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ION. ANT.—40

IONOSPHERIC DATA AT SYOWA STATION

(ANTARCTICA)

January 1983—June 1983

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RADIO RESEARCH LABORATORY

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TOKYO, JAPAN

INTRODUCTION

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

LOCATION OF SYOWA STATION

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

SPECIFICATIONS OF THE IONOSONDE USED AT SYOWA STATION

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

DESCRIPTION

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

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

c. Characteristics of Ionosphere

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

Symbols

(i) Descriptive Letters.

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

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

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

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

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

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

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

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

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

K Presence of particle E layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

D Greater than.

E Less than.

J Ordinary component characteristic deduced from the extraordinary component.

M Mode interpretation uncertain.

O Extraordinary component characterisitic deduced from the ordinary component.

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

U Uncertain or doubtful numerical value.

Z Measurement deduced from the third magneto-electronic component.

Definitions of the CNT, MED, UQ and LQ

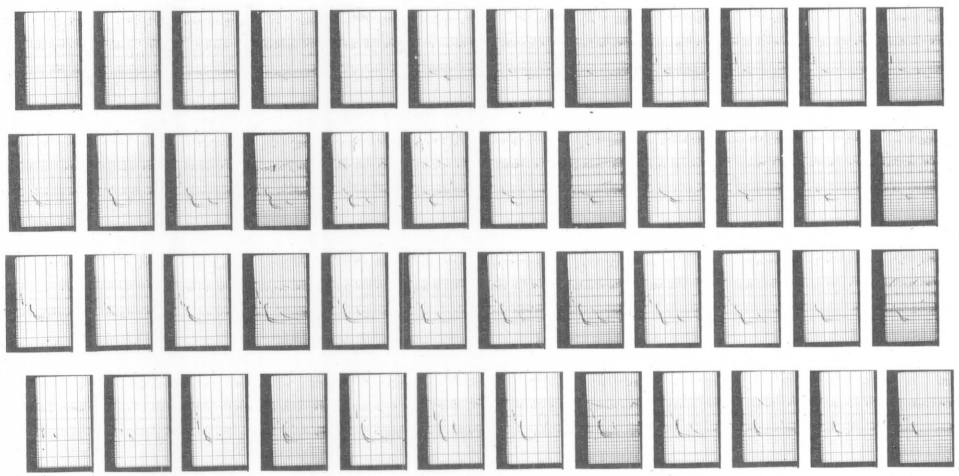
Median count (CNT) is the number of values from which a median has been computed. In addition to numerical values, the count may include certain descriptive letters.

