E B 245	A	A	A	A	A
31	A	A	A	A	A	B	A	A	A	220	B	B	B	B	B	230	B	Y 270	A	B	A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	6	4	5	5	4	6	8	7	13	19	14	17	16	19	19	16	21	27	24	21	19	21	15	9
MED	262	265	275	270	U 270	250	232	210	212	220	200	210	200	205	210	205	225	222	226	238	250	240	250	250
UQ	290	272	290	275	290	260	252	220	232	220	210	230	210	215	225	220	230	241	245	240	258	260	265	255
LQ	245	250	260	250	262	230	212	200	205	202	190	200	200	200	205	200	205	213	220	225	241	230	240	240

JAN. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

FEB. 1984 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

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

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	Y	42	B	A	B	B	B	46	B	B	B	68	65	B	O X 70	O R 71	X 65	X 64	X 58	A	X 52	O R 46	31	34
2	X 41	46	45	B	B	58	60	71	75	X 76	X 80	O X 73	X 68	X 67	X 64	X 64	X 66	O X 66	X 59	X 58	50	A	B	A
3	64	B	A	45	A	A	A	Y	O X 50	O X 47	O X 51	O X 56	X 56	55	O X 57	X 63	Y	X 57	X 64	O X 64	50	X 45	69	A
4	A	A	O R 42	A	B	A	Y	B	B	Y	Y	Y	B	B	B	B	B	61	51	Y	Y	70	57	A
5	A	A	B	A	A	Y	Y	50	A	Y	O X 49	O X 47	B	B	B	B	50	B	O X 54	X 51	X 49	X 47	41	33
6	A	A	A	47	Y	B	A	Y	O X 49	56	X 61	X 58	O X 47	X 57	O X 48	O X 48	59	X 59	62	X 62	X 57	51	59	51
7	O X 36	A	A	A	A	A	A	42	O X 43	A	A	O X 51	O X 47	B	B	X 60	X 58	B	B	O X 50	X 54	X 51	37	O X 34
8	35	Y	B	A	A	42	Y	61	58	X 57	X 57	B	Y	B	O X 56	O X 54	59	X 58	X 58	X 58	X 52	X 54	52	A
9	A	A	A	A	A	51	63	60	E G 46	O X 56	O X 56	O R 54	Y	O X 47	X 56	B	X 60	X 60	X 55	X 52	X 52	45	39	34
10	A	A	A	A	43	45	A	A	63	66	X 70	X 63	X 61	O X 61	X 60	B	64	X 58	Y	A	A	60	A	A
11	A	39	A	41	38	55	A	A	A	A	A	Y	Y	B	O X 46	X 58	59	X 52	X 46	X 48	48	38	32	A
12	A	A	A	45	45	46	52	A	59	62	63	B	B	A	X 61	Y	X 58	X 59	X 58	O X 54	55	X 51	48	48
13	A	60	A	A	A	A	51	45	A	Y	B	Y	B	B	B	B	48	E G 45	41	A	60	B	A	37
14	A	A	A	A	A	A	B	E G 46	A	A	B	B	B	O X 47	O X 46	B	O X 54	53	X 48	A	R	X 43	A	A
15	70	A	80	A	B	A	53	60	A	A	B	60	50	X 56	63	X 61	O R 63	O X 51	X 52	X 55	54	X 52	49	45
16	33	35	A	44	A	A	A	A	63	66	X 68	X 71	68	B	B	B	B	B	B	B	B	O X 50	B	29
17	42	40	A	41	Y	A	50	62	Y	B	B	63	63	63	64	O X 68	71	65	R	X 59	X 56	X 56	X 53	45
18	31	32	34	A	A	50	B	B	A	Y	B	B	64	B	B	B	61	59	O R 50	47	A	A	A	A
19	A	A	Y	45	42	45	A	50	64	72	X 75	X 73	X 74	X 68	X 65	X 60	61	61	61	X 55	U R 55	B	A	A
20	A	45	45	61	Y	57	61	70	80	81	82	X 85	X 83	X 78	X 74	X 66	X 66	X 62	X 62	Y	X 58	X 59	43	A
21	A	61	Y	Y	B	B	B	B	B	B	B	B	B	B	B	B	O X 49	B	B	B	B	B	B	A
22	45	Y	A	Y	B	B	B	B	B	B	B	B	B	B	B	O X 48	B	B	B	45	B	B	B	Y
23	A	A	35	40	O R 39	B	B	Y	B	B	B	B	B	O X 50	56	58	X 59	B	60	55	55	44	X 34	A
24	A	48	43	60	A	45	48	61	69	X 67	X 65	X 65	X 65	X 69	X 70	X 69	72	X 68	X 63	X 55	59	33	A	A
25	A	43	60	Y	50	45	60	73	72	X 76	X 76	X 85	X 85	X 86	B	B	80	70	B	B	67	70	71	72
26	69	A	40	58	A	A	60	65	72	71	73	83	80	X 76	X 74	X 78	80	78	63	X 50	A	60	A	A
27	43	O R 40	A	48	80	64	B	A	A	Y	B	B	B	63	62	70	70	B	57	55	X 51	35	A	43
28	A	Y	49	55	42	B	61	58	Y	63	69	70	B	B	O X 72	70	X 68	X 65	X 59	X 59	X 47	38	32	30
29	A	A	43	34	45	59	O X 51	X 60	O X 66	68	70	83	83	89	89	81	X 32	83	70	44	A	43	36	34
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	11	12	11	14	9	13	12	17	15	15	16	18	16	16	20	18	25	22	22	20	20	23	17	14
MED	42	42	43	45	43	50	56	60	63	66	X 68	X 66	X 65	X 63	X 62	X 64	61	X 60	X 58	X 55	54	50	43	36
UQ	54	47	47	55	45	57	60	62	70	72	74	X 73	77	X 72	X 70	X 70	68	65	X 62	X 58	56	X 55	53	45
LQ	36	40	41	41	42	45	51	50	54	60	X 59	X 58	X 58	X 56	X 56	X 58	59	X 58	X 52	X 50	X 50	44	36	34

FEB. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

FEB. 1984 | FOF2 (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	F	B	A	B	B	B	F	B	B	B	F	F	B	64	F 63	59	58	52	A	46	F 38	F	F
2	35	F	F 35	B	B	F	F	F 60	69	70	73	67	62	61	58	58	60	60	53	51	F	A	B	A
3	F	B	A	F	A	A	A	Y	44	E G 41	45	50	50	F	51	57	Y	J R 51	48	48	42	39	F	A
4	A	A	F 35	A	B	A	Y	B	B	Y	Y	Y	B	B	B	B	B	F	F	Y	Y	F	F	A
5	A	A	B	A	A	Y	Y	F	A	Y	43	E G 41	B	B	B	B	F	B	48	45	43	41	F 31	F 26
6	A	A	A	F	Y	B	A	Y	43	F 46	54	52	E G 41	51	E G 42	E G 42	51	53	F 53	56	50	F	F	F
7	30	A	A	A	A	A	A	F	37	A	A	45	E G 41	B	B	J R 54	52	B	B	44	48	45	F 30	28
8	F	Y	B	A	A	F	Y	55	50	51	51	B	Y	B	50	48	F	52	52	52	46	48	F 45	A
9	A	A	A	A	A	F	F	F	E G 40	50	50	U R 48	Y	E G 41	J R 50	B	53	54	49	46	46	F 36	F	F
10	A	A	A	A	F	F	A	A	F 55	F 53	63	57	54	55	54	B	F	52	Y	A	A	F	A	A
11	A	F	A	F	F	F	A	A	A	A	A	Y	Y	B	E G 40	52	F	46	40	42	F 40	F	F	A
12	A	A	A	F	F	F	F	A	F	F	F	B	B	A	55	Y	52	53	52	48	F 46	45	40	F
13	A	A	A	A	A	A	F	F	A	Y	B	Y	B	B	B	B	F	E G 39	F	A	F	B	A	F
14	A	A	A	A	A	A	B	E G 37	A	A	B	B	B	E G 41	E G 40	B	48	F 44	42	A	I R 34	37	A	A
15	F	A	F	A	B	A	F	F	A	A	B	F 51	F	50	F 53	55	F 55	45	46	49	F 46	45	F 40	F
16	F	F	A	F 35	A	A	A	A	F	F 55	62	64	F 60	B	B	B	B	B	B	B	B	44	B	F
17	F	F	A	F	Y	A	F	F	Y	B	B	F	F	F	F 57	62	F	F	D R 44	53	50	50	47	F
18	F	F	F	A	A	F	B	B	A	Y	B	B	F	B	B	B	F	F	F 42	F	A	A	A	A
19	A	A	Y	F	F	F	A	F	F 56	F 62	69	67	68	62	59	53	F 53	F	F 53	49	U R 49	B	A	A
20	A	A	F	F	Y	F	F	F	F	F	F	79	77	72	68	60	60	56	J R 56	Y	J R 52	53	F	A
21	A	F	A	Y	B	B	B	B	B	B	B	B	B	B	B	B	E G 43	B	B	B	B	B	B	A
22	F	A	A	A	B	B	B	B	B	B	B	B	B	B	B	E G 42	B	B	B	F	B	B	B	A
23	A	A	F	F	F 30	B	B	Y	B	B	B	B	B	E G 44	F	F	J R 53	B	F	F	F	F	J R 28	A
24	A	F	F	F	A	F	F	F	F 60	61	59	J R 59	59	63	64	63	F	62	57	49	F	F	A	A
25	A	F	F	Y	F	F	F	F 60	F 61	70	70	79	79	80	B	B	F	F	B	B	F 59	F	F	F
26	F	A	F	F	A	A	F	F	F	F	F	F	F	70	68	72	F	F 70	F	44	A	F	A	A
27	F	F 33	A	F	F	F	B	A	A	Y	B	B	B	F	F	F 61	F	B	F	F	45	F	A	F
28	A	Y	F	F	F	B	F	F	Y	F	F 61	F 61	B	B	66	F	61	59	53	53	41	F	F	F
29	A	A	F	F	F	F 35	45	J R 54	60	F 60	F	F 70	F 76	F	F 80	F	76	F 73	F 60	F	A	F	J F 30	F
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	1	2	1	1	1	1	5	11	11	12	15	11	12	18	15	14	17	18	15	17	12	8	2
MED	32	F 33	F 35	F 35	F 30	F 35	45	55	55	58	60	59	60	58	56	57	53	53	52	49	46	44	F 36	27
UQ								F 60	F 60	62	66	67	72	66	64	62	60	59	53	52	49	46	42	
LQ								54	44	50	50	50	52	47	50	52	52	51	47	46	43	38	F 30	

FEB. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

FEB. 1984 | 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	35	36	B	42	B	B	B	33	B	B	B	E B 56	31	B	E B 57	E B 57	E B 32	36	42	79	35	31	E B 20	E B 18
2	19	33	31	B	B	32	32	E G 26	59	E G 30	E G 31	31	33	45	32	32	29	E B 55	E G 26	29	E G 24	89	B	70
3	62	B	45	48	42	70	40	36	36	33	33	33	35	33	30	E C 31	33	32	26	30	33	K 20	40	52
4	43	43	60	90	B	42	26	B	B	31	37	35	B	B	B	B	B	40	32	36	26	70	44	41
5	80	45	B	41	44	33	35	60	58	30	36	30	B	B	B	B	E B 32	B	E B 31	25	31	24	30	29
6	37	44	47	30	35	B	35	36	37	34	E G 30	E G 31	E G 31	31	41	E B 33	32	30	31	33	32	33	80	70
7	68	71	43	45	45	42	40	24	42	42	41	33	E G 30	B	B	E B 43	32	B	B	38	33	42	27	23
8	31	59	B	35	45	26	37	35	28	30	30	B	26	B	34	31	E B 31	E B 30	E B 28	26	23	23	42	34
9	40	41	45	42	41	31	36	37	35	45	E G 33	35	35	32	32	B	27	30	31	30	32	37	30	36
10	38	45	46	46	45	45	46	48	44	46	29	31	32	31	31	B	38	30	24	45	45	100	70	90
11	43	32	72	35	35	47	59	48	45	43	46	36	34	B	E B 35	34	37	34	30	26	22	38	25	41
12	38	48	45	51	31	40	34	41	50	37	36	B	B	70	40	32	33	30	K 27	E B 24	27	E B 23	15	23
13	47	45	42	70	48	44	45	100	52	32	B	37	B	B	B	B	E B 32	43	35	85	71	B	48	40
14	42	45	51	59	40	41	B	35	52	45	B	B	B	E B 32	E G 32	B	E B 30	36	39	45	E B 30	35	42	53
15	70	58	43	60	B	52	51	28	50	50	B	E G 31	29	E G 30	E B 30	E G 30	E B 29	E B 30	36	39	42	34	17	29
16	34	80	45	33	42	48	51	49	43	E G 30	33	33	36	B	B	B	B	B	B	B	B	E B 30	B	E B 14
17	23	26	45	70	38	43	34	36	36	B	B	E G 32	E G 31	30	29	E B 50	E B 30	41	35	32	21	E B 19	E B 18	34
18	31	35	37	90	42	30	B	B	45	34	B	B	E G 31	B	B	B	E B 32	31	E B 26	33	41	39	41	53
19	41	41	31	31	32	31	41	35	E G 25	26	30	E B 32	32	E B 32	33	30	29	24	24	E B 29	E B 29	B	35	43
20	41	47	32	35	40	31	39	E B 32	E B 30	E B 32	33	31	30	32	30	30	28	28	26	E B 30	23	E B 20	E B 23	92
21	43	42	42	35	B	B	B	B	B	B	B	B	B	B	B	B	E B 33	B	B	B	B	B	B	33
22	70	35	41	40	B	B	B	B	B	B	B	B	B	B	B	E B 30	B	B	B	E B 30	B	B	B	34
23	40	35	52	32	E B 23	B	B	32	B	B	B	B	B	E B 33	E B 32	E B 30	E G 28	B	E B 30	35	31	28	40	42
24	42	48	47	70	45	36	36	34	E G 28	E G 28	E G 30	E G 31	33	58	31	35	E G 29	26	32	22	28	15	37	39
25	40	42	55	36	35	36	33	E G 26	E G 26	E G 28	31	37	E G 31	E G 31	B	B	E B 50	E B 29	B	B	E B 30	35	36	22
26	39	48	52	44	45	43	33	35	32	35	33	E B 50	E G 31	48	32	30	29	26	40	28	48	67	90	59
27	70	60	52	42	51	34	B	47	41	35	B	B	B	E B 30	E B 35	32	35	B	31	E B 26	16	29	50	70
28	81	26	35	32	26	B	E B 50	40	40	39	E G 30	E G 30	B	B	E B 55	E B 60	E B 30	23	E B 23	E B 22	17	E B 23	19	27
29	28	31	33	30	16	19	19	23	26	30	32	32	32	E B 35	32	E B 32	E B 29	33	33	36	42	30	23	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	29	28	26	28	23	23	22	25	24	24	19	21	19	17	20	19	26	22	24	26	26	25	25	29
MED	41	44	45	42	41	40	36	35	40	34	33	32	31	32	31	E E 32	E E 32	30	31	30	30	31	36	39
UQ	47	48	51	55	45	44	43	41	48	40	34	34	33	35	34	33	32	35	34	36	35	38	42	53
LQ	37	35	41	35	35	32	34	32	31	29	30	E E 31	E G 31	E E 31	30	30	E E 29	28	25	24	22	22	23	29

