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ION. ANT.—43

IONOSPHERIC DATA AT SYOWA STATION

(ANTARCTICA)

July 1984—December 1984

CONTENTS

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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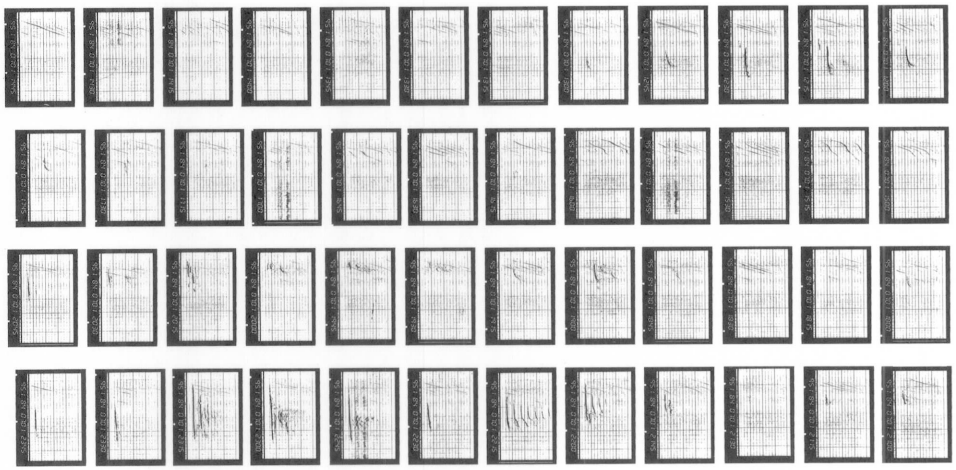

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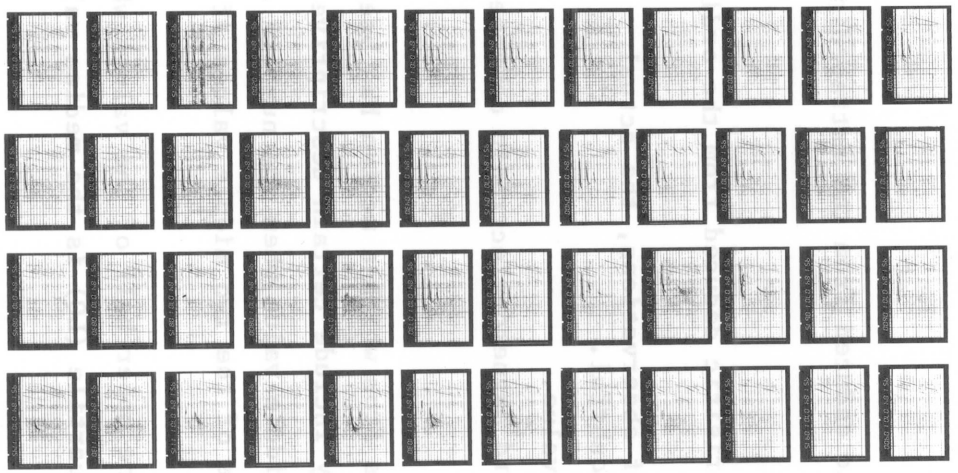

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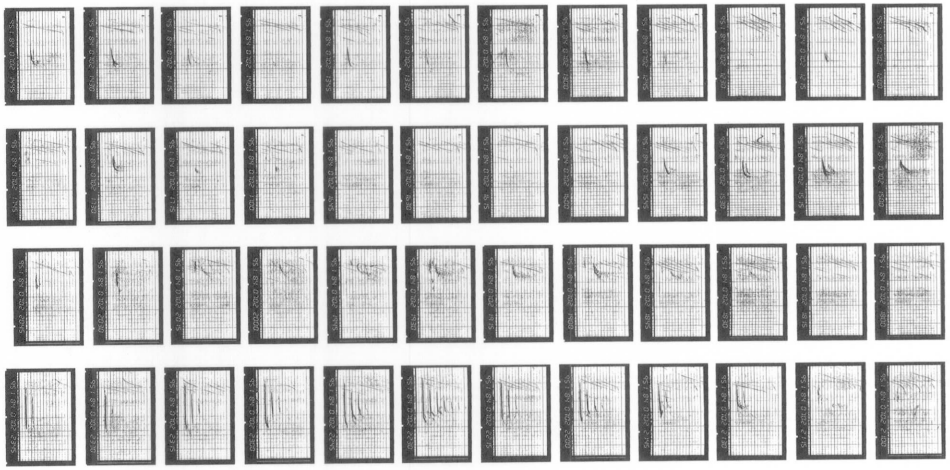

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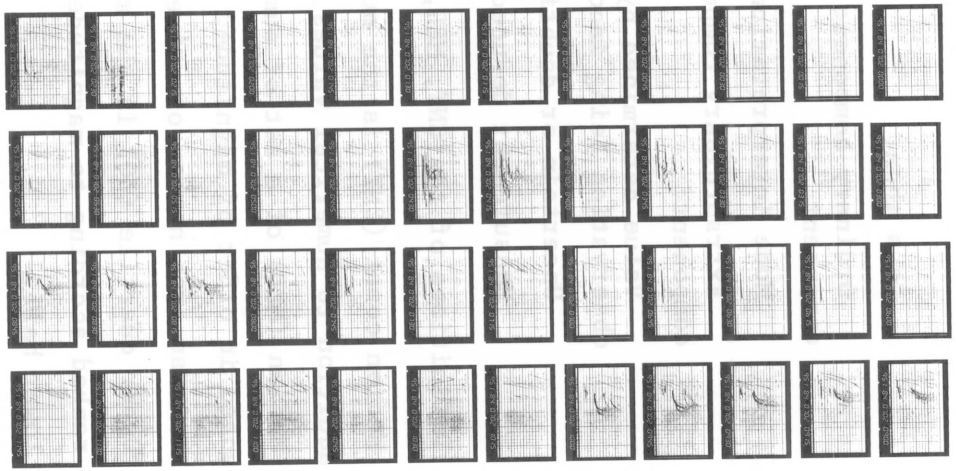

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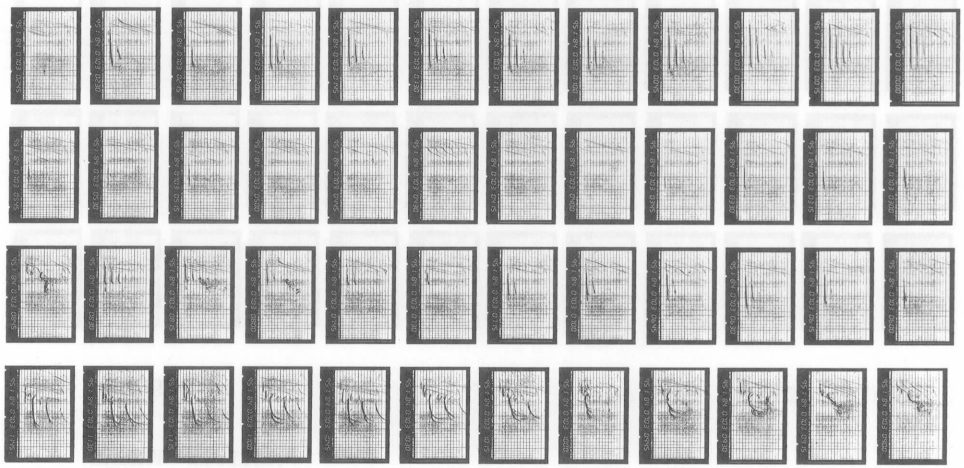

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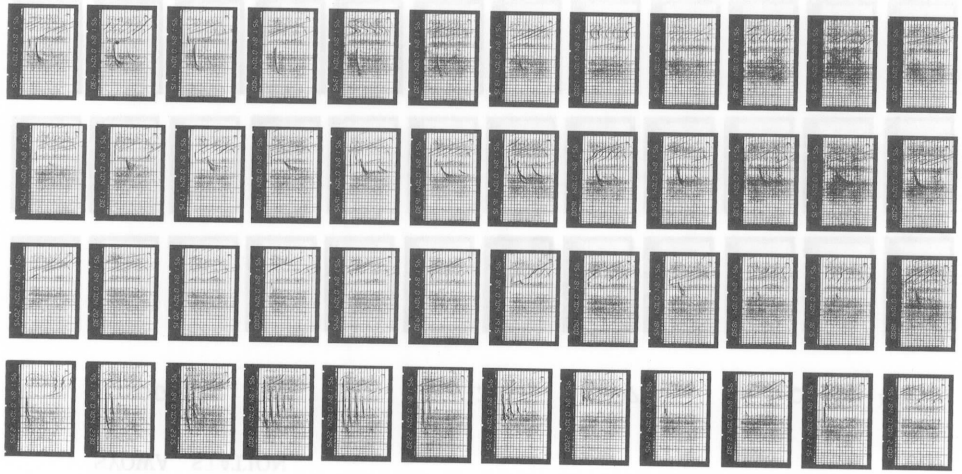

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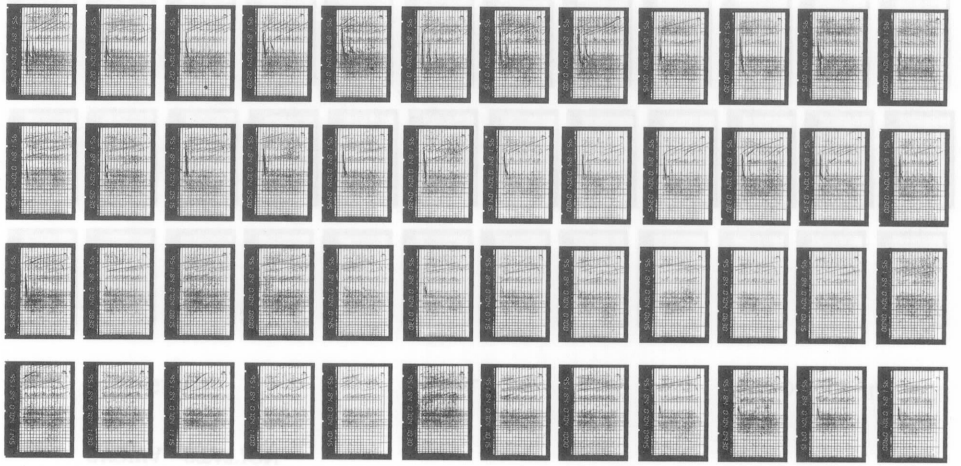

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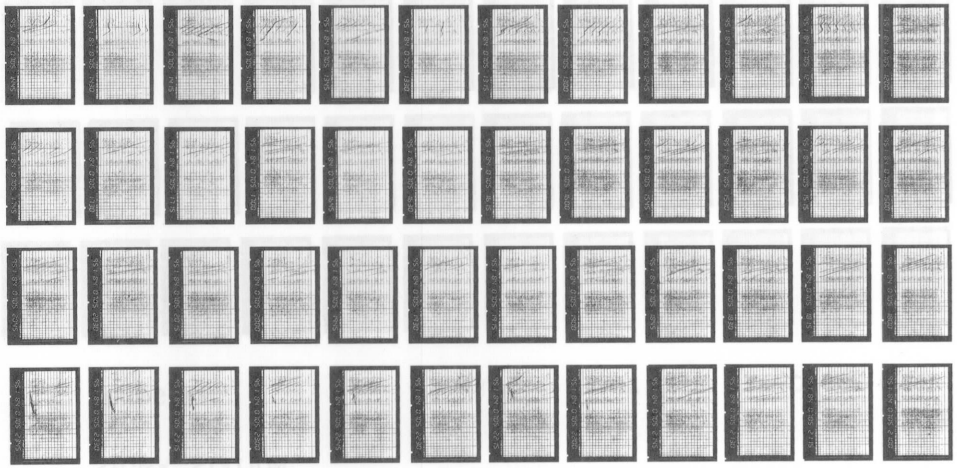

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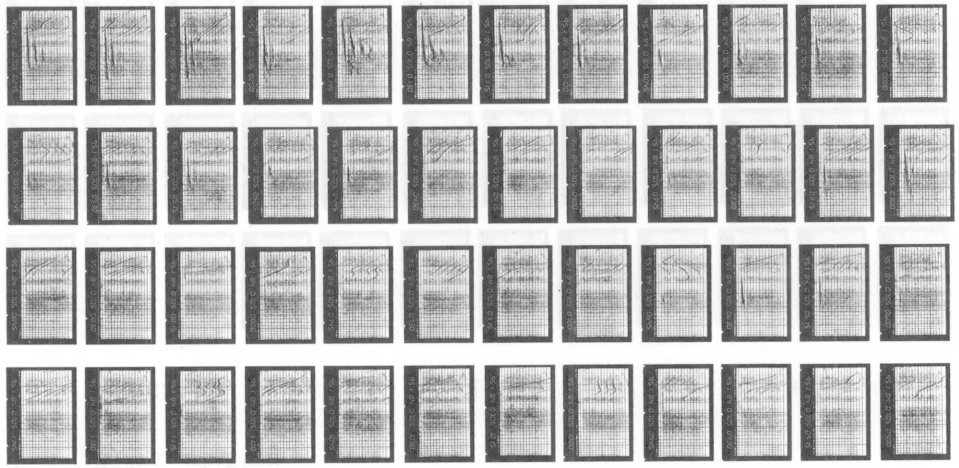

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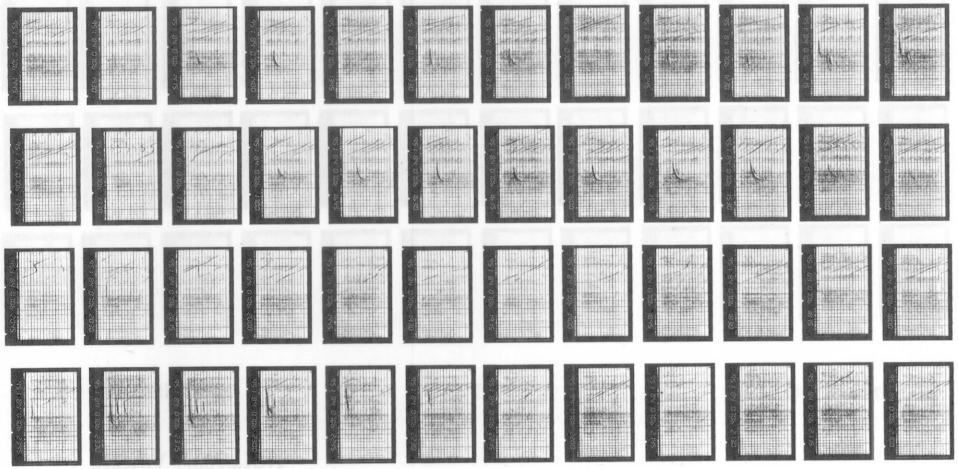

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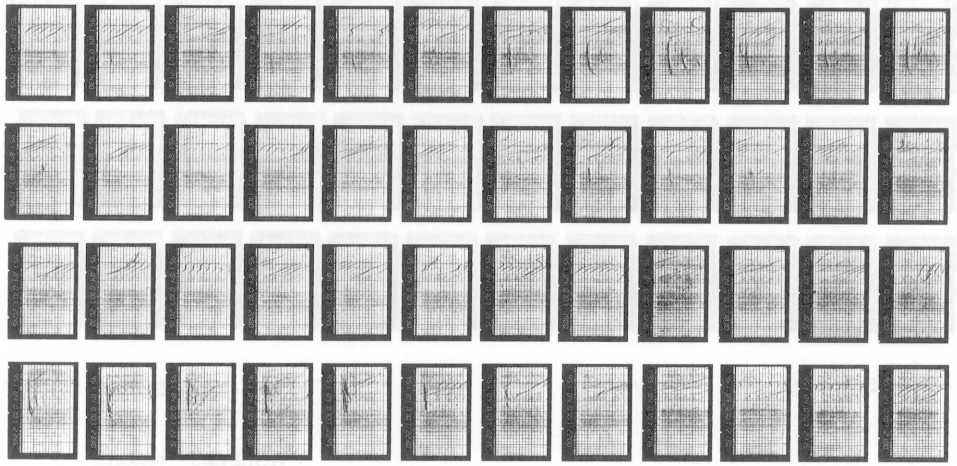

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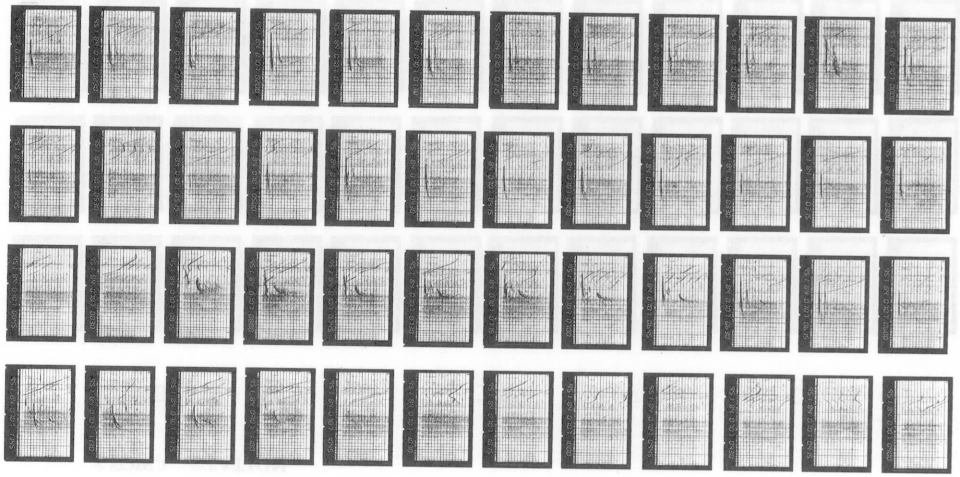

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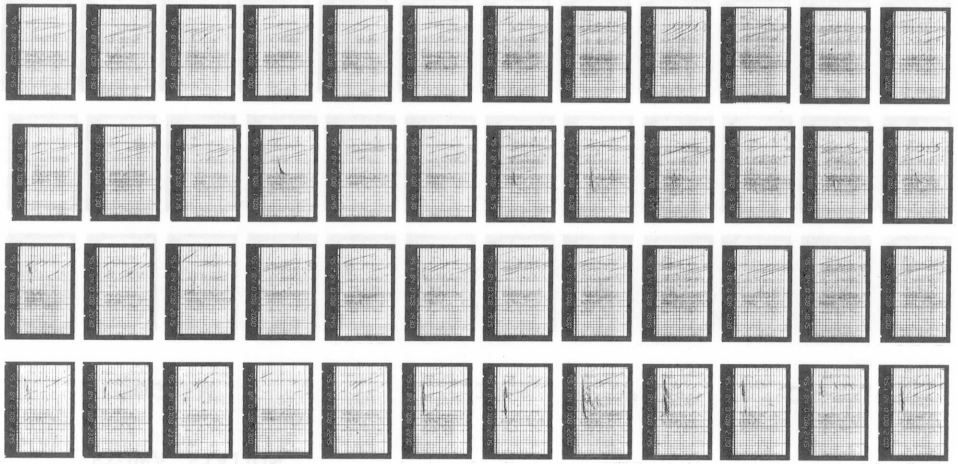

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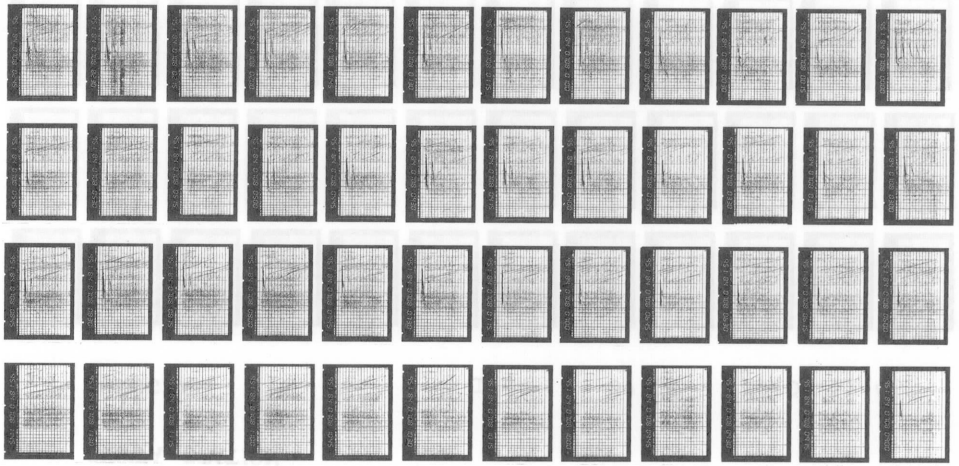

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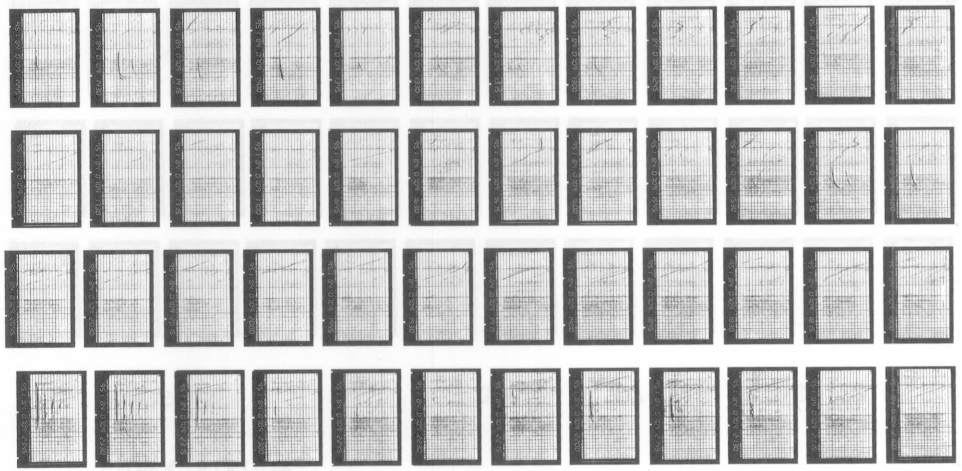

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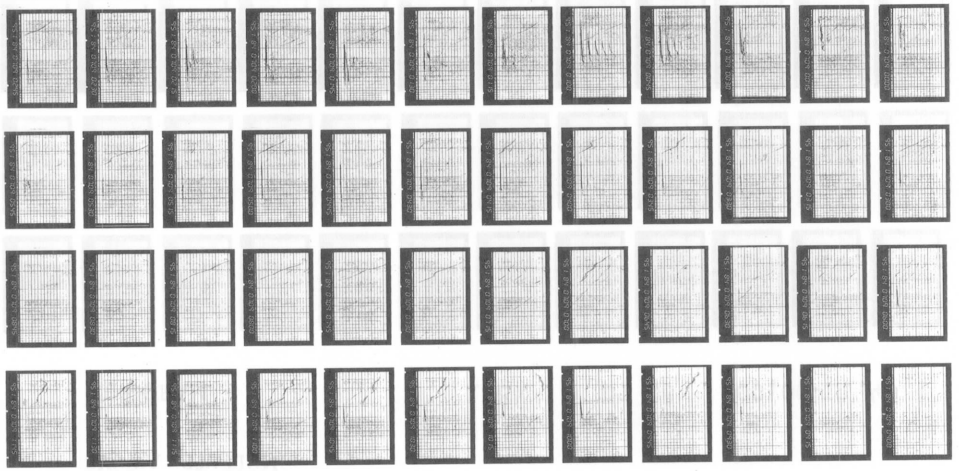

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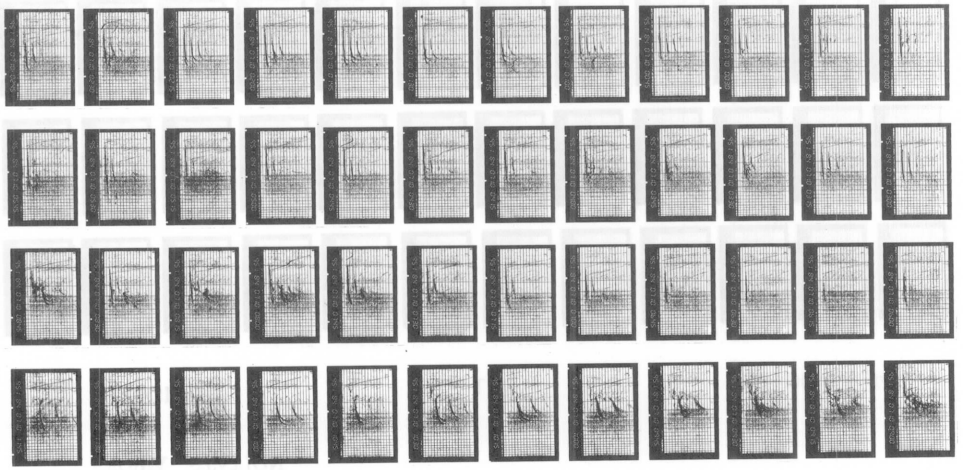

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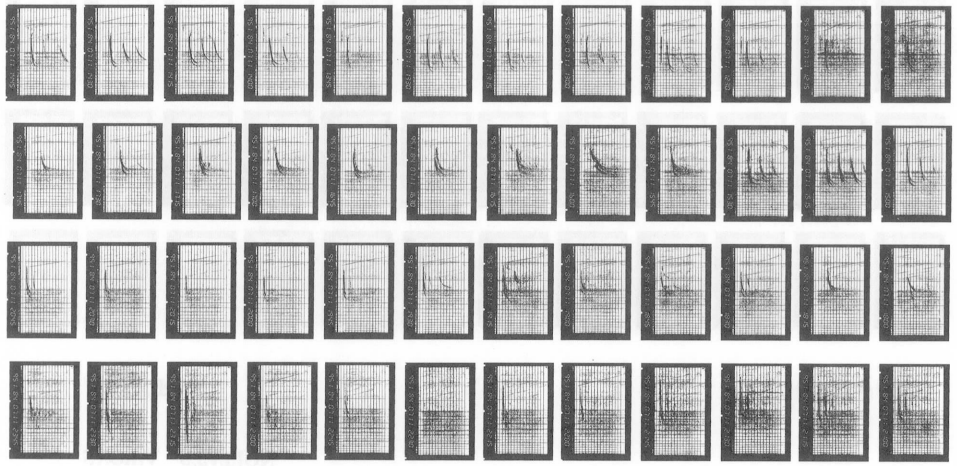

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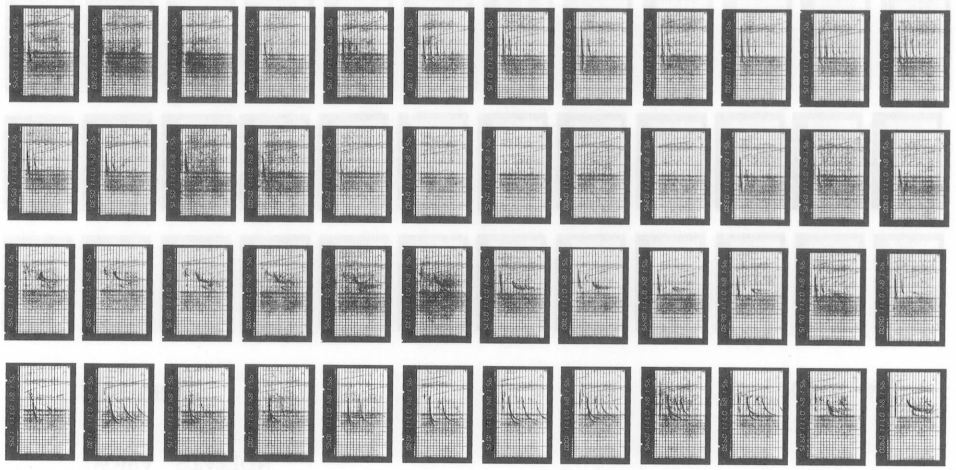

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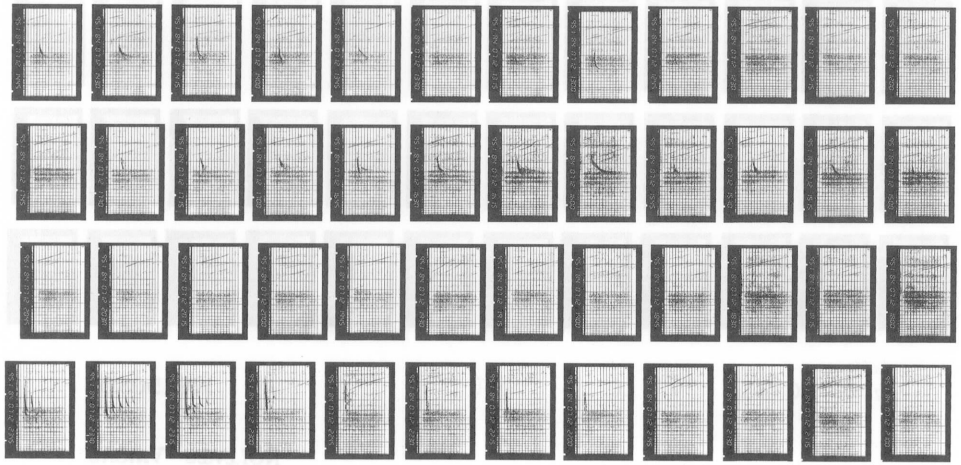

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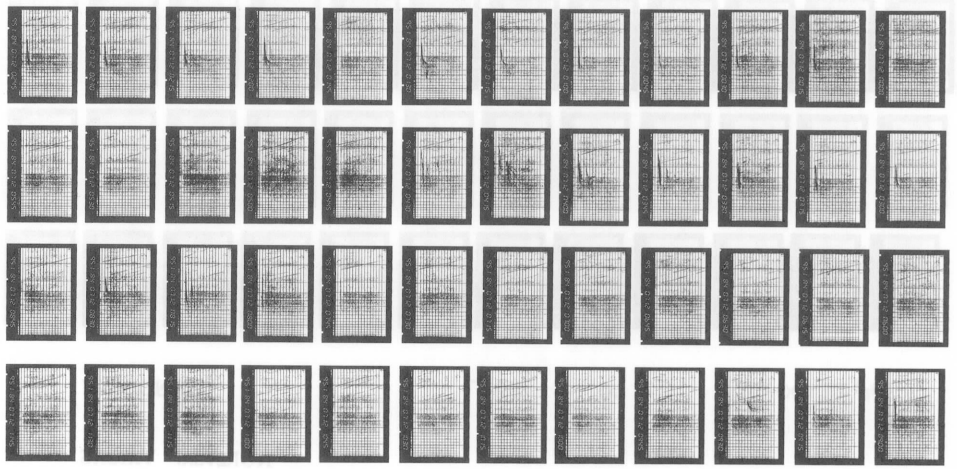

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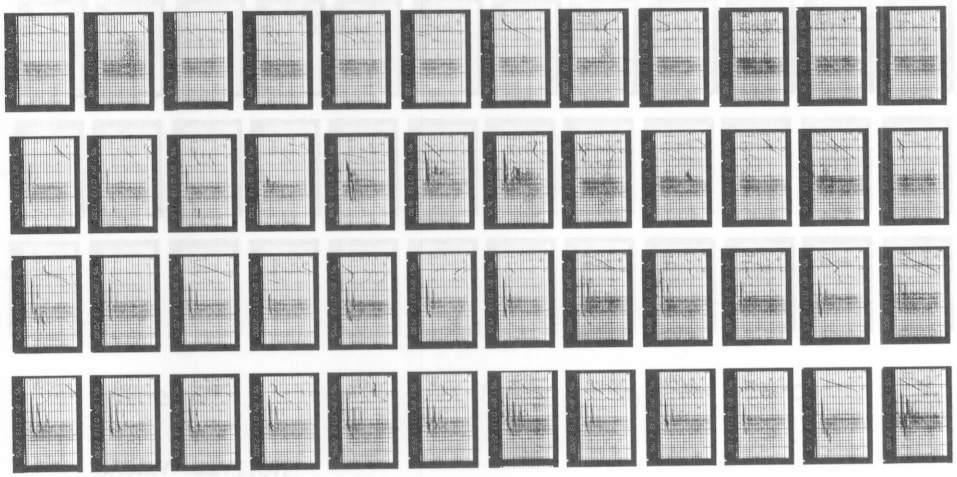

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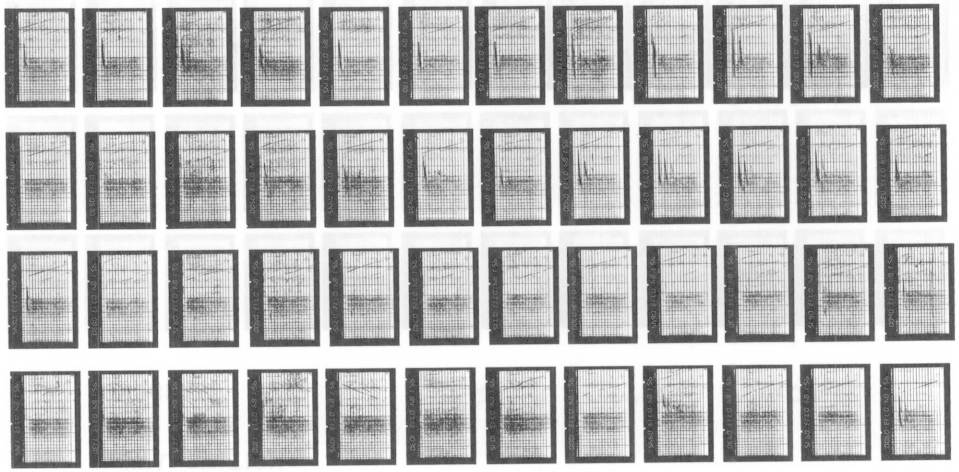

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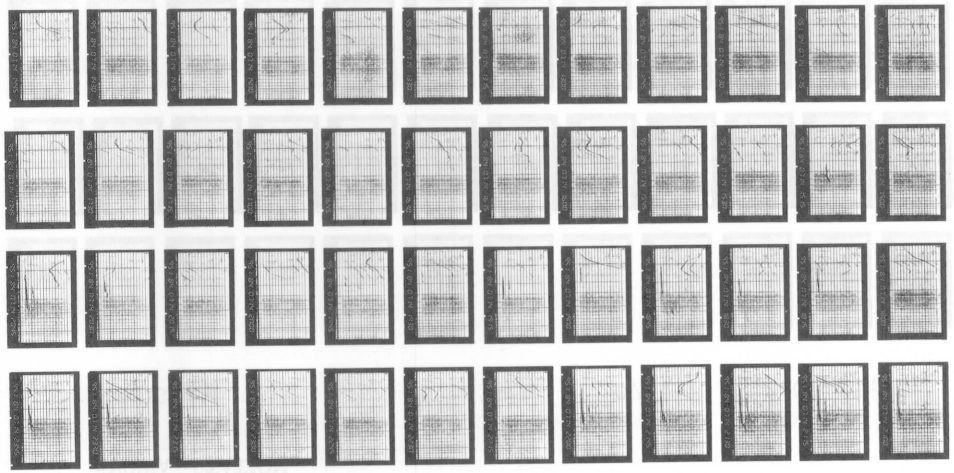

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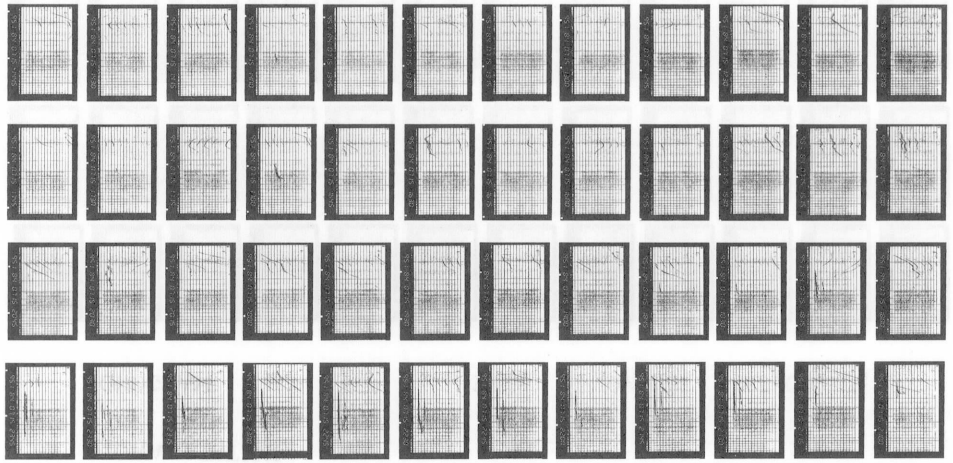

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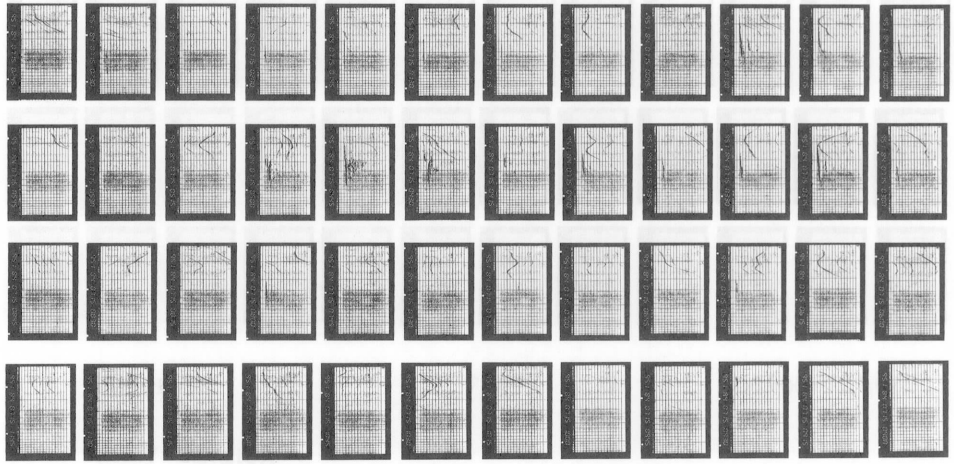

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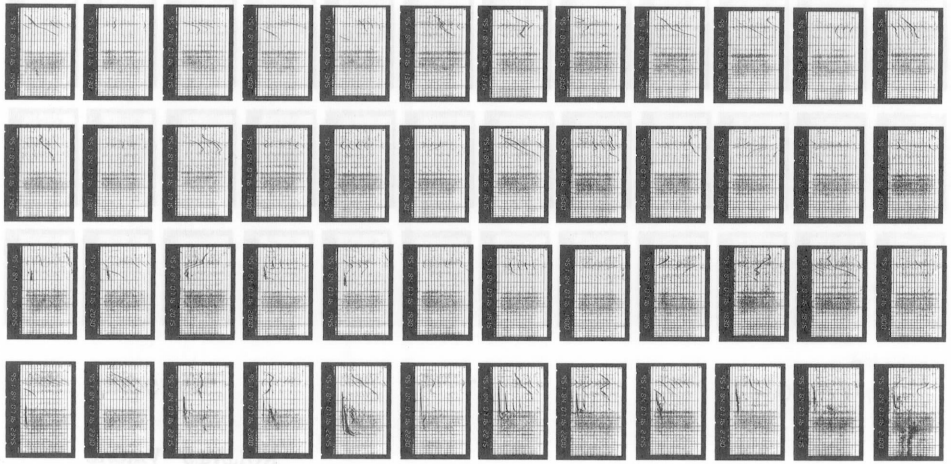

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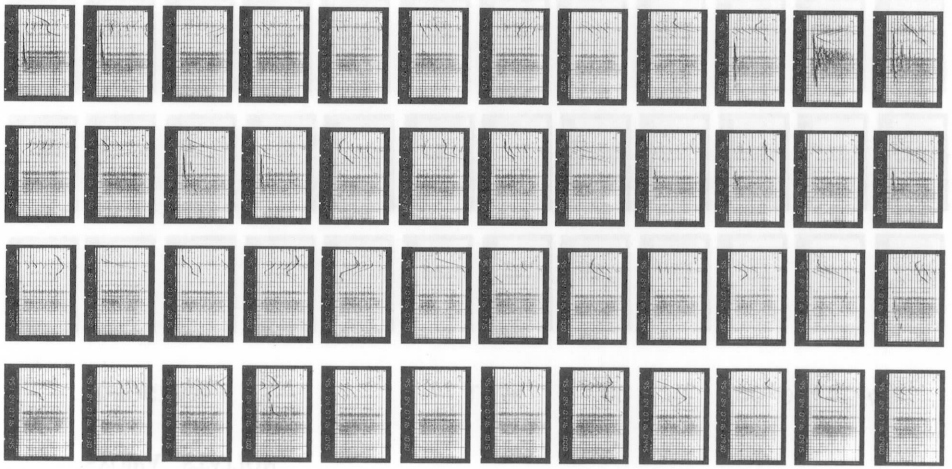

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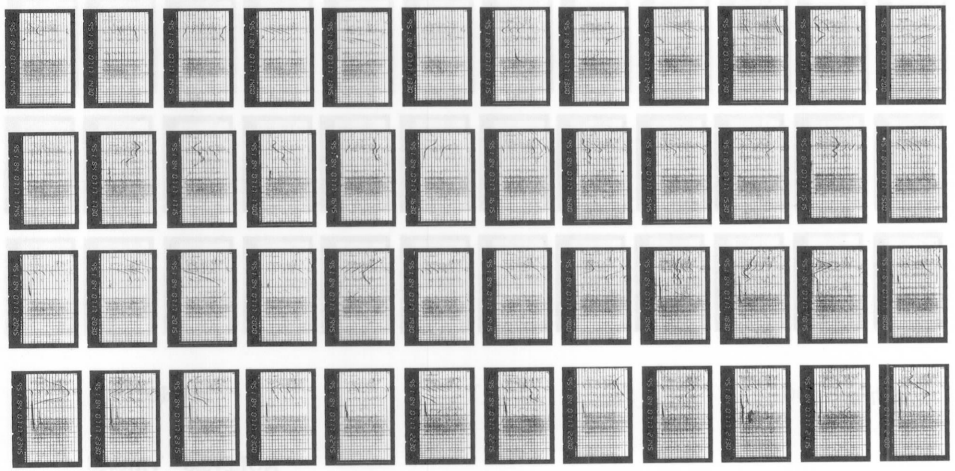

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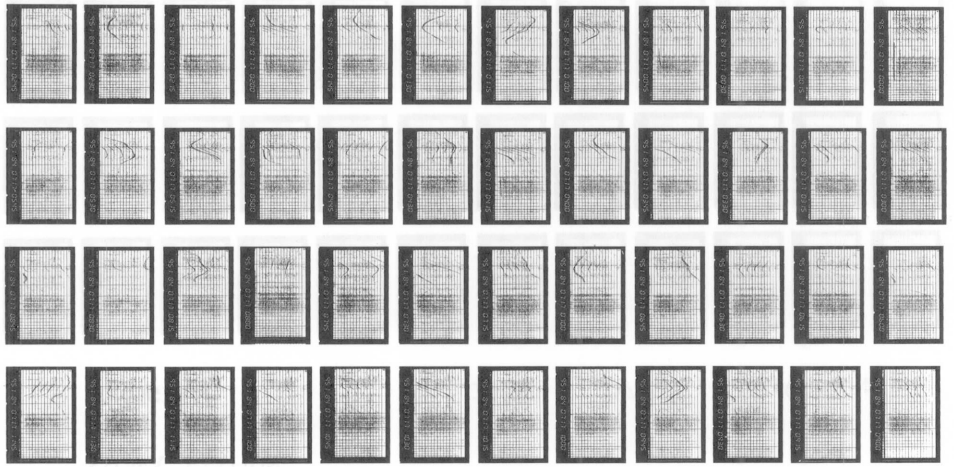

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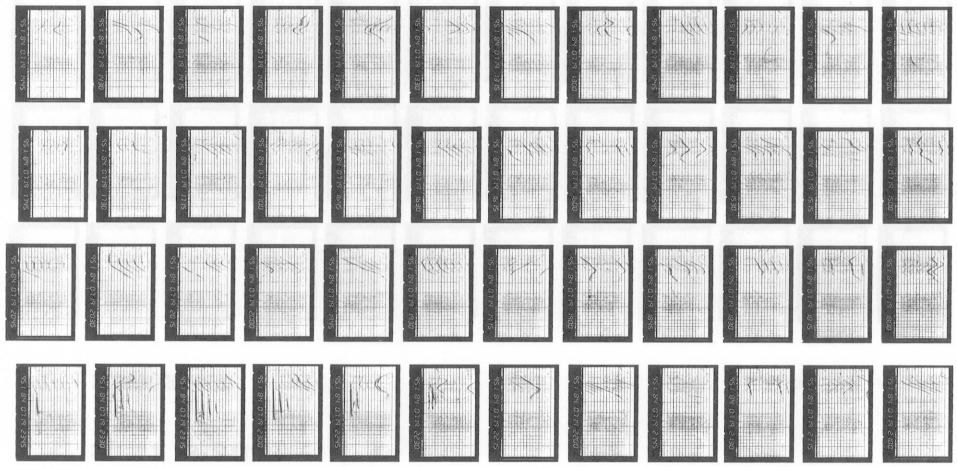

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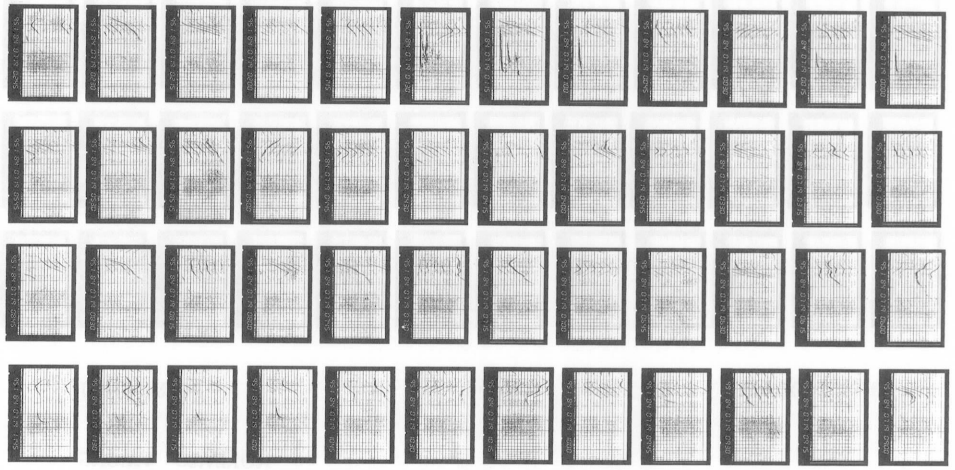

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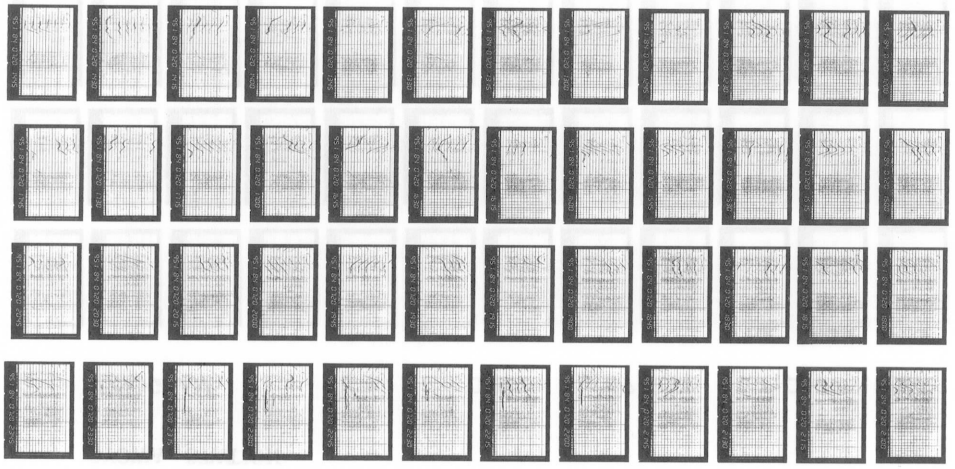

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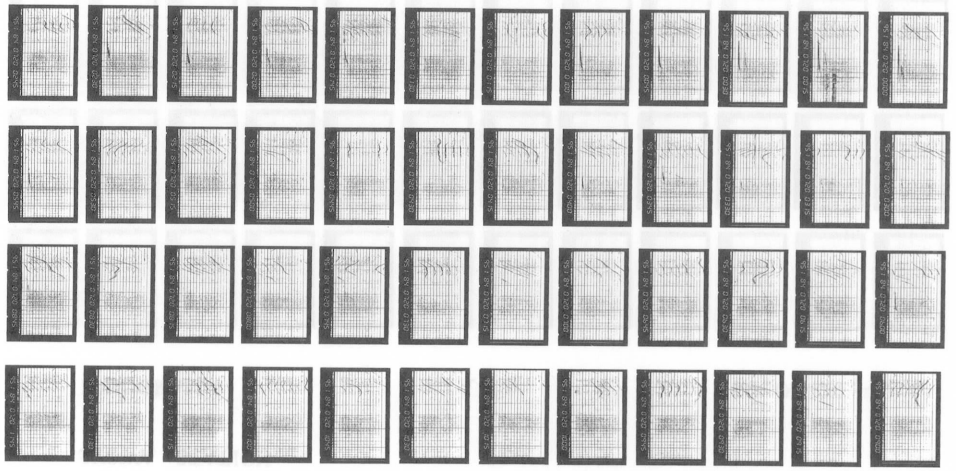

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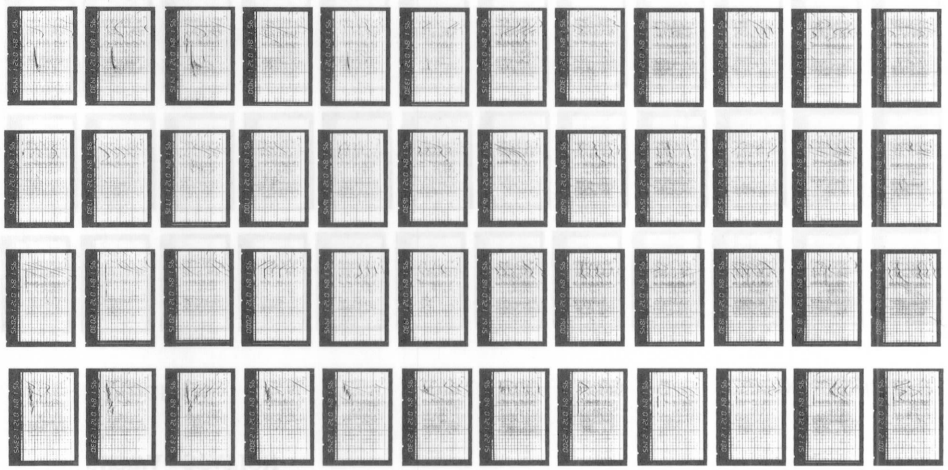

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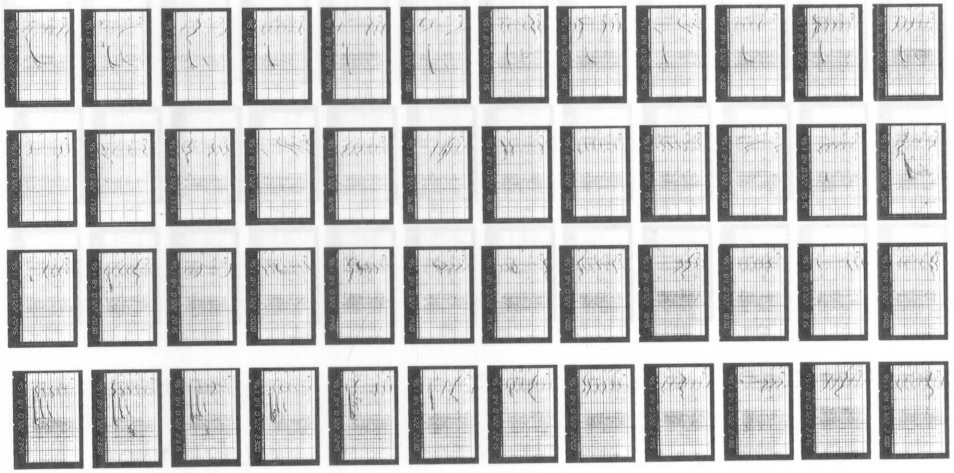

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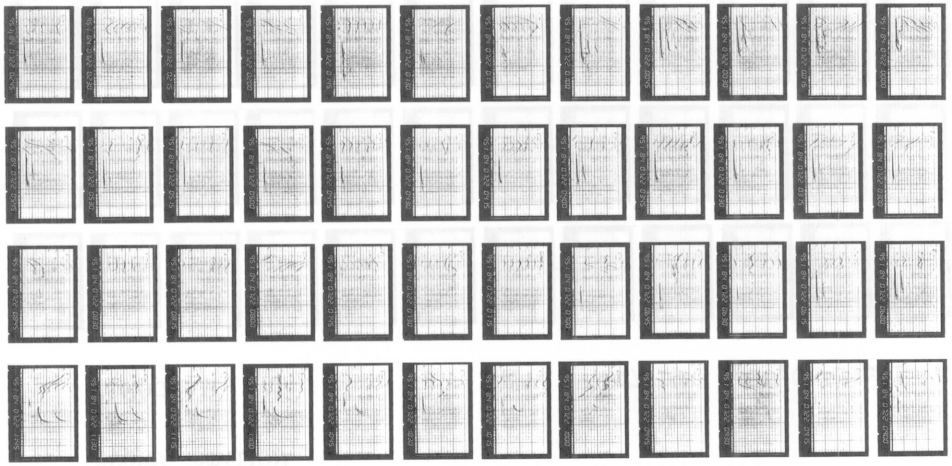

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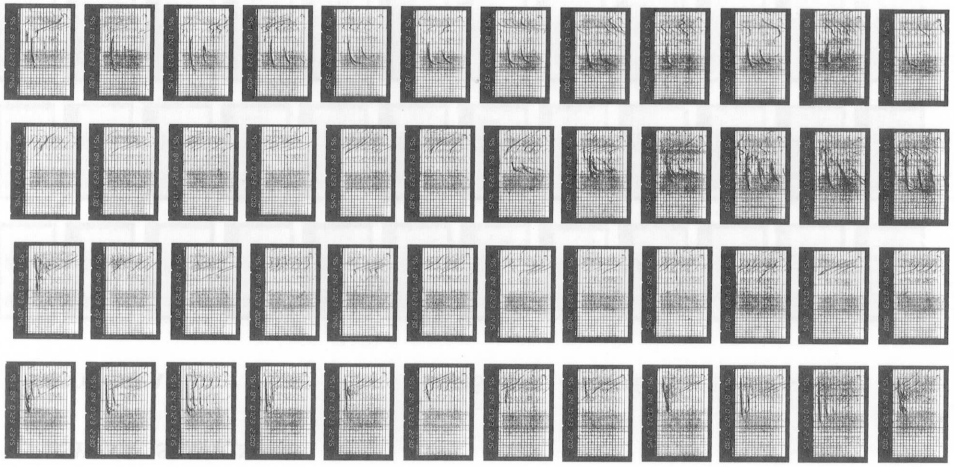

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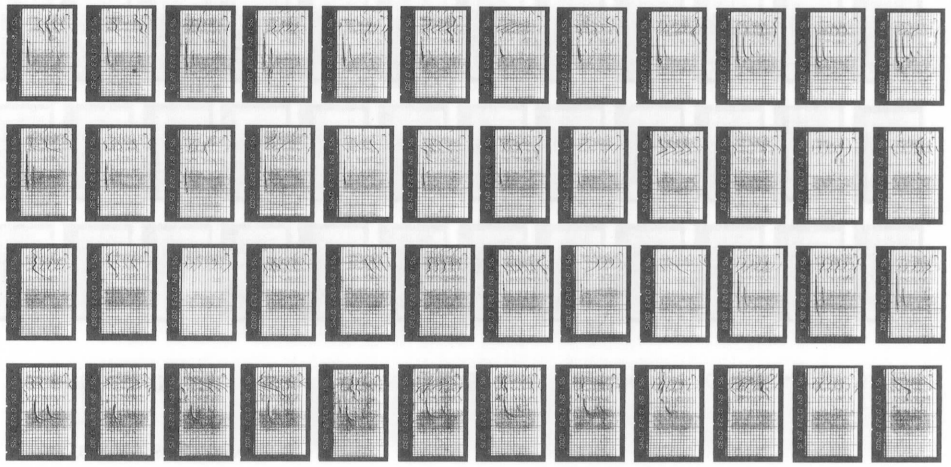

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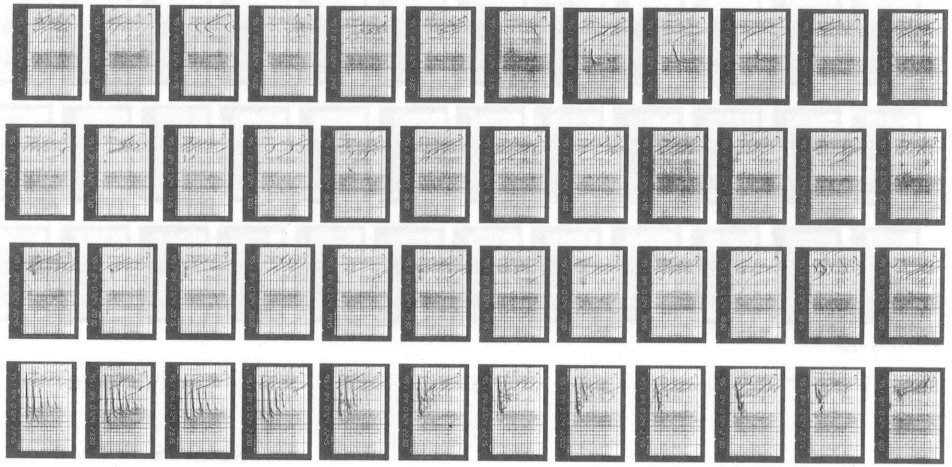

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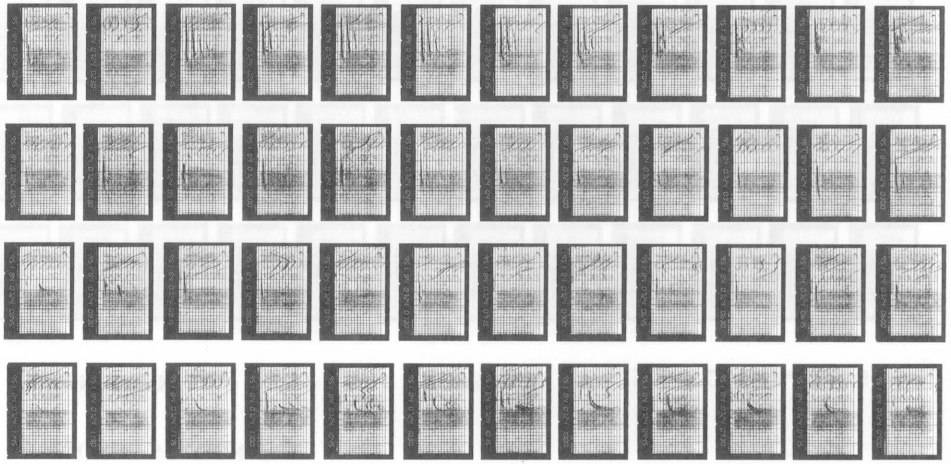

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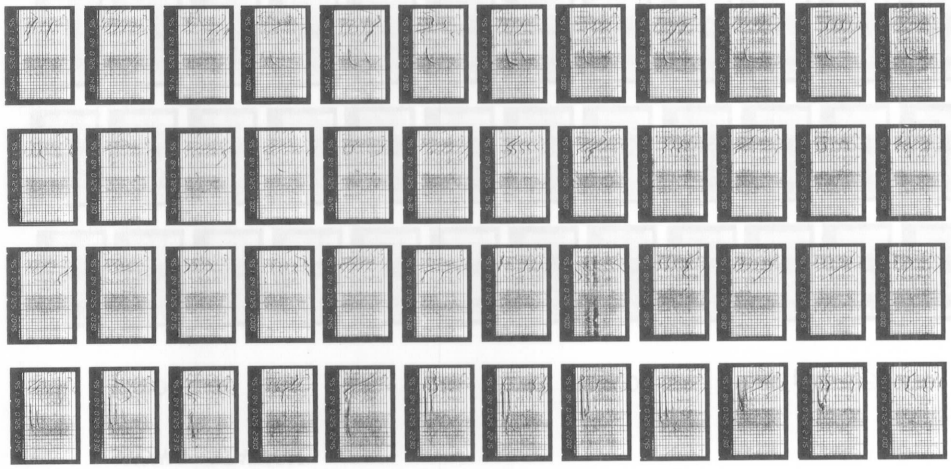

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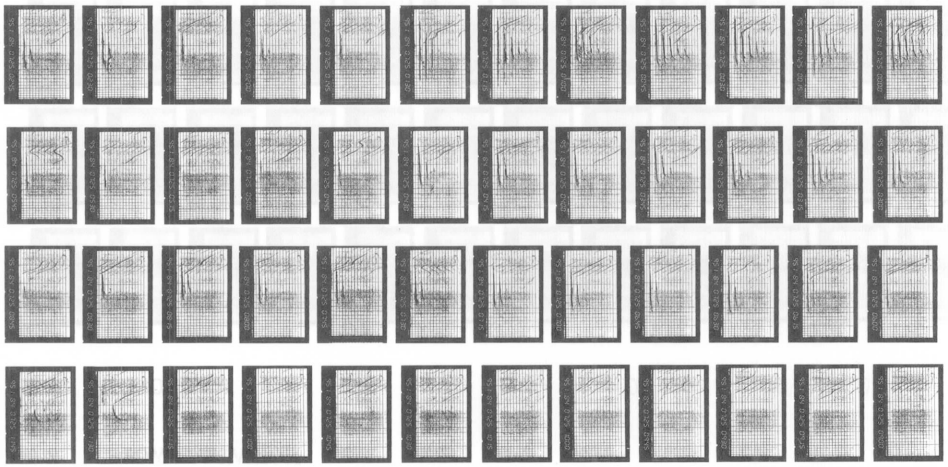

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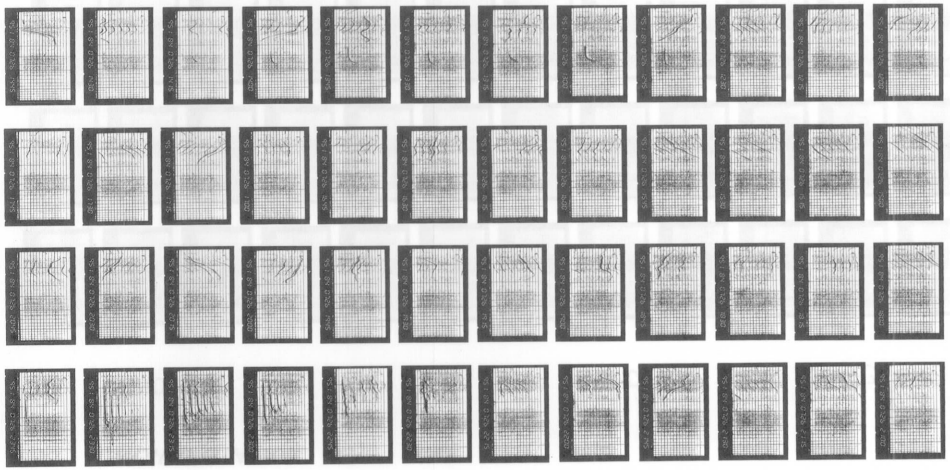

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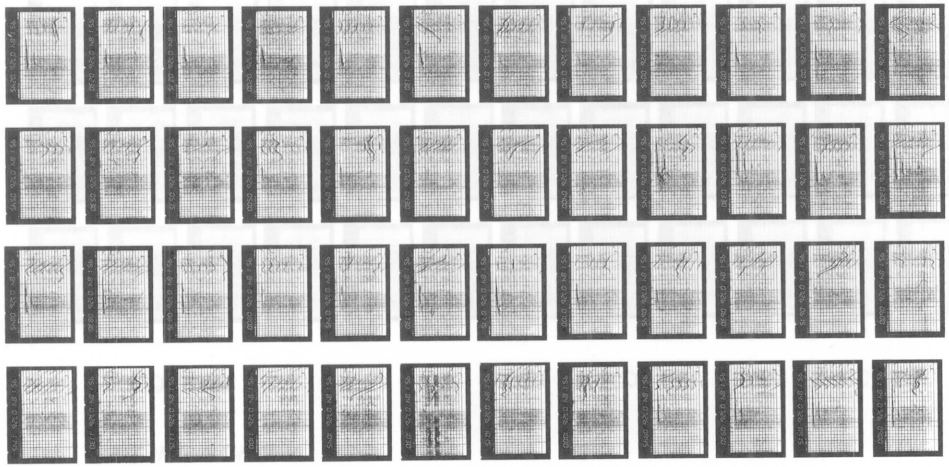

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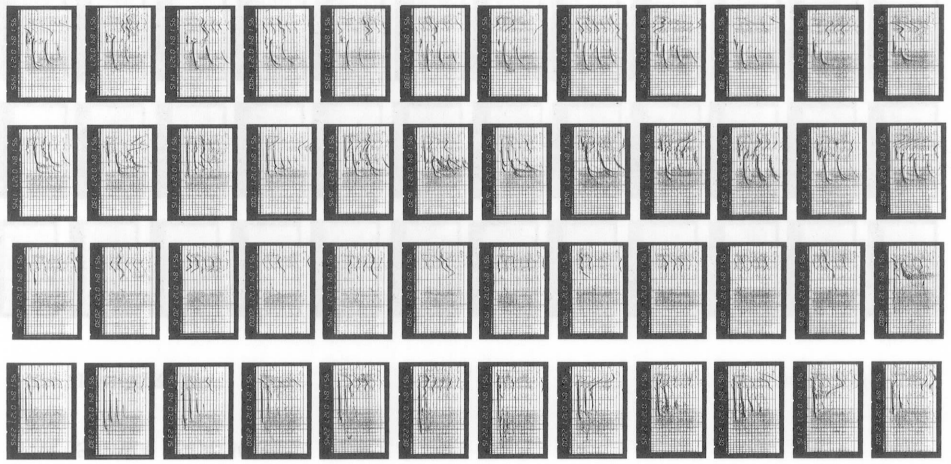

SYOWA STATION

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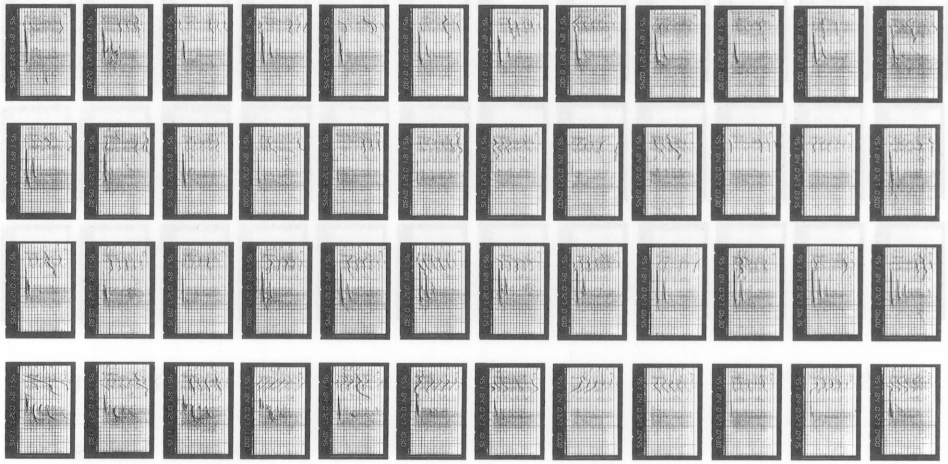

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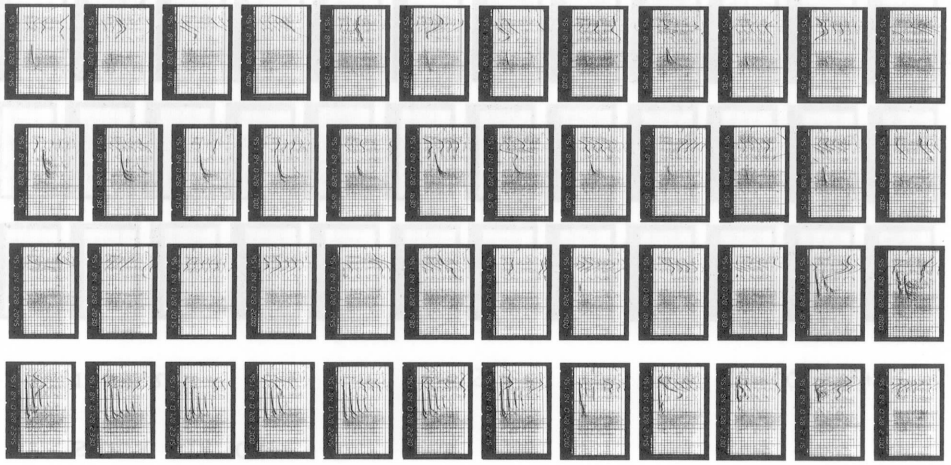

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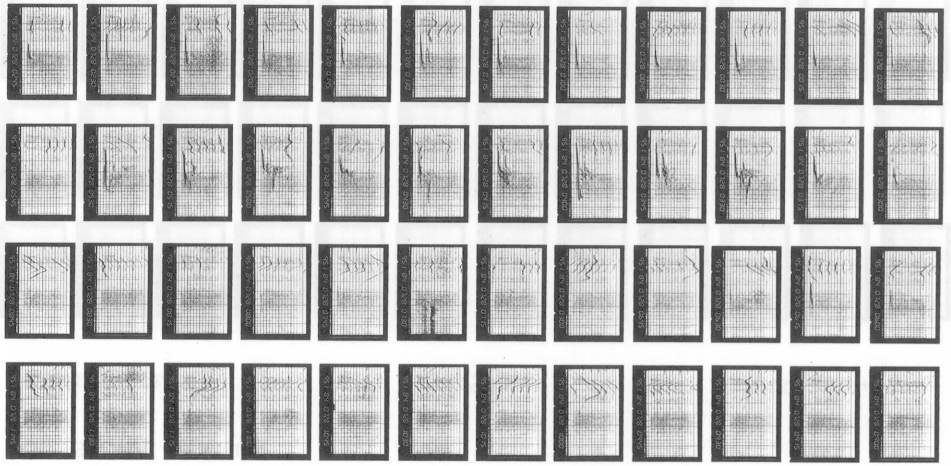