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

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

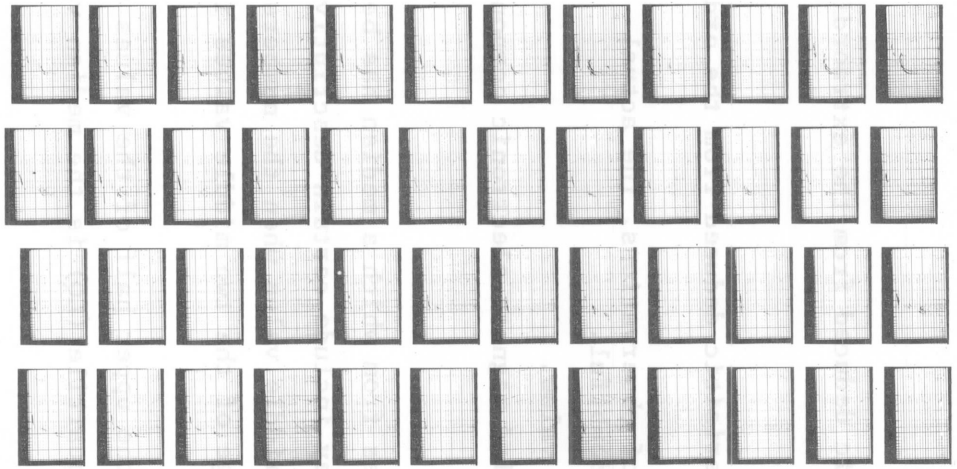
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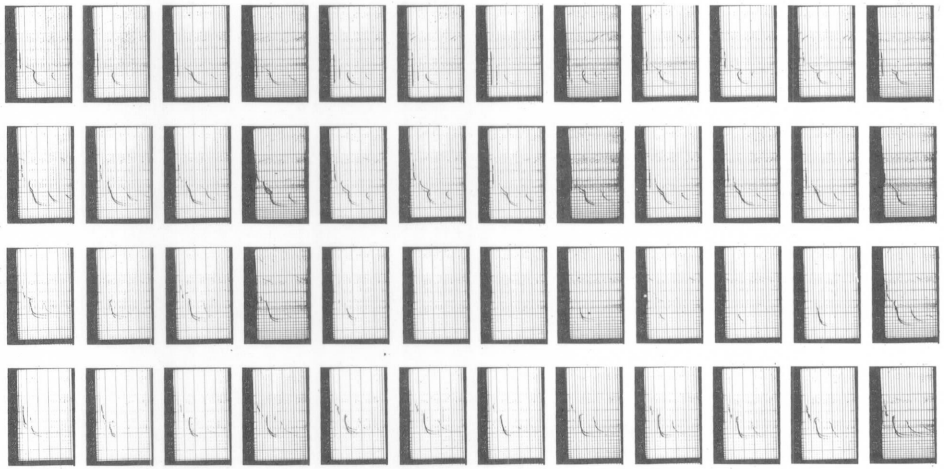
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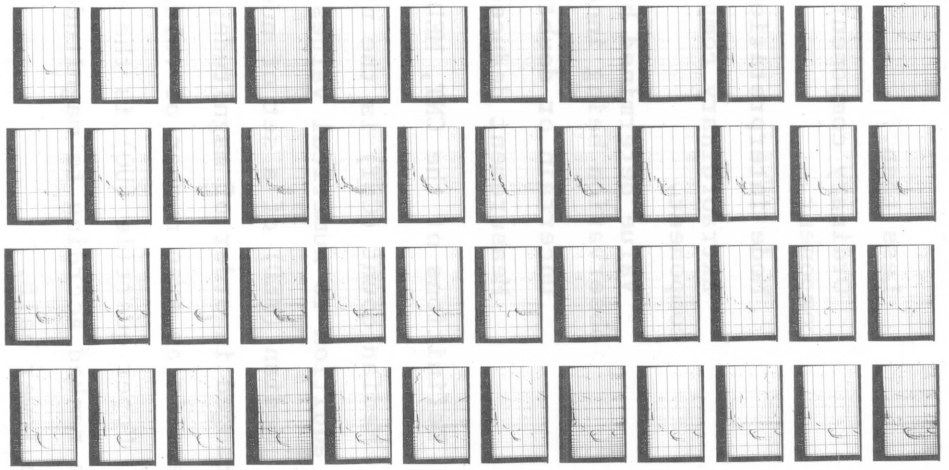
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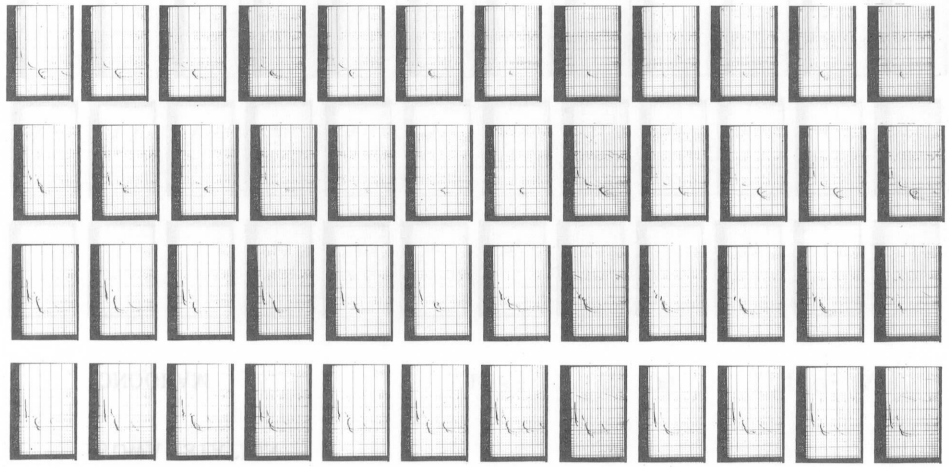
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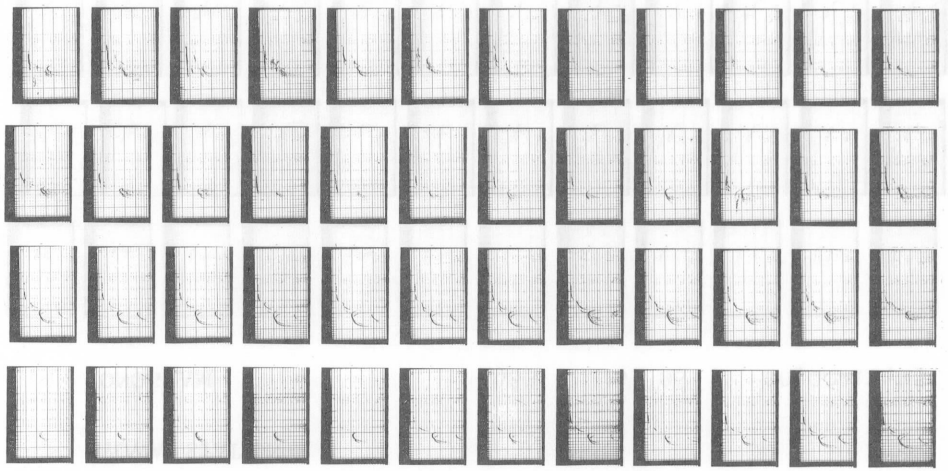
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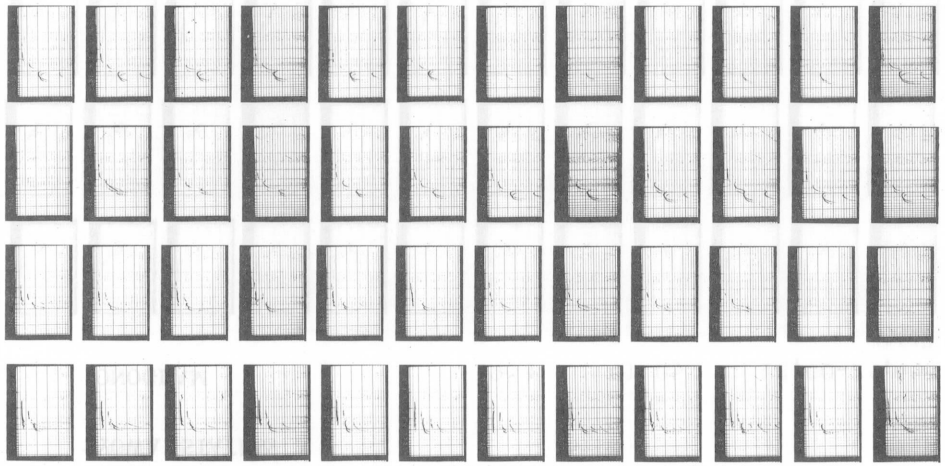
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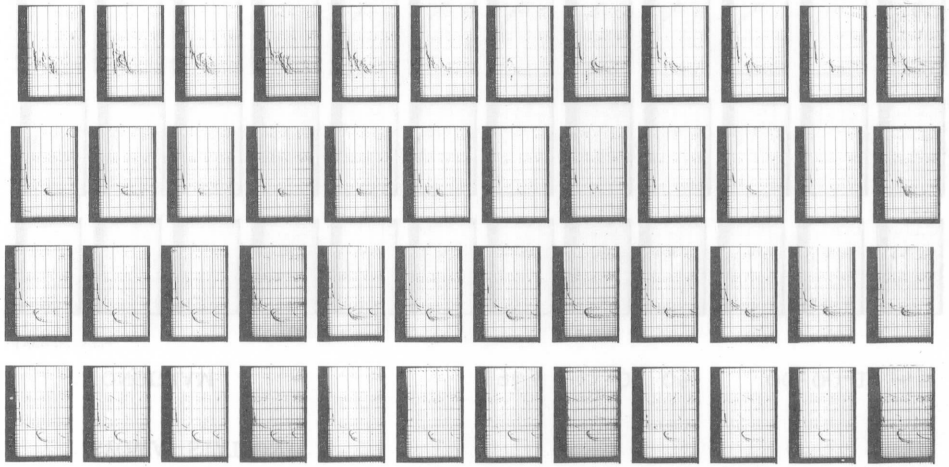
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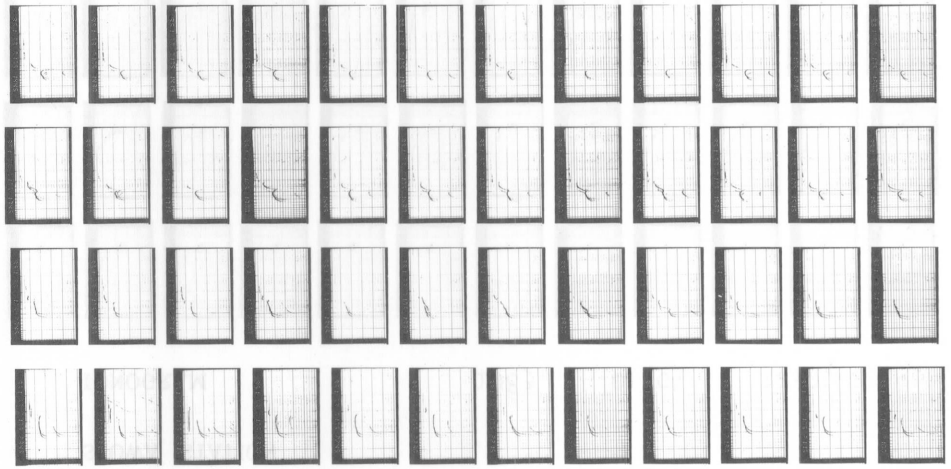
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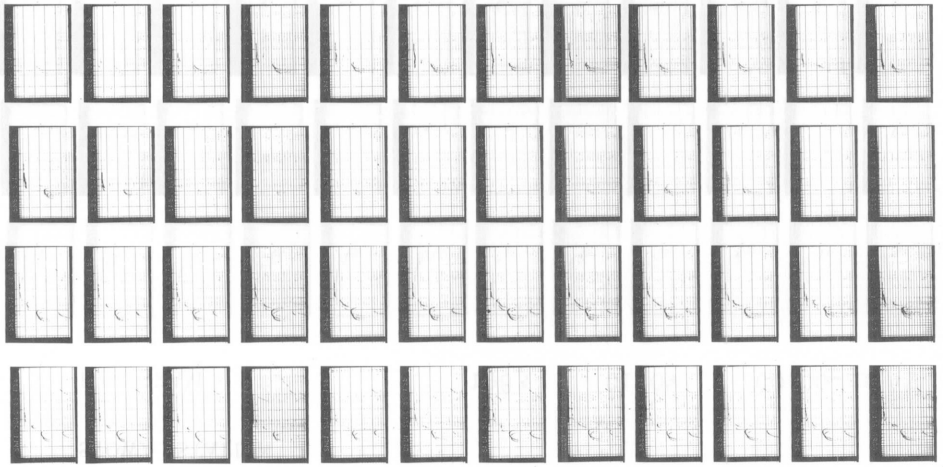
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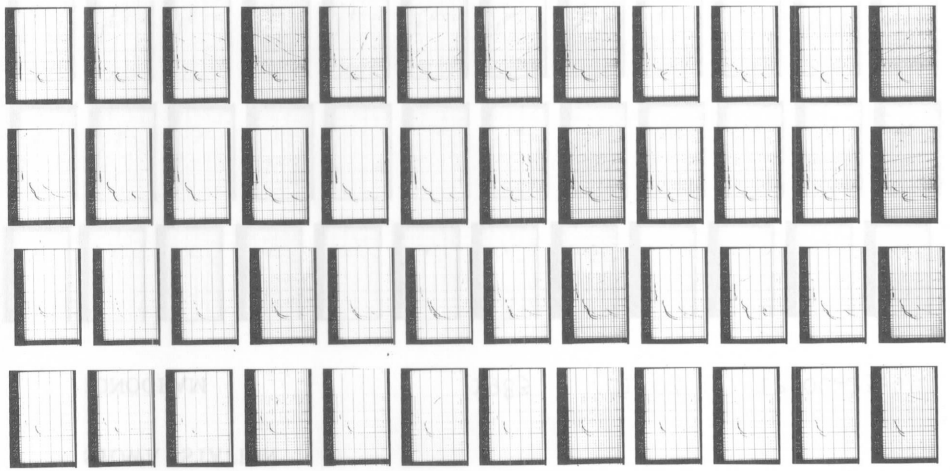
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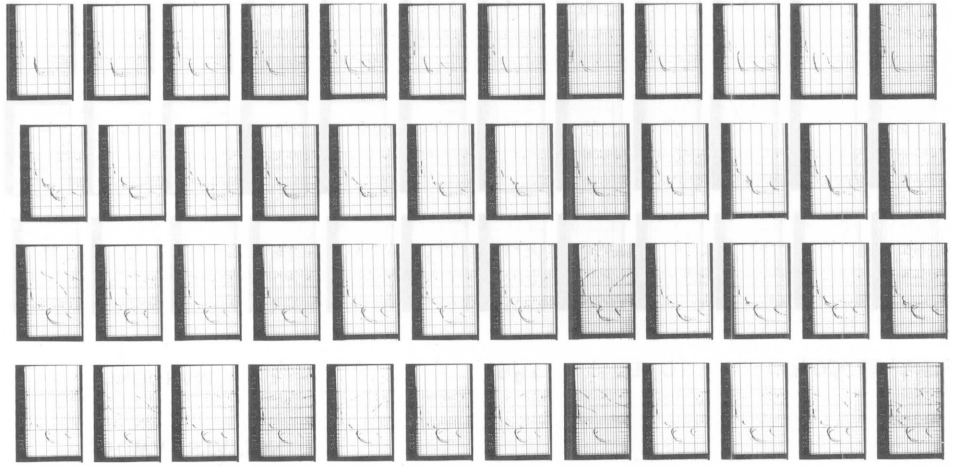
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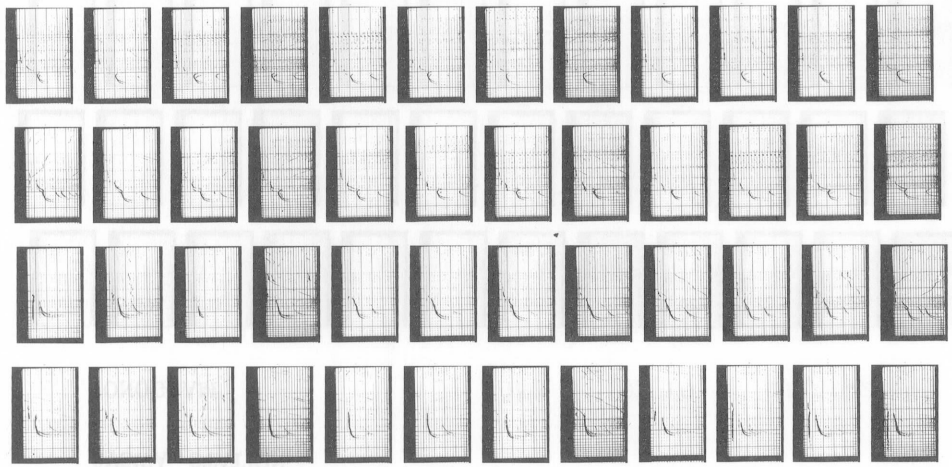
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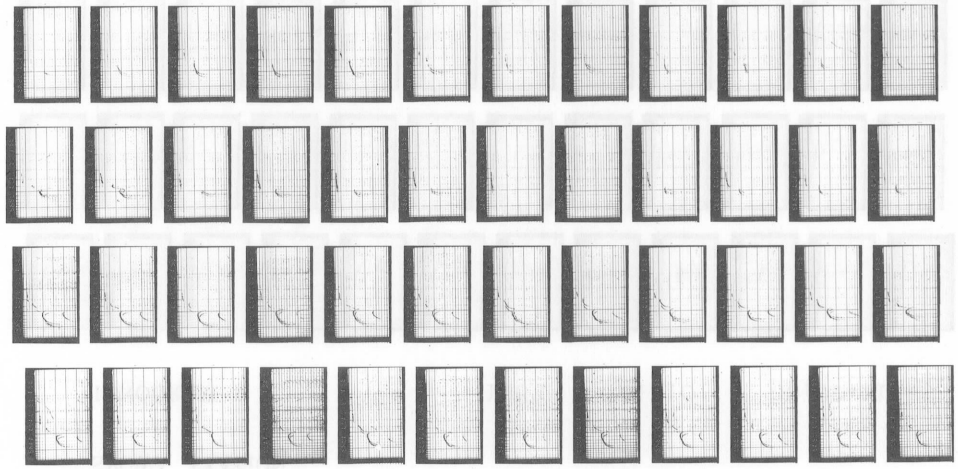
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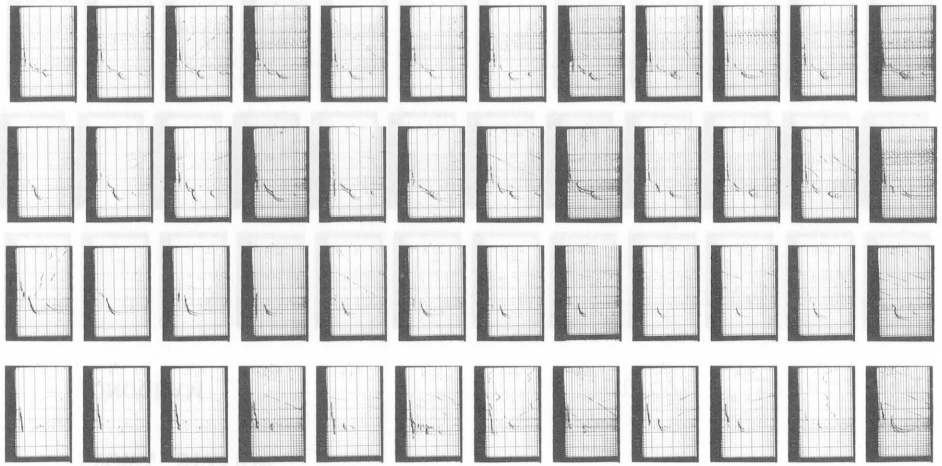
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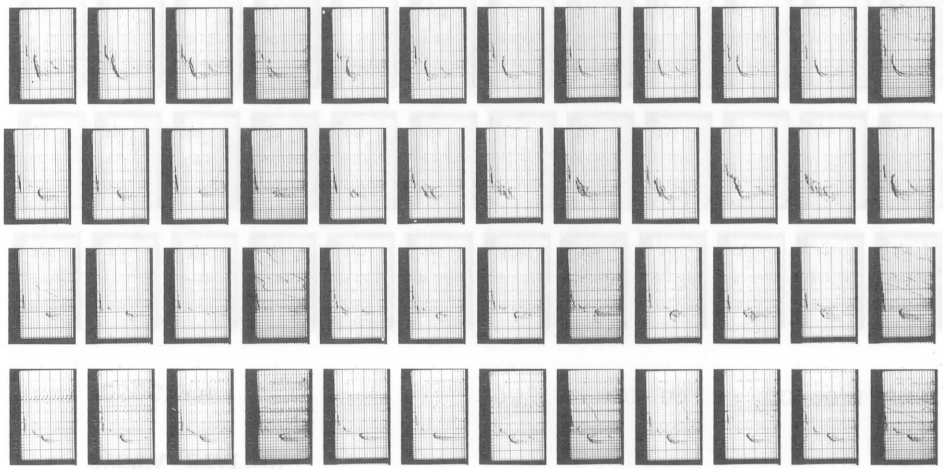
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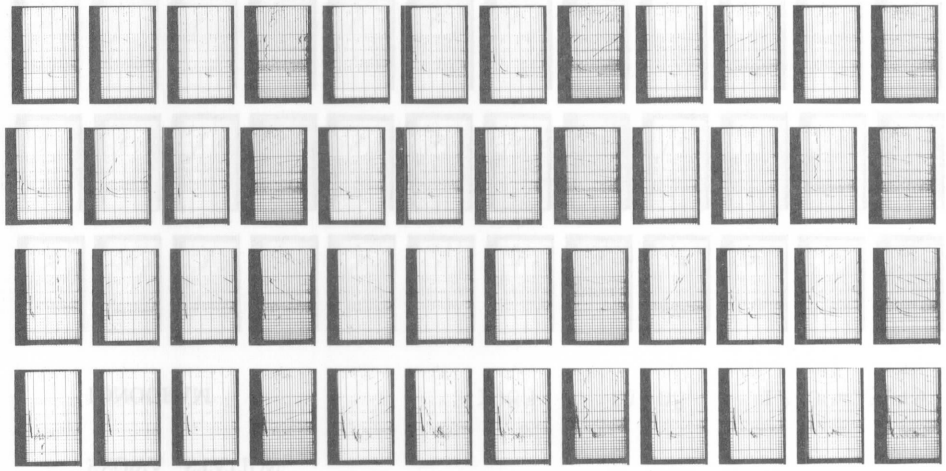
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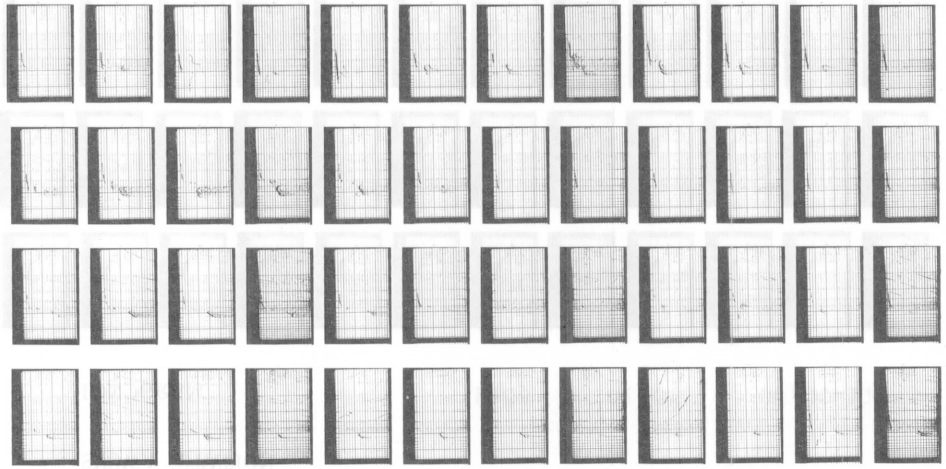
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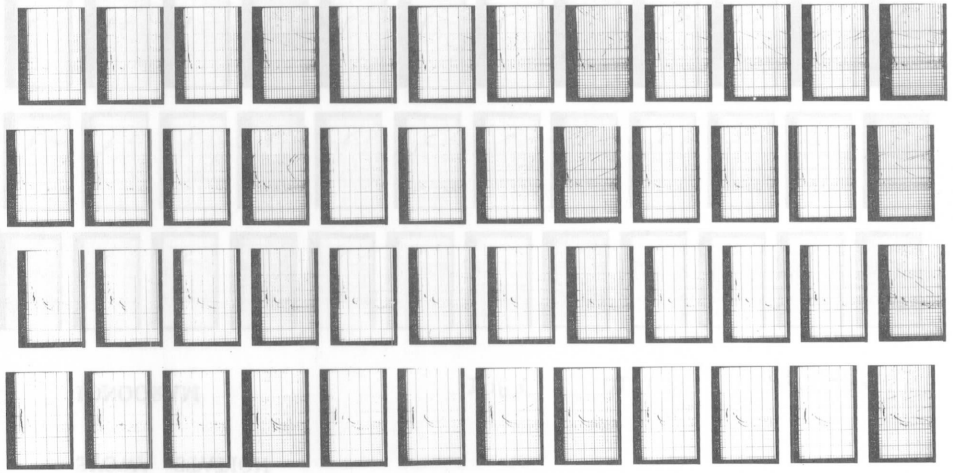
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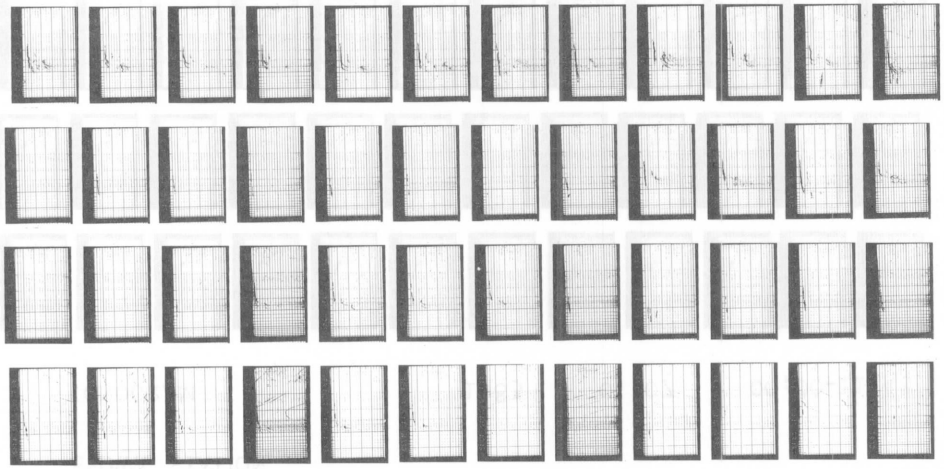