FEB. 1984 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

FEB. 1984 | 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	21	11	B	22	B	B	B	18	B	B	B	56	24	B	57	57	32	25	23	25	16	14	20	18
2	14	11	11	B	B	15	15	11	13	14	18	18	15	13	13	13	26	55	15	11	13	16	B	9
3	8	B	8	14	13	13	14	17	13	11	11	8	14	14	21	19	20	9	11	23	8	11	11	15
4	18	8	12	10	B	13	18	B	B	14	21	21	B	B	B	B	B	15	9	10	8	14	9	7
5	10	11	B	14	19	8	7	11	13	13	21	13	B	B	B	B	32	B	31	7	19	8	8	8
6	8	13	20	7	24	B	10	19	14	15	9	13	13	11	16	33	15	10	15	11	9	9	7	7
7	14	11	8	9	13	8	11	8	9	13	16	13	20	B	B	43	10	B	B	16	12	7	8	13
8	7	23	B	13	19	8	19	13	11	13	10	B	23	B	18	22	31	30	28	22	20	14	9	7
9	8	9	8	10	7	8	9	11	13	13	23	32	23	19	13	B	25	19	15	14	13	12	E	9
10	10	13	19	17	10	9	20	15	15	14	13	13	12	11	13	B	13	16	14	13	13	8	10	11
11	8	8	21	13	9	15	13	11	14	19	21	23	30	B	35	19	16	12	19	9	17	8	8	9
12	19	10	13	8	9	13	11	11	16	15	13	B	B	31	23	21	18	15	18	24	7	23	11	7
13	13	7	8	15	8	8	13	13	8	13	B	24	B	B	B	B	32	10	13	9	9	B	13	7
14	8	E	13	8	14	13	B	19	13	19	B	B	B	32	24	B	30	18	17	8	30	11	13	7
15	7	7	13	13	B	13	9	8	8	23	B	23	23	13	30	23	29	30	13	11	8	8	9	8
16	9	11	20	12	18	20	19	13	13	9	13	13	15	B	B	B	B	B	B	B	B	30	B	14
17	10	10	10	21	23	22	21	21	23	B	B	23	24	23	19	50	30	31	26	15	19	19	18	9
18	9	9	9	10	20	13	B	B	20	13	B	B	24	B	B	B	32	15	26	20	13	10	9	14
19	23	13	27	11	30	18	18	18	14	19	17	32	19	32	15	18	15	21	17	29	29	D	18	14
20	11	14	9	21	25	23	26	32	30	32	28	13	28	30	23	20	13	14	23	30	14	20	23	20
21	20	15	23	29	B	B	B	B	B	B	B	B	B	B	B	B	33	B	B	B	B	B	B	18
22	20	23	20	24	B	B	B	B	B	B	B	B	B	B	B	30	B	B	B	30	B	B	B	18
23	19	18	18	16	23	B	B	30	B	B	B	B	B	33	32	30	13	B	30	23	21	13	13	10
24	11	11	13	13	15	13	19	23	15	15	20	15	21	12	10	24	25	22	18	15	13	10	10	11
25	11	9	9	17	11	19	13	18	11	11	13	14	13	20	B	B	50	29	B	B	30	22	11	13
26	9	15	11	7	11	20	15	13	13	11	11	50	23	13	14	20	22	15	10	13	13	11	8	8
27	7	9	9	8	10	7	B	10	15	23	B	B	B	30	35	23	15	B	22	26	11	9	11	10
28	9	13	9	7	20	B	50	21	21	13	20	11	B	B	55	60	30	18	23	22	11	23	15	8
29	9	8	8	8	8	11	14	11	13	15	15	15	15	35	23	32	29	12	12	13	16	10	10	11
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	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
MED	10	11	13	13	19	13	18	17	14	15	21	23	24	32	30	33	29	21	19	16	13	13	11	10
UQ	14	13	20	17	25	22	50	21	21	23	B	B	B	B	B	B	32	55	28	25	20	22	18	14
LQ	8	9	9	9	11	11	13	11	13	13	13	13	19	19	18	22	16	15	15	11	11	10	9	8

FEB. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

FEB. 1984 | 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	B	A	B	B	B	260	B	B	B	B	240	B	B	B	215	Y	A	A	240	A	320	300
2	300	A	A	B	B	A	265	215	210	210	205H	205H	205	200	205	240	235	B	230	240	270	A	B	A
3	A	B	A	A	A	A	A	A	A	250	230	240H	235	210	210	240	250	230	250	265	250	260	A	A
4	A	A	A	A	B	A	A	B	B	A	A	A	B	B	B	B	B	A	225	A	A	A	A	A
5	A	A	B	A	A	A	A	250	A	A	A	210	B	B	B	B	260	B	250	245	245	260	250	A
6	A	A	A	A	A	A	A	A	A	245	210	240	215	205	225	240	215	210	250	210	250	275	A	A
7	A	A	A	A	A	A	A	210	A	A	A	A	250	B	B	B	240	B	B	250	245	255	295	A
8	A	Y	B	A	A	A	A	A	215	200	210	B	Y	B	230	210	245	240	240	260	225	250	230	A
9	A	A	A	A	A	280	A	220	205	A	270	250	220	240	210	B	Y 255	220	225	H 230	240	250	A	A
10	A	A	A	A	A	A	A	A	A	250	220	210	205	205	240	B	215	225	Y	A	A	A	A	A
11	A	A	A	A	A	A	A	A	A	A	A	A	Y	B	250	230	230	235	250	250	250	A	A	A
12	A	A	A	A	A	A	A	A	250	210	220	B	B	A	225	230	240	220	250	250	250	240	250	300
13	A	A	A	A	A	A	A	A	A	A	B	A	B	B	B	B	225	A	A	A	A	B	A	A
14	A	A	A	A	A	A	B	210	A	A	B	B	B	240	245	B	250	270	A	A	E B 290	290	A	A
15	A	A	A	A	B	A	A	220	A	A	B	200	250	220	240	225	230	240	220	235	245	250	260	300
16	A	A	A	285	A	A	A	A	270	200	245	210	240	B	B	B	B	B	B	B	B	250	B	305
17	320	300	A	A	A	A	A	A	A	B	B	205	250	190	240	B	220	Y	A	255	240	240	250	320
18	A	A	A	A	A	A	B	B	A	A	B	B	205	B	B	B	E B 250	240	225	300	A	A	A	A
19	A	A	Y	A	A	260	A	A	H 210	230	200	220	200	210	240	210	210	260	250	250	250	B	A	A
20	A	A	290	A	A	A	A	B	230	210	230	200	230	225	H 225	210	225	225	210	270	255	250	B	A
21	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	240	B	B	B	B	B	B	A
22	250	A	A	A	B	B	B	B	B	B	B	B	B	B	B	240	B	B	B	260	B	B	B	A
23	A	A	A	A	B	B	B	Y	B	B	B	B	B	240	240	220	240	B	260	265	275	260	A 250	A
24	A	A	A	A	A	A	A	310	250	230	240	225	240	250	230	225	240	240	240	255	280	A	A	A
25	A	A	A	A	A	A	A	260	225	200	240	210	220	220	B	B	B	240	B	B	250	260	245	255
26	280	A	A	A	A	A	A	290	255	A	230	B	240	A	220	230	240	240	A	270	A	A	A	A
27	A	A	A	A	A	A	B	A	A	A	B	B	B	230	240	240	235	B	275	300	260	300	A	A
28	A	A	A	A	A	B	B	A	A	A	250	220	B	B	B	B	250	240	250	240	240	260	300	A
29	A	A	A	A	A	A	260	250	240	240	240	230	240	B	240	230	225	270	240	A	A	A	285	A
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	4	1	1	1		2	2	11	11	12	15	15	17	14	18	15	25	17	18	20	20	16	11	6
MED	290	300	290	285		270	262	250	230	220	230	210	235	220	235	230	238	240	245	252	250	258	250	300
UQ	310							260	250	242	240	228	240	240	240	240	242	240	250	265	255	260	290	305
LQ	265							218	212	205	215	208	215	205	225	222	225	225	225	242	242	250	250	300

FEB. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAR. 1984 | 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	43	60	O R 41	39	45	62	59	X 66	70	X 74	X 76	X 74	X 85	X 90	X 96	80	70	63	52	A	A	A	A
2	A	A	B	A	A	B	B	B	B	B	B	B	B	B	O X 46	70	46	40	E G 48	51	X 38	X 31	A	56
3	A	B	40	A	A	A	B	B	B	Y	B	B	B	B	B	B	X 53	X 53	B	43	35	A	A	B
4	B	Y	B	B	49	B	B	B	Y	B	B	B	B	B	B	X 59	X 61	X 64	X 58	X 57	X 46	42	35	35
5	32	32	33	42	33	45	50	50	B	63	70	X 64	70	82	87	79	76	71	75	65	59	56	62	57
6	35	O X 30	A	60	50	B	52	B	A	Y	B	B	A	O X 46	59	72	71	62	X O X 45	O X 40	A	A	B	A
7	B	B	A	B	A	B	B	B	B	A	B	B	B	B	B	B	B	O X 55	O R 47	O R 43	B	A	A	A
8	42	B	A	A	43	B	B	B	B	B	O X 51	B	B	B	O X 45	B	59	X 60	B	O X 37	A	A	40	B
9	A	A	B	B	35	B	55	B	B	B	B	B	B	X 56	X 58	X 58	X 56	O X 55	X 55	X 54	X 50	X 36	33	A
10	A	A	A	60	62	Y	O R 44	A	O X 51	55	B	B	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	A	58	43	33	34	B	B	A	A	42	58	57	56	X 59	X 58	X 56	O X 50	X 56	X 51	41	A	A	A
13	A	47	42	80	32	A	A	Y	Y	Y	50	O X 51	B	B	X 61	X 59	60	Y	Y	O X 41	44	X 40	A	A
14	A	A	A	40	42	38	38	B	B	C	B	B	B	B	B	67	U R 59	X 58	X 58	O X 51	X 50	X 49	45	42
15	35	37	34	26	35	58	42	O X 46	55	53	B	66	82	X 80	X 76	X 81	X 76	X 66	X 66	X 66	X 60	50	45	39
16	30	52	A	60	62	70	60	70	A	63	B	B	58	80	80	69	X 75	X 74	63	60	35	A	C	A
17	A	C	34	53	60	42	45	O X 47	Y	B	50	Y	B	X 66	76	81	B	70	X 64	A	28	A	A	A
18	42	A	A	52	45	A	A	A	63	68	X 70	70	X 73	B	B	B	74	B	X 59	X 54	A	45	A	A
19	B	A	A	A	B	B	B	B	A	B	B	64	80	70	B	B	70	3	X 61	65	O X 51	43	O R 39	33
20	30	A	60	70	A	70	72	80	80	83	90	X 92	X 90	X 89	92	X 94	X 84	X 77	73	63	55	52	45	38
21	35	33	32	32	40	60	43	72	80	84	80	90	89	100	X 93	90	90	X 85	88	X 81	80	60	40	A
22	A	A	A	B	60	44	56	60	71	63	B	B	O X 49	B	80	O X 72	68	66	B	60	49	A	A	A
23	59	40	B	A	A	58	45	Y	60	60	B	B	62	63	90	B	B	70	X 52	53	42	37	33	51
24	A	A	55	42	43	A	A	B	B	60	X 72	X 79	X 77	X 77	X 74	X 73	X 70	72	X 66	B	60	40	35	27
25	A	A	A	62	60	A	A	42	B	B	B	B	B	B	B	70	65	X 62	B	A	A	A	51	A
26	A	A	37	A	A	B	42	O X 49	B	63	64	X 68	X 70	X 72	B	X 68	O X 66	64	X 66	X 55	42	33	A	A
27	A	A	63	53	A	B	B	B	B	B	B	O X 80	X 89	X 100	R	102	X 101	X 102	B	71	42	A	A	A
28	A	B	A	A	O R 36	A	A	B	B	B	B	O R 53	B	B	B	B	B	X 71	A	33	A	50	A	A
29	A	A	B	A	A	B	B	Y	B	B	B	B	B	B	B	B	B	B	O X 37	28	A	A	A	B
30	A	A	B	B	B	B	Y	B	B	B	B	B	B	B	B	B	B	63	63	50	A	A	42	43
31	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	R	62	35	O X 31	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	8	12	16	19	11	14	10	8	12	11	13	14	15	16	19	22	24	22	26	20	15	13	10
MED	35	38	41	52	43	45	48	54	64	63	70	X 68	74	X 77	X 76	X 72	69	X 65	X 62	52	45	43	40	40
UQ	42	45	59	60	55	59	56	70	76	69	73	X 79	X 82	X 84	88	81	76	71	66	60	53	50	45	51
LQ	32	32	34	42	36	43	43	O X 47	58	60	50	64	62	X 64	X 59	X 68	59	X 59	X 55	43	40	38	35	35