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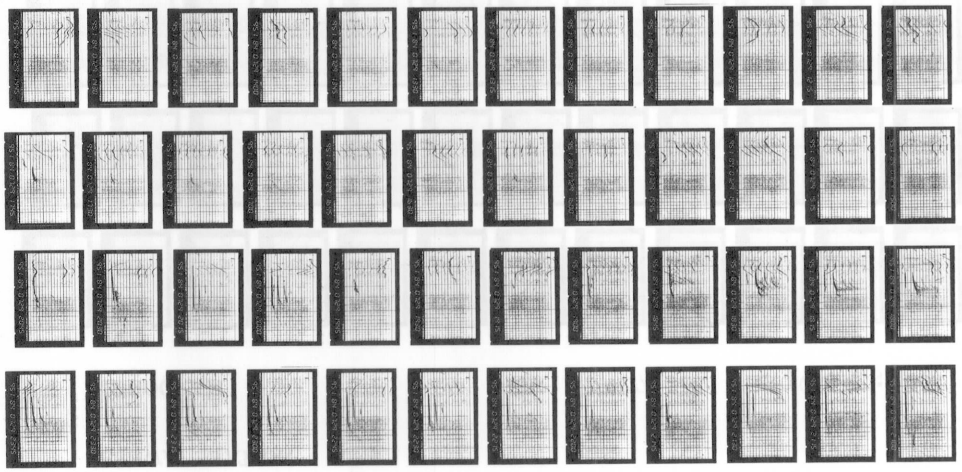

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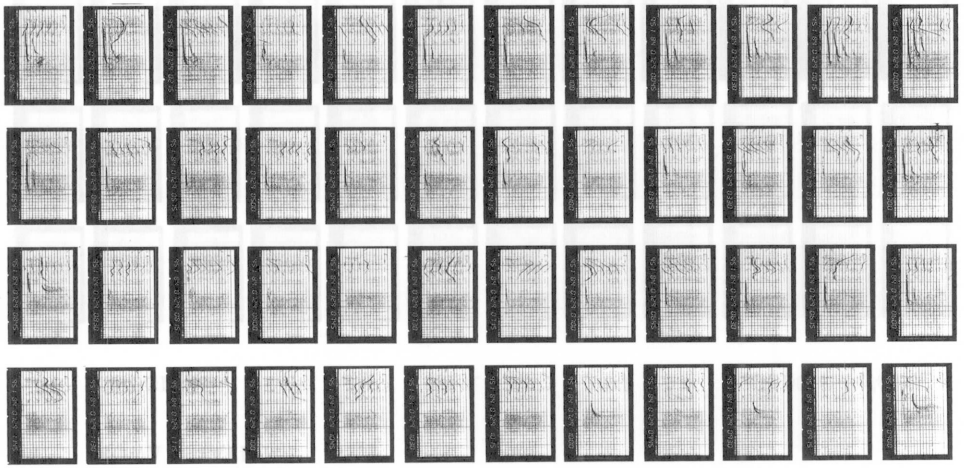

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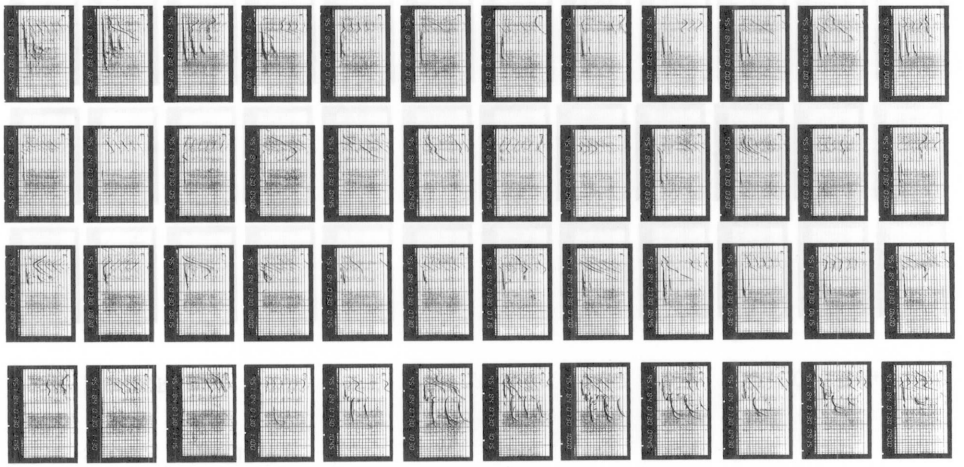

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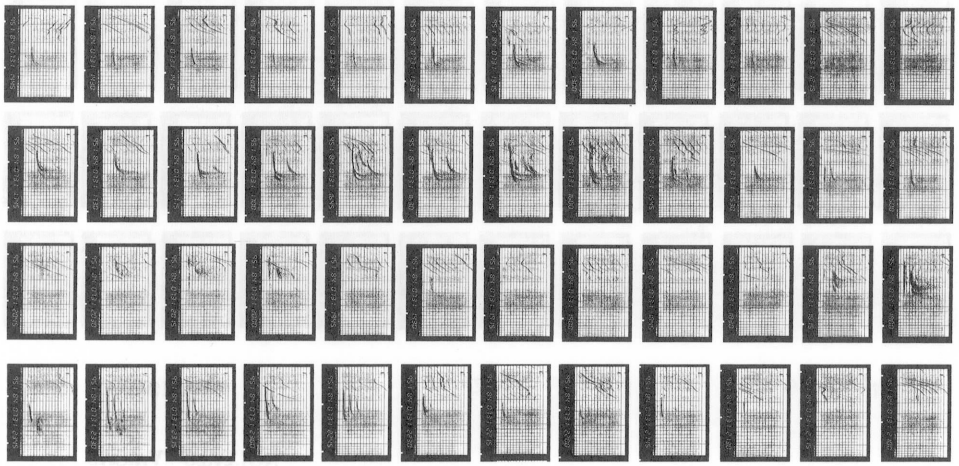

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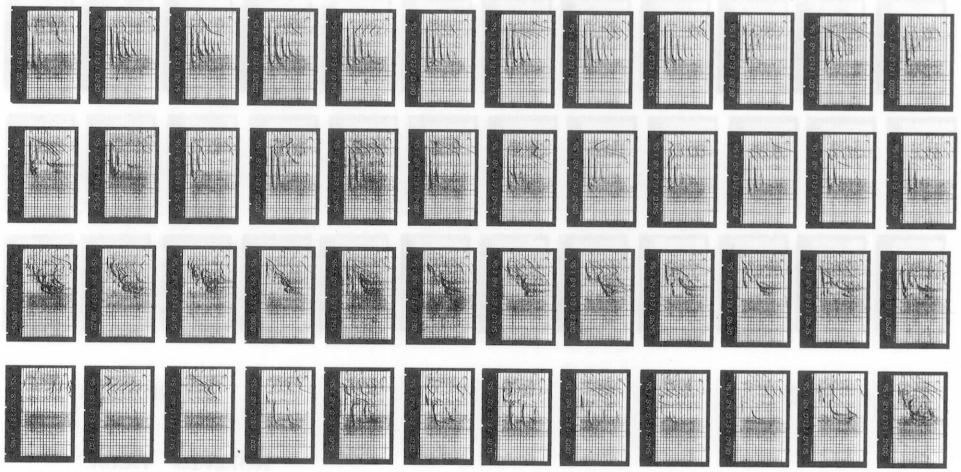

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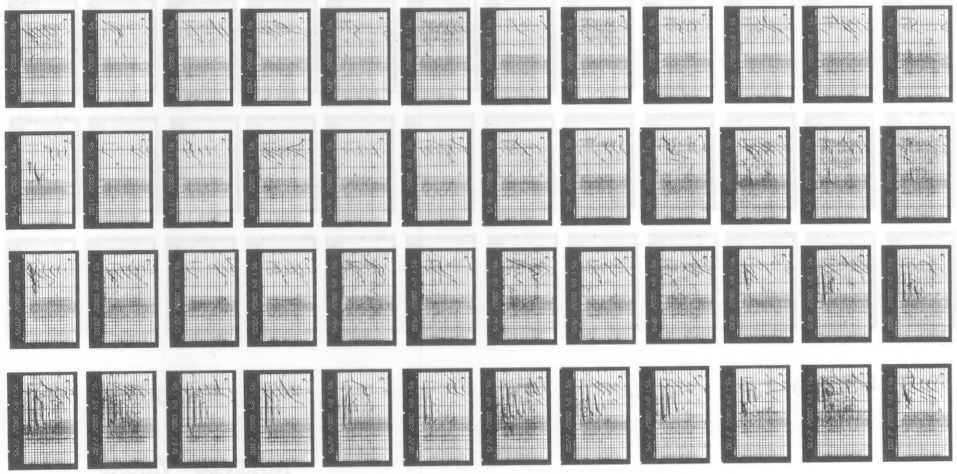

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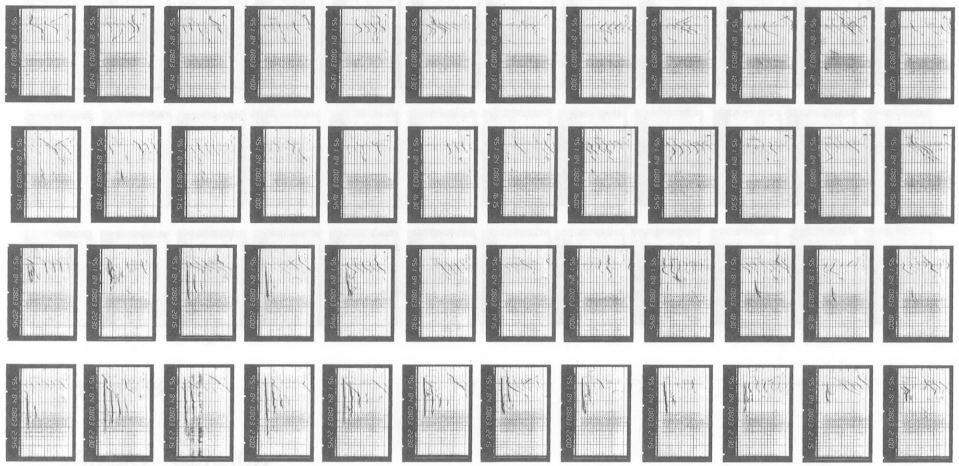

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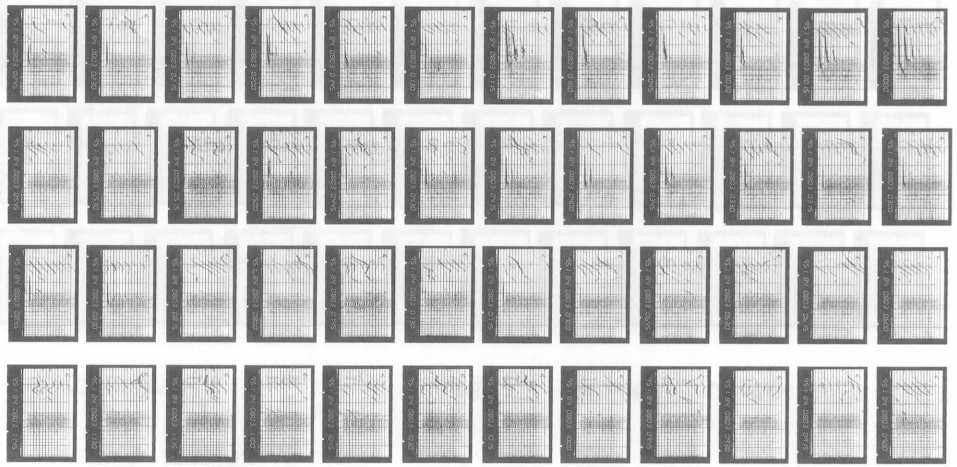

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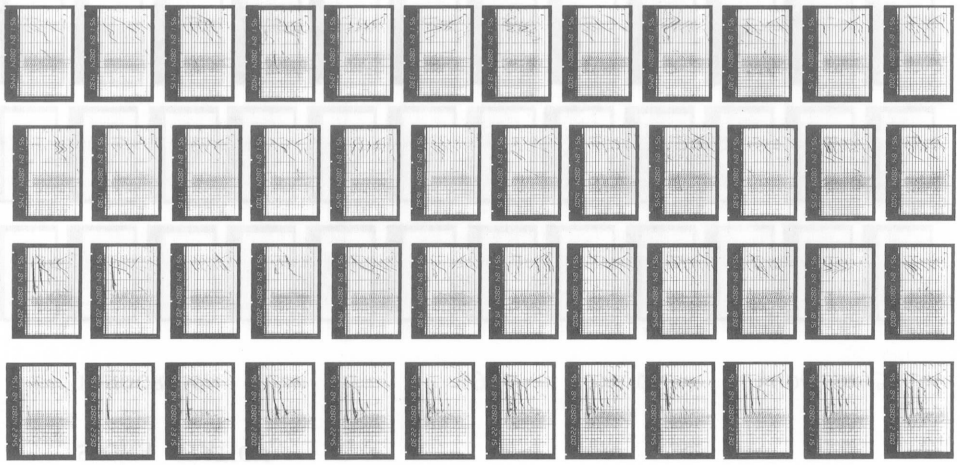

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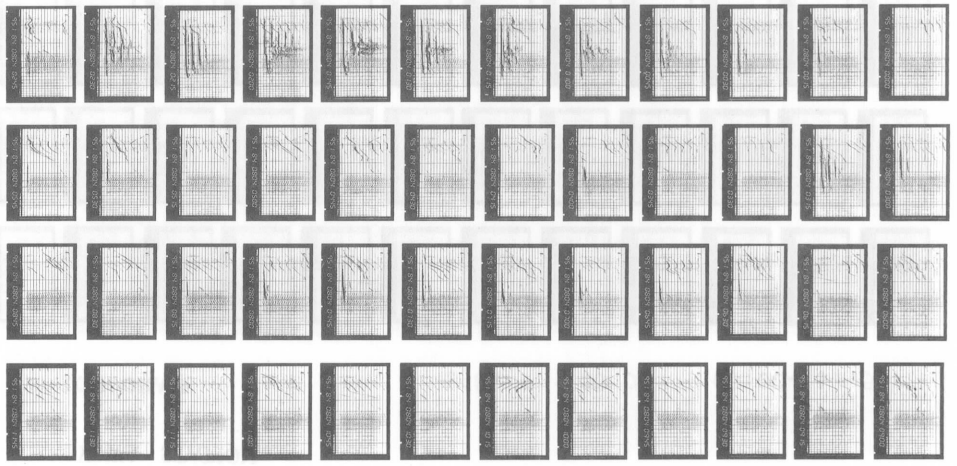

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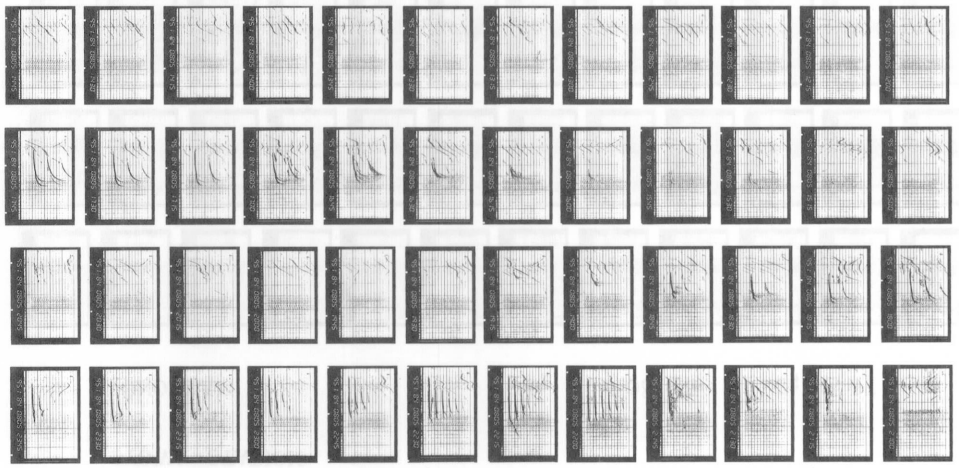

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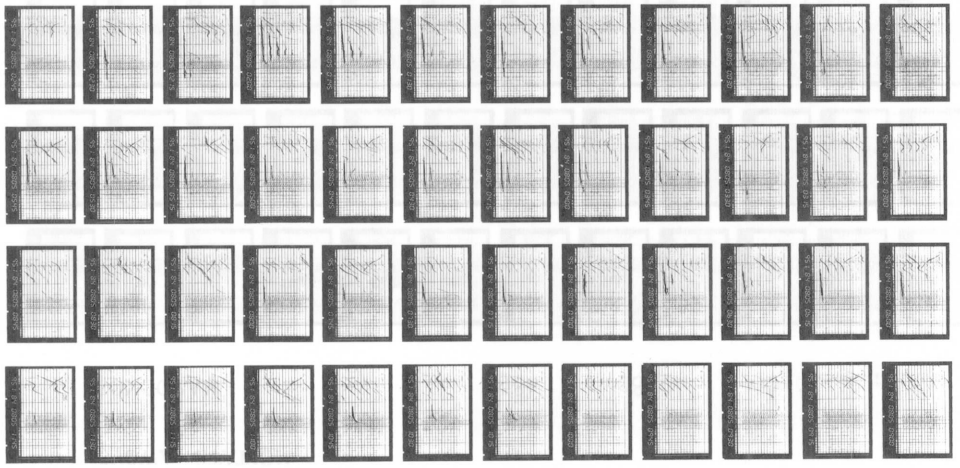

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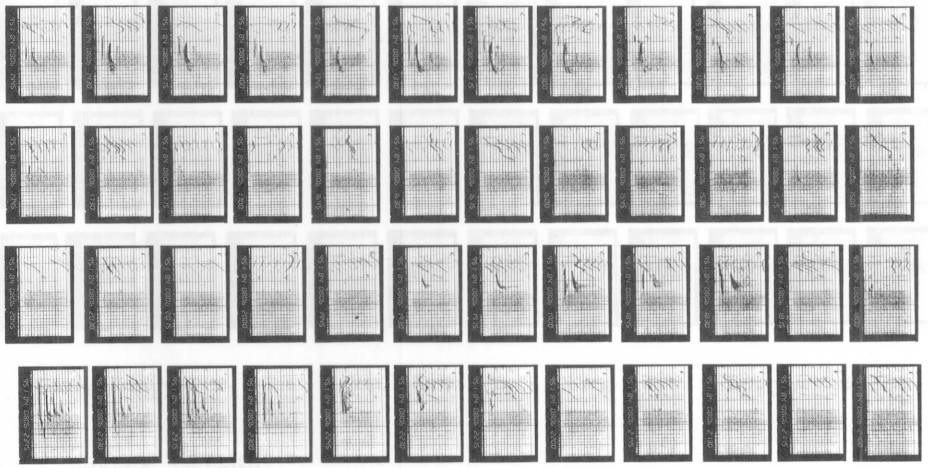

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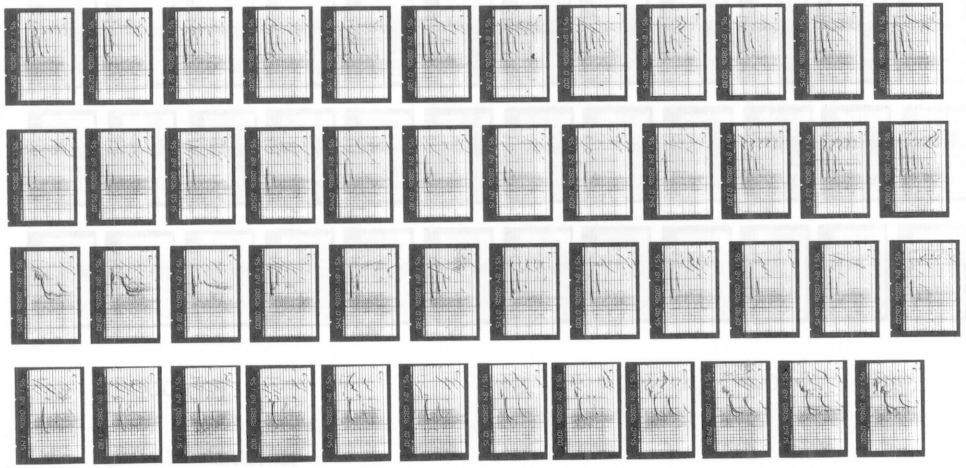

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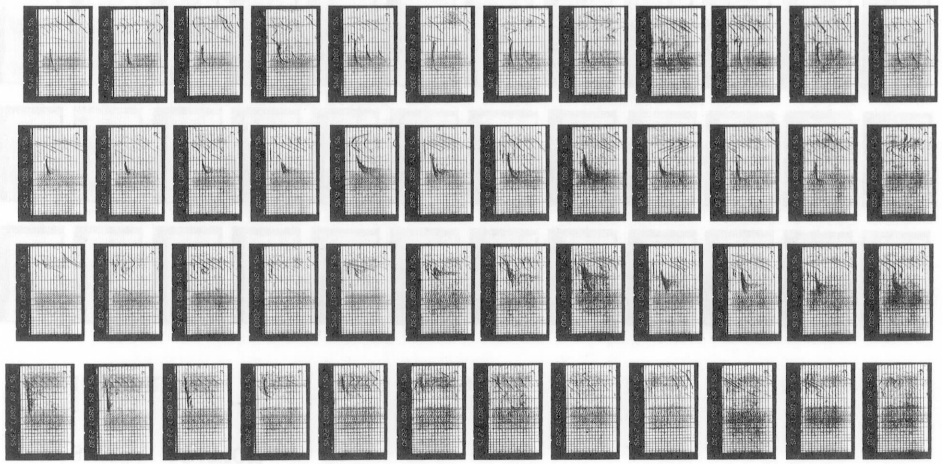

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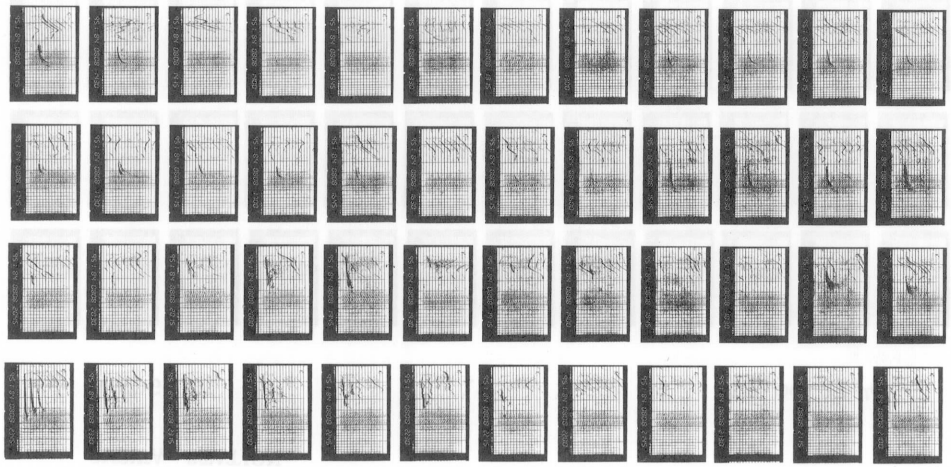

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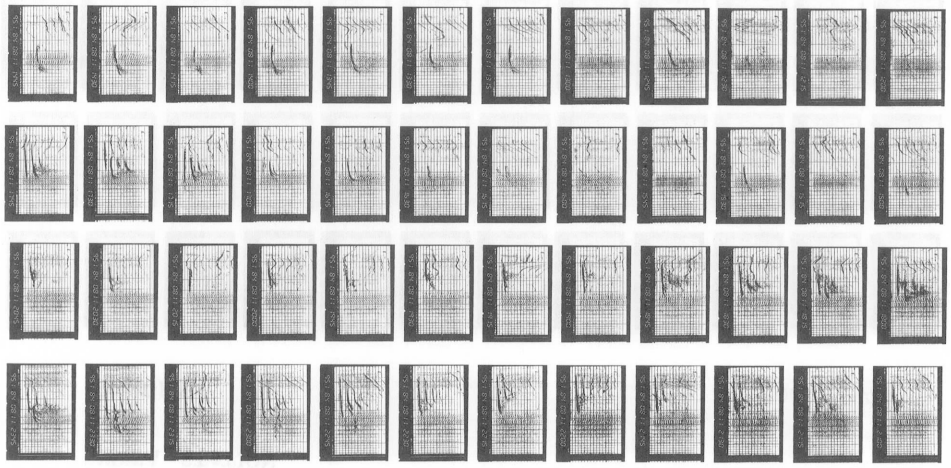

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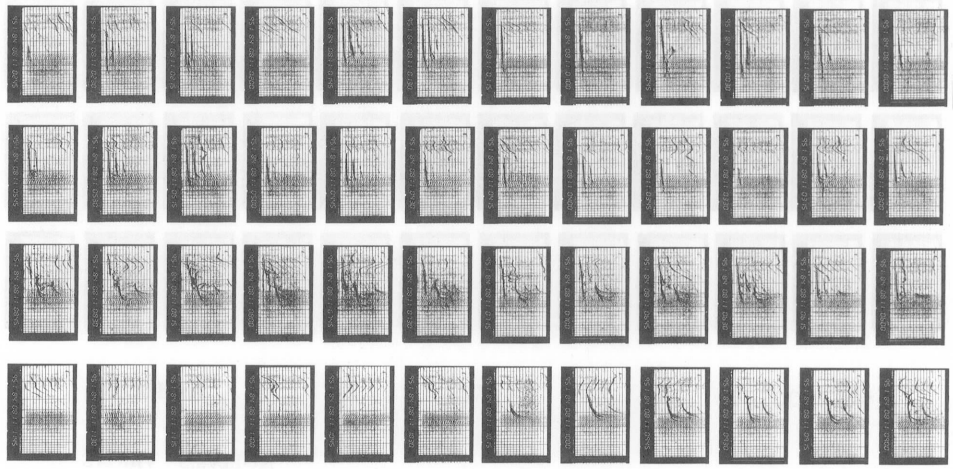

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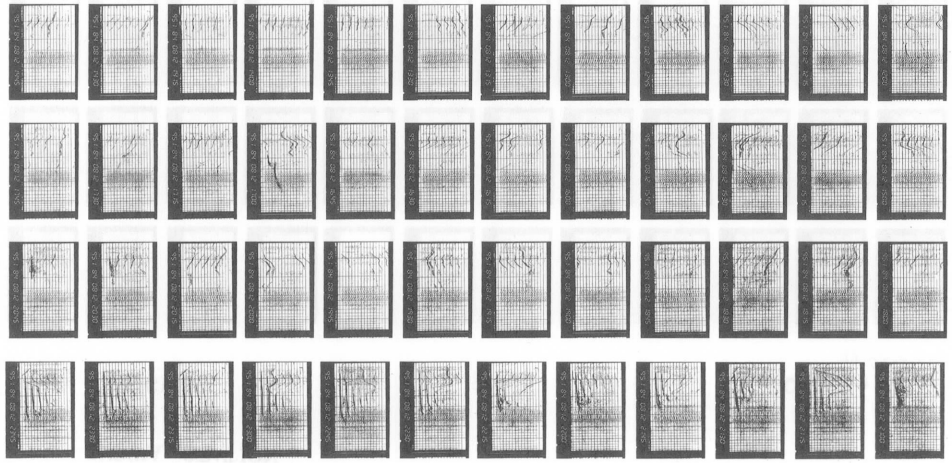

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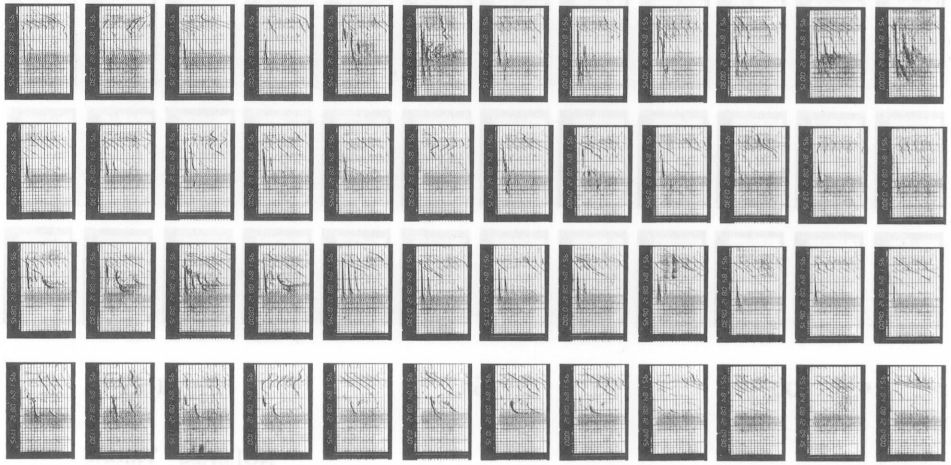

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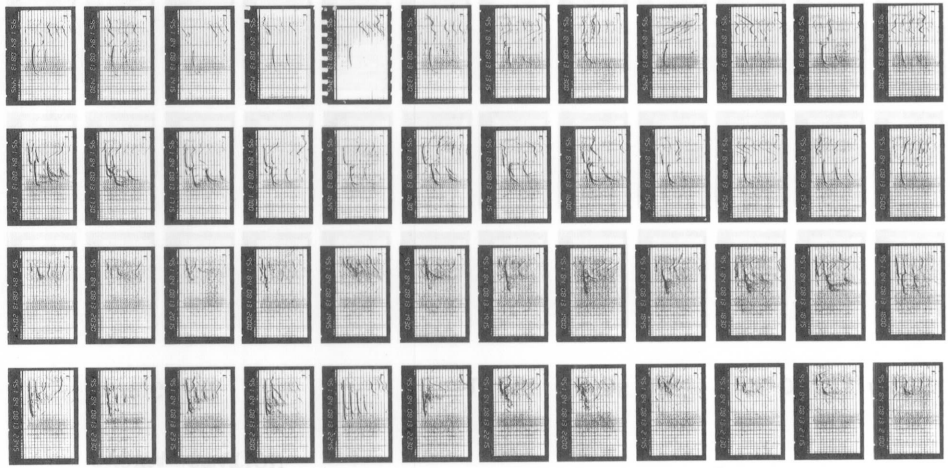

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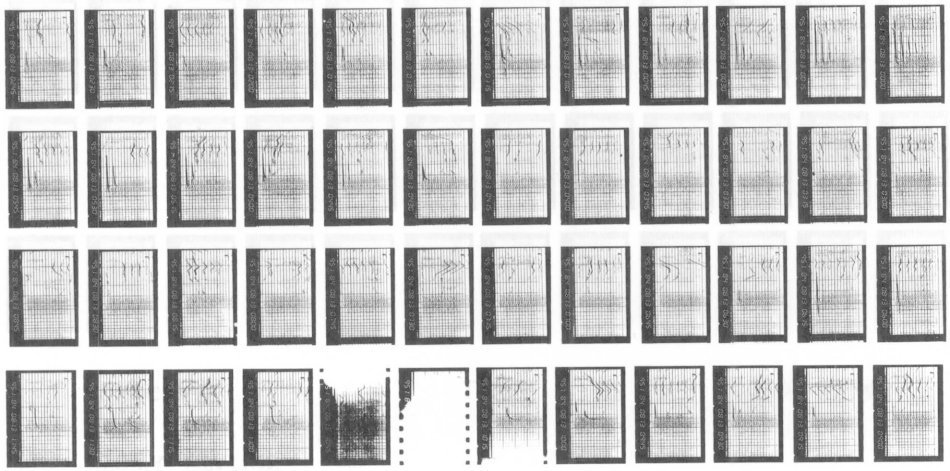

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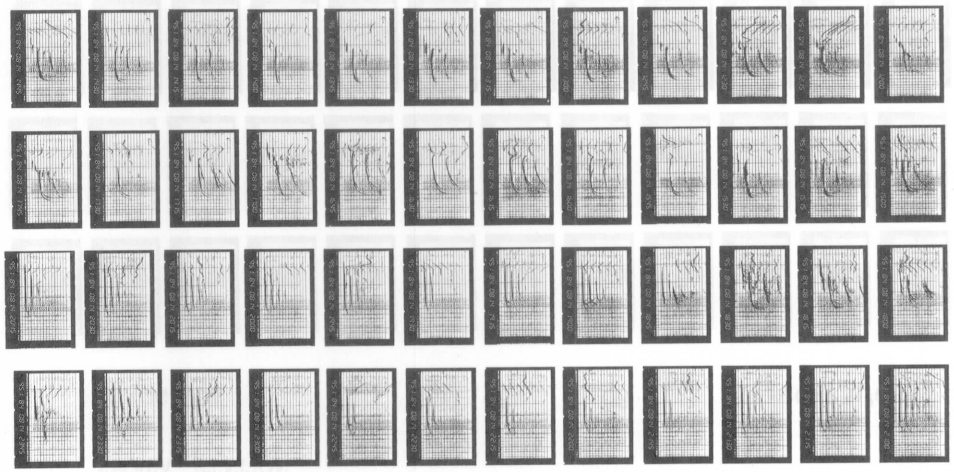

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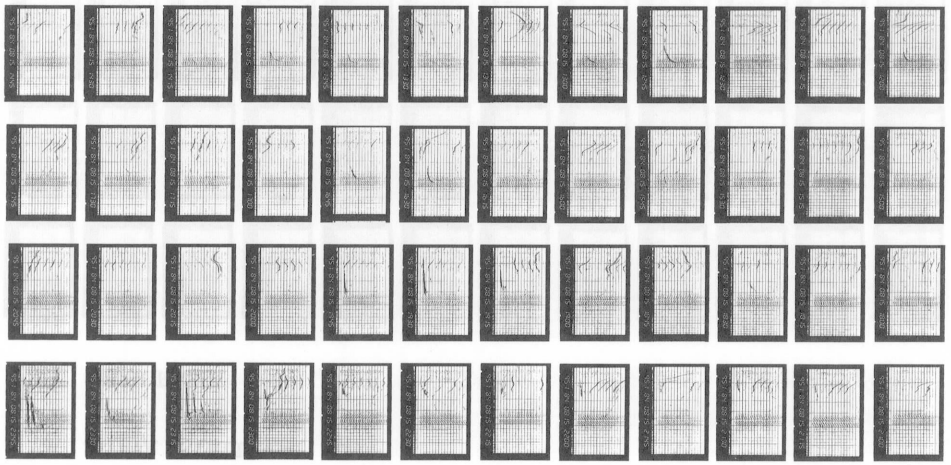

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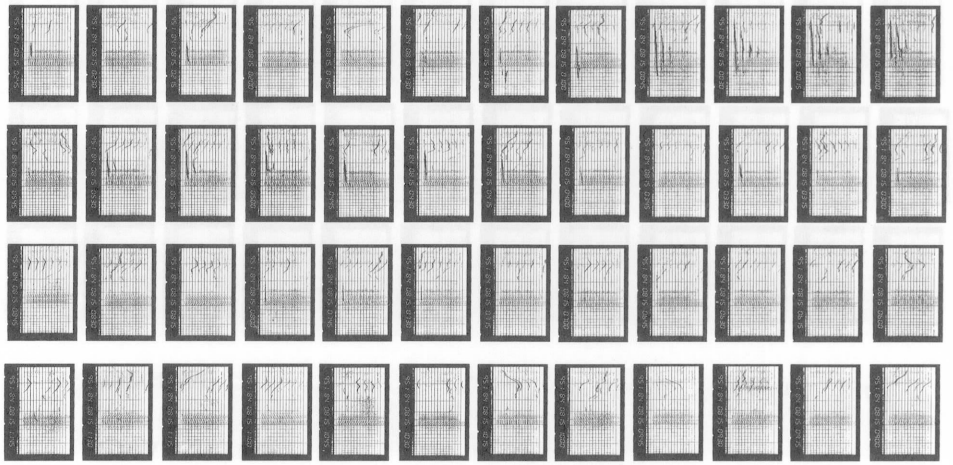

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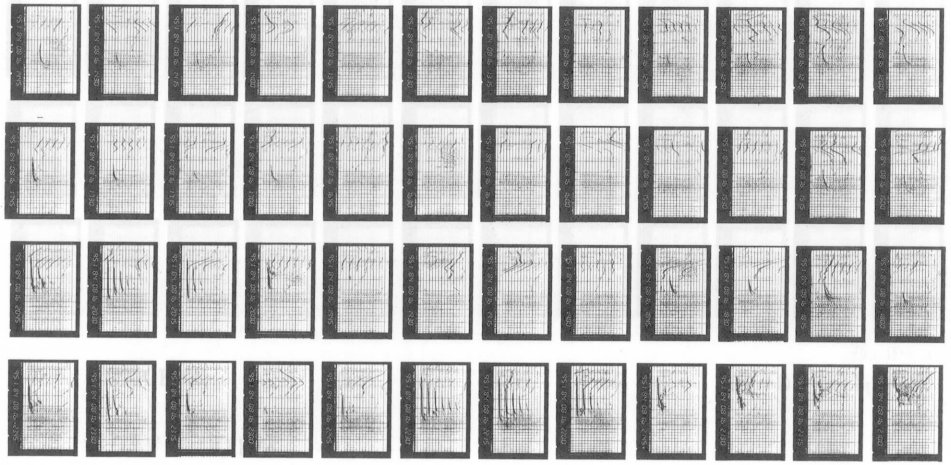

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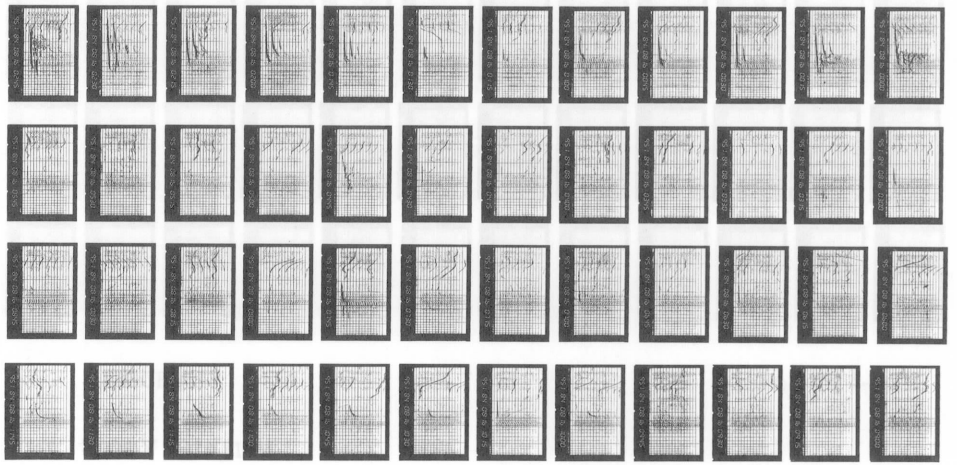

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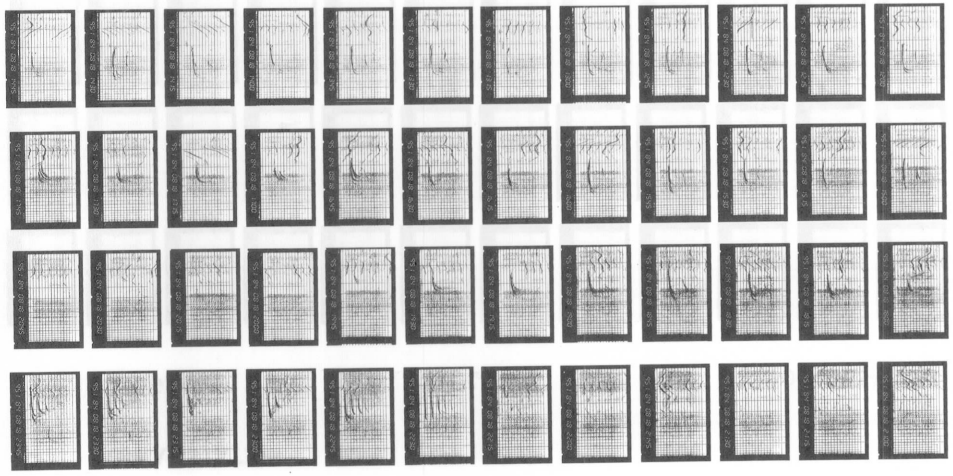

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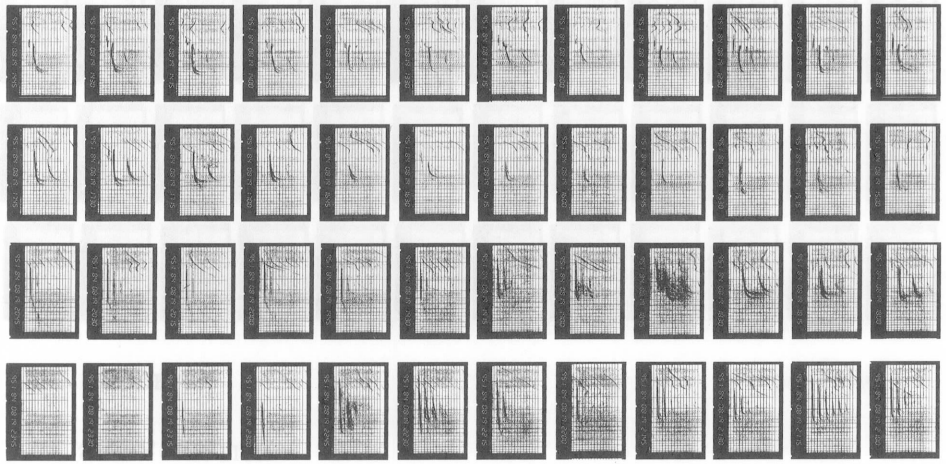

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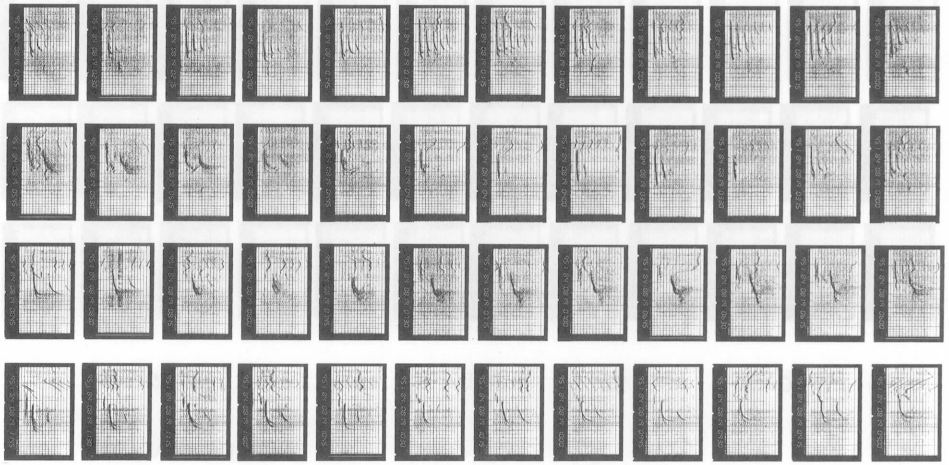

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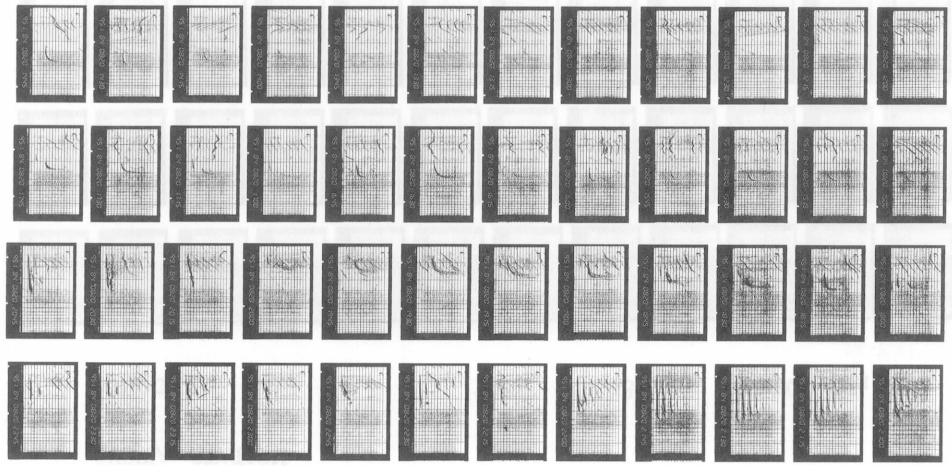

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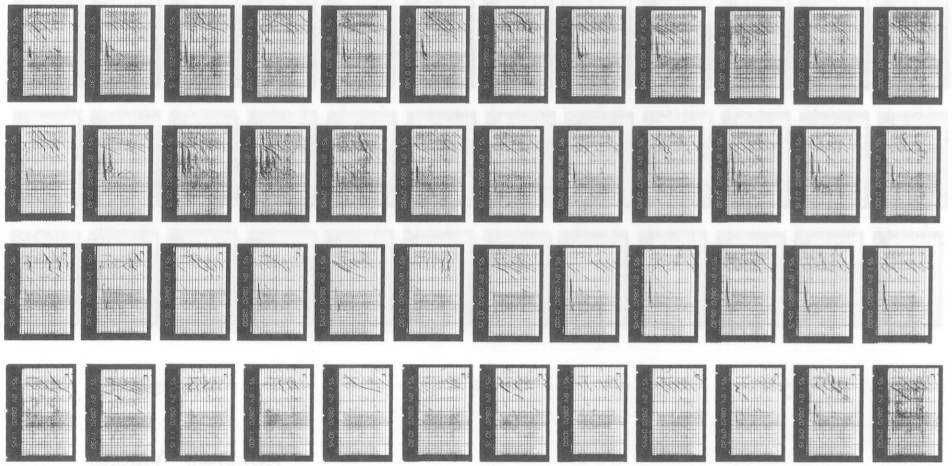

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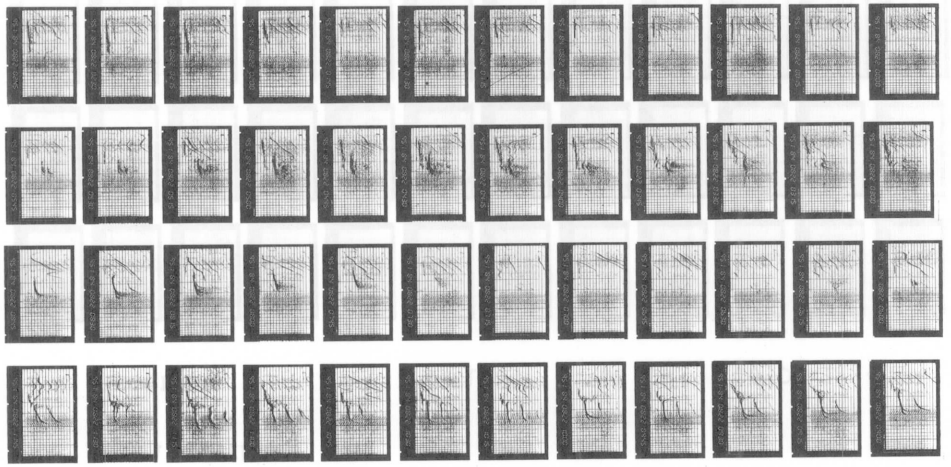

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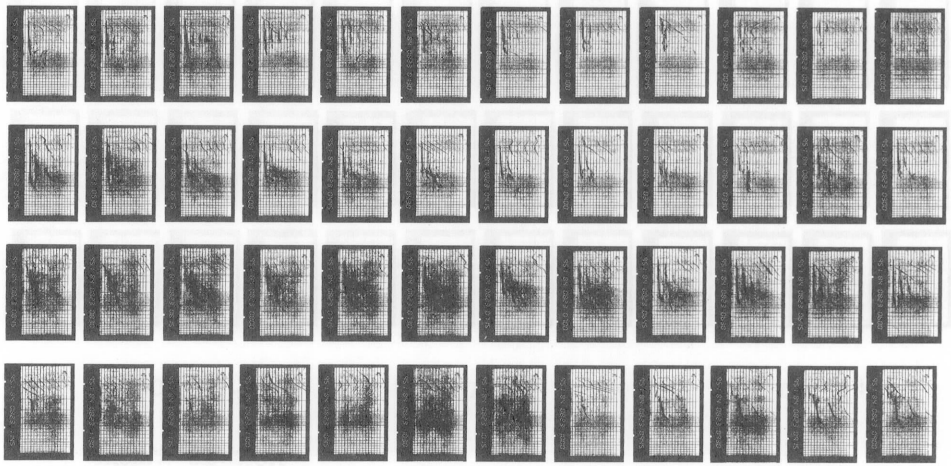

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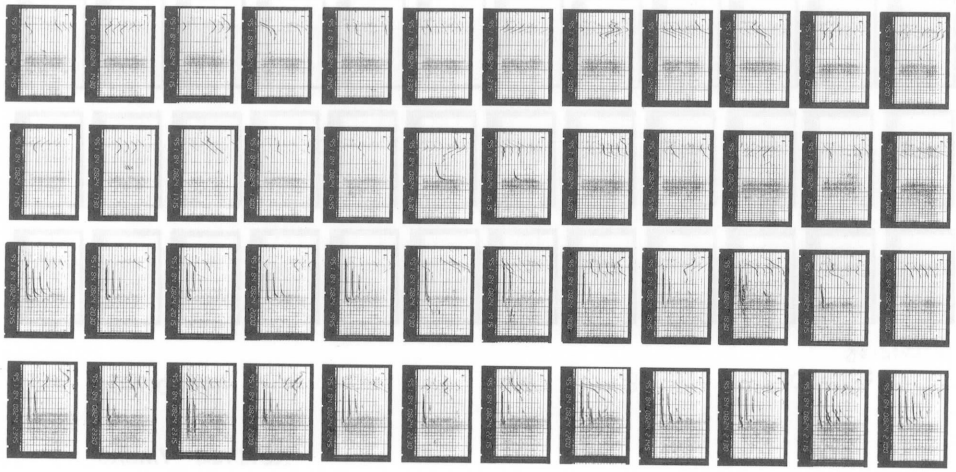

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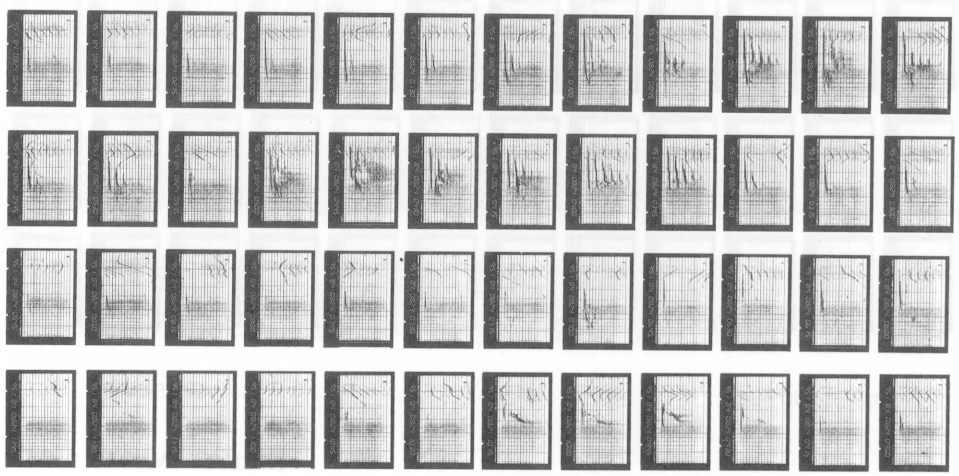

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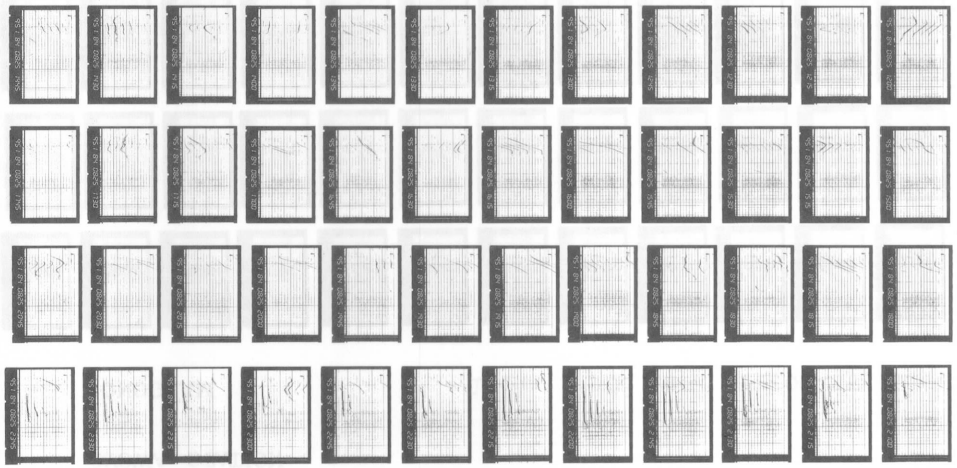

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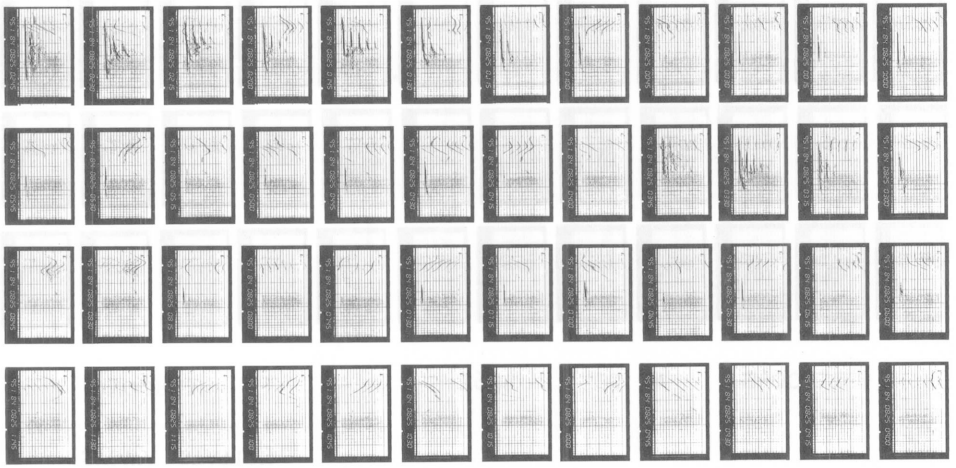

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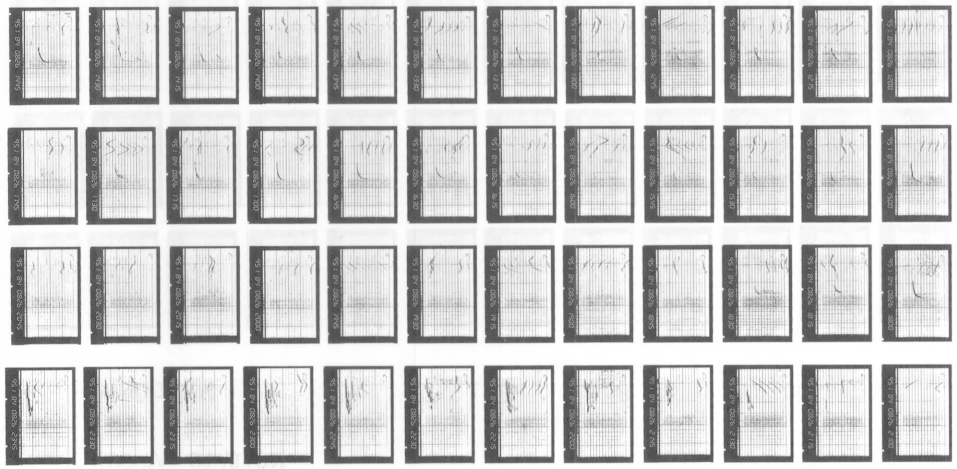

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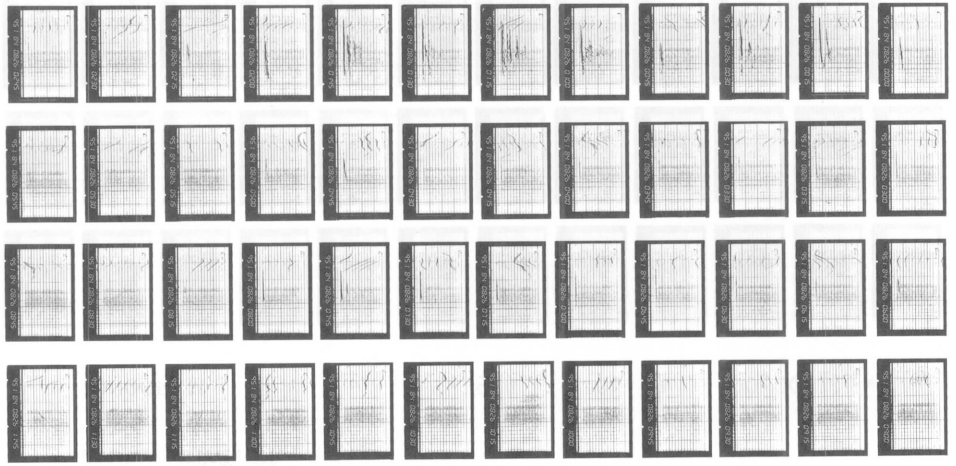

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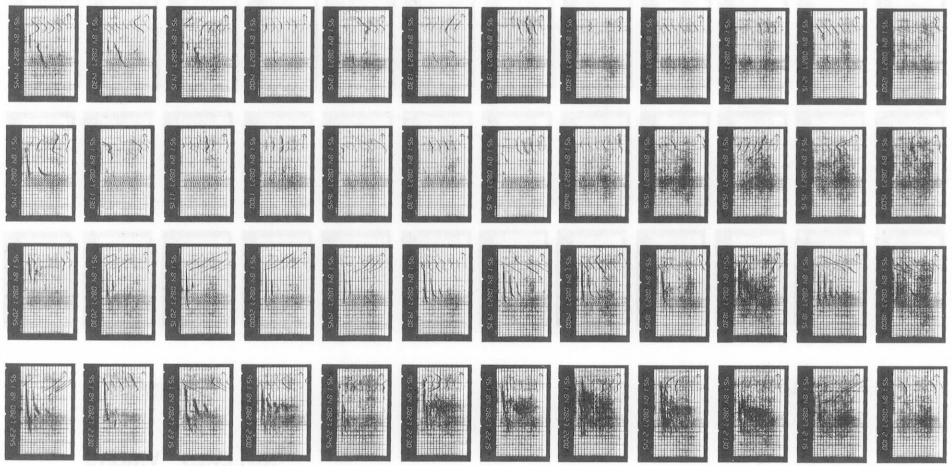

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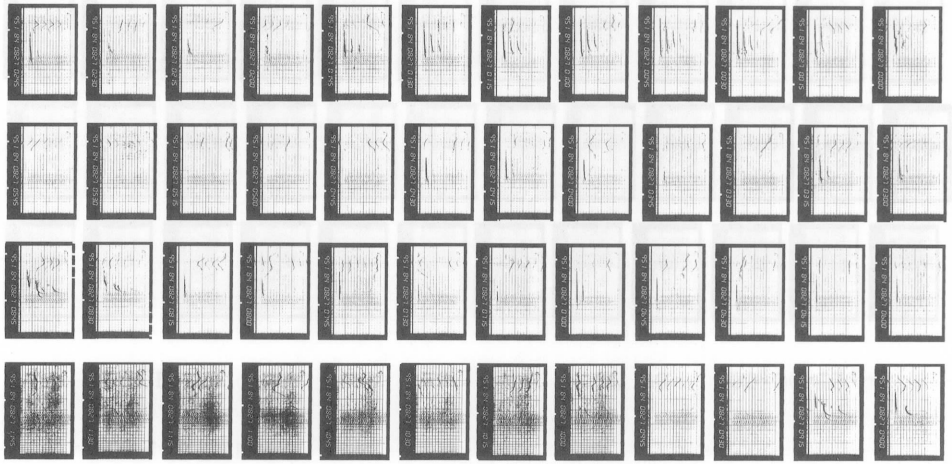

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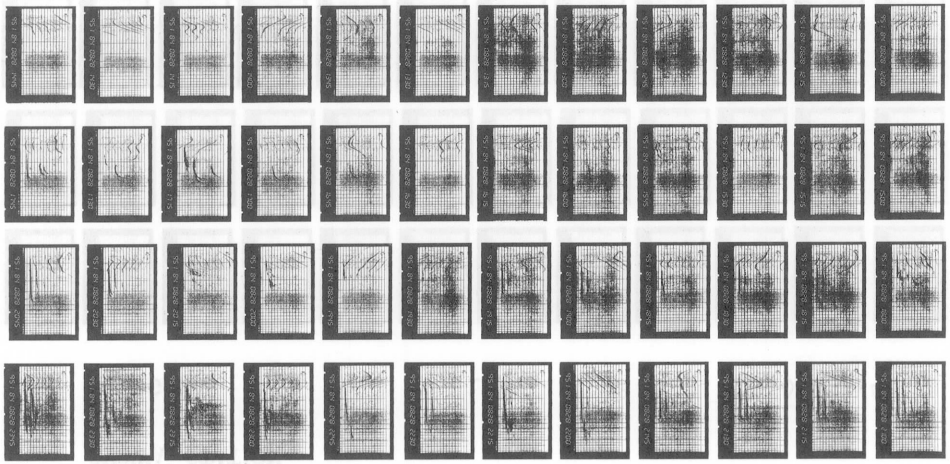

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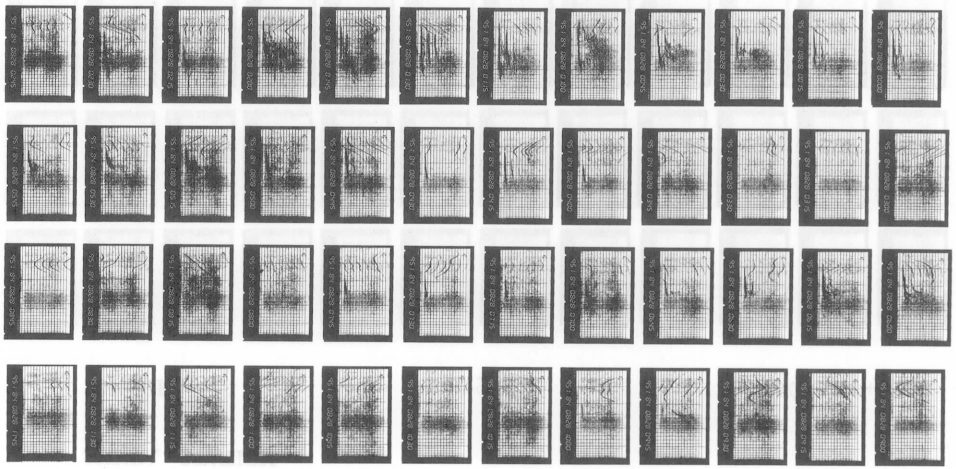

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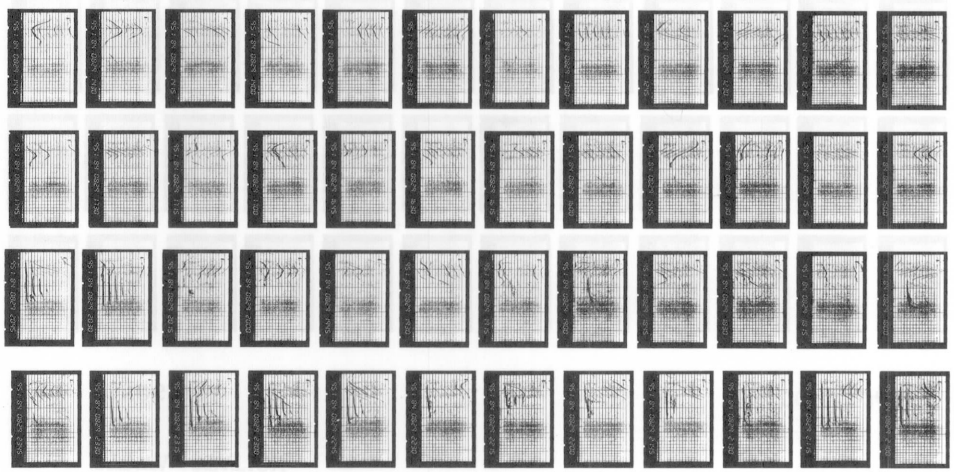

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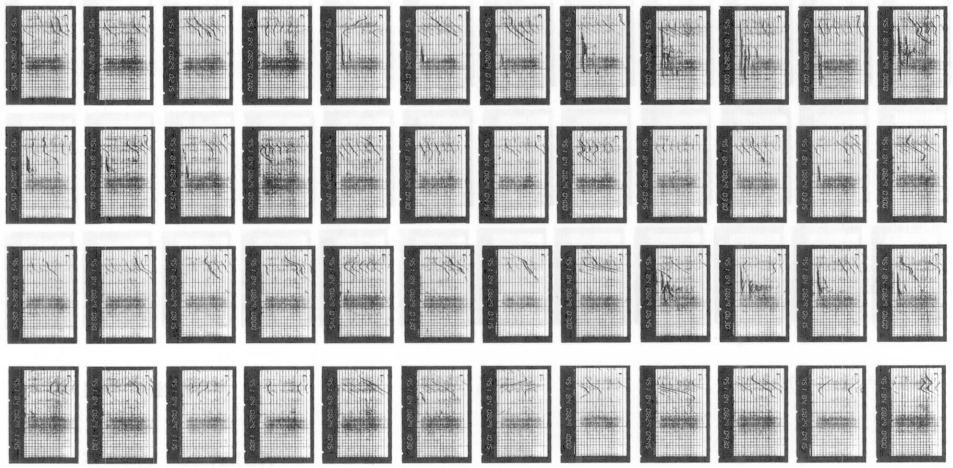

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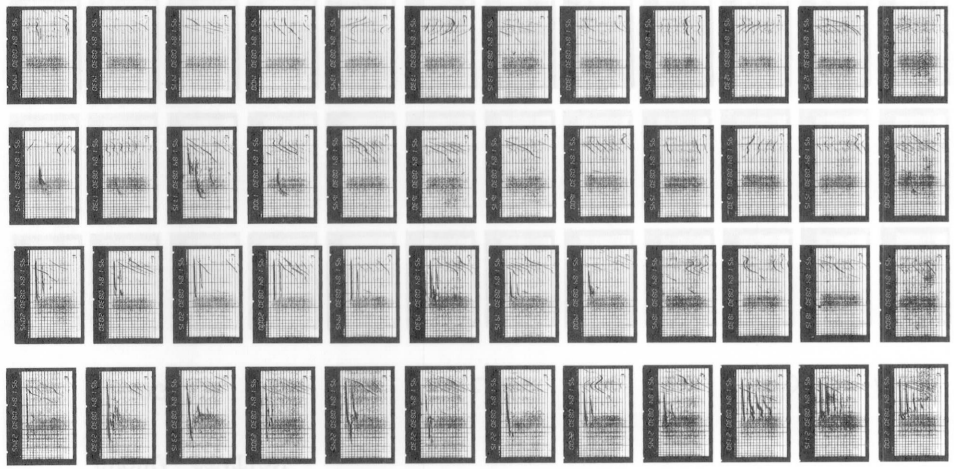

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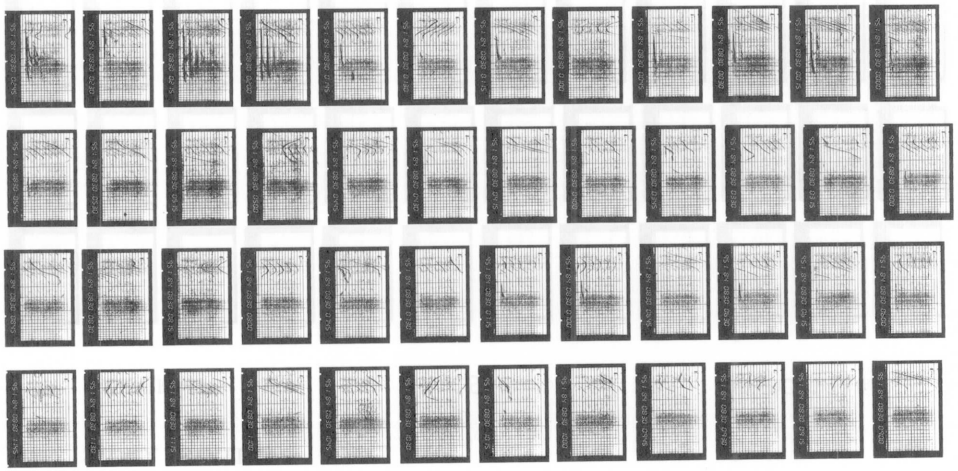
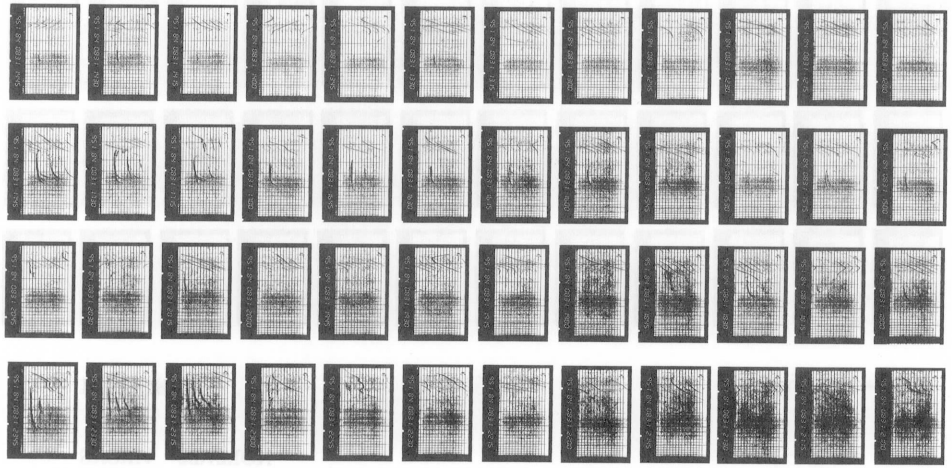