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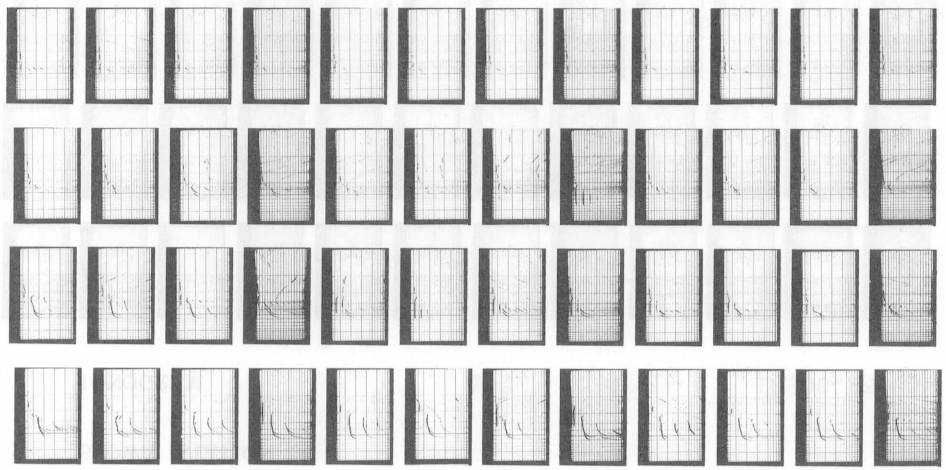
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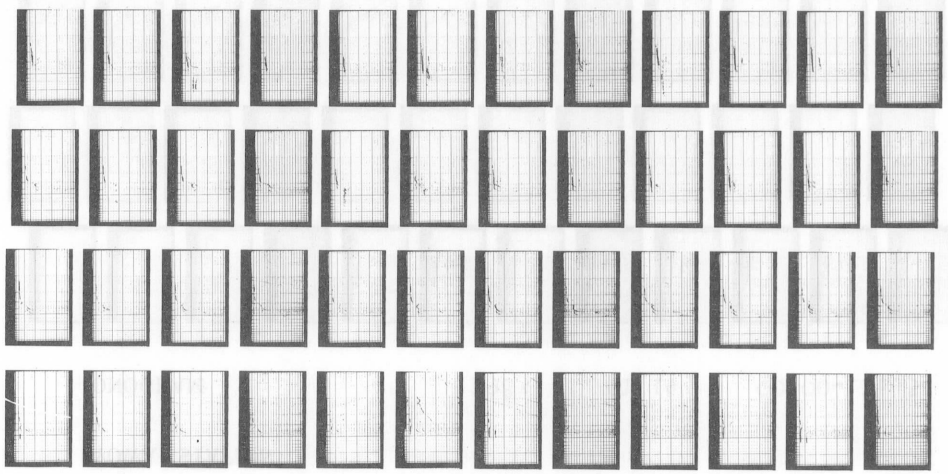
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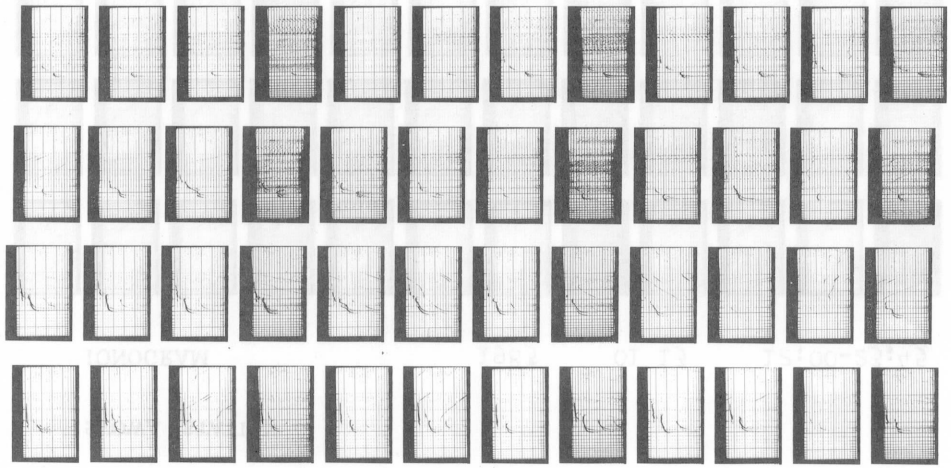
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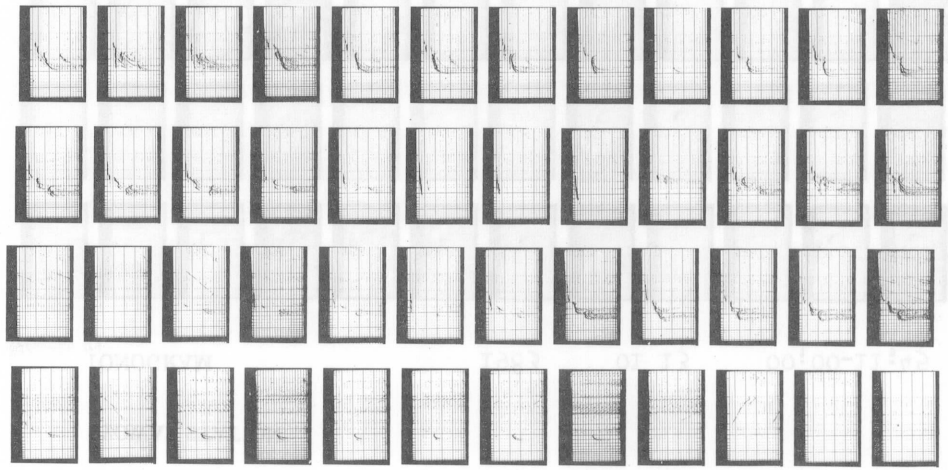
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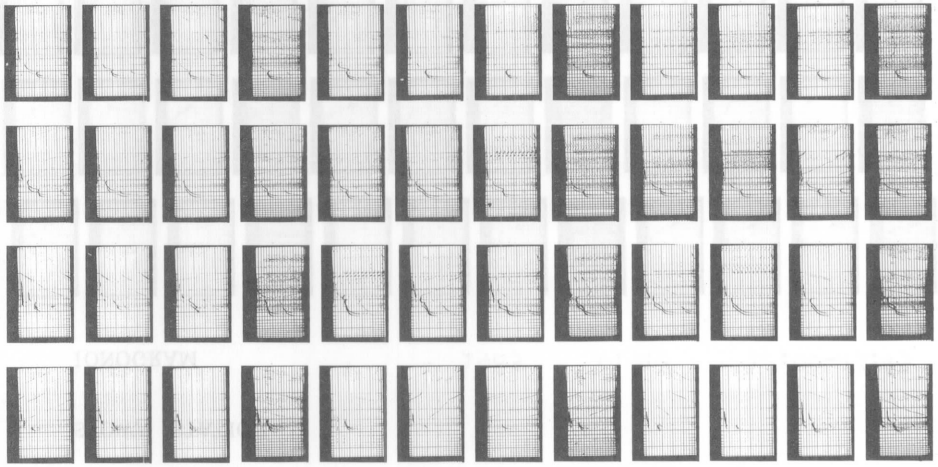
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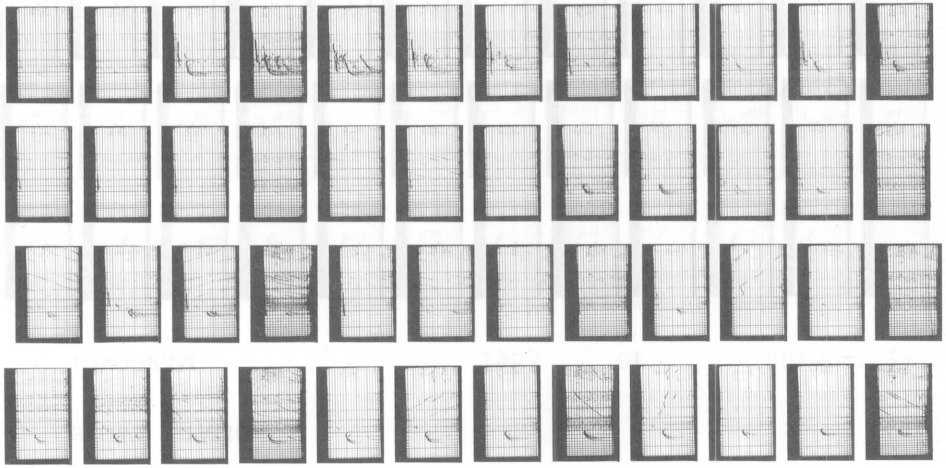
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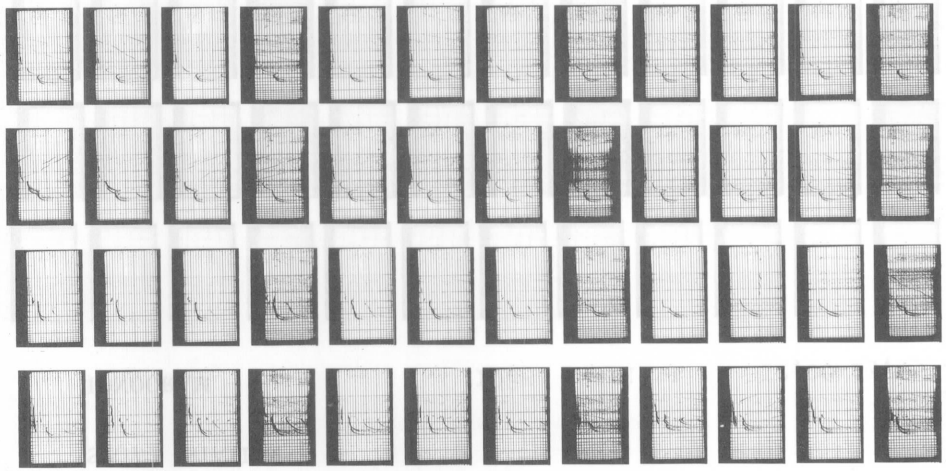
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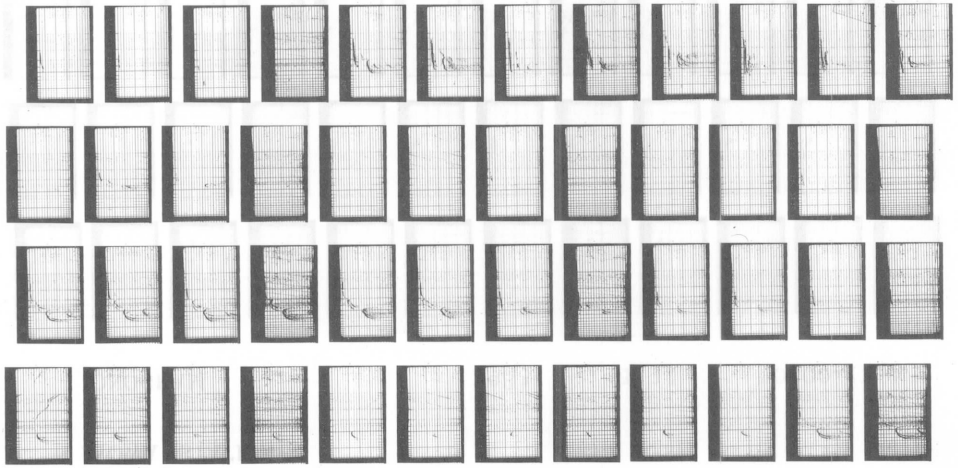
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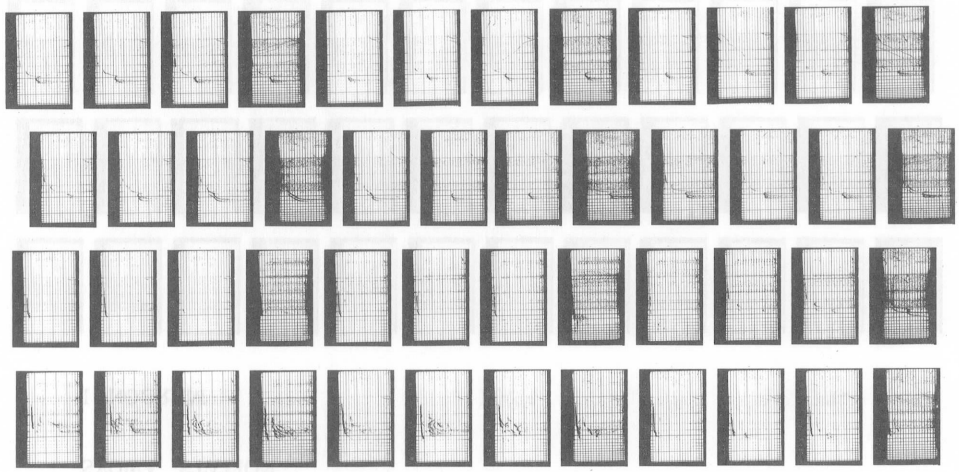
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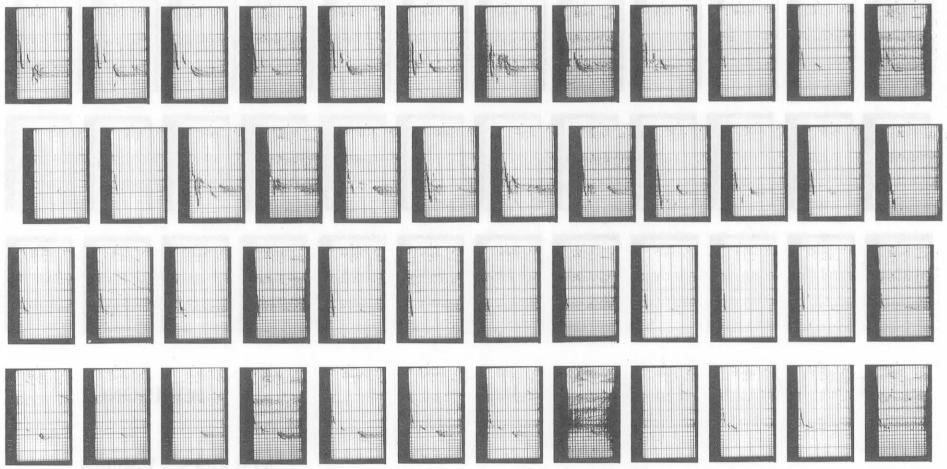
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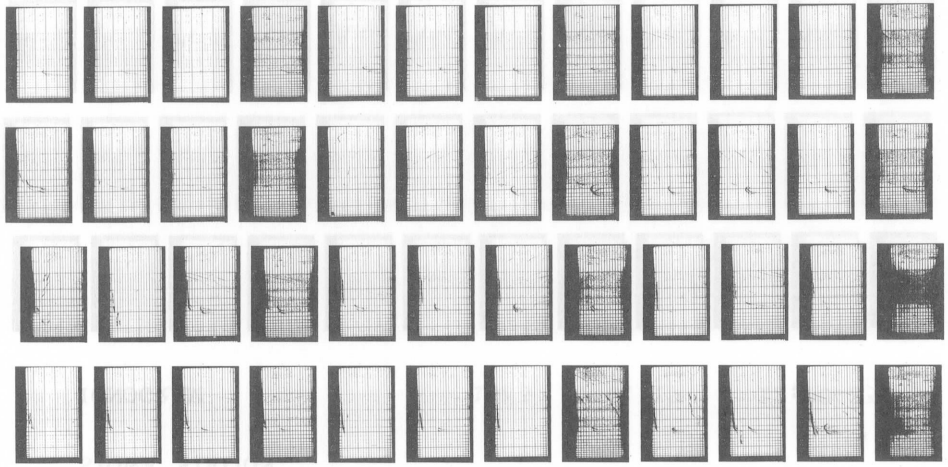
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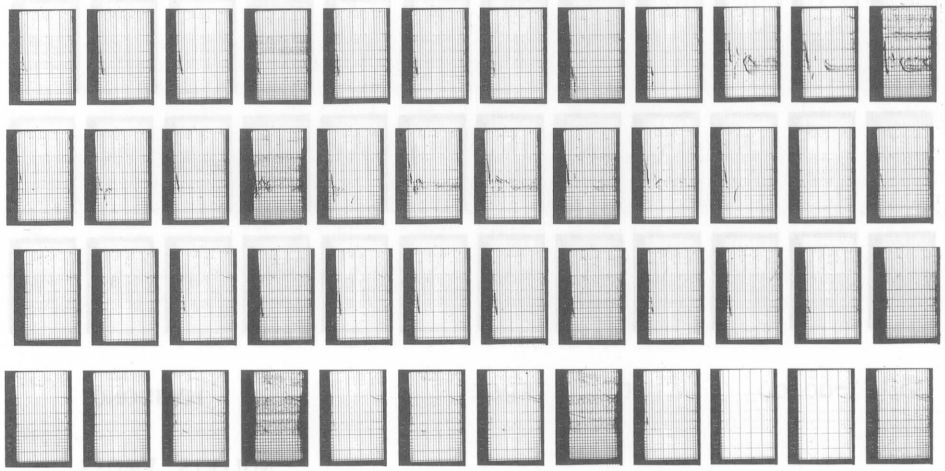
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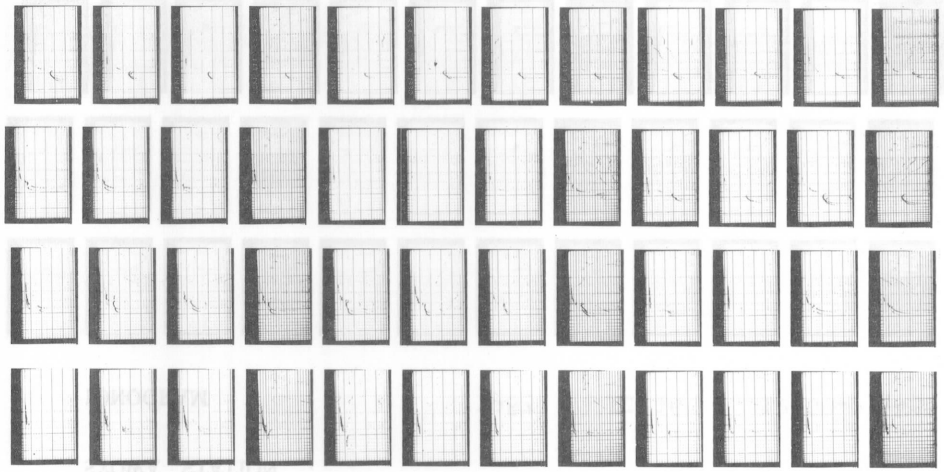
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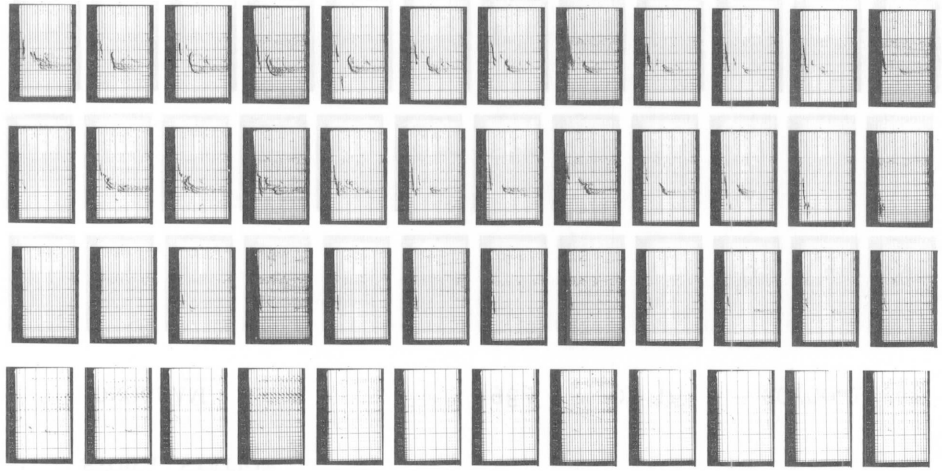
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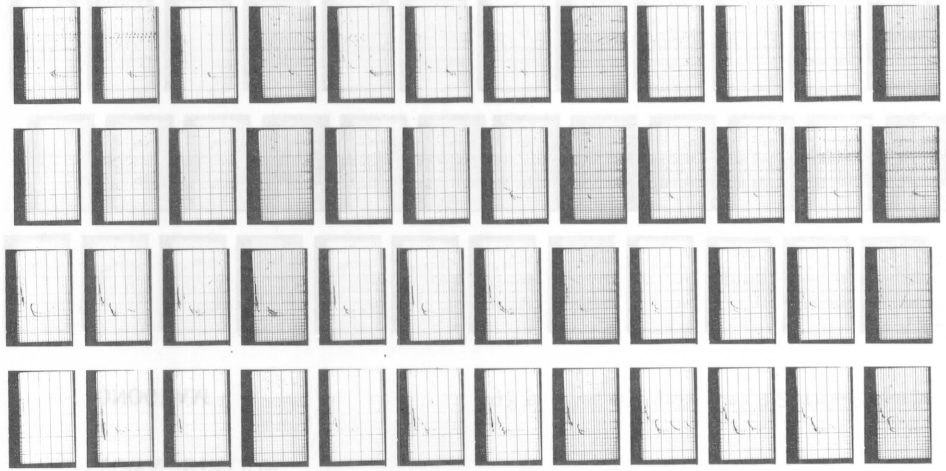
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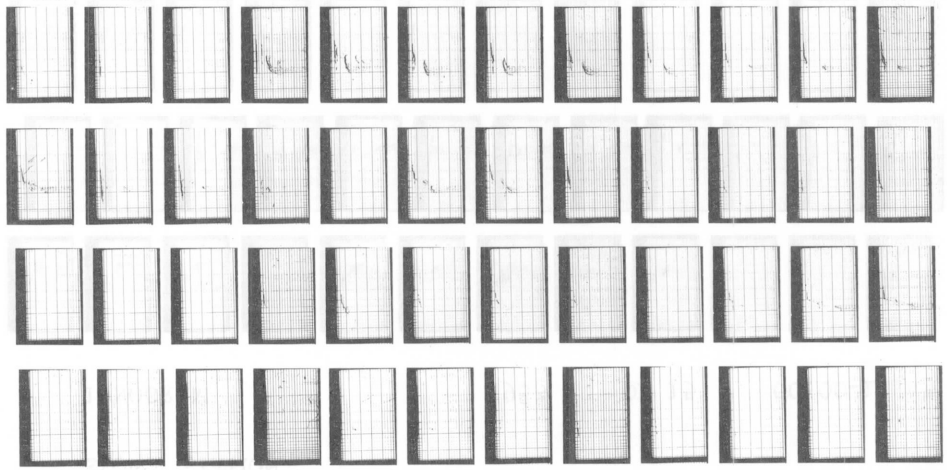
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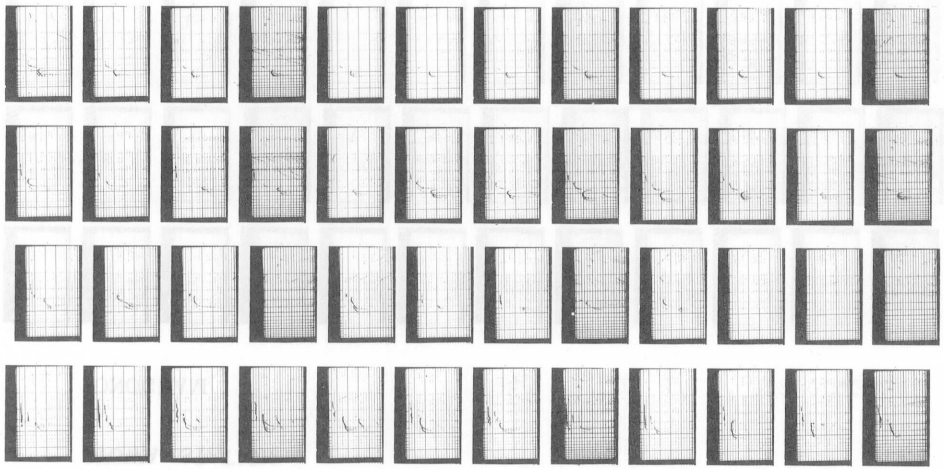
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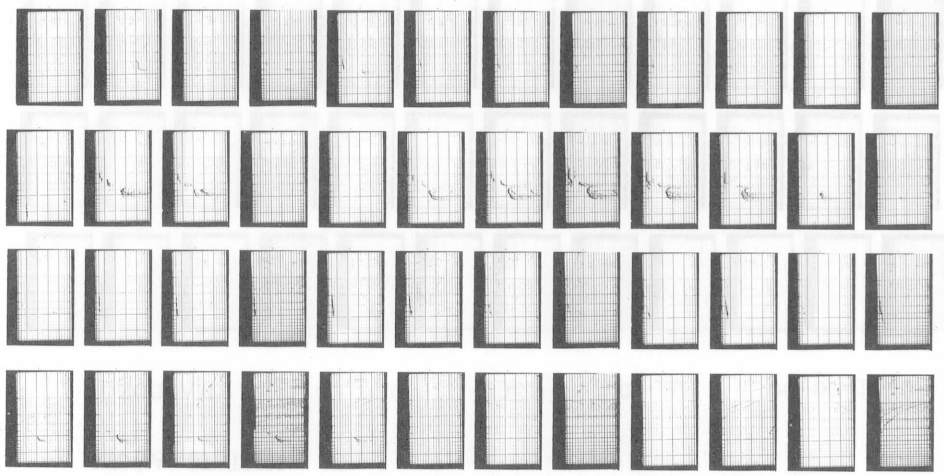
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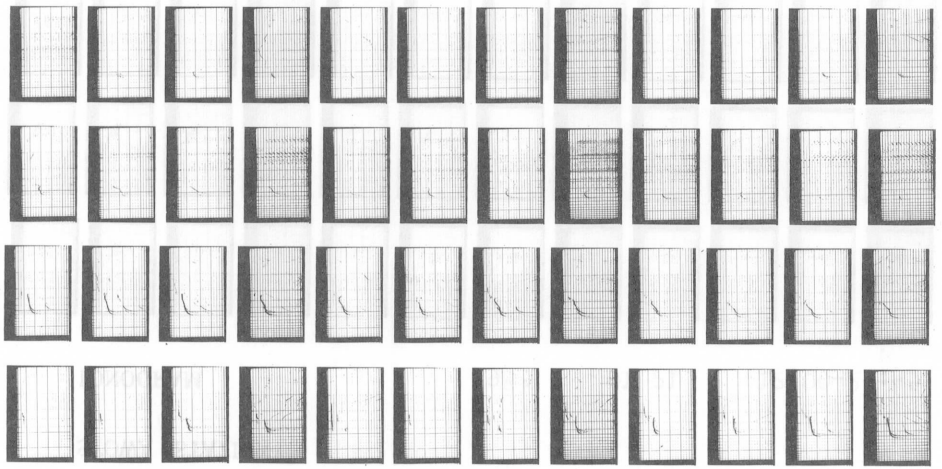