MAR. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAR. 1984 | 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

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	F	F 32	31		F	F J F 53	60	F	68	70	68	78	84	90	F	F	F 56	F	A	A	A	A
2	A	A	B	A	A	B	B	B	B	B	B	B	B	B	E G 40	F 60	F	F	E G 42	F 40	31	26	A	F
3	A	B	F	A	A	A	B	B	B	Y	B	B	B	B	B	B	47	47	B	F	F 28	A	A	B
4	B	Y	B	B	F	B	B	B	Y	B	B	B	B	B	B	53	55	58	51	50	40	F 31	F 27	J F 29
5	F 23	F	F 25	F	F 19	F	F	F	B	F	F	58	F 61	F 71	F 79	F 70	F 68	F 63	F	F	F 50	F 46	F	F
6	J F 29	F 22	A	F	F	B	F	B	A	Y	B	B	A	E G 40	F	F 58	F 60	53	38	34	A	A	B	A
7	B	B	A	B	A	B	B	B	B	A	B	B	B	B	B	B	B	49	F 39	F 35	B	A	A	A
8	F	B	A	A	F	B	B	B	B	B	45	B	B	B	E G 39	B	51	53	B	31	A	A	F	B
9	A	A	B	B	F	B	F	B	B	B	B	B	B	50	J R 52	J R 52	50	49	49	48	43	30	F	A
10	A	A	A	F	F	Y	F 36	A	45	F	B	B	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	A	F	F	F	F	B	B	A	A	F	F	F	F	53	52	50	44	50	45	F	A	A	A
13	A	F	F	F	F	A	A	Y	Y	Y	F	45	B	B	55	J R 53	F	Y	Y	35	F	33	A	A
14	A	A	A	F	F	F	F	B	B	C	B	B	B	B	B	F	U R 53	J R 52	52	45	44	43	F 37	F 32
15	F	F	F 24	F	F 27	F 30	F	40	F	F	B	F	F	74	70	75	70	60	60	60	53	F 42	F 37	F 31
16	F 22	F	A	F	F	F	F	F	A	F	B	B	J F 53	F 62	F 63	F 61	68	68	F	F	F	A	C	A
17	A	C	F	F	F	F	F	41	Y	B	F	Y	B	60	68	F 71	B	F 62	58	A	F	A	A	A
18	F	A	A	F	F	A	A	A	F 53	F 58	63	62	67	B	B	B	F 67	B	53	48	A	F	A	A
19	B	A	A	A	B	B	B	B	A	B	B	F	F	F	B	B	F	B	55	F 56	45	F 35	F 30	F
20	F	A	F	F	A	F	F	F	F 69	F	F	86	84	83	F 85	88	78	71	F	F 56	F 45	F 42	F	F
21	F	F 23	F	F	F	F	J F 36	F	F	F 69	F	F	F	F	87	81	F	79	F 78	75	F 70	F	F	A
22	A	A	A	B	F	F	F	F	F	F	B	B	43	B	F 70	66	F 60	F	B	F	F 40	A	A	A
23	F	F	B	A	A	F	F	A	F	F	B	B	F	F	F	B	B	F	45	F 36	F	F	F	F
24	A	A	F	F	F	A	A	B	B	F	66	73	71	71	68	67	64	F	60	B	F	F	F	F
25	A	A	A	F	F	A	A	F	B	B	B	B	B	B	B	F	F	56	B	A	A	A	F	A
26	A	A	F	A	A	B	F	43	B	F	F	62	63	66	B	62	60	58	60	49	F 34	F	A	A
27	A	A	F	F	A	B	B	B	A	B	B	73	80	J R 94	D R 80	F	95	J R 96	B	F	F	A	A	A
28	A	B	A	A	F 28	A	A	B	B	B	B	F 45	B	B	B	B	B	64	A	F 24	A	F	A	A
29	A	A	B	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	31	F	A	A	A	B
30	A	A	B	B	B	B	Y	B	B	B	B	B	B	B	B	B	B	F	F	F 32	A	A	F	F
31	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	D R 70	F	F	25	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	3	2	2	1	4	1	2	4	4	2	4	9	9	11	15	16	16	19	17	18	13	9	4	3
MED	F 23	F 22	F 24	F 32	F 28	F 30	F 36	42	56	F 64	64	62	67	71	63	64	60	58	52	45	43	F 35	F 34	F 31
UQ	F 26				30			48	64		67	73	71	76	80	73	68	66	58	50	45	F 42	F 37	F 32
LQ	F 22				F 23			40	49		54	58	61	61	54	56	52	52	45	F 35	34	31	F 28	F 30

MAR. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAR. 1984 | 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	33	36	70	36	31	23	23	24	26	30	40	58	48	42	38	38	E B 58	35	36	42	36	41	46	45
2	70	42	B	32	40	B	B	B	B	B	B	B	B	B	E B 32	31	32	32	45	32	19	25	30	71
3	32	B	47	90	35	40	B	B	B	35	B	B	B	B	B	B	28	28	B	22	K 17	41	40	B
4	B	33	B	B	35	B	B	B	40	B	B	B	B	B	B	29	E B 30	E B 30	24	25	E B 18	E B 14	19	30
5	25	21	22	23	22	23	16	E G 22	B	E B 27	E B 31	33	33	41	39	31	33	31	27	E B 30	E B 23	E B 18	19	E B 13
6	15	31	35	35	31	B	32	B	44	36	B	B	49	35	32	33	27	32	23	35	42	71	B	35
7	B	B	41	B	40	B	B	B	B	42	B	B	B	B	B	B	B	E B 27	E B 25	35	B	42	43	80
8	52	B	42	43	32	B	B	B	B	B	E B 30	B	B	B	E B 32	B	28	35	B	E B 19	41	38	90	B
9	69	35	B	B	100	B	E B 31	B	B	B	B	B	B	E B 29	E B 28	E G 25	E B 25	26	K 23	21	29	E B 13	14	32
10	48	45	36	40	47	36	42	58	41	36	B	B	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	42	42	70	24	18	B	B	45	41	35	E B 29	32	32	29	27	23	E B 30	25	21	20	33	55	41
13	70	80	89	35	33	80	40	28	28	35	30	E B 32	B	B	33	E B 32	26	30	31	31	25	30	42	33
14	36	40	33	33	35	40	31	B	B	C	B	B	B	B	B	E B 31	E B 30	E B 30	E B 23	E B 22	22	22	20	29
15	30	29	37	29	20	E B 16	E B 15	22	25	E B 28	B	E B 34	32	35	35	26	E B 28	E B 23	E G 21	E B 17	21	14	E B 14	E B 13
16	33	59	47	43	43	37	31	E G 21	38	35	B	B	30	35	29	29	25	K 23	25	33	31	29	C	35
17	39	38	34	32	37	34	31	34	36	B	32	30	B	E B 32	E B 30	26	B	33	E B 22	42	20	40	42	44
18	59	42	41	39	36	43	42	50	39	E G 24	E B 31	27	E B 29	B	B	B	E B 26	B	19	19	36	27	39	40
19	B	42	42	42	B	B	B	B	42	B	B	F 52	E B 30	E B 51	B	B	E B 56	B	E B 26	21	E B 22	E B 18	E B 18	30
20	70	37	27	42	41	42	35	22	E G 22	E G 24	E G 27	30	E G 29	E G 30	E G 27	E G 26	E B 25	E B 22	E B 21	E B 15	E B 10	E B 15	E B 13	E B 13
21	E B 12	E B 13	31	22	29	30	E B 15	42	25	26	E B 33	E B 56	E B 47	29	E G 28	28	24	23	K 20	E B 16	21	28	28	59
22	50	43	130	B	71	42	30	30	35	28	B	B	E B 34	B	E B 32	E B 33	E B 30	E B 51	B	30	15	40	42	95
23	43	69	B	65	38	32	33	39	30	30	B	B	E B 30	E B 55	E B 57	B	B	37	36	19	19	33	17	40
24	42	43	71	36	40	40	40	B	B	E B 28	E G 26	26	E G 26	E G 27	E G 27	E G 25	26	26	21	B	E B 14	E B 11	23	33
25	38	40	70	60	30	35	37	35	B	B	B	B	B	B	B	E B 28	E B 28	23	B	35	45	43	70	43
26	33	36	33	35	45	B	34	29	B	E B 50	E B 32	E B 30	E B 27	E B 28	B	E B 31	E B 50	E B 30	E B 22	17	26	33	46	43
27	90	59	42	90	40	B	B	B	44	B	B	E B 51	E B 51	E B 36	E B 60	E B 51	E G 23	E B 24	B	E B 19	34	35	37	92
28	47	B	35	40	42	42	37	B	B	B	B	30	B	B	B	B	B	25	35	E B 20	56	50	63	42
29	37	42	B	42	38	B	B	38	B	B	B	B	B	B	B	B	B	B	E B 20	E B 19	25	35	41	B
30	30	35	B	B	B	B	30	B	B	B	B	B	B	B	B	B	B	E B 49	31	26	33	39	70	63
31	B	B	B	35	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 53	25	40	42	28	36	36
	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	25	25	23	25	27	18	20	15	16	17	11	14	15	15	17	19	22	26	24	28	28	29	27	26
MED	39	40	41	39	37	36	32	30	37	30	E E 31	28	E E 32	E E 35	E E 32	28	E E 28	26	24	22	24	33	39	40
UQ	52	43	47	43	40	42	37	38	42	36	32	E B 51	36	36	34	30	E B 30	32	29	32	35	40	44	45
LQ	33	35	34	35	32	30	28	23	27	E 28	E E 30	30	E 30	E E 30	E E 29	26	24	24	20	E B 19	19	22	20	32

MAR. 1984 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAR. 1984 | 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	11	12	11	13	13	11	12	13	12	13	18	16	15	14	13	58	18	15	13	12	11	11	13
2	19	15	B	15	18	B	B	B	B	B	B	B	B	B	32	20	30	29	13	14	14	11	11	13
3	14	B	11	13	13	19	B	B	B	21	B	B	B	B	B	B	18	18	B	18	13	11	11	B
4	B	23	B	B	20	B	B	B	25	B	B	B	B	B	B	21	30	30	15	15	18	14	11	8
5	11	11	8	11	8	11	13	20	B	27	31	21	13	14	16	13	13	15	18	30	23	18	11	13
6	11	8	8	11	16	B	13	B	19	24	B	B	15	23	23	18	15	13	13	11	10	11	B	19
7	B	B	19	B	13	B	B	B	B	22	B	B	B	B	B	B	B	27	25	13	B	10	12	11
8	13	B	23	23	13	B	B	B	B	B	30	B	B	B	32	B	18	19	B	19	10	13	13	B
9	12	13	B	B	17	B	31	B	B	B	B	B	B	29	28	19	25	23	21	15	13	13	9	8
10	11	22	13	15	18	23	14	21	23	23	B	B	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	19	16	13	13	13	B	B	22	24	23	29	22	21	20	18	18	30	18	13	10	11	12	20
13	11	10	11	13	11	29	15	21	18	21	20	32	B	B	28	32	13	19	23	13	11	12	9	10
14	10	11	11	12	13	15	18	B	B	C	B	B	B	B	B	31	30	30	23	22	18	11	12	8
15	11	8	13	13	11	16	15	20	22	28	B	34	23	24	26	21	28	23	18	17	14	13	14	13
16	8	10	11	12	13	12	13	14	19	20	B	B	23	19	20	22	14	13	22	18	20	10	C	11
17	11	11	11	10	15	18	14	18	21	B	21	21	B	32	30	20	B	23	22	16	10	13	13	13
18	12	11	15	10	10	23	23	20	19	11	31	25	29	B	B	B	26	B	15	13	10	11	10	13
19	B	23	20	28	B	B	B	B	24	B	B	52	30	51	B	B	56	B	26	15	22	18	18	11
20	10	11	19	12	13	14	12	14	15	18	20	20	19	24	20	15	25	22	21	15	10	15	13	13
21	12	13	8	8	8	10	15	14	20	18	33	56	47	18	18	14	14	14	15	16	11	8	8	13
22	8	14	18	B	19	22	13	18	24	21	B	B	34	B	32	33	30	51	B	11	11	11	11	15
23	10	13	B	20	17	19	13	23	25	25	B	B	30	55	57	B	B	17	13	10	11	10	12	10
24	12	11	7	7	8	18	20	B	B	28	25	18	17	20	18	17	12	16	18	B	14	11	10	7
25	10	10	8	12	8	15	21	19	B	B	B	B	B	B	B	28	28	17	B	11	11	11	9	20
26	20	8	10	14	11	B	13	27	B	50	32	30	27	28	B	31	50	30	22	11	10	11	11	12
27	13	8	8	13	20	B	B	B	24	B	B	51	51	36	60	51	21	24	B	19	10	9	11	11
28	10	B	16	22	15	15	19	B	B	B	B	24	B	B	B	B	B	20	20	20	13	9	28	15
29	22	20	B	18	13	B	B	23	B	B	B	B	B	B	B	B	B	B	20	19	15	11	18	B
30	18	10	B	B	B	B	20	B	B	B	B	B	B	B	B	B	B	49	16	17	11	10	13	11
31	B	B	B	22	B	B	B	B	B	B	B	B	B	B	B	B	B	53	14	12	10	11	10	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	29	30	30	30	30	30	30	30	30	29	30	30	29	29	29	29	29	29	29	29	29	29	28	29
MED	12	12	14	13	13	22	20	D B 27	25	28	B	B	51	55	32	31	28	23	20	15	11	11	11	13
UQ	18	22	23	22	18	B	B	B	B	B	B	B	B	B	B	B	58	30	23	18	14	13	13	15
LQ	11	10	11	12	11	15	13	20	21	21	31	29	23	24	23	19	18	18	15	13	10	11	10	11