SYOWA STATION

IONOGRAM 1984 08 31 12;00-23;45



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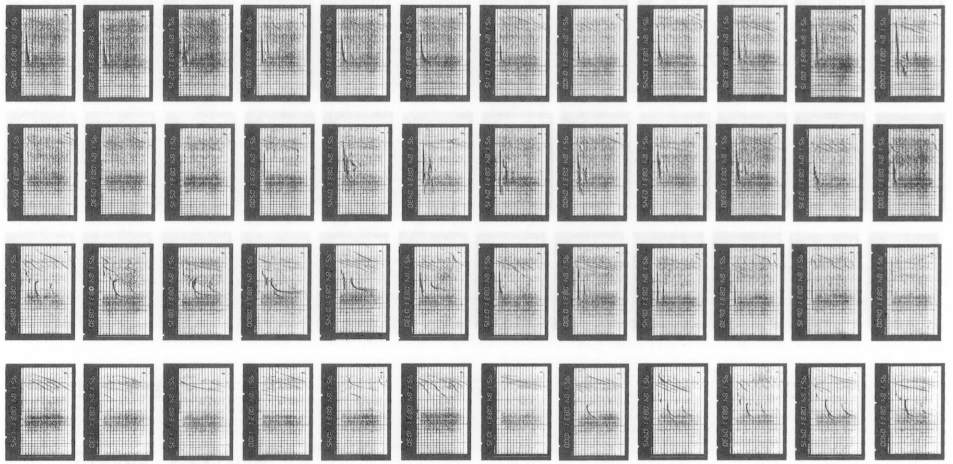

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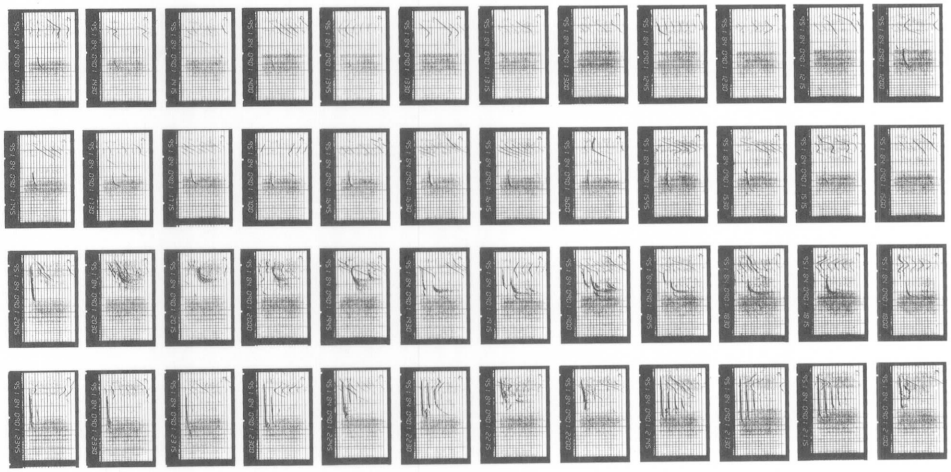

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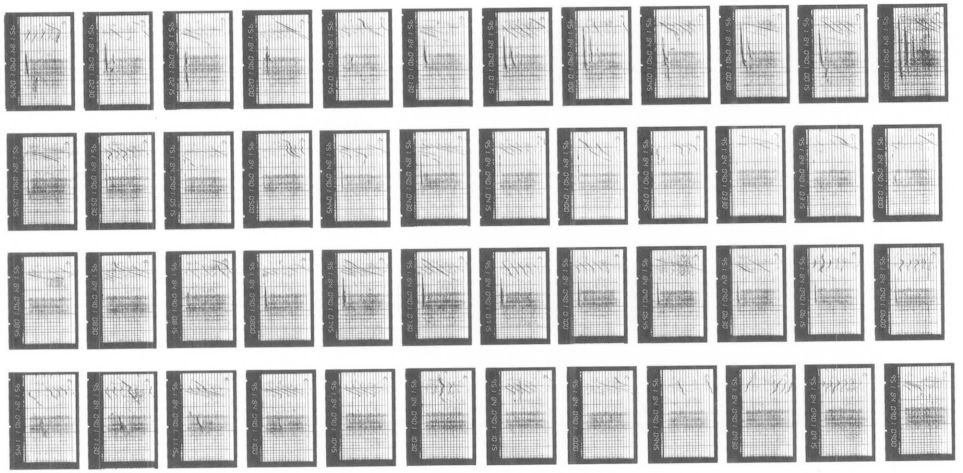

SYOWA STATION

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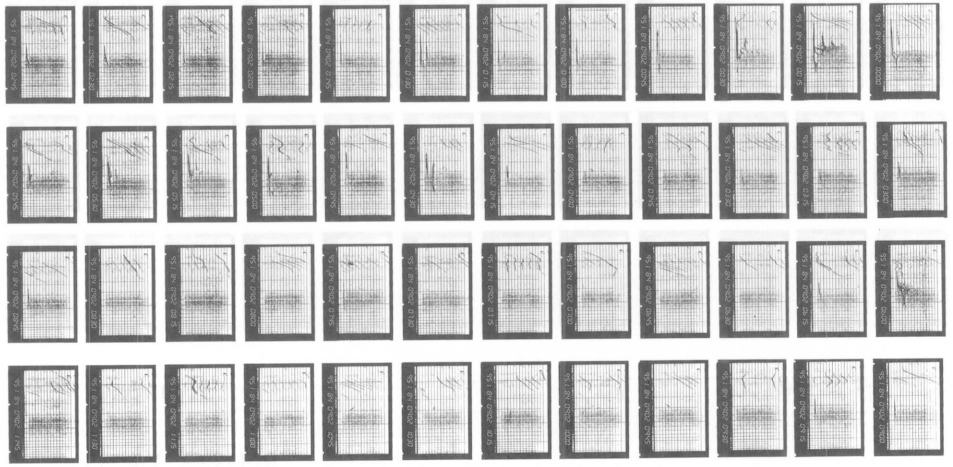

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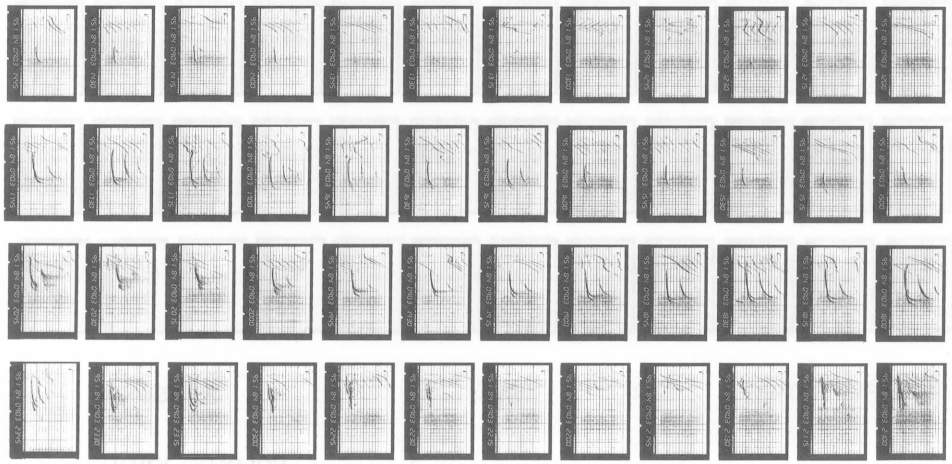

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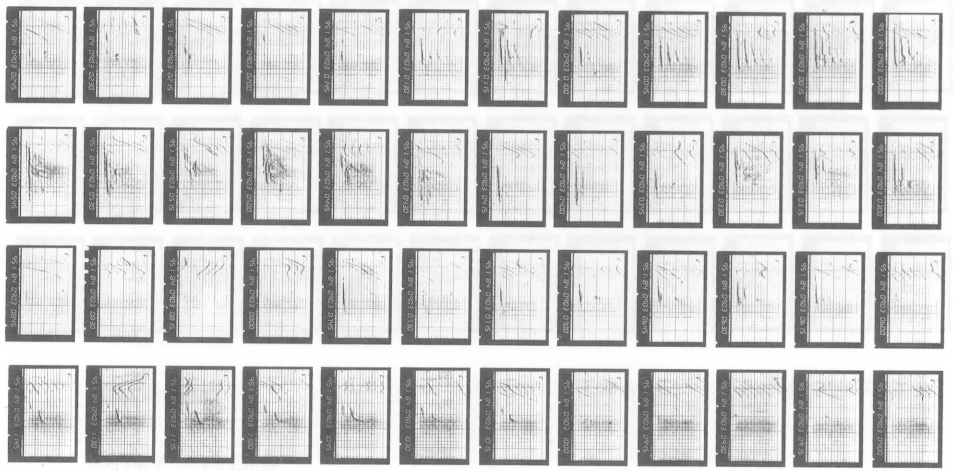

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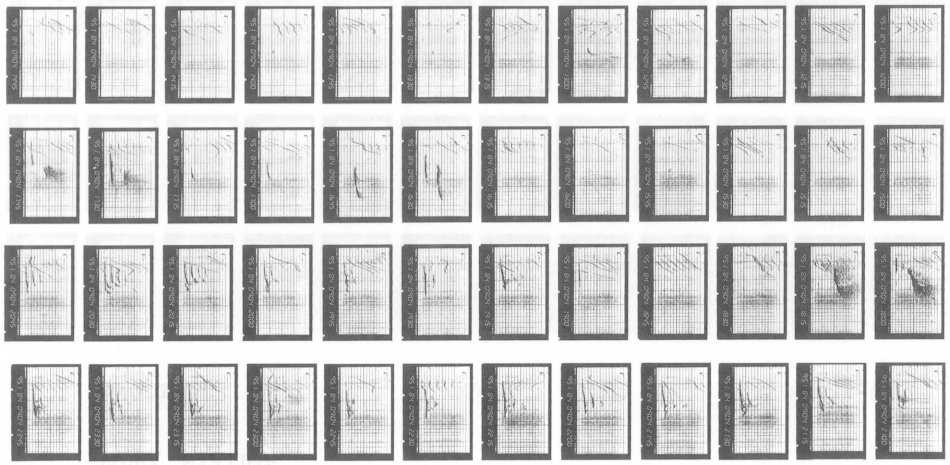

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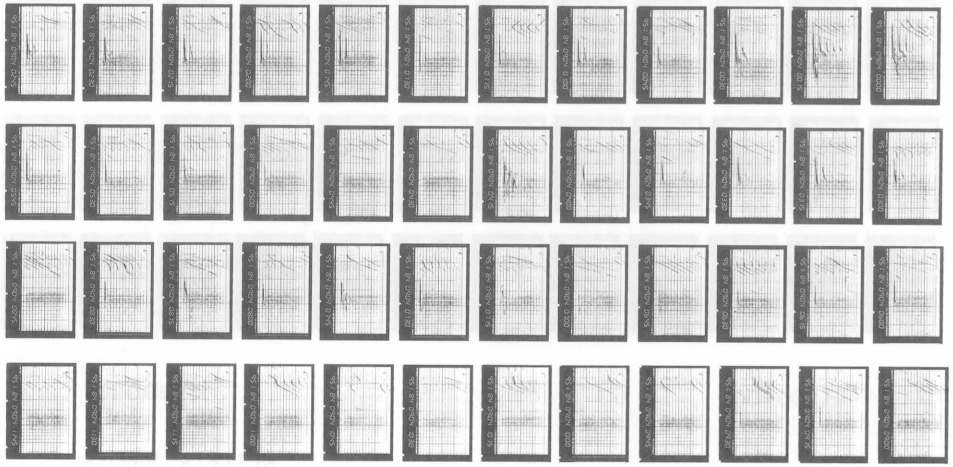

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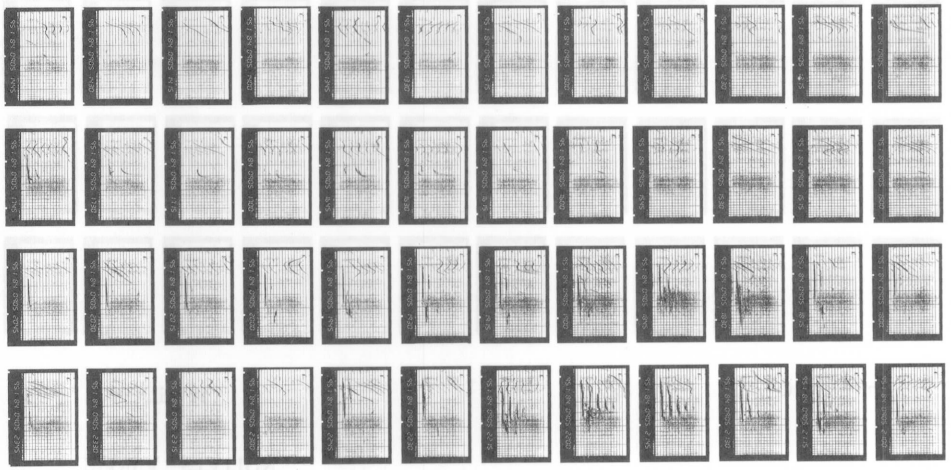

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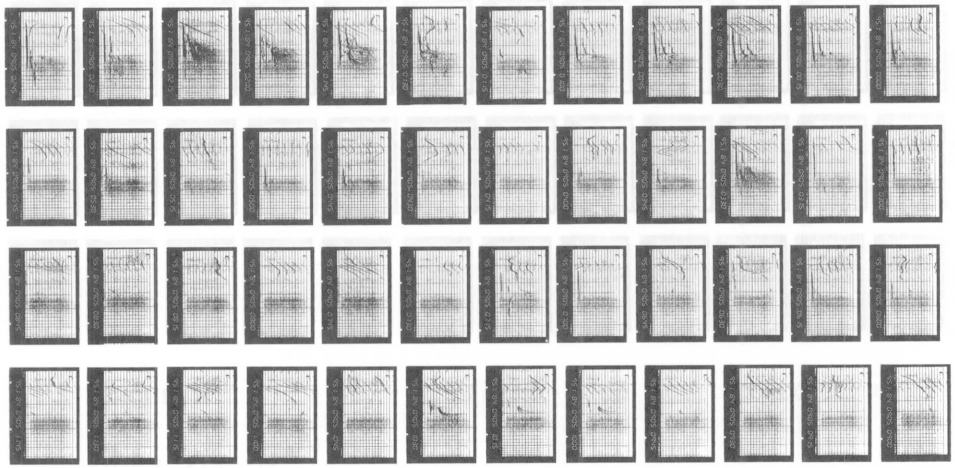

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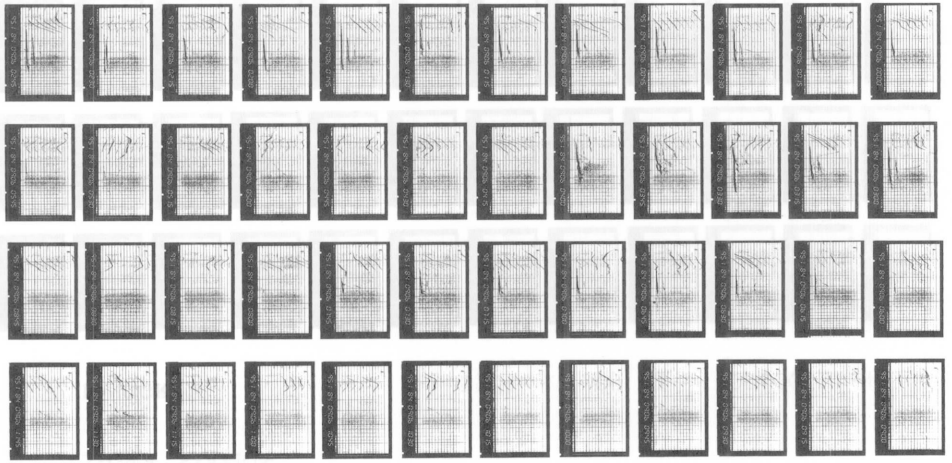

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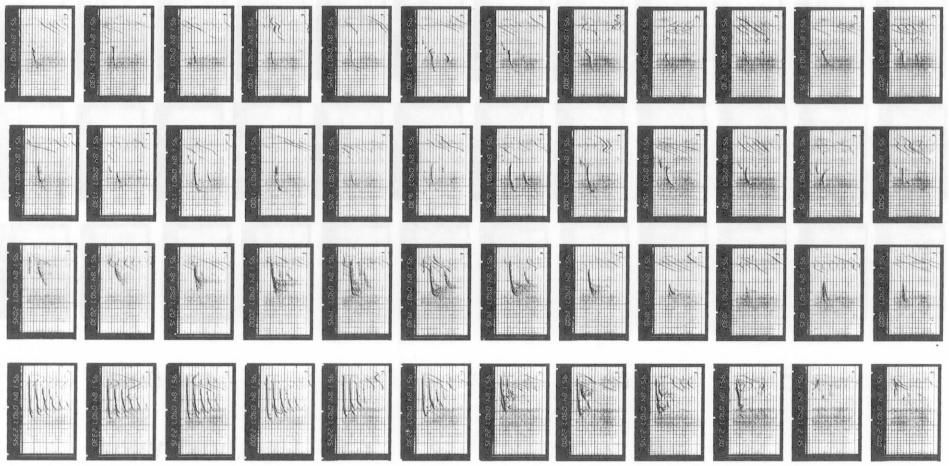

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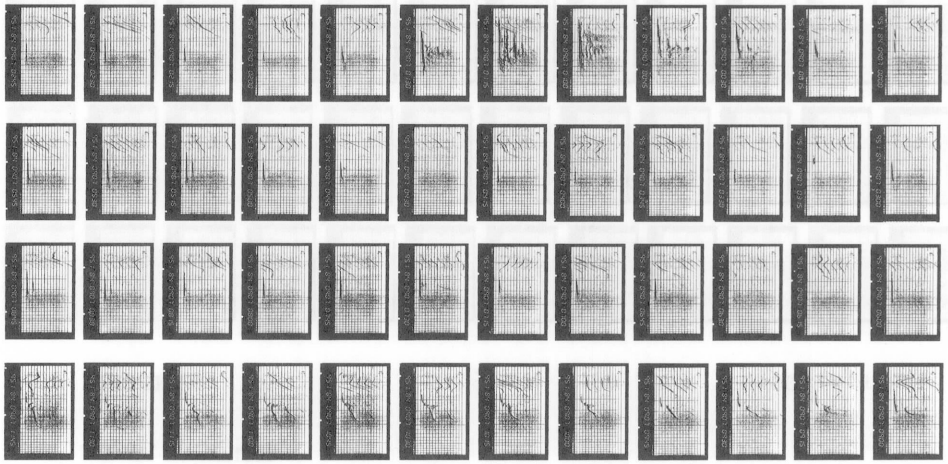

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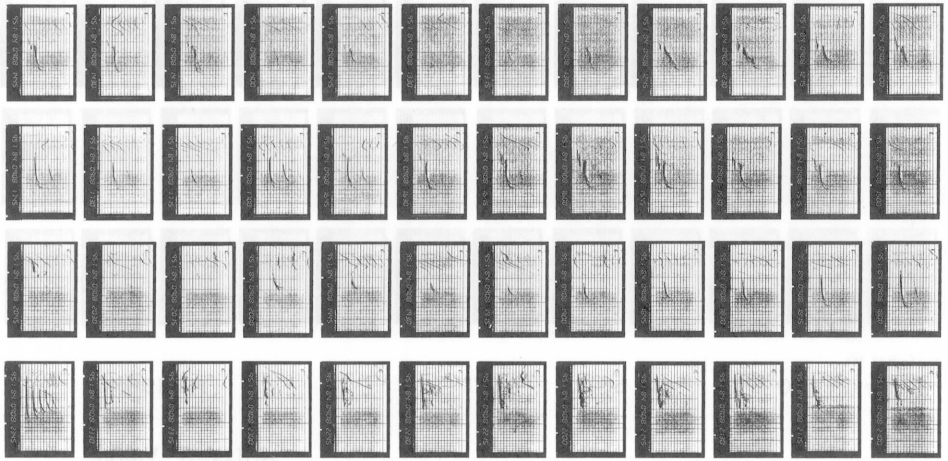

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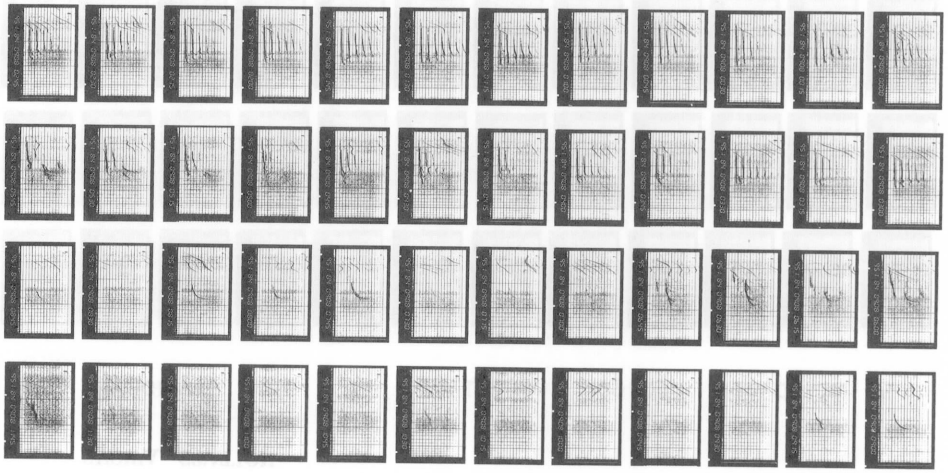

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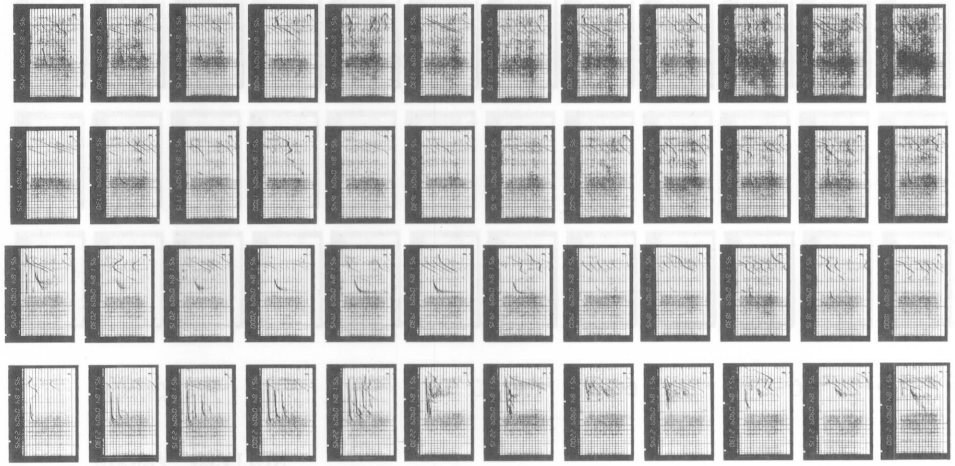

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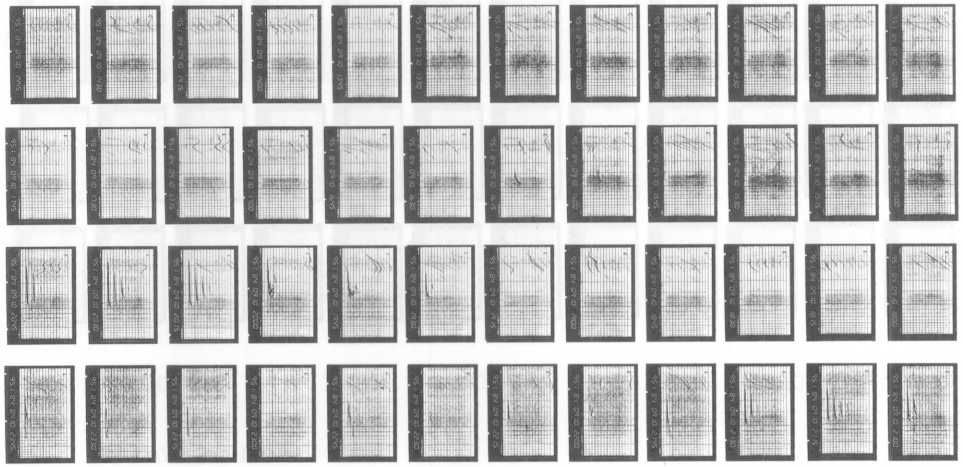

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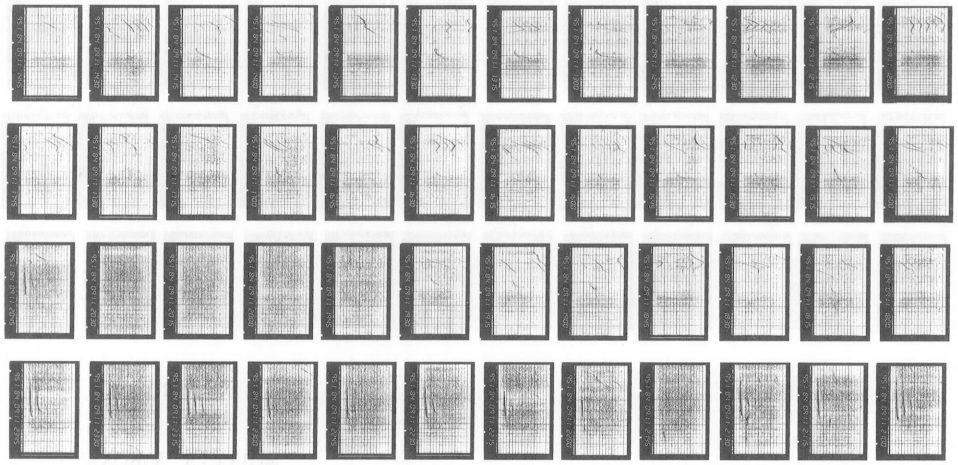

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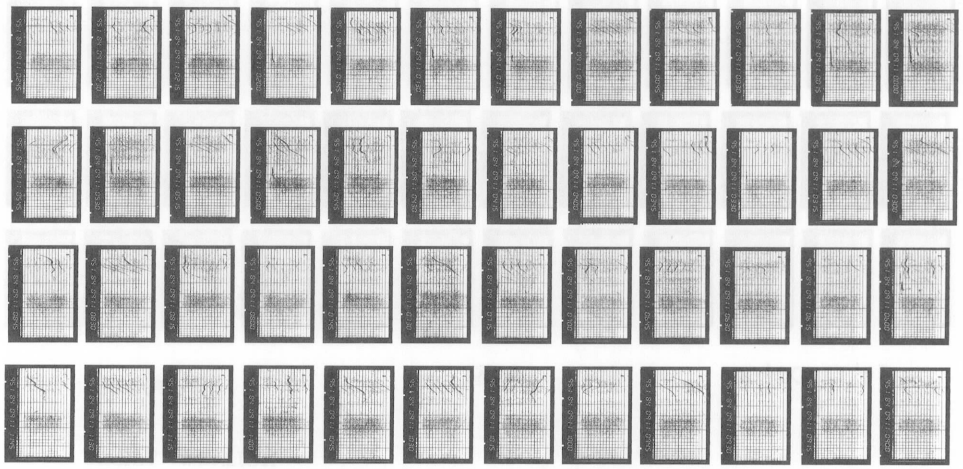

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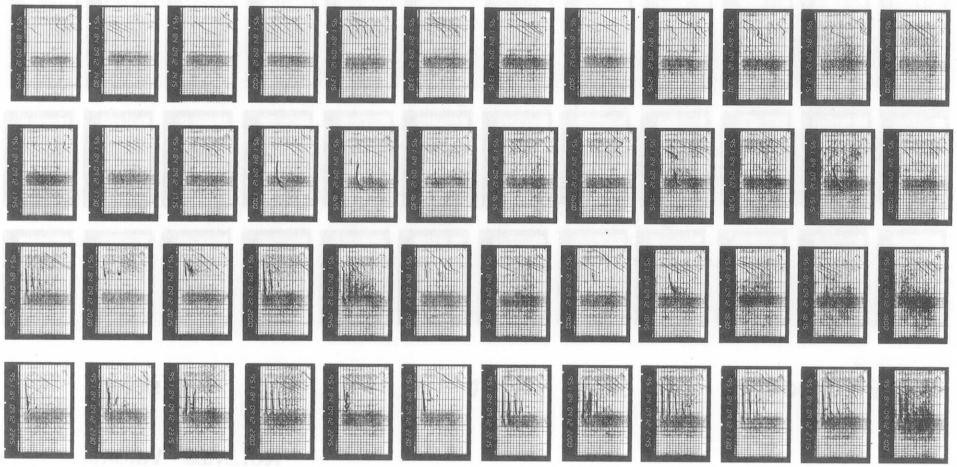

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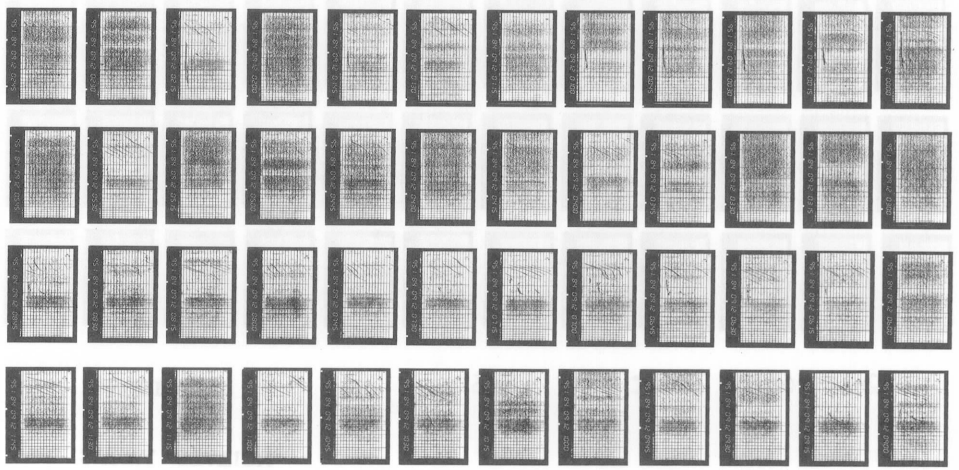

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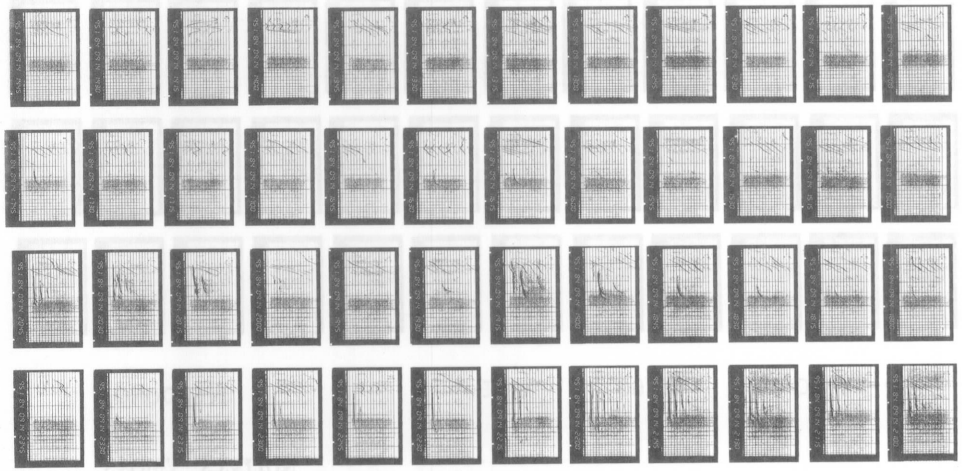

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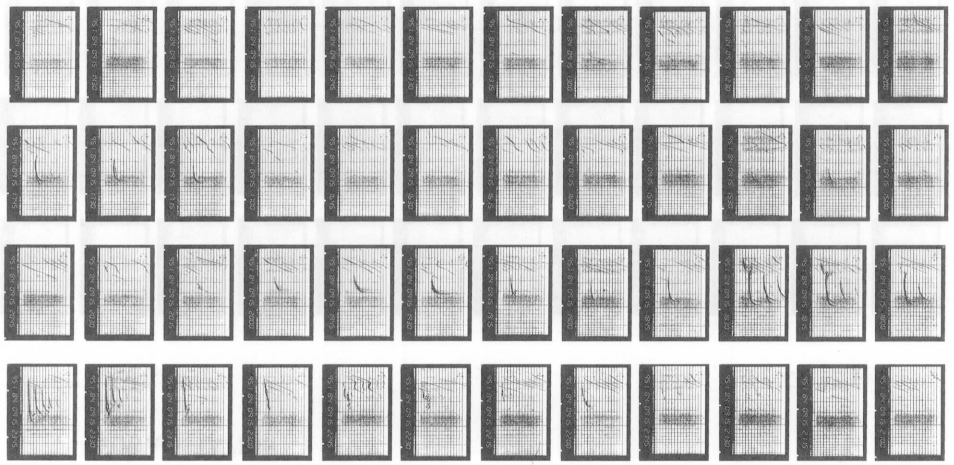

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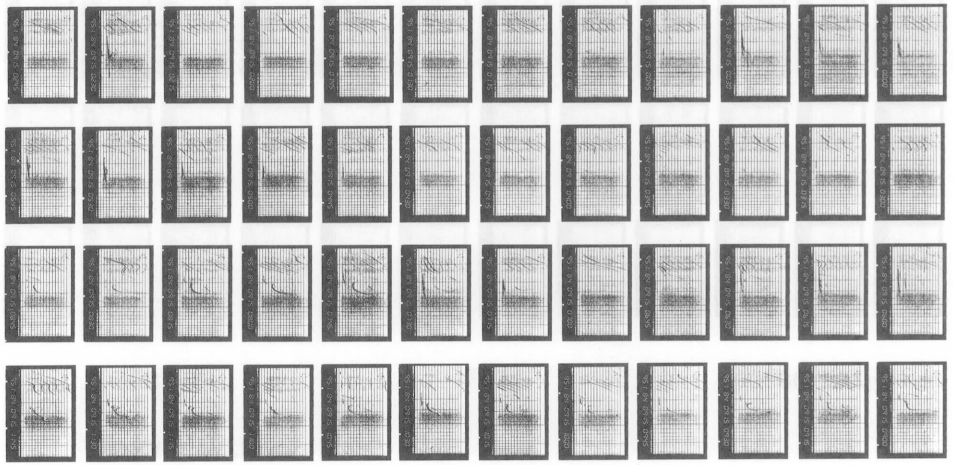

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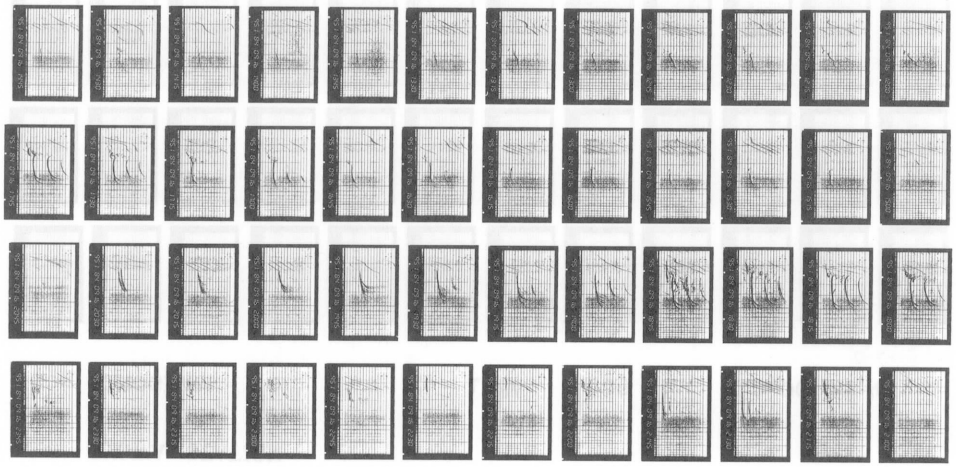

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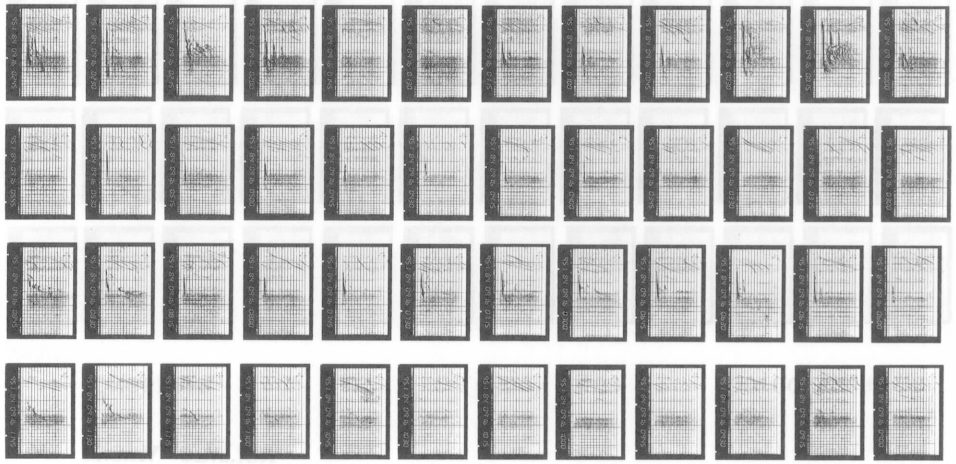

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SYOWA STATION

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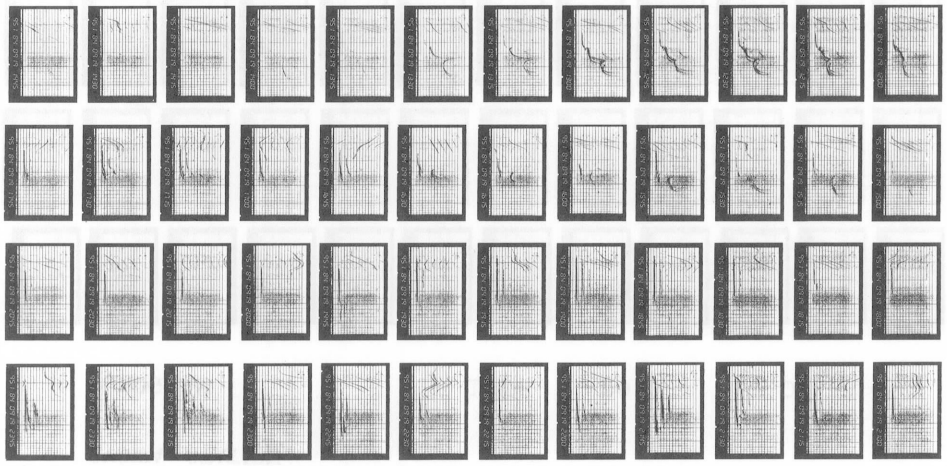

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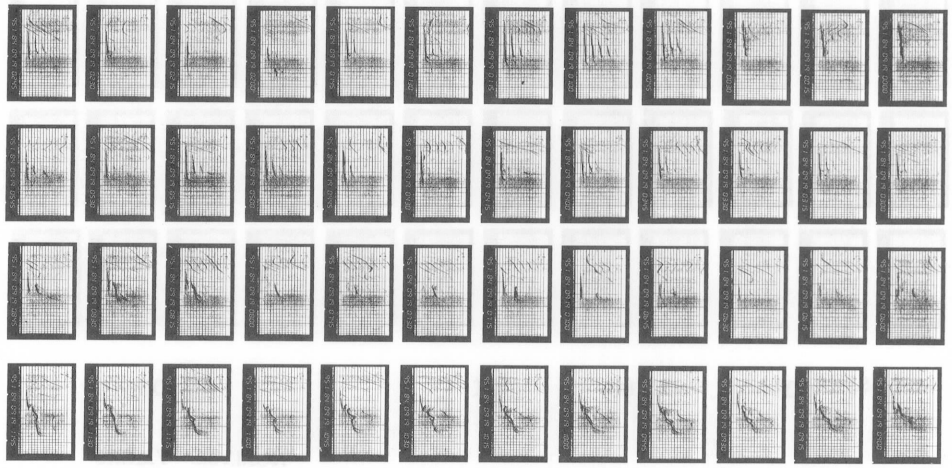

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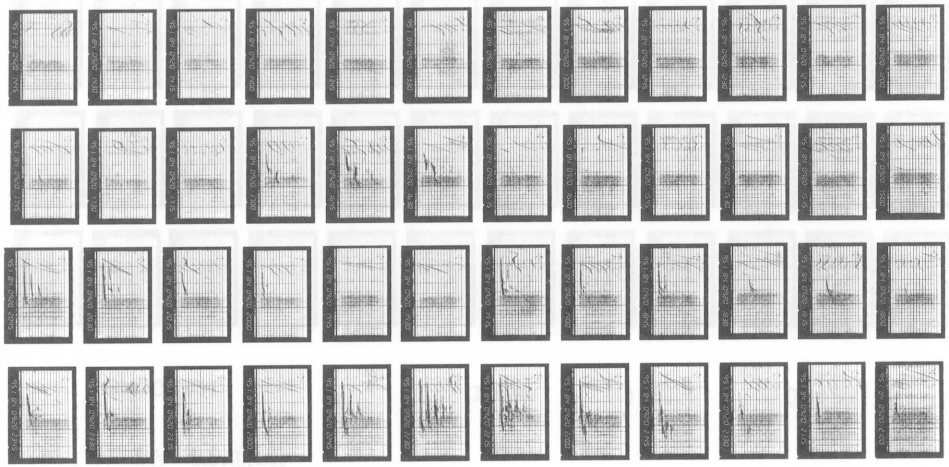

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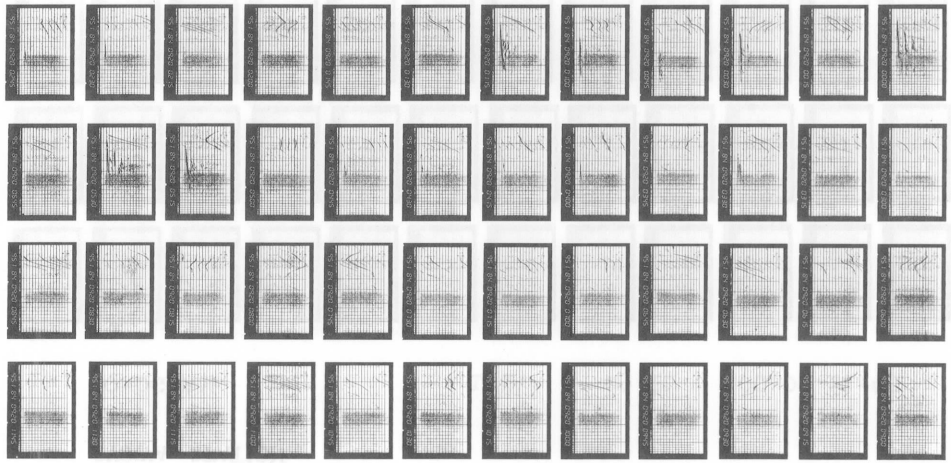

SYOWA STATION

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SYOWA STATION

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SYOWA STATION

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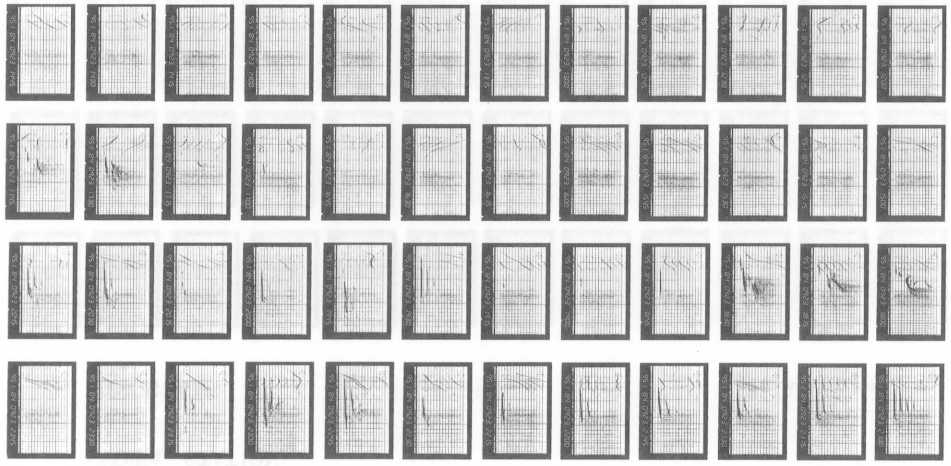

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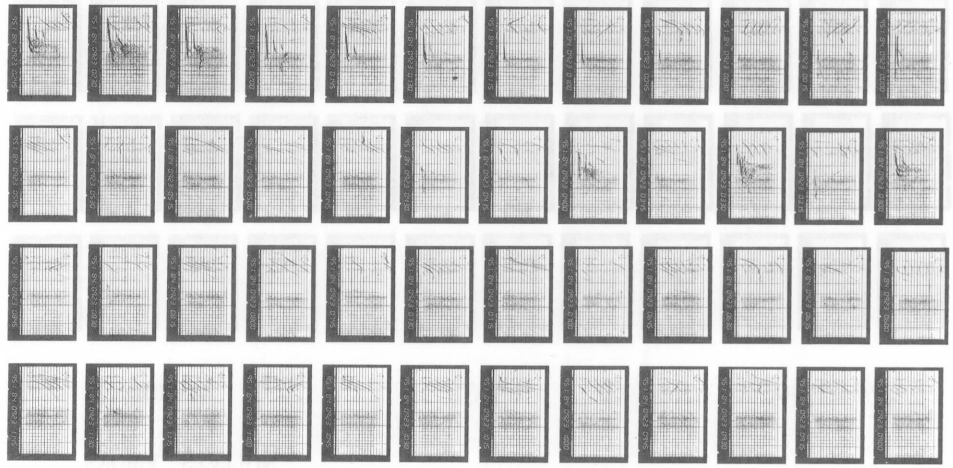

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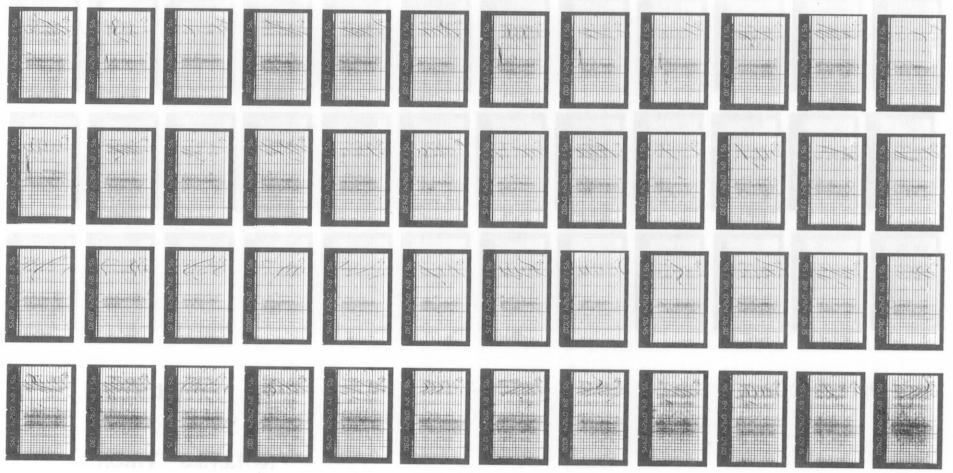

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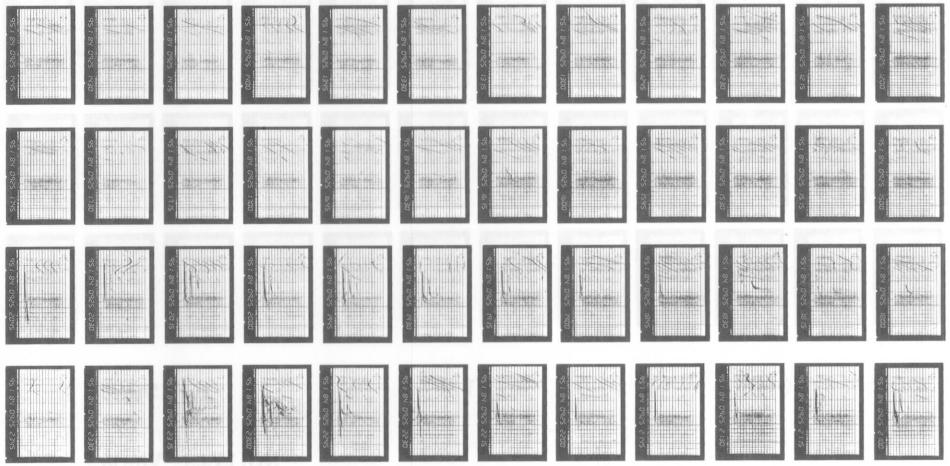

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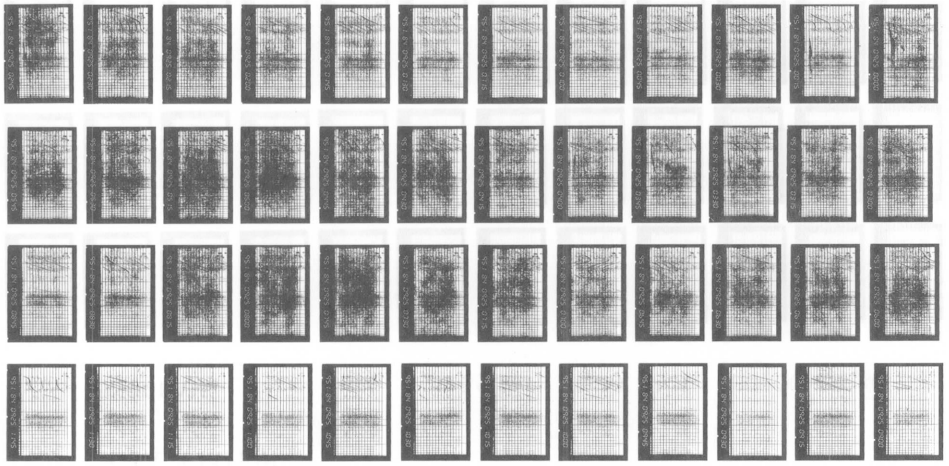

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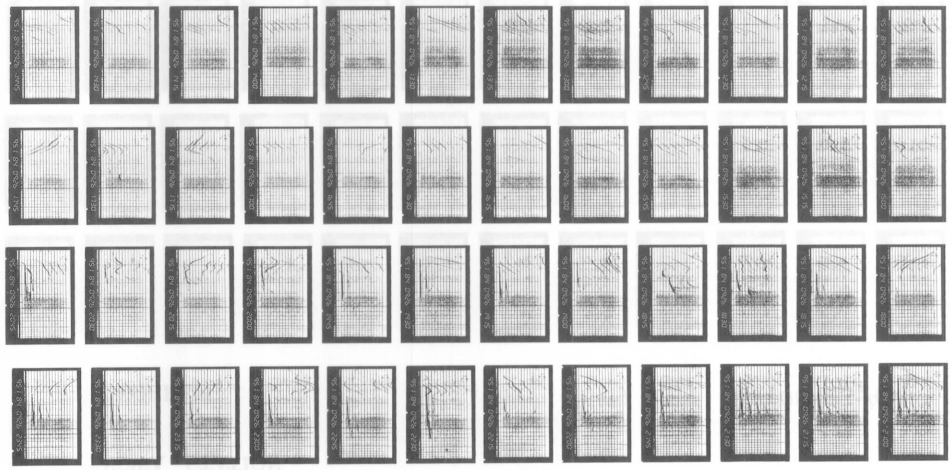

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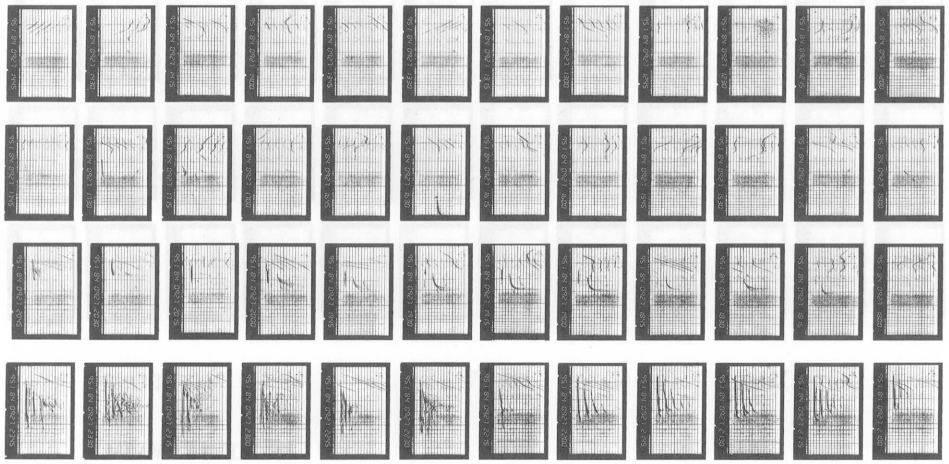

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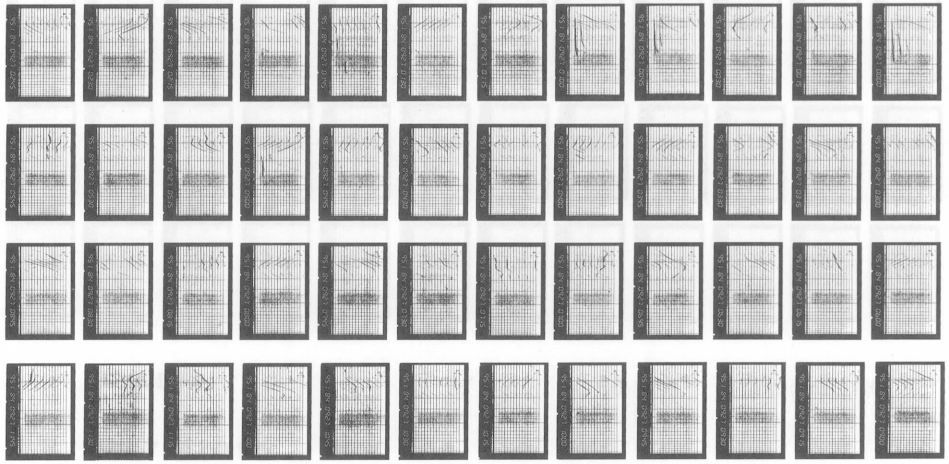

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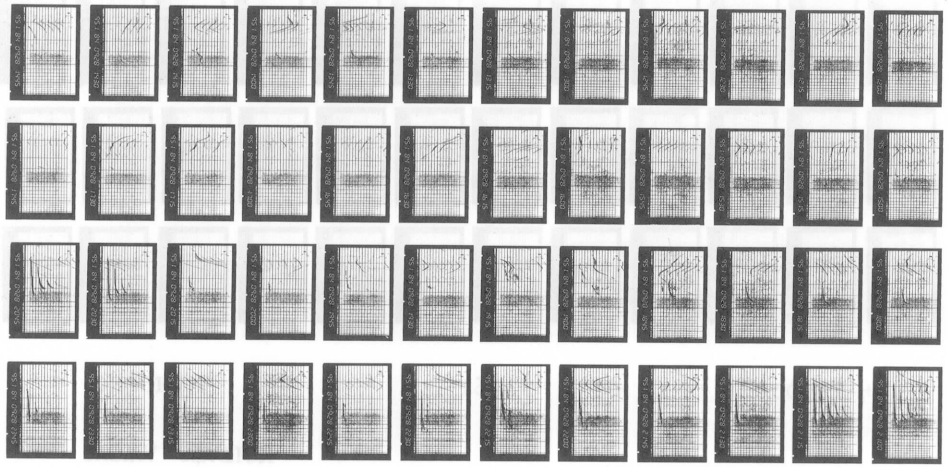

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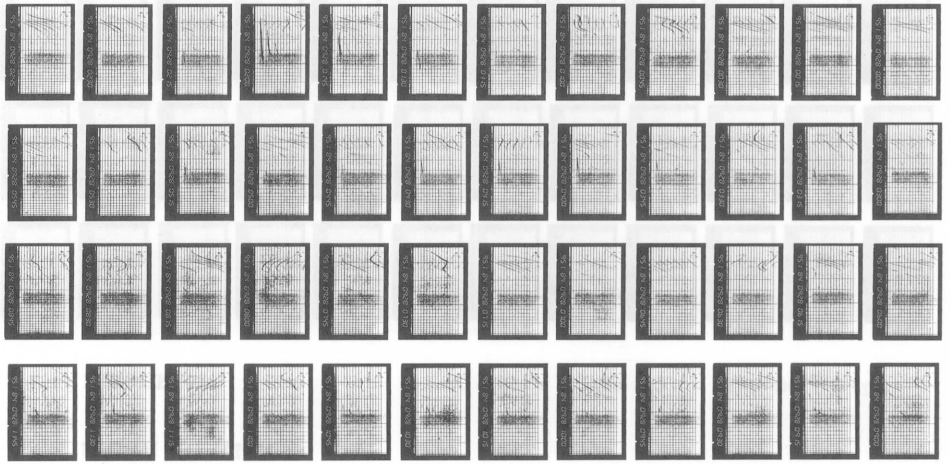

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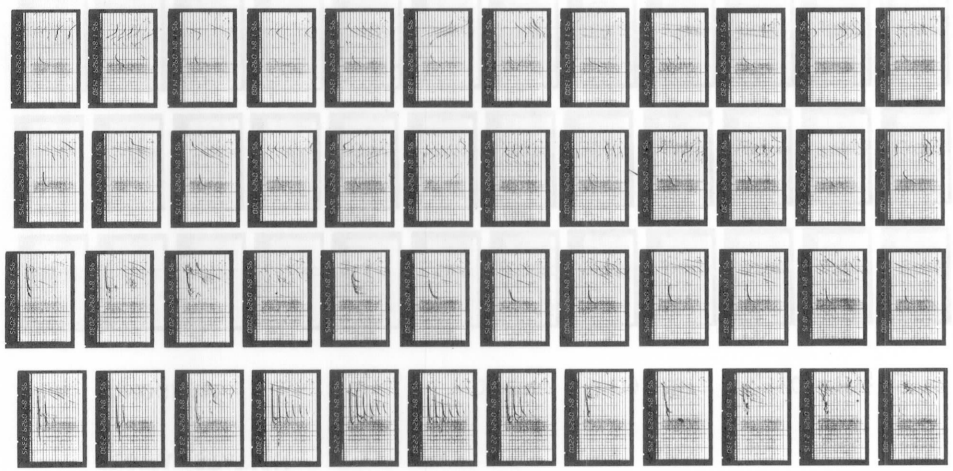

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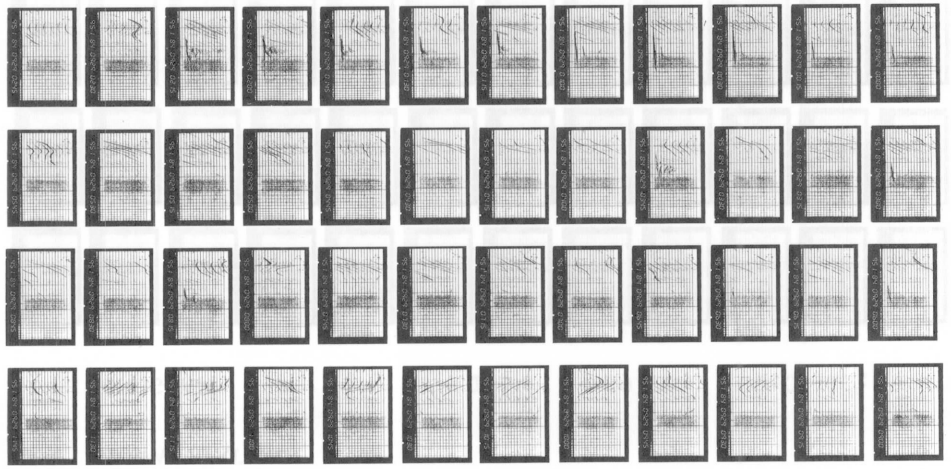

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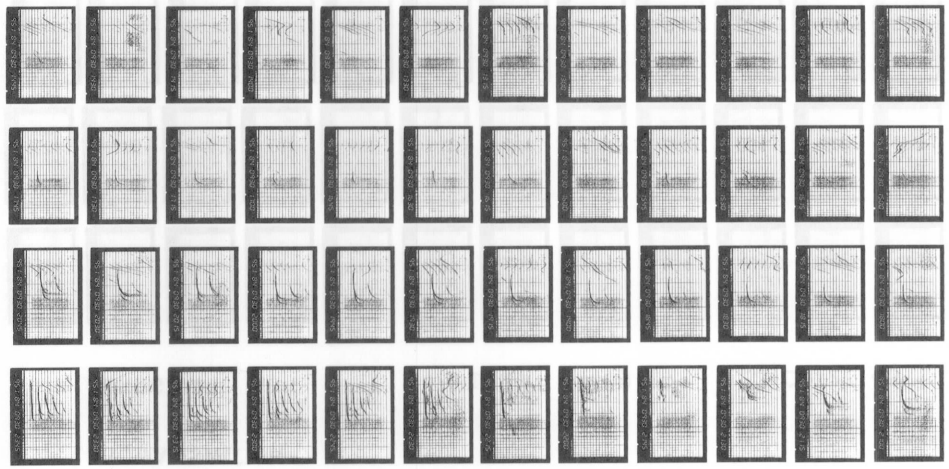

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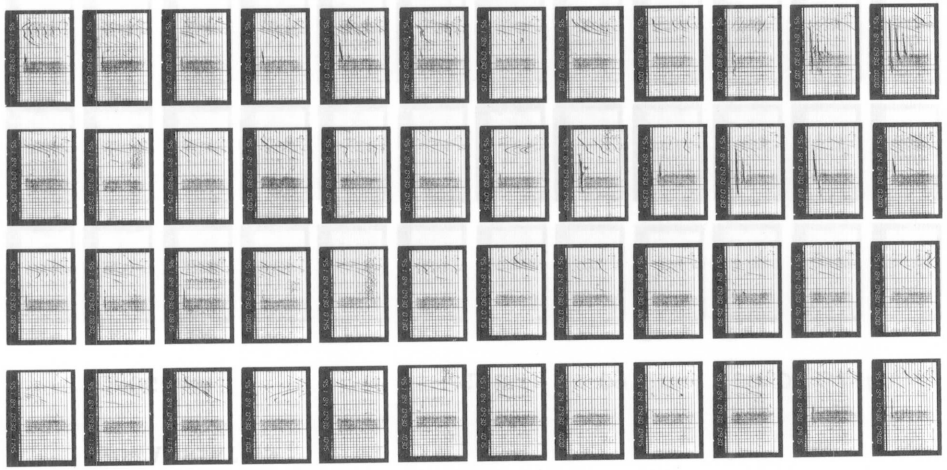

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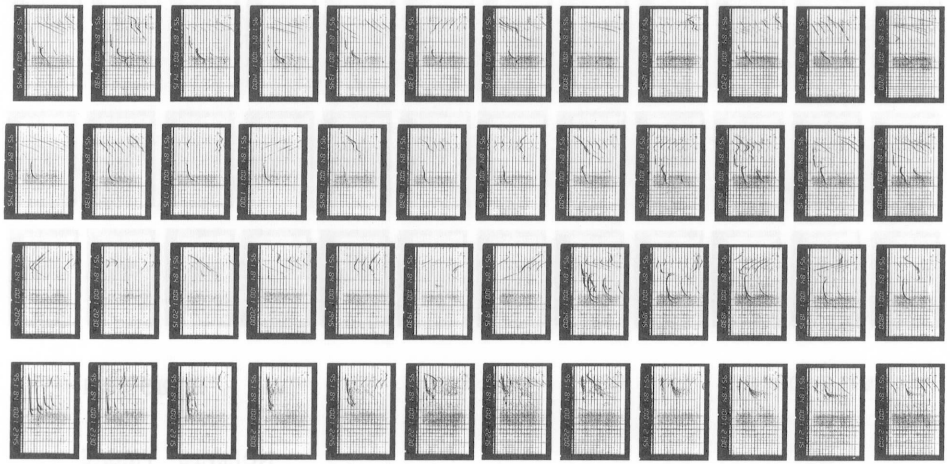

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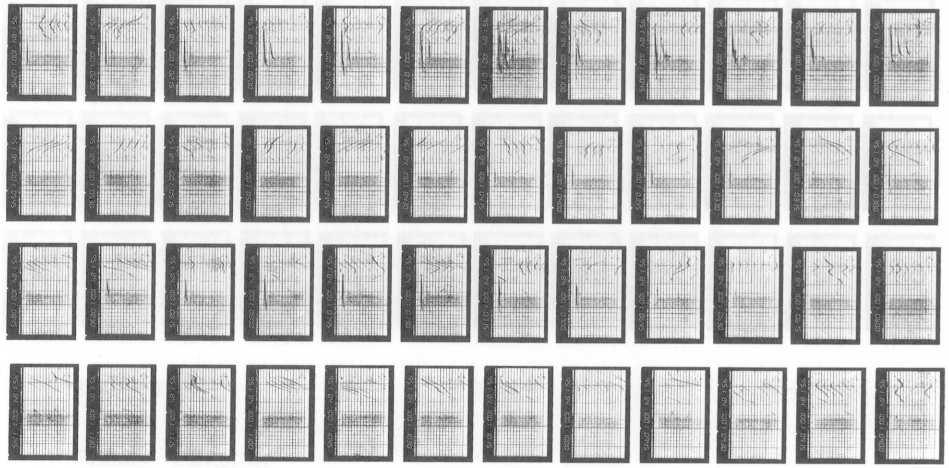

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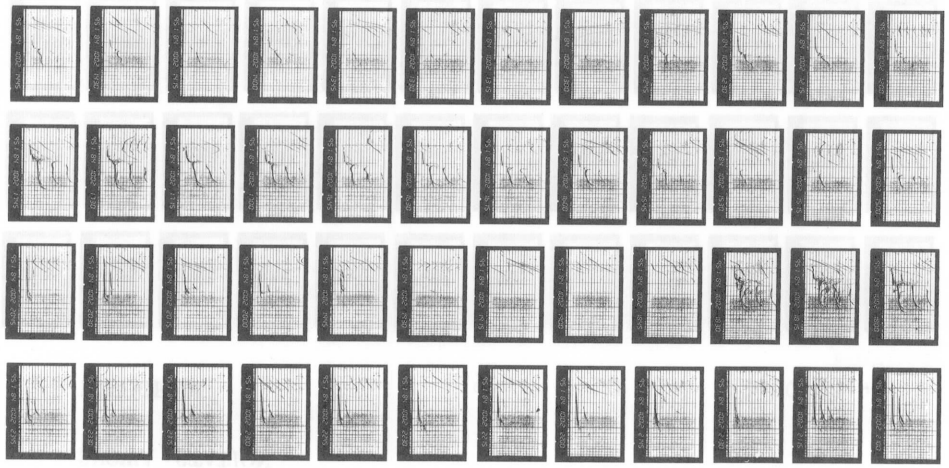

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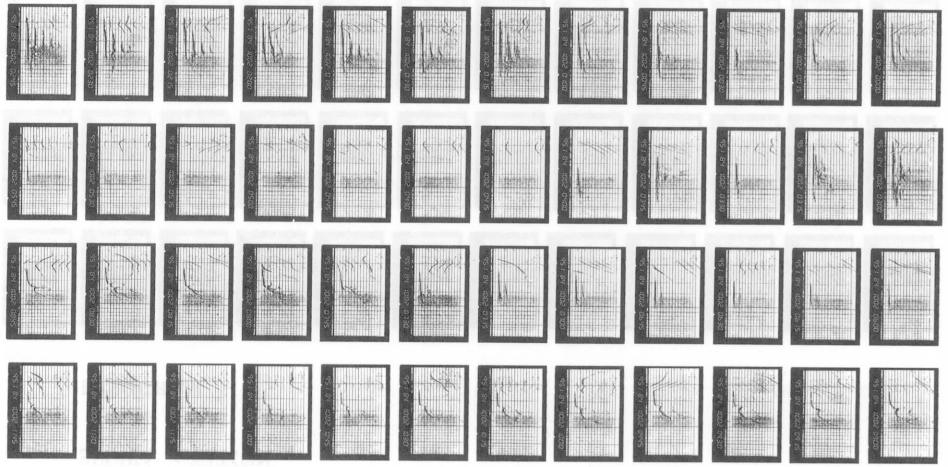

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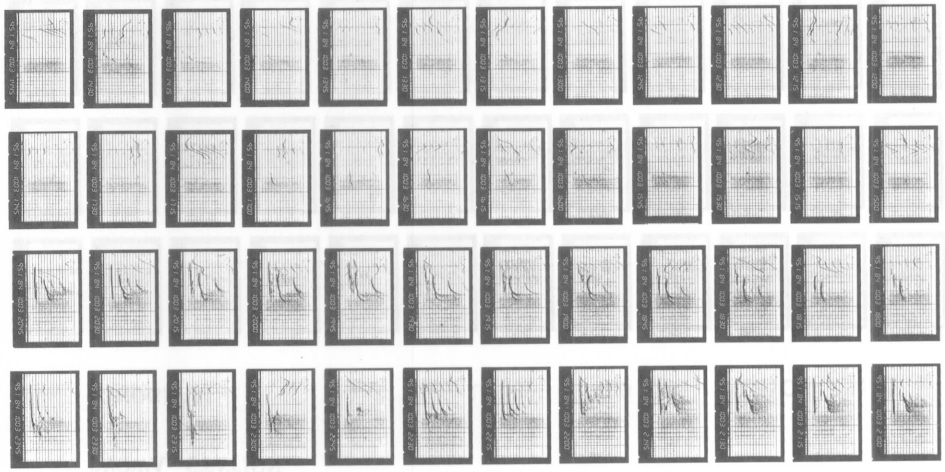