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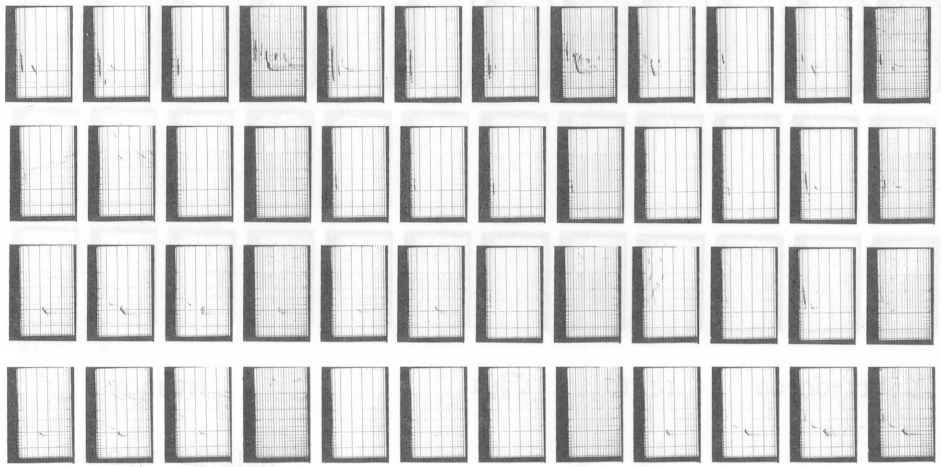
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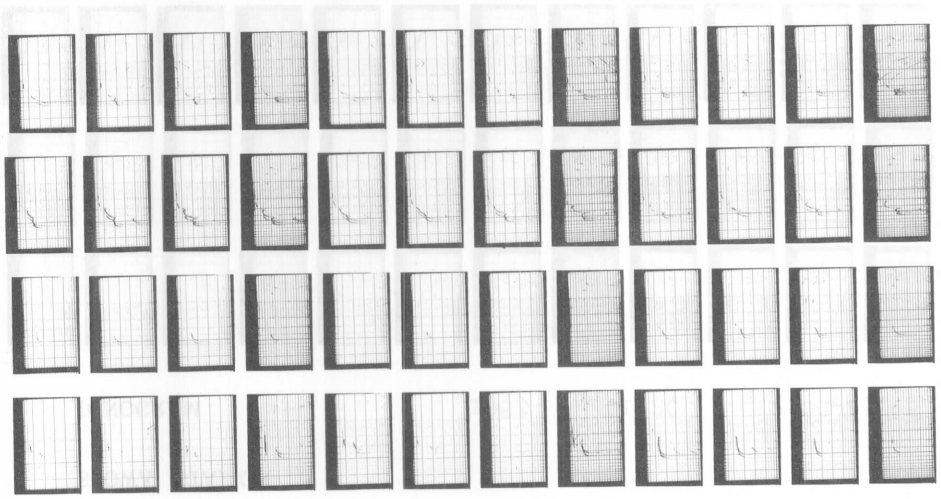
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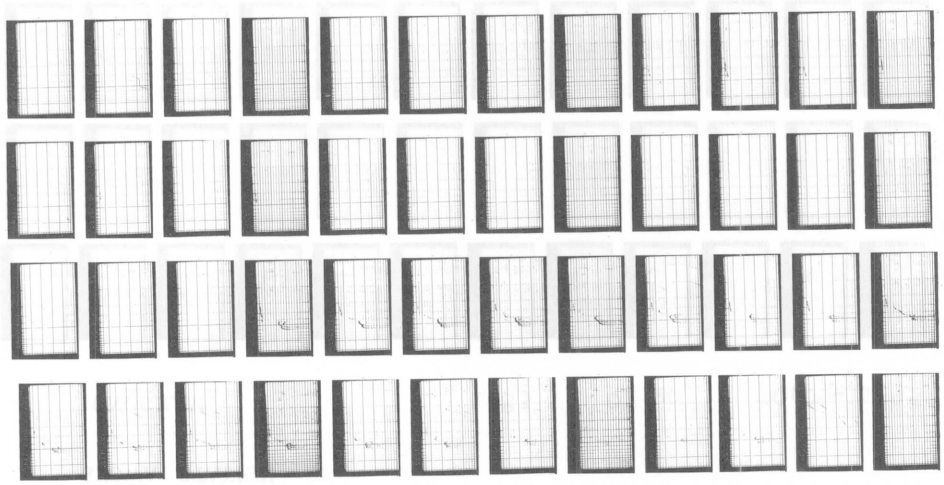
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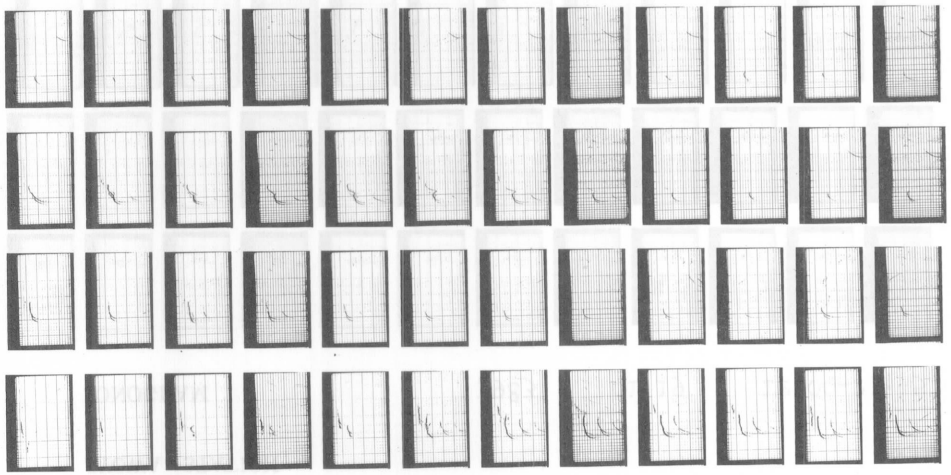
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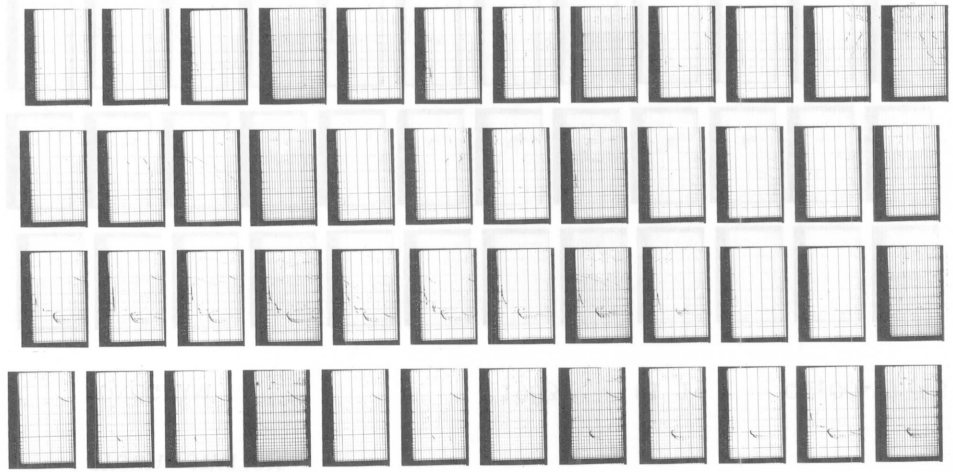
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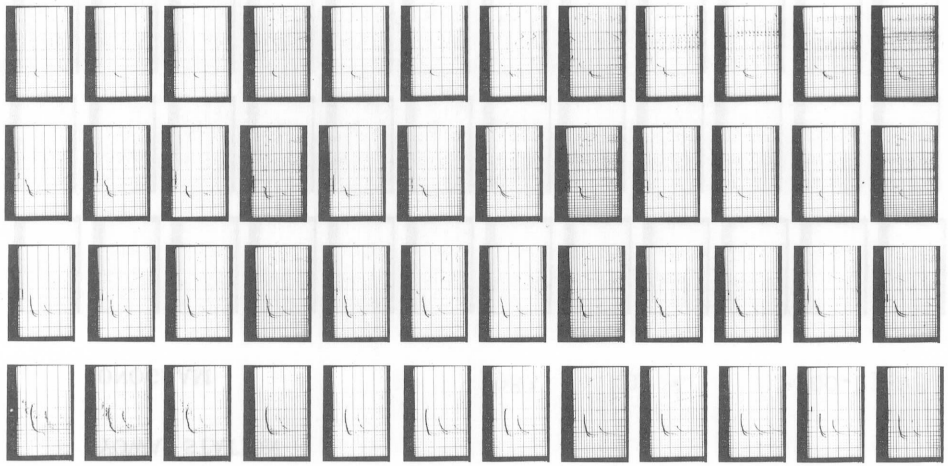
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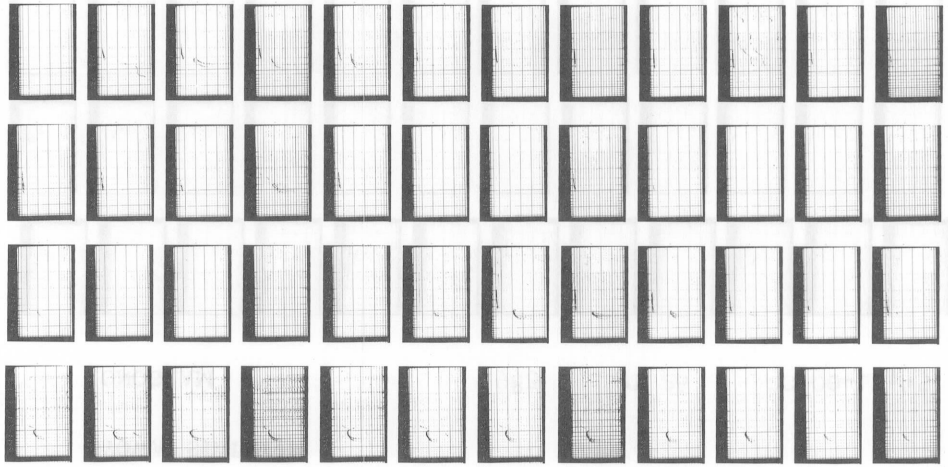
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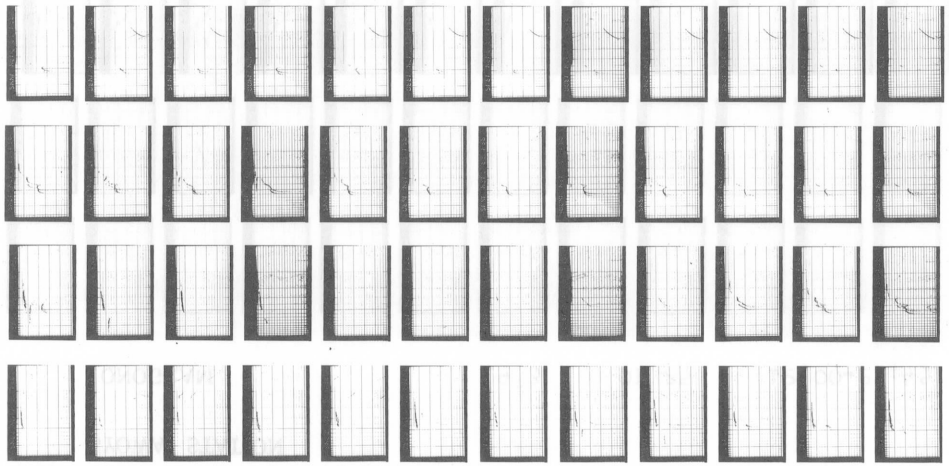
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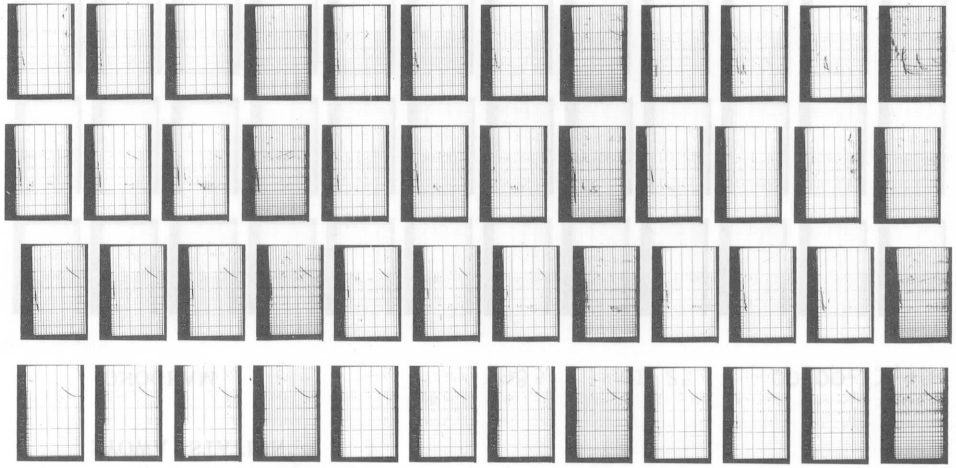
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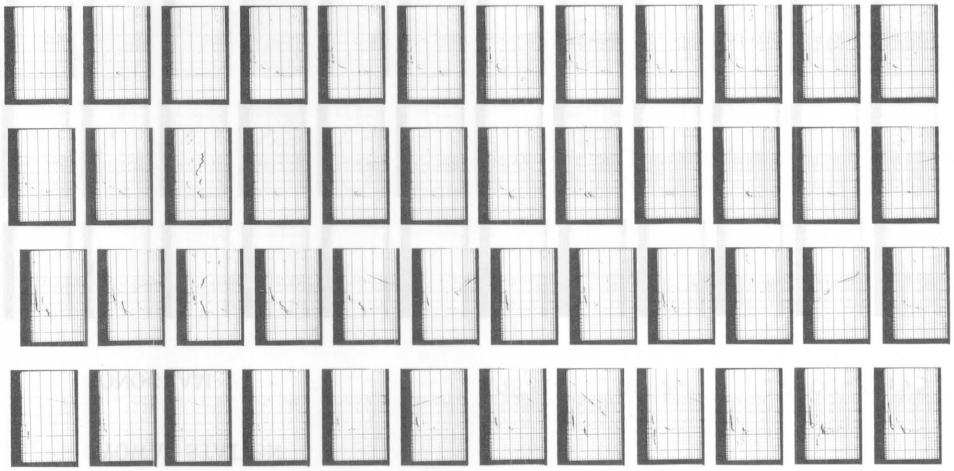
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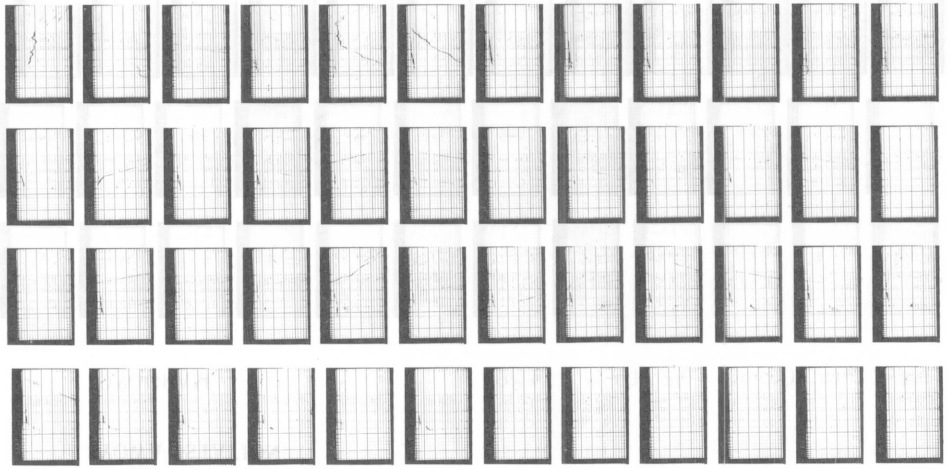
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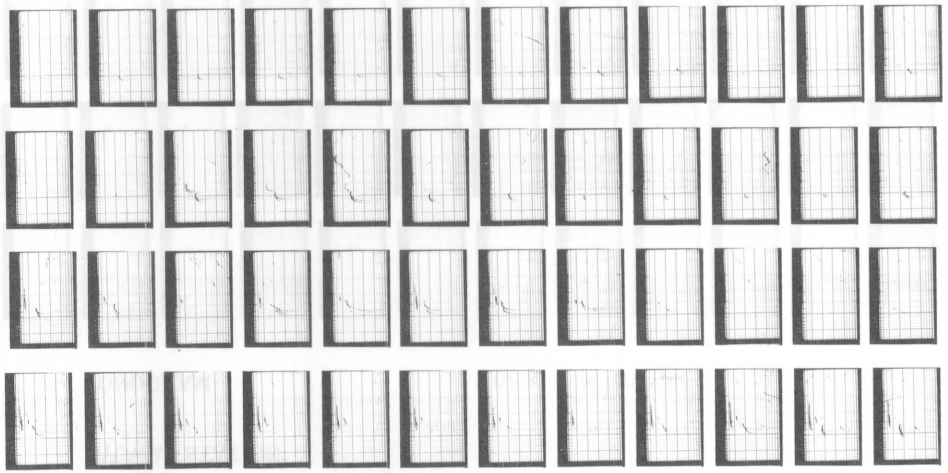
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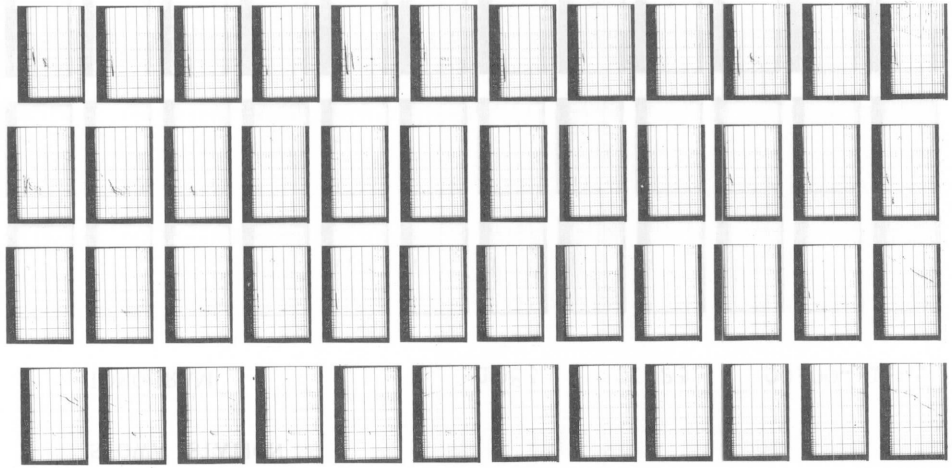
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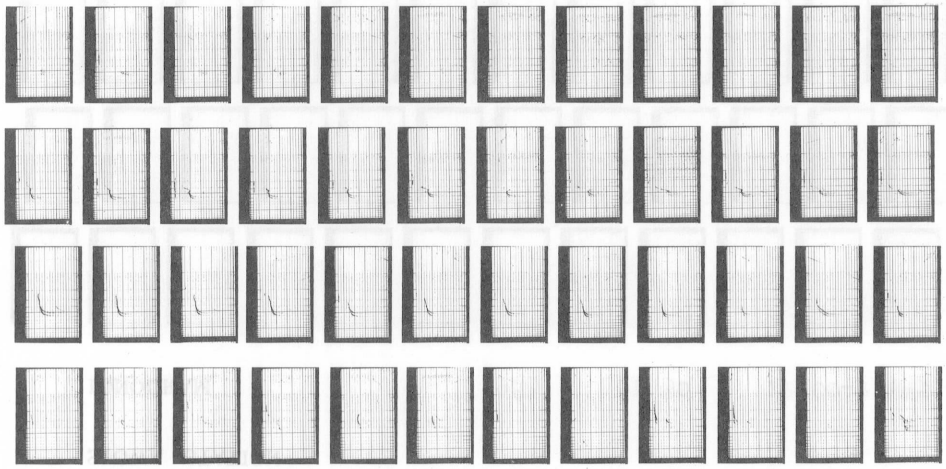
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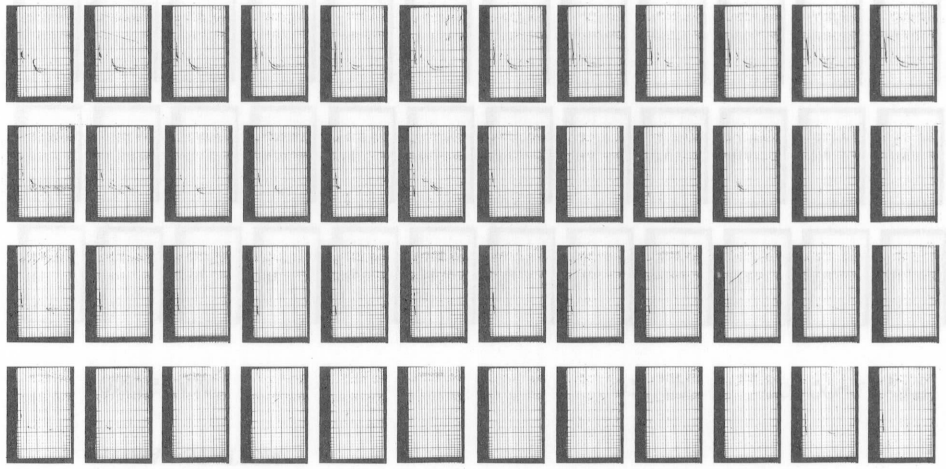
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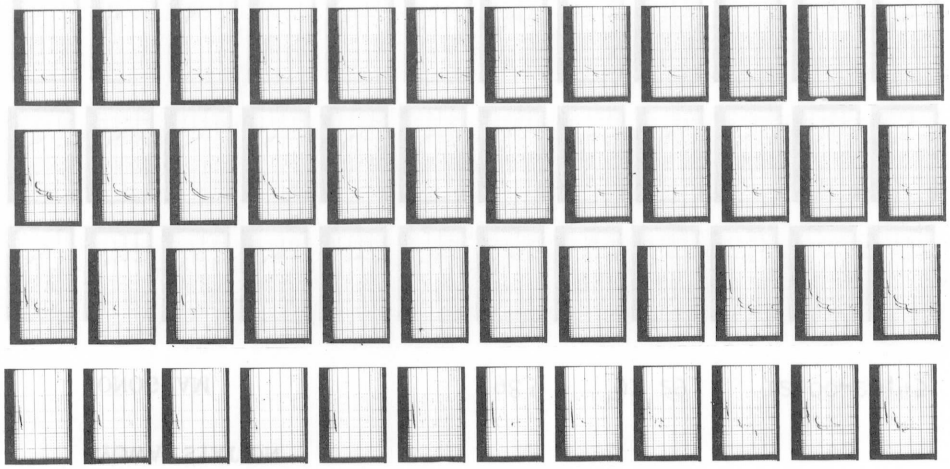
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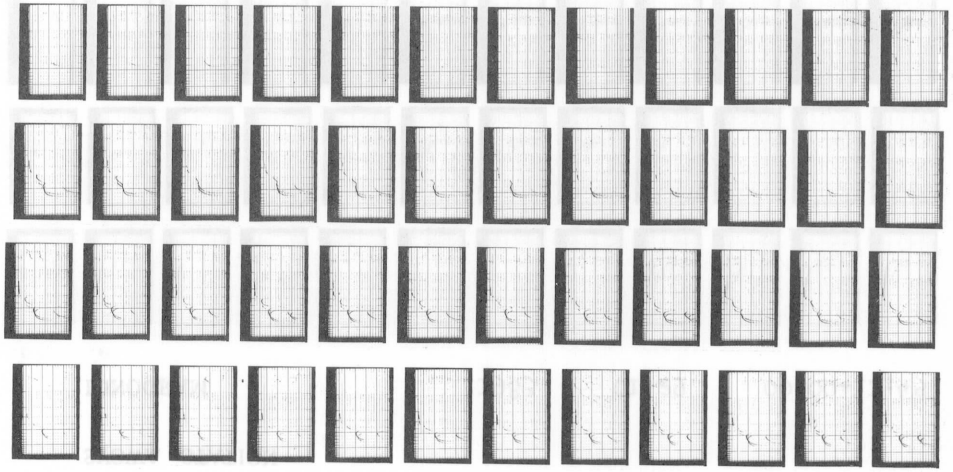
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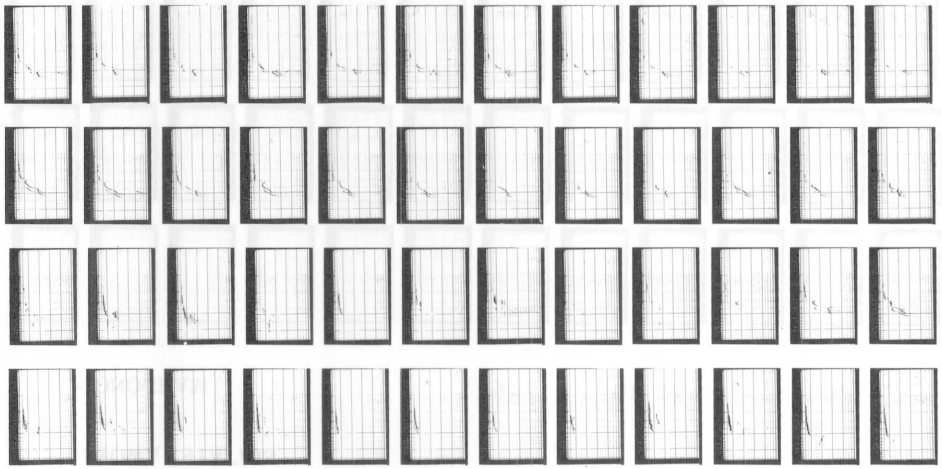
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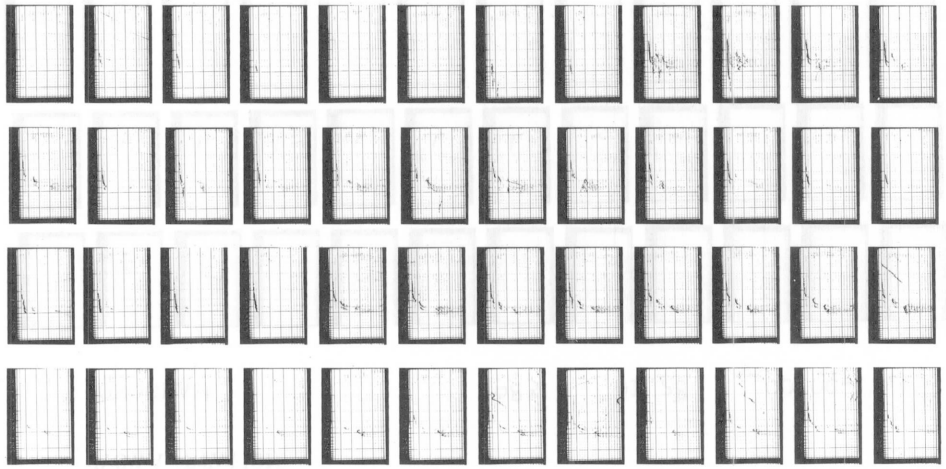