MAR. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAR. 1984 | 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	285	240	250	240	225	A	A	220	225	235	B	A	A	A	A	A	A	A
2	A	A	B	A	A	B	B	B	B	B	B	B	B	B	260	260	250	275	280	290	290	A	A	A
3	A	B	A	A	A	A	B	B	B	A	B	B	B	B	B	B	245	250	B	300	275	A	A	B
4	B	A	B	B	A	B	B	B	A	B	B	B	B	B	B	220	240	250	250	255	260	250	260	270
5	310	330	325	A	A	A	275	240	B	205	250	240	225	220	225	220	215	210	250	230	250	245	245	250
6	270	A	A	A	280	B	205	B	A	A	B	B	A	250	E A 240	240	230	270	275	A	A	A	B	A
7	B	B	A	B	A	B	B	B	B	A	B	B	B	B	B	B	B	250	E B 270	A	B	A	A	A
8	A	B	A	A	A	B	B	B	B	B	250	B	B	B	E B 250	B	230	A	B	290	A	A	A	B
9	A	A	B	B	A	B	B	B	B	B	B	B	B	225	210	220	240	255	255	240	240	255	A	A
10	A	A	A	A	A	A	A	A	A	A	B	B	C	C	C	C	C	C	C	C	C	C	C	C
11	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
12	C	A	210	A	A	A	B	B	A	A	A	230	240	225	230	235	240	260	270	250	300	A	A	A
13	A	A	A	A	A	A	A	A	A	A	235	280	B	B	280	290	245	A	A	A	295	265	A	A
14	A	A	A	A	A	A	A	B	B	C	B	B	B	B	B	240	230	250	235	240	250	240	260	250
15	A	290	A	A	A	B	250	260	250	250	B	B	245	220	210	220	245	230	245	225	220	225	250	275
16	A	A	A	A	A	A	A	260	A	220	B	B	230	245	220	230	230	270	Y	A	A	A	C	A
17	A	C	A	A	A	A	A	250	A	B	260	240	B	250	240	240	B	290	250	A	A	A	A	A
18	A	A	A	A	A	A	A	A	A	240	E B 250	240	220	B	B	B	240	B	255	290	A	A	A	A
19	B	A	A	A	B	B	B	B	A	B	B	B	240	B	B	B	E B 270	B	255	245	240	260	290	310
20	A	A	A	A	A	A	A	220	240	245	240	230	225	230	225	225	235	230	220	230	210	245	245	275
21	270	300	320	310	A	A	290	310	230	210	240	B	B	220	225	225	210	220	225	235	225	275	A	A
22	A	A	A	B	A	A	A	A	Y	A	B	B	260	B	265	260	240	B	B	260	250	A	A	A
23	A	A	B	A	A	A	A	A	A	280	B	B	255	B	B	B	B	275	275	260	320	275	320	260
24	A	A	A	A	A	A	A	B	B	240	220	Y 240	225	240	240	240	250	255	250	B	240	275	A	A
25	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	250	250	290	B	A	A	A	A	A
26	A	A	A	A	A	B	A	A	B	B	B	240	225	240	B	245	B	250	225	225	270	325	A	A
27	A	A	A	A	A	B	B	B	A	B	B	B	B	250	B	260	240	240	B	250	A	A	A	A
28	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	300	A	B	A	A	A	A
29	A	A	B	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	310	B	A	A	A	B
30	A	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A
31	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	3	3	1	1		5	7	4	9	9	8	11	13	15	19	20	20	18	17	16	12	7	7
MED	270	300	320	310	280		275	250	245	240	240	240	230	230	228	240	240	252	251	250	250	258	260	270
UQ	290	315	322				285	260	250	245	250	240	242	245	242	248	245	272	270	260	282	275	275	275
LQ	270	295	265				250	240	235	220	235	235	225	220	225	225	230	245	245	235	240	245	248	255

MAR. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

APR. 1984 | 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	B	Y	Y	B	B	B	A	B	B	B	B	B	B	B	B	44	63	A	43	A	A
2	A	A	A	B	B	B	B	S	S	B	B	B	B	B	B	B	X 58	55	53	A	A	43	61	A
3	B	A	Y	B	B	B	32	A	B	B	B	B	B	B	B	B	B	49	X 43	Y	A	A	A	A
4	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	O X 47	O R 51	B	O R 37	68	B	36	33
5	B	B	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	39	30	A	A	34	36	A
6	A	A	B	A	A	A	B	32	B	B	B	B	B	B	B	B	B	B	O X 43	O R 37	B	A	A	A
7	B	A	A	63	A	B	A	O R 36	O R 42	X 42	O X 48	B	O X 53	B	B	B	B	59	43	49	A	A	A	62
8	A	A	38	A	35	B	A	A	B	B	B	B	B	B	B	B	73	69	43	51	51	A	A	A
9	A	A	A	A	B	A	A	B	B	B	B	B	X 43	B	O X 50	O X 52	O X 55	48	51	36	26	45	A	A
10	54	36	Y	86	42	43	43	A	A	O X 47	O R 53	63	X 61	X 64	X 64	60	X 61	X 59	54	O R 46	35	27	15	24
11	A	45	A	A	B	B	B	A	55	O X 49	X 56	48	63	70	X 60	B	63	B	O X 46	42	28	A	A	A
12	A	A	A	A	A	S	A	B	B	B	B	63	76	86	X 86	X 81	X 76	X 63	53	36	30	B	A	A
13	A	A	A	62	52	52	70	A	A	58	O X 51	59	75	74	X 68	X 65	X 64	63	54	X 45	38	A	A	A
14	A	50	43	70	33	50	45	36	50	53	O X 52	X 59	X 66	X 69	X 74	X 67	X 68	65	50	48	A	34	A	57
15	A	A	45	A	A	A	A	54	50	B	B	67	71	71	90	80	80	73	70	50	35	B	O R 22	25
16	33	34	A	A	33	44	50	62	53	O X 54	66	74	79	84	90	X 87	76	72	59	52	36	32	17	A
17	A	A	A	A	A	32	43	45	51	X 60	X 68	X 78	X 83	X 91	X 87	X 81	80	69	70	48	41	34	19	42
18	A	70	A	A	50	60	69	47	44	41	59	65	72	90	92	90	80	70	65	53	36	31	B	B
19	28	40	43	43	44	66	55	70	70	72	68	X 75	X 84	90	X 104	X 110	X 101	X 85	X 65	66	X 63	45	33	36
20	65	A	40	45	A	A	45	A	B	B	B	B	B	B	B	B	X 63	70	57	O R 49	42	41	36	A
21	A	40	A	32	B	B	A	O R 42	60	O X 56	X 66	B	B	B	X 105	X 87	85	X 76	62	37	B	33	41	A
22	30	A	B	B	A	A	A	50	47	X 55	X 68	X 75	X 86	X 92	110	104	89	66	62	50	42	32	B	13
23	A	20	58	60	50	B	52	52	60	63	80	X 91	95	103	108	104	X 86	X 56	57	51	39	A	A	A
24	52	A	32	50	52	64	58	45	A	O R 51	58	70	71	82	83	86	70	63	B	B	B	17	15	A
25	71	B	A	A	33	35	35	43	55	52	60	64	75	95	X 93	X 91	X 38	X 81	B	70	63	63	A	70
26	43	36	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	Y	B	B	B	A	A	O X 43	45	B	B	B	Y	71	B	O R 73	75	O R 70	B	A	33	A	A	A
30	B	B	Y	B	B	B	O R 36	A	B	B	B	B	Y	B	O X 62	O X 56	O X 49	X 44	O R 33	33	O X 24	O X 21	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	9	7	9	10	9	13	14	13	14	14	14	16	15	17	17	22	24	23	22	18	16	11	9
MED	48	40	43	60	43	50	45	45	51	54	60	66	74	84	X 87	X 81	X 74	64	54	48	37	34	33	36
UQ	60	45	44	63	50	60	55	52	55	X 53	68	X 75	81	90	93	X 90	80	70	62	51	42	43	36	57
LQ	32	36	39	45	33	43	43	42	47	49	O X 53	63	64	71	X 68	X 67	X 63	56	45	37	33	32	18	25

APR. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

APR. 1984 | 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	B	A	B	Y	Y	B	B	B	A	B	B	B	B	B	B	B	B	F	F	A	F	A	A
2	A	A	A	B	B	B	B	S	S	B	B	B	B	B	B	B	52	45	F 45	A	A	F	F	A
3	B	A	Y	B	B	B	F	A	B	B	B	B	B	B	B	B	B	J F 43	37	Y	A	A	A	A
4	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	41	F 42	B	F 26	F	B	F	F
5	B	B	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	F	F	A	A	F	F	A
6	A	A	B	A	A	A	B	F	B	B	B	B	B	B	B	B	B	B	37	F 27	B	A	A	A
7	B	A	A	F	A	B	A	F 26	35	36	42	B	47	B	B	B	B	F	F	F	A	A	A	F
8	A	A	F	A	F	B	A	A	B	B	B	B	B	B	B	B	60	F	F	F	F	A	A	A
9	A	A	A	A	B	A	A	B	B	B	B	B	37	B	44	46	49	F 39	F 38	F 25	F	F	A	A
10	F	F	Y	A	F	F	F	A	A	41	F 45	F	55	58	58	J F 54	55	53	F 46	F 37	F	F 18	F	F
11	A	F	A	A	B	B	B	A	F 40	43	50	F	J F 57	F 60	54	B	F	B	40	F 34	F	A	A	A
12	A	A	A	A	A	D S 41	A	B	B	B	B	F	F 68	F 78	80	75	70	57	F 44	F 25	F	B	A	A
13	A	A	A	F	F	F	F	A	A	F	45	F 52	F 68	F 67	62	59	58	F 55	F 45	38	F	A	A	A
14	A	F	F	F	F	F	F	F	F	F 45	46	53	60	63	68	61	62	F	F	F	A	F	A	F
15	A	A	F	A	A	A	A	F	F 40	B	B	F	F 60	F	F	F	F	F	F 59	F	F 28	B	F 14	F
16	F	F 27	A	A	F	F	F	F	F	48	F 59	F 65	F 70	F	81	J R 31	F 68	F	F 51	F	F	F	J F 11	A
17	A	A	A	A	A	F	F	F 30	F 40	J R 54	62	J R 72	J R 77	85	81	75	70	61	F 58	F	J F 35	F	F	F
18	A	F	A	A	F	F	F	F	F	F	F	F 57	F 63	J F 83	F	F 80	F	J F 63	F	F	F	F	B	B
19	F	F	F	F	F	F	F	F	F	F 49	F 60	68	78	F	93	104	J R 95	73	58	F 59	57	J F 39	F	F
20	F	A	F	F	A	A	F	A	B	B	B	B	B	B	B	B	57	F 60	F	F 41	F	F	F	A
21	A	F	A	F	B	B	A	F 34	F	50	60	B	B	B	99	31	F	70	F	F	B	F	F	A
22	F	A	B	B	A	A	A	F	F	49	62	69	80	86	F 100	F	F 70	F	F	F	F	F	B	F
23	A	F	F	F	F	B	F	F 31	F	F	F 71	85	F	J F 96	F	F 95	80	50	F 49	F	F	A	A	A
24	F	A	F	F	F	F	F	F	A	F 42	F 50	F	F	F 72	F 72	F	F 61	F 54	B	B	B	F	F	A
25	F	B	A	A	F 25	F 25	F	F 29	F	F 43	F	F	F 66	89	87	85	82	75	B	A	F	F	A	A
26	F	F	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	Y	B	B	B	A	A	37	F 35	B	B	B	Y	F	B	F 65	F	F 60	B	A	F 25	A	A	A
30	B	B	Y	B	B	B	F 29	A	B	B	B	B	Y	B	56	50	43	38	F 25	F 25	18	15	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		1			1	2	1	6	5	11	12	8	14	11	14	14	17	17	14	10	5	3	2	
MED		F 27			F 25	33	F 29	F 30	F 40	45	54	66	64	F 78	76	75	61	55	F 45	F 30	F 28	F 18	F 12	
UQ								F 34	F 40	49	61	70	F 70	86	87	81	70	61	F 51	F 38	F 35	F 28		
LQ								F 29	F 35	42	46	F 55	57	F 65	58	59	55	F 45	F 38	F 25	F 25	16		