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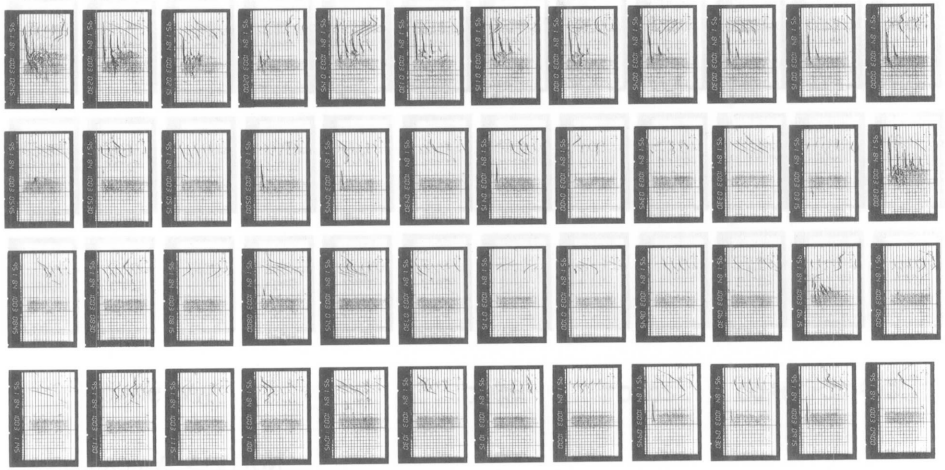

SYOWA STATION

IONOGRAM 1984 10 04 12;00-23;45

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SYOWA STATION

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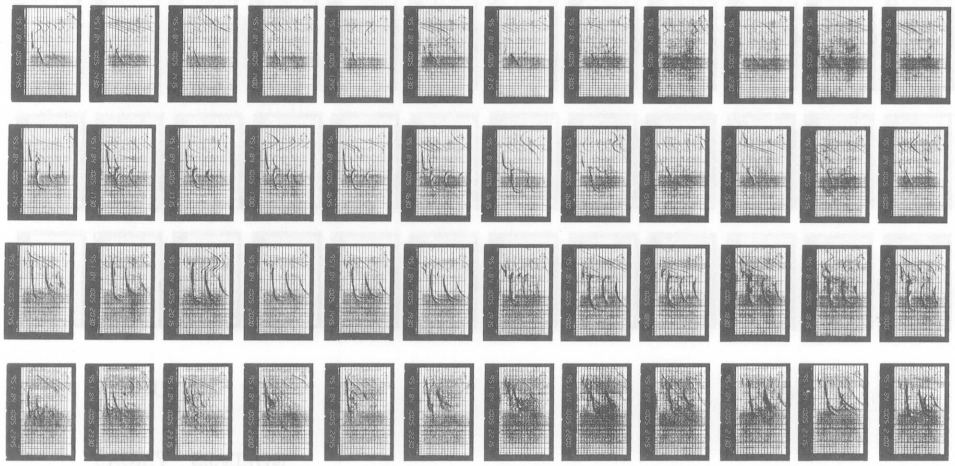

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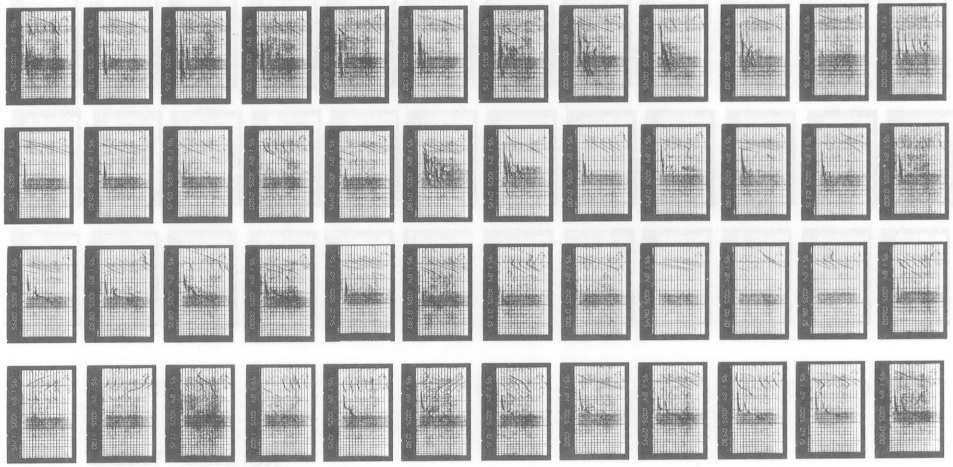

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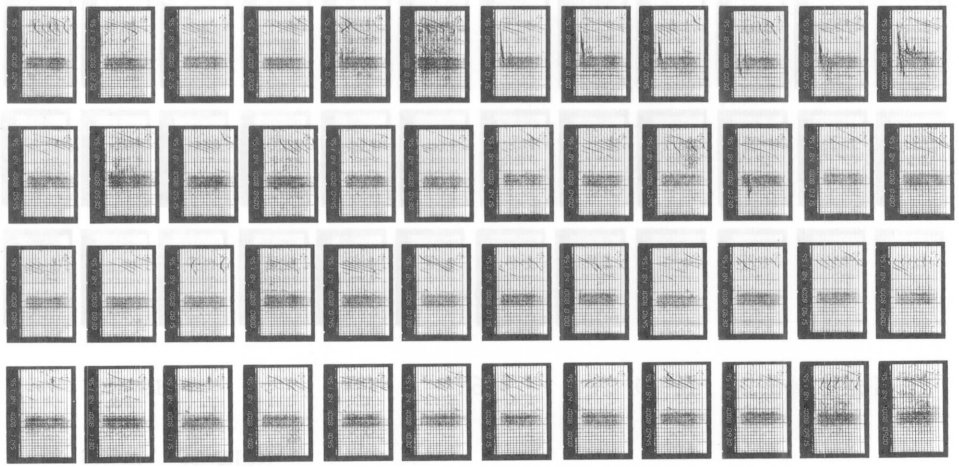

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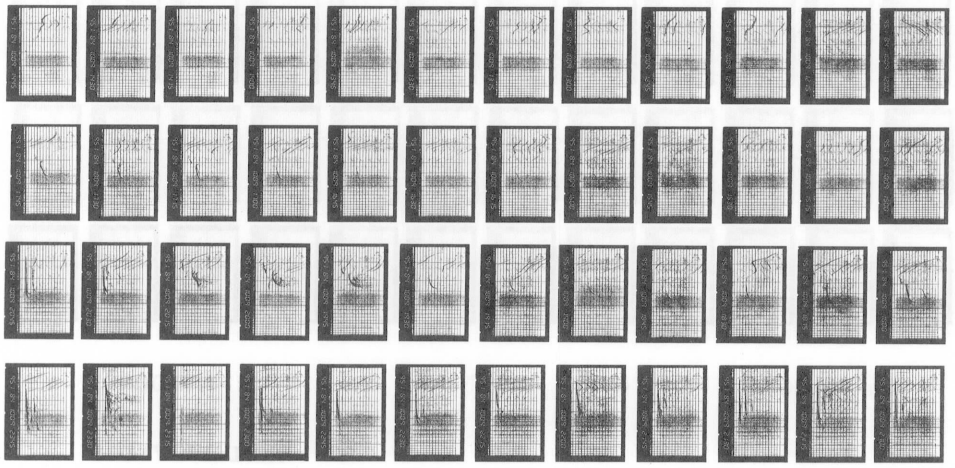

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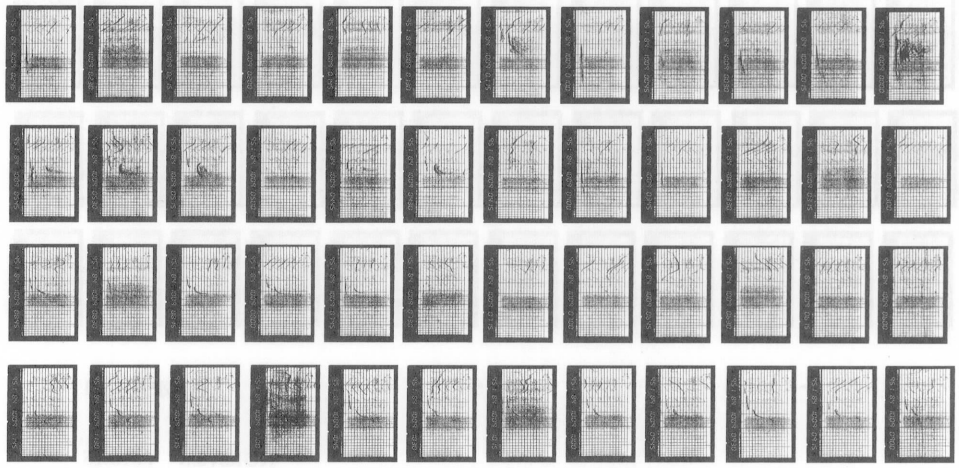

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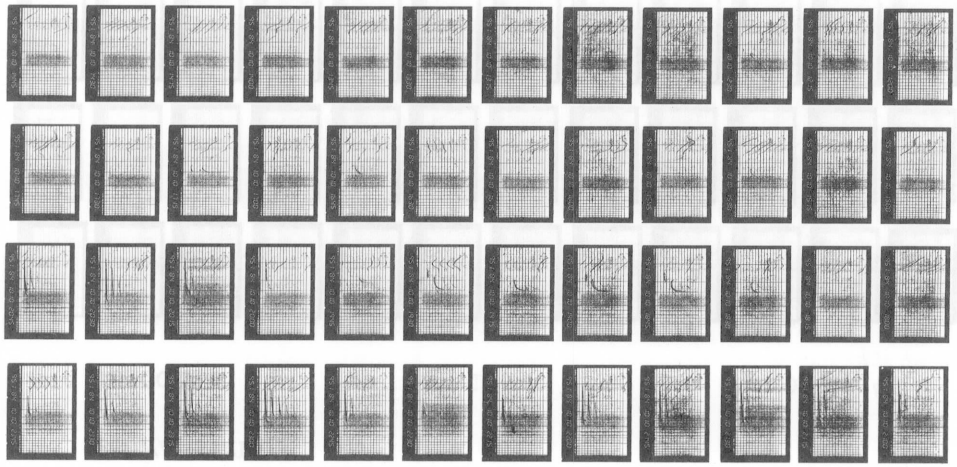

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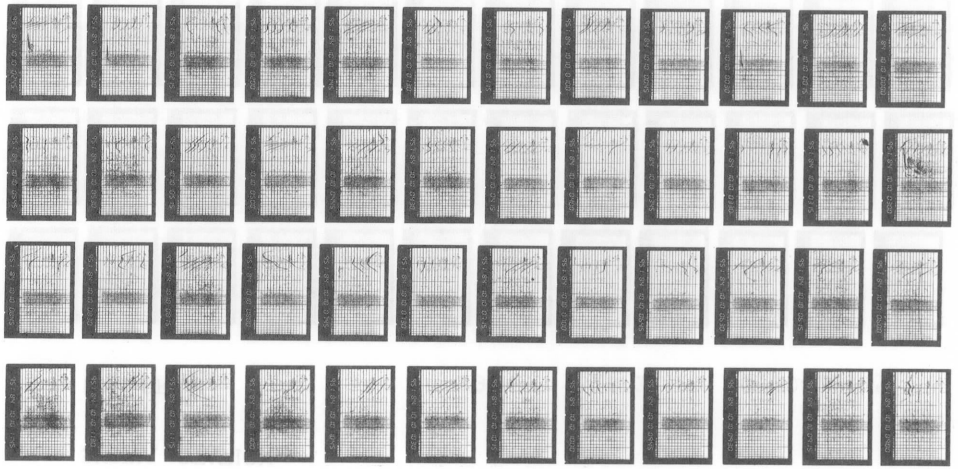

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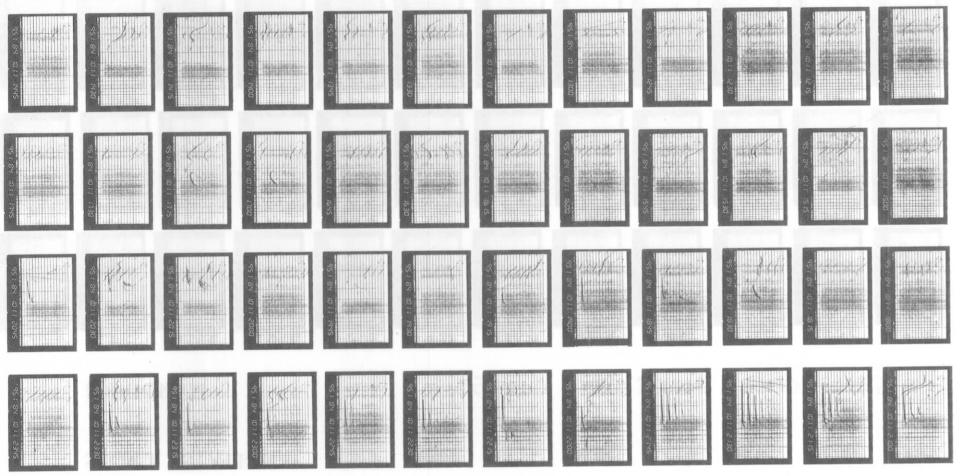

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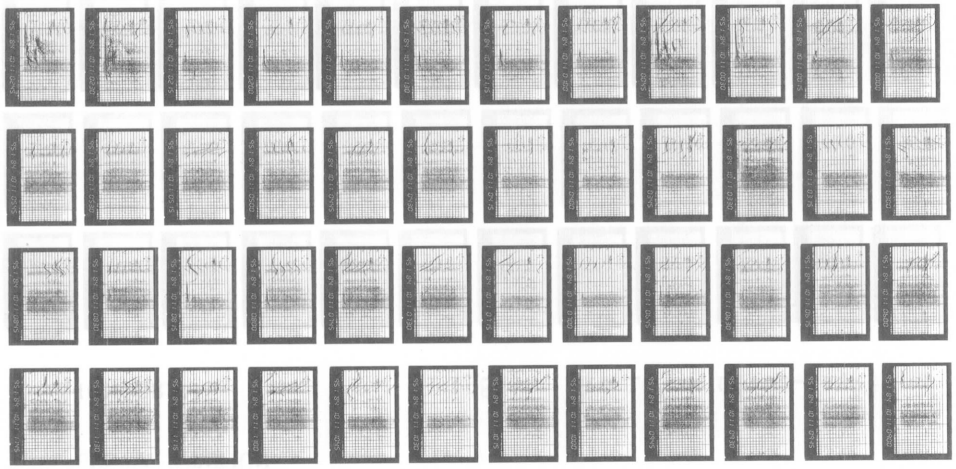

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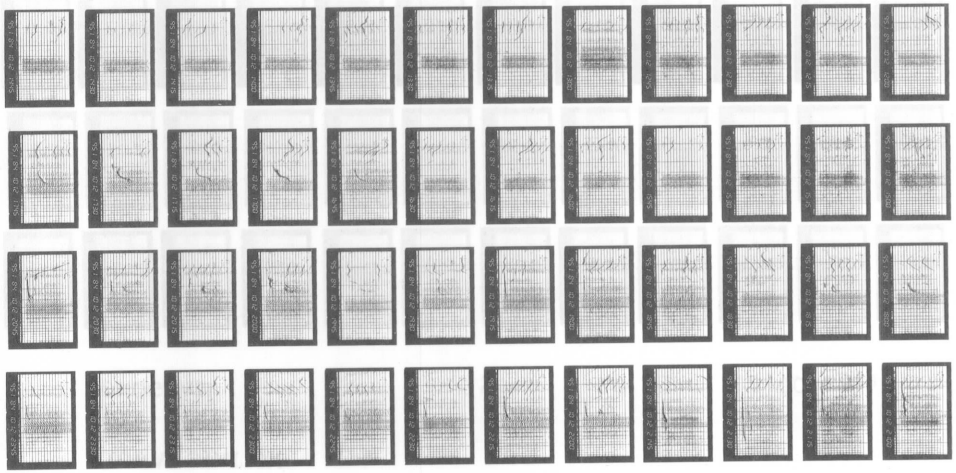

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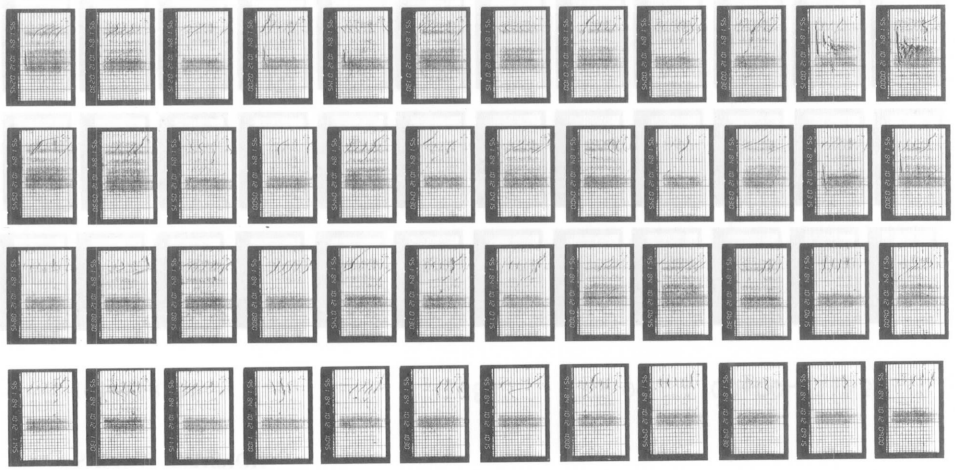

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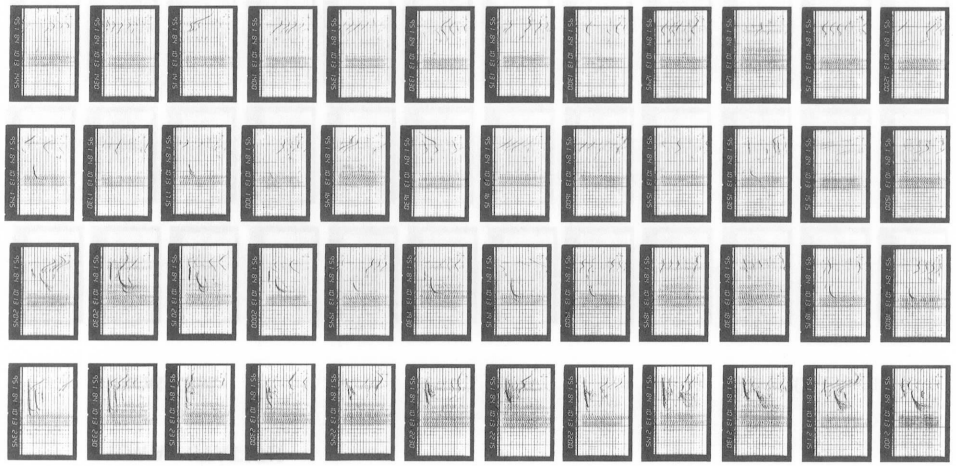

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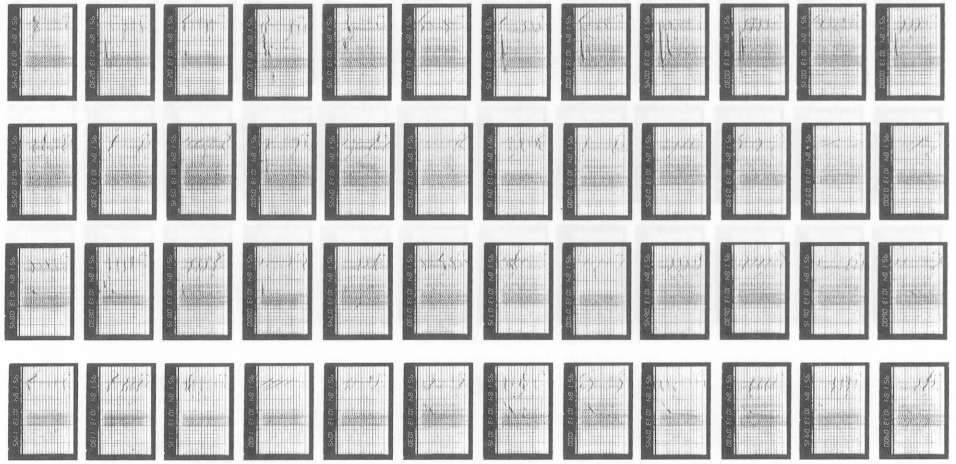

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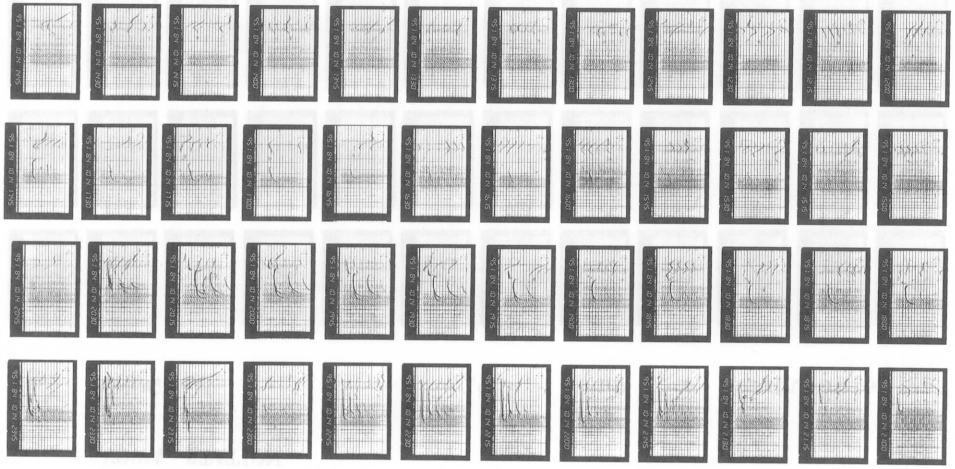

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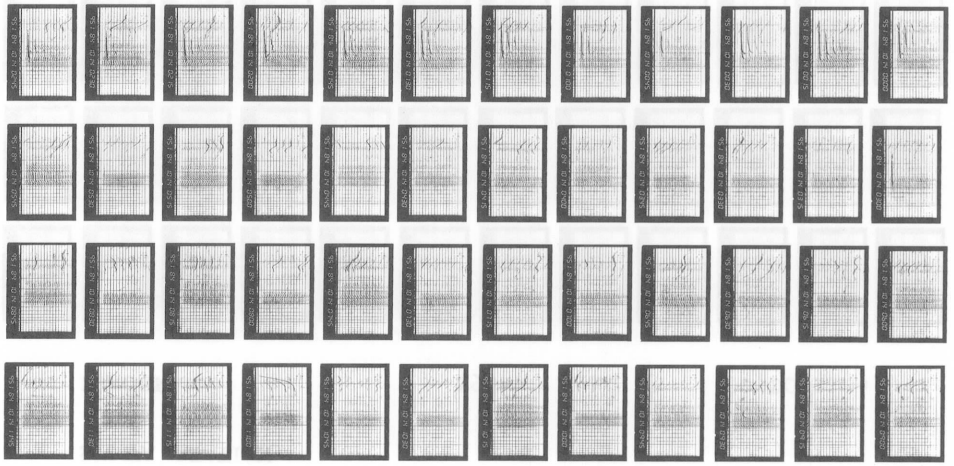

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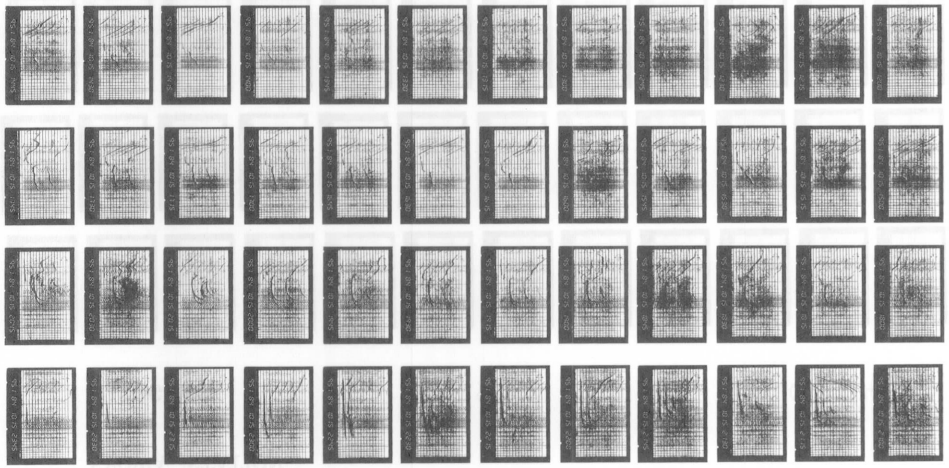

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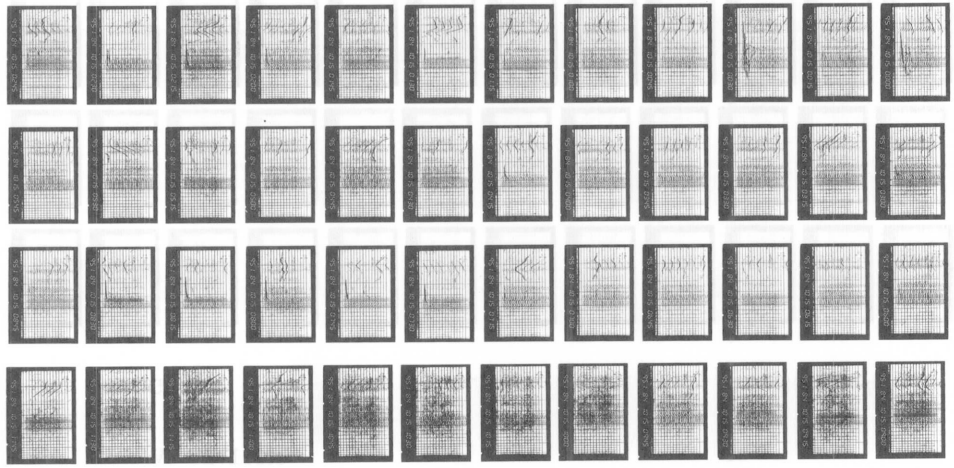

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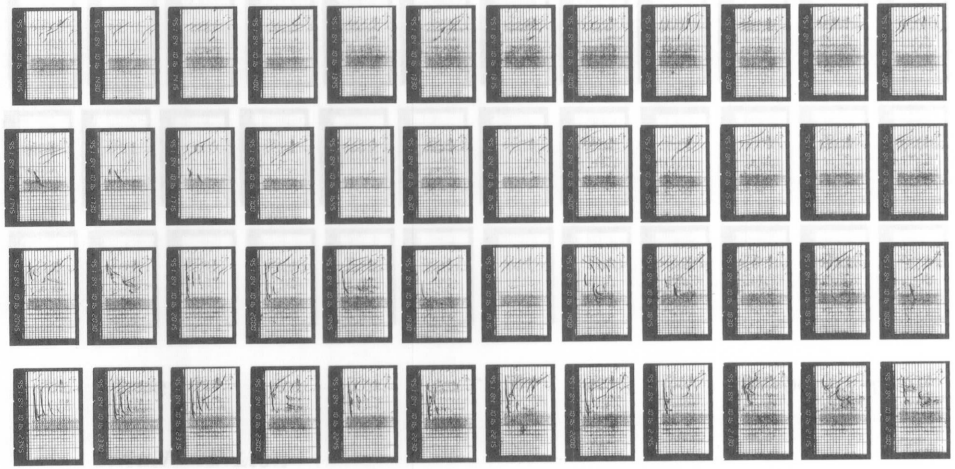

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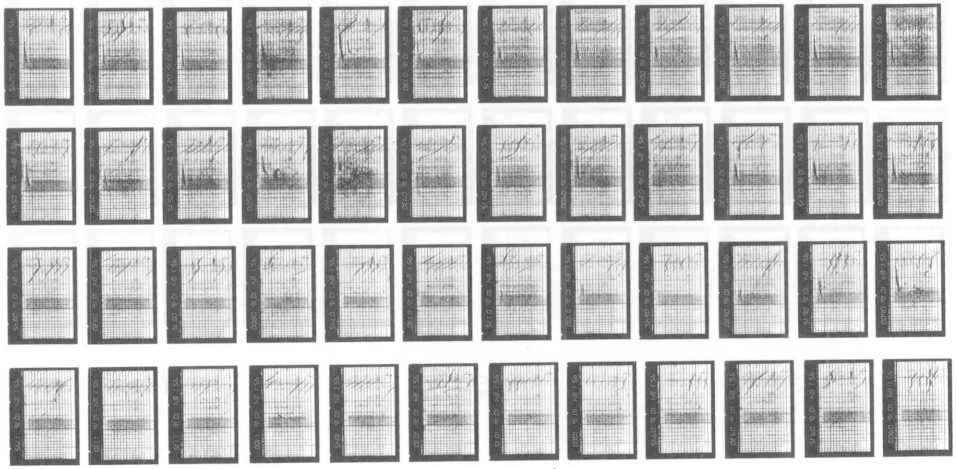

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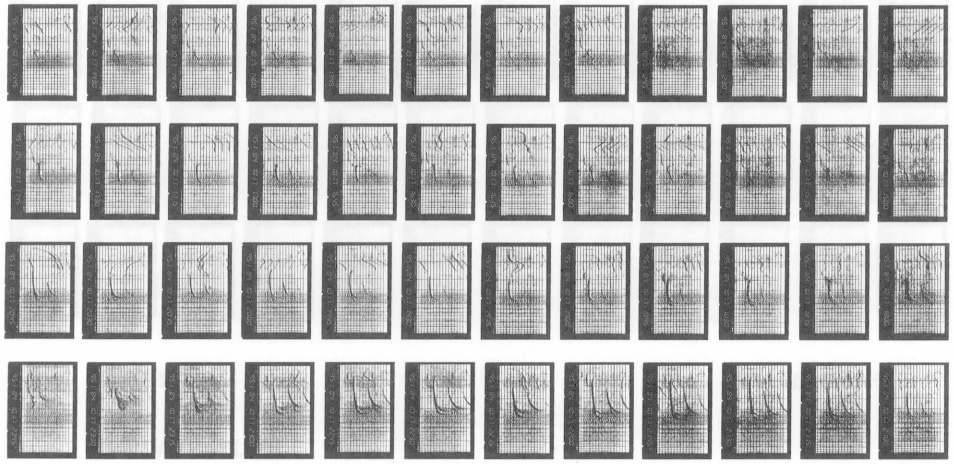

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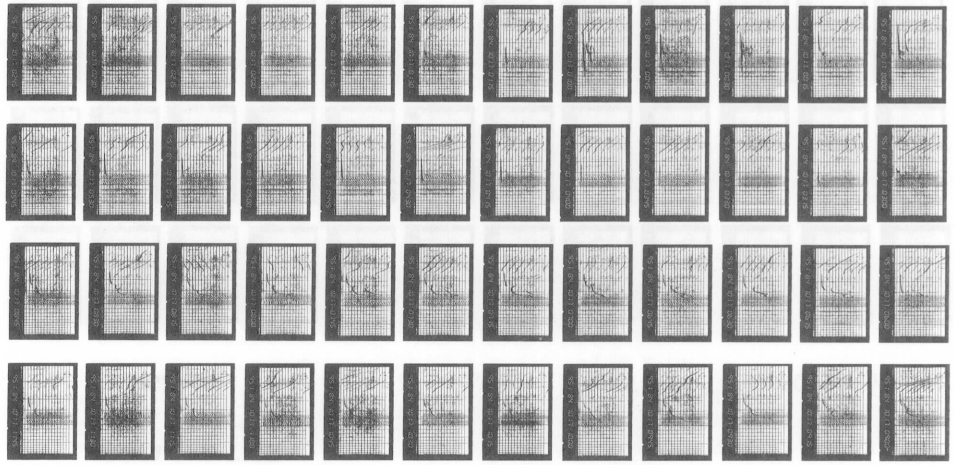

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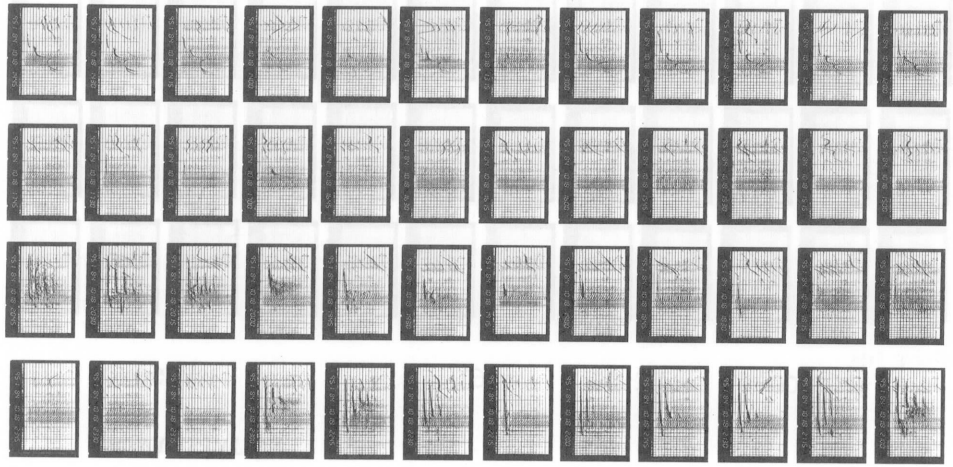

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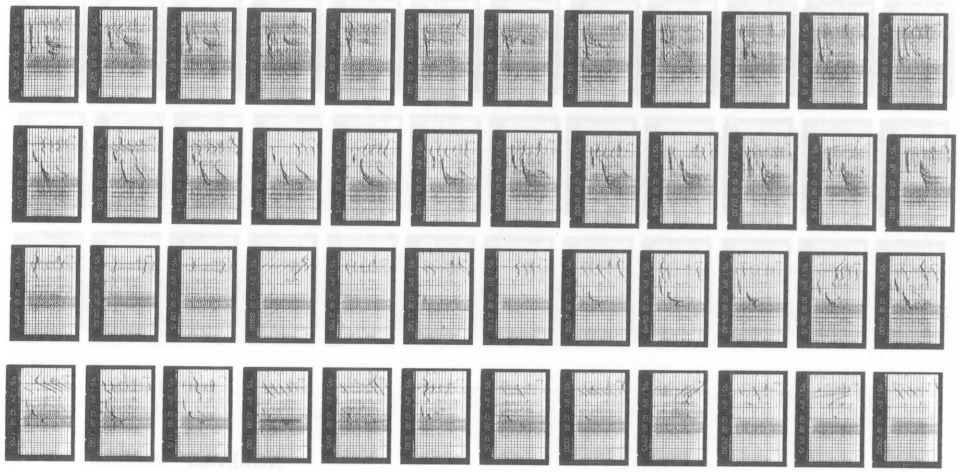

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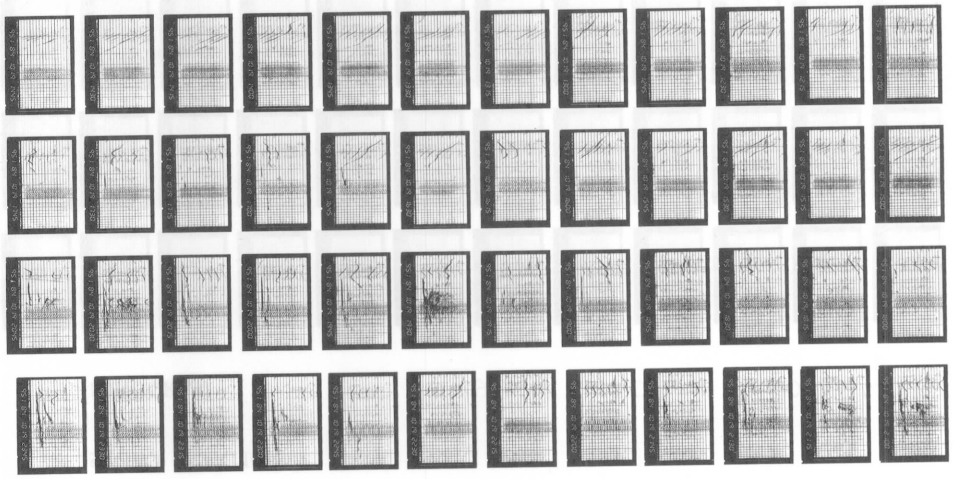

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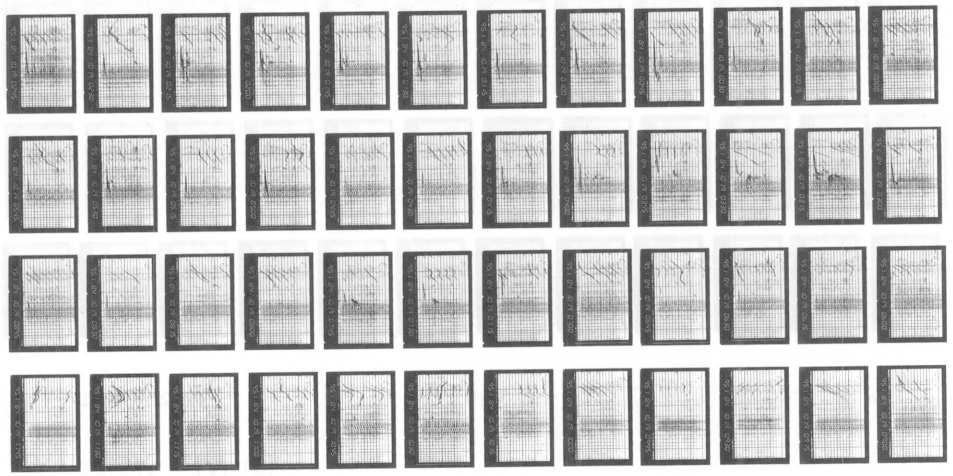

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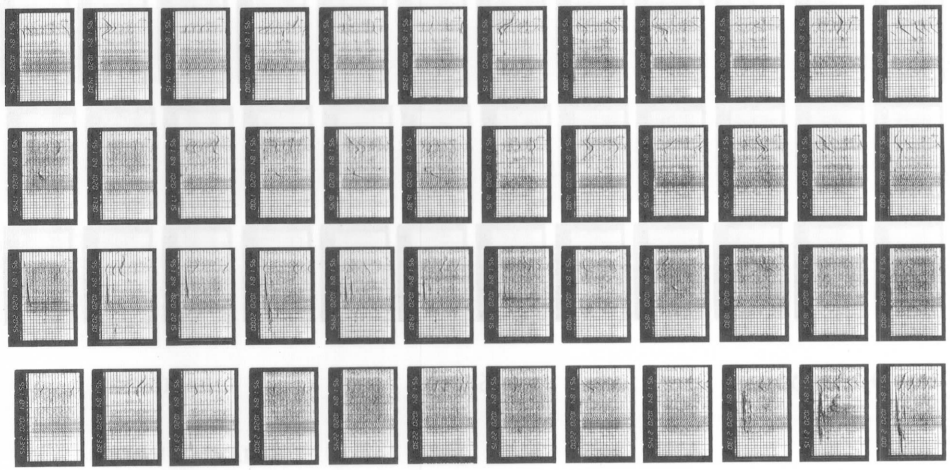

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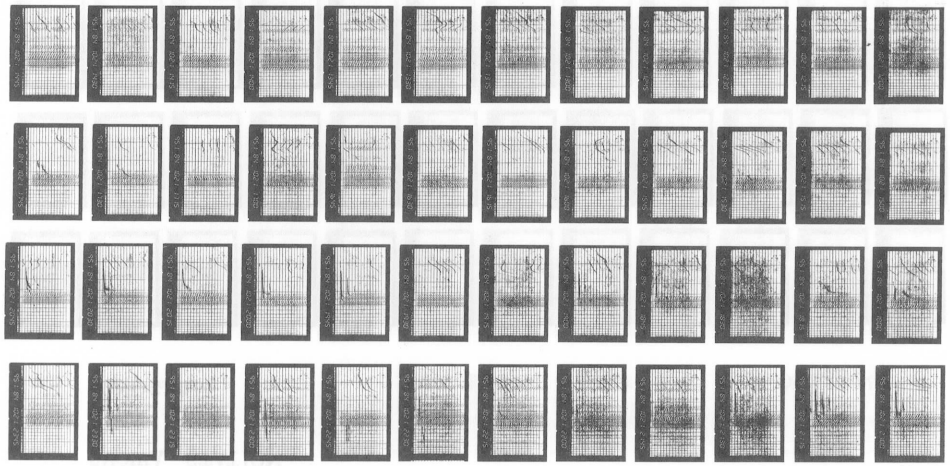

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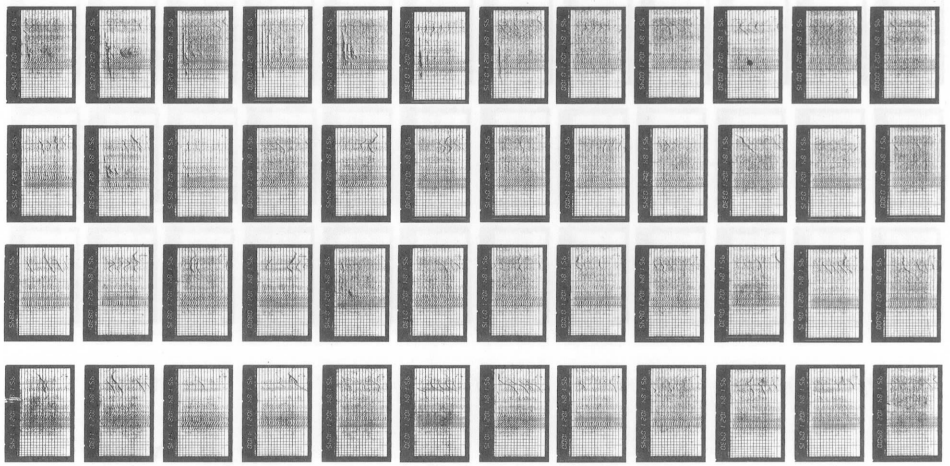

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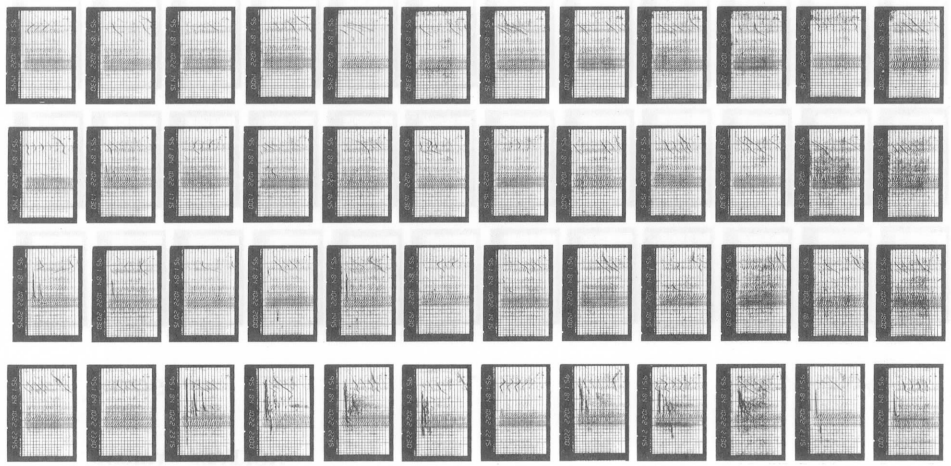

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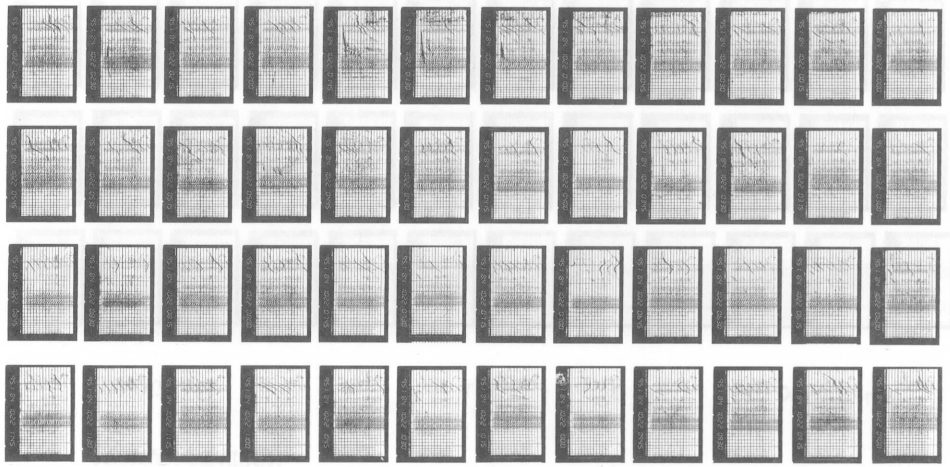

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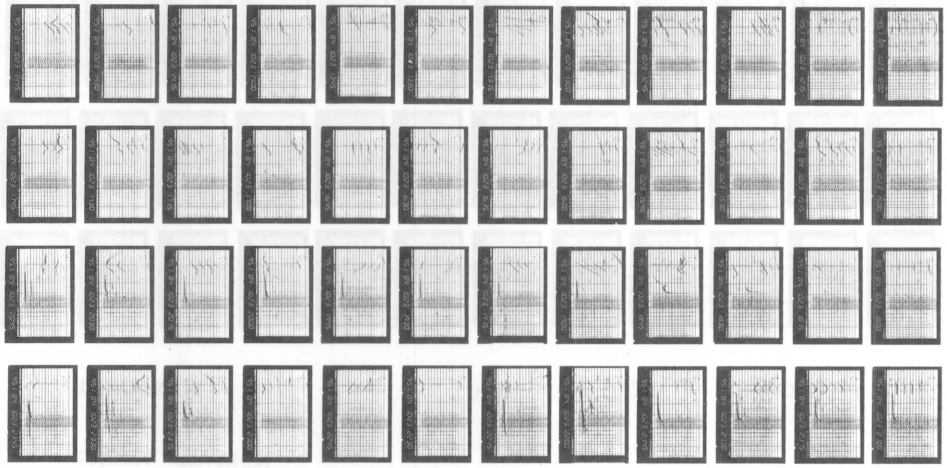

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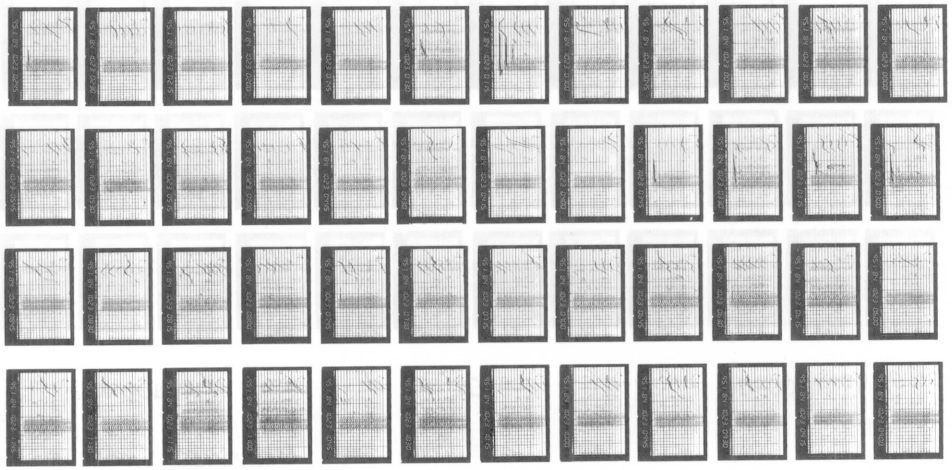

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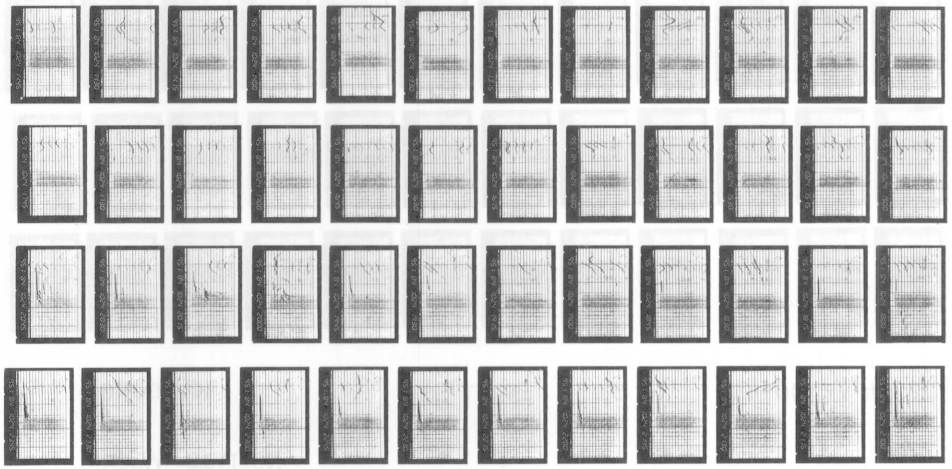

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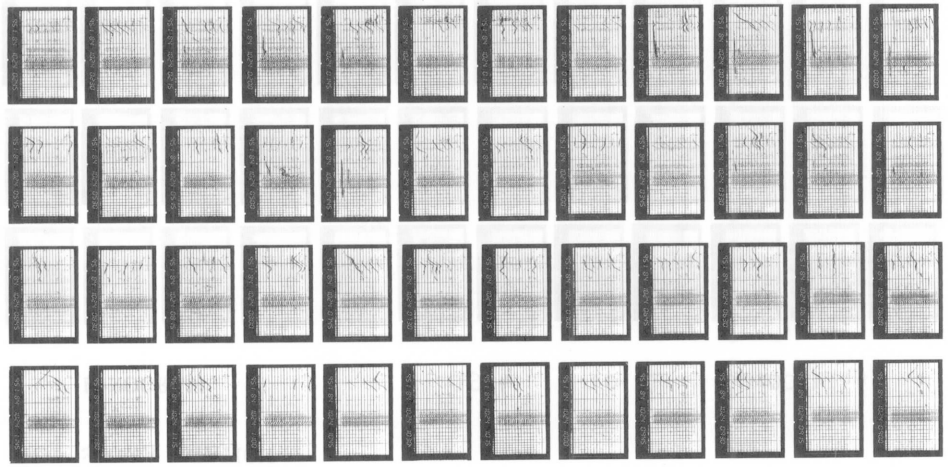

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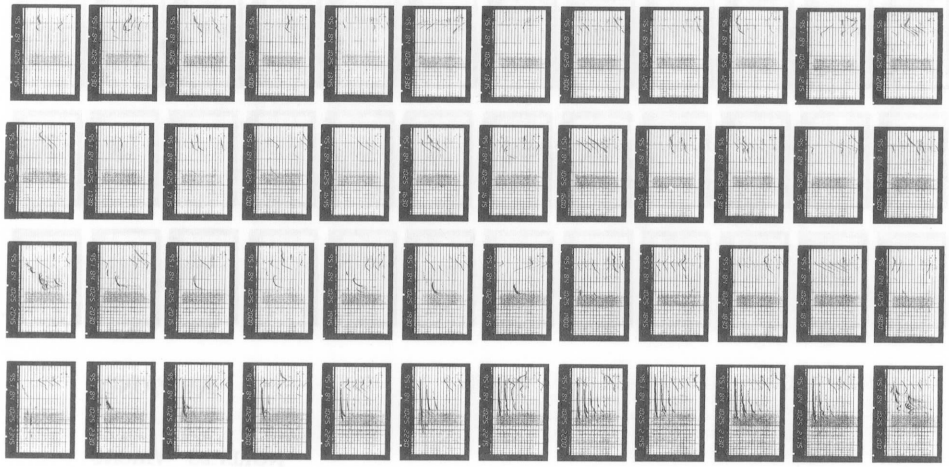

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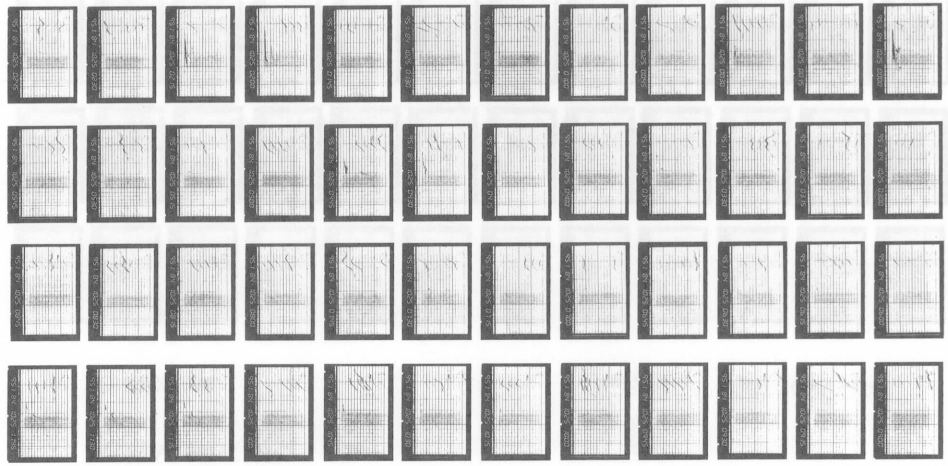

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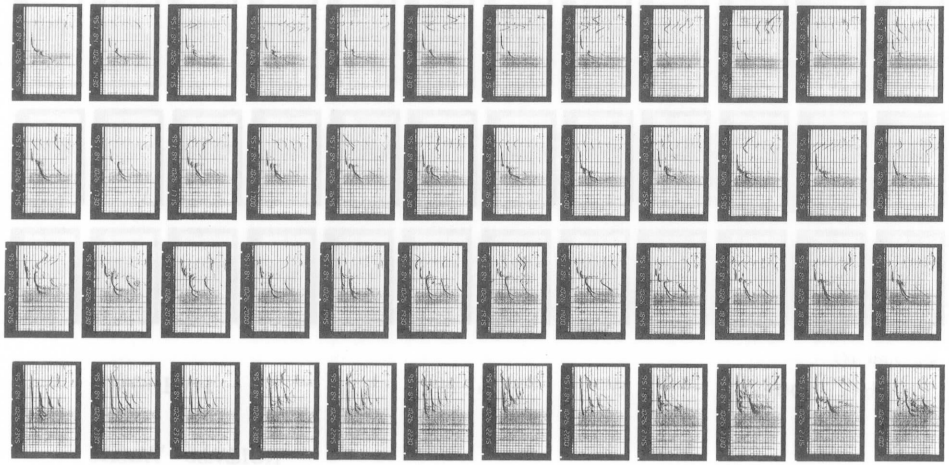

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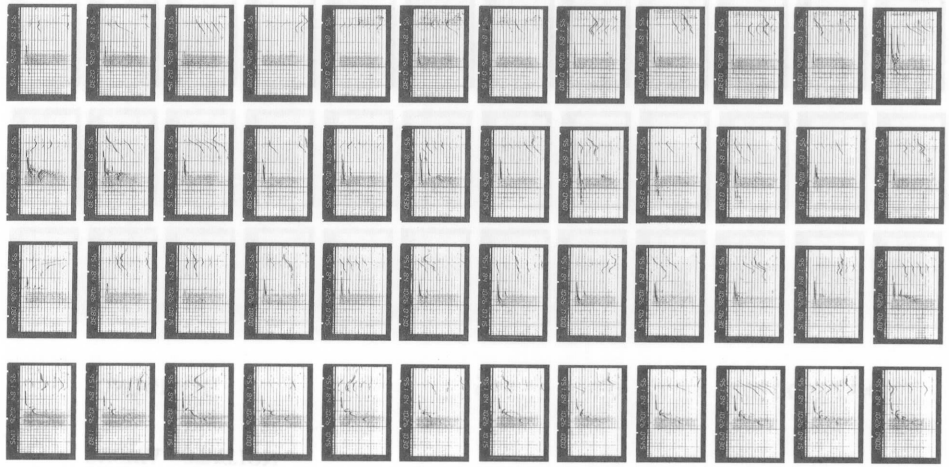

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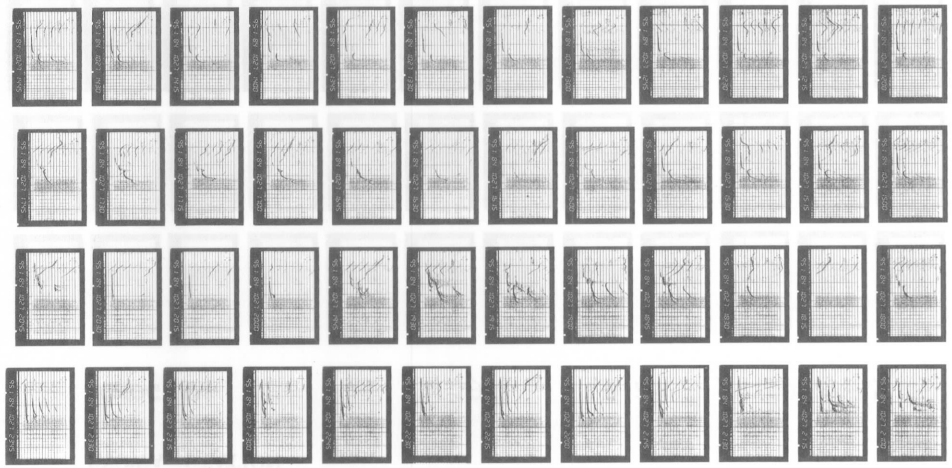

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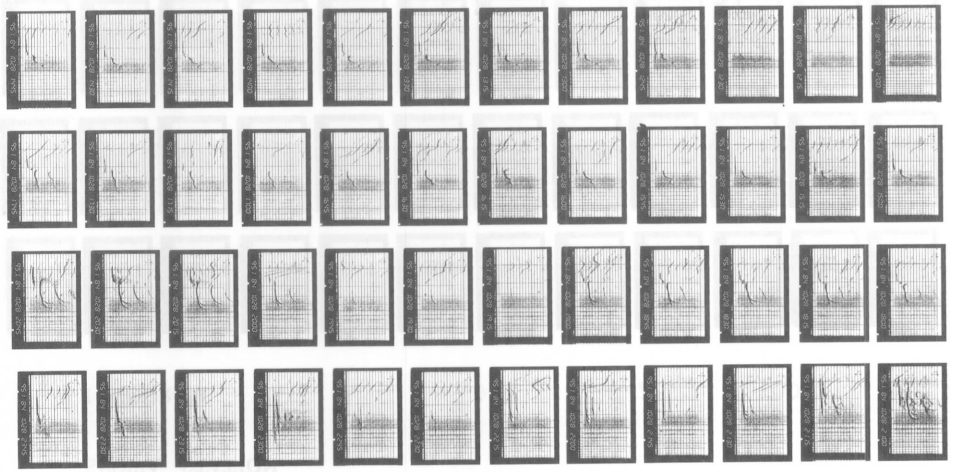

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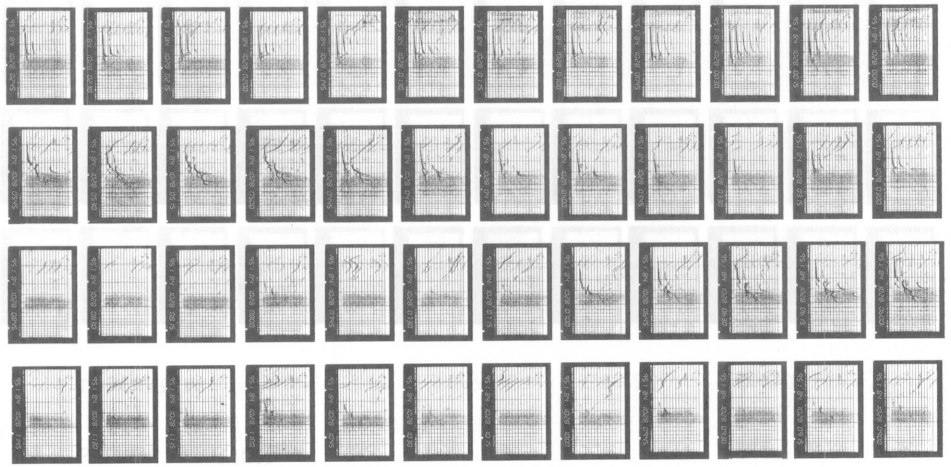

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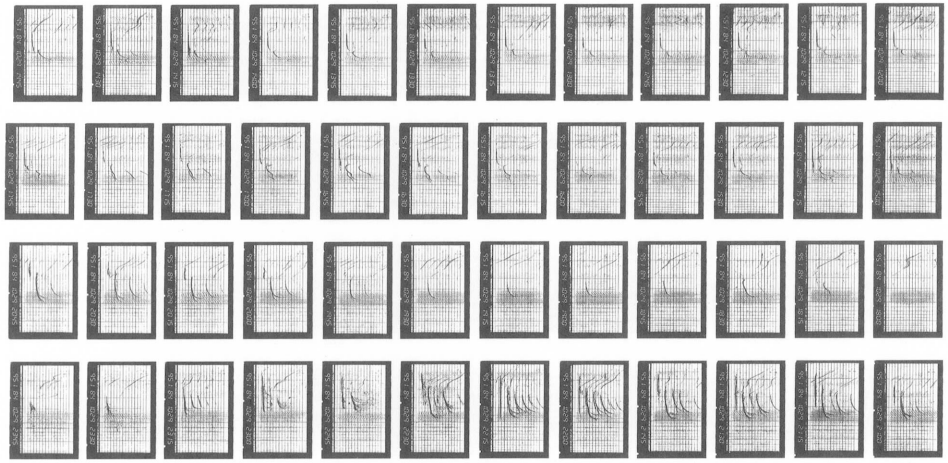

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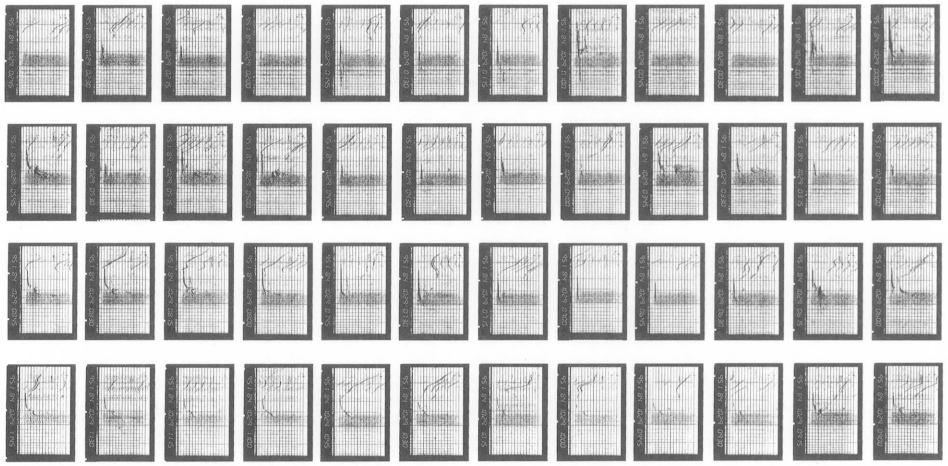

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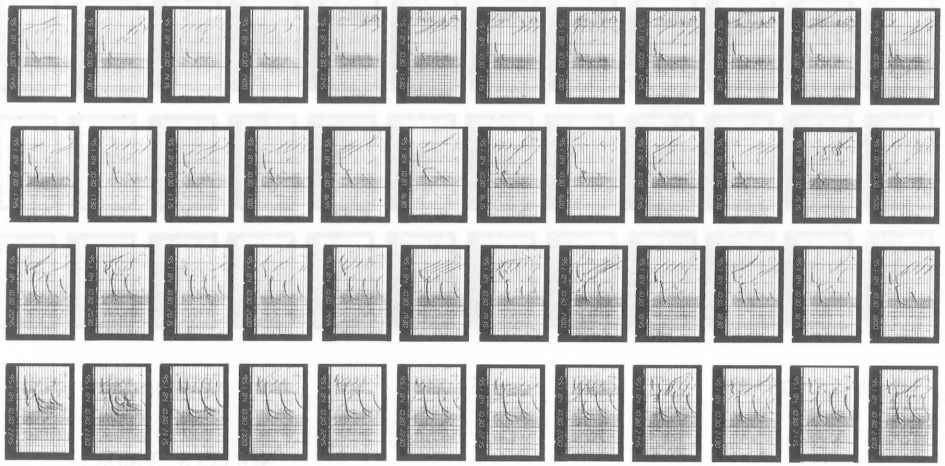

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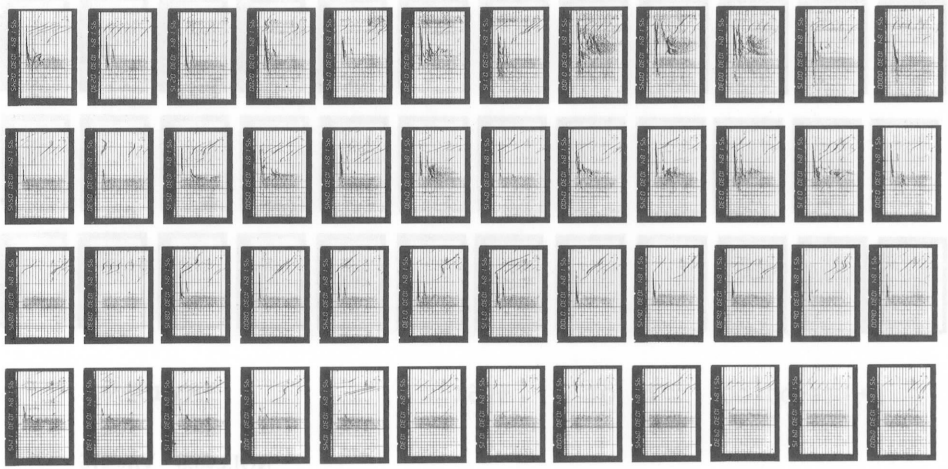

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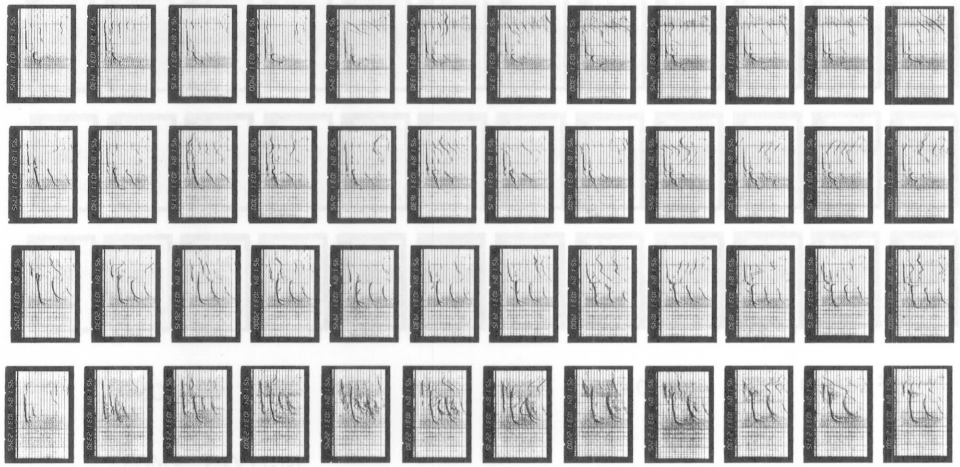

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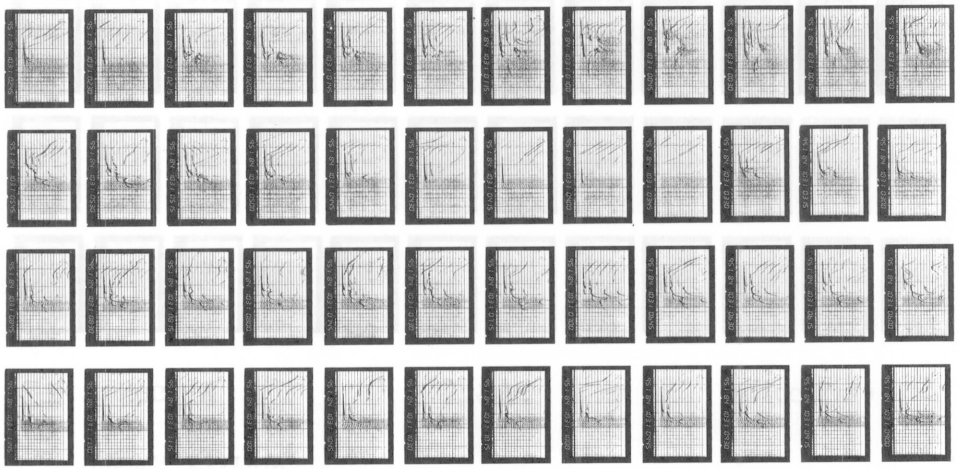