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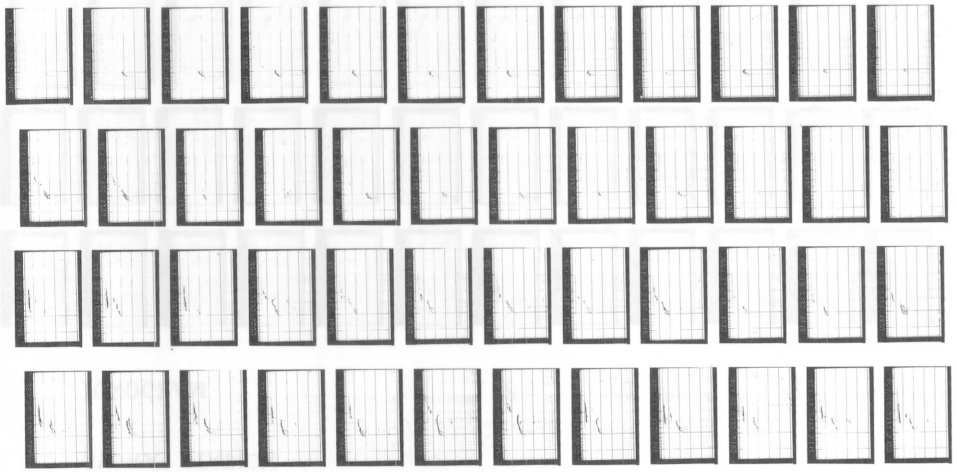
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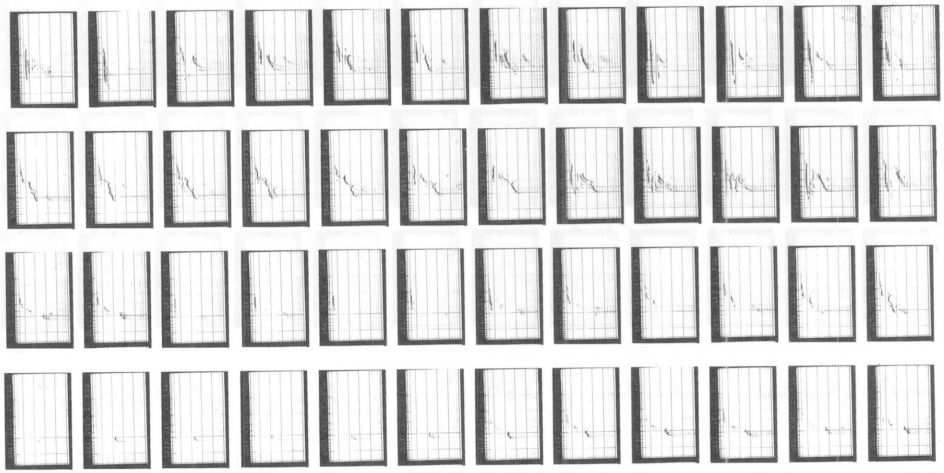
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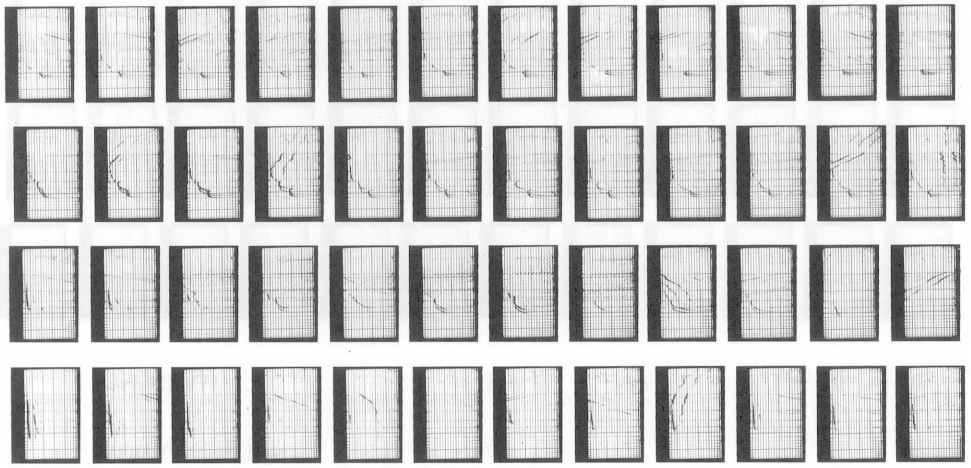
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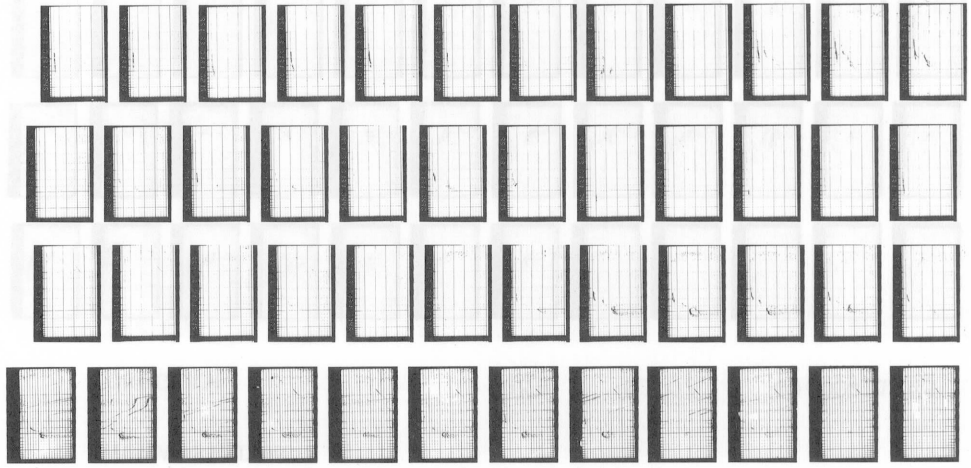
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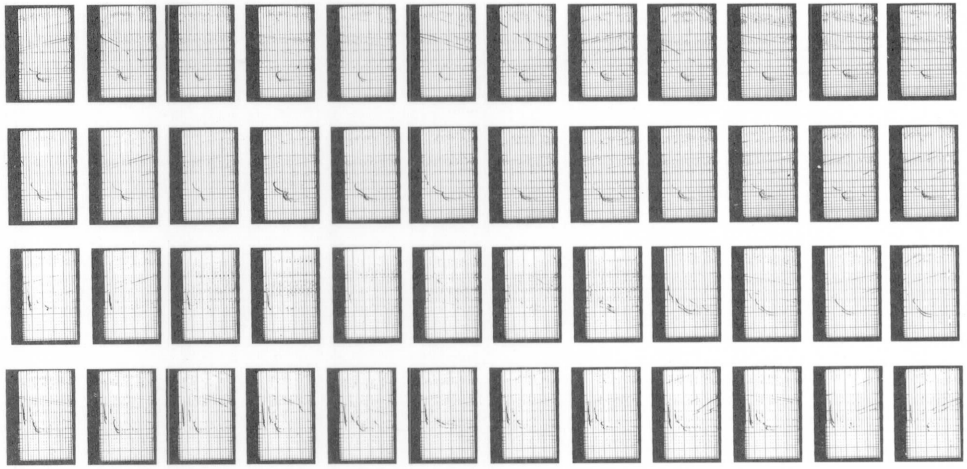
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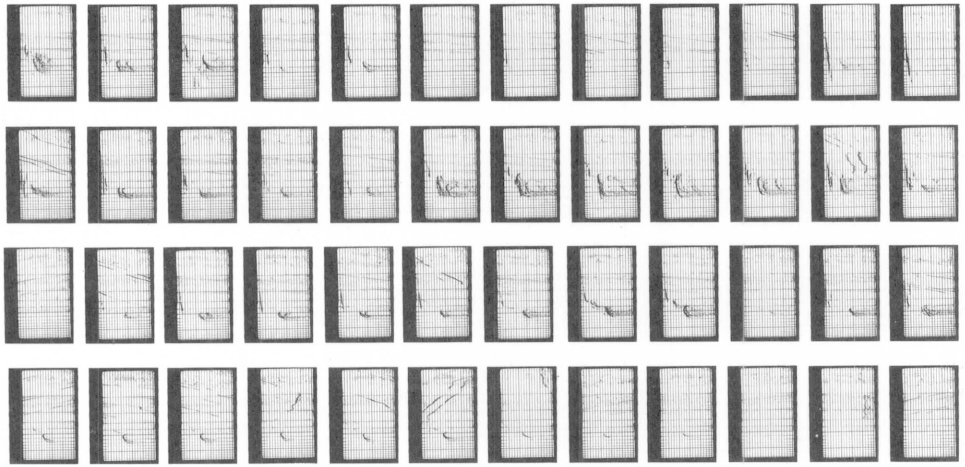
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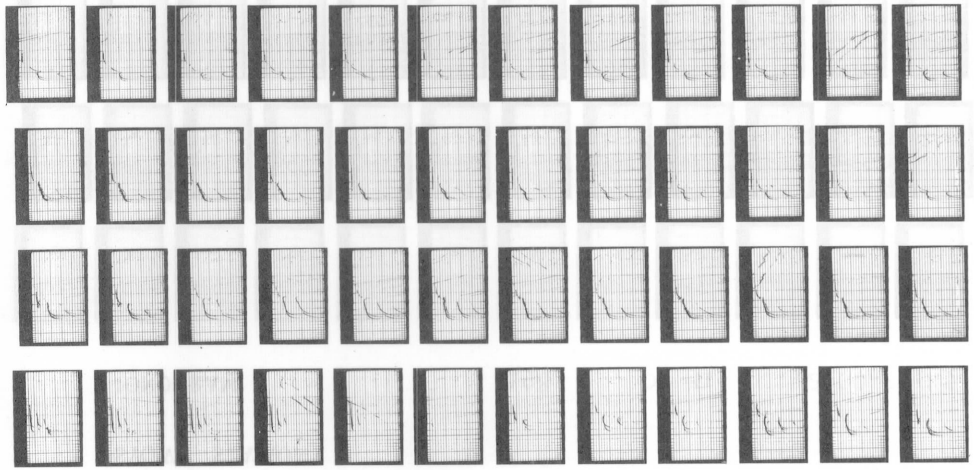
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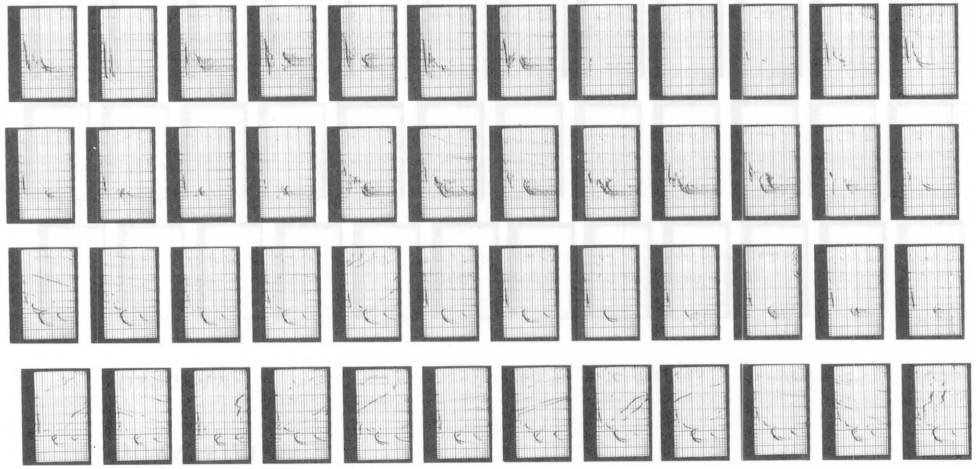
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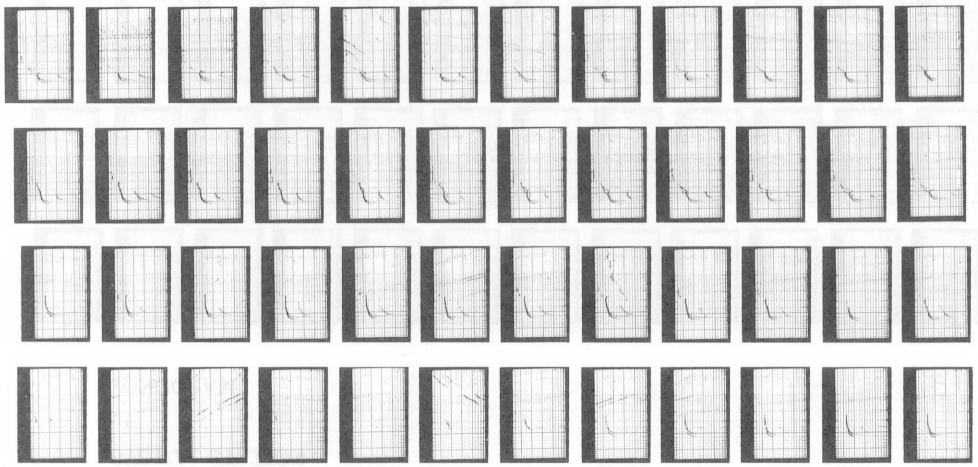
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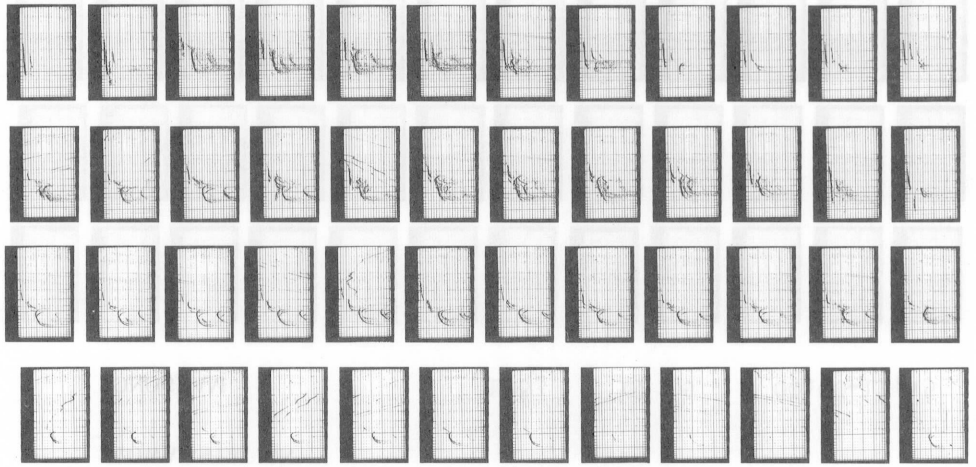
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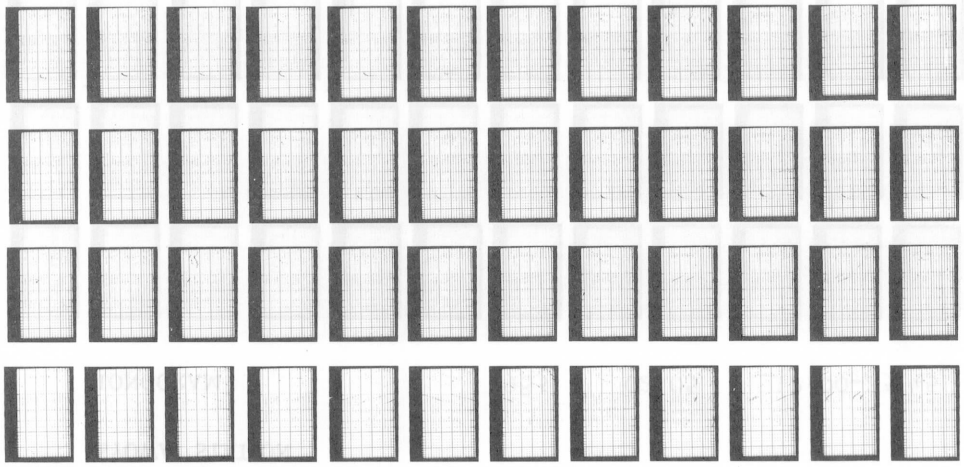
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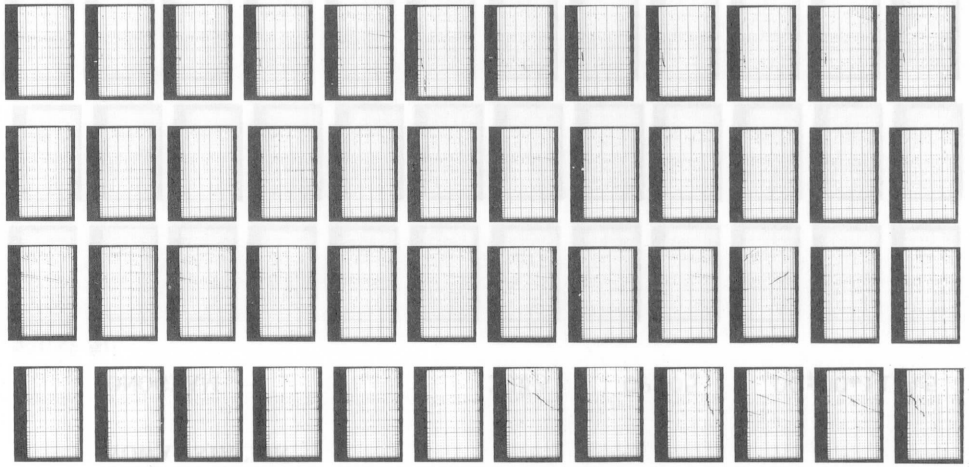
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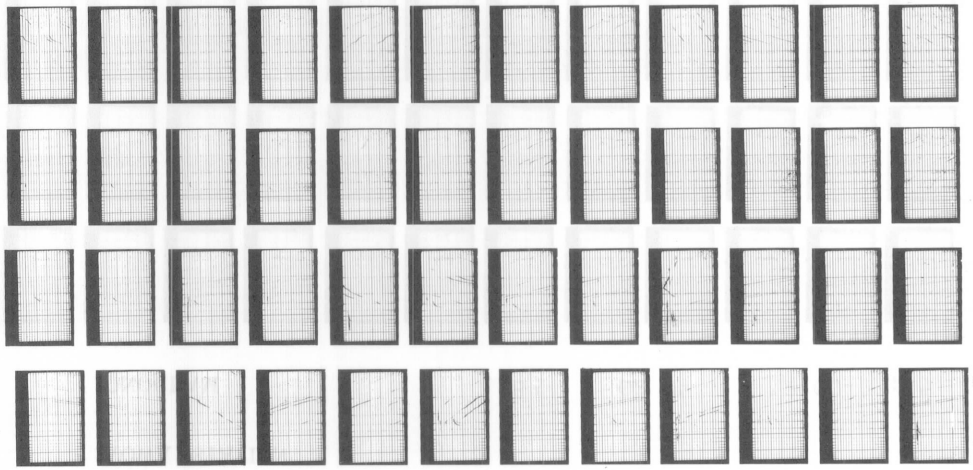
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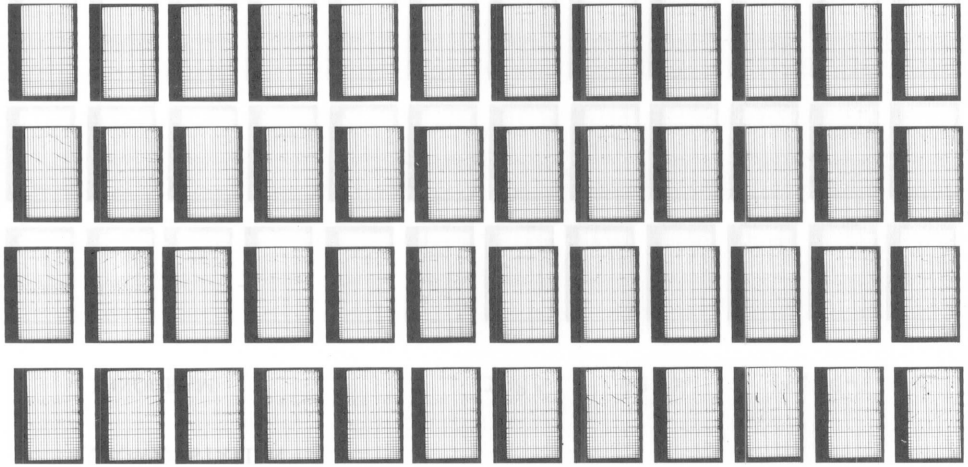
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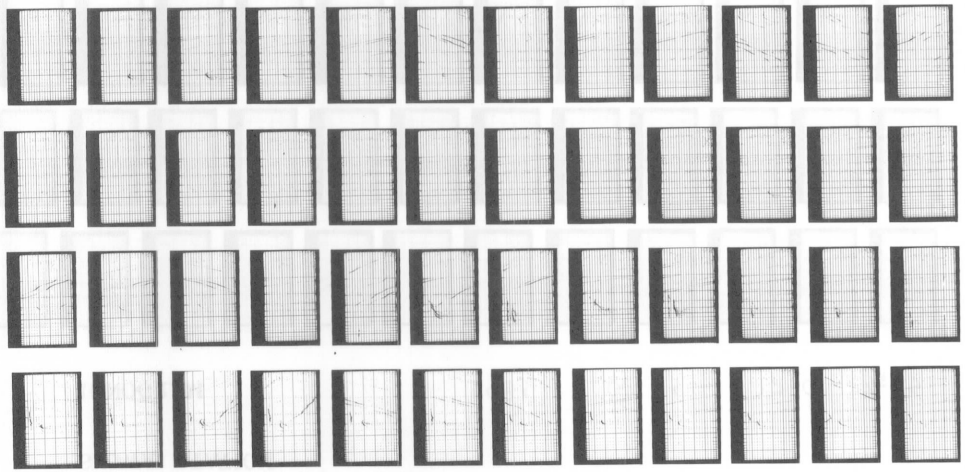
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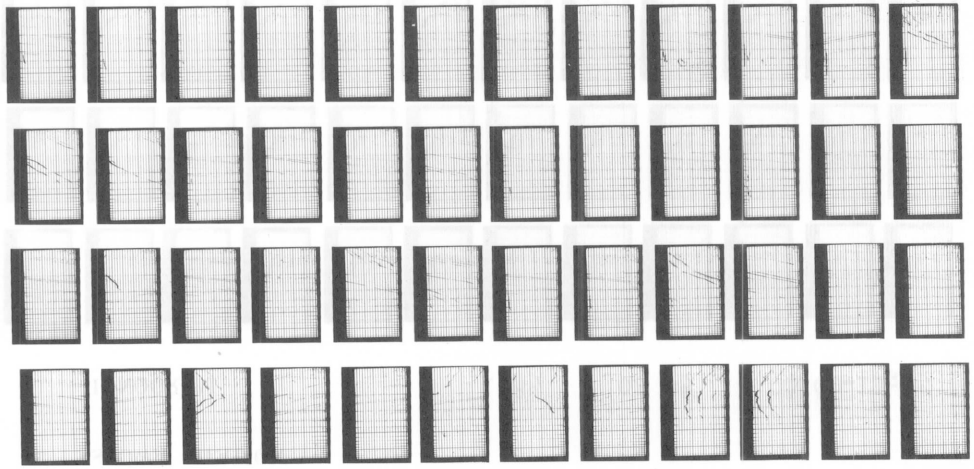
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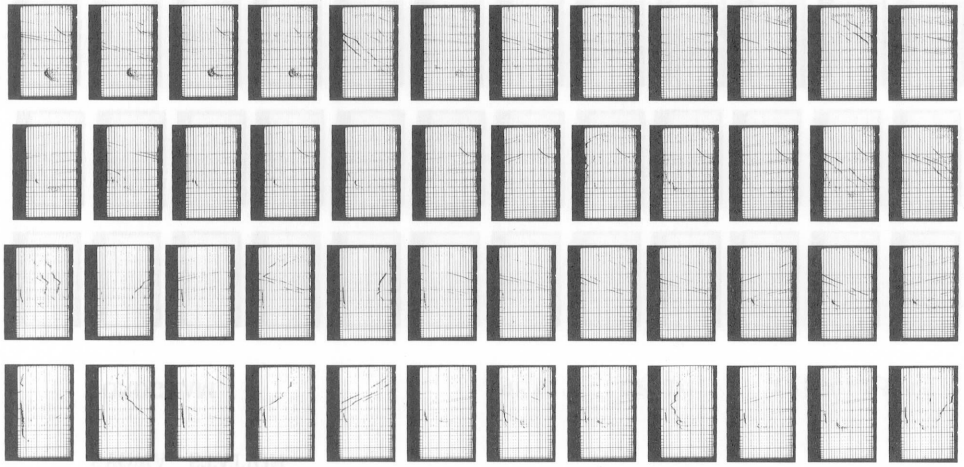
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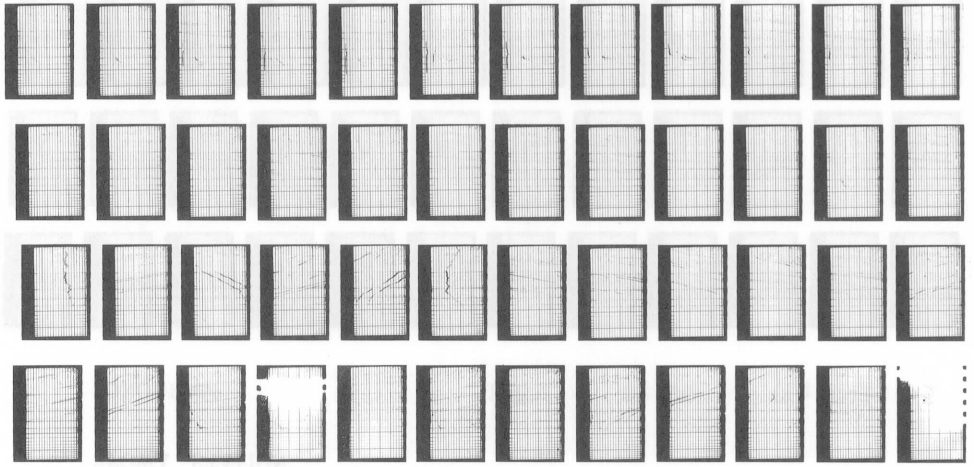
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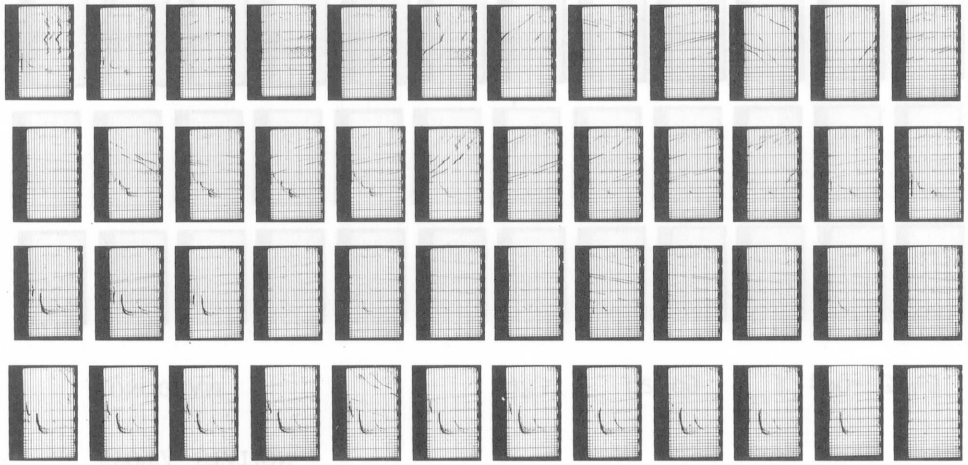