APR. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

APR. 1984 | 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	70	B	35	B	17	30	B	B	B	42	B	B	B	B	B	B	B	B	E B 28	39	43	38	40	41
2	44	44	35	B	B	B	B	36	36	B	B	B	B	B	B	B	25	E 3 21	25	41	60	71	76	80
3	B	35	92	B	B	B	23	37	B	B	B	B	B	B	B	B	B	E B 38	34	23	35	41	100	86
4	110	B	B	B	B	36	B	B	B	B	B	B	B	B	B	B	E B 26	29	B	28	61	B	47	35
5	B	B	37	59	B	59	B	B	B	B	B	B	B	B	B	B	B	35	33	72	70	68	80	71
6	34	60	B	36	35	60	B	21	B	B	B	B	B	B	B	B	B	B	E B 26	E 3 17	B	40	37	42
7	B	70	35	39	65	B	37	26	24	24	E B 26	B	E B 28	B	B	B	B	E B 32	26	41	42	37	37	56
8	48	81	100	41	36	B	58	30	B	B	B	B	B	B	B	B	31	E B 54	33	35	23	42	42	40
9	79	59	41	107	B	36	36	B	B	B	B	B	E B 35	B	E B 27	E B 27	E B 24	E B 33	E B 19	E B 14	30	32	48	51
10	48	42	42	41	25	36	27	40	41	30	E B 24	E B 26	E B 25	E B 25	23	23	E B 27	E B 20	E B 19	E B 20	E B 13	E B 12	27	31
11	42	71	62	40	B	B	B	44	29	16	E G 22	E B 39	E G 29	E B 23	E B 24	B	E B 33	3	E B 30	19	30	44	42	70
12	42	40	38	40	46	35	41	B	B	B	B	E B 30	E G 26	E G 25	E B 23	E B 23	E B 22	21	28	26	33	B	40	37
13	41	50	48	37	71	34	28	35	41	37	E B 23	E B 33	E B 42	E B 30	E B 26	E G 21	G 22	E G 20	17	E B 13	15	43	37	42
14	50	62	63	51	31	41	41	40	36	G 24	G 21	26	37	22	E G 23	26	20	27	32	28	48	31	48	63
15	59	43	36	59	42	52	58	52	33	B	B	29	E B 32	E B 32	E B 40	E B 34	E B 29	E B 20	E B 23	E B 19	E B 14	B	16	19
16	31	32	34	42	52	48	30	E B 12	E B 22	E B 29	E B 29	E B 33	E G 25	24	23	24	20	16	E B 16	E B 13	E G 13	E B 16	E B 12	37
17	50	60	48	51	43	37	28	15	16	E G 21	22	E G 21	26	23	23	E B 21	E G 19	12	17	10	10	E B 13	17	33
18	42	70	51	47	42	42	29	36	32	E B 25	27	22	24	23	24	E B 21	E B 14	E B 14	E B 13	E B 10	E B 8	E B 13	B	B
19	E B 23	28	25	53	30	32	32	28	15	17	19	22	E G 23	E G 22	22	21	K 16	13	E B 8	E B 10	E B 10	26	30	30
20	70	82	80	70	60	45	40	50	B	B	B	B	B	B	B	B	E B 21	E B 21	E B 23	E B 19	27	22	28	31
21	36	70	70	37	B	B	37	37	22	E B 19	E B 23	B	B	B	E B 29	E B 20	E B 56	E B 19	E B 31	E B 20	B	E B 30	17	35
22	30	40	B	B	42	41	41	27	27	E G 22	22	E B 24	E B 31	E B 30	E B 26	27	E B 19	E B 14	E B 10	E B 11	E B 8	13	B	E B 9
23	26	16	16	13	17	B	30	35	30	E G 23	25	25	23	23	E B 27	E G 20	K 17	23	E B 11	17	14	36	42	56
24	46	53	43	32	32	35	41	43	42	36	32	E B 26	E B 51	E B 29	E B 25	E B 22	E B 18	E B 14	B	B	B	E B 11	E B 13	24
25	36	B	45	45	31	21	31	39	16	21	21	E B 21	E B 22	23	26	26	28	30	B	30	31	92	49	43
26	58	30	42	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	35	B	B	B	41	40	32	28	B	B	B	E B 30	E B 35	B	E B 58	E B 30	E B 53	B	43	16	31	40	32
30	B	B	25	B	B	B	32	45	B	B	B	B	E B 35	B	E B 33	E B 28	E B 22	E B 20	E B 13	E B 13	E B 14	E B 14	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	23	24	20	18	19	21	22	17	15	14	14	18	15	17	17	22	24	23	26	24	24	24	25
MED	44	50	42	42	39	37	36	36	29	20	22	E B 26	E B 28	E E 24	E B 24	E B 23	E B 22	E B 21	E B 23	20	25	32	40	40
UQ	54	66	56	52	46	44	41	40	36	30	E B 26	E B 30	E B 35	E B 30	E B 26	25	E B 28	26	28	30	38	42	48	56
LQ	36	38	35	38	31	35	30	28	22	18	22	E E 22	E E 25	23	22	E B 21	E B 19	E B 13	E B 16	E B 13	E B 14	E B 15	28	32

APR. 1984 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

APR. 1984 | 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	B	21	B	12	22	B	B	B	29	B	B	B	B	B	B	B	B	28	10	11	10	11	13
2	8	11	23	B	B	B	B	25	25	B	B	B	B	B	B	B	22	21	20	10	13	13	11	10
3	B	21	28	B	B	B	12	20	B	B	B	B	B	B	B	B	B	38	12	13	10	13	13	13
4	22	B	B	B	B	23	B	B	B	B	B	B	B	B	B	B	26	22	B	12	13	B	11	15
5	B	B	20	18	B	20	B	B	B	B	B	B	B	B	B	B	B	31	8	19	8	11	11	13
6	24	26	B	24	14	24	B	13	B	B	B	B	B	B	B	B	B	B	26	17	B	10	15	13
7	B	11	11	11	30	B	18	17	11	13	26	B	28	B	B	B	B	32	20	12	12	10	7	7
8	12	13	8	11	13	B	21	18	B	B	B	B	B	B	B	B	22	54	11	13	13	11	13	10
9	20	22	13	20	B	20	17	B	B	B	B	B	35	B	27	27	24	33	19	14	11	11	13	13
10	10	8	30	16	11	13	10	19	13	23	24	26	25	25	20	17	27	20	19	20	13	12	8	9
11	12	8	7	10	B	B	B	18	19	14	20	39	29	23	24	B	33	B	30	13	10	11	11	14
12	12	16	12	20	11	23	23	B	B	B	B	30	24	23	23	23	22	15	13	9	7	B	11	7
13	13	13	22	13	13	11	11	23	16	15	23	33	42	30	26	19	13	12	14	13	8	10	7	11
14	13	7	10	7	7	13	19	13	12	15	15	14	12	12	19	17	13	12	8	8	9	7	12	9
15	13	16	8	12	22	19	13	10	20	B	B	23	32	32	40	34	29	20	23	19	14	B	8	11
16	13	11	10	11	11	11	16	12	22	29	29	33	21	18	19	19	11	11	16	13	13	16	12	9
17	9	11	14	16	16	11	10	8	11	12	11	11	11	12	19	21	15	10	9	8	9	13	8	11
18	19	12	11	10	12	12	8	7	12	25	20	9	21	18	20	21	14	14	13	10	8	13	B	B
19	23	8	11	9	16	15	11	9	10	13	13	15	20	15	18	19	13	10	8	10	10	9	10	8
20	10	10	10	11	16	14	13	14	B	B	B	B	B	B	B	B	21	21	23	19	15	14	13	7
21	7	25	19	10	B	B	20	13	13	19	23	B	B	B	29	20	56	19	31	20	B	30	11	11
22	8	11	B	B	18	16	14	13	13	18	18	24	31	30	26	20	19	14	10	11	8	8	B	9
23	10	10	8	10	11	B	20	14	20	15	19	19	19	19	20	17	15	15	11	10	9	15	12	8
24	13	22	13	13	13	22	13	13	18	18	20	26	51	29	25	22	18	14	B	B	B	11	13	9
25	11	B	13	13	11	14	14	14	13	12	14	21	22	20	17	16	13	11	B	12	13	25	15	13
26	18	23	22	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	31	B	B	B	19	19	15	19	B	B	B	30	35	B	58	30	53	B	15	13	13	20	15
30	B	B	23	B	B	B	18	28	B	D	B	B	35	B	33	28	22	20	13	13	14	14	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	13	16	16	16	17	22	18	18	21	D B 29	B	B	35	D B 35	31	31	23	20	20	13	13	13	12	11
UQ	24	31	28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	53	31	19	14	25	15	14
LQ	11	11	11	11	12	14	13	13	13	15	20	24	24	23	20	20	15	14	12	10	9	11	11	9

APR. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

APR. 1984 | 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	B	A	B	Y	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
2	A	A	A	B	B	B	B	A	A	B	B	B	B	B	B	B	235	285	290	A	A	A	A	A
3	B	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A
4	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A	B	A	A
5	B	B	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A	A
6	A	A	B	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	230	290	B	A	A	A
7	B	A	A	A	A	B	A	A	A	A	E B 270	B	250	B	B	B	B	230	270	230	A	A	A	A
8	A	A	A	A	A	B	A	A	B	B	B	B	B	B	B	B	310	B	A	A	A	A	A	A
9	A	A	A	A	B	A	A	B	B	B	B	B	B	B	E 3 280	275	260	260	250	270	A	A	A	A
10	A	A	B	A	A	255	A	A	A	310	270	250	230	250	240	230	250	230	240	245	255	300	A	A
11	A	A	A	A	B	B	B	A	A	Y	240	B	260	235	245	B	240	B	290	275	A	A	A	A
12	A	A	A	A	A	250	A	B	B	B	B	260	260	250	230	230	210	215	240	300	A	B	A	A
13	A	A	A	A	A	A	240	A	A	A	A	B	B	270	250	250	235	230	220	230	270	A	A	A
14	A	A	A	A	A	A	A	A	A	270	250	240	240	230	240	225	210	235	290	230	A	A	A	A
15	A	A	A	A	A	A	A	A	A	B	B	255	260	230	240	220	240	220	215	210	240	B	A	A
16	A	A	A	A	A	A	A	300	270	245	245	250	235	225	230	210	205	200	240	215	220	245	255	A
17	A	A	A	A	A	A	A	300	255	240	230	240	230	240	210	205	200	200	220	210	210	225	A	A
18	A	A	A	A	A	A	A	A	320	B	230	225	220	225	225	220	205	200	220	205	210	240	B	B
19	B	A	A	A	A	A	A	A	265	250	230	220	220	230	220	210	205	200	215	210	220	220	A	A
20	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	240	245	260	260	255	Y	A	A
21	A	A	A	A	B	B	A	A	275	245	240	B	B	B	245	220	B	210	B	245	B	B	A	A
22	A	A	B	B	A	A	A	A	280	255	245	230	245	220	225	210	200	210	200	205	205	230	B	B
23	A	A	A	A	A	B	A	A	A	230	220	220	220	225	220	205	200	210	205	210	230	A	A	A
24	A	A	A	A	A	A	A	A	A	A	240	255	B	250	240	230	220	225	B	B	B	280	B	A
25	A	B	A	A	A	180	A	190	250	255	250	230	250	230	225	230	240	250	B	A	A	A	A	A
26	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	A	B	B	B	A	A	A	A	B	B	B	250	250	B	B	250	B	B	A	Y	A	A	A
30	B	B	Y	B	B	B	A	A	B	B	B	B	E B 270	B	250	230	220	215	220	225	250	B	B	B
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						3	1	3	7	9	13	12	15	15	17	16	20	19	18	18	11	7	1	
MED						250	240	300	270	250	240	240	242	230	235	222	228	220	240	230	230	240	255	
UQ						252		300	278	255	248	252	252	250	242	230	245	232	270	270	252	262		
LQ						215		245	260	245	230	228	230	228	225	210	205	210	220	210	215	228		

APR. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAY. 1984 | 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	B	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B
2	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	A	A
3	A	A	33	A	24	26	51	53	45	43	58	68	64	79	73	70	60	0 X 52	52	39	20	A	A	A
4	A	43	B	A	A	A	A	A	A	B	0 X 49	60	60	0 X 71	B	B	B	B	0 R 42	0 R 36	30	A	33	37
5	A	39	A	A	B	B	A	A	A	A	0 X 48	X 48	B	B	0 X 76	B	B	80	42	Y	A	58	A	A
6	A	A	68	B	B	Y	A	A	42	B	B	0 R 46	0 X 45	0 X 48	0 X 47	X 49	0 X 45	0 X 30	0 X 35	B	B	B	B	A
7	A	A	52	56	A	A	43	44	42	42	52	X 56	64	X 68	X 64	78	0 R 48	0 R 43	B	B	B	A	A	A
8	A	A	35	A	34	43	50	51	63	0 X 41	0 X 51	62	72	76	74	X 63	0 X 50	0 R 40	29	22	0 X 22	B	Y	A
9	A	51	70	53	59	42	49	A	40	60	52	61	71	B	80	X 77	63	X 70	Y	31	A	A	A	59
10	A	A	A	B	A	A	A	A	B	58	Y	B	B	B	B	B	71	Y	B	A	A	A	A	A
11	A	A	A	A	A	A	A	A	42	40	42	0 X 50	X 57	X 59	X 62	X 64	X 51	0 R 43	30	27	A	0 X 20	A	A
12	A	A	52	A	A	A	34	42	42	42	43	0 X 47	B	B	B	B	B	0 X 37	0 R 30	B	A	A	A	A
13	A	A	A	37	57	Y	B	B	Y	52	X 45	X 48	X 51	X 58	X 63	68	X 46	37	0 R 29	A	A	A	A	A
14	A	0 R 23	21	29	29	29	28	0 R 20	27	32	X 47	X 59	X 58	X 60	X 63	X 68	X 70	63	0 X 48	B	A	A	A	43
15	A	Y	A	32	41	32	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	A	A
16	A	A	A	A	A	A	A	A	0 R 37	45	60	72	X 71	X 78	X 86	80	72	0 X 44	A	B	A	B	B	A
17	A	A	A	A	A	A	B	A	B	B	57	68	64	B	B	B	71	62	48	B	B	B	52	52
18	70	59	60	70	A	40	43	44	40	B	B	60	70	B	75	30	68	X 63	X 46	B	B	A	A	A
19	A	47	B	B	B	B	Y	B	B	B	B	B	B	B	B	B	0 R 44	0 R 35	B	B	A	A	A	A
20	A	A	B	B	A	B	A	Y	B	B	B	B	B	50	B	72	B	41	0 X 42	30	65	A	A	A
21	A	A	A	A	B	A	B	B	C	A	B	B	B	B	45	58	55	B	Y	A	A	A	A	A
22	A	A	B	B	A	B	A	B	A	B	B	B	B	B	B	X 55	B	B	B	A	A	A	A	A
23	A	B	B	B	Y	B	B	B	B	B	B	B	B	B	B	B	B	59	42	A	A	A	30	A
24	B	B	B	B	B	B	A	Y	Y	B	B	B	B	B	B	B	58	X 53	B	B	A	A	A	B
25	B	A	B	B	B	B	Y	A	B	B	B	R	X 66	X 67	X 67	74	63	0 X 49	B	B	A	A	33	A
26	A	A	A	B	B	52	B	B	A	B	B	B	B	B	B	B	B	B	28	B	B	B	A	A
27	A	A	A	A	A	40	45	43	33	35	X 46	0 X 49	0 X 49	B	B	70	63	X 53	0 R 38	A	A	A	A	A
28	A	A	A	B	A	A	A	A	A	0 X 35	X 37	X 45	X 46	B	0 X 51	B	C	C	0 R 26	C	C	A	A	A
29	C	A	C	B	B	A	B	B	B	B	B	B	B	B	B	B	62	B	B	B	B	A	A	A
30	43	A	B	A	A	B	B	B	A	B	B	B	B	B	B	100	B	R	C	A	A	C	A	38
31	A	A	A	A	Y	A	A	A	B	B	0 X 37	0 X 48	62	60	67	B	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	6	8	6	6	8	8	7	11	12	15	17	16	12	15	16	18	19	16	6	4	2	4	5
MED	56	45	52	45	38	40	44	44	42	42	X 48	X 56	63	X 64	X 67	70	61	49	40	30	26	39	33	43
UQ		51	64	56	57	42	50	48	42	43	52	61	68	X 74	74	79	68	X 60	44	36	48		42	52
LQ		39	34	32	29	30	38	42	38	38	X 44	0 X 48	X 54	X 58	X 62	X 64	50	0 40	0 30	27	21		32	38