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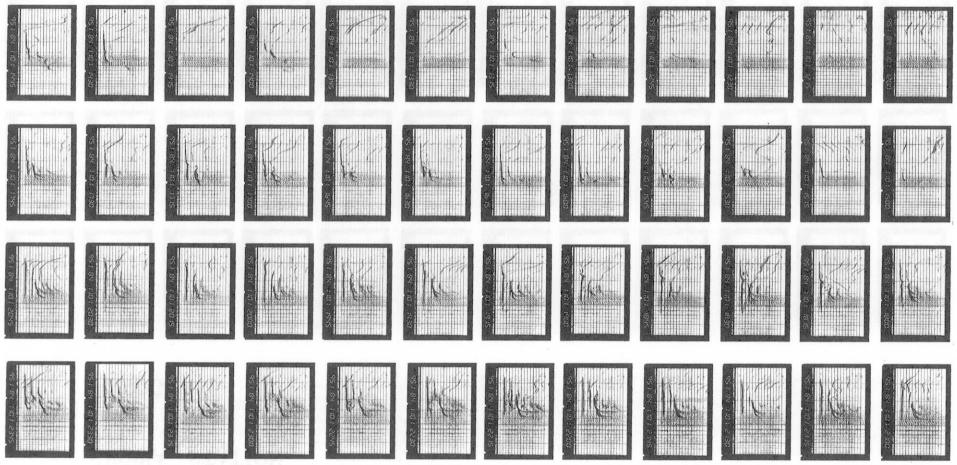

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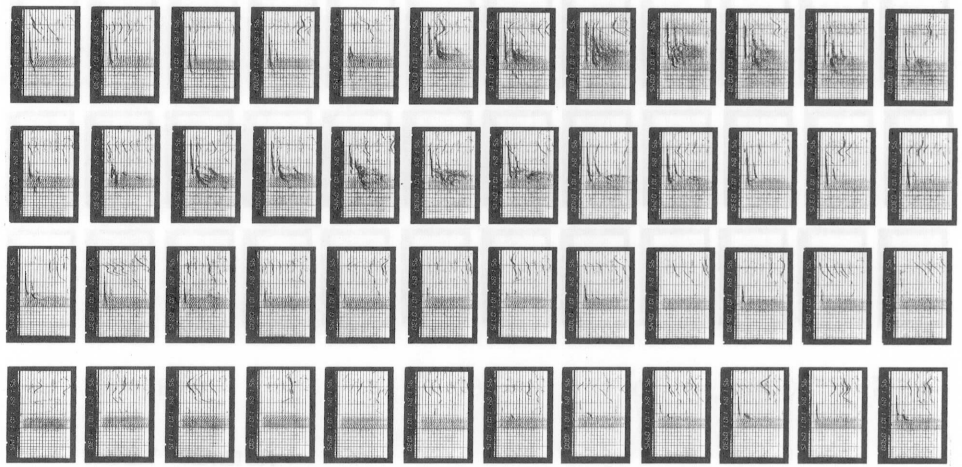

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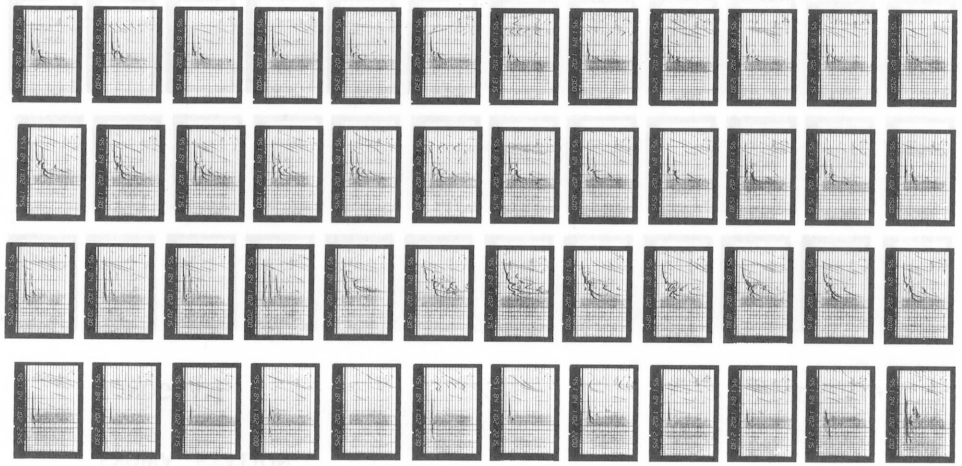

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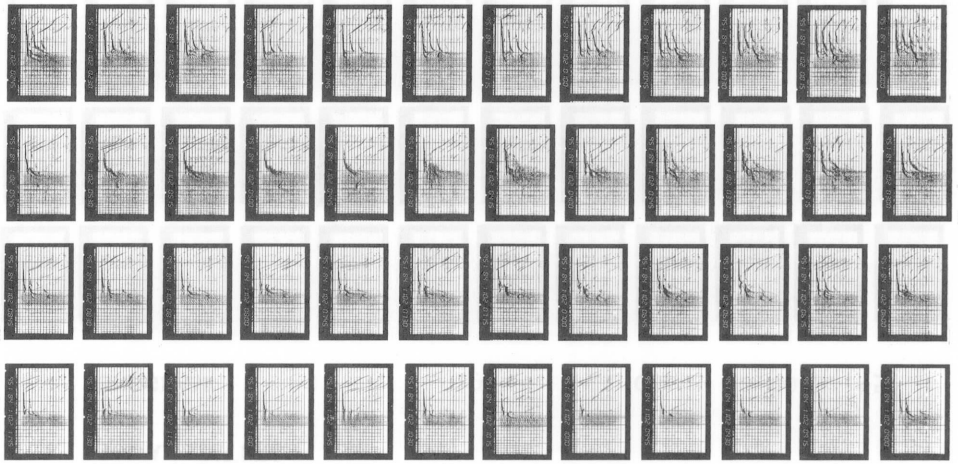

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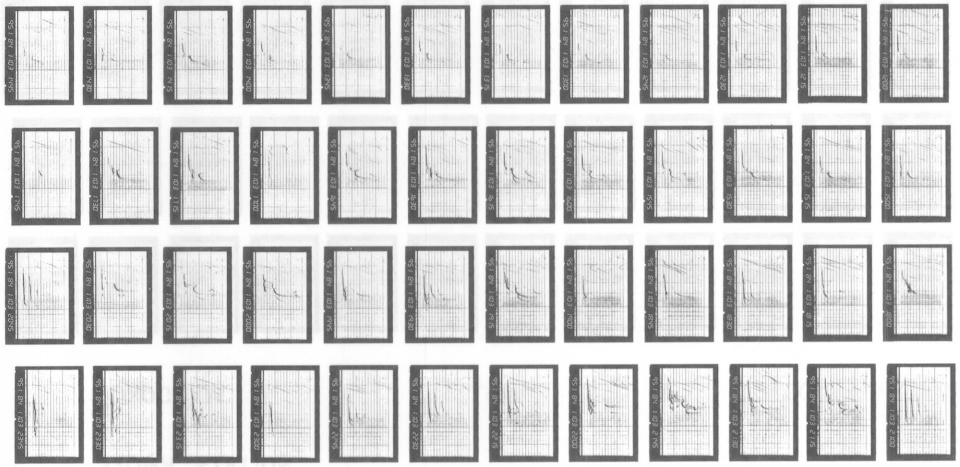

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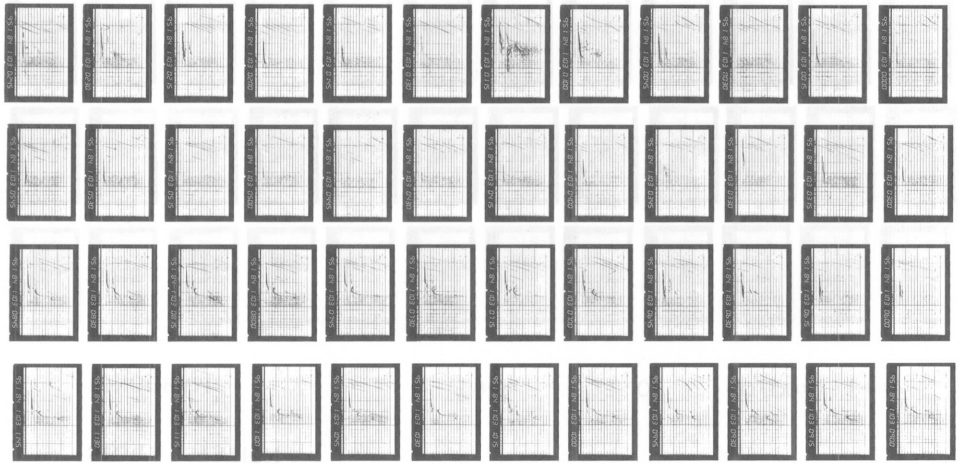

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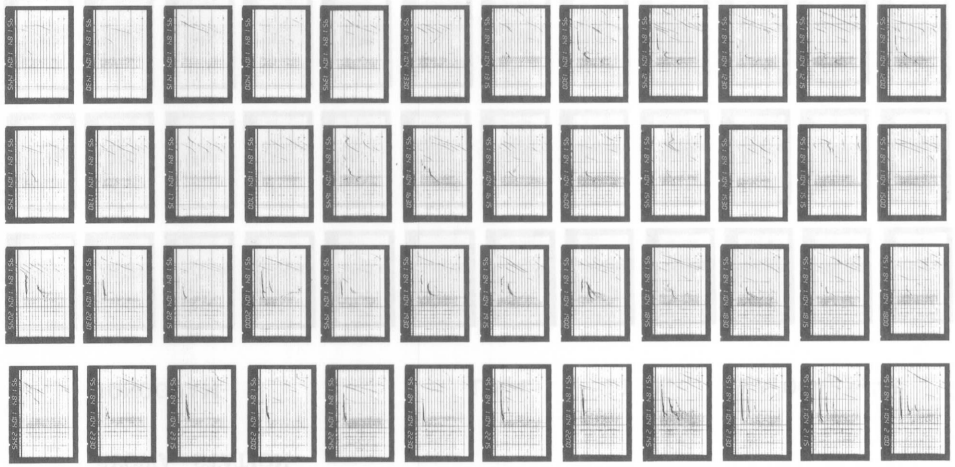

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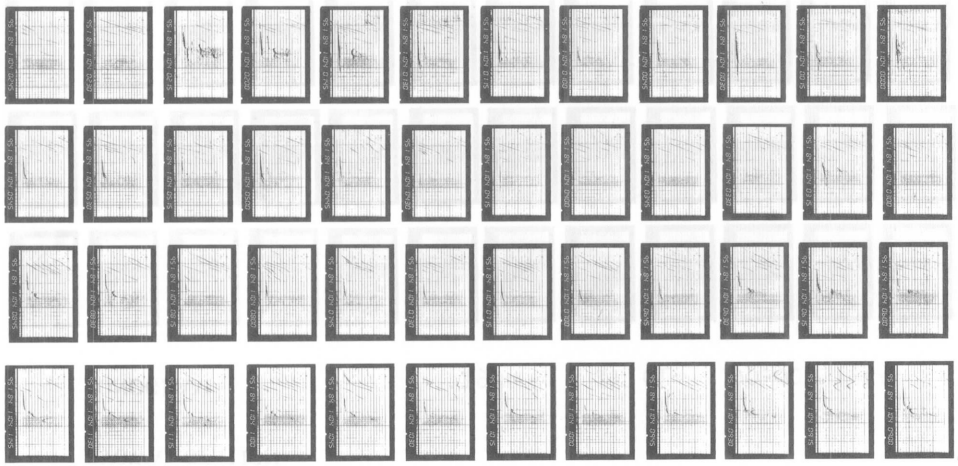

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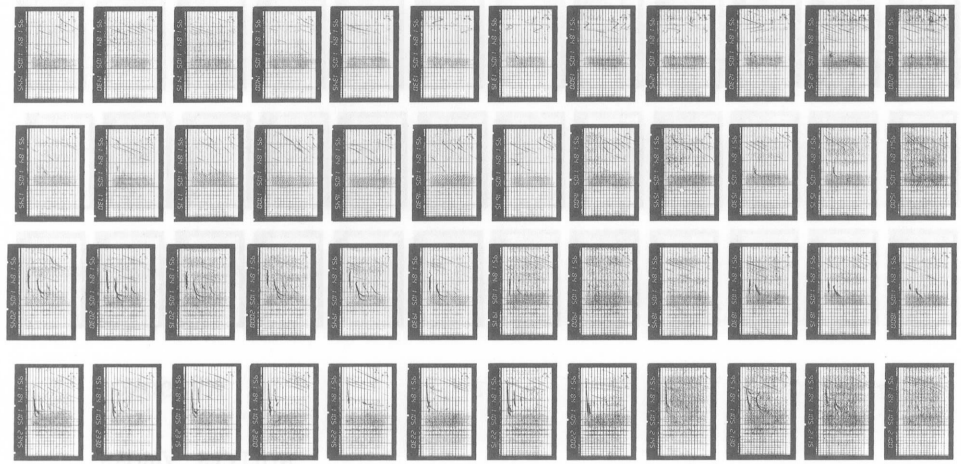

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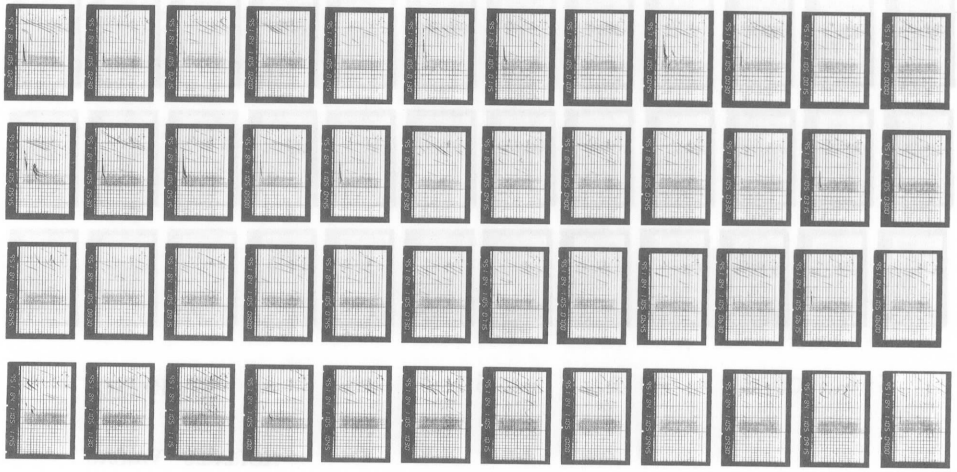

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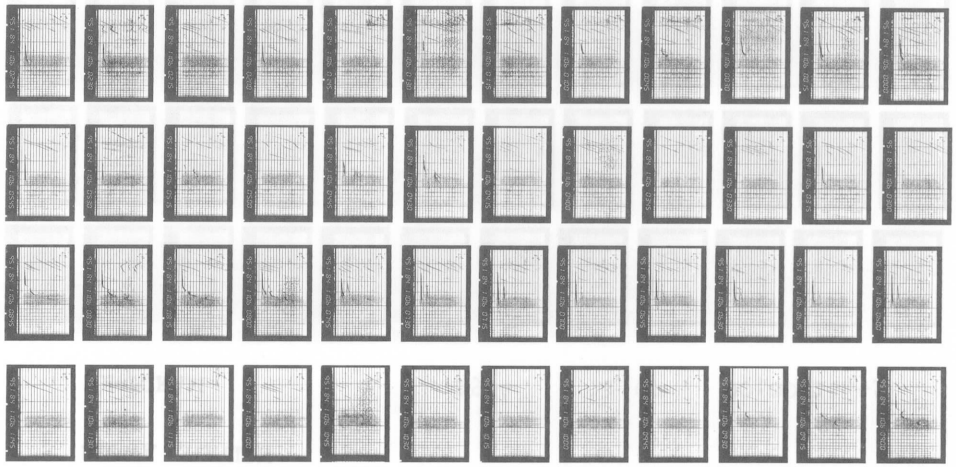

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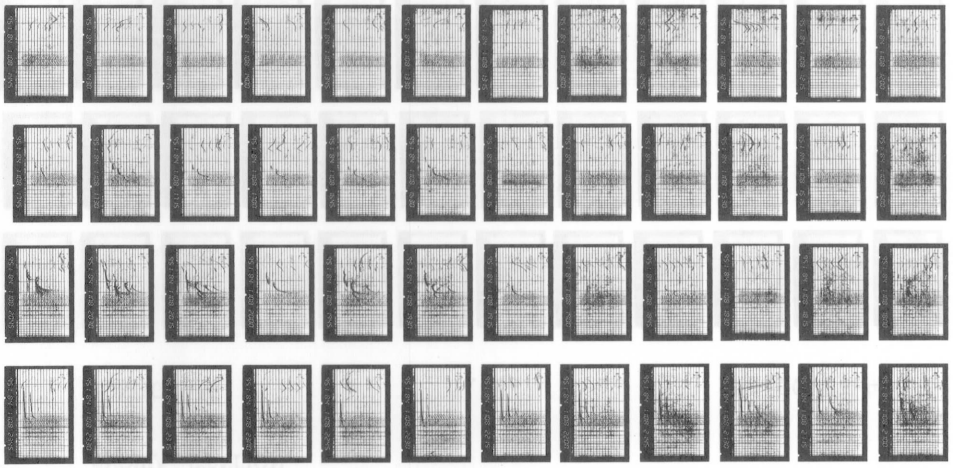

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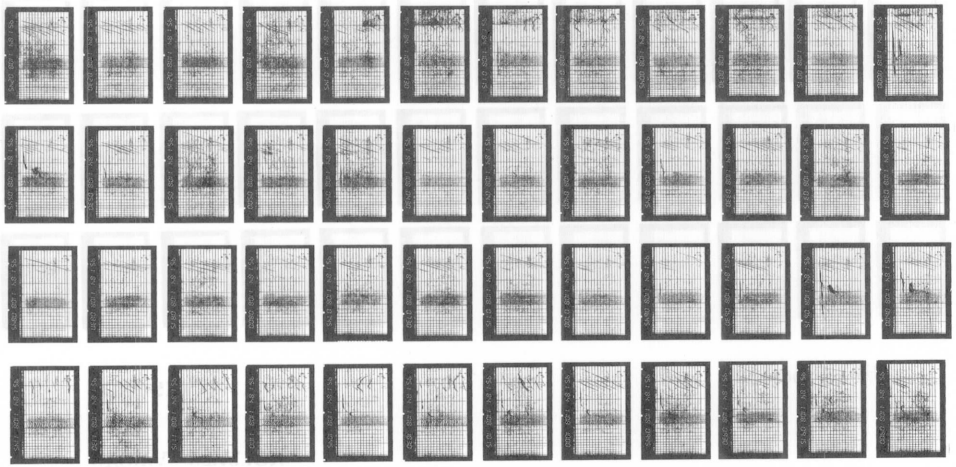

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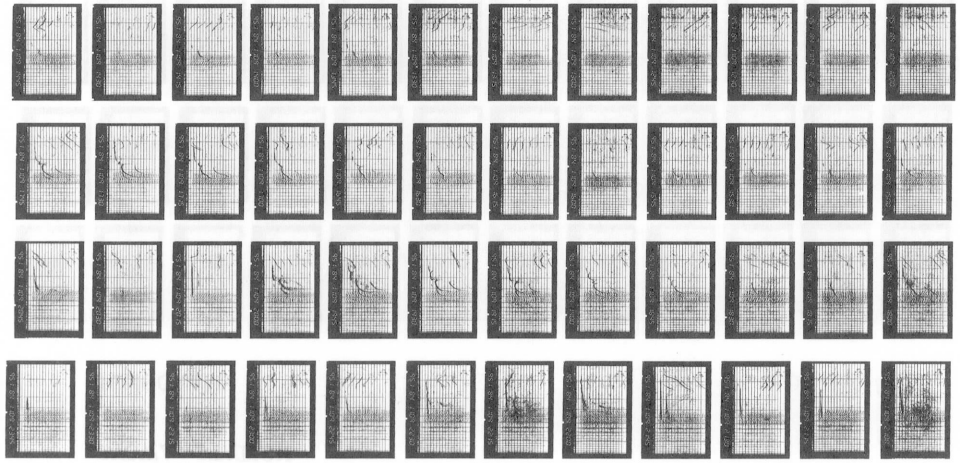

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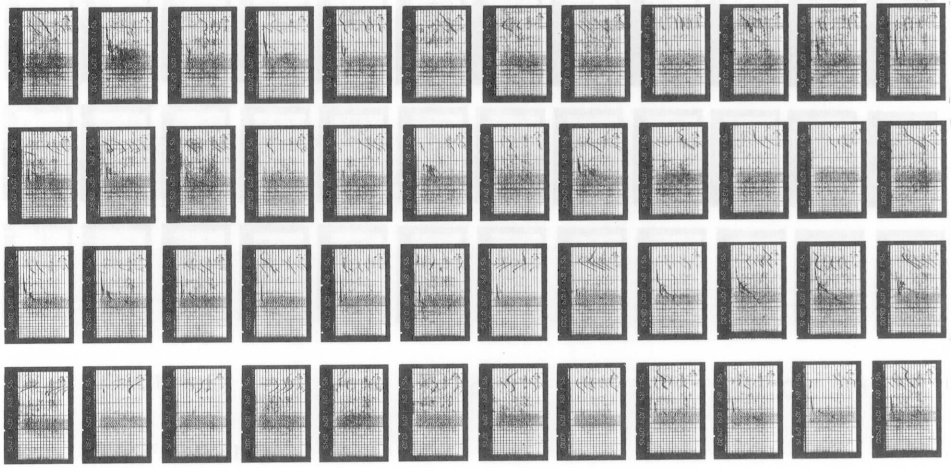

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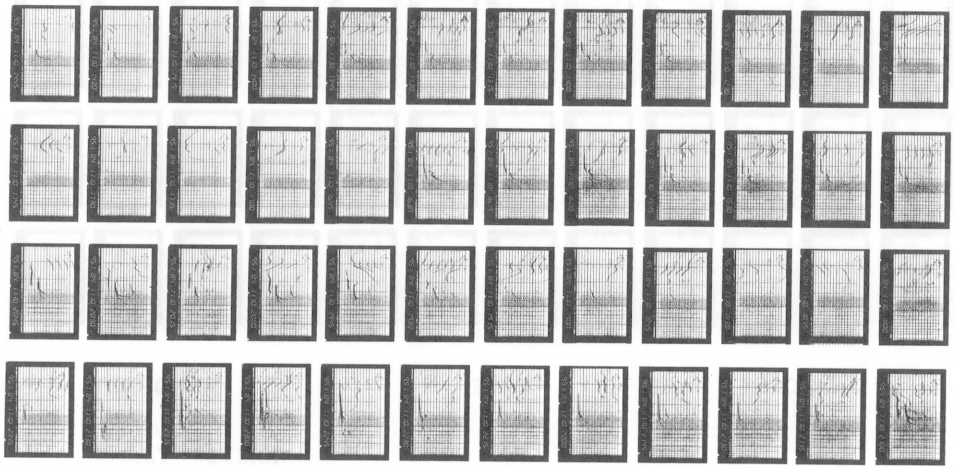

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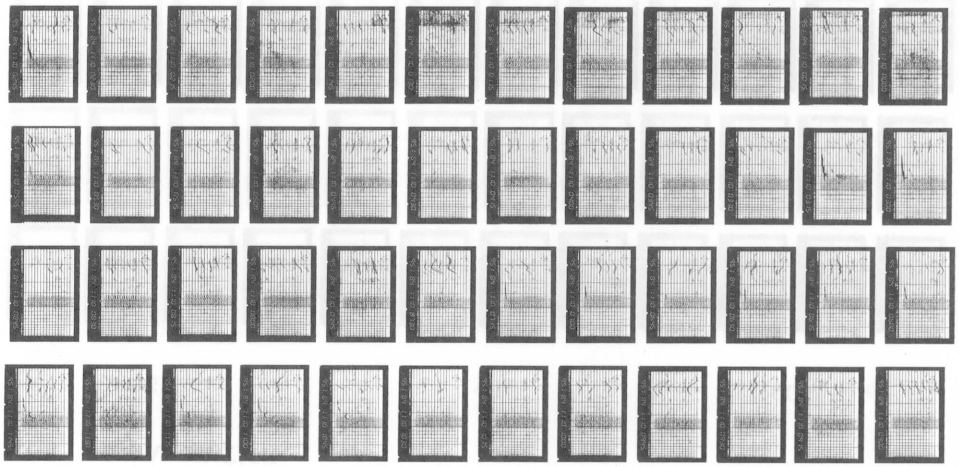

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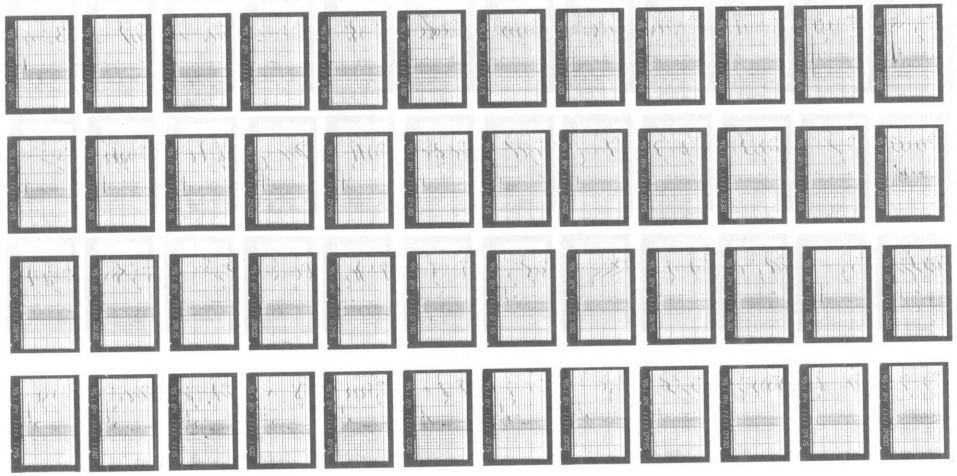

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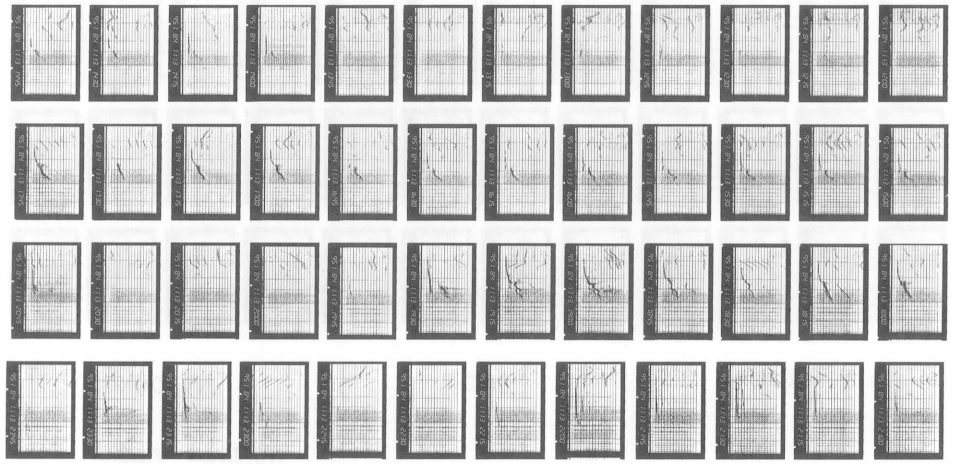

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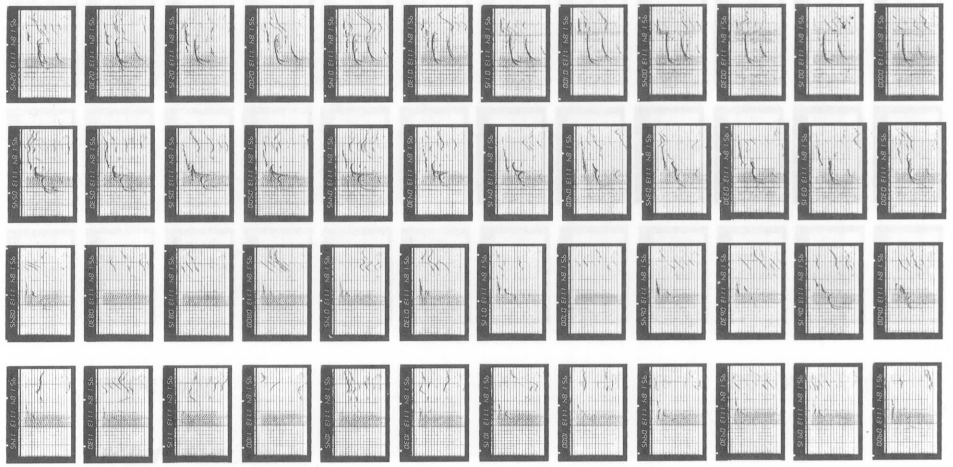

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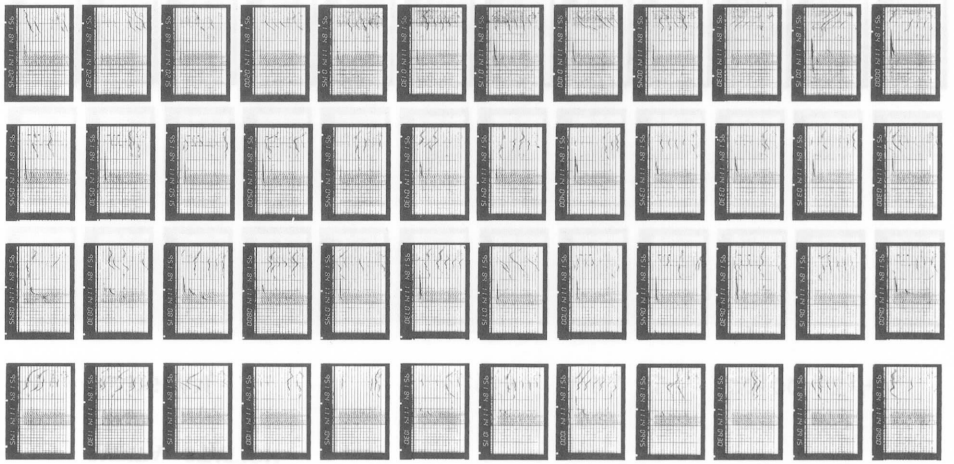

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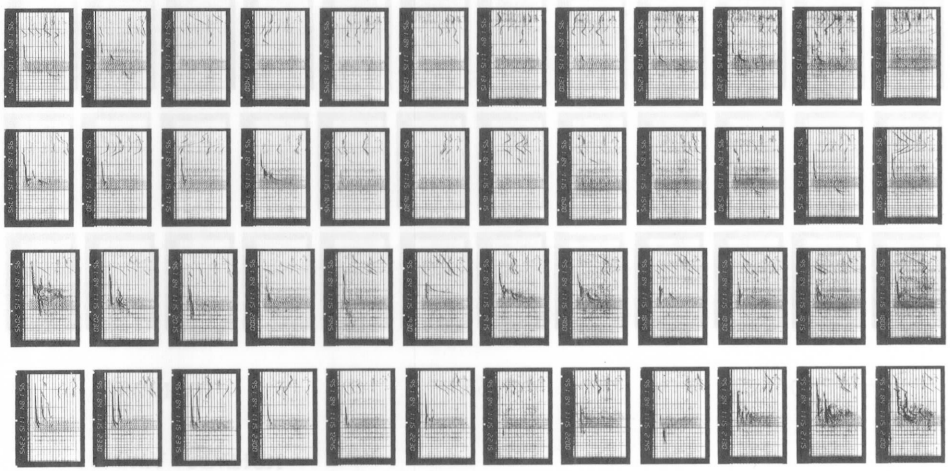

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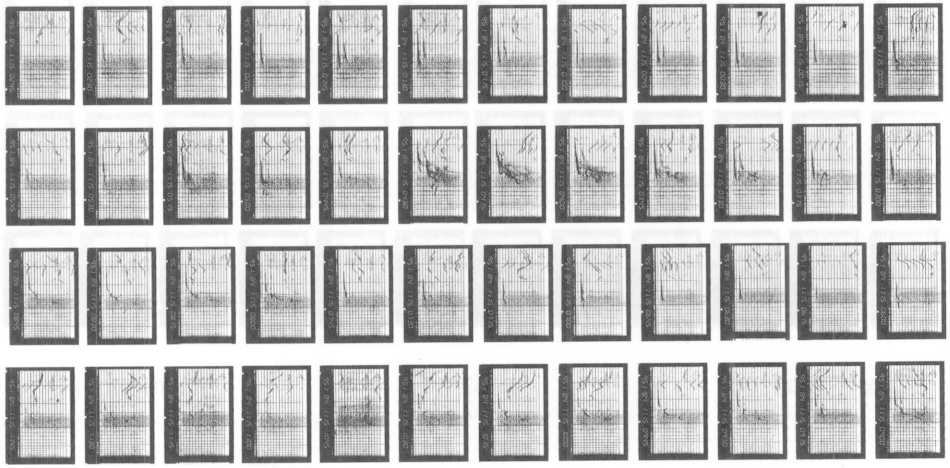

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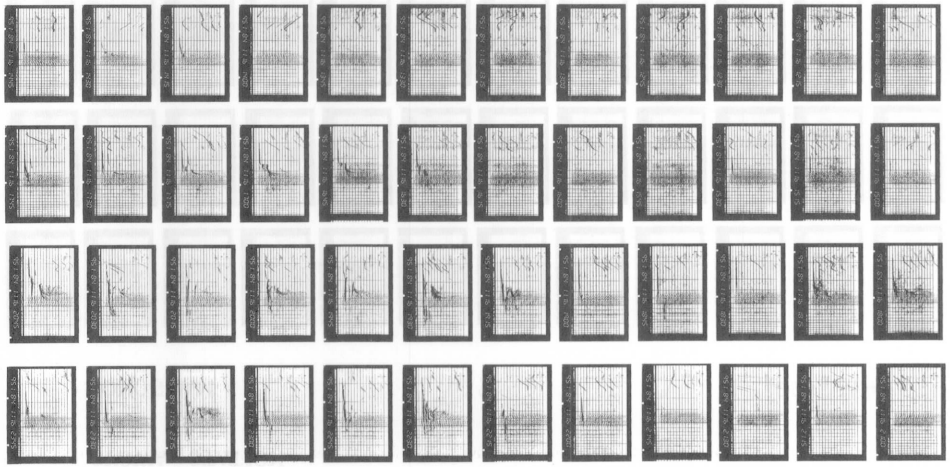

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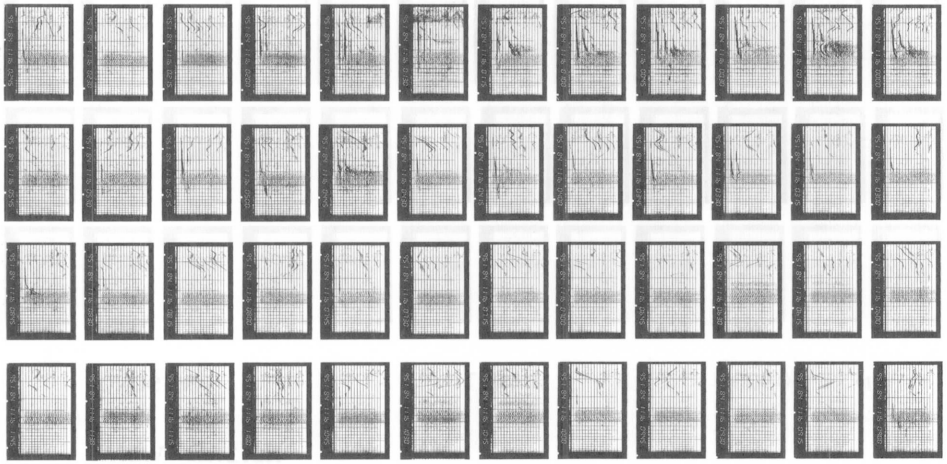

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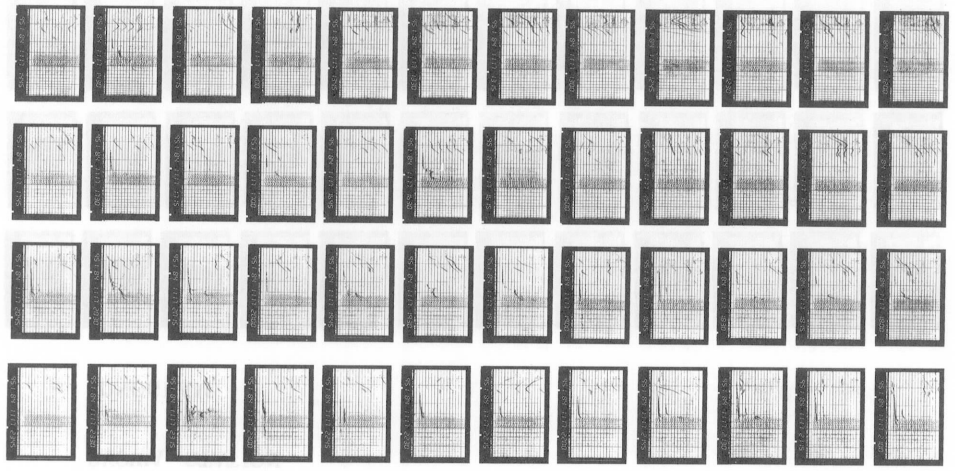

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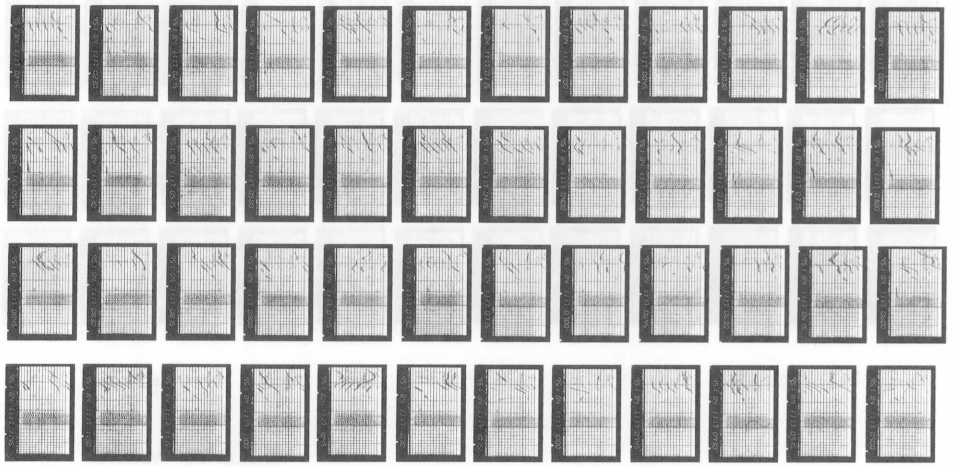

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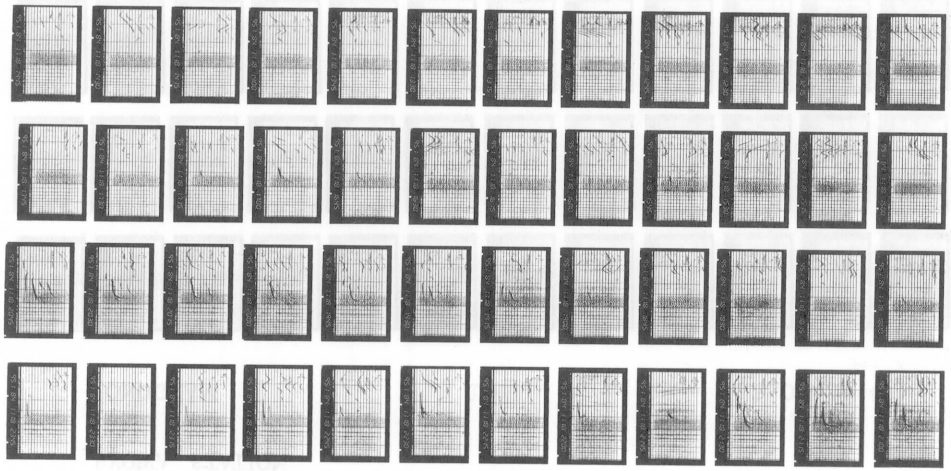

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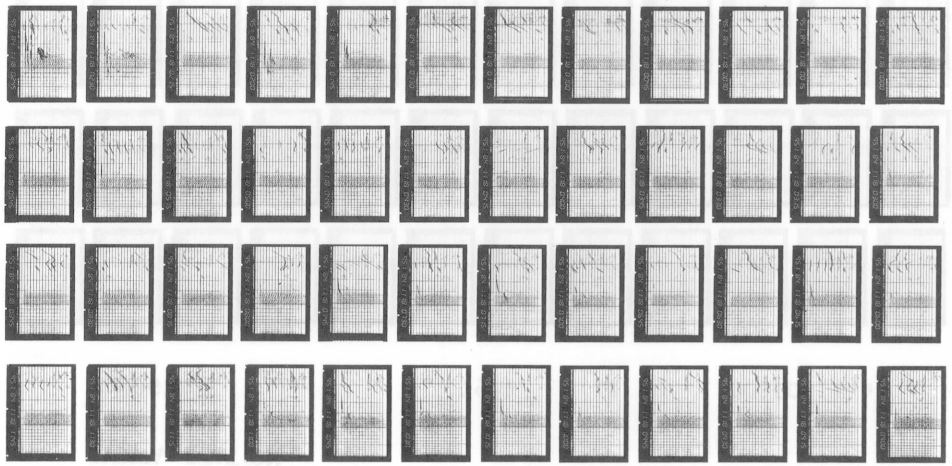

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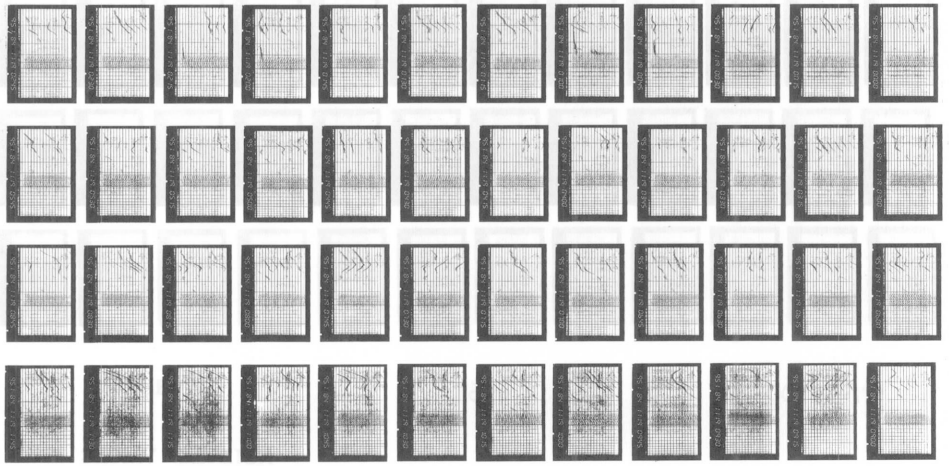

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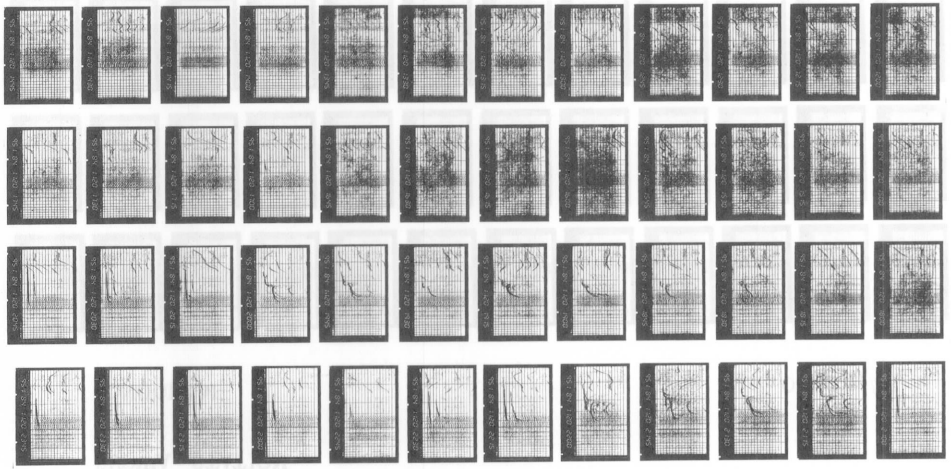

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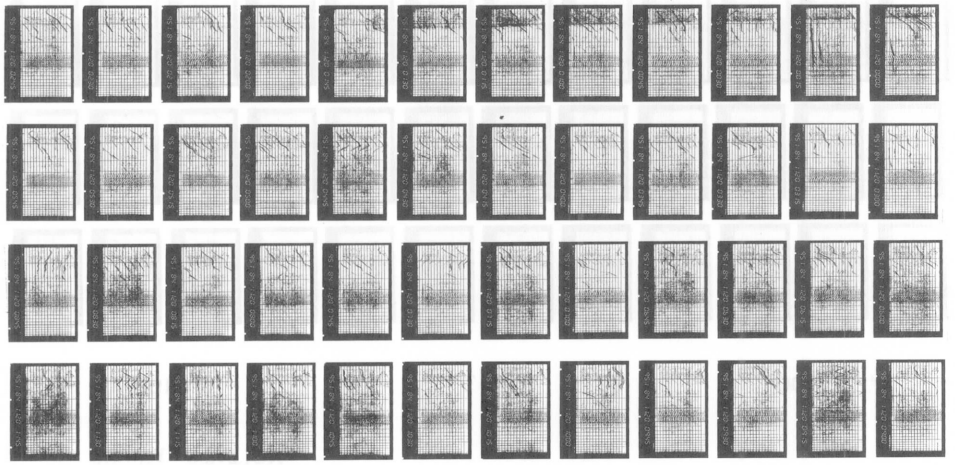

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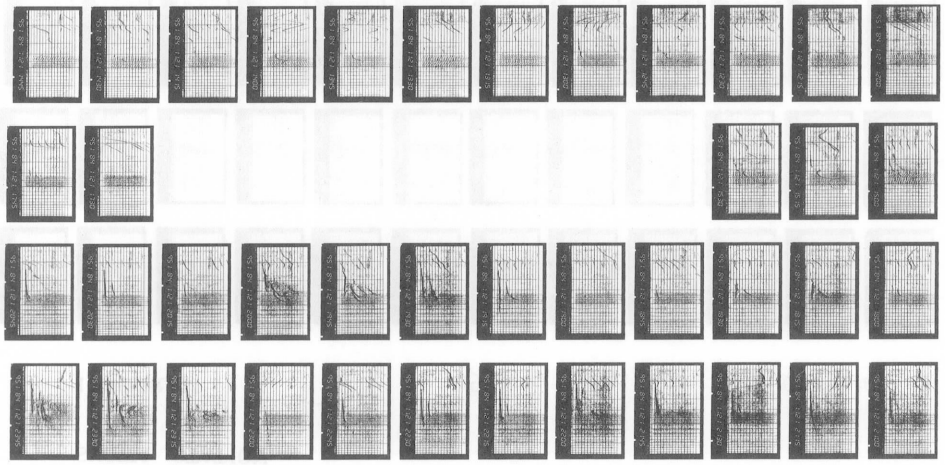

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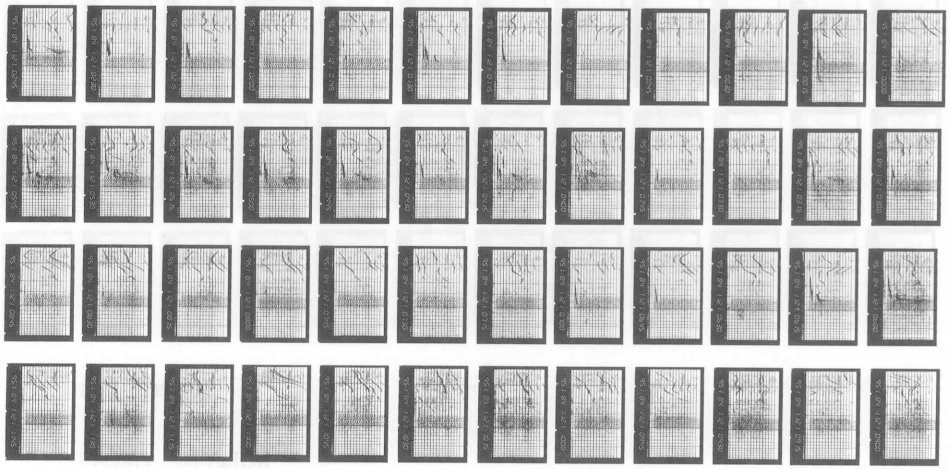

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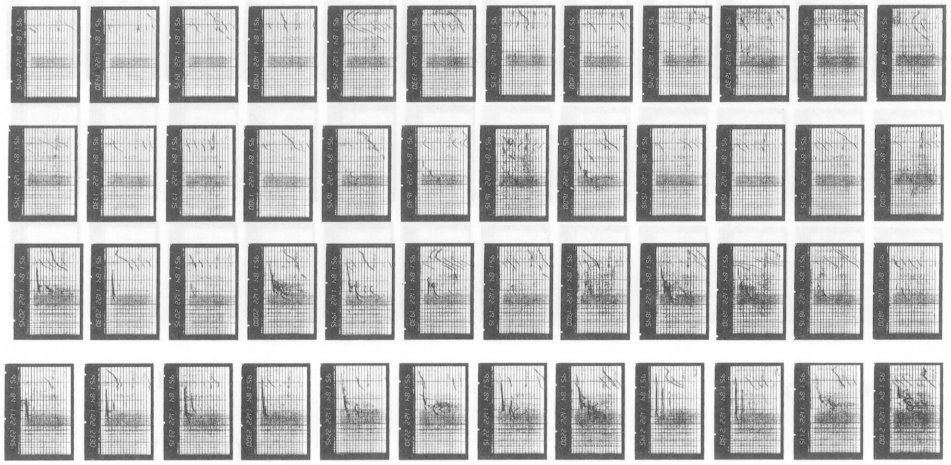

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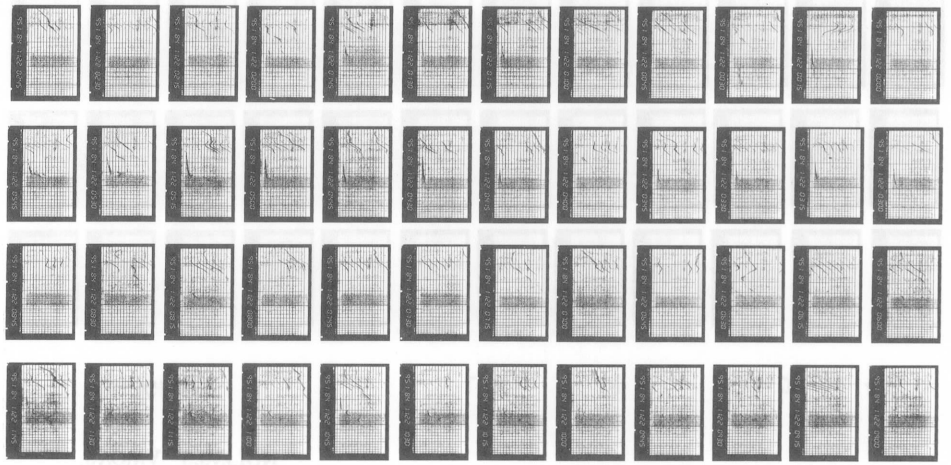

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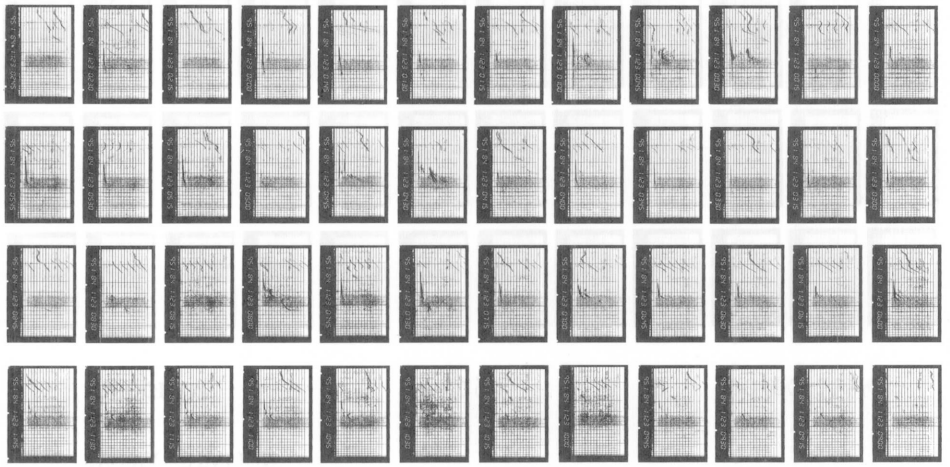

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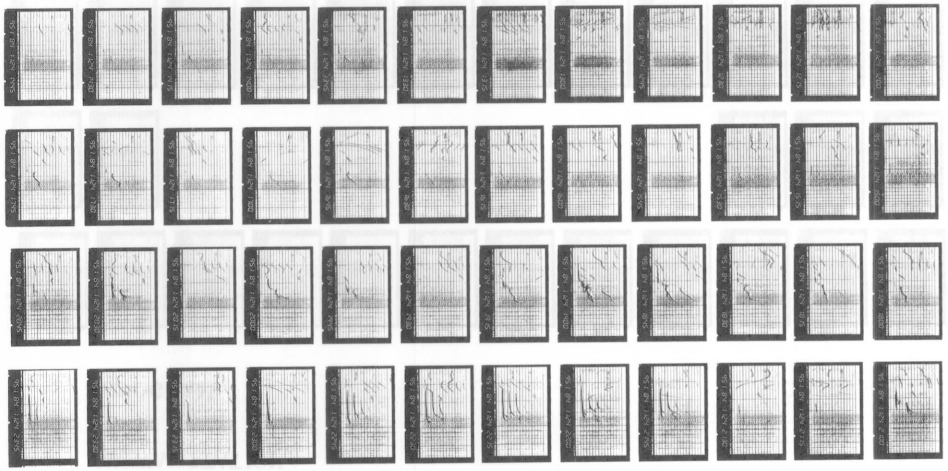

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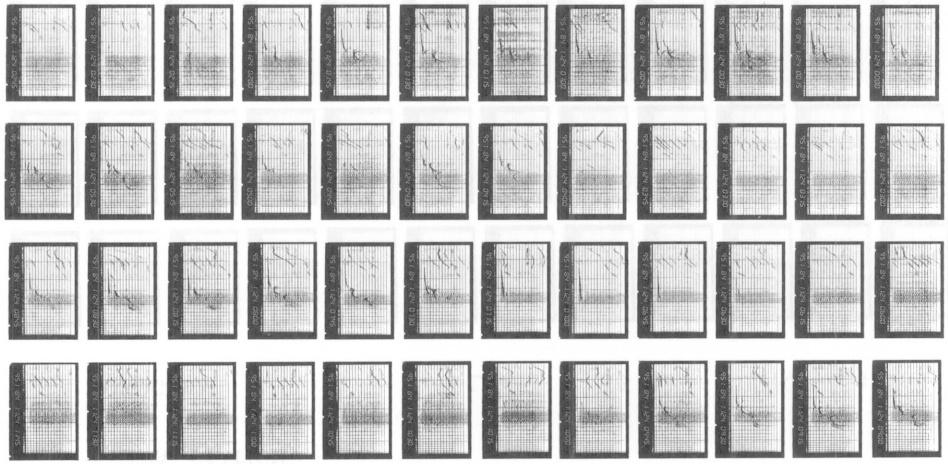

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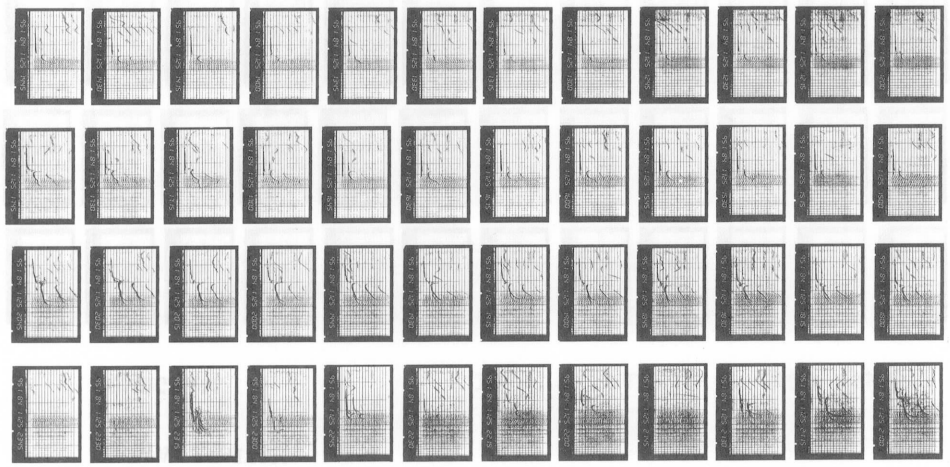

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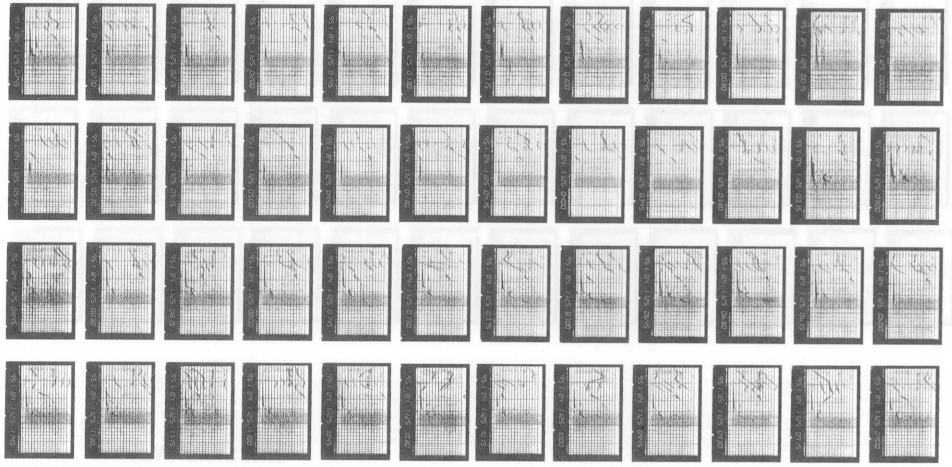

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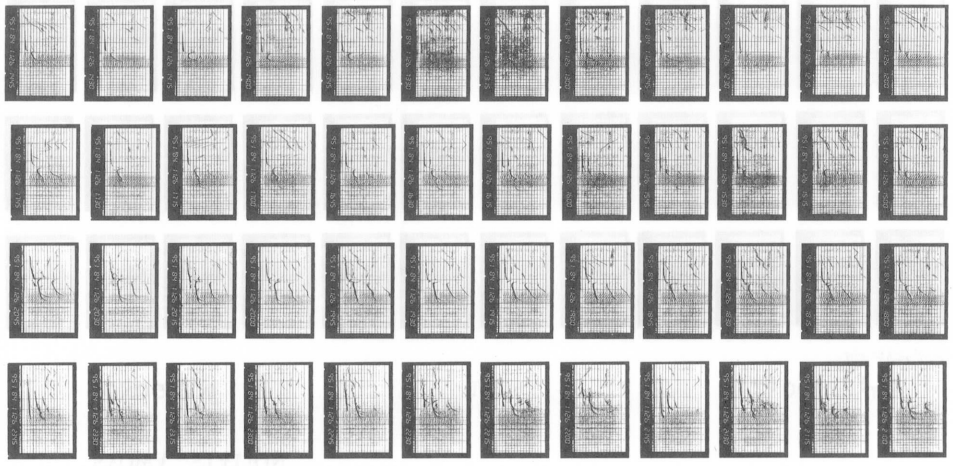

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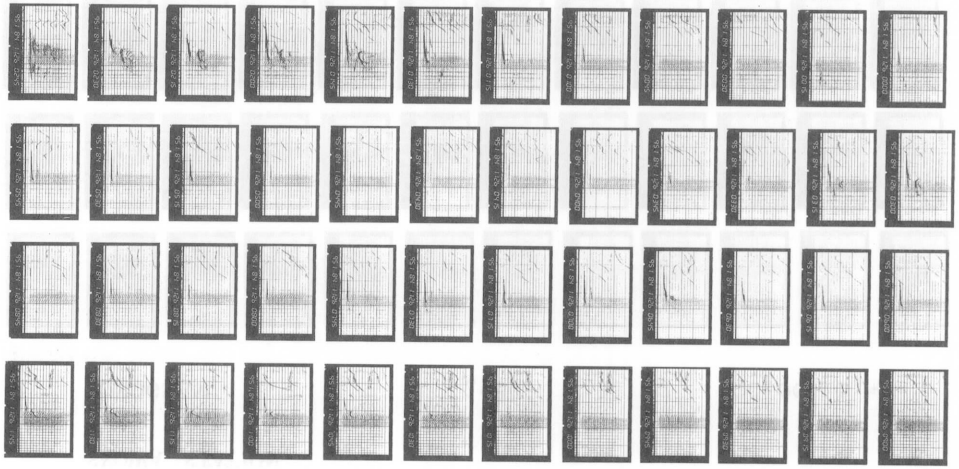

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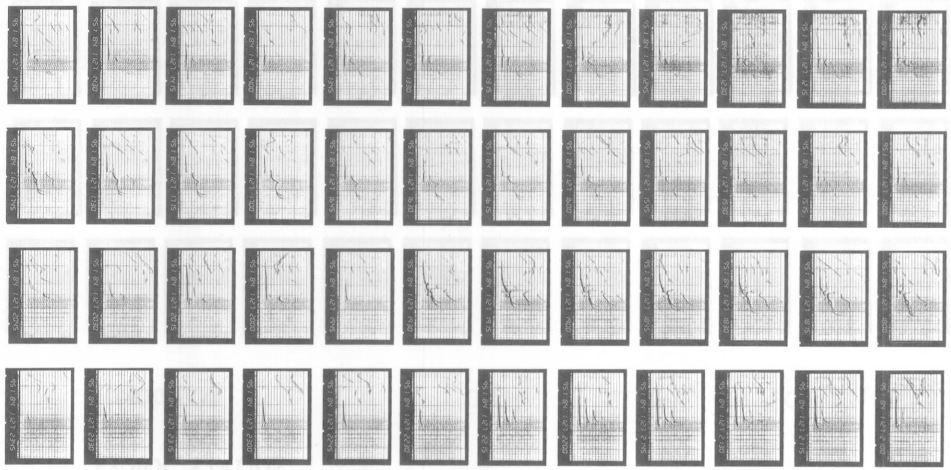

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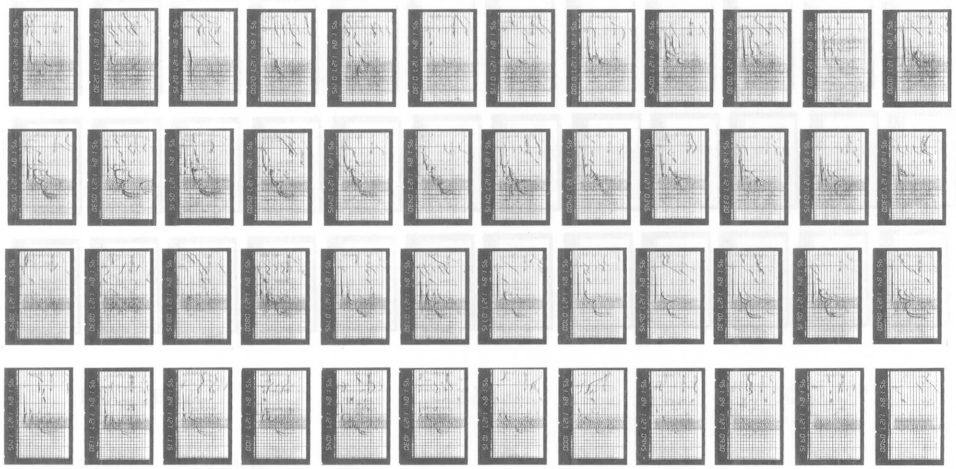

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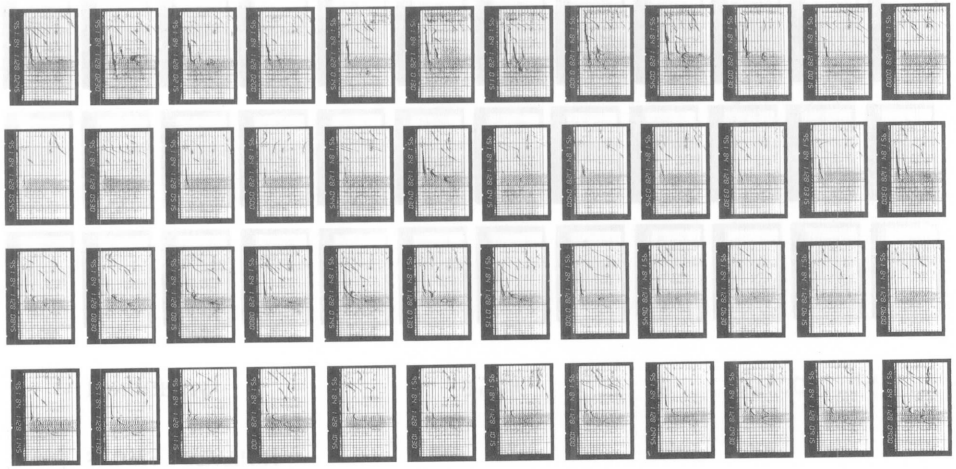

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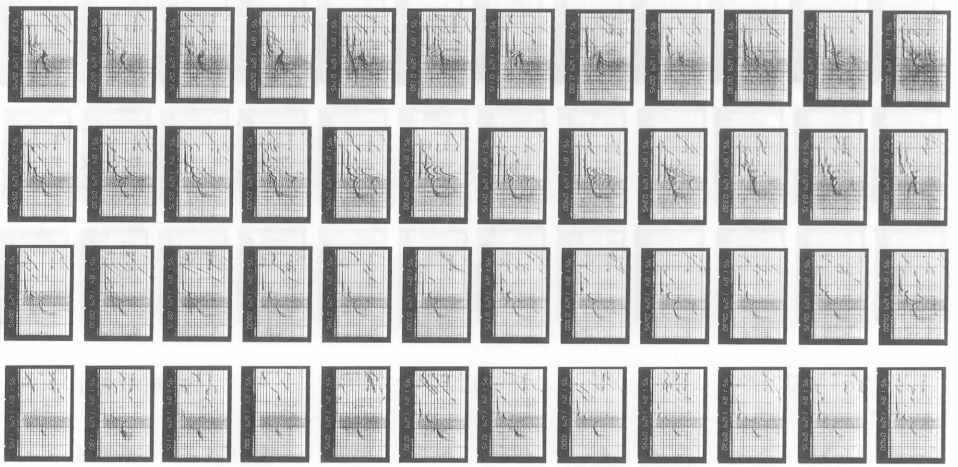

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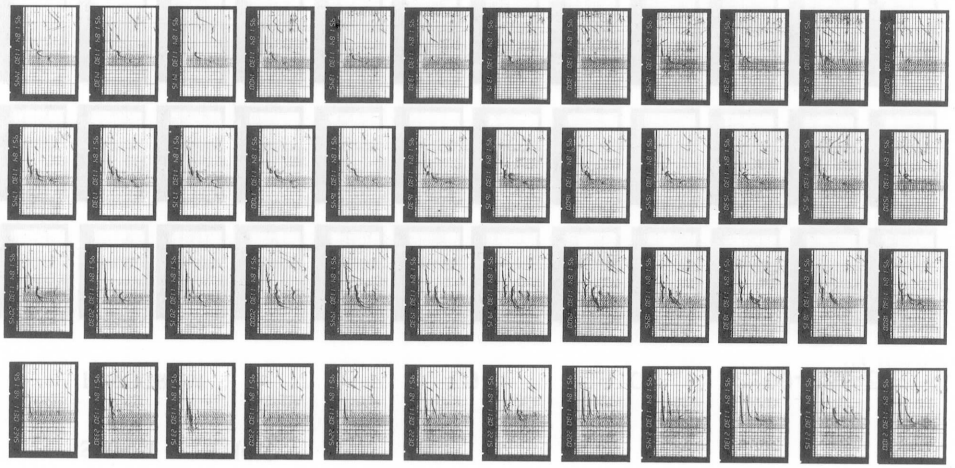

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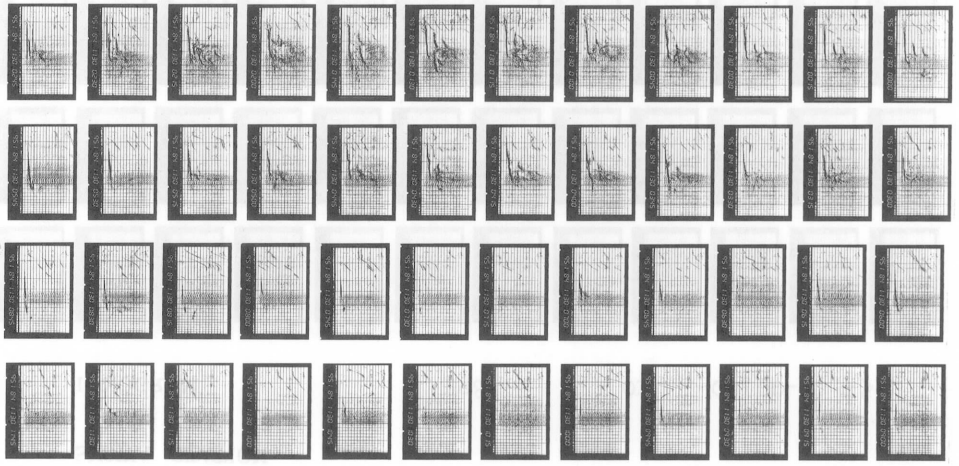