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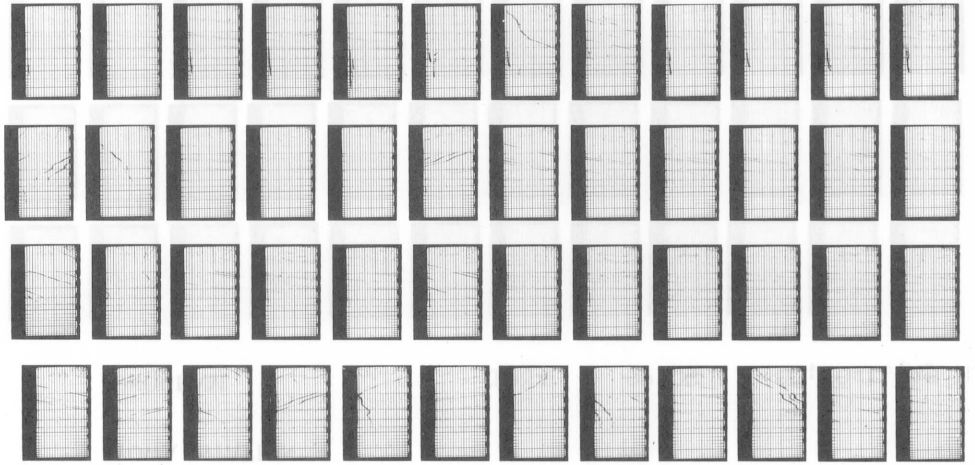
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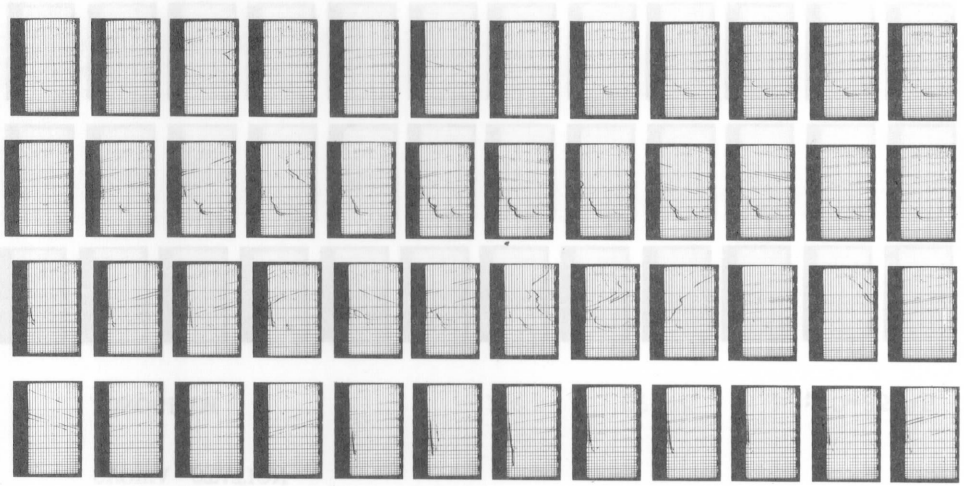
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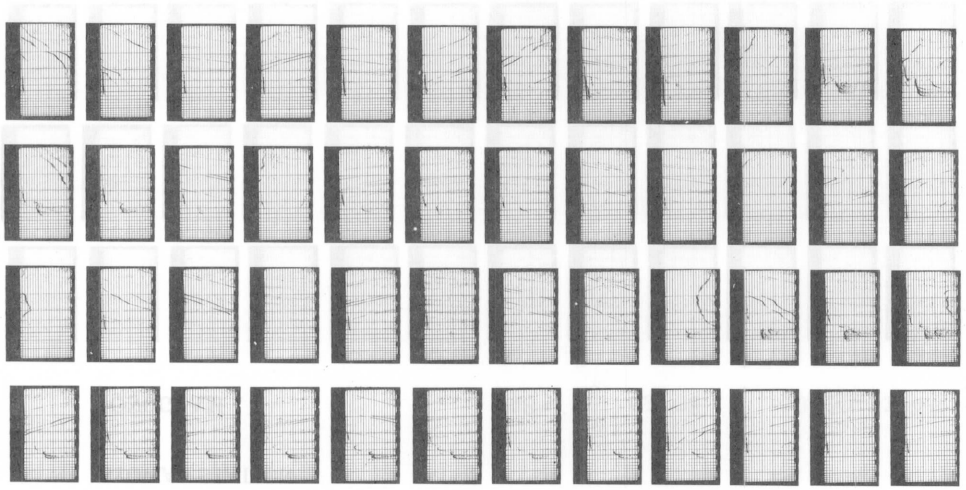
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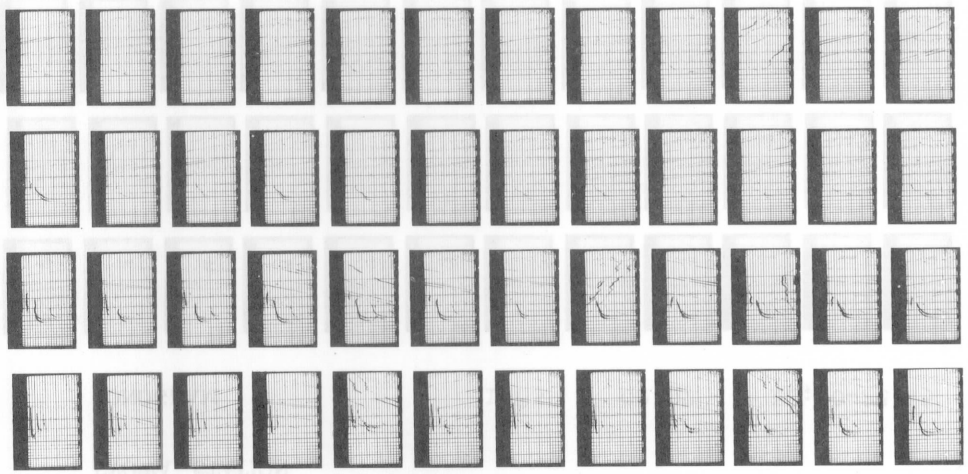
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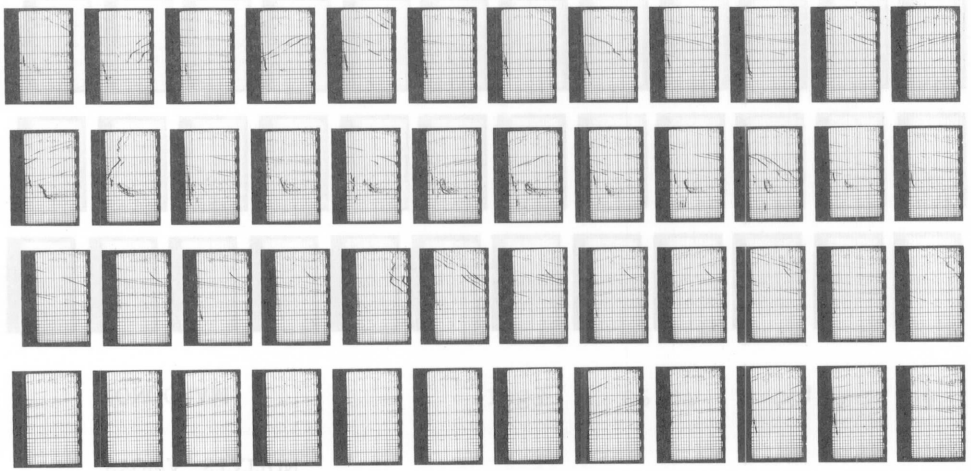
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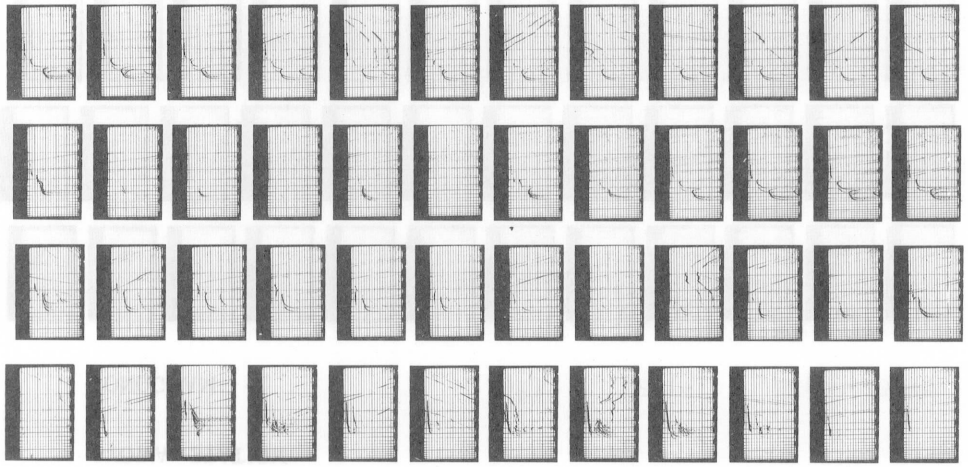
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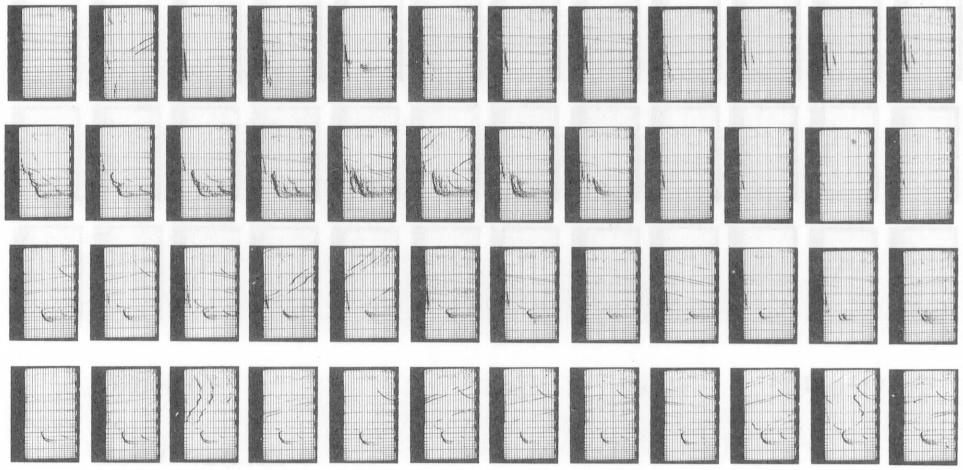
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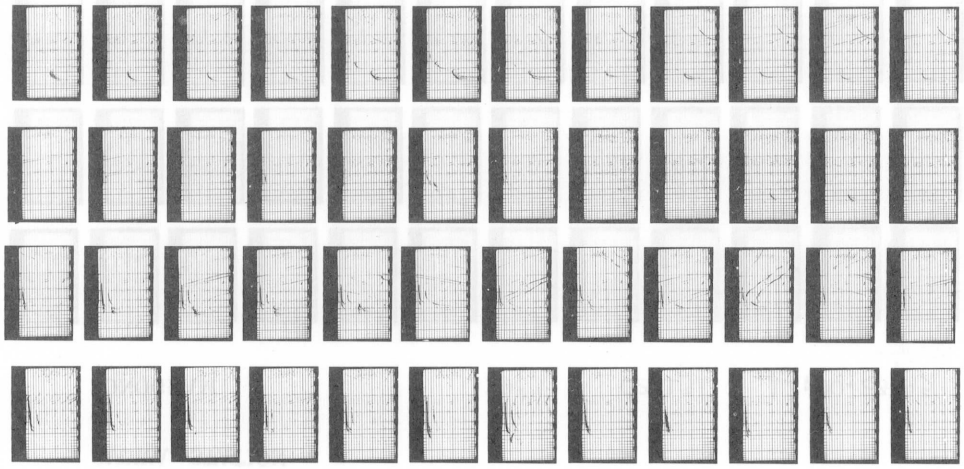
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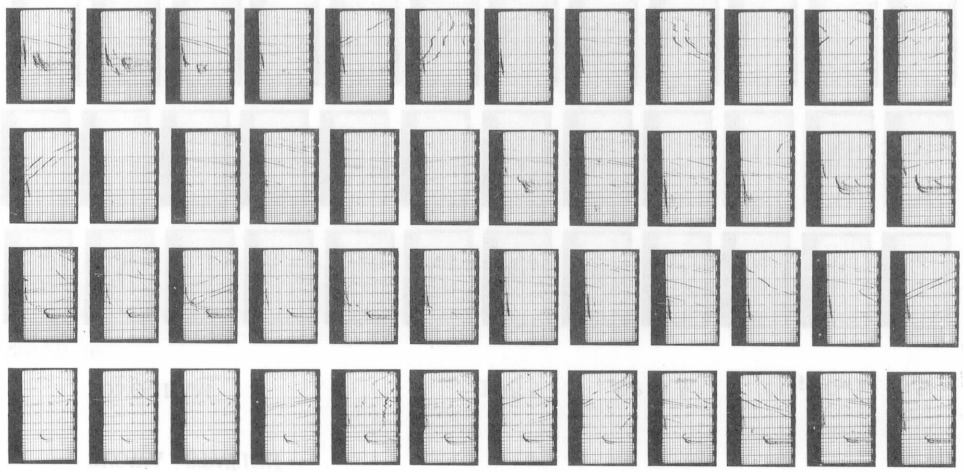
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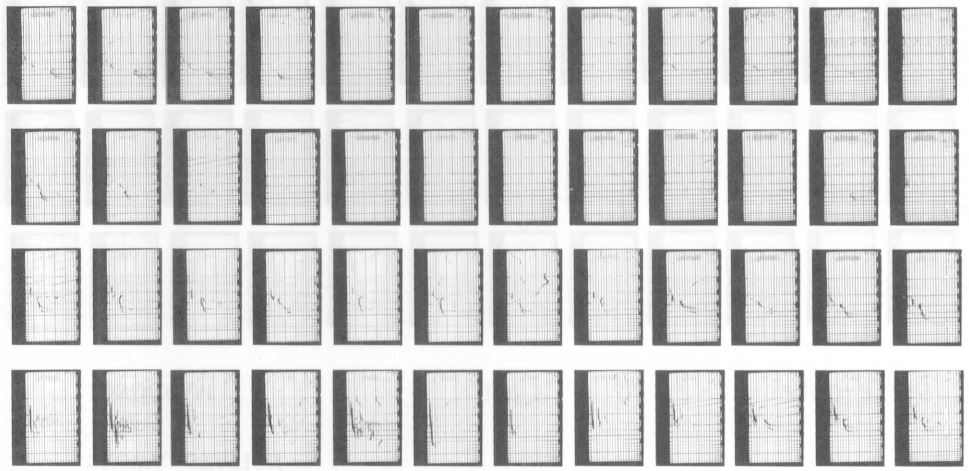
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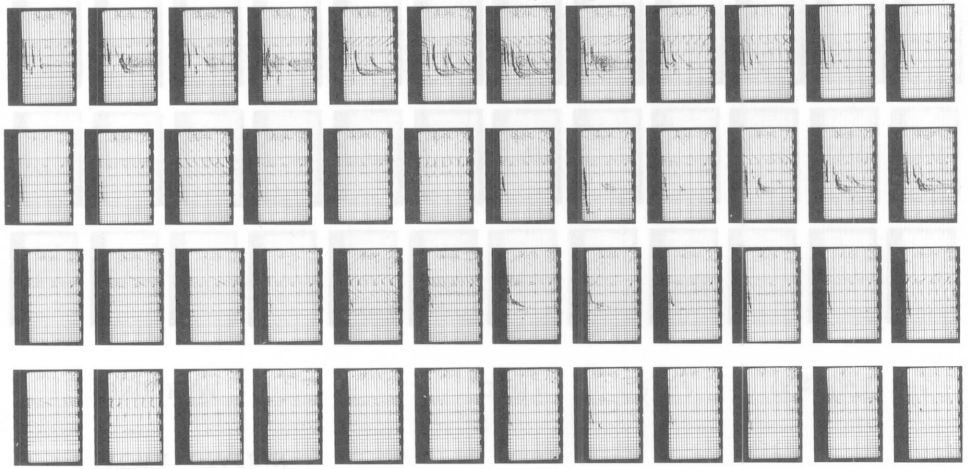
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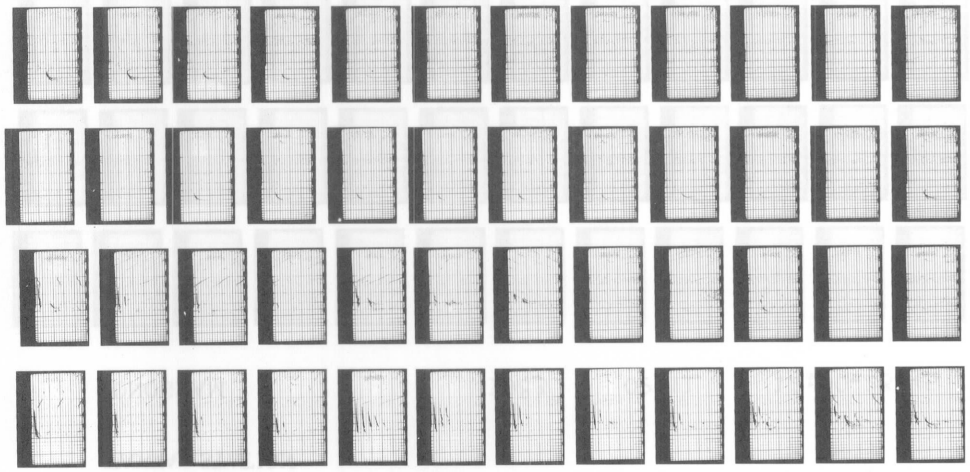
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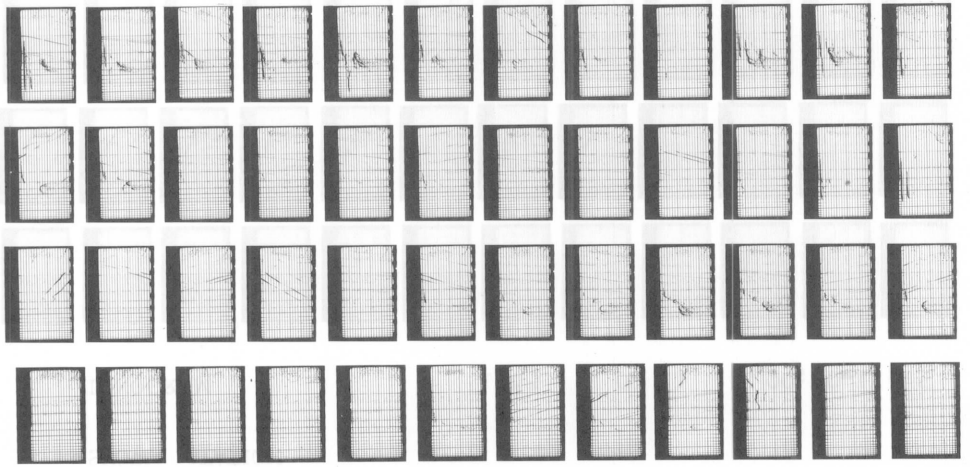
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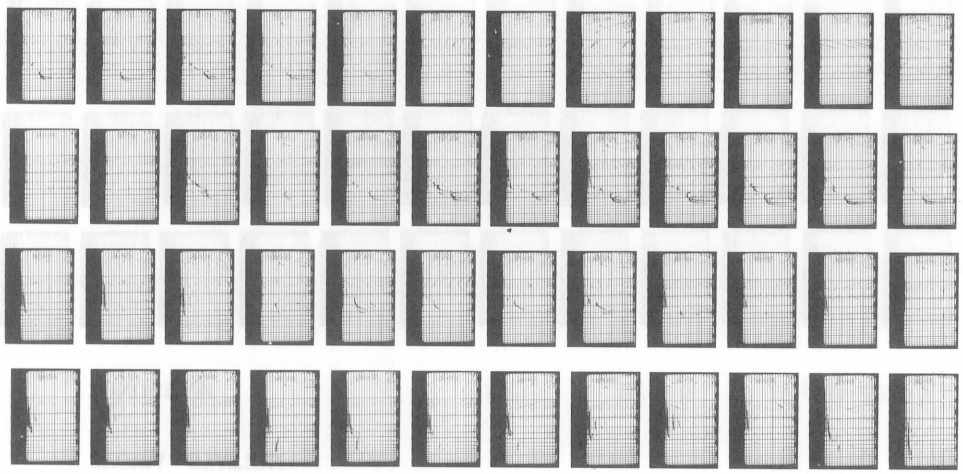
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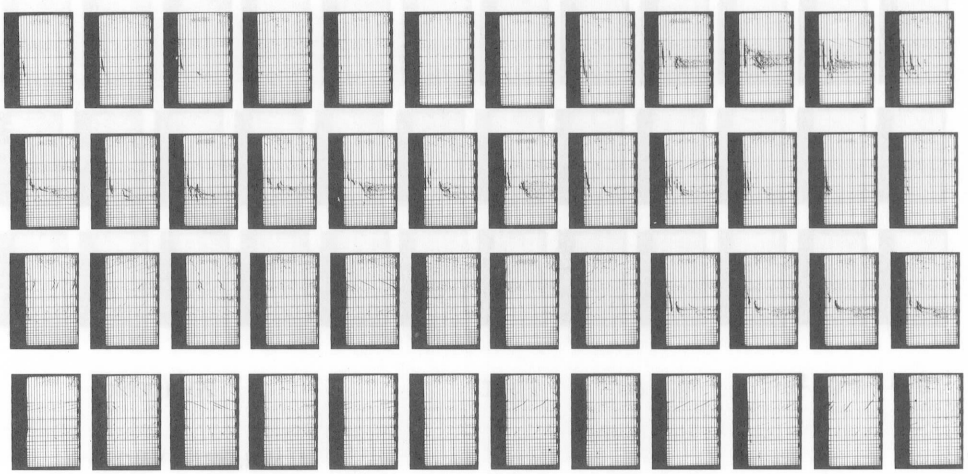
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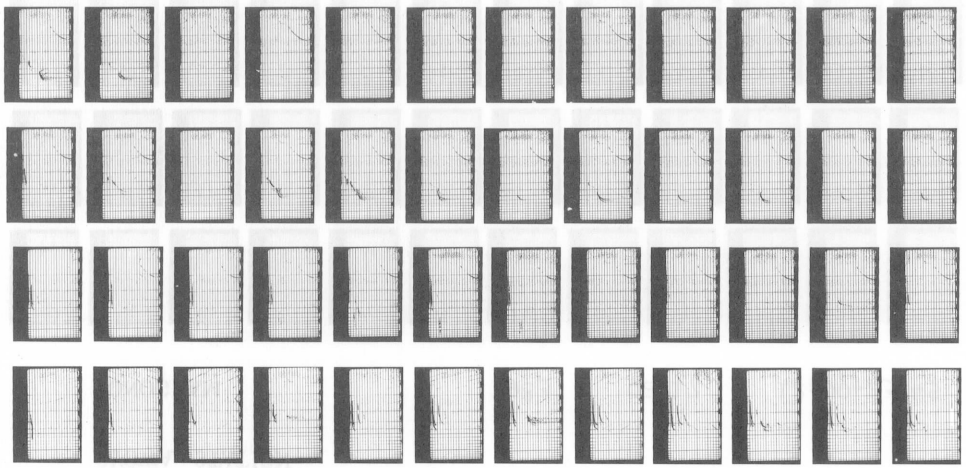
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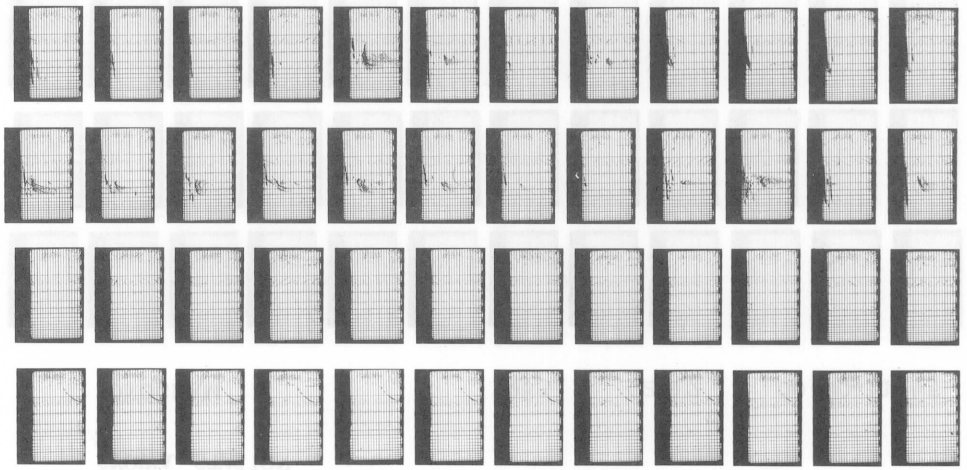
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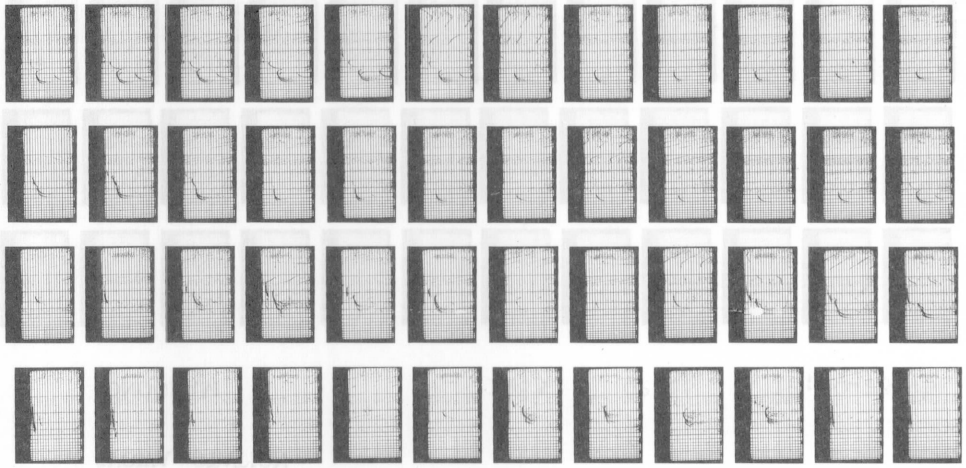
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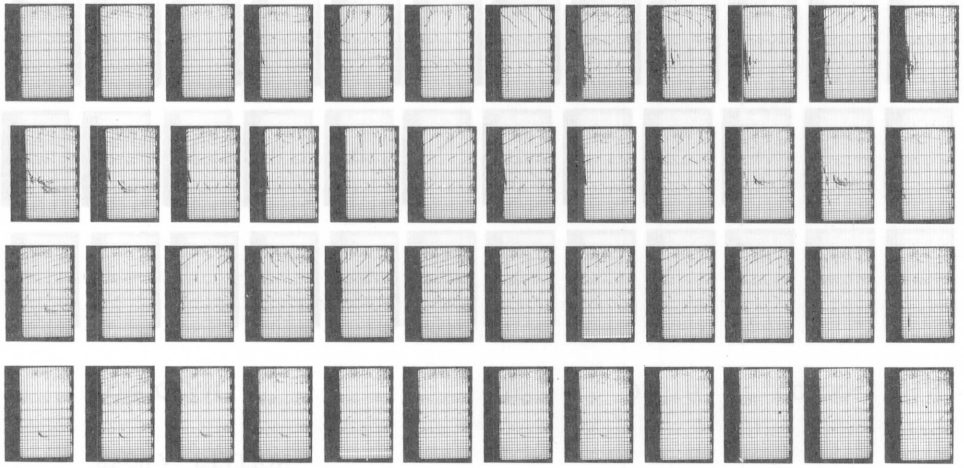