MAY. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAY. 1984 | 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	B	B	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B
2	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	A	A
3	A	A	F	A	F	F	F	F	F	F 36	F	F 60	F	F 69	F	F	F	46	F	F 32	F	A	A	A
4	A	F	B	A	A	A	A	A	A	B	43	F	F	65	B	B	B	B	F 33	F 27	F	A	F	F
5	A	F	A	A	B	B	A	A	A	A	42	42	B	B	70	B	B	F	F 32	Y	A	F	A	A
6	A	A	F	B	B	Y	A	A	F	B	B	F 38	39	42	41	43	39	30	29	B	B	B	B	A
7	A	A	F	F	A	A	J F 37	F	J F 36	F 33	F	50	F	62	58	69	F 40	F 35	B	B	B	A	A	A
8	A	A	F	A	F 24	F 22	F	F	F	35	45	F 52	F	F 69	F 66	57	44	F 31	F	F	16	B	Y	A
9	A	F	F	F	F	F	F	A	F	F	F	F	F 62	B	F	71	F 52	63	Y	F	A	A	A	F 35
10	A	A	A	B	A	A	A	A	B	F	A	B	B	B	B	B	F	Y	B	A	A	A	A	A
11	A	A	A	A	A	A	A	A	F	F 32	F 34	44	51	53	55	58	45	F 35	F	F 20	A	14	A	A
12	A	A	F	A	A	A	F	F 35	F 33	F 31	F 35	41	B	B	B	B	B	31	F 22	B	A	A	A	A
13	A	A	A	F	F 28	Y	B	B	Y	F	39	42	45	52	57	F 57	40	F 30	F 21	A	A	A	A	A
14	A	F 13	F 13	F	F 13	F 13	F 13	F 13	F 15	F 25	41	53	52	54	57	62	63	F	42	B	A	A	A	F
15	A	Y	A	F	F	F	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	A	A
16	A	A	A	A	A	A	A	A	F 27	F 35	F	F	65	71	80	F 60	F	F 35	A	B	A	B	B	A
17	A	A	A	A	A	A	B	A	B	B	F	F 55	F 55	B	B	B	F 62	J F 66	F	B	B	B	A	F
18	A	F	F	F	A	F	F	F	F	B	B	F	F	B	F 67	F	F 60	57	40	B	B	A	A	A
19	A	F	B	B	B	B	A	B	B	B	B	B	B	B	B	9	F 37	F 27	B	B	A	A	A	A
20	A	A	B	B	A	B	A	A	B	B	B	B	B	F 42	B	F	B	F	36	F	F	A	A	A
21	A	A	A	A	B	A	B	B	C	A	B	B	B	B	F	F	F	B	A	A	A	A	A	A
22	A	A	B	B	A	B	A	B	A	B	B	B	B	B	B	49	B	B	B	A	A	A	A	A
23	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	F 43	F 24	A	A	A	F	A
24	B	B	B	B	B	B	A	Y	Y	B	B	B	B	B	B	B	50	47	B	B	A	A	A	B
25	B	A	B	B	B	B	A	A	B	B	B	0 R 45	60	61	61	F 65	F	43	B	B	A	A	F	A
26	A	A	A	B	B	F	B	B	A	B	B	B	B	B	B	B	B	B	F	B	B	B	A	A
27	A	A	A	A	A	F	F 18	F 18	F	F	40	43	43	B	B	F	F 55	47	F 29	A	A	A	A	A
28	A	A	A	B	A	A	A	A	A	29	31	39	40	B	45	B	C	C	F 18	C	C	A	A	A
29	C	A	C	B	B	A	B	B	B	B	B	B	B	B	B	B	F	B	B	B	B	A	A	A
30	F	A	B	A	A	B	B	B	A	B	B	B	B	B	B	F	B	0 R 43	C	A	A	C	A	F
31	A	A	A	A	Y	A	A	A	B	B	31	42	F 55	F 51	F 59	B	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		1	1		3	2	3	3	4	8	10	14	11	12	12	10	12	17	11	3	1	1		1
MED		F 13	F 13		F 24	F 18	F 18	F 18	F 30	F 32	40	44	52	58	58	59	43	43	F 29	F 27	16	14		F 35
UQ					F 26		F 28	F 26	F 34	F 35	42	52	58	67	66	65	F 58	47	34	F 30				
LQ					F 18		F 16	F 16	F 21	F 30	34	42	44	52	56	57	40	F 31	F 23	F 24				

MAY. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAY. 1984 | 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

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	19	B	B	43	36	B	B	B	43	B	B	B	B	B	B	B	B	B	B	B	35	32	26	B
2	26	31	39	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	27	38	33
3	35	36	36	35	32	29	32	27	15	27	20	29	F 21	34	E B 23	30	E B 19	E B 19	32	27	28	34	40	44
4	62	89	B	42	39	35	39	42	60	B	28	32	E B 30	E B 58	B	B	B	B	E B 23	E B 20	17	30	33	31
5	49	68	51	71	B	B	42	42	43	52	40	E B 23	B	B	E B 58	B	B	35	30	30	40	60	71	71
6	35	35	27	B	B	31	41	43	E B 21	B	B	E B 27	E B 30	E B 23	E B 20	E B 21	E B 20	E B 21	E B 13	B	B	B	B	20
7	26	30	35	70	46	43	24	30	19	18	20	21	24	E B 21	E B 20	19	E B 20	E B 22	B	B	B	25	28	31
8	33	40	39	40	36	31	26	16	E B 15	E B 19	E B 24	E B 23	E B 21	E B 20	E B 21	E B 20	E B 23	E B 20	E B 19	E B 17	E B 14	B	12	27
9	17	31	35	32	33	27	33	44	42	32	23	E B 22	E B 23	B	E B 30	E B 15	14	11	32	35	39	34	41	41
10	42	52	35	B	41	41	51	44	B	36	43	B	B	B	B	B	E B 30	32	B	41	43	47	50	46
11	47	40	71	71	51	51	40	38	30	37	19	E B 19	E B 21	E B 21	E B 20	20	39	35	17	21	36	14	41	70
12	42	50	59	44	41	47	34	40	29	29	E B 19	E B 28	B	B	B	B	B	E B 24	E B 17	B	31	46	51	48
13	40	45	50	41	42	35	B	B	39	25	23	19	19	25	30	16	16	22	E B 15	33	51	41	38	40
14	30	27	30	30	40	26	15	12	10	E B 16	E B 19	18	22	E G 19	19	34	E B 10	E B 20	E B 19	B	41	41	48	83
15	59	31	42	70	39	24	40	44	44	35	B	B	B	B	B	B	B	B	B	B	B	B	16	19
16	31	33	34	36	68	45	42	45	25	35	32	29	41	31	31	E B 31	E B 60	33	65	B	42	B	B	21
17	27	31	45	47	80	37	B	42	B	B	32	25	E B 19	B	B	B	E B 20	E B 15	19	B	B	B	36	35
18	41	35	31	41	42	35	36	43	35	B	B	E B 20	E B 25	B	E B 29	E B 33	E B 31	E B 19	E B 19	B	B	20	34	42
19	64	72	B	B	B	B	27	B	B	B	B	B	B	B	B	B	E B 23	E B 23	B	B	20	41	41	40
20	41	50	B	B	70	B	50	41	B	B	B	B	B	E B 20	B	E B 56	B	E B 30	E B 30	32	79	28	37	43
21	43	69	73	43	B	39	B	B	C	45	B	B	B	B	E B 27	E B 23	E B 27	B	26	35	33	40	42	42
22	42	71	B	B	44	B	41	B	42	B	B	B	B	B	B	20	B	B	B	39	36	45	41	51
23	59	B	B	B	41	B	B	B	B	B	B	B	B	B	B	B	B	E B 22	19	42	25	40	35	42
24	B	B	B	B	B	B	35	30	32	B	B	B	B	B	B	B	E B 19	E B 20	B	B	35	42	72	B
25	39	40	B	B	B	B	36	32	B	B	B	E B 30	E B 28	E B 22	E B 20	E B 30	E B 23	E B 24	B	B	40	32	26	34
26	70	61	60	B	B	E B 40	B	B	40	B	B	B	B	B	B	B	B	B	E B 16	B	B	B	31	36
27	34	34	37	35	30	18	26	14	15	E B 15	30	E B 22	E B 30	B	B	E B 35	E B 26	E B 13	37	37	38	35	30	31
28	42	42	42	B	40	42	43	35	33	22	E G 20	30	E B 21	B	E B 31	B	C	C	E B 14	C	C	31	41	33
29	C	45	C	B	B	41	B	B	B	B	B	B	B	B	B	B	E B 21	B	B	B	B	37	39	40
30	68	44	B	36	45	B	B	B	42	B	B	B	B	B	B	E B 50	B	E B 33	C	40	45	C	40	63
31	44	43	70	42	22	38	31	35	B	B	E B 24	E B 22	29	30	35	B	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	28	21	19	22	21	22	21	21	15	16	18	16	12	15	16	18	21	19	14	21	23	28	28
MED	41	41	39	42	41	36	36	40	33	29	24	E B 23	E B 24	E B 22	E B 27	E B 26	E B 22	E B 22	E B 19	34	36	35	38	40
UQ	47	51	51	46	45	41	41	43	42	36	31	27	E B 30	29	E B 30	E B 34	E B 27	E B 30	30	39	41	41	41	45
LQ	33	34	35	36	36	31	31	30	21	20	20	E B 21	E B 21	E B 20	E B 20	18	E B 19	E B 20	E B 17	27	31	30	32	32

MAY. 1984 | FES (0.1 MHZ)

IONOSPHERIC DATA

MAY. 1984 | 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	13	B	B	30	13	B	B	B	17	B	B	B	B	B	B	B	B	B	B	B	14	13	20	B
2	23	23	23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	18	9
3	9	10	13	13	9	9	7	8	10	11	15	15	21	18	23	18	19	19	8	13	9	13	10	8
4	13	10	B	23	14	22	15	18	23	B	20	21	30	58	B	B	B	B	23	20	11	14	9	7
5	13	8	13	31	B	B	25	21	13	16	23	23	B	B	58	B	B	17	21	11	13	11	11	13
6	11	8	12	B	B	21	22	14	21	B	B	27	30	23	20	21	20	21	13	B	B	B	B	8
7	10	9	10	11	20	12	10	9	9	8	15	19	20	21	20	15	20	22	B	B	B	13	10	9
8	9	8	9	8	8	8	9	10	15	19	24	23	21	20	21	20	23	20	19	17	14	B	10	9
9	8	8	9	9	11	13	24	13	13	13	16	22	23	B	30	15	10	8	24	15	13	13	10	13
10	13	8	10	B	14	19	15	19	B	20	25	B	B	B	B	B	30	22	B	13	10	9	13	13
11	11	9	11	11	15	14	14	11	9	8	13	19	21	21	20	11	9	11	9	10	10	8	9	13
12	10	13	13	20	14	13	10	9	15	13	19	28	B	B	B	B	B	24	17	B	10	13	13	13
13	18	16	14	12	13	25	B	B	25	11	13	14	16	21	13	13	13	14	15	13	13	13	9	8
14	8	7	8	6	7	6	10	9	9	16	19	16	14	16	15	8	10	20	19	B	11	10	10	13
15	12	24	23	13	13	13	23	16	22	13	B	B	B	B	B	B	B	B	B	B	B	B	12	9
16	9	9	9	8	10	13	14	13	13	12	19	20	16	20	15	31	60	20	29	B	18	B	B	13
17	9	11	13	8	13	21	B	23	B	B	21	18	19	B	B	B	20	15	13	B	B	B	11	9
18	11	10	10	10	11	10	9	9	11	B	B	20	25	B	29	33	31	19	19	B	B	10	8	8
19	8	15	B	B	B	B	19	B	B	B	B	B	B	B	B	B	23	23	B	B	13	8	10	10
20	13	10	B	B	19	B	15	26	B	B	B	B	B	20	B	56	B	30	30	19	13	10	15	8
21	8	13	14	14	B	20	B	B	C	23	B	B	B	B	27	23	27	B	19	8	9	9	13	24
22	18	10	B	B	23	B	16	B	24	B	B	B	B	B	B	13	B	B	B	8	13	13	17	8
23	9	B	B	B	29	B	B	B	B	B	B	B	B	B	B	B	B	22	13	13	10	11	10	18
24	B	B	B	B	B	B	21	24	21	B	B	B	B	B	B	B	19	20	B	B	30	28	23	B
25	28	22	B	B	B	B	30	20	B	B	B	30	28	22	20	30	23	24	B	B	15	17	19	20
26	14	21	14	B	B	40	B	B	25	B	B	B	B	B	B	B	B	B	16	B	B	B	9	10
27	9	9	8	8	9	8	8	9	11	15	9	22	30	B	B	35	26	13	13	8	9	7	10	13
28	21	18	20	B	23	16	23	20	13	13	18	11	21	B	31	B	C	C	14	C	C	7	9	20
29	C	18	C	B	B	29	B	B	B	B	B	B	B	B	B	B	21	B	B	B	B	9	10	9
30	18	14	B	16	18	B	B	B	22	B	B	B	B	B	B	50	B	33	C	11	8	C	10	14
31	C	9	19	20	16	18	20	24	B	B	24	22	20	12	12	B	C	C	C	C	C	C	C	C
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	31	30	31	31	31	31	31	30	31	31	31	31	31	31	31	29	29	29	29	29	29	30	30
MED	11	10	14	20	16	21	21	20	22	B	25	27	30	B	B	56	27	22	21	B	13	13	10	12
UQ	14	18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	15	13
LQ	9	9	10	11	13	13	14	12	13	13	19	20	21	21	20	20	20	19	15	13	10	10	10	9