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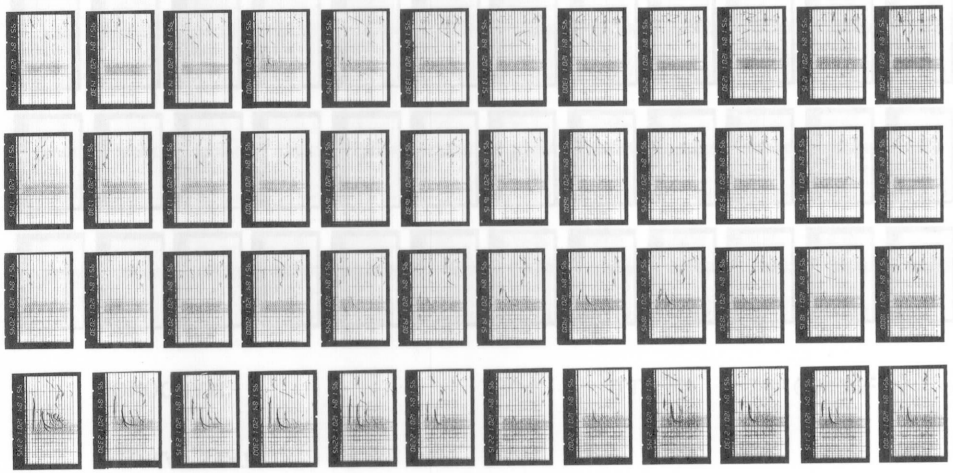

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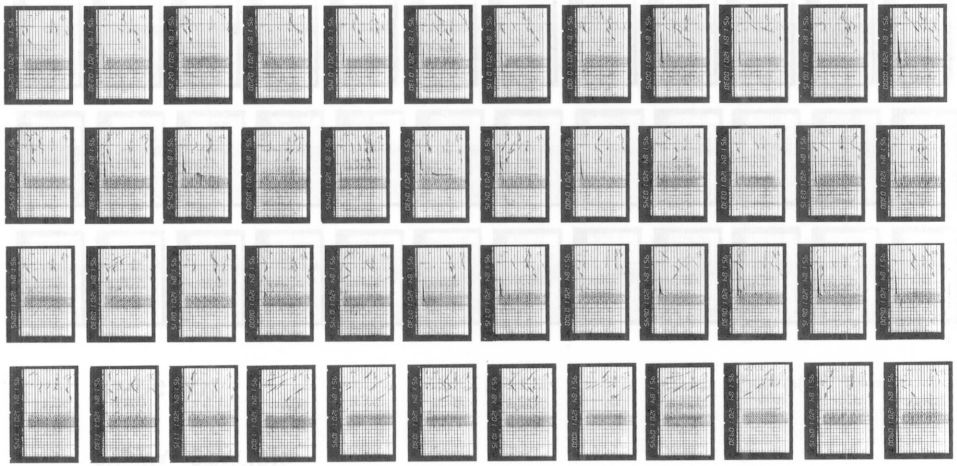

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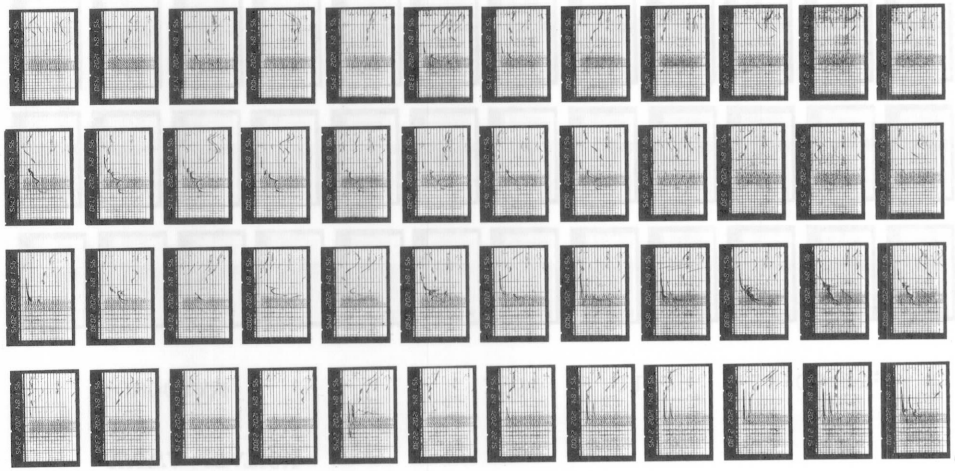

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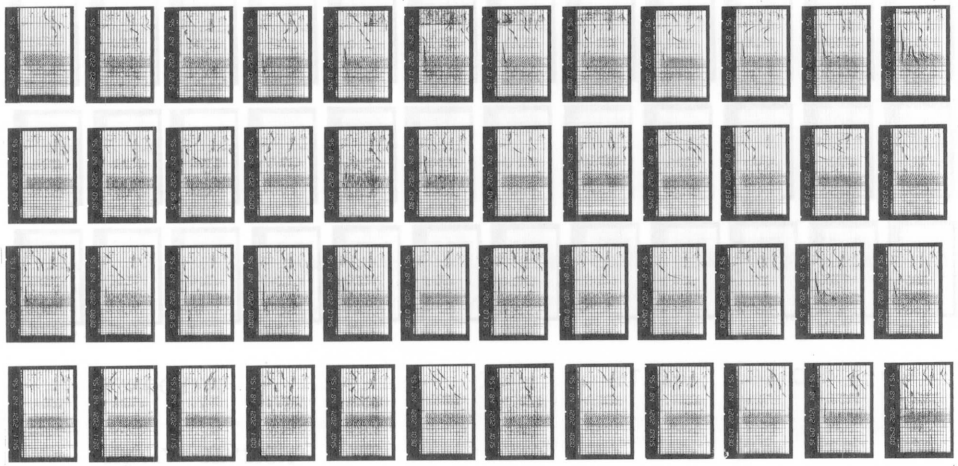

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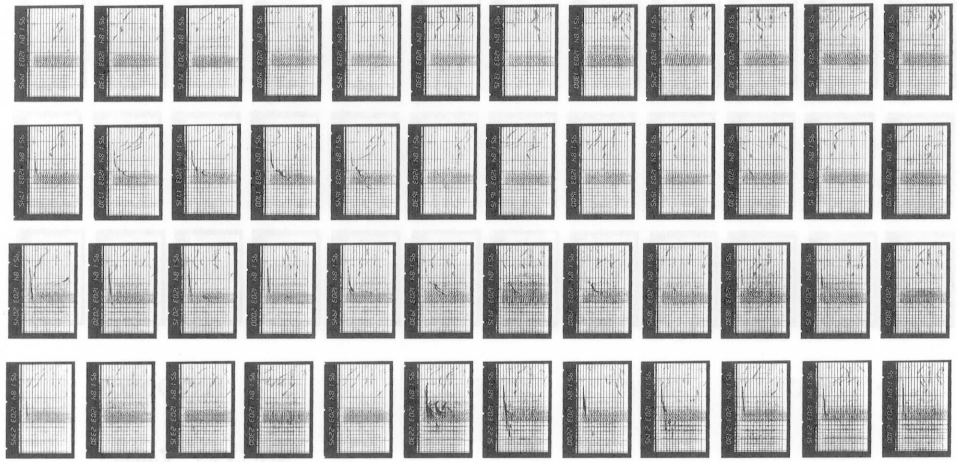

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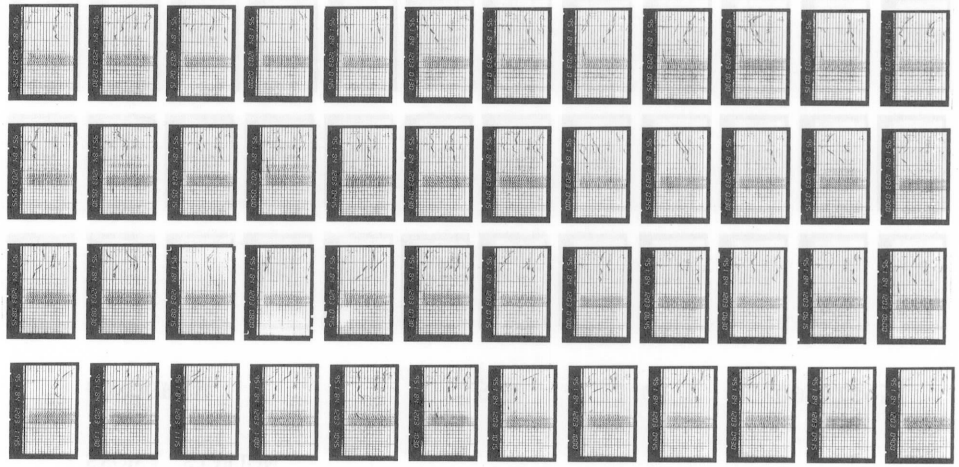

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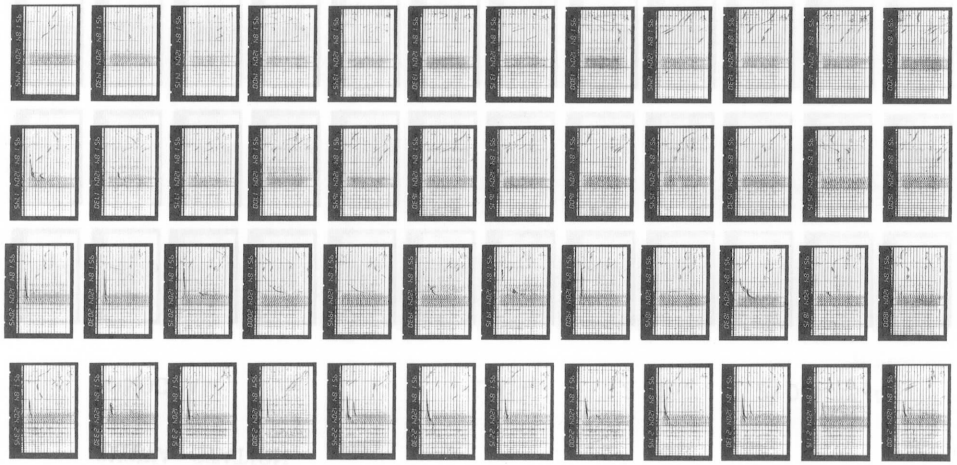

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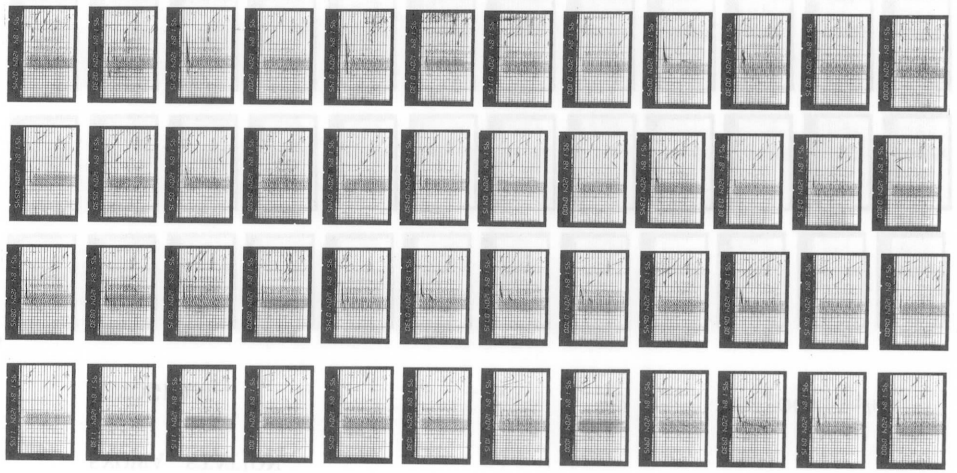

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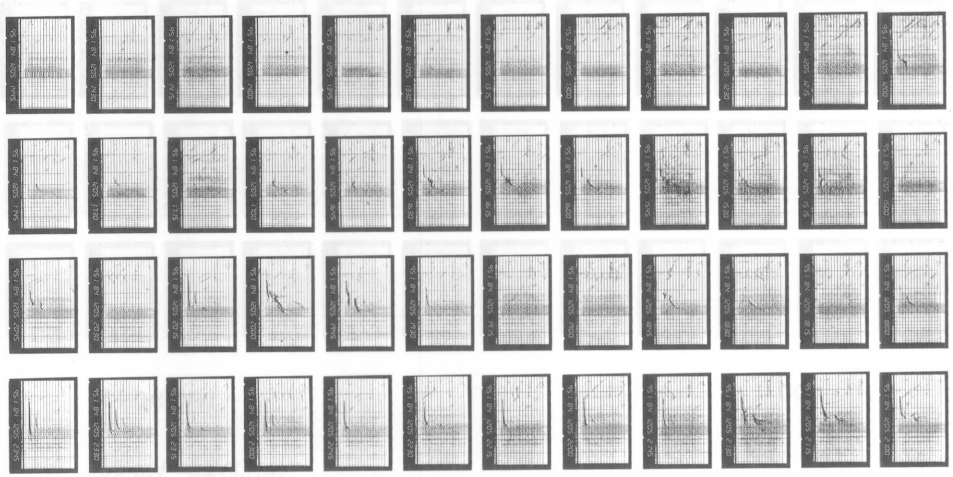

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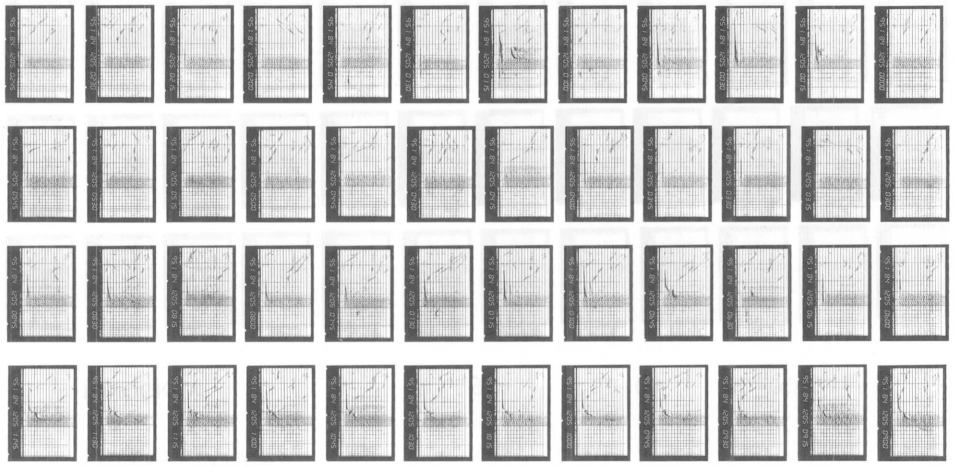

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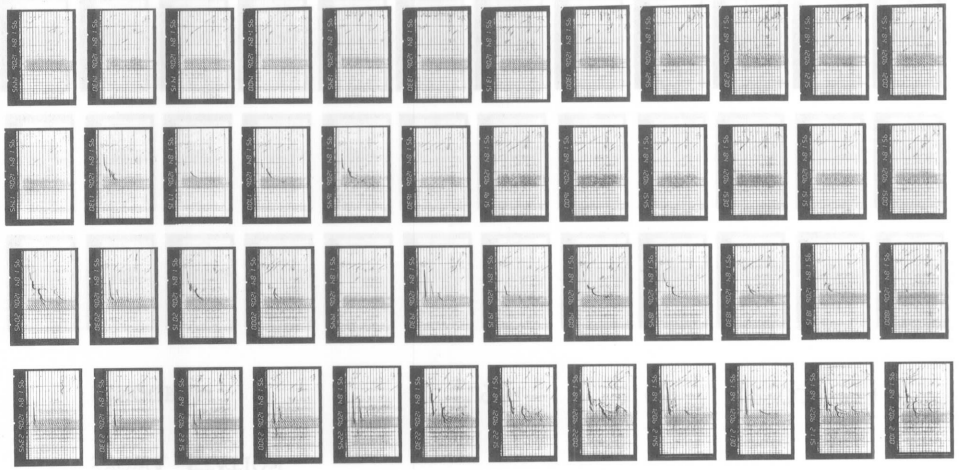

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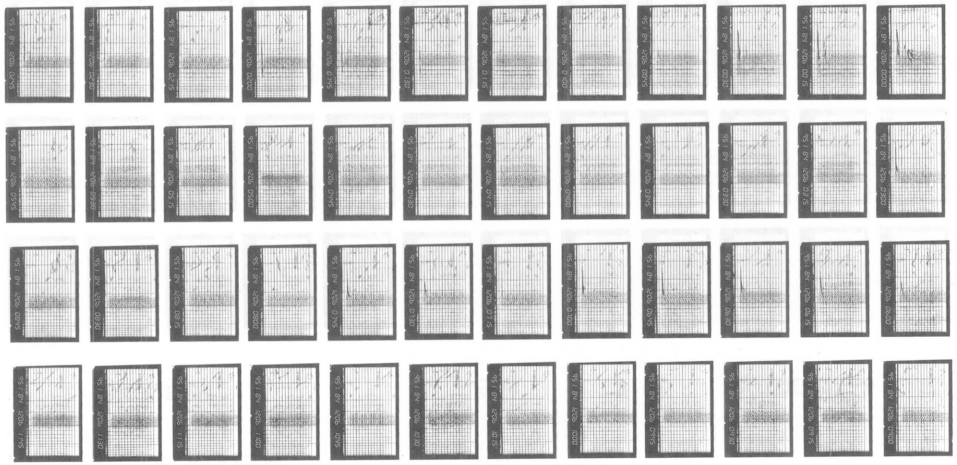

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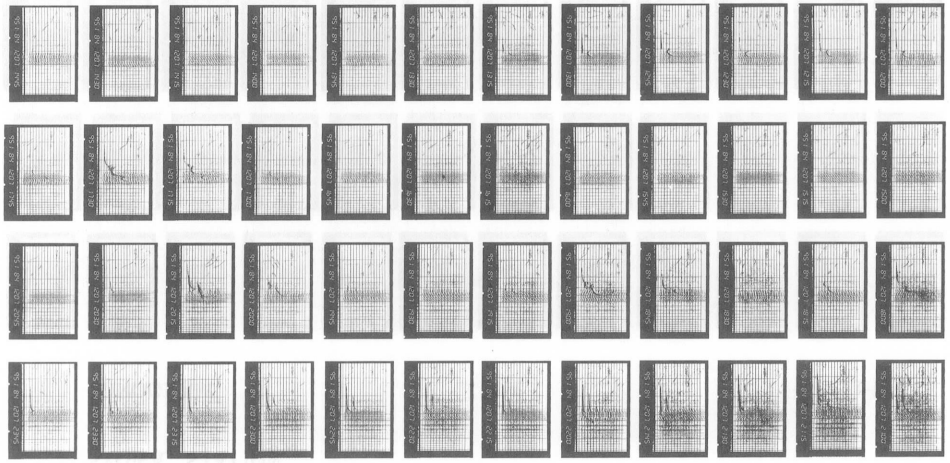

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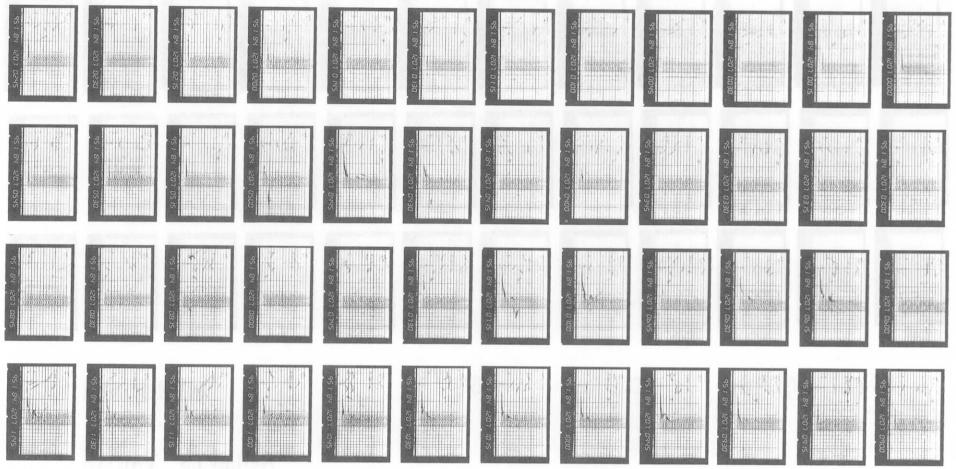

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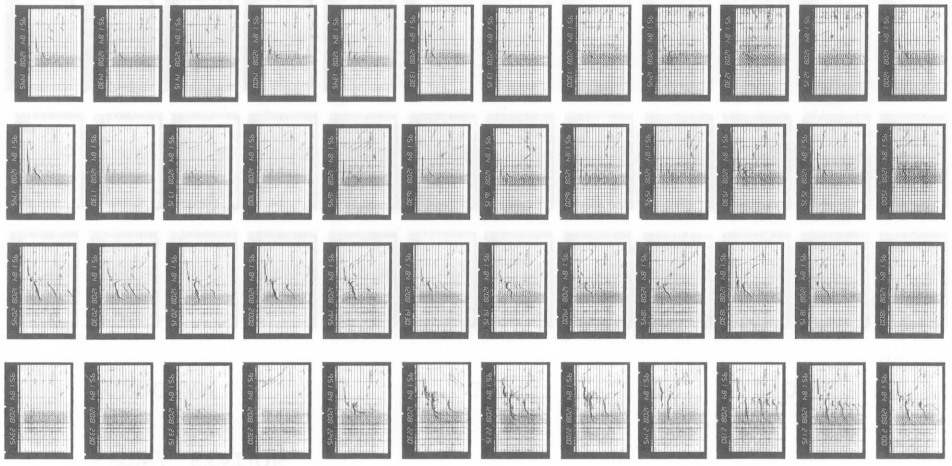

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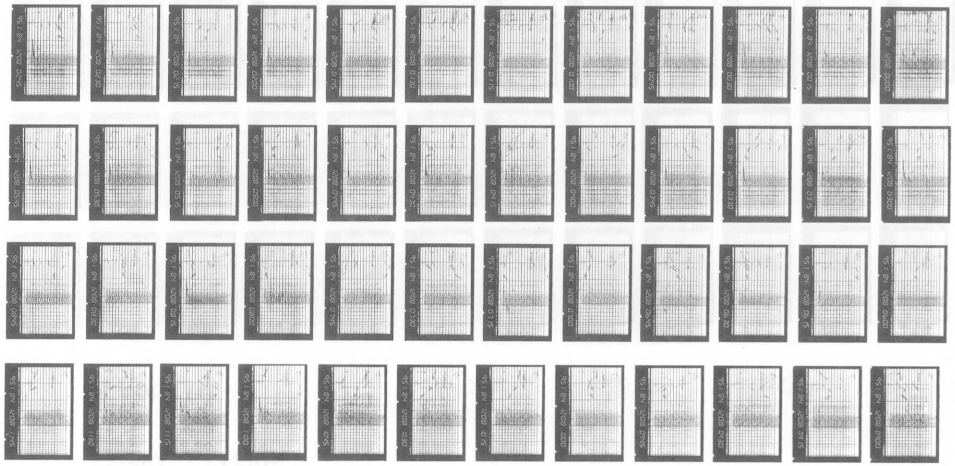

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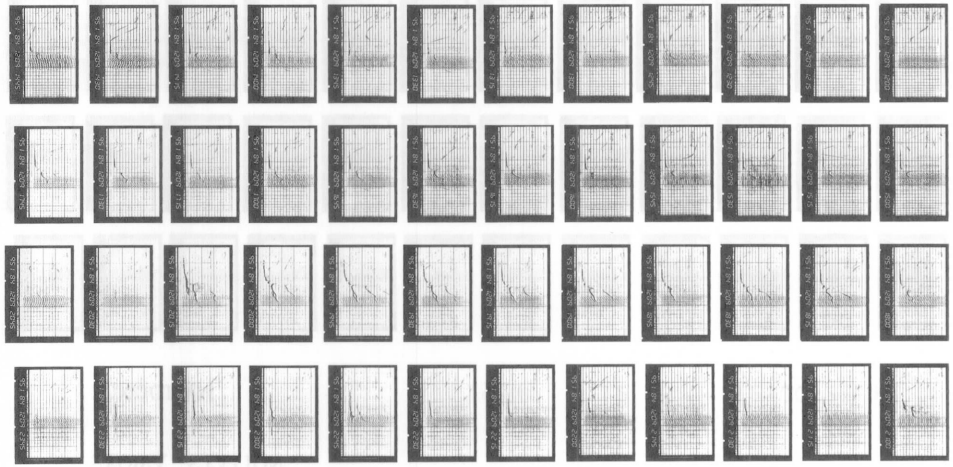

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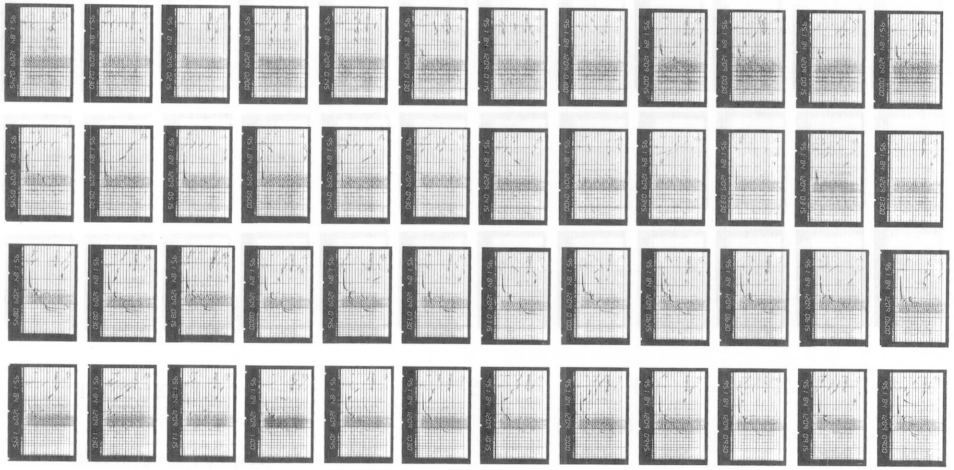

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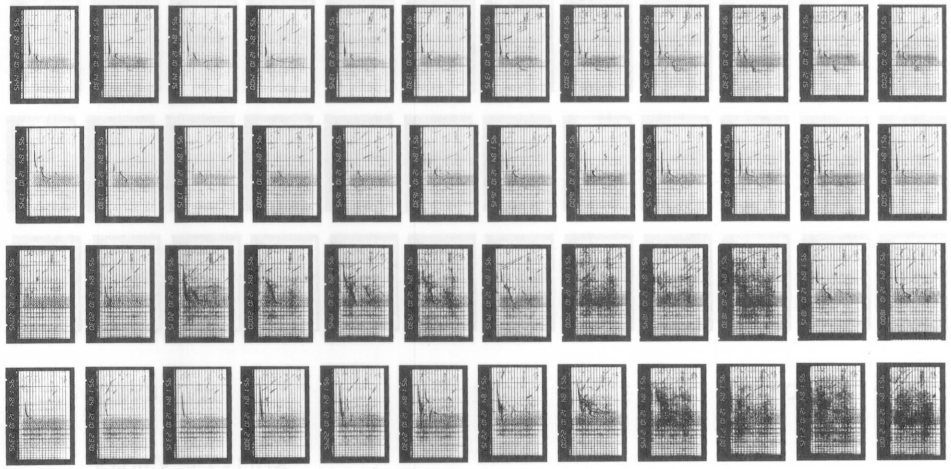

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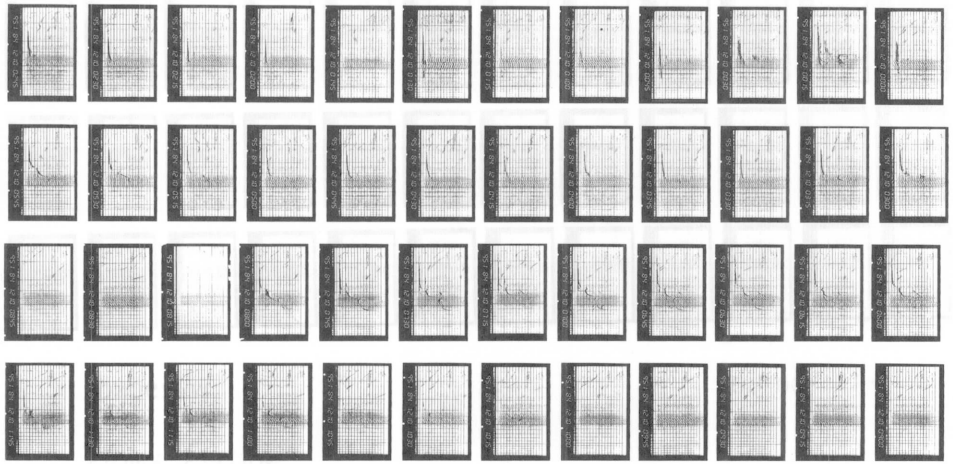

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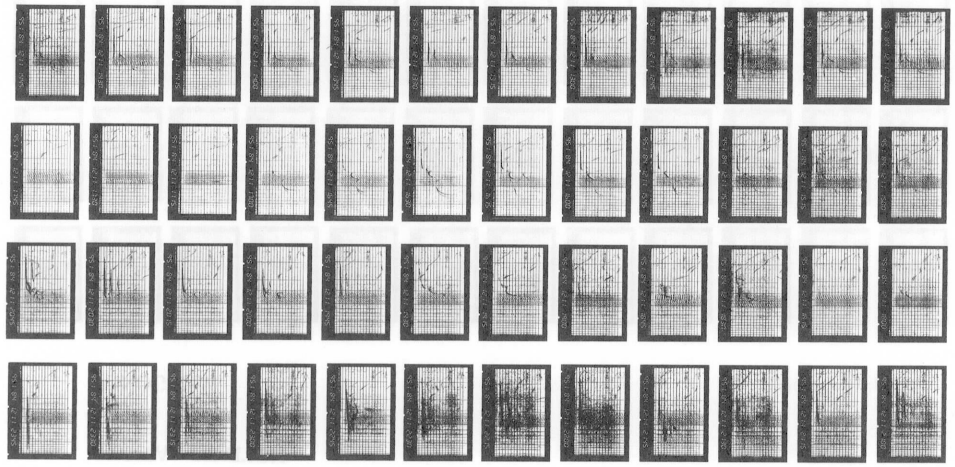

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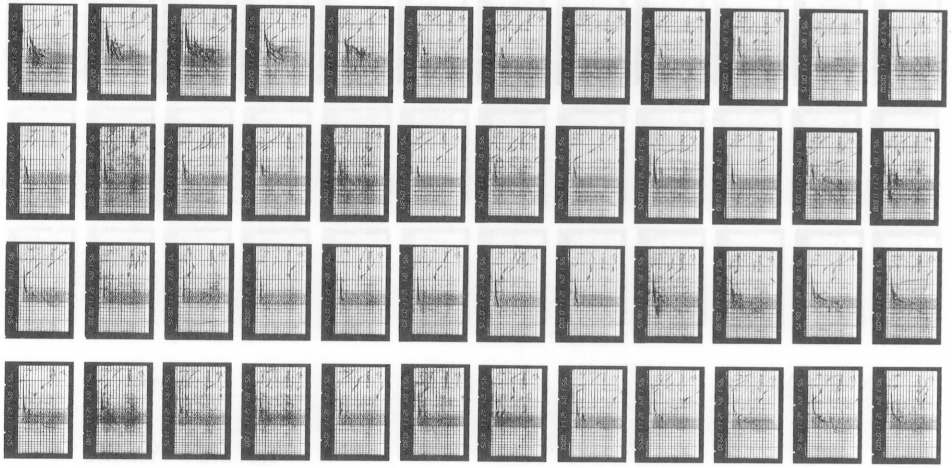

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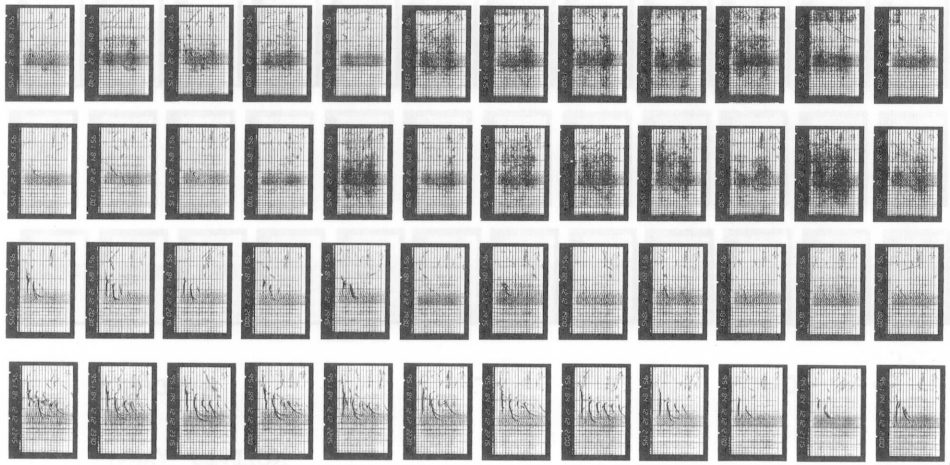

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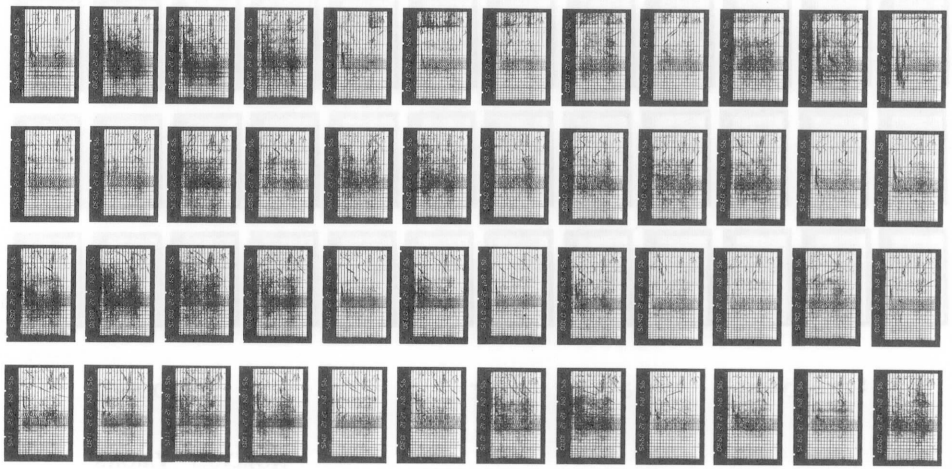

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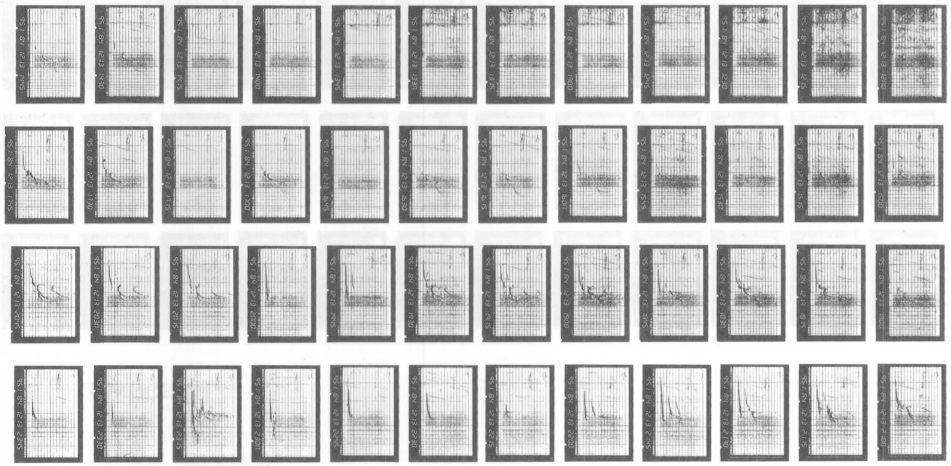

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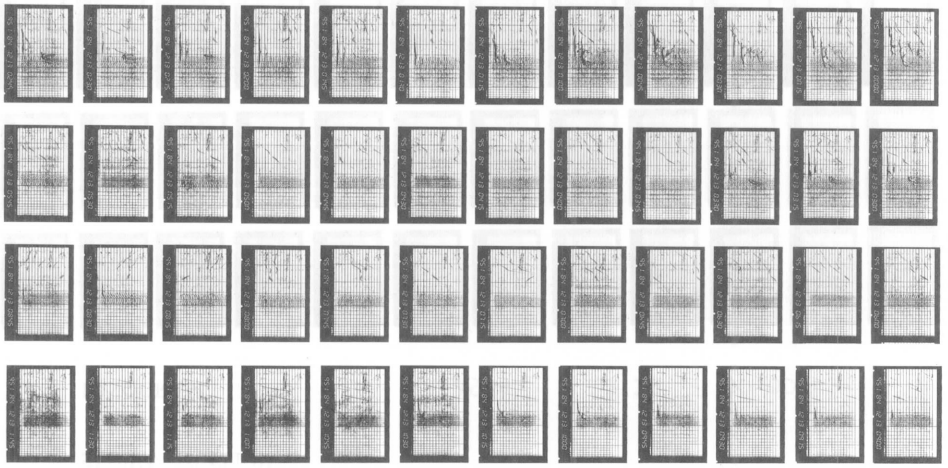

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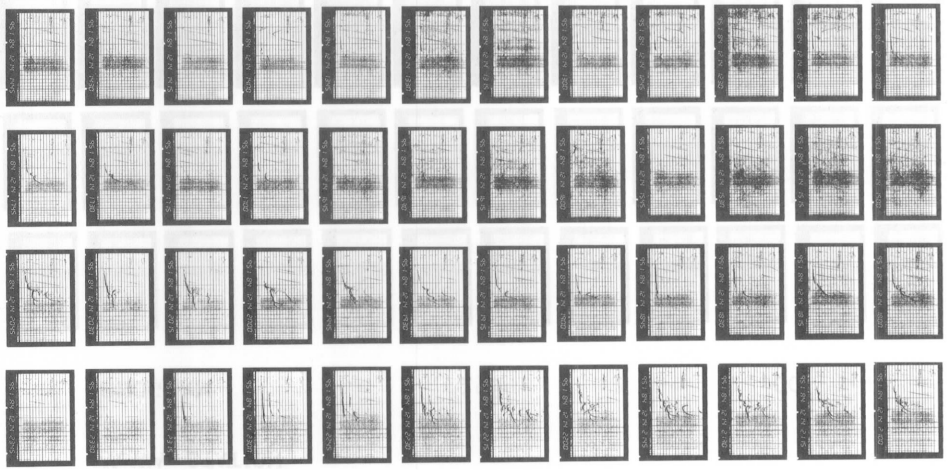

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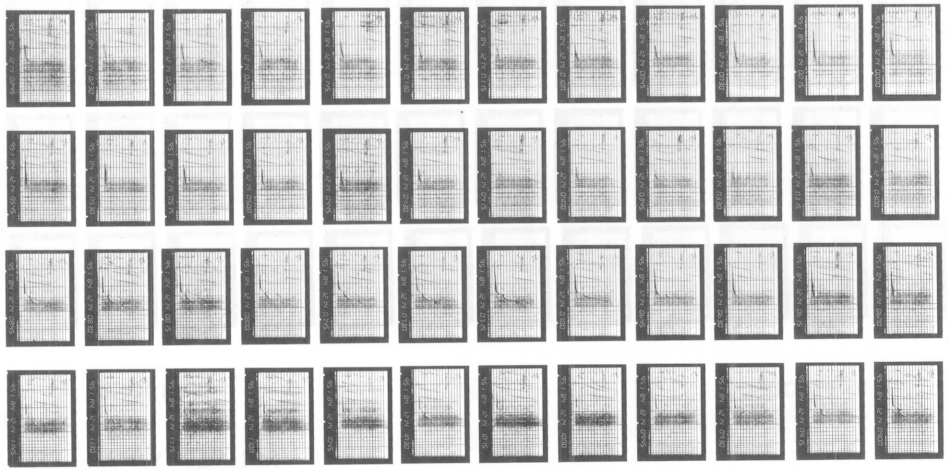

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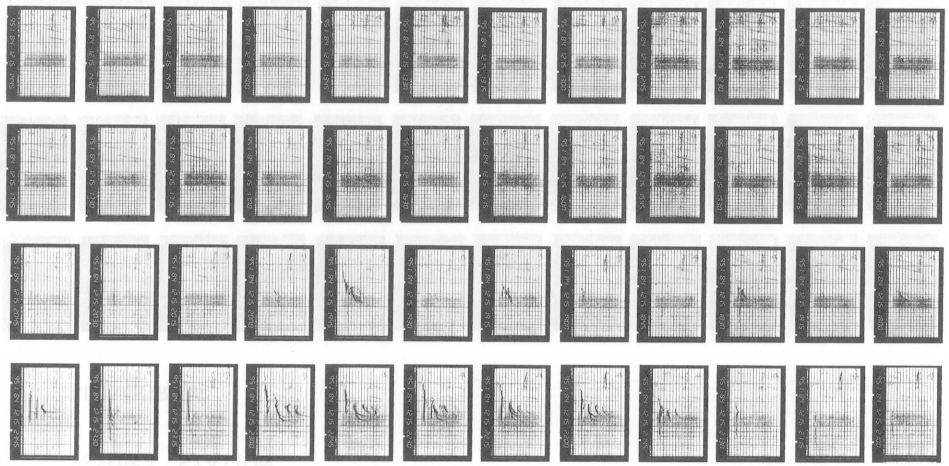

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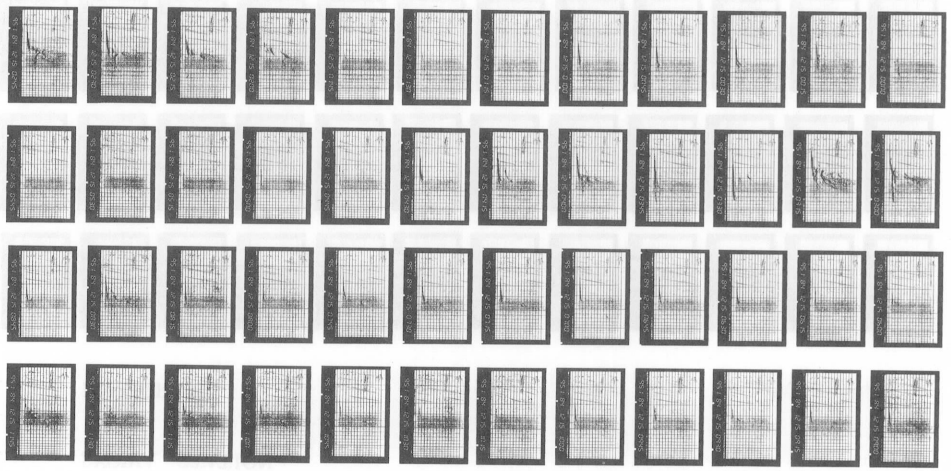

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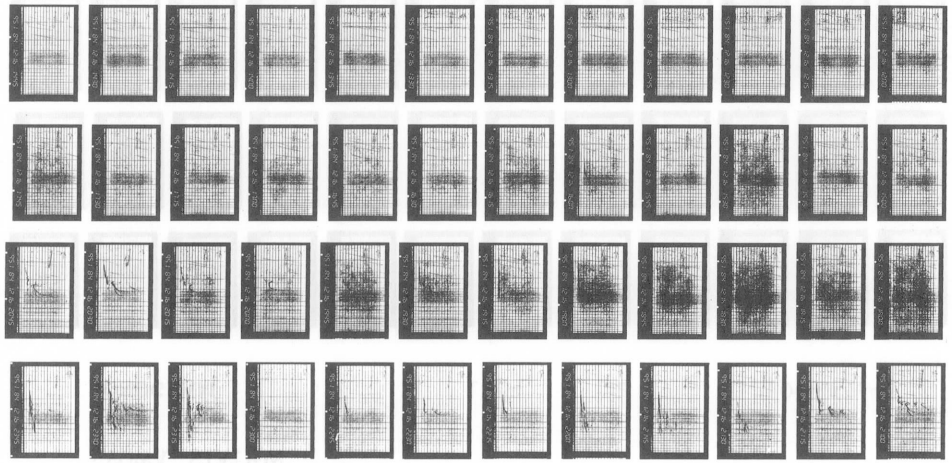

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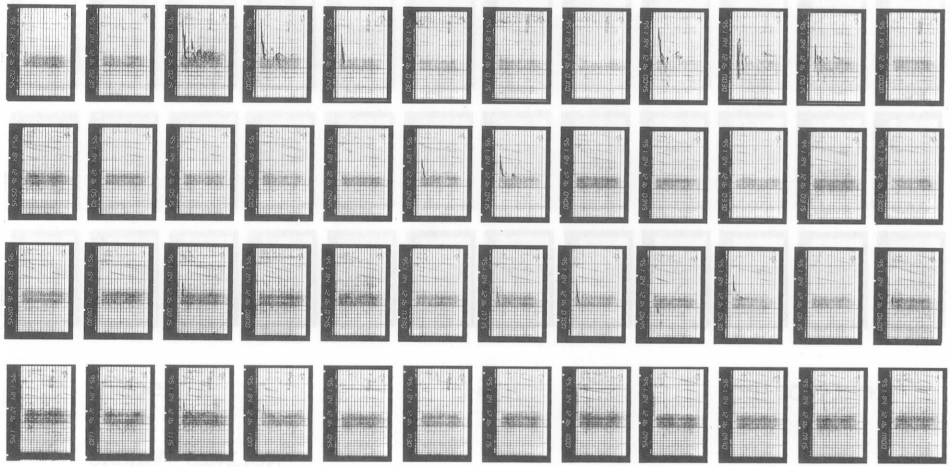

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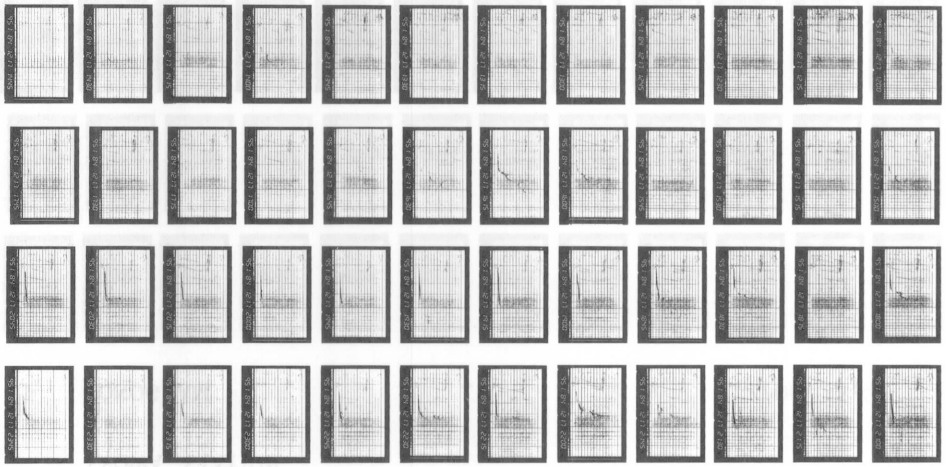

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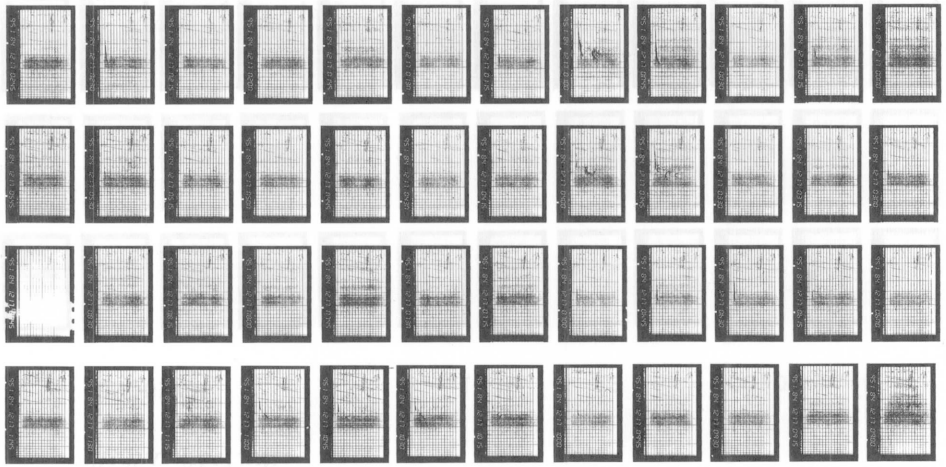

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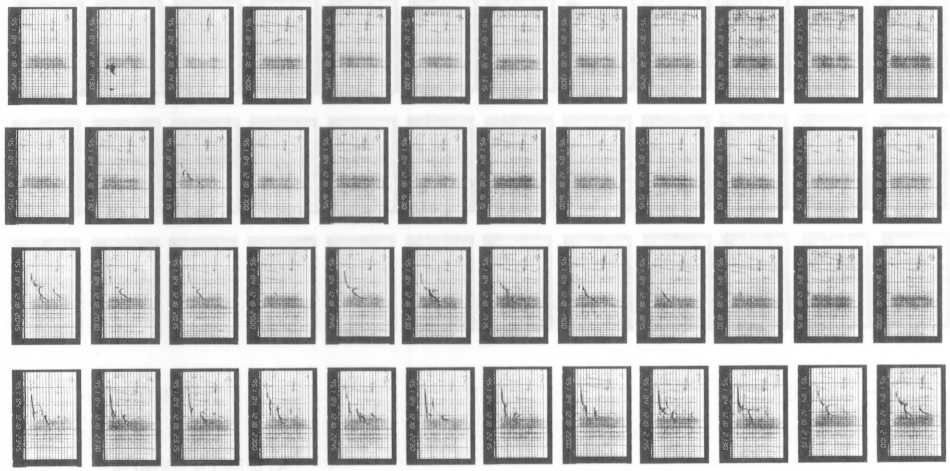

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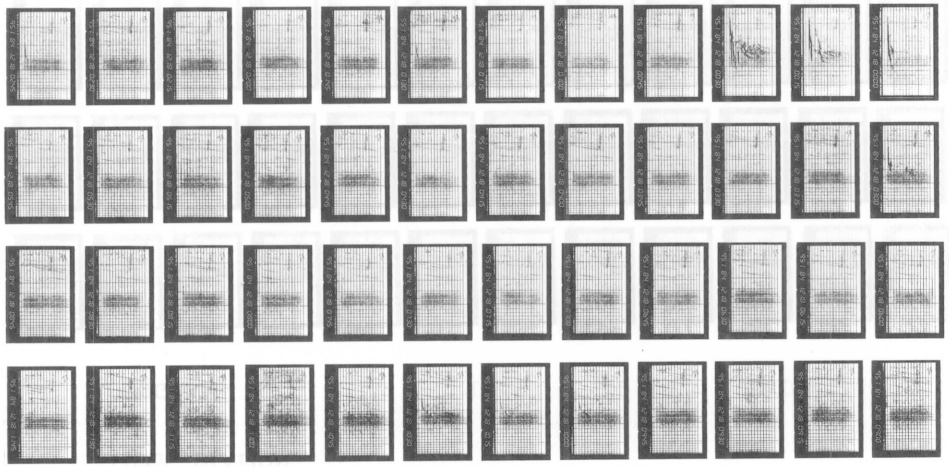

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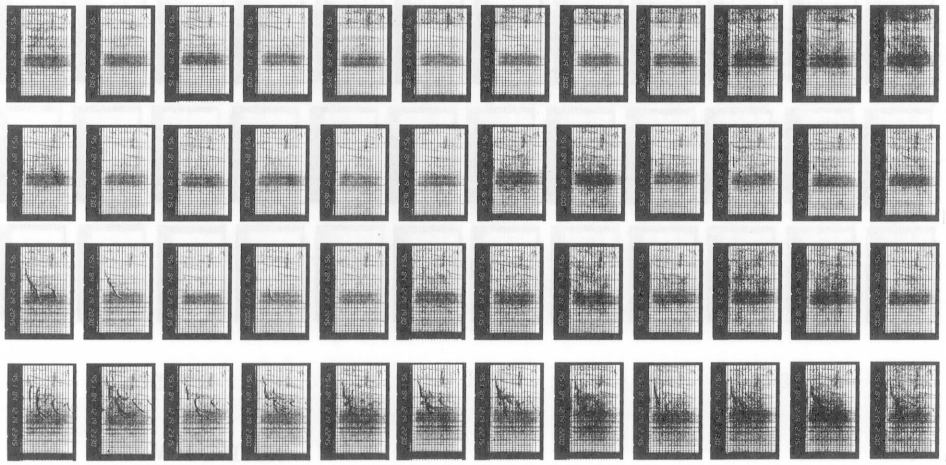

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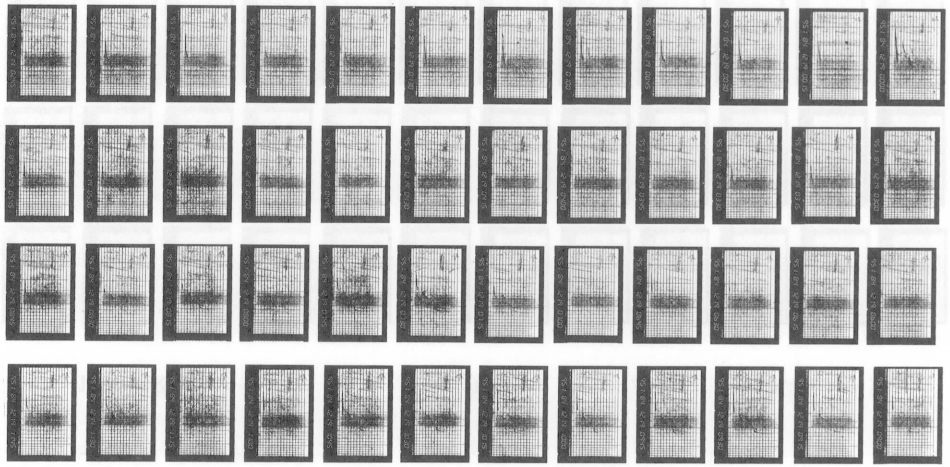

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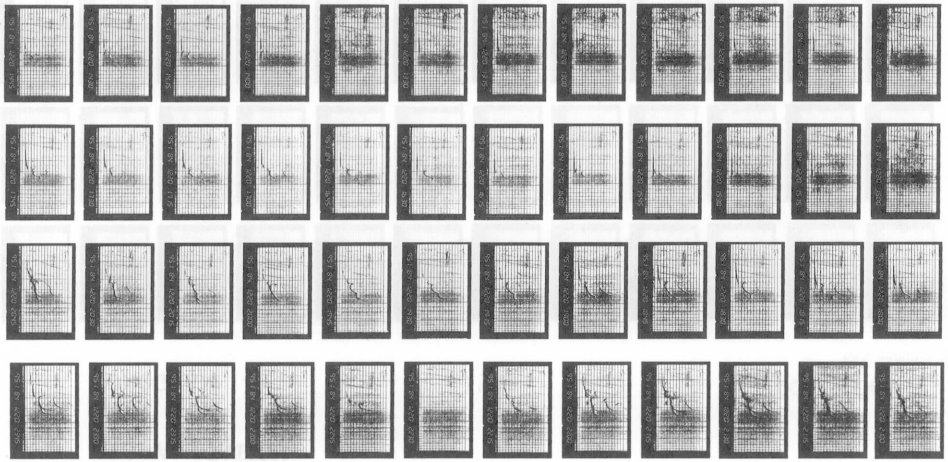

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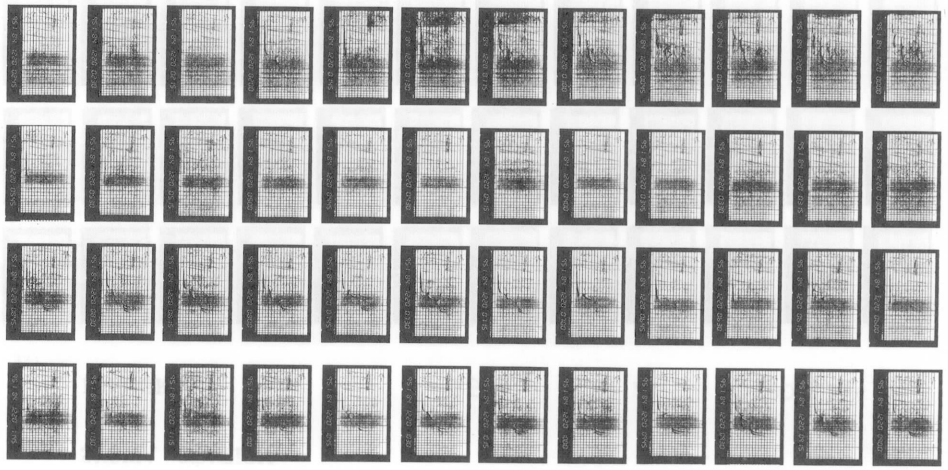

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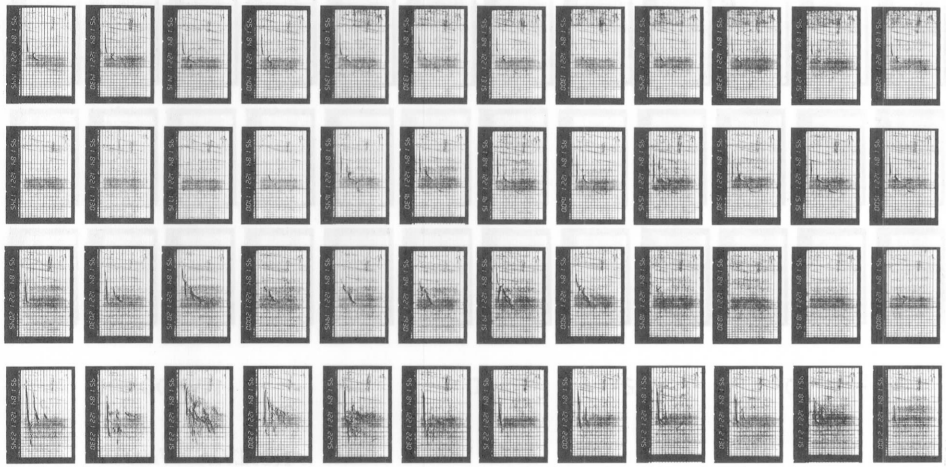

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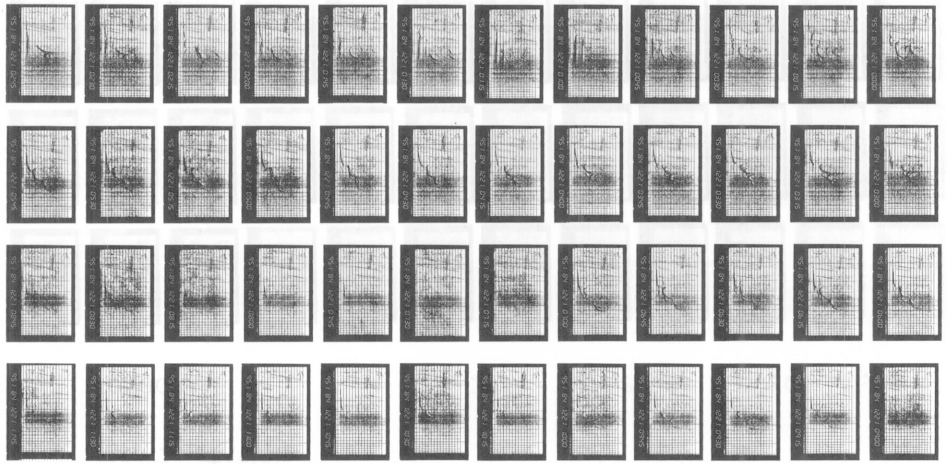

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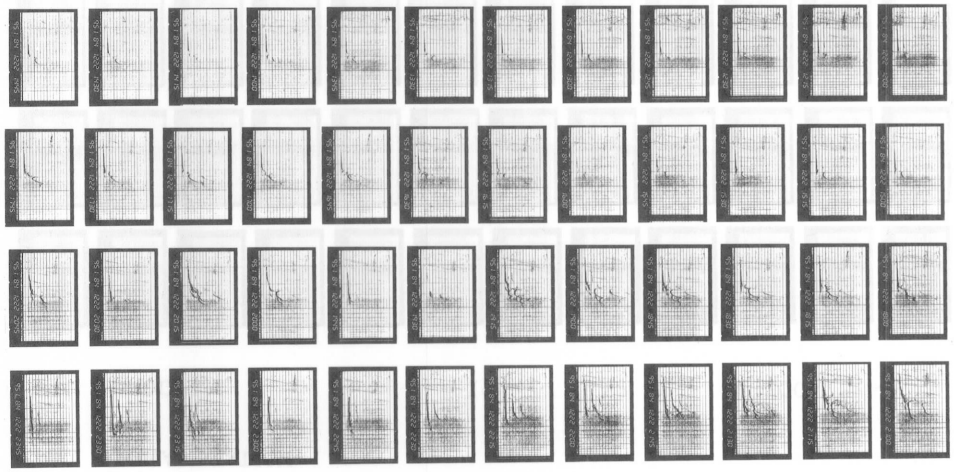

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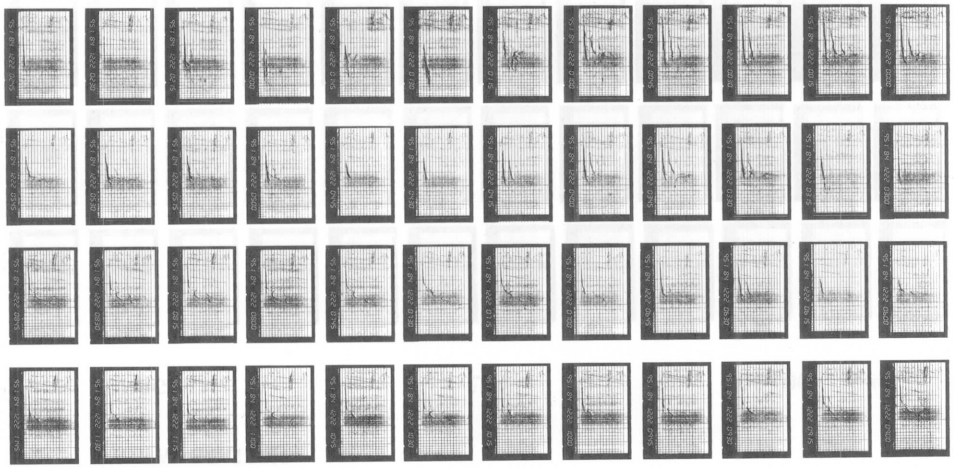

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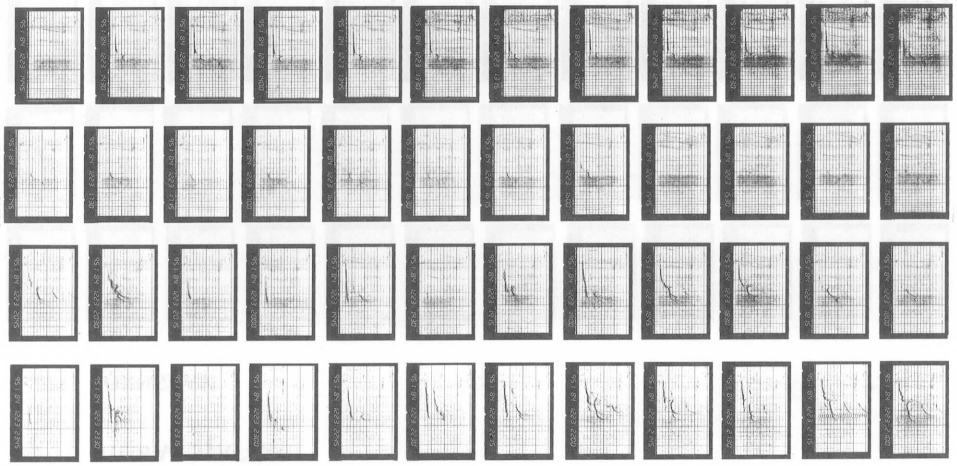

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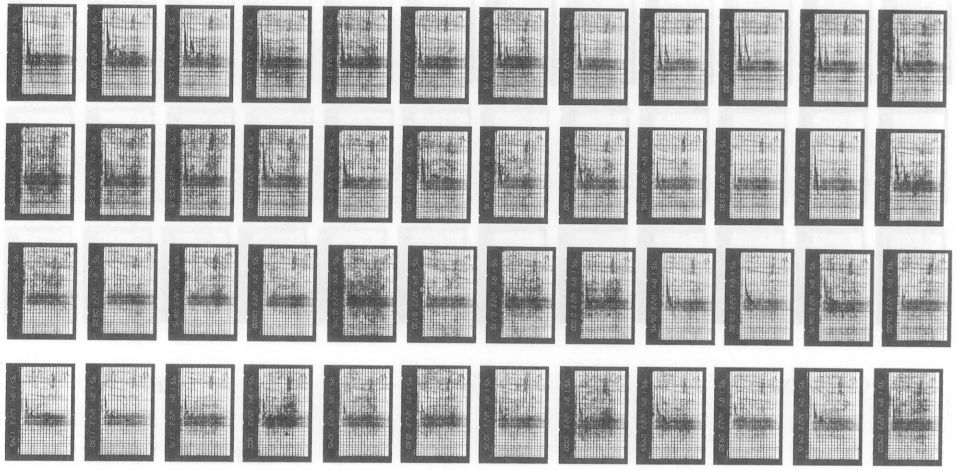

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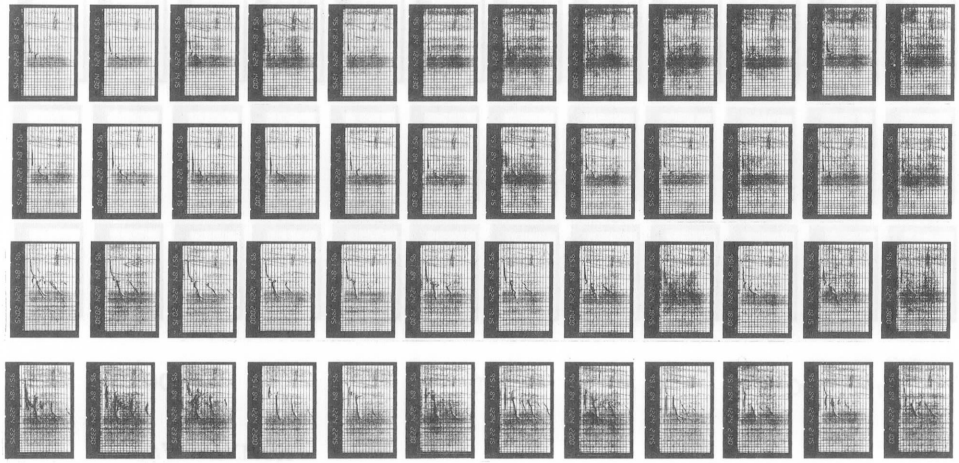

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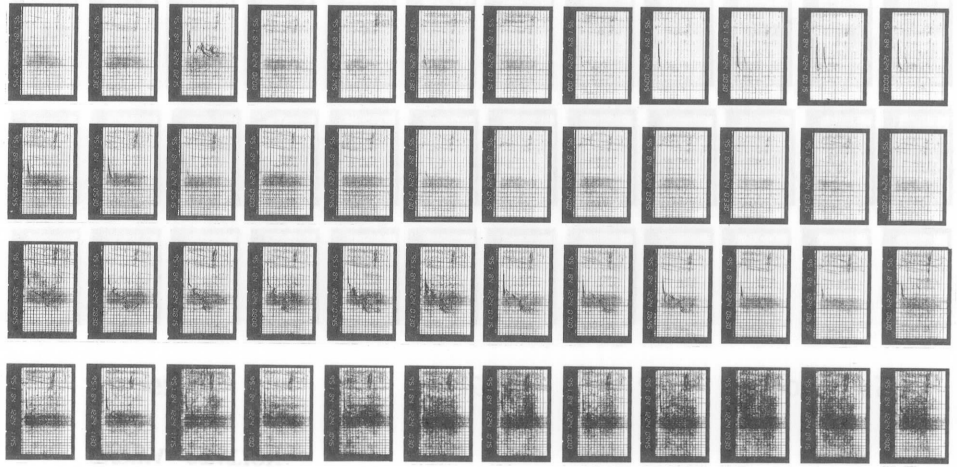

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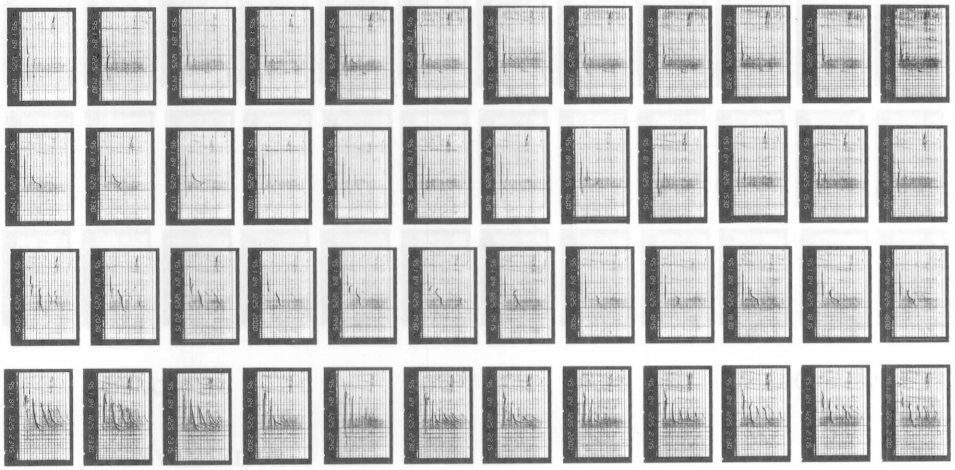