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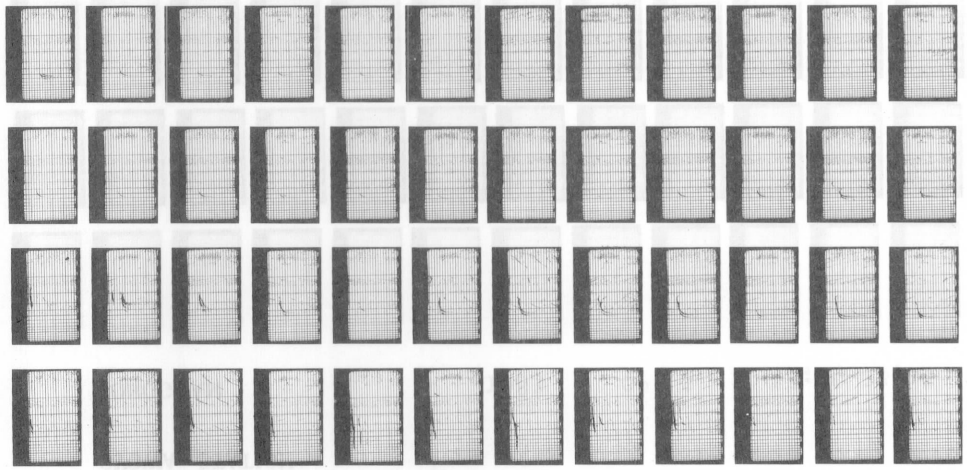
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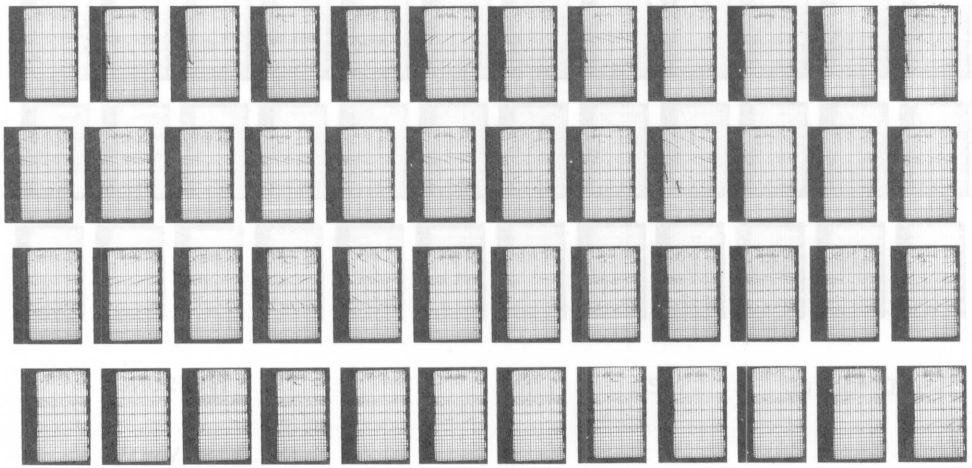
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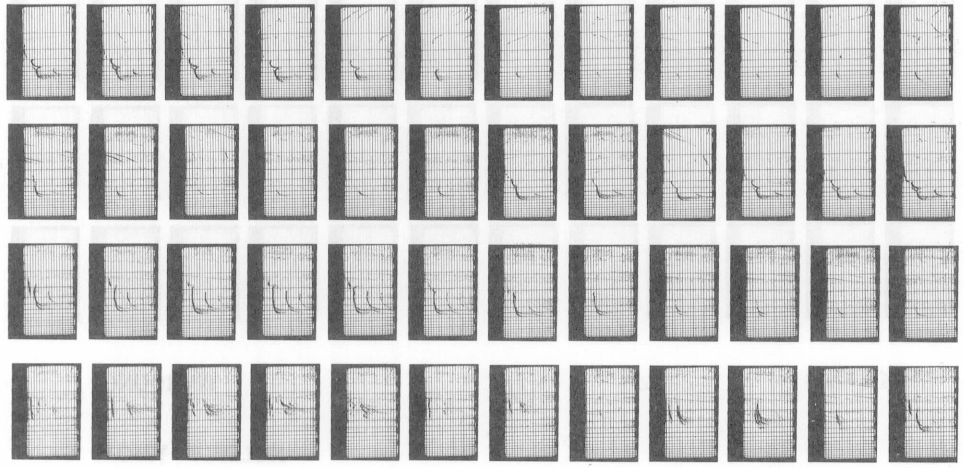
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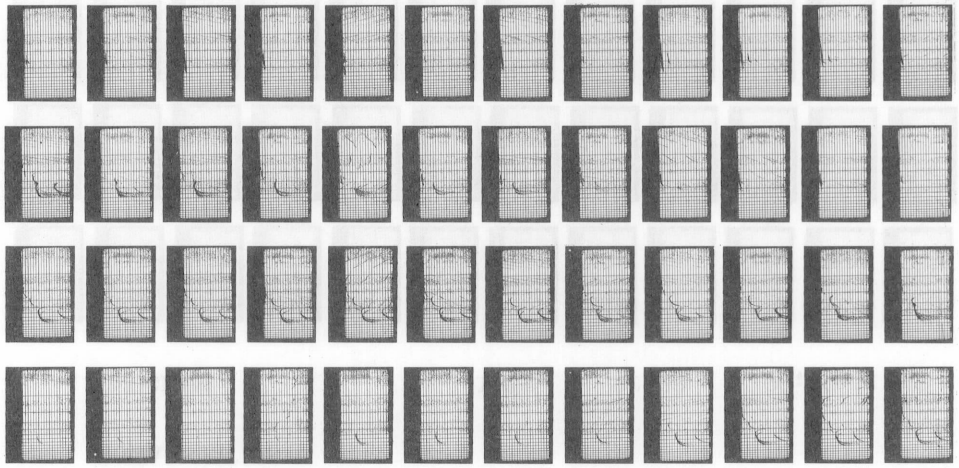
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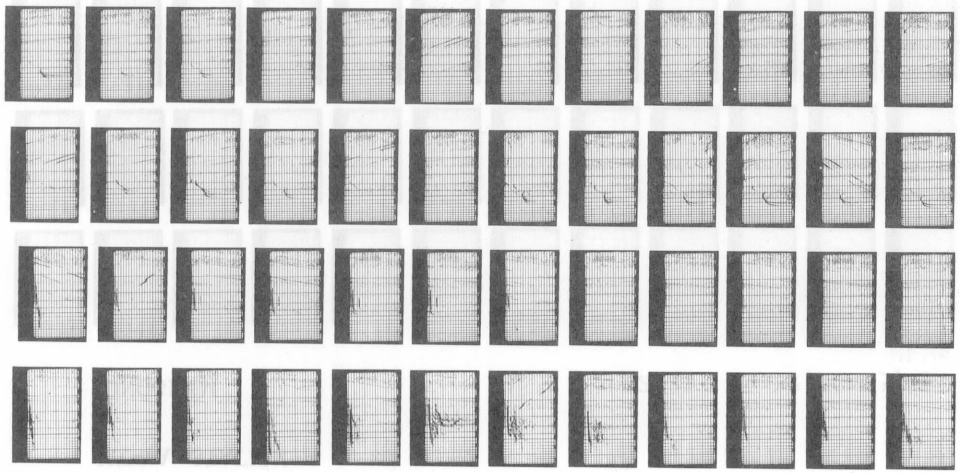
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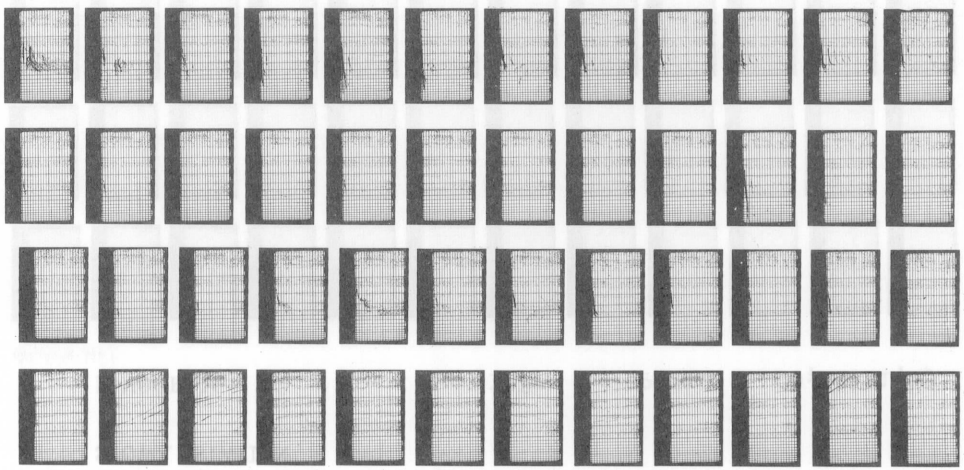
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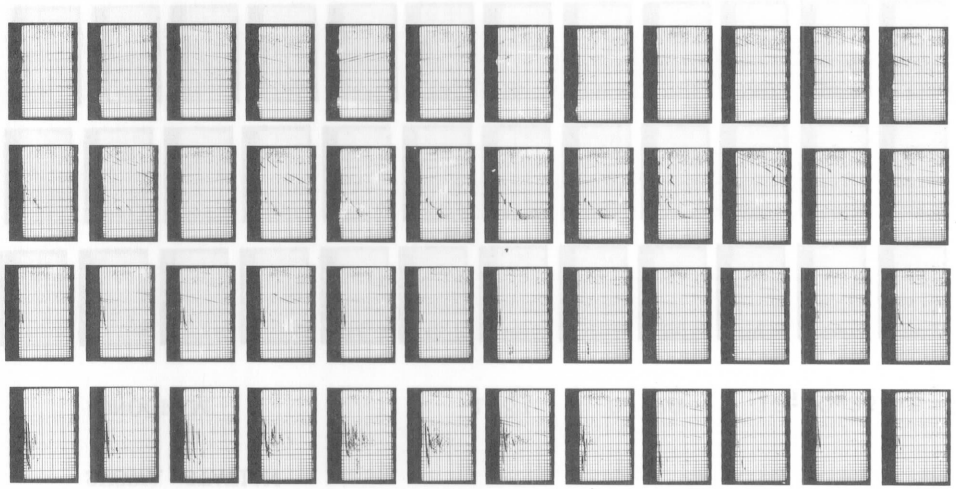
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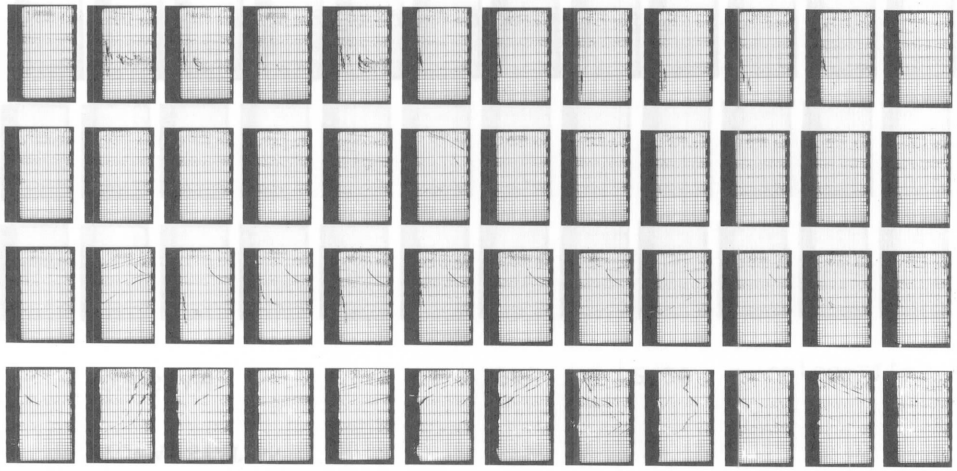
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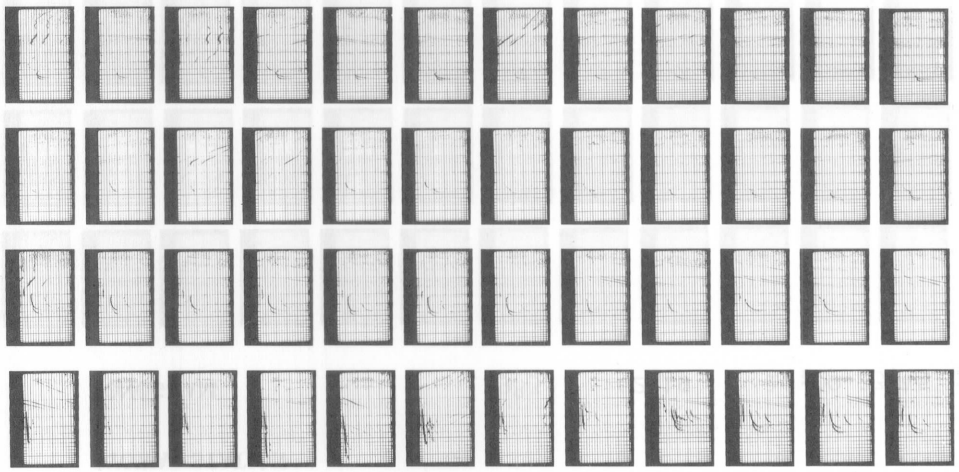
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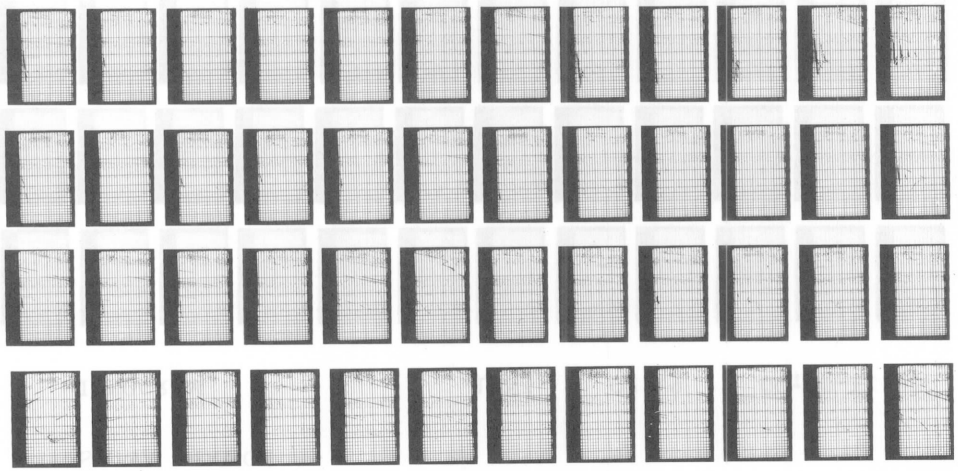
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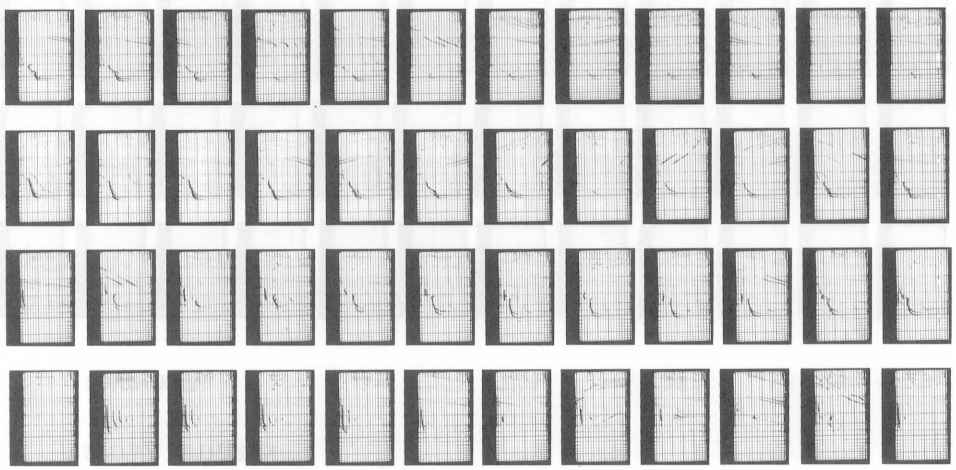
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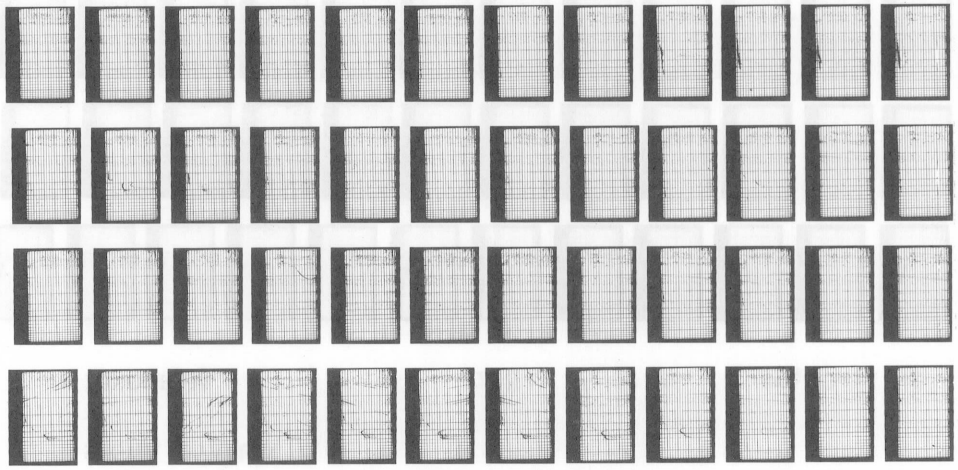
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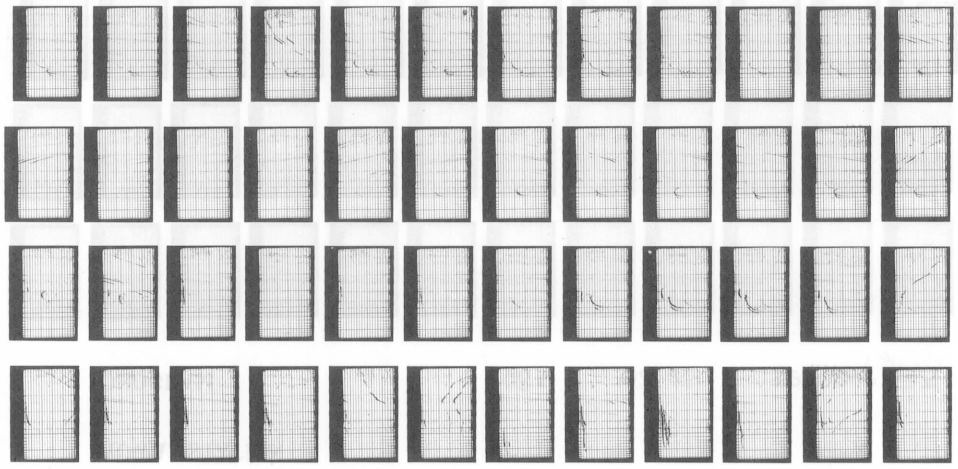
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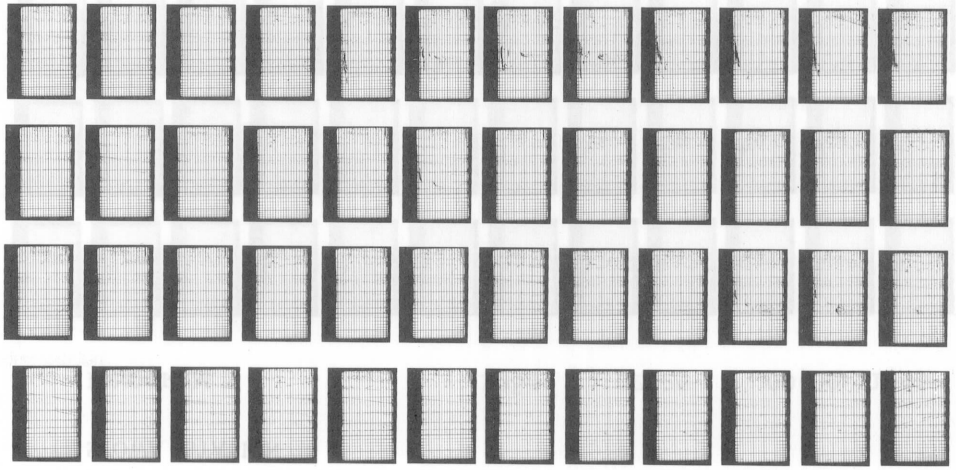
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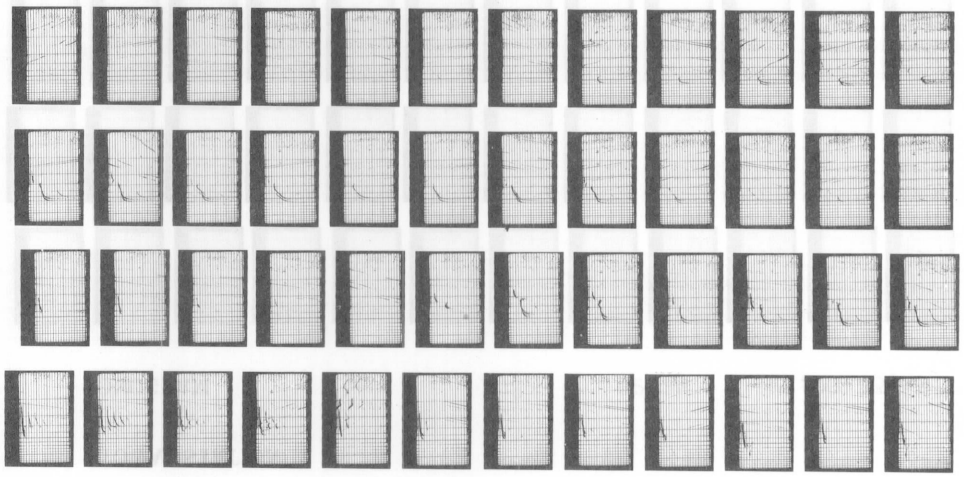
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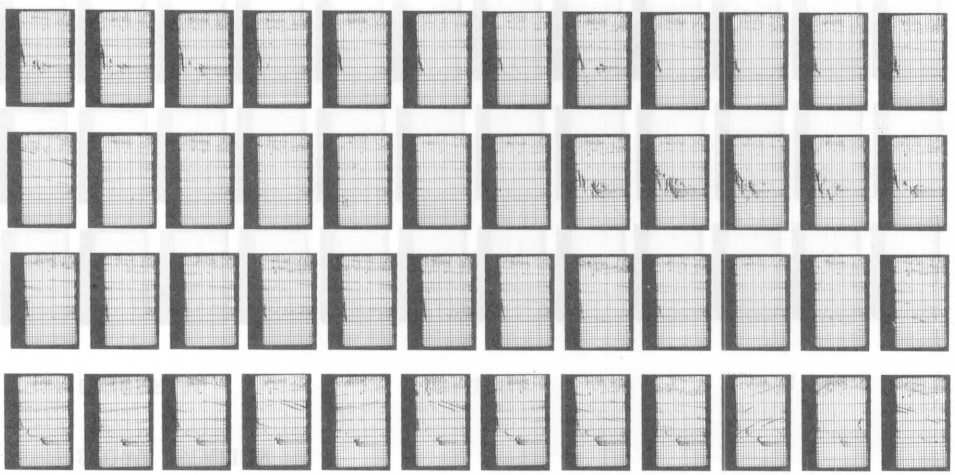
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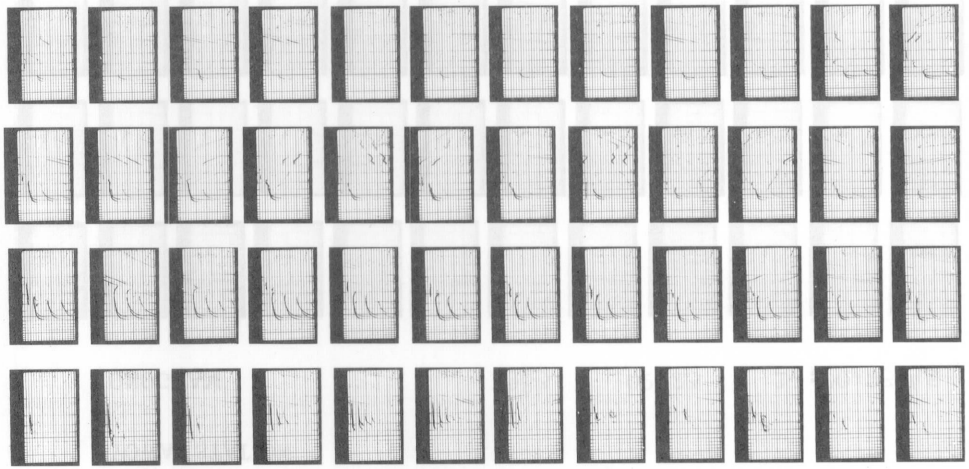
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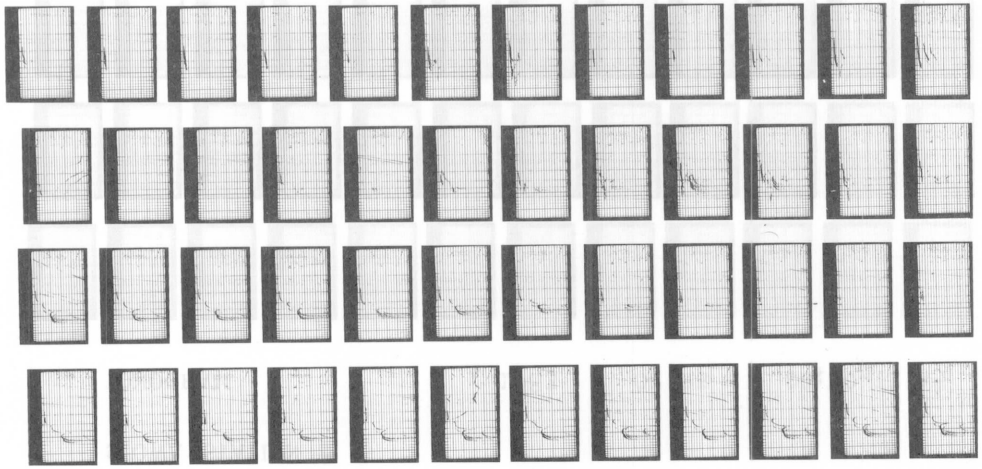
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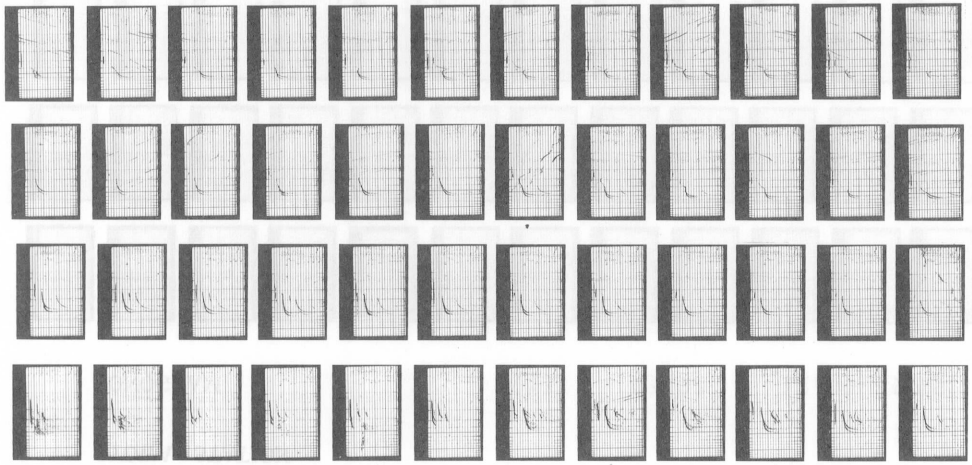