MAY. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAY. 1984 | 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	B	B	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	B
2	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	A	A
3	A	A	A	A	A	A	A	300	300	245	250	245	240	220	205	210	215	250	240	240	A	A	A	A
4	A	A	B	A	A	A	A	A	A	B	275	280	B	B	B	B	B	B	E B 250	B	255	A	A	A
5	A	A	A	A	B	B	A	A	A	A	A	275	B	B	B	B	B	A	290	Y	A	A	A	A
6	A	A	A	B	B	A	A	A	B	B	B	B	B	250	250	250	255	B	260	B	B	B	B	A
7	A	A	A	A	A	A	A	290	265	235	225	220	220	225	230	210	220	E B 260	B	B	B	A	A	A
8	A	A	A	A	A	A	A	A	B	260	230	225	220	225	215	205	210	230	E B 250	B	B	B	A	A
9	A	A	A	A	A	A	Y	A	A	A	260	245	240	B	225	235	215	235	Y	A	A	A	A	A
10	A	A	A	B	A	A	A	A	B	A	A	B	B	B	B	B	250	A	B	A	A	A	A	A
11	A	A	A	A	A	A	A	A	A	A	A	255	260	250	235	225	210	A	E A 230	E A 250	A	A	A	A
12	A	A	A	A	A	A	A	A	A	A	300	280	B	B	B	B	B	B	B	B	A	A	A	A
13	A	A	A	A	A	A	B	B	A	280	275	250	260	250	235	210	215	250	260	A	A	A	A	A
14	A	A	A	A	A	A	A	A	E B 280	260	230	220	225	225	215	250	210	220	255	B	A	A	A	A
15	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	A	A
16	A	A	A	A	A	A	A	A	A	A	245	225	225	210	235	B	B	230	A	B	A	B	B	A
17	A	A	A	A	A	A	B	A	B	B	A	240	260	B	B	B	200	230	210	B	B	B	A	A
18	A	A	A	A	A	A	A	A	A	B	B	250	225	B	240	225	250	210	230	B	B	A	A	A
19	A	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	E B 265	B	B	B	A	A	A	A
20	A	A	B	B	A	B	A	A	B	B	B	B	B	280	B	240	B	B	B	A	A	A	A	A
21	A	A	A	A	B	A	B	B	C	A	B	B	B	B	B	B	B	B	A	A	A	A	A	A
22	A	A	B	B	A	B	A	B	A	B	B	B	B	B	B	225	B	B	B	A	A	A	A	A
23	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	235	270	A	A	A	A	A
24	B	B	B	B	B	B	A	A	A	B	B	B	B	B	B	B	210	240	B	B	B	B	B	B
25	B	A	B	B	B	B	A	A	B	B	B	250	240	220	215	220	250	280	B	B	A	A	275	A
26	A	A	A	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	250	B	B	B	A	A
27	A	A	A	A	A	A	A	A	A	260	240	240	270	B	B	240	250	240	A	A	A	A	A	A
28	A	A	A	B	A	A	A	A	A	A	345	270	265	B	260	B	C	C	260	C	C	A	A	A
29	C	A	C	B	B	A	B	B	B	B	B	B	B	B	B	B	255	B	B	B	B	A	A	A
30	A	A	B	A	A	B	B	B	A	B	B	B	B	B	B	250	B	230	C	A	A	C	A	A
31	A	A	A	A	A	A	A	A	B	B	B	250	235	205	225	B	C	C	C	C	C	C	C	C
	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	6	11	17	14	11	13	14	16	14	13	2	1		1	
MED								295	280	260	250	250	240	225	230	225	216	234	250	242	255		275	
UQ									290	260	275	255	260	250	235	240	250	245	260					
LQ									268	245	235	240	225	220	215	210	210	230	U 225					

MAY. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUN. 1984 | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	25	B	B	A	A
2	A	41	36	37	A	A	41	A	A	B	O R 46	O R 48	61	68	X 76	B	B	B	B	B	A	R	A	A
3	A	A	A	A	A	A	A	60	45	42	57	B	B	O R 63	X 59	X 54	X 56	O R 53	A	A	A	A	A	A
4	A	A	X 32	A	50	O R 32	A	B	B	B	B	B	B	B	B	B	38	X 62	B	A	A	A	A	A
5	A	B	B	A	B	A	B	A	B	B	B	B	B	B	62	B	B	B	B	B	O X 36	B	A	A
6	A	A	A	A	B	A	B	B	A	A	B	O X 46	O X 58	B	O X 53	O X 60	O R 51	B	B	B	B	B	A	A
7	A	A	A	35	A	A	A	A	A	B	B	X 42	B	B	B	B	B	B	B	B	B	B	A	A
8	A	A	A	A	A	A	43	43	38	36	X 41	X 57	X 53	X 67	X 61	43	O R 32	O R 30	A	O R 32	O R 24	B	A	A
9	A	A	A	X 39	A	A	A	A	A	O R 47	Y	B	B	B	B	B	B	B	O R 32	A	A	A	A	A
10	A	A	A	A	A	A	B	B	B	B	B	B	B	57	B	B	B	B	O X 29	B	A	A	A	A
11	A	A	A	A	A	A	B	B	B	Y	B	B	O R 52	X 55	X 63	X 54	O R 36	B	B	O X 28	B	B	B	B
12	A	A	A	A	A	B	B	B	B	A	B	O R 43	O X 50	B	62	43	O R 36	O R 37	B	B	B	B	B	B
13	B	B	O R 25	O R 24	A	33	26	30	O R 33	O R 34	B	O R 52	70	X 53	52	52	33	B	B	B	B	A	A	A
14	A	A	A	A	O R 33	A	A	38	40	38	47	60	58	61	69	43	O R 33	O R 34	O R 24	O R 25	A	A	B	O X 18
15	A	32	O R 31	29	29	O R 27	A	A	B	B	51	60	X 59	X 74	X 62	65	74	65	O X 49	A	A	A	A	A
16	A	A	A	A	A	B	Y	A	B	B	B	B	B	B	B	B	B	O X 33	A	A	A	A	A	B
17	A	B	B	B	B	B	A	A	A	Y	O R 34	O X 43	B	B	B	B	B	B	B	B	B	B	B	A
18	33	A	A	A	A	B	A	A	A	40	35	B	50	65	B	X 92	31	74	A	A	A	A	A	A
19	A	A	B	B	B	A	A	A	A	B	B	B	B	B	B	B	B	38	A	Y	A	A	A	A
20	B	B	Y	B	B	B	A	B	B	B	B	B	B	B	B	B	B	35	B	B	B	B	B	Y
21	A	A	A	A	A	A	A	O R 25	O R 26	O R 25	37	45	X 56	X 52	55	X 43	O R 36	A	O R 24	O R 24	B	A	R	A
22	Y	A	A	B	B	A	A	A	A	B	B	A	B	B	O X 51	X 55	37	X 40	B	B	B	B	A	A
23	35	A	A	A	A	A	A	A	A	A	37	O X 43	X 46	X 73	60	R 42	31	X 42	A	A	A	A	A	A
24	A	B	A	B	B	A	A	A	B	B	A	A	X 43	O X 46	B	B	B	B	B	B	A	A	B	R
25	A	A	A	A	A	A	B	A	A	A	A	O R 41	B	B	B	B	O R 36	O X 32	B	B	B	B	A	A
26	A	A	A	A	A	A	B	A	O R 36	36	36	B	B	X 55	B	B	B	B	B	B	A	A	A	O R 35
27	A	A	A	A	B	A	B	B	A	B	B	O R 38	B	B	B	B	B	B	B	B	B	B	A	A
28	A	O X 37	A	A	B	A	A	B	B	B	B	A	B	B	B	B	B	O R 45	A	A	A	A	A	A
29	A	B	A	B	A	A	A	A	O R 52	A	O R 42	O X 50	X 51	O R 53	O R 51	B	B	B	O R 36	B	B	31	A	A
30	A	A	A	A	B	A	A	B	Y	B	B	B	B	X 45	B	B	B	B	B	B	A	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	2	3	4	5	3	3	3	5	7	8	11	14	13	15	14	12	14	14	6	5	2	1		2
MED	34	37	32	35	33	O R 32	41	38	O R 38	37	41	O 46	X 53	X 58	60	53	36	39	O R 30	O R 25	O 30	31		O 26
UQ		39	34	37	42	32	42	43	42	41	46	O 52	X 58	66	X 62	X 58	56	53	O R 36	O 28				
LQ		34	O R 28	29	31	O R 30	34	30	O R 34	35	36	O 43	X 50	X 54	55	43	O R 33	O 34	O R 24	O R 25				

JUN. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUN. 1984 | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	F 18	B	B	A	A
2	A	F	F	F	A	A	F	A	A	B	F 38	F 40	F 55	61	69	B	B	B	B	B	A	R	A	A
3	A	A	A	A	A	A	A	F 35	F 22	Z 29	29	B	B	F 55	R 52	V 47	F 47	F 46	A	A	A	A	A	A
4	A	A	26	A	A	26	A	B	B	B	B	B	B	B	B	B	72	55	B	A	A	A	A	A
5	A	B	3	A	B	A	B	A	B	B	B	B	B	B	51	B	B	B	B	B	30	B	A	A
6	A	A	A	A	B	A	B	B	A	A	B	40	V 52	B	Z 52	J R 54	F 42	B	B	B	B	B	A	A
7	A	A	A	F	A	A	A	A	A	B	B	J R 36	B	B	B	D	B	B	B	B	B	B	A	A
8	A	A	A	A	A	A	F	F 22	F 22	F 26	36	50	45	60	54	F 35	F 22	F 26	A	F 26	F 18	B	A	A
9	A	A	A	33	A	A	A	A	A	F 40	Y	B	B	B	B	B	B	B	F	A	A	A	A	A
10	A	A	A	A	A	A	B	B	B	B	B	B	B	F 50	B	B	B	B	R 23	B	A	A	A	A
11	A	A	A	A	A	A	B	B	B	Y	B	B	F 45	47	Z 57	45	F 30	B	B	22	B	B	B	B
12	A	A	A	A	A	B	B	B	B	A	B	F 37	44	B	F 54	F 35	F 30	F 31	B	B	B	B	B	B
13	B	B	F 19	F 18	A	F 27	F 17	F 20	F 27	F 28	B	F 46	44	50	44	F 43	F 28	B	B	B	B	A	A	A
14	A	A	A	A	F 27	A	A	F 30	F	F	J R 41	F 53	R 52	52	F 45	37	F 25	F 29	F	F 19	A	A	B	12
15	A	F 25	F 25	F 23	F 24	F 21	A	A	B	B	F 42	53	J R 53	J R 63	55	F	F 64	F 57	43	A	A	A	A	A
16	A	A	A	A	A	B	Y	A	B	B	B	B	B	B	B	B	B	3 27	A	A	A	A	A	B
17	A	B	B	B	B	B	A	A	A	Y	F 28	37	B	B	B	B	B	B	B	B	B	B	B	A
18	F 22	A	A	A	A	B	A	A	A	F	F 27	B	F 41	R 49	B	J R 86	70	F	A	A	A	A	A	A
19	A	A	B	B	B	A	A	A	A	B	B	B	B	B	B	B	B	F	A	Y	A	A	A	A
20	B	B	Y	B	B	B	A	B	B	B	B	B	B	B	B	B	B	270	B	B	B	B	B	Y
21	A	A	A	A	A	A	A	F 17	F 14	F 16	F 25	F 36	J A 50	45	V 49	J R 37	F 26	A	F 16	F 17	B	A	R	A
22	Y	A	A	B	B	A	A	A	A	B	B	A	B	B	45	47	F 25	35	B	B	B	B	A	A
23	F	A	A	A	A	A	A	A	A	A	F 29	37	40	65	J R 54	35	F 25	36	A	A	A	A	A	A
24	A	B	A	B	B	A	A	A	B	B	A	A	38	40	B	B	B	B	B	B	A	A	B	R
25	A	A	A	A	A	A	B	A	A	A	A	F 34	B	B	B	B	F 30	26	B	B	B	B	A	A
26	A	A	A	A	A	A	B	A	F 25	F 30	F 26	B	B	43	B	B	B	B	B	B	A	A	A	F 27
27	A	A	A	A	B	A	B	B	A	B	B	F 33	B	B	B	B	B	B	B	B	B	B	A	A
28	A	31	A	A	B	A	A	B	B	B	B	A	B	B	B	B	B	F 35	A	A	A	A	A	A
29	A	B	A	B	A	A	A	A	F 42	A	F 33	44	45	F 45	45	B	B	B	F 23	B	B	A	A	A
30	A	A	A	A	B	A	A	B	Y	B	B	B	B	Z 43	B	B	B	B	B	B	A	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	1	2	3	3	2	3	1	5	6	6	11	14	13	15	14	11	14	12	4	5	2			2
MED	F 22	28	F 25	F 23	F 26	F 26	F 17	F 22	F 24	F 28	F 29	38	45	50	52	43	F 30	35	23	F 19	24			20
UQ			26	28		26		F 30	F 27	F 30	37	46	52	58	54	47	F 47	50	33	F 22				
LQ			F 22	F 20		24		F 20	F 22	F 26	F 28	F 36	44	46	45	36	F 25	F 23	F 20	F 19				