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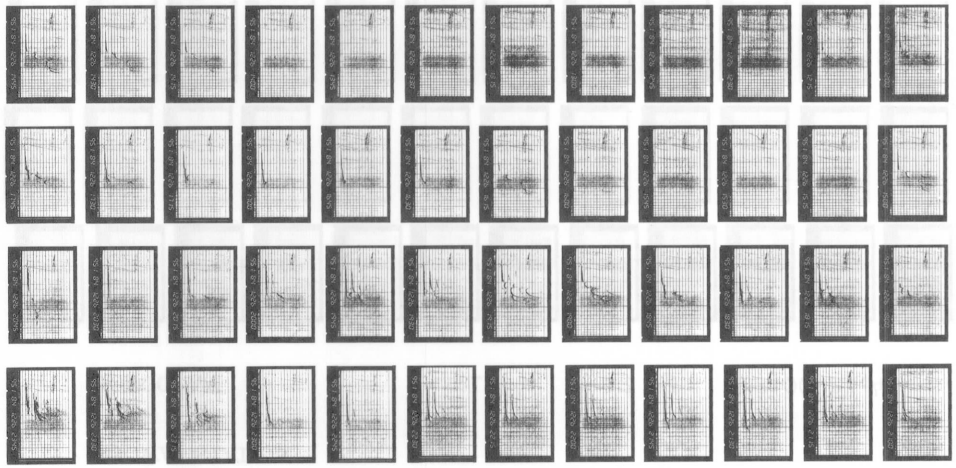

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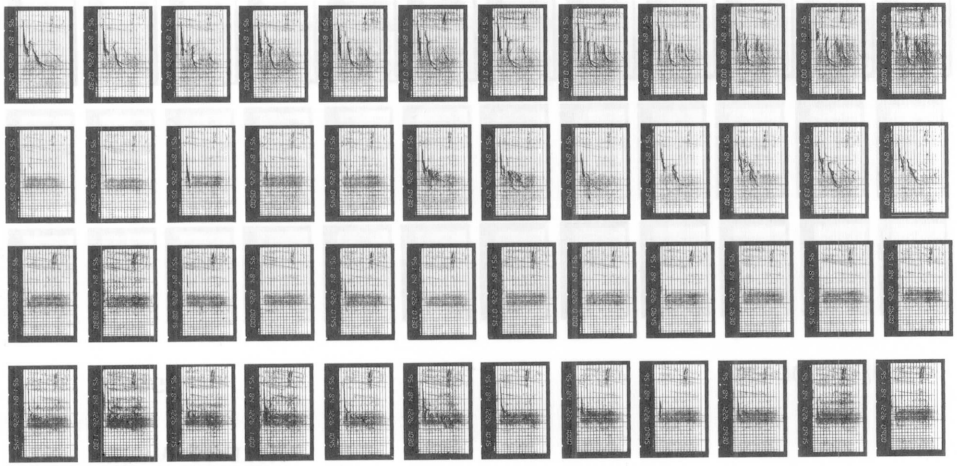

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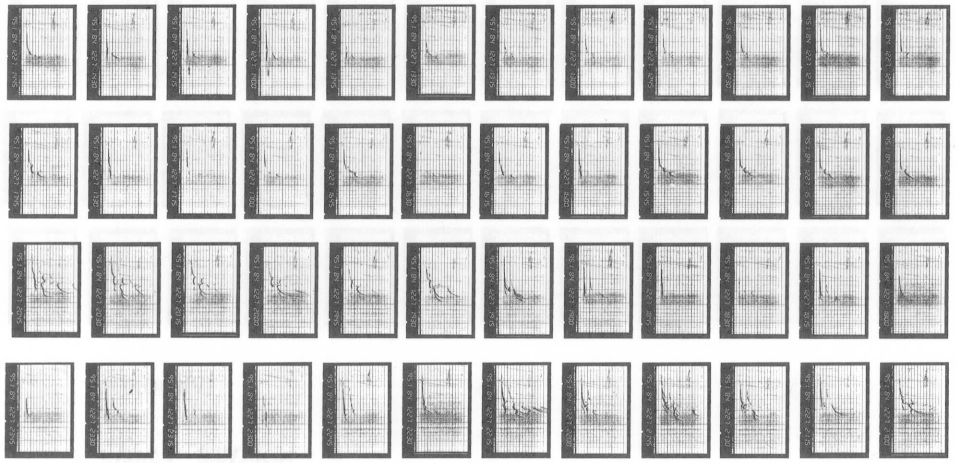

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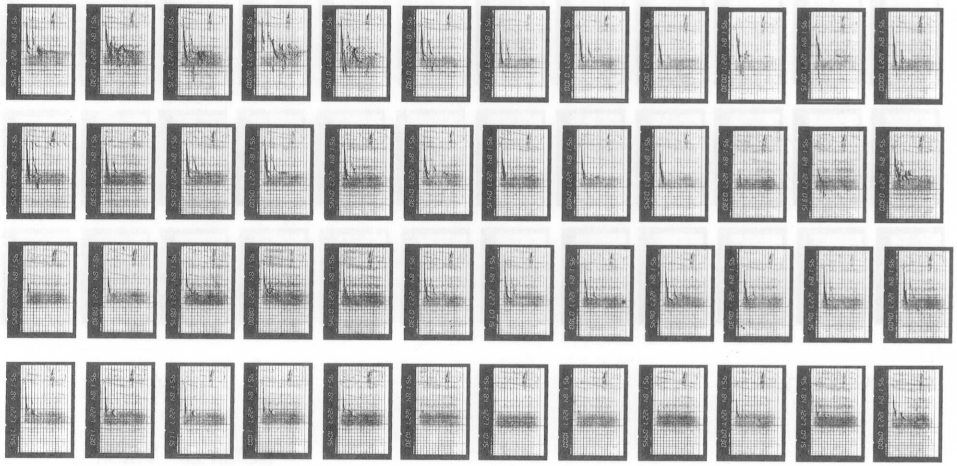

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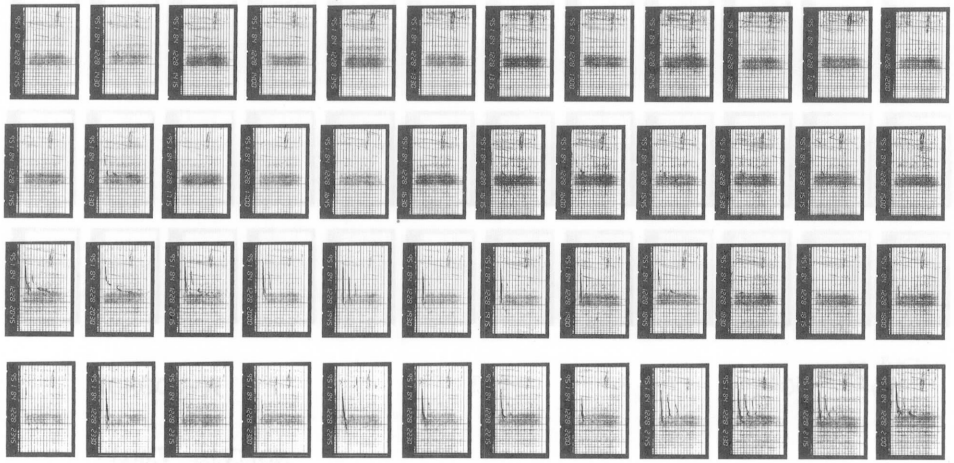

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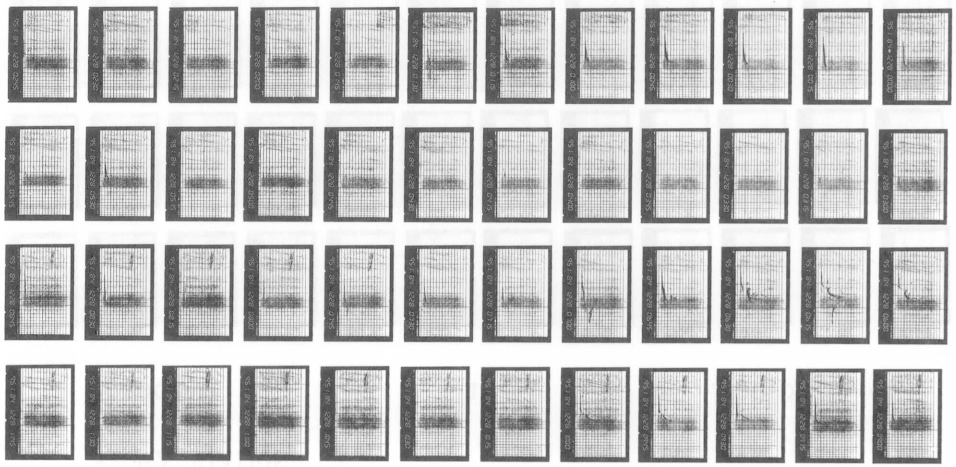

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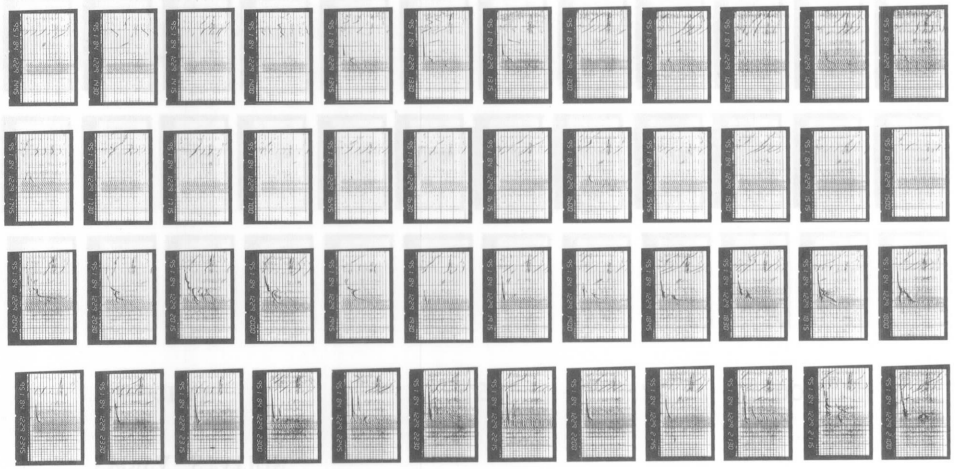

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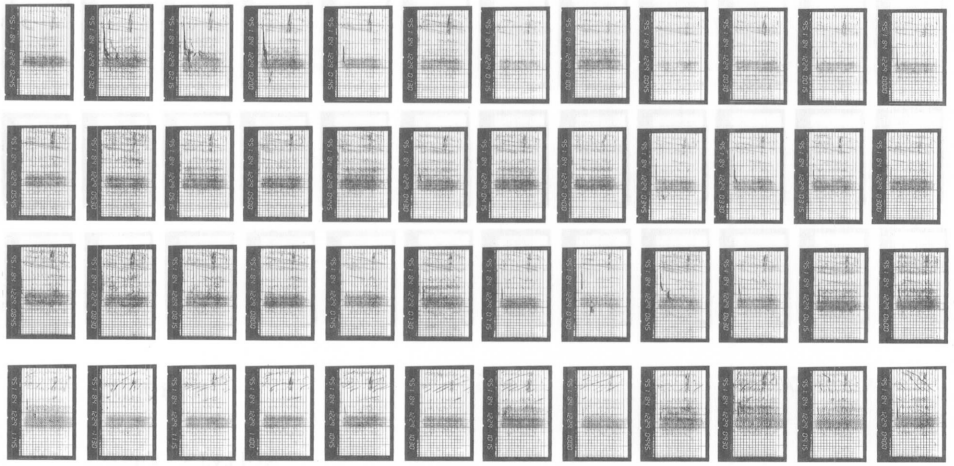

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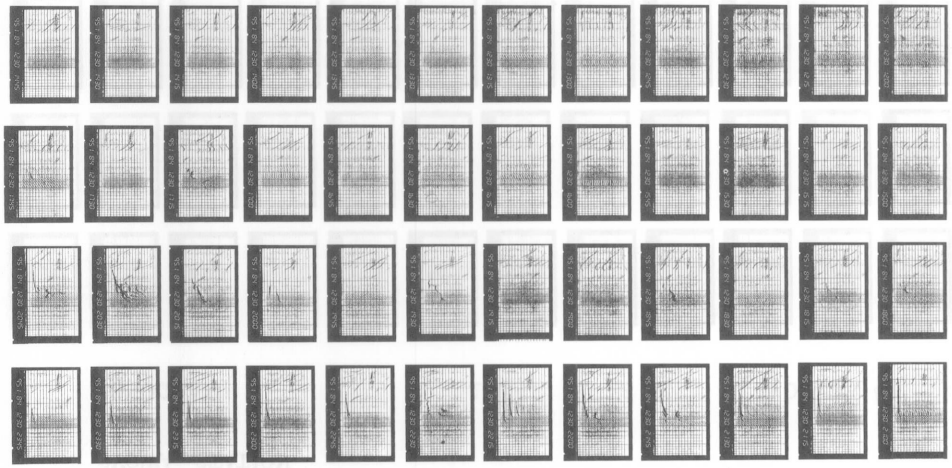

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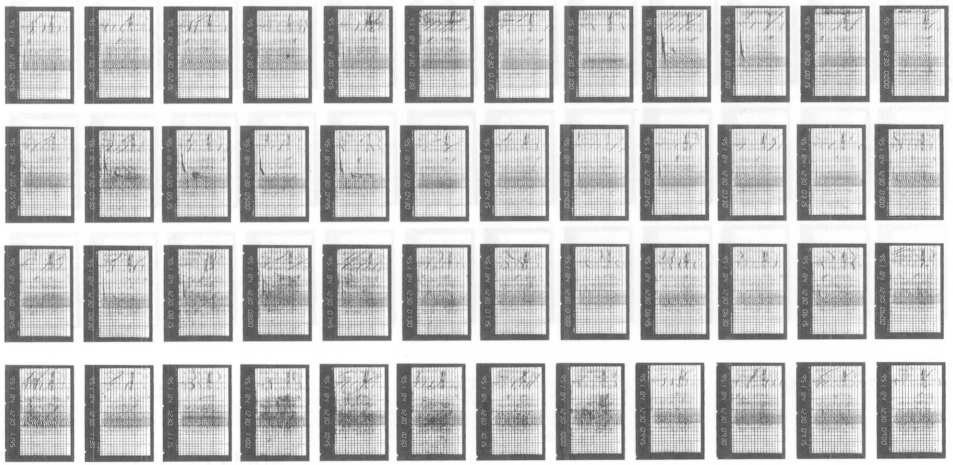

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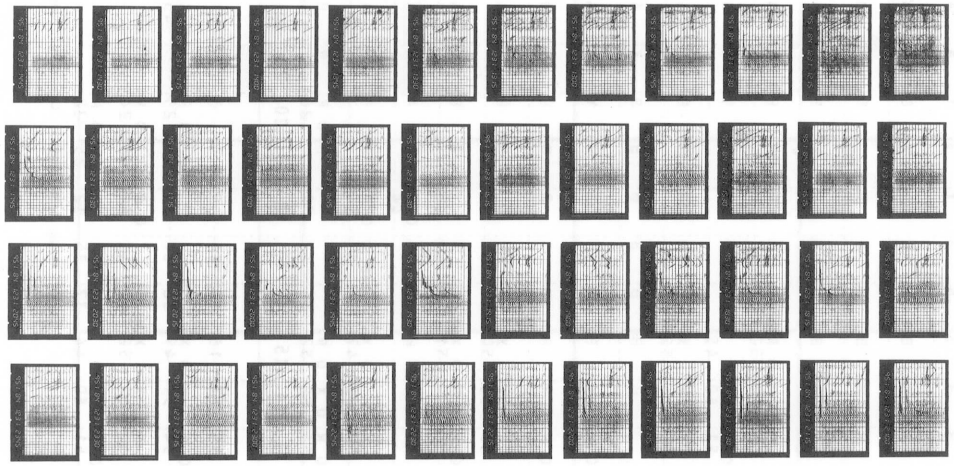

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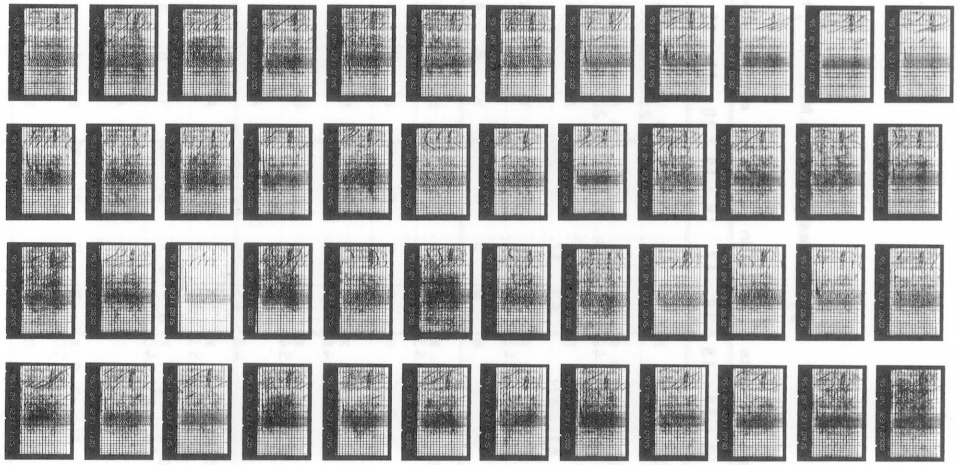

IONOSPHERIC DATA

JUL. 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	A	A	A	A	A	O R 36	B	B	O R 44	O R 47	O X 51	O X 54	B	B	B	B	X 25	25	O R 21	A	A	58
2	A	A	A	A	B	B	A	A	A	28	35	B	B	O R 52	O X 51	O R 42	O R 31	30	B	20	O R 23	Y	A	A
3	A	A	A	A	B	B	A	A	28	30	38	X 44	X 55	61	X 62	B	40	37	B	O R 26	A	A	A	A
4	A	A	A	A	A	A	B	B	B	A	B	B	B	B	63	O R 43	37	O R 34	32	O R 25	Y	B	A	A
5	A	A	A	A	B	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
6	A	A	A	A	A	B	A	A	B	B	B	X 40	O R 53	O R 58	X 45	O X 43	X 40	O R 42	B	B	B	B	B	A
7	A	A	A	A	A	A	A	O R 38	O R 36	B	B	O R 44	65	X 60	O R 71	B	R	B	B	B	B	B	B	A
8	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	O X 46	O X 66	O R 40	B	B	B	A	A	B
9	A	A	A	A	A	A	A	B	B	B	A	O R 42	B	X 61	70	X 54	B	B	B	B	B	B	A	A
10	A	60	A	A	A	O R 33	A	47	45	40	45	X 43	X 60	B	R	48	45	50	O R 42	O R 42	A	A	A	A
11	A	A	A	A	B	A	30	O R 31	29	29	X 40	X 50	X 58	O X 66	X 51	X 53	34	37	41	A	A	A	O X 43	A
12	B	A	A	A	A	B	B	B	A	A	B	B	B	O X 56	X 43	X 40	O R 38	O R 36	B	B	B	B	A	A
13	A	O R 51	A	A	A	A	A	B	Y	A	B	B	B	B	B	B	B	A	A	A	A	A	A	A
14	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	O X 50	B	B	B	Y	B	A	A	B
15	A	B	B	B	A	A	B	B	A	B	B	B	B	B	O R 50	B	B	O R 52	B	B	B	Y	A	A
16	A	B	B	A	B	A	B	B	B	B	B	O R 40	B	B	B	B	B	B	B	B	Y	Y	A	60
17	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	Y	A	A	A
18	B	B	B	B	50	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
19	A	A	B	B	B	B	B	B	B	B	B	O R 41	X 44	B	B	B	B	B	B	38	B	B	B	A
20	A	A	A	A	B	B	B	B	B	B	B	B	B	X 66	B	B	B	B	B	X 33	B	B	A	A
21	B	A	A	A	A	A	A	A	O R 24	O R 31	B	B	B	B	O R 41	O R 50	B	B	B	B	B	A	A	A
22	A	60	A	A	A	A	A	A	B	A	O R 36	O R 43	X 50	O R 51	50	45	B	B	B	B	B	B	B	A
23	A	A	A	B	A	A	A	A	B	B	O R 40	X 47	X 49	X 50	X 56	X 52	37	B	B	B	B	A	A	A
24	A	A	A	A	A	A	A	B	A	O R 38	O R 36	O R 36	B	47	B	B	B	B	B	B	B	Y	A	A
25	A	A	A	A	A	A	A	A	A	B	B	B	O R 43	O X 51	O X 50	B	B	O R 34	B	B	Y	B	A	B
26	A	B	A	A	A	A	A	A	A	A	B	B	B	O R 48	O R 48	B	B	B	B	B	B	B	B	A
27	A	A	A	A	A	A	A	A	A	A	B	O R 51	50	X 57	X 53	X 50	X 38	X 35	30	B	B	A	A	A
28	A	A	A	A	45	60	A	B	B	B	B	B	B	O X 51	B	O X 51	O S 39	X 43	38	A	B	Y	A	A
29	A	A	A	40	B	A	A	A	A	O R 36	O R 43	B	B	B	B	B	B	B	O R 44	A	A	A	A	A
30	A	A	A	A	B	A	A	A	A	X 31	X 45	X 45	O X 51	X 50	72	O X 47	B	O R 37	O R 34	B	B	B	A	A
31	A	A	A	A	A	A	29	30	29	34	O X 46	O X 50	B	O R 54	O X 50	O R 52	44	40	32	B	O R 26	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		3		1	2	2	2	5	6	9	11	15	12	18	17	16	12	14	9	7	3		1	2
MED		60		40	48	46	30	O R 36	29	31	O 40	O R 44	X 51	O X 54	X 51	O X 49	38	37	34	26	O R 23		O X 43	59
UQ		60						O R 38	36	O R 36	44	X 47	X 56	X 60	X 62	X 52	42	42	O R 41	36	O R 24			
LQ		56						O R 31	28	30	37	O R 42	X 50	O 51	O X 50	O 44	37	O R 35	32	25	O R 22			

JUL. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 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	A	A	A	A	A	A	F 28	B	B	F 36	F 40	F 43	48	B	B	B	B	R 19	F 18	F 14	A	A	A
2	A	A	A	A	B	B	A	A	A	F 18	F 27	B	B	F 43	45	F 33	F 24	F	B	F 14	14	Y	A	A
3	A	A	A	A	B	B	A	A	F 18	F 18	V 25	38	47	55	55	B	F 34	F 30	B	F 18	A	A	A	A
4	A	A	A	A	A	A	B	B	B	A	B	B	B	B	F 56	F 32	F 30	F 24	F 26	F 18	Y	B	A	A
5	A	A	A	A	B	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
6	A	A	A	A	A	B	A	A	B	B	B	J R 36	F 43	F 50	36	37	J R 36	F 34	B	B	B	B	B	A
7	A	A	A	A	A	A	A	F 28	F 26	B	B	V 38	F 52	53	F 65	B	R	B	B	B	B	B	B	A
8	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	F U 40	F 55	F 31	B	B	B	A	A	B
9	A	A	A	A	A	A	A	B	B	B	A	F 34	B	J R 55	Z 64	45	B	B	B	B	B	B	A	A
10	A	A	A	A	A	27	A	F	F 37	F 32	F 38	37	50	B	R	F 42	F 33	F 41	F 35	F 35	A	A	A	A
11	A	A	A	A	B	A	F	F 24	F 20	F 23	34	H 43	51	H 60	46	45	F 26	F 27	F 28	A	A	A	37	A
12	B	A	A	A	A	B	B	B	A	A	B	B	B	50	42	34	F 27	F 26	B	B	B	B	A	A
13	A	F 44	A	A	A	A	A	B	Y	A	B	B	B	B	B	B	B	A	A	A	A	A	A	A
14	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	43	B	B	B	Y	B	A	A	B
15	A	B	B	B	A	A	B	B	A	B	B	B	B	B	F 42	B	B	F 42	B	B	B	Y	A	A
16	A	B	B	A	B	A	B	B	B	B	B	F 33	B	B	B	B	B	B	B	B	Y	Y	A	F 42
17	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	Y	A	A	A
18	B	B	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
19	A	A	B	B	B	B	B	B	B	B	B	F 35	J R 38	B	B	B	B	B	B	32	B	B	B	A
20	A	A	A	A	B	B	B	B	B	B	B	B	B	J R 60	B	B	B	B	B	J R 27	B	B	A	A
21	B	A	A	A	A	A	A	A	F 18	F 21	B	B	B	B	R	R 43	B	B	B	B	B	A	A	A
22	A	A	A	A	A	A	A	A	B	A	F 28	F 35	45	F 42	F 44	F 35	B	B	B	B	B	B	B	A
23	A	A	A	B	A	A	A	A	B	B	F 30	41	43	V 42	50	46	F 25	B	B	B	B	A	A	A
24	A	A	A	A	A	A	A	B	A	F 30	F 26	F 28	B	F 40	B	B	B	B	B	B	B	Y	A	A
25	A	A	A	A	A	A	A	A	A	B	B	B	37	44	44	B	B	F 26	B	B	Y	B	A	B
26	A	B	A	A	A	A	A	A	A	A	B	B	B	F 41	42	B	B	B	B	B	B	B	B	A
27	A	A	A	A	A	A	A	A	A	A	B	F 45	F 42	50	45	F 43	32	28	F 17	B	B	A	A	A
28	A	A	A	A	A	A	A	B	B	B	B	B	B	45	B	45	V 33	F 35	V 31	A	B	Y	A	A
29	A	A	A	A	B	A	A	A	A	F 25	F 35	B	B	B	B	B	B	B	F 25	A	A	A	A	A
30	A	A	A	A	B	A	A	A	A	V 25	39	J R 39	45	R 45	60	R 41	B	F 30	F 25	B	B	B	A	A
31	A	A	A	A	A	A	F 20	F 24	F 22	F 27	40	44	B	F 44	54	F 43	F 38	F 30	F 23	B	F 19	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		1				1	1	4	6	9	11	15	12	18	16	16	12	13	9	7	3		1	1
MED		F 44				27	F 20	F 26	F 21	F 25	F 34	38	44	46	46	42	F 32	F 30	F 25	F 18	F 14		37	F 42
UQ								F 28	F 26	F 27	37	40	48	53	56	44	F 35	F 34	F 28	30	F 16			
LQ								F 24	F 18	F 21	F 28	F 35	42	F 43	43	36	F 26	F 27	F 23	F 18	14			

JUL. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 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	37	40	40	43	43	42	42	35	40	B	27	28	26	E B 25	B	B	B	B	E B 14	E B 9	11	20	34	70
2	59	41	42	42	74	B	S 33	40	30	21	20	B	B	E B 24	E B 32	E B 20	E B 20	27	B	12	11	22	45	48
3	45	50	48	70	B	B	45	36	30	13	14	17	33	E B 19	E B 24	B	E B 20	29	B E	B 10	33	37	25	36
4	73	48	38	45	33	42	40	B	B	36	B	B	B	B	E B 22	E B 19	20	23	27	19	22	B	20	52
5	43	50	70	50	B	34	45	B	33	B	B	B	B	B	B	B	B	B	B	B	B	B	27	20
6	30	38	53	45	70	B	43	45	B	B	B	34	32	E B 38	E B 24	E B 26	E B 22	E B 23	B	B	B	B	B	32
7	52	50	58	50	52	50	45	34	33	B	B	25	21	E B 18	E B 35	B	E B 22	B	B	B	B	B	B	33
8	40	45	45	40	53	53	43	45	26	32	B	B	B	B	B	E B 26	E B 23	E B 15	B	B	B	30	40	B
9	25	40	70	45	60	60	48	B	B	B	35	35	B	E B 30	E B 23	E B 19	B	B	B	B	B	B	38	33
10	40	36	46	43	43	36	47	47	44	26	24	E B 14	24	B	E B 38	E B 18	E B 13	18	E B 24	E B 24	26	24	45	40
11	40	53	40	45	B	40	35	28	E G 13	30	30	E B 17	20	30	20	E B 11	19	25	E B 18	37	43	42	45	46
12	B	45	44	45	40	B	B	B	55	40	B	B	B	E B 27	E B 21	E B 21	E B 15	E B 18	B	B	B	B	30	35
13	66	70	50	40	45	40	40	B	74	55	B	B	B	B	B	B	B	35	55	63	40	85	50	45
14	50	45	60	40	40	B	B	35	B	B	B	B	B	B	B	E B 30	B	B	B	20	B	35	50	45
15	37	B	46	45	32	50	B	B	42	B	B	B	B	B	E B 30	B	B	E B 23	B	B	B	20	45	70
16	80	B	B	44	B	50	70	B	B	B	B	E B 20	B	B	B	B	B	B	B	B	19	30	35	43
17	75	B	42	B	B	B	B	B	B	B	B	B	B	B	B	B	B	30	22	B	21	40	30	30
18	B	B	B	B	28	B	B	45	B	B	B	B	B	B	B	B	B	B	B	B	B	45	45	37
19	19	15	B	B	B	B	B	B	B	B	B	E B 23	E B 28	B	B	B	B	B	B	E B 22	B	B	B	42
20	70	48	40	40	45	B	47	B	B	B	B	B	B	55	B	B	B	B	B	22	B	B	11	13
21	B	42	45	40	47	40	35	22	28	30	B	B	B	B	E B 30	E B 30	B	B	B	B	B	25	30	24
22	30	45	45	45	50	60	46	60	B	40	E B 24	28	E B 23	E B 25	20	E B 14	B	B	B	B	B	B	B	40
23	40	40	58	B	43	60	60	43	B	B	E G 18	20	17	17	20	E B 13	17	B	B	B	B	F 30	16	33
24	33	45	35	60	47	48	44	B	44	25	19	33	B	26	B	B	B	B	B	B	B	F 14	33	40
25	50	37	35	48	45	28	50	53	43	B	B	B	25	E B 24	E B 30	B	B	E B 22	B	B	20	B	40	B
26	45	43	40	45	19	40	40	50	42	60	B	B	B	E B 23	E B 26	B	B	B	B	B	B	B	B	40
27	40	45	45	70	43	45	50	55	53	40	B	28	32	27	27	20	14	35	80	B	B	38	45	47
28	45	53	44	43	80	28	45	B	65	B	B	B	B	E B 35	B	E B 35	E B 20	E B 15	25	28	B	17	33	43
29	47	40	38	40	35	45	45	43	37	33	E B 19	B	B	B	B	B	B	B	25	32	47	48	47	54
30	43	38	40	75	B	44	40	35	20	28	20	E B 24	E B 30	E B 24	E B 25	E B 30	B	E B 20	E B 22	B	B	B	35	27
31	37	43	45	47	45	45	30	17	45	12	24	26	B	26	E B 25	E B 23	27	16	34	B	20	B	38	40
	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	27	28	27	24	22	25	19	20	16	12	15	12	18	18	16	13	16	11	12	12	18	26	29
MED	43	45	45	45	45	44	45	43	41	31	21	25	24	E B 26	E B 25	E B 20	E B 20	23	25	21	22	30	36	40
UQ	51	48	49	48	51	50	47	46	44	40	26	28	31	28	E B 30	E B 28	E B 22	28	30	30	36	40	45	45
LQ	37	40	40	42	40	40	40	35	30	26	19	E B 20	21	E B 24	E B 22	E B 18	E B 17	E B 18	E B 22	14	20	22	30	33

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 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	14	14	9	9	10	13	9	11	29	B	20	19	23	25	B	B	B	B	14	9	8	11	8	8
2	17	15	20	18	31	B	22	10	8	10	9	B	B	24	32	20	20	16	B	8	8	13	10	8
3	8	9	11	21	B	B	15	9	8	7	8	9	9	19	24	B	20	8	B	10	10	8	9	7
4	22	11	9	13	14	13	30	B	B	22	B	B	B	B	22	19	13	14	14	14	20	B	9	8
5	17	11	9	13	B	17	25	B	16	B	B	B	B	B	B	B	B	B	B	B	B	B	17	15
6	9	10	8	8	13	B	20	14	B	B	B	25	14	38	24	26	22	23	B	B	B	B	B	10
7	13	12	12	14	15	16	18	11	11	B	B	18	17	18	35	B	22	B	B	B	B	B	B	9
8	11	14	12	14	13	17	17	13	12	17	B	B	B	B	B	26	23	15	B	B	B	10	7	B
9	8	8	13	15	15	13	22	B	B	B	15	21	B	30	23	19	B	B	B	B	B	B	11	15
10	7	8	10	9	10	10	13	13	11	8	10	14	18	B	38	18	13	15	24	24	12	7	8	11
11	8	9	17	22	B	14	8	12	10	8	8	17	15	15	11	11	9	10	18	15	17	8	13	17
12	B	18	15	18	11	B	B	B	19	15	B	B	B	27	21	21	15	18	B	B	B	B	13	8
13	22	13	18	14	11	17	18	B	30	12	B	B	B	B	B	B	B	24	13	11	23	7	15	11
14	8	8	22	18	17	B	B	18	B	B	B	B	B	B	B	30	B	B	B	9	B	10	10	27
15	17	B	25	27	15	11	B	B	21	B	B	B	B	B	30	B	B	23	B	B	B	12	15	14
16	11	B	B	22	B	14	30	B	B	B	B	20	B	B	B	B	B	B	B	B	12	12	13	18
17	17	B	34	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	16	B	17	11	20	17
18	B	B	B	B	17	B	B	27	B	B	B	B	B	B	B	B	B	B	B	B	B	15	10	20
19	19	15	B	B	B	B	B	B	B	B	B	23	28	B	B	B	B	B	B	22	B	B	B	7
20	15	18	23	14	25	B	24	B	B	B	B	B	B	55	B	B	B	B	B	22	B	B	11	13
21	B	7	20	17	22	18	14	8	10	8	B	B	B	B	30	30	B	B	B	B	B	10	8	7
22	8	8	15	14	15	18	8	25	B	16	24	15	23	25	18	14	B	B	B	B	B	B	B	8
23	8	15	13	B	15	16	14	23	B	B	15	16	13	13	16	13	10	B	B	B	B	7	8	8
24	7	7	7	16	19	15	20	B	14	18	14	15	B	20	B	B	B	B	B	B	B	10	6	7
25	8	7	14	14	8	18	13	11	8	B	B	B	20	24	30	B	B	22	B	B	16	B	7	B
26	22	35	22	7	14	22	23	23	18	8	B	B	B	23	26	B	B	B	B	B	B	B	B	7
27	10	17	12	13	17	14	13	11	15	13	B	18	16	14	10	11	8	8	10	B	B	10	9	8
28	15	15	14	23	9	10	15	B	35	B	B	B	B	35	B	35	20	15	13	21	B	12	7	7
29	7	15	10	9	29	20	16	20	23	14	19	B	B	B	B	B	B	B	14	14	10	9	14	14
30	9	14	9	20	B	15	15	12	10	12	8	24	30	24	25	30	B	20	22	B	B	B	7	8
31	8	7	8	14	9	9	8	8	8	7	13	9	B	16	25	23	15	9	8	B	8	B	25	10
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	11	14	14	15	15	17	18	23	21	22	B	B	B	35	32	35	B	24	B	B	B	12	11	10
UQ	17	16	21	22	30	B	28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	16	15
LQ	8	8	10	14	13	14	14	12	11	12	15	18	22	24	24	20	20	16	17	18	16	10	8	8

JUL. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 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	A	E A 370	B	B	280	210	230	230	B	B	B	B	210	260	340	A	A	A
2	A	A	A	A	B	B	A	A	A	E A 320	270	B	B	230	210	220	E B 350	A 300	B	290	300	Y	A	A
3	A	A	A	A	B	B	A	A	E A 400	280	210	230	230	230	260	B	250	240	B	290	A	A	A	A
4	A	A	A	A	A	A	B	B	B	A	B	B	B	B	220	230	245	E A 300	260	260	Y	B	A	A
5	A	A	A	A	B	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
6	A	A	A	A	A	B	A	A	B	B	B	300	220	E B 245	230	260	250	250	B	B	B	B	B	A
7	A	A	A	A	A	A	A	350	280	B	B	250	210	220	220	B	230	B	B	B	B	B	B	A
8	A	A	A	A	A	A	A	A	A	A	B	B	B	B	B	300	220	270	B	B	B	A	A	B
9	A	A	A	A	A	A	A	B	B	B	A	A	B	250	250	210	B	B	B	B	B	B	A	A
10	A	A	A	A	A	A	A	A	295	270	230	245	230	B	250	200	220	230	290	290	A	A	A	A
11	A	A	A	A	B	A	A	360	320	300	240	200	240	210	210	210	220	230	250	A	A	A	E A 280	A
12	B	A	A	A	A	B	B	B	A	A	B	B	B	245	250	250	220	240	B	B	B	B	A	A
13	A	E A 330	A	A	A	A	A	B	Y	A	B	B	B	B	B	B	B	A	A	A	A	A	A	A
14	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	E B 290	B	B	B	Y	B	A	A	B
15	A	B	B	B	A	A	B	B	A	B	B	B	B	B	270	B	B	250	B	B	B	Y	A	A
16	A	B	B	A	B	A	B	B	B	B	B	280	B	B	B	B	B	B	B	B	Y	350	A	200
17	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	Y	B	Y	A	A	A
18	B	B	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A
19	A	A	B	B	B	B	B	B	B	B	B	250	250	B	B	B	B	B	B	220	B	B	B	A
20	A	A	A	A	B	B	B	B	B	B	B	B	B	240	B	B	B	B	B	E B 300	B	B	A	A
21	B	A	A	A	A	A	A	A	E A 380	350	B	B	B	B	E B 240	240	B	B	B	B	B	A	A	A
22	A	A	A	A	A	A	A	A	B	A	E B 345	280	240	250	200	230	B	B	B	B	B	B	B	A
23	A	A	A	B	A	A	A	A	B	B	260	230	210	210	230	200	230	B	B	B	B	A	A	A
24	A	A	A	A	A	A	A	B	A	A	270	340	B	240	B	B	B	B	B	B	B	Y	A	A
25	A	A	A	A	A	A	A	A	A	B	B	B	280	240	270	B	B	E B 250	B	B	Y	B	A	B
26	A	B	A	A	A	A	A	A	A	A	B	B	B	230	240	B	B	B	B	B	B	B	B	A
27	A	A	A	A	A	A	A	A	A	A	B	E A 260	240	220	200	200	200	A	220	B	B	A	A	A
28	A	A	A	A	A	A	A	B	B	B	B	B	B	250	B	E B 230	270	250	280	A	B	Y	A	A
29	A	A	A	A	B	A	A	A	A	280	240	B	B	B	B	B	B	B	230	A	A	A	A	A
30	A	A	A	A	B	A	A	A	A	320	245	240	230	230	240	225	B	270	E B 300	B	B	B	A	A
31	A	A	A	A	A	A	E A 370	320	E A 350	230	240	230	B	210	230	220	200	220	210	B	E A 250	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		1					1	4	6	8	11	14	12	18	18	16	13	13	9	7	3	1	1	1
MED		E A 330					E A 370	345	U 308	285	242	245	230	230	232	224	225	245	240	U 275	300	350	E A 230	200
UQ								362	E A 380	320	268	280	240	245	250	240	248	260	270	290	320			
LQ								335	295	275	240	230	225	220	220	210	220	235	220	260	275			

The Radio Research Laboratory, Japan

JUL. 1984 | H'F (KM)

IONOSPHERIC DATA

AUG. 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	70	A	A	A	A	A	A	B	B	A	Y	B	B	O R 38	B	B	O R 36	33	B	A	A	A	A	A
2	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	O X 49	B	B	O X 38	B	B	A	A	A
3	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	S	B	A	A	A	A
4	B	A	A	A	A	A	B	A	A	B	B	B	B	B	O X 51	B	B	B	B	B	Y	A	A	A
5	A	A	A	A	A	A	A	A	A	B	B	O X 51	B	B	B	B	O R 42	X 42	X 45	O R 28	B	B	A	A
6	A	A	A	A	A	A	A	A	A	X 37	S 50	55	X 56	65	65	B	B	B	A	33	Y	B	B	A
7	A	A	A	A	A	A	A	A	O R 36	41	X 46	X 45	X 52	X 57	X 45	O X 51	43	35	35	30	A	B	B	A
8	A	A	A	A	65	A	A	A	O R 43	43	B	B	O X 51	B	B	57	X 49	O X 44	33	31	A	A	Y	A
9	B	A	A	A	A	A	A	O R 38	29	40	X 47	X 51	57	O X 51	O X 71	X 65	O X 80	X 70	44	A	A	A	A	A
10	S	A	A	A	35	A	A	A	A	X 40	X 43	B	B	B	B	B	B	O S 37	37	B	B	A	A	S 50
11	O X 46	A	B	A	A	A	O R 41	40	45	X 42	40	Y	B	B	70	O X 76	S	S 42	43	A	A	A	A	A
12	80	A	A	A	A	A	A	A	35	B	X 42	O X 46	O X 50	B	B	B	B	65	B	B	B	A	A	A
13	A	A	B	B	A	A	A	Y	B	A	O X 43	O X 48	O X 52	O X 51	X 58	X 55	X 46	X 50	35	33	A	O R 24	28	31
14	A	A	A	A	30	36	38	40	37	X 42	X 51	O X 52	67	X 80	X 90	X 65	X 70	65	55	A	A	A	A	A
15	A	A	Y	A	A	A	B	B	A	B	B	Y	O X 45	O X 48	O X 49	B	B	B	B	B	B	B	A	A
16	X 43	A	A	A	B	B	A	A	B	B	O X 41	O X 42	O X 51	B	B	X 60	B	O X 51	X 45	B	A	R	A	B
17	A	A	B	B	A	A	A	B	B	B	O X 42	B	B	B	B	B	B	B	B	B	O X 23	O X 36	A	A
18	B	A	A	A	A	A	A	31	B	B	O X 46	O X 52	X 70	X 73	X 60	O X 68	65	36	O R 41	O R 40	B	A	A	A
19	A	A	A	A	A	28	32	35	34	X 43	X 45	X 54	65	X 47	X 65	X 65	X 50	X 45	O X 50	40	A	A	A	A
20	B	A	A	A	A	A	A	A	A	B	B	B	B	B	B	O X 49	41	S	O R 34	O R 25	O B 20	A	A	A
21	A	A	A	A	A	A	A	50	45	O R 43	47	X 50	X 57	X 60	X 57	56	51	O S 36	B	B	B	B	B	B
22	A	A	A	30	35	43	34	Y	32	X 40	X 46	54	O X 51	X 60	X 56	X 55	O X 61	X 41	X 40	30	24	O B 18	S	A
23	O B 19	A	A	O R 44	A	43	A	60	52	55	O X 46	O X 50	X 58	X 62	X 65	60	X 60	O X 50	O X 51	X 50	O R 33	A	A	A
24	66	A	A	A	A	65	A	A	A	A	O R 39	B	B	B	B	B	B	B	B	A	A	A	A	A
25	A	A	A	A	Y	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	O R 36
26	A	A	A	A	A	A	A	A	A	B	B	B	B	O X 48	O X 43	O X 49	O X 43	O X 43	O X 41	B	B	B	A	A
27	A	A	A	A	A	B	A	A	A	O R 43	O X 45	B	O X 49	O X 49	O X 49	O X 56	B	B	O X 41	A	A	B	A	A
28	A	A	A	B	A	O R 34	A	A	B	B	A	B	B	B	B	B	O R 44	O X 45	O R 34	A	A	A	A	A
29	A	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	O X 48	39	Y	A	A	A
30	A	B	A	A	B	B	A	A	B	B	B	B	B	B	B	O X 73	B	70	B	A	A	A	A	A
31	A	A	A	A	A	A	A	A	X 38	X 43	O X 45	B	B	B	B	O X 49	O X 48	O X 52	O X 46	B	B	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	6			2	4	6	4	7	11	13	18	13	15	14	15	18	16	20	20	11	4	3	1	3
MED	56			37	35	40	36	40	37	X 42	X 45	O X 51	X 52	X 54	X 58	X 56	X 48	X 44	41	33	O 24	O 24	28	36
UQ	70				50	43	40	45	44	43	X 46	X 52	X 58	X 62	X 65	X 65	X 60	X 52	X 46	40	28	O 30		43
LQ	O X 43				32	34	33	36	34	X 40	O X 42	O X 48	O X 51	O X 48	X 50	O X 51	O 43	39	36	30	O 22	O 21		34

AUG. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

AUG. 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	A	A	A	A	A	A	B	B	A	Y	B	B	F 30	B	B	F 30	F 25	B	A	A	A	A	A
2	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	S 43	B	B	S 32	B	B	A	A	A
3	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	D S 40	B	A	A	A	A
4	B	A	A	A	A	A	B	A	A	B	B	B	B	B	45	B	B	B	B	B	Y	A	A	A
5	A	A	A	A	A	A	A	A	A	B	B	45	B	B	B	B	F 34	37	V 39	F 19	B	B	A	A
6	A	A	A	A	A	A	A	A	A	31	43	46	50	F 59	F 55	B	B	B	A	F 24	Y	B	B	A
7	A	A	A	A	A	A	A	A	F 26	35	40	41	45	50	43	45	F 34	F 30	F 27	F 18	A	B	B	A
8	A	A	A	A	A	A	A	A	U F 35	F 36	B	B	45	B	B	F 48	42	37	F 25	F 14	A	A	Y	A
9	B	A	A	A	A	A	A	F 26	F 18	F 34	40	V 44	R 46	45	65	56	Z 75	64	F 31	A	A	A	A	A
10	S	A	A	A	A	A	A	A	A	35	V 37	B	B	B	B	B	B	F 30	F 28	B	B	A	A	A
11	40	A	B	A	A	A	F 32	F 30	F 30	36	F 31	Y	B	B	F 60	R 69	D S 43	F 36	F 37	A	A	A	A	A
12	A	A	A	A	A	A	A	A	F 26	B	35	40	43	B	B	B	B	R 54	B	B	B	A	A	A
13	A	A	B	B	A	A	A	Y	B	A	F 37	41	45	43	R 50	47	40	44	R 29	F 18	A	F 16	F 20	F 24
14	A	A	A	A	F 24	F 33	F 25	F 27	F 22	Z 35	45	46	60	75	R 80	58	62	60	Z 45	A	A	A	A	A
15	A	A	Y	A	A	A	B	B	A	B	B	Y	39	42	43	B	B	B	B	B	B	B	A	A
16	37	A	A	A	B	B	A	A	B	B	35	S 36	44	B	B	R 52	B	44	42	B	A	R	A	B
17	A	A	B	B	A	A	A	B	B	B	37	B	B	B	B	B	B	B	B	B	16	R 30	A	A
18	B	A	A	A	A	A	A	F 17	B	B	40	S 45	63	66	55	S 60	Z 59	S 32	F 33	F 28	B	A	A	A
19	A	A	A	A	A	F 22	F 25	F 25	F 23	Z 35	43	F 46	Z 60	45	60	R 55	S 44	40	F 42	F 33	A	A	A	A
20	B	A	A	A	A	A	A	A	A	B	B	B	B	B	B	43	35	S	F 26	F 18	F 12	A	A	A
21	A	A	A	A	A	A	A	F 32	F 23	F 35	41	Z 43	50	53	R 50	F 49	F 40	F 30	B	B	B	B	B	B
22	A	A	A	F 23	F 27	F 33	F 28	Y	F 25	35	40	R 48	45	52	S 49	S 50	J S 55	36	33	F 24	F 14	F 11	S	A
23	F 11	A	A	F 38	A	F 36	A	F 45	F 46	Z 43	40	S 43	U R 48	J R 54	55	F 50	R 54	44	S 43	43	F 24	A	A	A
24	A	A	A	A	A	A	A	A	A	A	F 33	B	B	B	B	B	B	B	B	A	A	A	A	A
25	A	A	A	A	Y	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	F 27
26	A	A	A	A	A	A	A	A	A	B	B	B	B	F 42	F 37	F 43	S 37	37	F 35	B	B	B	A	A
27	A	A	A	A	A	B	A	A	A	F 34	39	B	S 43	S 43	S 43	S 46	B	B	F 33	A	A	B	A	A
28	A	A	A	B	A	R 27	A	A	B	B	A	B	B	B	B	B	F 36	F 37	F 25	A	A	A	A	A
29	A	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	Z 41	32	Y	A	A	A
30	A	B	A	A	B	B	A	A	B	B	B	B	B	B	B	F 67	B	F 65	B	A	A	A	A	A
31	A	A	A	A	A	A	A	A	30	37	39	B	B	B	B	S 43	42	46	40	B	B	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3			2	2	5	4	7	11	13	18	13	15	14	15	18	17	20	21	11	4	3	1	2
MED	37			F 30	F 26	F 33	F 26	F 27	F 26	35	40	44	45	48	50	50	42	37	F 33	F 24	F 15	F 16	F 20	F 26
UQ	38					F 33	F 30	F 31	F 30	36	40	46	50	54	58	56	54	45	40	F 30	20	23		
LQ	24					F 27	F 25	F 26	F 23	35	37	41	44	43	44	45	F 36	F 34	F 29	F 18	F 13	F 14		

The Radio Research Laboratory, Japan

AUG. 1984 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

AUG. 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	40	100	41	48	55	45	60	B	B	41	36	B	B	E B 22	B	B	E B 21	25	B	33	115	40	45	25
2	60	30	42	45	38	39	70	B	B	B	B	B	B	B	B	E B 23	B	B	40	B	B	F 28	38	43
3	60	43	48	45	45	45	37	45	B	B	B	B	B	B	B	B	B	B	E B 23	B	37	30	33	75
4	B 80	65	40	41	45	43	45	40	B	B	B	B	B	B	E B 25	B	B	B	B	B	16	45	40	42
5	33	43	38	44	45	44	37	36	44	B	B	E B 24	B	B	B	B	E B 24	12	15	E B 13	B	B	40	36
6	40	37	40	40	45	45	43	45	34	17	19	E G 20	21	23	40	B	B	B	40	42	S 19	B	B	43
7	60	60	48	53	49	48	48	47	36	19	19	16	G 17	E B 19	E B 22	E B 31	18	27	22	26	17	B	B	21
8	33	42	44	75	40	43	43	45	45	39	B	B	E B 28	B	B	E B 18	E B 28	E B 24	E B 16	15	F 26	28	17	28
9	40	48	50	48	43	45	43	32	30	11	17	21	E B 23	E B 34	E B 52	20	32	35	29	32	21	27	33	47
10	S 18	70	37	37	32	35	44	43	36	27	34	B	B	B	B	B	B	E B 25	20	B	B	30	43	60
11	45	75	B 45	53	50	40	40	50	E B 14	E B 15	30	B	B	28	E B 60	E B 30	35	35	33	30	33	33	41
12	70	103	43	53	26	43	42	55	35	B	22	28	E B 23	B	B	B	B	28	B	B	B	F 30	33	44
13	43	45	B	60	42	37	70	S 18	B	35	28	E B 20	E B 23	E B 20	E G 21	16	20	22	24	12	26	40	15	32
14	30	37	40	40	22	20	26	27	14	17	25	20	18	26	19	27	15	15	34	50	48	50	50	54
15	37	80	20	40	45	35	B	B	44	B	B	30	E B 28	E B 35	E B 29	B	B	B	B	B	B	B	F 18	27
16	45	35	43	43	B	B	45	50	71	B	28	E B 30	E B 22	B	B	E B 25	B	E B 24	E B 29	B	F 30	F 16	40	B
17	60	42	45	B	45	43	55	45	B	B	E B 29	B	B	B	B	B	B	B	B	B	E B 11	13	45	45
18	37	41	41	45	35	27	17	12	B	B	E B 29	E B 29	E B 23	23	E B 20	E B 20	E B 17	E B 16	E B 20	E B 14	B	30	16	33
19	35	35	40	35	F 45	30	26	28	18	E B 14	20	24	40	23	26	E B 21	E B 25	E B 15	14	45	50	42	49	105
20	40	40	40	40	44	36	60	60	44	65	B	B	B	B	B	E B 30	E B 24	29	27	12	11	35	30	22
21	33	30	25	30	20	38	34	40	16	E B 24	E B 22	22	26	29	27	28	34	E B 24	B	B	B	B	B	B
22	12	17	24	28	28	25	18	20	13	17	22	40	25	25	32	27	19	13	12	12	10	10	F 11	19
23	F 12	28	32	35	35	43	47	42	30	18	E B 23	E B 23	27	30	26	32	17	E B 18	E B 25	E B 14	20	43	46	50
24	43	73	60	45	40	45	38	70	45	40	35	B	B	B	B	B	B	B	B	45	45	44	50	45
25	60	45	60	44	47	45	37	43	B	B	B	B	B	B	B	B	B	B	B	B	B	49	46	28
26	60	70	90	43	43	36	35	60	43	B	B	B	B	E B 30	E B 27	E G 24	E B 30	E B 18	E B 18	B	B	B	29	33
27	31	37	34	40	44	B	45	60	38	35	E B 28	B	E B 29	E B 34	E B 24	E B 24	B	B	40	43	50	B	70	44
28	49	49	43	B	38	35	35	33	B	B	34	B	B	B	B	B	E B 24	E B 23	20	43	28	45	100	92
29	80	60	B	B	B	B	35	B	B	B	B	B	B	B	B	B	B	B	E B 15	E B 14	12	35	30	40
30	41	B	70	44	B	B	70	40	B	B	B	B	B	B	B	E B 28	B	E B 24	B	35	39	38	50	80
31	75	40	44	44	70	35	40	43	24	18	E B 23	B	B	B	B	E B 25	E B 24	E B 20	E G 22	B	B	B	B	27
	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	28	28	28	27	30	27	21	17	20	15	15	14	15	18	17	21	22	19	21	23	27	29
MED	40	43	42	44	42	43	42	43	36	18	22	22	E B 23	24	E E 26	E B 25	E B 24	E B 24	20	32	26	33	40	42
UQ	60	70	48	45	45	45	47	46	44	35	29	30	26	E B 30	27	E B 28	E B 28	25	29	42	39	41	46	47
LQ	33	37	39	40	35	35	35	34	30	17	20	18	E B 22	23	E E 23	E B 21	17	E B 18	15	14	17	28	30	28

AUG. 1984 | FES (0.1 MHZ)

IONOSPHERIC DATA

AUG. 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	14	21	8	7	15	13	B	B	10	11	9	B	22	B	B	21	9	9	8	9	13	8	13
2	8	14	20	8	11	7	11	B	B	B	B	B	B	B	B	23	B	B	7	B	B	10	8	7
3	8	8	14	15	14	16	23	23	B	B	B	B	B	B	B	B	B	B	23	B	11	14	8	7
4	B	8	7	8	15	9	30	13	11	B	B	B	B	B	25	B	B	B	B	B	13	7	7	8
5	14	8	8	15	13	16	15	11	15	B	B	24	B	B	B	B	24	10	8	13	B	B	7	7
6	7	8	7	8	20	18	22	8	9	9	14	16	18	16	17	B	B	B	22	9	16	B	B	8
7	13	14	8	9	13	16	8	8	10	8	14	11	15	19	22	31	9	10	15	8	12	B	B	8
8	8	8	8	14	17	20	15	9	13	8	B	B	28	B	B	18	28	24	16	8	8	14	15	8
9	30	13	14	16	18	15	10	14	8	8	10	17	23	34	52	16	24	24	15	9	14	8	7	8
10	16	24	22	14	7	19	14	8	7	9	8	B	B	B	B	B	B	25	14	B	B	8	8	8
11	11	8	B	13	16	18	8	8	8	14	15	14	B	B	20	60	30	18	10	8	9	11	7	8
12	9	10	19	16	13	14	16	15	11	B	18	18	23	B	B	B	B	15	B	B	B	9	8	8
13	8	14	B	30	17	13	17	11	B	21	18	20	23	20	18	9	10	9	8	7	7	10	7	8
14	7	8	8	19	14	8	8	8	8	10	15	17	16	14	15	8	7	8	8	8	7	8	17	8
15	8	20	17	24	24	13	B	B	20	B	B	24	28	35	29	B	B	B	B	B	B	B	10	14
16	8	14	8	23	B	B	24	14	62	B	21	30	22	B	B	25	B	24	29	B	9	8	8	B
17	23	13	30	B	16	25	16	26	B	B	29	B	B	B	B	B	B	B	B	B	11	8	8	8
18	29	14	24	14	16	14	13	10	B	B	29	29	23	10	20	20	17	16	20	14	B	20	8	9
19	8	8	14	9	13	13	8	9	16	14	17	16	15	16	17	21	25	15	8	9	10	8	14	22
20	28	14	23	21	18	10	19	18	22	30	B	B	B	B	B	30	24	20	16	8	8	7	7	8
21	8	8	8	8	8	8	9	8	10	24	22	14	13	14	13	12	9	24	B	B	B	B	B	B
22	8	8	8	7	7	8	13	14	9	10	14	10	15	14	13	15	13	9	8	7	7	8	8	7
23	7	8	8	8	10	8	8	8	9	8	23	23	15	15	15	9	8	18	25	14	14	13	8	8
24	8	8	9	14	8	8	8	19	25	20	15	B	B	B	B	B	B	B	B	10	13	8	8	14
25	14	14	10	16	15	22	22	20	B	B	B	B	B	B	B	B	B	B	B	B	B	9	8	8
26	18	11	14	16	21	19	20	16	14	B	B	B	B	30	27	17	30	18	18	B	B	B	7	8
27	8	8	15	14	19	B	17	14	20	15	28	B	29	34	24	24	B	B	14	10	11	B	8	11
28	13	8	8	B	20	11	8	18	B	B	20	B	B	B	B	B	24	23	8	9	9	7	9	8
29	8	9	B	B	B	B	14	B	B	B	B	B	B	B	B	B	B	B	15	14	10	8	8	7
30	15	B	9	30	B	B	23	19	B	B	B	B	B	B	B	28	B	24	B	13	7	8	10	8
31	8	20	9	18	15	14	10	14	14	B	23	B	B	B	B	25	24	20	22	B	B	B	B	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	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	10	14	15	15	15	14	14	16	24	23	B	B	B	B	30	30	24	18	13	12	10	8	8
UQ	14	14	20	20	18	19	20	19	B	B	B	B	B	B	B	B	B	B	B	B	B	D B 20	10	3
LQ	8	8	8	9	13	10	10	9	10	10	15	18	22	20	20	19	22	16	12	8	9	8	8	8

AUG. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

AUG. 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	A	B	B	A	240	B	B	280	B	B	350	445	B	A	A	A	A	A
2	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	250	B	B	300	B	B	A	A	A
3	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	225	B	A	A	A	A
4	B	A	A	A	A	A	B	A	A	B	B	B	B	B	230	B	B	B	B	B	Y	A	A	A
5	A	A	A	A	A	A	A	A	A	B	B	245	B	B	B	B	230	245	240	210	B	B	A	A
6	A	A	A	A	A	A	A	A	A	250	230	210	200	210	200	B	B	B	A	260	Y	B	B	A
7	A	A	A	A	A	A	A	A	E A 380	250	240	200	240	230	220	220	210	280	E A 240	210	A	B	B	A
8	A	A	A	A	A	A	A	A	E A 450	395	B	B	250	B	B	240	220	235	240	245	A	A	Y	A
9	B	A	A	A	A	A	A	350	E A 350	285	250	220	240	240	E B 260	230	220	E A 300	270	A	A	A	A	A
10	U Y 340	A	A	A	A	A	A	A	A	270	240	B	B	B	B	B	B	245	250	B	B	A	A	A
11	250	A	B	A	A	A	E A 400	350	270	245	200	Y	B	B	245	300	250	240	240	A	A	A	A	A
12	A	A	A	A	A	A	A	A	330	B	280	280	245	B	B	B	B	240	B	B	B	A	A	A
13	A	A	B	B	A	A	A	Y	B	A	250	245	240	200	230	200	200	240	200	230	A	270	205	260
14	A	A	A	A	215	330	340	300	260	240	230	240	250	220	230	210	240	250	260	A	A	A	A	A
15	A	A	Y	A	A	A	B	B	A	B	B	Y	250	A	250	B	B	B	B	B	B	B	A	A
16	250	A	A	A	B	B	A	A	B	B	E A 320	270	250	B	B	245	B	220	230	B	A	360	A	B
17	A	A	B	B	A	A	A	B	B	B	290	B	B	B	B	B	B	B	B	B	260	N Y 430	A	A
18	B	A	A	A	A	A	A	370	B	B	280	250	230	240	200	220	220	240	260	220	B	A	A	A
19	A	A	A	A	A	E A 380	345	300	E A 270	200	230	220	220	200	240	220	230	240	220	E A 300	A	A	A	A
20	B	A	A	A	A	A	A	A	A	B	B	B	B	B	B	250	250	S	310	245	300	A	A	A
21	A	A	A	A	A	A	A	330	280	245	240	220	210	220	230	200	220	270	B	B	B	B	B	B
22	A	A	A	E A 400	E A 300	300	395	Y	250	230	220	200	200	210	210	210	210	200	200	200	230	200	E A 200	A
23	E A 285	A	A	345	A	E A 380	A	300	280	220	E A 200	230	210	210	200	230	230	245	250	250	300	A	A	A
24	A	A	A	A	A	A	A	A	A	A	E A 300	B	B	B	B	B	B	B	B	A	A	A	A	A
25	A	A	A	A	Y	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	E A 360
26	A	A	A	A	A	A	A	A	A	B	B	B	B	290	240	240	245	245	270	B	B	B	A	A
27	A	A	A	A	A	B	A	A	A	280	260	B	245	E A 250	240	250	B	B	340	A	A	B	A	A
28	A	A	A	B	A	E A 240	A	A	B	B	A	B	B	B	B	B	270	270	350	A	A	A	A	A
29	A	A	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	250	270	Y	A	A	A
30	A	B	A	A	B	B	A	A	B	B	B	B	B	B	B	E A 28	B	259	B	A	A	A	A	A
31	A	A	A	A	A	A	A	A	250	260	240	B	B	B	3	230	230	210	250	9	B	B	B	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	4			2	2	5	4	7	11	13	19	13	15	13	15	18	17	20	21	11	4	4	2	2
MED	259			358	U 236	E A 330	356	330	U 265	250	240	230	240	220	230	230	230	244	250	238	280	315	202	U 285
UQ	312					E A 380	396	350	U 310	270	260	245	248	240	240	245	245	255	270	252	300	395		
LQ	250					300	342	300	260	240	230	220	215	210	215	210	220	240	240	215	245	235		

AUG. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 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	A	B	A	A	A	A	A	B	B	OX 51	57	B	S	OX 51	OX 54	OX 51	OX 42	X 34	OR 24	A	A	A
2	A	A	A	A	Y	A	A	Y	B	A	B	B	X 46	B	B	OX 50	OX 49	X 50	X 50	OX 46	B	B	A	A
3	A	A	A	S	A	34	A	OR 42	B	B	OX 50	OX 51	OX 51	OX 56	OX 54	OX 52	OX 54	X 58	47	44	36	26	OB 21	A
4	A	A	A	A	A	A	A	B	A	B	B	B	B	OB 42	B	B	B	A	35	A	A	A	A	A
5	A	A	45	A	A	A	A	A	B	B	OR 36	B	B	B	B	B	B	OR 41	A	A	A	A	A	B
6	A	A	A	A	A	B	A	A	B	B	B	B	B	B	B	OX 47	OX 45	B	B	OR 32	OB 25	A	A	A
7	A	A	A	A	A	A	A	A	A	41	X 48	X 55	X 57	X 60	58	X 60	60	65	OX 50	37	34	A	A	A
8	A	A	A	A	A	A	X 38	R	OR 44	OR 50	B	B	57	59	S	60	60	X 57	X 60	OX 51	OR 36	OB 23	A	A
9	A	A	A	B	A	A	28	30	X 37	X 44	X 44	B	B	B	OX 50	OX 51	B	B	B	OX 35	OR 34	32	OR 24	A
10	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	OR 51	B	B	B	A	A	A	B
11	A	B	A	B	B	A	A	B	B	B	B	B	OX 39	OX 41	OX 39	X 40	OX 42	OX 42	B	OR 34	B	A	A	A
12	A	A	A	A	B	B	B	OX 34	B	OR 41	B	B	B	OX 41	B	B	B	X 54	B	OX 26	A	A	A	A
13	A	A	B	B	B	B	B	B	B	OX 41	OX 37	B	B	B	B	B	B	B	OX 43	OX 36	OR 25	18	A	A
14	A	A	A	A	A	A	A	A	OX 36	B	B	B	B	B	B	B	B	B	OX 43	40	A	A	A	A
15	A	B	B	B	B	A	A	B	OR 39	OX 37	OX 39	OX 39	B	43	B	OX 49	B	B	45	OX 46	OR 35	B	A	A
16	A	A	A	B	A	A	A	OR 40	A	B	B	OX 49	44	OX 46	S	OX 51	OX 51	55	X 49	X 47	X 34	B	A	A
17	A	A	A	A	A	A	A	OR 41	OR 41	B	B	B	X 43	OX 49	OX 49	X 60	X 55	X 54	OX 50	OR 50	OR 51	43	34	30
18	20	A	34	A	A	OR 29	33	44	OX 41	OR 46	B	58	60	X 60	X 64	X 65	OR 52	50	X 50	40	37	30	29	17
19	A	A	69	A	OX 33	A	33	OR 41	OR 46	54	58	X 67	X 80	X 69	X 85	OX 86	OX 42	A	A	A	A	A	A	A
20	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	OX 50	OX 47	A	A	A	A	A
21	A	A	A	A	A	A	A	OX 41	A	OR 45	OX 50	50	64	S 59	B	B	B	OX 48	X 47	B	A	A	A	A
22	A	35	A	A	A	B	A	OR 49	45	42	B	B	B	B	B	OX 54	B	B	B	39	38	A	A	A
23	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	A	37	A	A	A	A	A
24	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	OR 44	OR 39	A	A	A	A	Y
25	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	OX 39	A	A	A	A	A
26	A	B	A	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
27	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	45	B	B	B	OX 36	30	A	A	A
28	B	B	A	B	A	A	B	B	B	OX 41	S	OX 41	R	B	OX 43	OX 47	B	B	OX 50	32	A	A	A	A
29	A	A	A	A	B	B	A	B	B	B	B	B	OX 41	OX 46	40	OX 46	OX 50	OX 48	OX 48	OX 43	20	A	A	A
30	A	B	A	A	A	B	B	B	B	A	B	B	B	B	B	OX 48	50	OX 50	OX 51	X 48	X 42	33	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	1	3		1	2	4	9	8	11	8	9	12	13	9	18	14	16	20	20	15	7	4	2
MED	20	35	45		OX 33	32	33	OR 41	41	42	OX 46	OX 51	X 54	OX 49	OX 50	OX 51	OX 51	X 50	OX 47	OX 40	34	30	26	24
UQ			57				36	OR 42	OR 44	46	X 50	X 55	58	X 59	X 58	OX 60	O 54	X 54	X 50	X 46	36	32	32	
LQ			40				30	0 40	OX 38	41	OX 38	OX 49	X 44	OX 43	OX 43	OX 47	OX 49	OX 48	OX 42	O 34	28	24	O 22	

The Radio Research Laboratory, Japan

SEP. 1984 | FXI (0.1 MHZ)

IONOSPHERIC DATA

SEP. 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	A	A	B	A	A	A	A	A	B	B	F 45	F 52	B	D S 43	U S 45	U S 48	46	36	F 27	F 16	A	A	A
2	A	A	A	A	Y	A	A	Y	B	A	B	B	40	B	B	F 43	43	44	45	S 40	B	B	A	A
3	A	A	A	F	A	F	A	F 31	B	B	U S 44	F 43	45	S 50	S 48	45	48	50	F 38	F 35	F 28	F 16	F 14	A
4	A	A	A	A	A	A	A	B	A	B	B	B	B	35	B	B	B	A	F	A	A	A	A	A
5	A	A	U F 35	A	A	A	A	A	B	B	F 27	B	B	B	B	B	B	F 34	A	A	A	A	A	B
6	A	A	A	A	A	B	A	A	B	B	B	B	B	B	B	41	39	B	B	F 24	F 17	A	A	A
7	A	A	A	A	A	A	A	A	A	36	42	48	S 50	J R 54	50	R 51	R 54	R 55	F 44	F 25	F 23	A	A	A
8	A	A	A	A	A	A	F 33	R	F 38	F 42	B	B	R 50	R 50	S	50	R 50	50	53	45	F 28	R 15	A	A
9	A	A	A	B	A	A	F 20	F 24	33	40	40	B	B	B	44	45	B	B	B	28	F 27	F 18	F 18	A
10	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	F 43	B	B	B	A	A	A	B
11	A	B	A	B	B	A	A	B	B	B	B	B	F 33	35	33	R 34	36	36	B	F 26	B	A	A	A
12	A	A	A	A	B	B	B	28	B	F 34	B	B	B	35	B	B	B	V 48	B	20	A	A	A	A
13	A	A	B	B	B	B	B	B	B	35	S 31	B	B	B	B	B	B	B	37	30	F 18	F 16	A	A
14	A	A	A	A	A	A	A	A	29	B	B	B	B	B	B	B	B	B	S 37	F 33	A	A	A	A
15	A	B	B	B	B	A	A	B	F 30	31	33	33	B	35	B	S 43	B	B	40	40	F 27	B	A	A
16	A	A	A	B	A	A	A	F 30	A	B	B	43	R 39	S 40	D S 44	S 45	45	R 47	44	V 38	Z 28	B	A	A
17	A	A	A	A	A	A	A	F 32	F 29	B	B	B	37	S 43	S 43	54	44	R 48	44	F 40	F 40	F 36	F 23	F 19
18	F 16	A	F 24	A	A	F 20	F 27	F 34	35	F 35	B	50	54	R 52	V 56	59	46	45	44	F 34	F 30	F 24	F 15	F 13
19	A	A	F	A	27	A	F	F 35	F 40	F 44	F 54	62	Z 75	H 63	S 79	S 80	46	A	A	A	A	A	A	A
20	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	44	41	A	A	A	A	A
21	A	A	A	A	A	A	A	35	A	F 39	44	R 44	56	S 53	B	B	B	42	F 39	B	A	A	A	A
22	A	F 27	A	A	A	B	A	F 38	40	37	B	B	B	B	B	S 48	B	B	B	F 35	F 32	A	A	A
23	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	A	F 30	A	A	A	A	A
24	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F 36	F 30	A	A	A	A	Y
25	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	F 33	A	A	A	A	A
26	A	B	A	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
27	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	F 35	B	B	B	F 23	F 22	A	A	A
28	B	B	A	B	A	A	B	B	B	F 35	D S 34	S 35	R	B	S 37	F 41	B	B	44	F 26	A	A	A	A
29	A	A	A	A	B	B	A	B	B	B	B	B	F 35	F 40	D S 35	H 40	44	42	42	37	F 27	A	A	A
30	A	B	A	A	A	B	B	B	B	A	B	B	B	B	B	42	R 44	F 44	F 45	40	34	F 25	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	1	2		1	1	3	9	8	11	9	9	12	13	11	18	14	16	19	20	15	7	4	2
MED	F 16	F 27	F 30		27	F 20	F 27	F 32	34	F 36	41	44	48	43	U S 47	45	44	44	41	F 34	F 27	F 18	F 16	F 16
UQ							F 30	F 35	39	40	44	48	53	52	51	50	48	48	44	39	F 29	F 24	F 20	
LQ							F 24	F 30	30	35	33	43	38	35	S 42	41	43	42	37	F 26	F 22	F 16	F 14	

SEP. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 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	80	54	53	42	35	43	45	50	45	B	B	E B 33	E G 18	B	E B 31	E B 30	E B 24	E B 24	E B 21	23	13	29	F 27	45
2	45	45	23	45	40	60	35	33	B	43	B	B	E B 35	B	B	E B 34	E B 21	E B 16	E B 18	E B 22	B	B	29	40
3	42	40	32	50	90	40	32	42	B	B	32	30	E B 30	E S 39	E B 25	E B 24	E B 21	E B 17	E B 10	E B 14	E B 13	29	E B 10	34
4	55	45	44	39	37	43	43	70	53	B	B	B	B	E B 24	B	B	B	35	16	35	33	29	34	44
5	45	37	74	37	45	44	40	43	B	B	28	B	B	B	B	B	B	26	37	100	45	43	35	B
6	38	37	60	65	50	B	35	36	34	B	B	B	B	B	B	E B 25	25	B	B	E B 18	17	37	38	40
7	33	75	42	45	45	44	45	37	42	33	E G 26	26	27	25	E B 29	25	23	E B 24	E B 22	E B 14	E B 8	18	35	42
8	41	38	43	40	37	32	30	E B 23	E B 23	E B 25	B	B	30	E B 25	E B 30	26	27	18	E B 16	E B 25	E B 15	20	F 30	26
9	42	80	46	34	42	35	21	20	18	22	22	B	B	B	E B 35	E B 28	B	B	B	E B 24	E B 18	18	20	44
10	47	64	B	53	37	38	35	43	B	B	B	B	B	B	B	B	E B 28	B	B	B	36	43	35	B
11	37	B	40	B	B	34	30	B	B	B	B	B	E B 28	27	E B 25	E B 22	E B 30	E B 25	B	E B 21	B	40	59	43
12	37	43	60	42	B	B	B	18	B	29	B	B	B	E B 28	B	B	B	E B 19	B	E B 14	35	38	43	36
13	30	28	B	B	B	B	B	B	B	E B 27	E B 28	B	B	B	B	B	B	B	E B 25	E B 14	E B 14	11	30	24
14	40	45	43	36	41	40	40	35	26	B	B	B	B	B	B	B	B	B	E B 25	20	20	38	45	45
15	37	B	B	B	B	37	37	B	20	21	23	22	B	E B 28	B	E B 30	B	B	14	E B 20	E B 17	B	24	33
16	F 55	70	64	B	42	43	45	35	36	B	B	E B 38	28	E B 26	E B 29	E B 27	E B 25	17	15	E B 14	E B 14	B	21	F 19
17	22	32	27	48	47	50	40	30	E B 22	B	B	B	26	25	27	24	24	21	E B 19	E B 14	E B 14	E B 10	17	17
18	F 16	37	31	33	33	16	F 27	17	E B 23	25	B	28	28	26	26	28	22	18	17	E B 14	E B 11	E B 10	12	12
19	36	40	35	36	42	43	40	35	E B 22	F 30	30	30	F 30	23	E B 31	34	43	43	35	44	35	45	65	71
20	37	75	B	32	41	B	B	B	B	B	B	B	B	B	B	B	B	29	E B 28	34	34	37	70	70
21	60	45	42	36	35	37	42	29	36	45	27	26	26	27	B	B	B	E B 21	33	B	33	38	32	33
22	40	75	60	37	44	B	38	32	27	35	B	B	B	B	B	E B 30	B	B	B	53	35	37	35	60
23	70	40	40	F 32	34	B	B	B	B	B	B	B	B	B	B	B	B	31	17	27	45	43	45	60
24	B	35	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	27	18	35	27	43	40	18
25	51	B	B	B	40	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 23	39	43	45	42	65
26	42	B	48	B	B	43	B	34	B	B	B	B	B	B	B	B	B	B	35	26	28	38	40	40
27	45	36	35	B	37	35	B	B	B	B	B	B	B	B	B	E B 28	B	B	B	22	23	29	45	60
28	B	B	45	B	34	38	B	B	B	E B 30	E B 30	E B 30	E B 30	B	E B 30	32	B	B	E B 23	20	33	43	58	43
29	44	42	70	40	B	B	41	B	B	B	B	B	E B 28	E B 28	E B 23	E B 25	E B 28	E B 30	E B 22	E B 19	12	27	31	40
30	70	B	40	35	60	B	B	B	B	44	B	B	B	B	B	E B 30	E B 27	E B 28	E B 22	E B 18	E B 14	E B 11	32	35
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	24	21	23	20	20	19	14	13	9	9	13	13	12	18	14	19	23	28	28	27	30	28
MED	42	42	43	39	41	40	39	35	26	30	26	28	27	E E 26	E B 29	E B 28	E B 25	20	E B 22	E B 22	22	37	35	40
UQ	49	59	56	45	44	43	42	40	36	35	30	E B 30	29	E E 28	E B 30	E B 30	E B 28	27	E B 25	30	34	42	43	45
LQ	37	37	38	36	37	36	34	30	E B 22	23	24	26	26	24	E B 26	E B 25	E B 23	E B 18	16	E B 16	E B 14	24	29	33

The Radio Research Laboratory, Japan

SEP. 1984 | FES (0.1 MHZ)

IONOSPHERIC DATA

SEP. 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	8	10	14	34	11	23	15	15	20	B	B	33	15	B	31	30	24	24	21	12	8	8	8	8
2	9	18	18	24	30	17	16	22	B	22	B	B	35	B	B	34	21	16	18	22	B	B	17	8
3	8	19	14	11	16	9	22	18	B	B	25	22	30	E S 39	25	24	21	17	10	14	13	8	10	11
4	8	18	14	15	21	21	18	35	25	B	B	B	B	24	B	B	B	19	8	10	9	11	8	10
5	10	8	8	8	23	21	20	13	B	B	18	B	B	B	B	B	B	20	10	14	14	14	8	B
6	11	14	16	14	9	B	18	14	29	B	B	B	B	B	B	25	20	B	B	18	13	7	11	8
7	13	8	24	21	24	18	14	18	18	14	18	15	20	18	29	20	16	24	22	14	8	9	8	8
8	8	8	8	8	8	8	9	23	23	25	B	B	17	25	30	17	14	15	16	25	15	9	8	8
9	11	19	15	28	15	11	10	10	14	15	17	B	B	B	35	28	B	B	B	24	18	11	8	8
10	24	15	B	21	10	13	18	15	B	B	B	B	B	B	B	B	28	B	B	B	9	8	23	B
11	14	B	22	B	B	23	13	B	B	B	B	B	28	24	25	22	30	25	B	21	B	9	20	15
12	10	23	21	30	B	B	B	15	B	23	B	B	B	28	B	B	B	19	B	14	8	8	8	8
13	13	20	B	B	B	B	B	B	B	27	28	B	B	B	B	B	B	B	25	14	14	9	8	8
14	8	14	11	18	14	24	16	8	14	B	B	B	B	B	B	B	B	B	25	10	15	8	8	15
15	20	B	B	B	B	23	13	B	16	17	18	19	B	28	B	30	B	B	11	20	17	B	13	8
16	24	23	11	B	18	18	24	16	15	B	B	38	19	26	29	27	25	14	10	14	14	B	14	15
17	9	9	24	18	15	14	13	13	22	B	B	B	19	17	15	17	19	18	19	14	14	10	8	14
18	10	10	8	17	13	10	14	11	23	15	B	25	18	14	16	17	16	15	14	14	11	10	8	7
19	7	8	22	13	9	11	11	14	22	16	14	23	14	14	31	20	23	14	13	7	13	11	9	8
20	8	18	B	28	23	B	B	B	B	B	B	B	B	B	B	B	B	14	28	9	11	16	8	8
21	8	24	18	20	20	18	14	13	24	14	15	14	15	20	B	B	B	21	14	B	7	7	8	8
22	10	10	14	14	16	B	20	14	13	8	B	B	B	B	B	30	B	B	B	23	10	8	14	9
23	14	15	9	13	8	B	B	B	B	B	B	B	B	B	B	B	B	21	11	18	15	9	13	9
24	B	20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	14	13	11	8	23	16
25	9	B	B	B	16	B	B	B	B	B	B	B	B	B	B	B	B	B	23	14	10	14	18	10
26	29	B	14	B	B	11	B	24	B	B	B	B	B	B	B	B	B	B	27	9	8	8	15	15
27	10	8	27	B	18	18	B	B	B	B	B	B	B	B	B	28	B	B	B	13	10	8	7	10
28	B	B	8	B	18	30	B	B	B	30	30	30	30	B	30	23	B	B	23	11	24	8	10	23
29	22	9	14	20	B	B	21	B	B	B	B	B	23	28	28	25	28	30	22	19	10	15	8	8
30	8	B	21	18	15	B	B	B	B	22	B	B	B	B	B	30	27	28	22	18	14	11	8	7
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	10	18	17	21	18	22	19	20	B	B	B	B	B	B	B	30	B	24	22	14	13	9	8	8
UQ	14	23	24	B	30	B	B	B	B	B	B	B	B	B	B	B	B	B	28	20	15	11	14	15
LQ	8	10	14	15	14	14	14	14	22	22	28	33	20	24	30	24	23	18	14	13	10	8	8	8

SEP. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 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	B	A	A	A	A	A	B	B	E B 300	250	B	E B 245	E B 230	230	240	245	260	280	A	A	A
2	A	A	A	A	Y	A	A	Y	B	A	B	B	300	B	B	250	240	245	260	E B 275	B	B	A	A
3	A	A	A	E A 370	A	E A 355	A	360	B	B	300	280	270	260	240	220	220	220	230	210	230	E A 250	310	A
4	A	A	A	A	A	A	A	B	A	B	B	B	B	245	B	B	B	A	300		A	A	A	A
5	A	A	A 280	A	A	A	A	A	B	B	290	B	B	B	B	B	B	330	A	A	A	A	A	B
6	A	A	A	A	A	B	A	A	B	B	B	B	B	B	B	220	260	B	B	280	E A 350	A	A	A
7	A	A	A	A	A	A	A	A	A	280	H 220	240	230	220	230	240	230	240	230	230	210	A	A	A
8	A	A	A	A	A	A	350	E B 300	310	240	B	B	225	200	A	230	200	230	230	230	245	350	A	A
9	A	A	A	B	A	A	400	370	295	240	220	B	B	B	300	245	B	B	B	E B 270	250	250	E A 400	A
10	A	A	B	A	A	A	A	A	B	B	B	B	B	B	B	B	270	B	B	B	A	A	A	B
11	A	B	A	B	B	A	A	B	B	B	B	B	E B 250	230	230	210	E B 300	250	B	300	B	A	A	A
12	A	A	A	A	B	B	B	270	B	A	B	B	B	245	B	B	B	240	B	E B 270	A	A	A	A
13	A	A	B	B	B	B	B	B	B	260	245	B	B	B	B	B	B	B	250	220	280	270	A	A
14	A	A	A	A	A	A	A	A	E A 300	B	B	B	B	B	B	B	B	B	240	230	A	A	A	A
15	A	B	B	B	B	A	A	B	260	250	250	245	B	240	B	250	B	B	240	245	270	B	A	A
16	A	A	A	B	A	A	A	E A 250	A	B	B	E B 270	220	240	230	225	240	230	240	240	255	B	A	A
17	A	A	A	A	A	A	A	365	240	B	B	B	200	200	200	230	200	220	220	220	240	230	250	260
18	280	A	270	A	A	350	345	210	250	200	B	230	210	200	220	210	200	210	210	220	230	235	250	300
19	A	A	A	A	E A 350	A	A	E A 360	260	200	200	230	230	200	E B 250	A	A	A	A	A	A	A	A	A
20	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	275	E B 260	A	A	A	A	A
21	A	A	A	A	A	A	A	A	A	265	220	200	220	240	B	B	B	240	270	B	A	A	A	A
22	A	E A 200	A	A	A	B	A	260	230	240	B	B	B	B	B	250	B	B	B	245	250	A	A	A
23	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	A	200	A	A	A	A	A
24	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	280	280	A	A	A	A	Y
25	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	280	A	A	A	A	A
26	A	B	A	B	B	A	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
27	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	280	B	B	B	280	300	A	A	A
28	B	B	A	B	A	A	B	B	B	B	E B 250	245	250	B	E B 250	230	B	B	270	340	A	A	A	A
29	A	A	A	A	B	B	A	B	B	B	B	B	230	250	280	240	250	250	250	250	E A 350	A	A	A
30	A	B	A	A	A	B	B	B	B	A	B	B	B	B	B	250	250	250	240	240	240	230	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	1	2	1	1	2	3	9	8	9	9	9	13	13	11	17	13	16	20	20	15	7	4	2
MED	280	E A 200	275	E A 370	E A 350	351	350	U 280	258	240	U 232	238	230	240	235	240	235	240	241	240	248	250	U 265	280
UQ							375	360	288	260	250	258	250	245	250	250	250	250	265	264	271	260	U 332	
LQ							348	U 235	245	240	220	230	220	200	230	222	220	230	230	230	240	231	250	

SEP. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 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	A	A	A	B	B	A	A	B	B	B	O X 44	O X 51	O X 51	55	O X 51	O X 50	49	X 45	A	O B 24	A	A
2	A	A	A	A	A	B	A	A	48	O X 48	O X 50	O X 50	O S 50	O R 48	O X 52	O X 51	X 50	X 53	X 55	B	A	A	A	A
3	A	A	A	A	B	A	B	B	O X 42	B	B	B	B	B	O X 41	B	O X 49	O X 44	O R 50	X 40	X 37	33	A	A
4	A	A	A	A	A	A	O X 52	X 43	43	O X 46	O X 49	O X 50	O X 50	U X 48	X 50	X 53	X 55	X 54	X 54	X 45	A	A	A	A
5	A	A	A	A	A	B	A	A	O X 45	O X 46	49	O X 51	B	O S 49	58	X 51	X 62	X 61	X 57	58	51	40	33	A
6	50	A	A	A	40	40	A	51	55	B	50	O R 51	53	52	X 52	O X 51	X 50	X 50	X 50	X 48	A	A	A	A
7	A	A	A	A	B	B	A	A	A	A	B	O X 41	O X 41	O X 41	O X 51	O X 51	X 46	B	O X 39	A	A	A	A	A
8	A	A	B	B	B	B	Y	B	B	B	B	B	B	O X 46	B	B	O X 42	B	42	X 42	34	A	A	A
9	A	A	A	B	A	B	B	B	O X 43	O X 40	O X 46	O X 49	B	B	B	B	O S 46	O X 46	46	O X 40	O R 32	A	A	A
10	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 36	A	A	A	A
11	A	A	A	B	B	A	B	Y	A	A	B	B	B	B	B	B	B	O X 44	B	A	B	A	A	A
12	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 43	O X 40	A	29	A	A	A
13	A	A	A	B	B	A	B	B	A	B	O S 46	B	B	B	B	B	B	U X 43	O X 43	O X 43	O R 36	30	A	A
14	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	O S 51	O X 50	X 49	46	X 43	A	A	B
15	A	B	A	A	B	B	B	B	A	B	B	B	O X 49	U X 49	O X 51	O X 51	O X 50	53	O X 50	X 48	X 44	X 42	A	A
16	A	A	A	A	A	37	A	A	B	B	B	O X 47	B	B	B	B	B	B	O X 51	45	A	A	A	24
17	A	A	B	B	A	A	O X 42	O X 44	O X 44	O X 46	O X 49	U X 49	O S 51	X 59	O X 50	O S 49	O X 50	X 50	X 53	X 53	X 50	X 46	X 43	35
18	A	O R 27	O R 26	35	X 37	46	X 43	O X 50	B	B	O X 41	A	X 60	O X 51	O X 43	B	B	O R 41	A	A	A	A	A	A
19	B	A	A	A	O X 38	A	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A	35	B	A
20	A	A	B	B	A	A	A	B	B	B	B	B	B	B	B	B	B	O X 39	O X 38	B	A	A	B	B
21	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O R 41	A	A	A	A	A
22	B	B	B	B	B	O X 39	B	B	B	B	B	B	B	B	B	B	B	O X 40	B	B	A	A	A	A
23	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	B
24	A	B	A	A	B	O R 41	B	B	B	B	B	B	B	B	B	B	B	B	A	B	O R 40	A	A	A
25	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 46	O X 43	A	O X 34	A	A	A
26	A	A	B	A	A	A	A	A	A	O X 50	O X 49	O X 49	O X 50	O X 47	O X 50	O X 48	O X 46	X 46	X 45	X 43	X 43	O X 43	A	A
27	A	A	A	A	A	A	A	A	A	O X 43	O X 43	O X 43	O X 43	O X 43	O X 46	43	O X 47	O X 45	43	X 44	A	28	A	A
28	A	A	A	A	O R 42	X 45	X 51	O X 49	O X 50	O X 50	B	O X 51	B	O X 51	O X 53	O X 51	O X 51	O X 51	50	50	X 46	X 43	A	A
29	A	A	A	A	A	40	O R 45	A	O X 43	O X 43	O X 46	O X 47	O X 59	O X 44	O X 50	O X 49	O X 49	O X 50	B	O X 46	X 47	X 49	X 47	O X 37
30	A	A	A	A	35	O R 41	A	A	A	B	B	O X 43	O X 43	O X 51	O X 51	O X 53	O X 50	O X 52	O X 51	X 50	X 48	X 45	X 41	X 40
31	36	A	A	A	A	O X 43	X 51	55	54	O X 52	O X 52	O X 55	O X 55	O X 50	O X 51	O X 55	X 55	53	X 53	51	X 47	X 44	43	X 43
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	1	1	1	5	9	6	6	10	10	12	14	13	16	16	14	18	23	23	19	16	13	5	5
MED	43	O R 27	O R 26	35	38	41	X 48	X 50	O X 44	O X 46	O X 49	O X 49	O X 50	O X 49	O X 51	O X 51	O X 50	O X 50	X 49	X 45	X 43	X 42	X 43	X 37
UQ					O 40	O 43	X 51	51	50	O X 50	O X 50	O X 51	O X 53	O X 51	O X 52	O X 53	X 51	X 52	X 51	X 49	X 47	X 44	X 43	X 40
LQ					X 37	40	O X 43	O X 44	O X 43	O X 43	O X 46	O X 47	O X 44	O X 46	O X 50	O X 49	O X 47	O X 44	X 43	X 43	35	33	41	35

OCT. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 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	A	A	A	B	B	A	A	B	B	B	38	45	45	48	45	44	40	37		F 16	A	A
2	A	A	A	A	A	B	A	A	42	42	44	44	S 44	42	46	45	44	45	49	B	A	A	A	A
3	A	A	A	A	B	A	B	B	S 36	B	B	B	B	B	35	B	43	38	F 41	33	30	F 23	A	A
4	A	A	A	A	A	A	F 42	37	38	40	43	S 44	44	U S 42	J R 44	S 46	47	47	47	F 38	A	A	A	A
5	A	A	A	A	A	B	A	A	39	40	43	S 45	B	S 43	R 52	J R 45	56	55	50	R 51	F 45	32	F 24	A
6	F 25	A	A	A	F 30	F	A	F 35	F 47	B	F 44	F 43	47	44	R 46	45	44	45	45	40	A	A	A	A
7	A	A	A	A	B	B	A	A	A	A	B	35	S 35	35	45	45	40	B	S 33	A	A	A	A	A
8	A	A	B	B	B	B	Y	B	B	B	B	B	B	40	B	B	S 36	B	35	35	F 26	A	A	A
9	A	A	A	B	A	B	B	B	37	F 34	40	43	B	B	B	B	S 40	40	40	S 34	F 24	A	A	A
10	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	30	A	A	A	A
11	A	A	A	B	B	A	B	Y	A	A	B	B	B	B	B	B	B	F 33	B	A	B	A	A	A
12	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	37	34	A	F 22	A	A	A
13	A	A	A	B	B	A	B	B	A	B	S 40	B	B	B	B	B	B	U S 37	F 36	F 37	F 30	F 24	A	A
14	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	S 45	F 43	43	40	36	A	A	B
15	A	B	A	A	B	B	B	B	A	B	B	B	S 43	U S 43	S 45	S 45	S 44	46	S 44	42	37	36	A	A
16	A	A	A	A	A	F	A	A	B	B	B	41	B	B	B	B	B	B	45	F 38	A	A	A	F 16
17	A	A	B	B	A	A	F 36	38	38	40	S 43	U S 43	S 45	R 53	S 44	S 43	S 44	J R 44	45	46	43	40	37	F 28
18	A	F 19	F 18	F 23	31	F 40	J R 37	42	B	B	S 35	A	48	45	S 37	B	B	F 33	A	A	A	A	A	A
19	B	A	A	A	F 32	A	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A	F	B	A
20	A	A	B	B	A	A	A	B	B	B	B	B	B	B	B	B	B	F 33	F 32	B	A	A	B	B
21	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F 33	A	A	A	A	A
22	B	B	B	B	B	S 33	B	B	B	B	B	B	B	B	B	B	B	34	B	B	A	A	A	A
23	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	B
24	A	B	A	A	B	F 33	B	B	B	B	B	B	B	B	B	B	B	B	A	B	F 32	A	A	A
25	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	S 40	37	A	28	A	A	A
26	A	A	B	A	A	A	A	A	A	44	43	43	44	41	44	42	40	40	39	36	V 36	F 37	A	A
27	A	A	A	A	A	A	A	A	A	35	37	S 37	37	37	40	37	41	39	36	37	A	F 22	A	A
28	A	A	A	A	F 36	40	43	43	44	44	B	45	B	45	47	45	45	45	44	43	40	R 35	A	A
29	A	A	A	A	A	F	F 33	A	37	36	40	41	43	38	44	43	43	44	B	40	40	43	39	31
30	A	A	A	A	F 27	F 30	A	A	A	B	B	37	37	45	45	47	44	46	45	44	41	39	35	33
31	F 30	A	A	A	A	37	45	48	46	46	46	49	49	44	45	49	J R 49	46	R 46	45	40	38	R 36	R 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	2	1	1	1	5	6	6	6	10	10	12	14	13	16	16	14	18	23	23	19	16	12	5	5
MED	F 28	F 19	F 18	F 23	F 31	35	40	40	38	40	43	43	44	43	45	45	44	43	41	38	36	36	36	31
UQ					F 32	40	43	43	44	44	44	44	45	45	46	46	45	45	45	42	40	38	37	33
LQ					F 30	F 33	F 36	37	37	36	40	41	38	40	44	43	41	38	36	36	F 29	F 24	35	F 28

OCT. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 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	70	50	60	43	B	B	55	60	34	B	B	E B 28	E B 30	24	23	E B 24	E B 22	E B 18	F 24	20	E B 11	20	30
2	45	54	45	70	73	B	59	45	E G 33	E G 26	E G 24	E G 25	E G 28	E B 29	E G 26	25	22	20	27	B	37	45	50	45
3	44	37	45	37	B	44	B	B	30	B	B	B	B	B	E B 27	B	E B 29	E B 25	27	F 20	35	39	32	60
4	45	45	35	42	44	37	F 26	29	E G 24	E G 25	28	32	33	34	33	33	25	31	28	33	37	32	37	44
5	45	45	75	44	43	B	43	40	43	35	30	E B 28	B	E B 30	28	25	E G 24	33	19	18	12	12	E G 14	42
6	60	44	35	33	35	33	42	42	32	B	42	32	28	34	33	E G 26	24	E G 30	19	E G 17	44	30	48	47
7	64	82	43	30	B	34	30	43	43	42	43	31	32	28	28	E B 25	26	B	E G 26	25	40	41	40	70
8	70	43	B	B	B	B	37	B	B	B	B	B	B	26	B	B	E B 26	B	22	22	30	29	45	45
9	75	90	37	B	60	B	B	B	27	27	26	27	B	B	B	B	E B 29	E B 25	20	E B 21	16	43	35	70
10	B	B	B	29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	20	28	45	47	44
11	44	42	43	B	B	43	B	37	44	43	B	B	B	B	B	B	B	18	B	40	B	44	45	55
12	60	B	42	30	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 21	E B 23	29	22	35	35	34
13	35	43	33	B	B	33	B	B	35	B	E B 27	B	B	B	B	B	B	E B 28	E B 25	E B 24	27	18	32	30
14	37	40	45	60	B	B	B	B	B	B	B	B	B	B	B	B	E B 25	E B 23	E B 18	E B 18	15	27	43	B
15	67	B	43	37	B	B	B	B	38	B	B	B	28	E B 29	26	24	27	21	18	18	18	37	46	70
16	44	40	37	40	37	29	35	35	B	B	B	E G 28	B	B	B	B	B	B	E B 24	24	40	27	35	28
17	36	70	B	B	37	40	30	23	24	E G 27	26	26	27	27	27	26	24	21	19	20	E B 15	E B 16	13	11
18	35	33	29	30	20	19	22	25	B	B	E B 28	29	28	28	E B 30	B	B	E B 26	33	37	F 30	45	70	70
19	B	45	60	45	55	44	B	B	B	B	B	B	B	B	B	B	B	27	B	37	60	90	B	90
20	47	43	B	B	43	90	43	B	B	B	B	B	B	B	B	B	B	E B 27	E B 24	B	105	130	B	B
21	B	B	73	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	35	39	38	38	41	90
22	B	B	B	B	B	27	B	B	B	B	B	B	B	B	B	B	B	E B 25	B	B	17	41	37	43
23	B	B	B	43	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	42	37	43	70	B
24	80	B	32	35	B	34	B	B	B	B	B	B	B	B	B	B	B	B	30	B	33	42	43	60
25	70	B	45	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 27	E B 26	34	18	E G 29	40	43
26	55	45	B	43	95	43	35	45	35	30	28	33	E G 29	27	23	34	E G 32	26	22	E G 18	20	25	36	34
27	E G 60	90	40	45	35	E G 35	45	38	40	E G 27	34	27	28	27	27	33	E G 24	20	23	E G 21	35	25	40	35
28	37	45	36	36	35	E G 28	30	E G 36	31	30	B	31	B	33	29	29	30	E B 25	E G 22	E G 20	17	27	42	80
29	45	90	40	37	35	36	33	45	40	29	S 28	E G 30	30	28	29	34	25	24	B	E B 23	20	30	37	35
30	95	70	60	37	52	43	40	43	41	B	B	29	33	E G 30	S 28	27	26	26	21	19	19	14	13	12
31	33	33	32	37	43	35	29	30	33	33	35	35	34	33	35	52	33	33	28	21	18	17	15	32
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	23	24	22	17	19	16	16	18	13	13	15	13	16	16	14	18	24	25	27	30	31	29	23
MED	45	45	42	37	43	35	35	39	35	30	28	29	28	28	28	26	24	22	21	21	28	32	40	44
UQ	64	70	45	44	52	43	42	44	41	34	34	32	32	32	30	33	28	26	27	31	37	42	45	65
LQ	37	42	36	35	35	32	30	31	30	E G 27	26	28	23	28	27	24	23	20	20	19	18	26	35	34

OCT. 1984 | FES (0.1 MHZ)

IONOSPHERIC DATA

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

OCT. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 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	B	B	A	A	B	B	B	220	250	230	235	225	235	240	255	A	E B 290	A	A
2	A	A	A	A	A	B	A	A	H 200	220	200	H 190	H 190	210	200	H 200	H 200	H 170	230	B	A	A	A	A
3	A	A	A	A	B	A	B	B	E A 240	B	B	B	B	B	E B 240	B	250	245	260	250	260	290	A	A
4	A	A	A	A	A	A	280	225	220	230	230	205	210	200	E A 210	210	200	220	230	240	A	A	A	A
5	A	A	A	A	A	B	A	A	260	220	205	E B 210	B	235	220	230	H 220	245	210	230	230	215	250	A
6	A 260	A	A	A	A	A	A	A 250	220	B	E A 200	205	220	E A 200	H 180	210	220	220	240	240	A	A	A	A
7	A	A	A	A	B	B	A	A	A	A	B	H 180	255	240	250	250	H 175	B	300	A	A	A	A	A
8	A	A	B	B	B	B	Y	B	B	B	B	B	B	230	B	B	250	B	250	235	320	A	A	A
9	A	A	A	B	A	B	B	B	250	E A 220	215	A 210	B	B	B	B	E B 250	E B 250	250	255	300	A	A	A
10	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	255	A	A	A	A
11	A	A	A	B	B	A	B	Y	A	A	B	B	B	B	B	B	B	245	B	A	B	A	A	A
12	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	200	260	A	A 400	A	A	A
13	A	A	A	B	B	A	B	B	A	B	E B 200	B	B	B	B	B	B	E B 250	245	260	245	295	A	A
14	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	E B 230	230	H 180	230	245	A	A	B
15	A	B	A	A	B	B	B	B	A	B	B	B	230	230	230	240	250	235	240	235	240	290	A	A
16	A	A	A	A	A	A	A	A	B	B	B	240	B	B	B	B	B	B	270	290	A	A	A	A
17	A	A	B	B	A	A	A	230	200	220	H 200	220	200	220	220	210	220	230	230	230	230	240	230	250
18	A	E A 300	A	350	290	245	240	240	B	B	E B 200	A	E A 200	210	230	B	B	260	A	A	A	A	A	A
19	B	A	A	A	370	A	B	B	B	B	B	B	B	B	B	B	B	A	B	A	A	A	B	A
20	A	A	B	B	A	A	A	B	B	B	B	B	B	B	B	B	B	E B 250	240	B	A	A	B	B
21	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	280	A	A	A	A	A
22	B	B	B	B	B	E A 375	B	B	B	B	B	B	B	B	B	B	B	250	B	B	A	A	A	A
23	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	B
24	A	B	A	A	B	E A 350	B	B	B	B	B	B	B	B	B	B	B	B	A	B	300	A	A	A
25	A	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	250	250	A	270	A	A	A
26	A	A	B	A	A	A	A	A	A	H 190	H 200	H 205	220	230	205	290	250	240	H 190	H 170	260	275	A	A
27	A	A	A	A	A	A	A	A	A	H 200	H 190	H 190	205	200	230	205	230	250	240	245	A	300	A	A
28	A	A	A	A	380	270	240	230	230	220	B	220	B	230	200	230	220	230	230	230	240	270	A	A
29	A	A	A	A	A	A	E A 220	A	A	220	E A 210	H 200	235	230	205	220	220	210	B	250	250	250	250	E A 370
30	A	A	A	A	200	270	A	A	A	B	B	220	A 200	220	210	230	215	220	210	240	240	240	240	240
31	300	A	A	A	A	220	230	H 200	H 200	200	H 195	H 190	H 200	205	200	215	200	H 200	H 210	200	220	H 200	250	290
	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		1	4	6	5	6	9	10	12	14	13	16	16	14	18	23	23	19	16	12	5	4
MED	280	E A 300		350	330	U 251	240	230	220	220	199	205	210	225	212	225	220	232	240	240	248	266	250	258
UQ					375	E A 350	240	240	240	220	205	220	220	230	230	235	250	250	250	252	285	290	250	U 310
LQ					245	245	230	225	200	200	200	H 190	200	208	201	210	215	220	230	230	240	240	240	245

OCT. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

NOV. 1984 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 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	A	A	A	F 36	F 34	A	F 36	A	F 37	37	B	B	F 36	37		44	F 43	F 37	F 35	F 37	34	F 32	F 32
2	R 33	A	A	A	A	A	A	F 40	40	40	A	A	38	36	35	36	35	34	34	32	A	A	A	A
3	A	F	A	A	A	A	A	35	37	42	40	42	37	44	37	39	36	A	F 34	A	30	A	F 23	A
4	A	A	F 29	B	B	A	F 33	A	A	40	U S 35	41	45	45	B	B	S 37	B	S 37	F 33	S 34	A	A	A
5	B	B	A	A	B	A	B	B	B	A	B	E G 37	S 40	B	B	44	B	B	F 40	S	35	B	A	A
6	A	A	A	A	B	B	A	A	42	45	B	B	B	E G 39	B	B	B	B	43	41	F 35	F 28	A	F 24
7	A	A	B	A	A	B	A	B	B	A	E G 38	E G 38	E G 37	46	46	S 46	44	U S 44	U S 40	32	A	A	A	A
8	A	B	B	B	B	A	F 32	B	B	S	E G 37	A	B	B	B	B	B	42	40	B	F 33	F 37	A	A
9	A	B	A	B	F 35	A	43	A	A	A	B	B	B	B	S 38	45	E G 38	43	41	36	F 30	33	F 28	A
10	U S 35	A	B	A	B	B	A	A	B	B	B	45	U S 45	S	E G 39	E G 40	43	B	B	E G 37	38	F 33	A	35
11	A	A	B	A	A	A	A	B	B	B	S 41	S 43	E G 39	S 44	B	B	B	44	S 40	A	37	33	32	F 35
12	B	B	A	A	F 42	B	A	B	B	B	B	S 37	S 38	B	S 39	B	U S 36	43	S 44	S 45	40	37	40	Z 44
13	44	43	42	45	43	44	F	B	S	F	E G 38	B	B	A	S 40	42	F 45	F 44	F 45	42	B	A	A	A
14	A	A	A	A	A	A	F 34	A	F 42	B	44	B	B	B	45	S 44	B	B	S	E G 43	B	A	A	A
15	A	A	A	A	A	A	A	A	40	44	S 43	B	B	S 37	B	A	B	F 37	F 37	F 36	A	F 38	A	A
16	A	A	A	A	A	A	B	B	B	A	A	A	B	B	B	A	B	F 33	F	A	F 33	B	A	A
17	B	B	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	36	E G 34	A	A	A	A	A
18	B	B	A	A	B	B	B	S	A	A	A	E G 38	B	B	B	B	B	F 37	S 37	S 43	43	44	A	A
19	B	F 30	A	B	B	B	B	B	B	B	B	B	B	B	E G 38	43	45	45	45	38	34	A	A	A
20	A	A	B	A	B	B	B	B	A	B	B	B	B	B	B	B	B	A	B	F 34	37	A	F 39	A
21	A	B	B	A	F	A	F 34	A	B	B	B	B	B	A	43	43	C	C	38	B	37	A	F 37	B
22	B	B	B	A	B	A	S	B	B	S	S	S 45	S 45	B	B	B	J R 53	E G 37	44	39	35	27	F	A
23	A	A	A	A	A	B	A	S 44	52	B	B	S 46	S 40	A	A	J R 53	J R 52	46	S 44	43	43	44	40	35
24	38	38	F 40	B	B	A	B	A	F 52	F 57	B	B	B	B	B	B	B	E G 44	S 45	45	F 35	F 34	A	A
25	B	A	A	F 33	B	A	A	43	45	E G 38	E G 38	E G 39	S 38	E G 46	40	46	S 45	S 45	43	42	43	40	33	A
26	A	A	F 40	A	A	A	A	A	A	B	B	S 39	E G 40	S 42	S 45	E G 40	55	R 53	45	46	46	35	33	37
27	F 33	37	F	A	F	F 55	62	63	58	B	B	62	56	60	A	A	64	65	56	44	40	A	A	A
28	A	A	A	A	A	A	A	A	44	48	49	49	54	E G 40	E G 40	56	R 54	S 45	50	S 45	43	45	44	43
29	41	F	F	F	60	65	68	70	69	69	69	B	B	F 44	44	42	42	43	43	45	43	F 43	F 45	A
30	A	A	A	A	A	A	A	A	A	A	A	B	A	B	45	40	43	45	44	F 45	49	43	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	6	4	4	2	5	4	7	7	11	10	12	14	14	13	16	16	18	22	26	23	24	17	12	8
MED	36	38	F 40	39	F 42	50	F 34	43	44	43	39	42	40	43	40	43	44	44	42	42	37	37	35	35
UQ	41	40	41		43	60	52	54	52	43	44	45	S 45	44	44	46	52	45	44	44	43	43	40	40
LQ	33	34	F 34		F 36	39	F 34	38	41	40	E G 38	E G 38	38	38	37	40	38	37	37	36	34	33	32	F 34

NOV. 1984 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

NOV. 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	42	40	47	45	37	35	22	37	42	38	28	B	B	27	28	40	45	43	45	50	60	45	36	35
2	34	37	40	E G 36	35	E G 29	37	33	36	34	37	43	33	35	35	38	31	37	23	E G 27	44	95	45	80
3	43	40	43	43	43	37	40	35	28	33	27	27	27	29	E G 30	35	26	36	20	37	27	46	F 32	60
4	59	44	33	B	B	44	33	43	36	33	30	28	28	28	B	B	E B 18	B	E B 25	30	37	43	40	43
5	B	B	42	43	B	42	B	B	B	35	B	28	E B 30	B	B	E B 29	B	B	29	42	25	B	35	36
6	36	30	43	43	B	B	43	45	36	27	B	B	B	E B 33	B	B	B	B	25	34	42	24	45	28
7	40	40	B	44	33	B	40	B	B	35	29	27	28	27	28	27	25	25	13	E G 24	70	47	45	45
8	75	B	B	B	B	43	33	B	B	35	28	30	B	B	B	B	B	28	28	B	24	33	44	43
9	45	B	35	B	34	38	E G 37	37	42	35	B	B	B	B	E B 31	26	E B 28	22	20	17	22	37	32	37
10	E B 28	21	B	38	B	B	35	36	B	B	B	30	30	28	28	28	27	B	B	E B 27	35	33	37	43
11	45	42	B	26	41	41	40	B	B	B	30	E G 31	32	28	B	B	B	E G 32	33	40	E G 22	20	31	28
12	B	B	42	38	35	B	38	B	B	B	B	30	28	B	E B 33	B	E B 30	S 25	E B 25	28	E B 21	20	E B 18	19
13	27	14	28	E G 24	35	25	32	45	35	45	28	B	B	37	35	32	30	25	28	E G 27	B	34	45	40
14	90	45	41	32	43	47	33	44	33	B	32	B	B	B	29	28	B	B	E B 28	E B 29	B	39	40	35
15	45	45	45	45	33	45	65	55	32	28	27	B	B	25	B	36	B	F 35	37	33	E G 40	34	60	43
16	40	44	45	33	30	32	B	B	B	45	27	28	B	B	B	31	B	E G 28	40	45	E G 60	B	45	45
17	B	B	65	35	B	B	36	36	B	B	B	B	B	B	B	B	B	24	19	37	30	42	36	70
18	B	B	E G 65	35	B	B	B	31	33	35	34	27	B	B	B	B	B	23	E B 30	E B 30	E B 21	35	32	43
19	B	33	35	B	B	B	B	B	B	B	B	B	B	B	29	E G 28	26	31	E G 27	E G 24	31	42	40	38
20	35	40	B	27	B	B	B	B	38	B	B	B	B	B	B	B	B	30	B	F 26	E G 23	39	29	40
21	47	B	B	45	38	40	35	43	B	B	B	B	B	36	28	32	C	C	E B 28	B	31	43	37	91
22	B	B	32	45	B	37	E B 32	B	B	E B 33	E B 32	30	E B 30	B	B	B	28	E B 30	30	26	F 33	E G 27	F 30	36
23	38	105	60	43	43	B	E G 43	38	35	B	B	32	27	43	29	28	27	24	E B 27	25	24	29	18	18
24	27	30	35	B	B	30	B	43	33	33	B	B	B	B	B	B	B	E B 30	24	F 26	E G 25	30	38	43
25	B	37	39	37	B	41	42	34	33	27	28	28	43	30	30	33	34	33	30	23	21	E G 20	26	37
26	37	38	44	44	65	40	45	50	43	B	B	33	32	31	29	34	32	26	E G 26	24	29	31	28	37
27	39	35	27	37	33	24	39	40	36	B	B	37	39	35	42	37	28	28	31	E G 31	38	45	44	41
28	35	45	40	45	37	45	43	36	36	E G 31	28	32	33	30	32	28	27	26	26	34	27	35	35	18
29	30	31	32	28	55	30	32	33	27	36	34	B	B	34	30	31	33	25	26	25	22	44	43	37
30	43	33	35	43	40	43	60	43	35	43	37	B	31	B	29	28	27	35	37	40	34	43	43	38
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	22	24	25	18	21	24	21	19	19	17	17	15	17	18	20	18	24	28	28	28	28	30	30
MED	40	39	40	38	37	40	37	38	35	35	28	30	30	30	30	31	28	27	26	27	28	36	37	39
UQ	45	44	44	44	43	43	42	43	36	36	32	32	32	35	31	34	31	32	30	36	36	43	44	43
LQ	35	33	35	34	34	32	33	36	33	33	28	28	28	28	29	28	26	25	22	25	23	30	32	36

NOV. 1984 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 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	14	8	9	14	8	8	18	15	24	14	18	9	B	23	15	29	13	10	8	11	8	8	7	7
2	8	7	9	8	8	14	9	8	8	8	15	14	11	15	9	10	8	8	8	8	8	8	10	16
3	22	8	18	16	18	23	20	13	11	7	11	11	14	20	18	15	10	15	14	15	13	8	8	18
4	14	14	9	B	B	11	10	23	19	10	25	25	16	13	B	B	18	B	25	18	13	8	13	15
5	B	B	30	20	B	16	B	B	B	23	B	23	30	B	B	29	B	B	23	24	14	B	9	8
6	14	20	19	25	B	B	15	13	14	14	B	B	B	33	B	B	B	B	10	13	14	12	9	9
7	15	26	B	15	22	B	13	B	B	22	17	13	21	15	14	15	13	15	11	11	30	14	19	25
8	9	B	B	B	B	24	14	B	B	17	13	20	B	B	B	B	B	24	23	B	15	14	13	10
9	11	B	9	B	15	24	16	24	13	18	B	B	B	B	31	19	28	13	14	14	13	11	8	16
10	28	14	B	14	B	B	21	23	B	B	B	18	18	17	18	16	10	B	B	27	14	13	14	10
11	11	24	B	22	29	21	21	B	B	B	18	17	16	17	B	B	B	14	16	14	8	10	8	7
12	B	B	20	24	28	B	23	B	B	B	B	16	17	B	33	B	30	23	25	20	21	13	18	13
13	21	8	10	8	7	13	18	29	22	20	22	B	B	20	16	16	14	14	10	9	B	15	10	23
14	13	21	22	17	15	16	16	20	24	B	18	B	B	B	12	11	B	B	28	29	B	9	18	16
15	18	17	14	13	8	13	24	15	13	10	15	B	B	21	B	14	B	14	14	14	9	8	22	8
16	8	8	9	10	14	9	B	B	B	14	15	22	B	B	B	19	B	8	8	8	13	B	15	8
17	B	B	16	18	B	B	24	25	B	B	B	B	B	B	B	B	B	16	15	13	14	10	16	10
18	B	B	14	26	B	B	B	22	22	24	22	16	B	B	B	B	B	18	30	30	21	15	17	16
19	B	8	21	B	B	B	B	B	B	B	B	B	B	B	21	14	18	17	11	18	15	11	14	18
20	19	23	B	10	B	B	B	B	24	B	B	B	B	B	B	B	B	19	B	19	14	9	7	15
21	22	B	B	19	13	13	8	19	B	B	B	B	B	17	23	15	C	C	28	B	8	15	7	25
22	B	B	26	24	B	19	32	B	B	33	32	24	30	B	B	B	17	30	24	22	11	13	8	7
23	22	15	16	20	18	B	14	15	14	B	B	10	15	14	24	13	14	13	27	22	13	12	8	14
24	9	11	10	B	B	16	B	14	9	15	B	B	B	B	B	B	B	30	16	7	14	15	7	13
25	B	15	22	8	B	20	14	13	12	10	12	11	13	13	11	11	10	9	8	8	8	9	15	17
26	19	21	7	13	22	22	18	11	19	B	B	14	15	13	14	8	13	11	7	8	8	8	7	8
27	8	9	20	17	10	8	8	8	8	B	B	14	13	10	18	14	16	14	8	8	8	10	7	16
28	25	8	14	14	24	25	16	14	9	13	12	12	13	15	14	13	14	15	14	14	15	10	11	11
29	8	9	8	7	7	7	8	14	14	10	19	B	B	10	13	14	11	15	10	13	11	7	8	9
30	8	7	7	8	7	13	8	13	15	24	16	B	18	B	14	8	10	14	11	8	10	7	7	23
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	29	29	30	30	30	30	30	30
MED	18	16	17	17	23	20	18	21	22	22	24	24	D B 30	22	24	16	18	15	14	14	13	10	10	14
UQ	28	B	26	24	B	B	24	B	B	B	B	B	B	B	B	B	B	24	25	22	15	14	15	16
LQ	11	8	9	13	13	13	14	14	13	14	16	14	16	15	14	14	13	14	10	9	9	8	8	9

NOV. 1984 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

NOV. 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	210	220	A	300	A	210	230	B	B	E A 250	E A 200	A	240	250	H 210	E A 285	280	280	300	330
2	350	A	A	A	A	A	A	E A 200	200	210	A	A	H 190	245	200	200	200	210	200	200	A	A	A	A
3	A	E A 230	A	A	A	A	A	260	220	200	230	230	E A 210	230	240	230	200	A	H 160	A	285	A	A	A
4	A	A	330	B	B	A	290	A	A	205	250	200	250	210	B	B	220	B	230	220	E A 250	A	A	A
5	B	B	A	A	B	A	B	B	B	A	B	220	H 210	B	B	220	B	B	260	S	250	B	A	A
6	A	A	A	A	B	B	A	A	240	H 195	B	B	B	250	B	B	B	B	235	E A 300	300	300	A	330
7	A	A	B	A	A	B	A	B	B	A	200	200	200	H 195	230	215	H 200	230	230	280	A	A	A	A
8	A	B	B	B	B	A	250	B	B	200	205	A	B	B	B	B	B	250	250	B	260	300	A	A
9	A	B	A	B	E A 300	A	H 200	A	A	A	B	B	B	B	230	220	210	H 180	H 170	H 160	260	A	E A 240	A
10	E B 340	A	B	A	B	B	A	A	B	B	B	205	205	220	205	210	H 180	B	B	E B 250	250	270	A	A
11	A	A	B	A	A	A	A	B	B	B	230	240	200	H 190	B	B	B	260	300	A	250	300	210	300
12	B	B	A	A	A	B	A	B	B	B	B	210	210	B	240	B	235	230	240	245	240	245	260	250
13	250	250	270	285	290	235	A	B	S	A	220	B	B	A	200	E A 200	200	H 200	205	H 200	B	A	A	A
14	A	A	A	A	A	A	A 290	A	A	B	230	B	B	B	200	200	B	B	S	250	B	A	A	A
15	A	A	A	A	A	A	A	A	H 190	H 195	200	B	B	A 210	B	A	B	A	A	E A 270	A	240	A	A
16	A	A	A	A	A	A	B	B	B	A	A	A	B	B	B	A	B	230	A	A	305	B	A	A
17	B	B	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	250	210	A	A	A	A	A
18	B	B	A	A	B	B	B	S	A	A	A	230	B	B	B	B	B	200	E A 250	250	230	260	A	A
19	B	A	A	B	B	B	B	B	B	B	B	B	B	B	220	H 190	220	250	230	H 200	285	A	A	A
20	A	A	B	A	B	B	B	B	A	B	B	B	B	B	B	B	B	A	B	240	280	A	250	A
21	A	B	B	A	A	A	240	A	B	B	B	B	B	A	235	260	C	C	230	B	260	A	370	B
22	B	B	B	A	B	A	260	B	B	280	220	210	H 200	B	B	B	220	230	225	230	280	250	A	A
23	A	A	A	A	A	B	A	A 220	200	B	B	205	200	A	A	200	210	200	E B 230	235	240	240	245	270
24	E A 300	310	A	B	B	A	B	A	H 195	H 200	B	B	B	B	B	B	B	220	210	245	275	300	A	A
25	B	A	A	E A 250	B	A	A	240	H 195	200	200	205	200	200	H 190	200	210	215	H 190	230	235	245	310	A
26	A	A	250	A	A	A	A	A	A	B	B	200	200	210	200	220	200	220	205	230	240	280	250	230
27	300	310	A	A	A	230	200	215	200	B	B	235	220	200	A	A	210	210	H 200	220	330	A	A	A
28	A	A	A	A	A	A	A	A	E A 210	215	210	200	200	H 210	H 190	200	220	200	235	240	230	240	245	240
29	280	A	A	A	240	H 195	200	220	200	E A 210	220	B	B	E A 240	200	200	200	210	210	230	220	220	A	A
30	A	A	A	A	A	A	A	A	A	A	A	B	A	B	220	H 190	220	230	250	250	260	210	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	6	4	3	2	4	4	8	7	10	12	13	14	14	14	16	16	18	21	25	23	24	16	10	7
MED	U 282	280	270	268	U 245	225	245	220	200	201	220	208	200	210	202	200	210	220	220	235	260	255	250	270
UQ	340	310	300		292	232	275	250	210	210	230	230	210	230	230	220	220	230	235	246	280	290	300	315
LQ	U 265	240	260		225	208	200	218	H 195	200	205	200	200	200	200	200	200	210	205	225	240	240	245	245

NOV. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 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	A	A	A	A	A	A	A	B	B	B	B	B	O X 45	B	B	B	B	O X 49	B	O X 50	O X 49	X 50
2	45	A	A	B	B	B	A	B	A	A	B	B	B	B	B	O X 51	O X 60	X 60	55	O R 48	U X 38	A	A	B
3	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	O X 51	B	O X 40	A	A	A	B
4	A	B	B	B	A	B	A	A	A	A	B	B	B	B	B	D	B	B	A	A	O X 39	A	A	A
5	B	B	A	B	A	B	A	A	A	E G 45	E G 44	E G 44	E G 45	B	B	B	O X 53	O X 51	O X 44	B	45	O R 39	A	A
6	O X 50	B	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	O X 50	B	O X 41	O X 42	X 43	43	A
7	A	B	A	A	A	A	A	A	B	A	A	A	O X 45	E G 44	B	B	B	B	O R 43	O R 46	O R 46	E G 44	A	A
8	A	B	A	A	B	A	B	A	B	B	B	O X 51	A	A	O X 51	O X 51	A	B	A	O X 43	50	O X 51	X 50	B
9	A	B	B	B	A	A	O X 50	59	X 63	X 67	X 61	O X 46	B	S	60	58	S	X 58	50	O X 50	O X 54	O X 42	A	A
10	A	A	A	40	A	A	42	S	S	B	B	O X 51	60	S	O X 46	O X 46	60	O X 43	52	S	X 45	B	39	A
11	A	B	A	A	A	A	A	A	A	A	E G 46	O X 51	X 60	E G 46	61	S	70	X 67	O X 53	A	42	A	A	A
12	A	A	A	A	B	A	A	A	A	A	O X 46	O X 46	E G 46	B	B	B	B	B	S	B	49	O X 46	X 45	X 45
13	X 44	48	A	45	B	A	B	B	B	A	43	S	B	B	B	E G 43	63	64	O X 50	X 46	A	42	A	A
14	A	A	A	B	A	A	A	O X 49	O X 43	O X 45	S	S	E G 46	O S 45	O S 43	S	B	O X 43	50	O X 44	45	O X 42	X 41	A
15	B	A	O X 39	36	40	A	A	A	A	A	A	O X 51	B	B	B	B	B	B	O X 46	B	B	B	43	X 44
16	B	B	45	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	E G 43	A	O X 39	X 41	A	A
17	B	37	B	A	36	B	B	B	B	B	S	O X 46	O X 47	B	O X 57	O X 56	O X 56	B	O X 42	A	A	A	O R 41	A
18	A	B	B	37	B	B	B	B	B	B	O X 44	B	B	B	B	B	B	B	B	O X 49	B	X 40	43	X 43
19	45	A	B	B	B	B	B	B	B	A	65	O X 64	O X 45	B	B	O X 46	B	B	B	B	O X 50	O X 48	X 40	O X 40
20	X 43	48	O X 50	B	B	B	A	O X 51	X 60	S	S	S	S	O X 46	A	A	O X 47	O X 49	O X 49	O X 50	O X 50	X 63	X 42	X 38
21	X 40	A	43	46	O X 48	58	58	62	B	B	59	O X 46	O X 56	O X 46	O X 47	X 60	X 60	S	S	O X 49	O X 46	B	A	A
22	A	A	A	A	A	A	O X 43	43	O X 50	O X 51	O X 43	O X 45	A	O X 44	O X 45	O X 46	A	O X 50	O X 51	O X 53	43	44	43	A
23	A	A	A	42	40	O X 41	A	A	A	A	O X 51	O X 51	O X 51	O X 51	S	O X 51	O X 50	O X 49	O X 49	E G 46	A	X 43	X 40	A
24	A	B	B	B	B	B	A	A	O X 51	O X 51	O X 46	O X 46	A	U X 46	O X 46	S	O X 48	O X 50	O X 54	O X 50	X 50	O X 49	X 50	53
25	X 50	A	A	A	A	A	A	A	A	O X 51	60	O X 51	X 60	A	A	A	A	A	O X 55	O X 50	O X 53	55	50	O X 49
26	X 52	X 54	X 52	X 54	A	A	A	B	B	A	A	A	E G 49	B	B	65	B	A	O X 49	X 42	43	A	A	A
27	A	A	44	40	O R 42	O R 42	A	A	O X 49	O X 50	Y	O X 46	S	S	O X 44	O X 46	A	O X 43	A	O X 46	42	41	O X 42	A
28	A	A	A	B	B	B	O X 40	A	A	A	O X 43	B	B	B	B	B	O X 45	B	B	A	A	O R 42	A	A
29	A	B	A	A	B	B	A	A	B	A	A	B	A	B	B	B	O X 43	B	O R 50	O X 41	44	45	A	O R 43
30	B	B	B	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	O X 41	B	O X 49	A	O X 46	A
31	B	A	A	A	B	A	A	B	O X 43	A	A	E G 43	O X 43	O X 44	B	B	B	B	O X 43	B	O X 43	A	A	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	4	6	8	5	3	5	5	7	7	13	16	13	9	11	12	12	14	20	19	23	20	17	9
MED	X 45	48	44	41	40	O 42	O X 43	51	O X 50	O X 51	X 46	O X 46	X 46	O X 46	O X 46	O X 51	O X 54	O X 50	O X 50	O X 46	X 45	X 44	X 43	X 44
UQ	X 50	51	X 50	46	O 42	50	O X 50	59	X 56	O X 51	X 59	O X 51	X 56	O X 46	O X 54	X 57	60	X O 58	52	O X 50	O X 50	X 48	X 46	X 49
LQ	X 44	42	43	38	40	O 42	O X 42	O X 49	O X 46	O X 48	O X 44	O X 46	O X 44	O 44	O X 45	O X 46	O X 48	O X 49	O X 44	O X 43	42	X 42	X 41	X 43

DEC. 1984 | FXI (0.1 MHZ)

IONOSPHERIC DATA

DEC. 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	A	A	A	A	A	A	A	A	B	B	B	B	B	U S 39	B	B	B	B	43	B	44	43	43
2	37	A	A	B	B	B	A	B	A	A	B	B	B	B	B	S 45	54	54	49	F 42	U S 32	A	A	B
3	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	45	B	34	A	A	A	B
4	A	B	B	B	A	B	A	A	A	A	B	B	B	B	B	B	B	B	A	A	33	A	A	A
5	B	B	A	B	A	B	A	A	A	E G 39	E G 38	E G 38	E G 39	B	B	B	47	45	38	B	39	F 33	A	A
6	44	B	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	44	B	35	36	37	F 35	A
7	A	B	A	A	A	A	A	A	B	A	A	A	39	E G 38	B	B	B	B	F 35	F 40	40	E G 38	A	A
8	A	B	A	A	B	A	B	A	B	B	B	S 45	A	A	S 45	45	A	B	A	S 37	44	45	44	B
9	A	B	B	B	A	A	44	R 45	55	60	54	S 40	B	S	S 54	50	S	49	S 44	S 44	45	S 36	A	A
10	A	A	A	F	A	A	37	S	S	B	B	E G 45	F 54	D S 52	E G 40	E G 40	54	S 37	46	D S 45	39	B	33	A
11	A	B	A	A	A	A	A	A	A	A	E G 40	E G 45	53	E G 40	F	S	R 64	R 61	S 47	A	F	A	A	A
12	A	A	A	A	B	A	A	A	A	A	E G 40	E G 40	E G 40	B	B	B	B	B	D S 43	B	F 42	40	39	36
13	37	F 41	A	39	B	A	B	B	B	A	F	S	B	B	B	E G 37	F	F	F 44	40	A	F 36	A	A
14	A	A	A	B	A	A	A	43	37	E G 39	S	S	E G 40	S 39	S 37	S 37	B	E G 37	43	38	41	36	35	A
15	B	A	33	F 29	F	A	A	A	A	A	A	45	B	B	B	B	B	B	40	B	B	B	37	37
16	B	B	F	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	E G 37	A	33	35	A	A
17	B	F	B	A	F	B	B	B	B	B	D S 36	E G 40	41	B	51	50	50	B	E G 36	A	A	A	F 33	A
18	A	B	B	F	B	B	B	B	B	B	E G 38	B	B	B	B	B	B	B	B	43	B	34	F 37	36
19	F 38	A	B	B	B	B	B	B	B	A	58	58	E G 39	B	B	E G 40	B	B	B	B	44	42	34	34
20	37	41	44	B	B	B	A	45	54	S	S	S	S	E G 40	A	A	E G 41	43	43	44	E G 44	37	35	32
21	34	A	37	F 40	42	F 52	50	54	B	B	J R 53	E G 40	50	E G 40	E G 41	J R 54	J R 54	S	S	E G 43	S 40	B	A	A
22	A	A	A	A	A	A	37	F	44	45	S 37	S 39	A	E G 38	E G 39	E G 40	A	44	45	46	38	38	37	A
23	A	A	A	F 37	F	35	A	A	A	A	45	45	45	E G 45	D S 39	E G 45	E G 44	E G 43	E G 43	E G 40	A	37	34	A
24	A	B	B	B	B	B	A	A	E G 45	E G 45	E G 40	E G 40	A	U S 40	E G 40	S	E G 42	S 44	48	S 44	44	43	43	F 47
25	43	A	A	A	A	A	A	A	A	45	F	45	53	A	A	A	A	A	49	S 45	E G 47	R 49	43	43
26	46	47	45	47	A	A	A	B	B	A	A	A	E G 43	B	B	R 58	B	A	43	36	F 37	A	A	A
27	A	A	F	F	F 36	F 34	A	A	43	44	Y	E G 40	S	S	E G 38	E G 40	A	E G 37	A	40	36	35	E G 36	A
28	A	A	A	B	B	B	34	A	A	A	E G 37	B	B	B	B	B	39	B	B	A	A	F 35	A	A
29	A	B	A	A	B	B	A	A	B	A	A	B	A	B	B	B	E G 37	B	F 43	E G 35	38	F	A	F 35
30	B	B	B	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	E G 35	B	S 43	A	40	A
31	B	A	A	A	B	A	A	B	37	A	A	E G 37	37	38	B	B	B	B	37	B	37	A	A	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	3	4	5	2	3	5	4	7	7	12	16	13	10	11	13	11	13	21	20	22	19	17	9
MED	38	41	40	F 39	39	F 35	37	45	44	45	38	E G 40	40	E G 40	38	45	47	44	43	40	39	37	37	36
UQ	44	44	44	40		44	44	50	50	45	49	45	50	E G 40	43	50	54	45	46	44	43	41	40	43
LQ	37	41	35	F 37		34	37	44	40	E G 42	E G 38	E G 40	E G 39	E G 38	38	E G 40	E G 42	43	38	37	37	36	34	35

DEC. 1984 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 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	44	43	43	35	40	37	33	36	B	B	B	B	B	33	B	B	B	B	34	B	27	E B 26	45
2	44	35	43	B	B	B	36	B	60	30	B	B	B	B	B	E B 30	27	24	21	33	E B 24	40	43	B
3	29	33	B	B	B	32	27	B	B	B	B	B	B	B	B	B	B	27	B	E B 25	34	37	43	B
4	19	B	B	B	45	B	45	34	41	41	B	B	B	B	B	B	B	B	34	42	E B 26	37	40	40
5	B	B	36	B	43	B	29	43	42	28	27	32	28	B	B	B	26	E B 28	22	B	29	30	41	43
6	38	B	70	34	B	B	37	37	B	B	B	B	B	B	B	B	B	25	B	20	E B 24	30	30	45
7	43	B	40	35	37	34	33	35	B	40	34	35	29	35	B	B	B	B	25	32	32	40	43	37
8	34	B	43	40	B	37	B	40	B	B	B	22	28	26	34	29	39	B	33	30	23	23	27	B
9	31	B	B	B	35	40	35	28	27	28	27	33	B	32	33	28	27	26	27	24	22	28	32	37
10	60	43	43	28	35	34	25	30	35	B	B	28	33	33	33	31	35	26	25	33	E B 19	B	30	37
11	32	B	37	70	36	35	37	45	42	32	35	32	45	43	45	28	17	E B 29	E B 27	33	40	45	44	80
12	90	36	42	37	B	40	35	37	34	28	27	33	25	B	B	B	B	B	E B 28	B	30	43	40	30
13	30	33	45	36	B	43	B	B	B	40	33	29	B	B	B	27	33	33	32	33	40	30	40	43
14	36	39	32	B	37	42	38	35	27	27	27	27	32	27	28	28	B	26	28	33	E G 23	E G 25	E G 27	37
15	60	40	22	70	36	45	37	38	38	43	37	34	B	B	B	B	B	B	E B 27	35	B	90	10	36
16	B	B	36	B	B	B	43	43	B	B	B	32	B	B	B	B	35	B	E B 29	36	E B 23	26	60	33
17	B	37	B	37	24	B	43	43	B	B	27	27	29	B	28	28	E G 30	B	28	43	37	43	E G 35	35
18	60	B	B	33	43	36	44	B	B	B	30	B	B	B	B	B	B	B	B	27	B	17	E G 34	30
19	40	43	37	43	40	B	B	B	B	27	27	27	26	B	B	27	B	B	B	37	E B 27	21	22	20
20	27	28	30	B	B	36	38	36	33	27	30	28	33	32	27	34	35	27	32	22	19	E G 22	E G 27	E G 18
21	22	44	34	27	27	27	26	37	36	B	27	29	30	30	30	34	37	E B 29	E B 30	33	E B 26	42	55	70
22	45	42	90	44	45	43	40	34	32	27	32	26	34	33	34	33	32	E G 30	32	33	33	24	40	45
23	65	45	53	37	40	40	43	43	36	35	35	36	35	33	33	E B 28	27	E B 30	E B 25	36	42	E G 22	E G 30	42
24	45	43	B	B	B	B	35	36	28	28	28	28	30	29	34	30	28	37	25	25	22	33	33	20
25	32	53	60	40	38	43	36	34	61	37	32	30	33	43	43	72	65	65	36	41	27	25	40	60
26	30	40	33	33	43	40	42	B	B	40	37	40	36	B	B	28	B	45	32	21	35	40	42	42
27	67	30	65	34	42	37	45	43	35	35	34	35	30	31	42	29	40	26	37	40	27	E G 32	34	56
28	41	40	45	40	B	36	23	38	38	37	28	B	B	B	B	B	25	B	37	45	42	37	45	36
29	40	B	43	40	B	B	36	27	B	35	35	B	27	B	B	B	E B 28	B	43	33	25	36	37	38
30	B	B	B	B	43	35	B	B	35	B	B	B	B	B	B	B	B	B	28	B	35	43	37	38
31	40	43	44	44	B	35	35	B	E B 29	36	35	35	27	27	B	B	B	32	E B 28	B	28	37	40	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	20	24	21	19	22	27	23	20	21	22	22	19	14	14	17	18	18	26	27	28	30	31	27
MED	40	40	43	37	38	37	37	37	36	35	31	31	30	32	33	28	31	27	28	33	27	32	37	38
UQ	52	43	45	43	43	40	41	42	40	37	35	34	33	33	34	31	35	32	32	36	34	40	42	44
LQ	32	36	36	34	36	35	35	34	32	28	27	28	28	29	30	28	26	26	24	28	E E 24	24	27	36

DEC. 1984 | FES (0.1 MHZ)

IONOSPHERIC DATA

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

DEC. 1984 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 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	A	A	A	B	B	B	B	B	220	B	B	B	B	250	B	250	255	245
2	295	A	A	B	B	B	A	B	A	A	B	B	B	B	B	220	225	235	E A 230	A	260	A	A	B
3	A	A	B	B	B	A	A	B	B	B	B	B	B	B	B	B	B	H 190	B	230	A	A	A	B
4	A	B	B	B	A	B	A	A	A	A	B	B	B	B	B	B	B	B	A	A	E B 270	A	A	A
5	B	B	A	B	A	B	A	A	A	H 195	H 195	200	H 190	B	B	B	200	210	E A 230	B	240	A	A	A
6	280	B	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	190	B	H 170	240	250	290	A
7	A	B	A	A	A	A	A	A	B	A	A	A	220	200	B	B	B	B	250	250	275	290	A	A
8	A	B	A	A	B	A	B	A	B	B	B	240	A	A	H 200	205	A	B	A	230	230	240	230	B
9	A	B	B	B	A	A	250	230	200	H 180	H 190	230	B	200	R 205	200	210	210	220	220	230	280	A	A
10	A	A	A	A	A	A	230	230	200	B	B	200	200	205	200	200	230	220	220	E A 245	A 200	B	E A 200	A
11	A	B	A	A	A	A	A	A	A	A	H 200	200	E A 200	H 200	E A 200	H 200	H 195	E B 250	E B 245	A	A	A	A	A
12	A	A	A	A	B	A	A	A	A	A	240	205	200	B	B	B	B	B	E B 230	B	255	E A 240	250	260
13	270	250	A	A	B	A	B	B	B	A	E A 230	S	B	B	B	230	A	230	250	250	A	270	A	A
14	A	A	A	B	A	A	A	A 230	H 190	H 200	200	H 190	200	H 190	205	200	B	230	230	285	240	230	A 260	A
15	B	A	A	A	A	A	A	A	A	A	A	E A 200	B	B	B	B	B	B	210	B	B	B	250	A 250
16	B	B	A	B	B	B	B	B	B	B	B	A	B	B	B	B	B	B	230	A	240	260	A	A
17	B	A	B	A	A	B	B	B	B	B	200	H 190	A	B	210	210	220	B	A 200	A	A	A	E A 340	A
18	A	B	B	A	B	B	B	B	B	B	H 190	B	B	B	B	B	B	B	B	E A 200	B	H 170	320	270
19	230	A	B	B	B	B	B	B	B	A	200	H 195	H 190	B	B	210	B	B	B	B	240	H 185	240	250
20	260	260	290	B	B	B	A	210	200	H 195	H 190	205	H 190	H 180	A	A	230	E A 200	H 200	H 205	215	H 200	240	H 210
21	240	A	E A 300	E A 300	E A 250	E A 230	E A 200	H 200	B	B	H 190	H 190	H 180	E A 210	200	190	200	E B 230	E B 200	220	240	B	A	A
22	A	A	A	A	A	A	E A 310	A	200	H 190	H 190	200	A	200	200	205	A	230	H 160	250	250	230	230	A
23	A	A	A	250	A	205	A	A	A	A	205	230	H 195	200	200	H 195	220	E B 210	A	A	A	240	260	A
24	A	B	B	B	B	B	A	A	H 190	H 170	H 170	H 190	A	210	200	200	200	200	H 200	200	200	220	250	245
25	270	A	A	A	A	A	A	A	A	H 200	A	H 200	E A 220	A	A	A	A	A	230	E A 250	240	240	A	E A 260
26	260	260	260	240	A	A	A	B	B	A	A	A	H 180	B	B	235	B	A	240	H 260	E A 240	A	A	A
27	A	A	A	A	A	A	A	A	230	230	Y	230	200	220	200	H 175	A	E A 300	A	A	190	250	290	A
28	A	A	A	B	B	B	210	A	A	A	200	B	B	B	B	B	210	B	B	A	A	310	A	A
29	A	B	A	A	B	B	A	A	B	A	A	B	A	B	B	B	230	B	E A 200	E A 300	230	A	A	A
30	B	B	B	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	220	B	250	A	300	A
31	B	A	A	A	B	A	A	B	210	A	A	200	200	H 200	B	B	B	B	230	B	245	A	A	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	3	3	3	1	2	5	5	8	8	15	18	14	12	12	15	12	15	21	17	22	18	16	8
MED	265	260	U 275	245	E A 250	212	220	230	200	H 192	H 198	200	196	200	200	200	215	210	220	U 232	240	240	251	249
UQ	275	260	292	262			240	230	205	H 200	200	205	200	205	205	210	228	228	230	250	243	260	282	260
LQ	250	255	275	245			210	210	195	H 185	H 190	H 192	H 190	H 200	200	200	200	200	200	212	230	225	240	245

DEC. 1984 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)
ION. ANT. — 43 July 1984—December 1984 (Not for Sale)

昭和基地電離層資料（南極）

（1984年7月—1984年12月）

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編集兼発行所　郵政省通信総合研究所
〒184 東京都小金井市貫井北町4丁目2—1
☎ 0423（21）1211（代）

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