JUN. 1984 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1984 | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	26	B	B	36	34
2	37	34	40	58	48	43	45	42	42	B	34	E B 30	21	21	12	B	B	B	B	B	34	26	35	45
3	45	46	45	46	44	46	46	35	15	37	17	B	B	E B 25	E B 18	26	E B 19	E B 13	43	40	43	80	45	40
4	40	50	45	65	33	75	45	B	B	B	B	B	B	B	B	B	E B 26	31	B	27	34	40	40	34
5	35	B	B	40	90	30	B	40	66	B	B	B	B	B	E B 26	B	B	B	B	B	25	B	20	36
6	42	61	42	70	B	50	B	B	39	37	B	E B 27	E B 24	B	E B 29	E B 40	E B 26	B	B	B	B	B	31	40
7	42	45	43	43	42	60	60	43	43	B	B	E B 29	B	B	B	B	B	B	B	B	B	B	19	41
8	34	40	40	43	35	43	33	12	13	15	14	21	32	25	27	35	25	28	38	E B 17	E B 10	B	17	40
9	60	43	50	70	60	43	44	47	43	43	38	B	B	B	B	B	B	B	28	27	43	37	40	42
10	40	39	41	45	60	38	B	B	B	B	B	B	B	E B 24	B	B	B	B	E B 21	D	21	22	15	33
11	42	45	40	49	43	41	B	B	B	34	B	B	20	E B 21	E B 18	E B 13	E B 20	B	B	E B 16	B	B	B	B
12	39	39	50	44	43	70	B	B	B	40	B	30	E B 35	B	E B 18	E B 13	E B 15	E B 18	B	B	B	B	B	B
13	B	B	29	32	28	33	38	E B 9	38	26	53	E B 24	25	30	30	30	22	B	B	B	B	15	40	37
14	32	48	32	33	43	35	43	30	28	27	29	15	20	E B 16	E B 18	25	25	25	C B 14	17	17	19	B	12
15	26	30	42	49	36	31	60	60	B	B	31	35	34	28	28	E B 21	18	34	E B 27	42	45	43	60	58
16	45	80	48	45	40	43	17	40	B	B	B	B	B	B	B	B	B	25	27	41	40	36	42	B
17	43	B	B	B	B	B	40	35	33	22	30	E B 19	B	B	B	B	B	B	B	B	B	B	B	42
18	24	35	40	39	43	B	43	45	43	18	E B 20	B	21	E B 23	B	E B 13	E B 24	35	42	45	45	48	45	45
19	40	39	45	33	43	36	33	30	35	B	B	B	B	B	B	B	B	E B 24	43	17	45	45	45	40
20	36	B	35	B	40	B	69	B	B	B	B	B	B	B	B	B	B	E B 24	B	B	B	B	B	18
21	29	30	43	35	39	32	18	17	E G 14	18	14	20	26	21	21	E B 21	18	26	17	16	B	21	16	35
22	30	36	36	B	45	44	41	40	58	B	B	40	B	B	E B 28	E B 20	E G 12	E B 13	B	B	B	B	25	30
23	70	80	45	62	60	42	45	41	41	43	43	37	E B 28	E B 22	23	26	26	26	27	27	33	17	28	33
24	37	B	37	B	40	70	40	37	B	B	30	32	25	22	B	B	B	B	B	B	23	31	B	18
25	32	45	45	43	45	45	B	43	43	44	40	E B 24	B	B	B	B	E B 19	E B 19	B	B	B	B	35	40
26	43	35	45	40	43	38	B	43	41	18	18	B	B	E B 28	B	B	B	B	B	B	35	28	33	75
27	48	50	45	43	42	40	B	B	61	B	B	27	B	B	B	B	B	B	B	B	B	B	26	28
28	45	42	39	40	43	32	44	B	B	B	B	40	B	B	B	B	B	E B 30	35	33	45	90	91	42
29	37	44	45	44	75	48	37	40	40	40	33	24	E B 23	E B 20	28	B	B	B	E B 16	B	B	20	29	41
30	75	70	43	44	B	44	47	B	45	B	B	B	B	E B 30	B	B	B	B	B	B	17	40	44	40
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	24	27	25	26	26	21	20	20	15	15	17	13	15	14	12	14	15	13	14	17	18	24	27
MED	40	44	43	44	43	43	43	40	41	34	30	24	23	E B 23	19	E B 23	E E 21	25	27	27	34	34	35	40
UQ	44	49	45	49	45	46	45	43	43	40	36	32	26	E B 26	23	27	24	28	38	40	43	43	43	42
LQ	34	38	40	40	40	36	38	32	34	20	18	20	20	E B 21	E B 13	E B 16	E B 18	E B 22	E B 21	17	23	21	26	34

JUN. 1984 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUN. 1984 | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	11	B	B	14	9
2	9	8	8	10	13	23	14	16	29	B	23	30	21	21	12	B	B	B	B	B	18	20	10	9
3	9	8	10	8	8	8	9	10	8	8	13	B	B	25	18	13	19	18	9	18	10	9	13	15
4	16	14	8	8	8	13	16	B	B	B	B	B	B	B	B	B	26	17	B	14	13	13	10	13
5	12	B	B	15	40	17	B	21	39	B	B	B	B	B	26	B	B	B	B	B	19	B	15	13
6	13	14	15	27	B	19	B	B	25	26	B	27	24	B	29	40	26	B	B	B	B	B	13	13
7	8	13	13	8	24	18	24	20	18	B	B	29	B	B	B	B	B	B	B	B	B	B	14	8
8	8	11	8	10	11	9	9	9	7	8	8	8	9	14	15	13	10	13	10	17	10	B	8	9
9	11	14	7	14	8	14	18	16	19	18	32	B	B	B	B	B	B	B	20	16	10	7	10	20
10	18	18	7	24	20	24	B	B	B	B	B	B	B	24	B	B	B	B	21	B	14	18	8	8
11	7	13	13	13	24	30	B	B	B	23	B	B	16	21	18	13	20	B	B	16	B	B	B	B
12	8	7	14	16	16	40	B	B	B	23	B	20	35	B	18	13	15	18	B	B	B	B	B	B
13	B	B	8	8	7	7	8	9	14	16	35	24	10	15	24	8	16	B	B	B	B	8	8	9
14	8	8	7	7	8	10	13	9	8	8	8	8	10	16	18	14	14	13	14	15	11	13	B	9
15	8	7	9	7	7	7	16	18	B	B	14	8	7	8	8	21	15	8	27	17	11	8	14	8
16	25	14	19	13	28	32	15	19	B	B	B	B	B	B	B	B	B	13	11	11	8	8	7	B
17	15	B	B	B	B	B	20	14	9	18	18	19	B	B	B	B	B	B	B	B	B	B	B	8
18	8	8	8	14	23	B	32	20	15	13	20	B	13	23	B	13	24	8	8	8	8	13	18	22
19	21	8	30	29	30	24	23	15	24	B	B	B	B	B	B	B	B	24	8	13	8	8	14	18
20	30	B	28	B	25	B	19	B	B	B	B	B	B	B	B	B	B	24	B	B	B	B	B	12
21	9	8	8	8	22	14	11	9	10	8	9	9	10	10	11	21	13	15	8	7	B	7	8	7
22	23	18	21	B	30	21	24	23	30	B	B	B	B	B	28	20	11	13	B	B	B	B	15	8
23	7	14	13	16	15	18	15	11	15	13	9	18	28	22	14	15	15	18	18	14	13	13	13	11
24	8	B	13	B	29	14	25	18	B	B	14	19	14	18	B	B	B	B	B	B	8	8	B	14
25	14	8	20	23	17	16	B	20	16	20	16	24	B	B	B	B	19	19	B	B	B	B	9	8
26	8	20	23	11	15	21	B	13	14	11	11	B	B	28	B	B	B	B	B	B	25	13	8	16
27	13	14	18	23	35	20	B	B	19	B	B	16	B	B	B	B	B	B	B	B	B	B	14	16
28	8	19	10	23	30	8	24	B	B	B	B	24	B	B	B	B	B	30	17	14	11	8	14	25
29	8	33	18	30	11	14	8	15	8	11	20	19	23	20	20	B	B	B	16	B	B	8	8	8
30	8	20	13	13	B	18	18	B	37	B	B	B	B	30	B	B	B	B	B	B	11	8	7	8
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	30	30	30	30	30
MED	9	14	13	14	22	18	20	19	24	26	35	29	B	30	B	B	B	30	B	B	18	13	14	12
UQ	15	20	19	24	30	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	15	16
LQ	8	8	8	10	11	14	15	13	14	13	14	19	16	21	18	15	16	17	16	14	11	8	8	8

JUN. 1984 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

JUN. 1984 | 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	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	245	B	B	A	A
2	A	A	A	A	A	A	A	A	A	B	300	270	260	230	235	B	B	B	B	B	A	R	A	A
3	A	A	A	A	A	A	A	A	230	330	310	B	B	230	220	220	260	270	A	A	A	A	A	A
4	A	A	A 310	A	A	A	A	B	B	B	B	B	B	B	B	B	250	260	B	A	A	A	A	A
5	A	B	B	A	B	A	B	A	B	B	B	B	B	B	250	B	B	B	B	B	E A 360	B	A	A
6	A	A	A	A	B	A	B	B	A	A	B	255	240	B	230	220	260	B	B	B	B	B	A	A
7	A	A	A	330	A	A	A	A	A	B	B	260	B	B	B	B	B	B	B	B	B	B	A	A
8	A	A	A	A	A	A	A	350	300	275	215	220	200	210	200	200	260	300	A	270	250	B	A	A
9	A	A	A	240	A	A	A	A	A	E A 340	Y	B	B	B	B	B	B	B	260	A	A	A	A	A
10	A	A	A	A	A	A	B	B	B	B	B	B	B	240	B	B	B	B	E B 275	B	A	A	A	A
11	A	A	A	A	A	A	B	B	B	Y	B	B	230	220	210	200	300	B	B	230	B	B	B	B
12	A	A	A	A	A	B	B	B	B	A	B	300	E B 250	B	220	200	240	250	B	B	B	B	B	B
13	B	B	E A 355	300	A	370	350	285	250	300	B	250	210	210	240	210	A 200	B	B	B	B	A	A	A
14	A	A	A	A	270	A	A	350	300	290	260	200	220	230	200	210	A	235	225	E A 250	A	A	B	410
15	A	370	325	E A 320	E A 350	E A 400	A	A	B	B	285	230	220	230	220	240	230	230	240	A	A	A	A	A
16	A	A	A	A	A	B	Y	A	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A	B
17	A	B	B	B	B	B	A	A	A	Y	345	270	B	B	B	B	B	B	B	B	B	B	B	A
18	320	A	A	A	A	B	A	A	A	270	E B 330	B	250	E B 350	B	220	295	320	A	A	A	A	A	A
19	A	A	B	B	B	A	A	A	A	B	B	B	B	B	B	B	B	B	A	Y	A	A	A	A
20	B	B	Y	B	B	B	A	B	B	B	B	B	B	B	B	B	B	270	B	B	B	B	B	Y
21	A	A	A	A	A	A	A	E A 450	300	E A 270	245	200	220	220	200	230	200	A	230	245	B	A	340	A
22	Y	A	A	B	B	A	A	A	A	B	B	A	B	B	250	230	220	250	B	B	B	B	A	A
23	220	A	A	A	A	A	A	A	A	A	A 350	300	300	210	220	300	300	230	A	A	A	A	A	A
24	A	B	A	B	B	A	A	A	B	B	A	A	260	260	B	B	B	B	B	B	A	A	B	R
25	A	A	A	A	A	A	B	A	A	A	A	280	B	B	B	B	210	260	B	B	B	B	A	A
26	A	A	A	A	A	A	B	A	E A 450	300	310	B	B	250	B	B	B	B	B	B	A	A	A	E A 400
27	A	A	A	A	B	A	B	B	A	B	B	280	B	B	B	B	B	B	B	B	B	B	A	A
28	A	E A 320	A	A	B	A	A	B	B	B	B	A	B	B	B	B	B	B	A	A	A	A	A	A
29	A	B	A	B	A	A	A	A	E A 350	A	A	240	240	220	245	B	B	B	245	B	B	A	A	A
30	A	A	A	A	B	A	A	B	Y	B	B	B	B	230	B	B	B	B	B	B	A	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	2	2	3	4	2	2	1	4	7	8	10	14	13	15	14	12	13	11	6	5	2		1	2
MED	270	345	A 318	U 290	U 290	378	350	334	U 275	288	298	258	235	230	220	220	250	260	238	245	U 278		340	405
UQ			332	325				U 375	312	308	330	280	250	232	240	230	260	270	252	250				
LQ			318	270				318	275	272	260	230	220	220	210	205	220	242	230	245				

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