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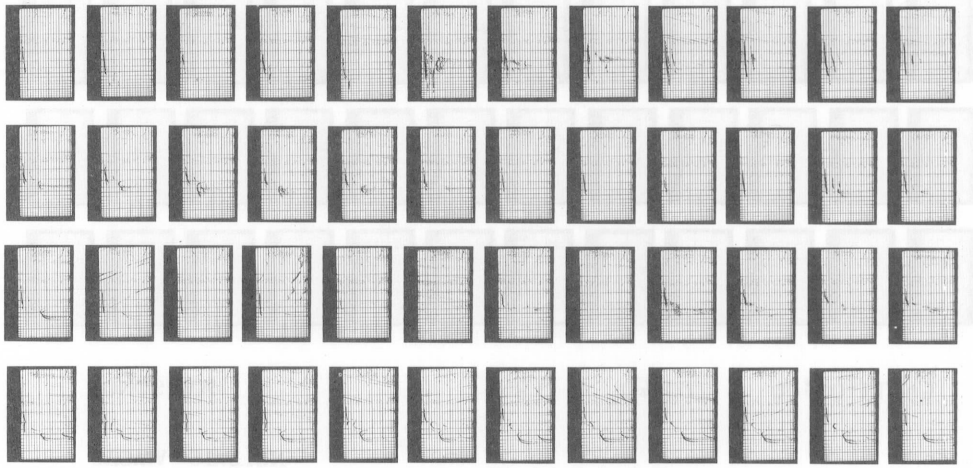
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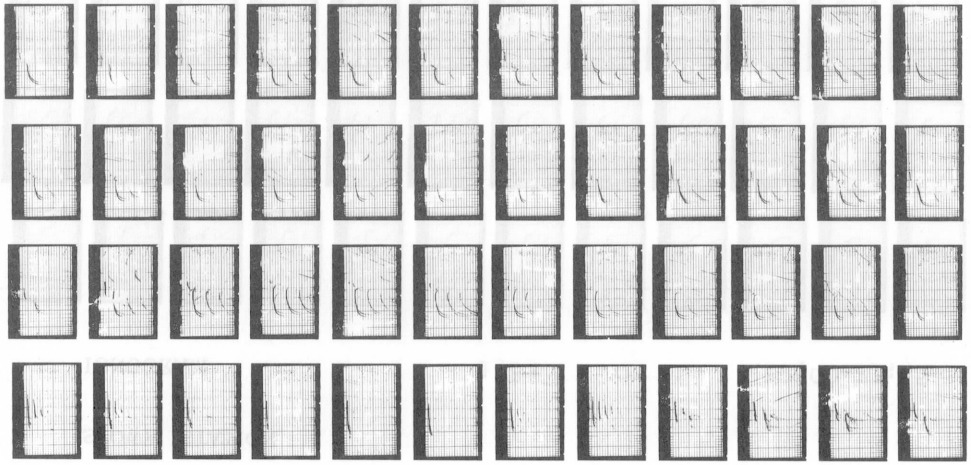
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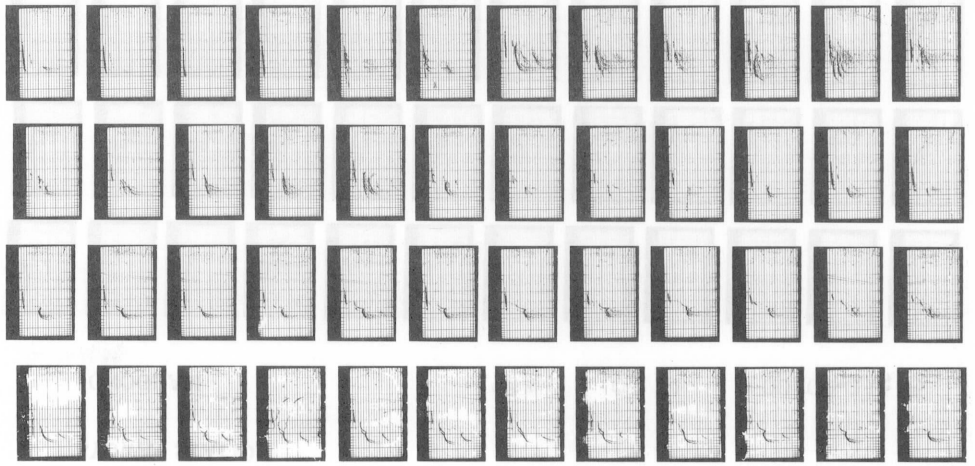
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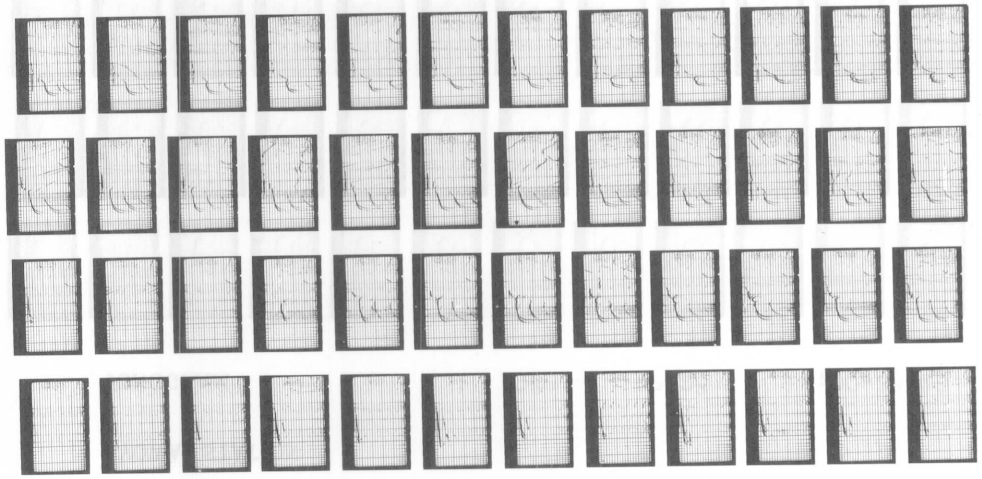
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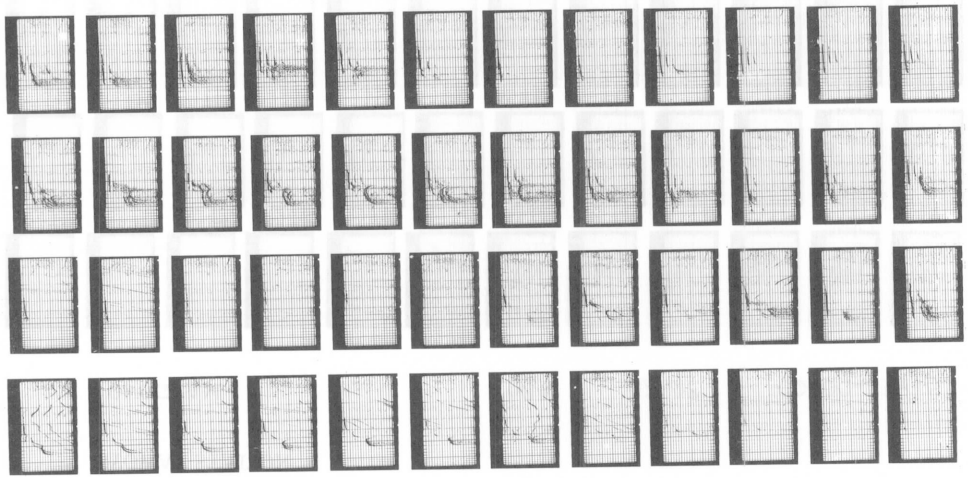
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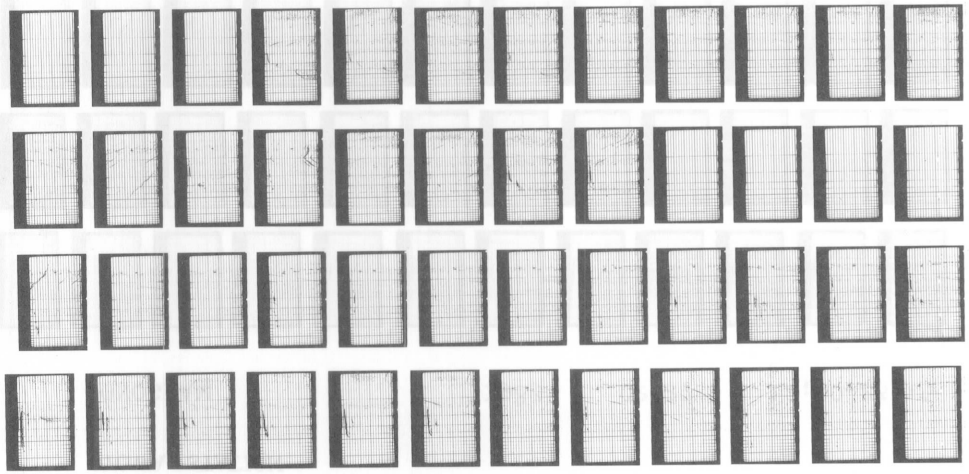
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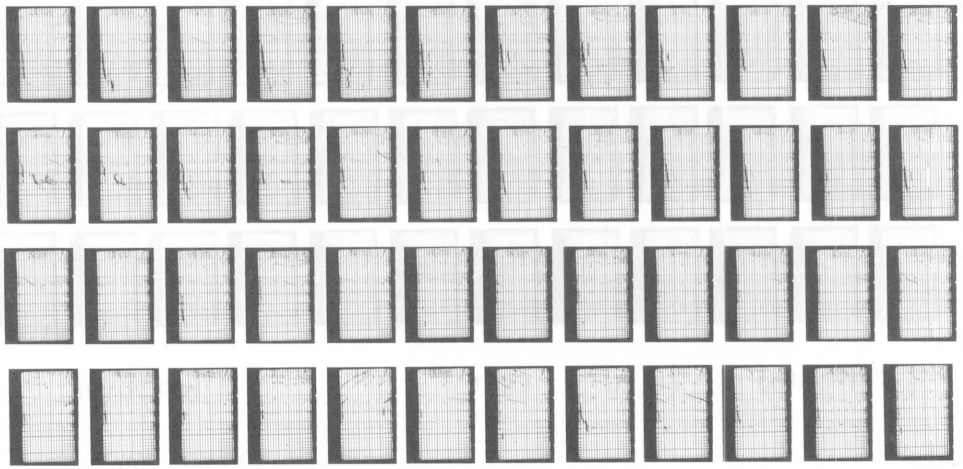
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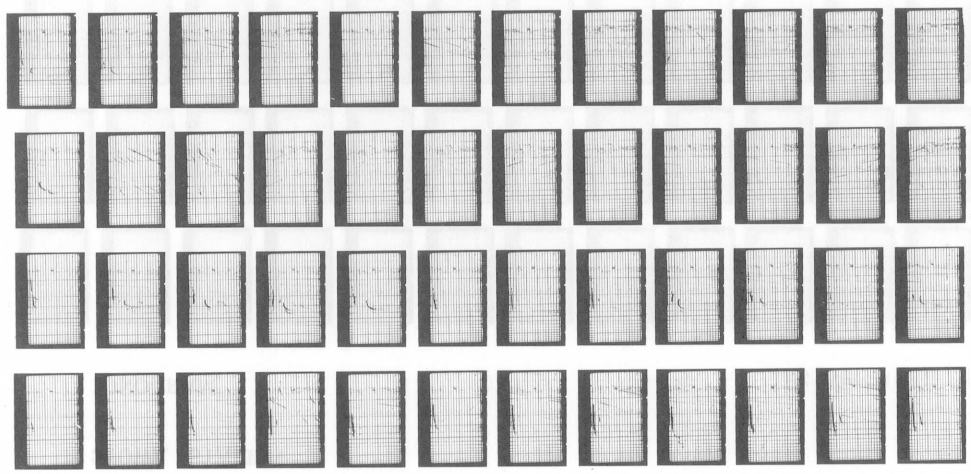
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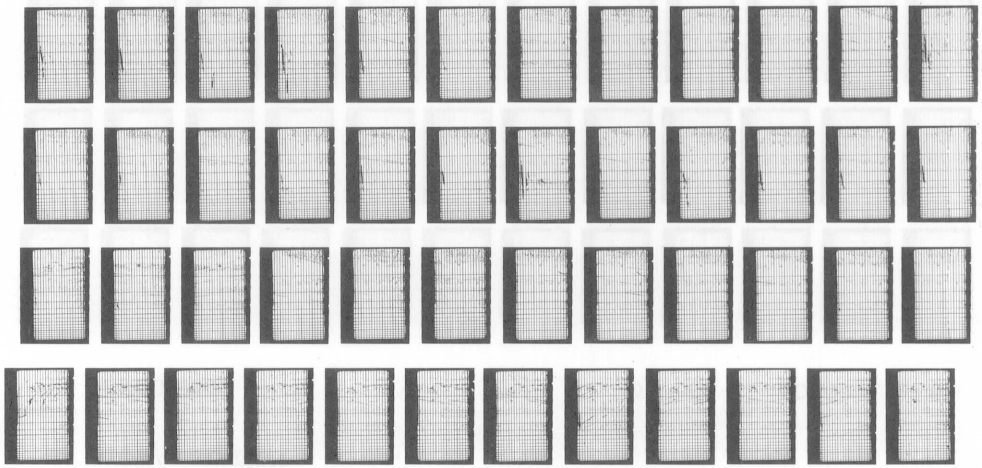
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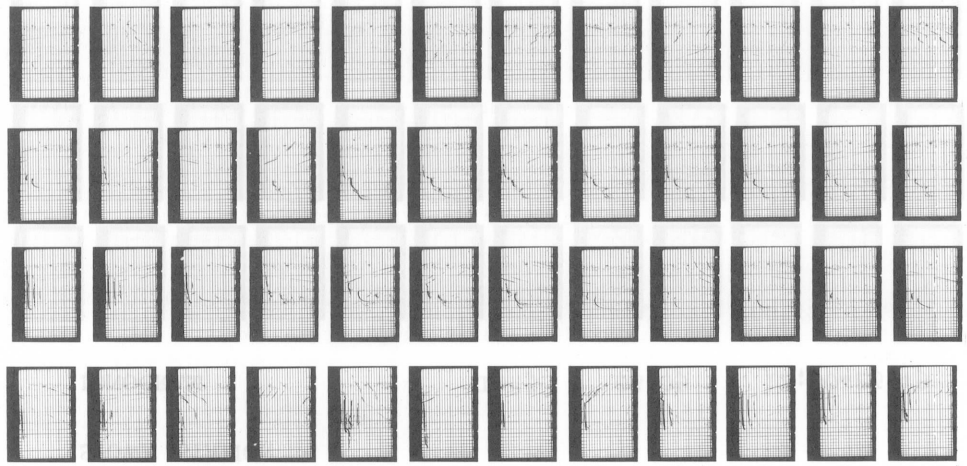
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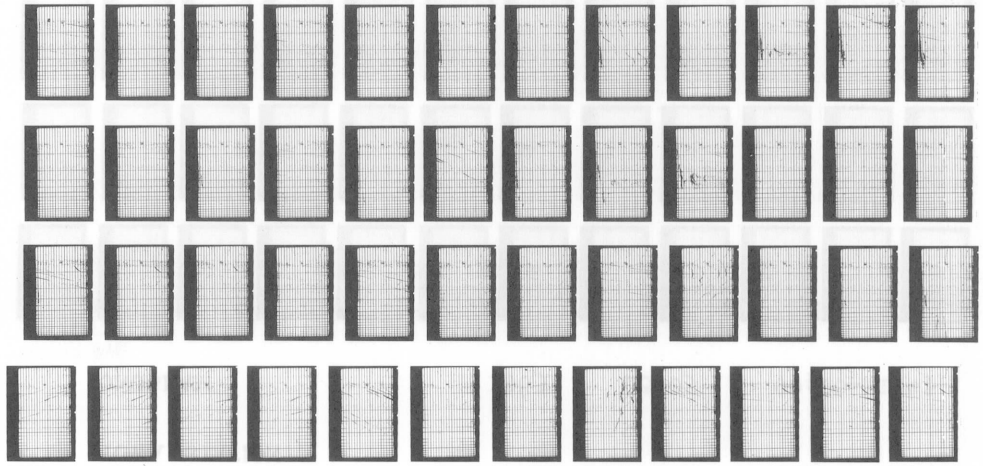
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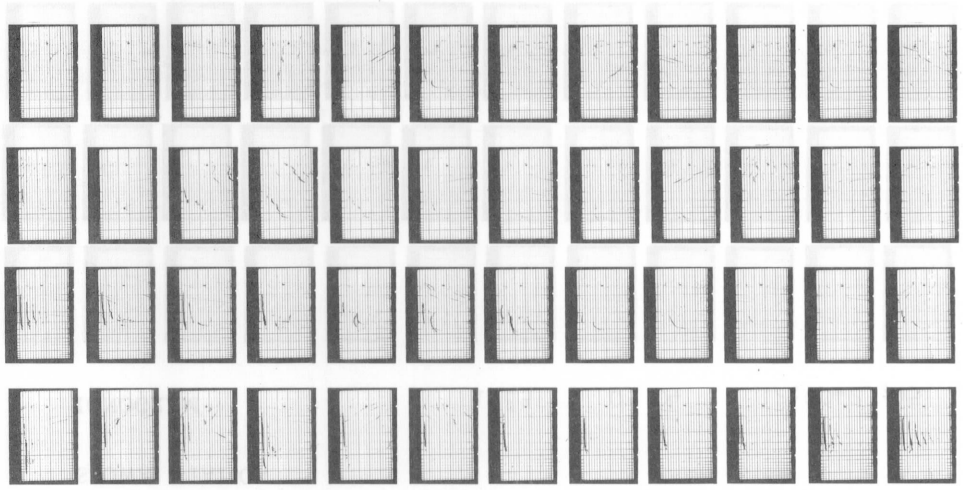
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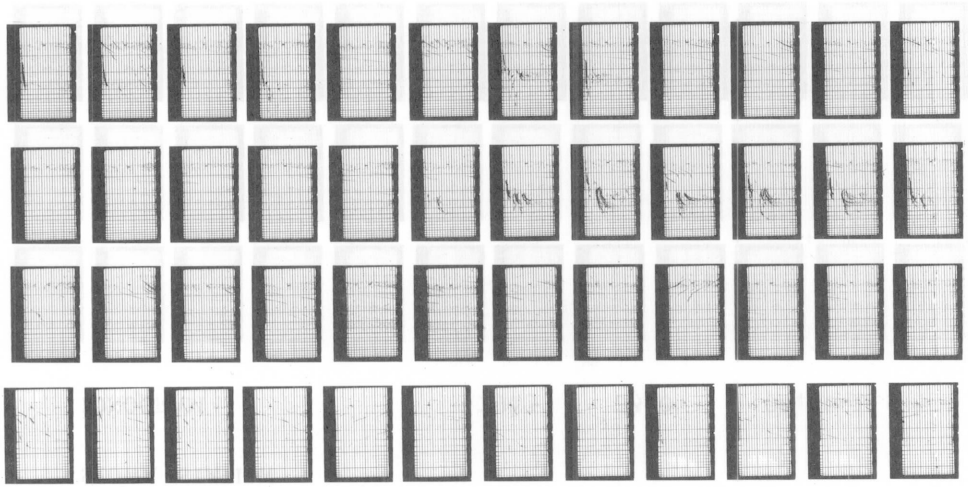
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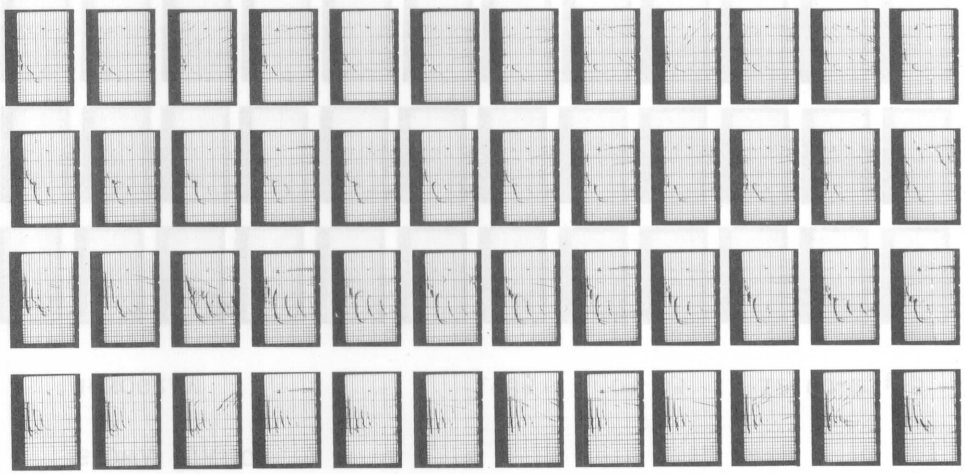
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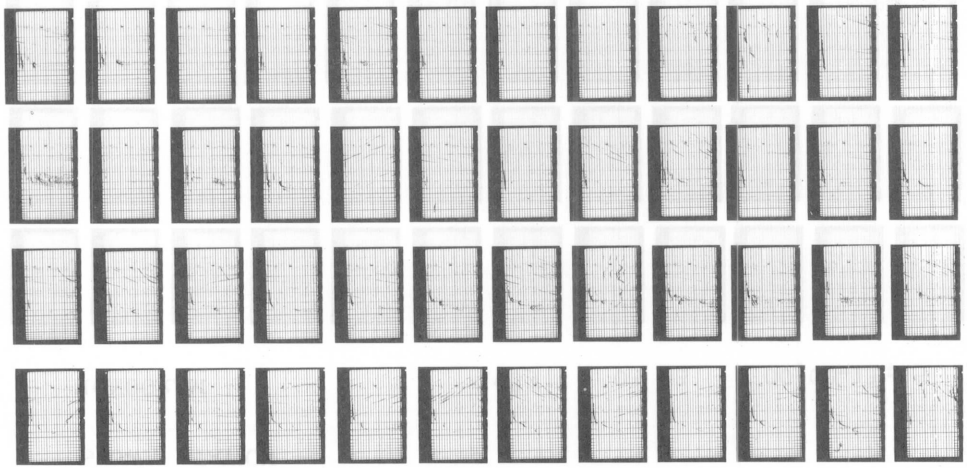
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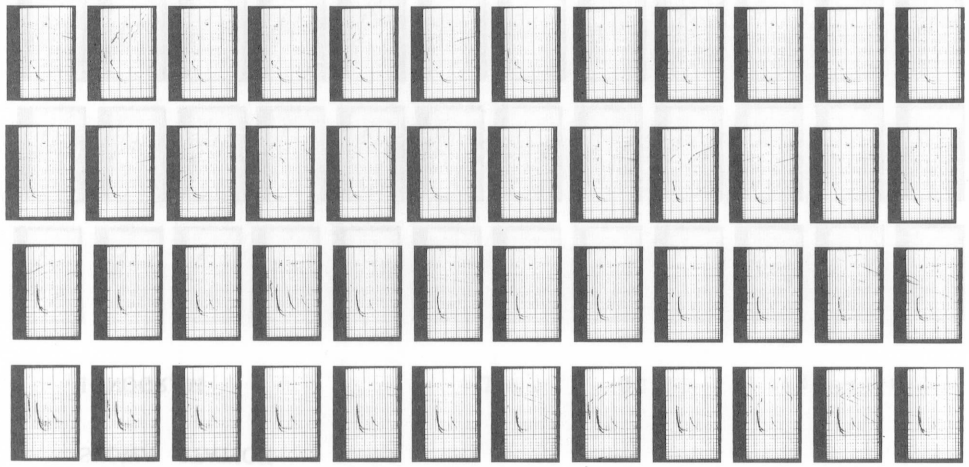
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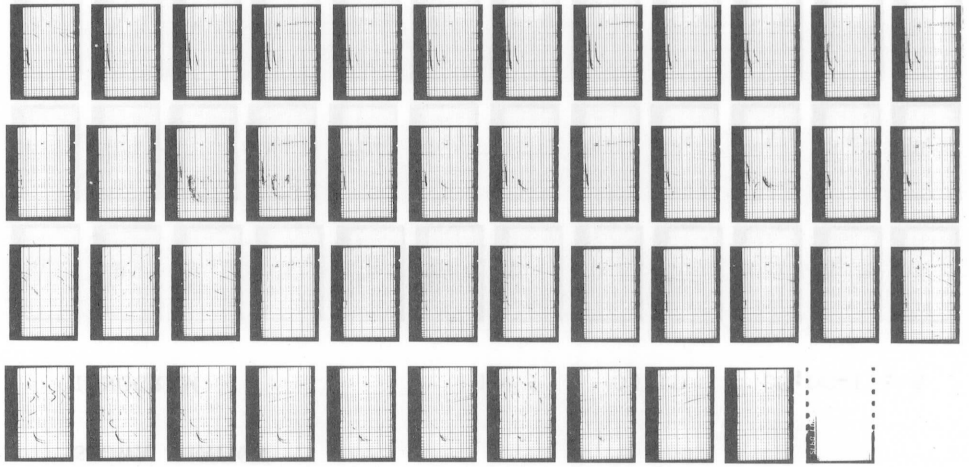
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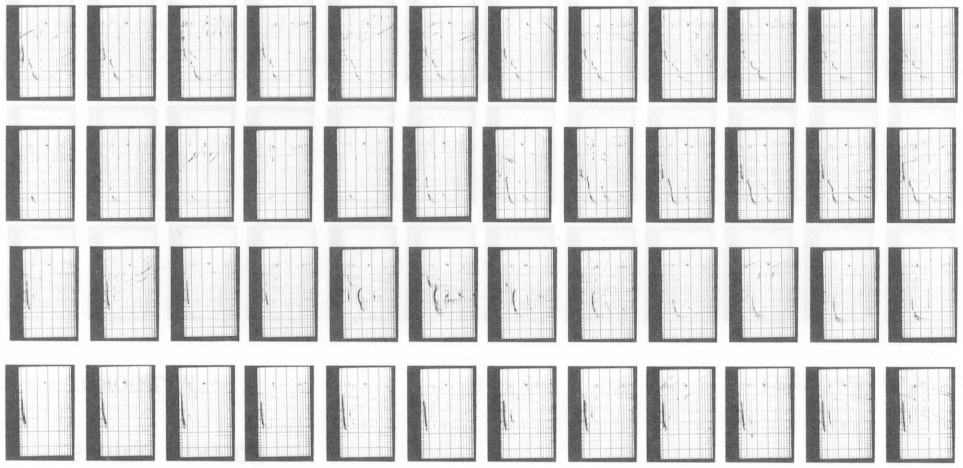
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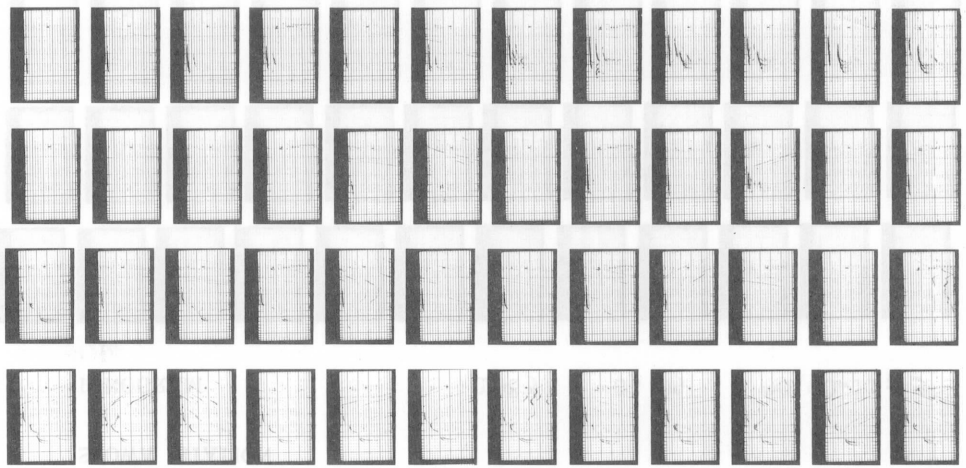
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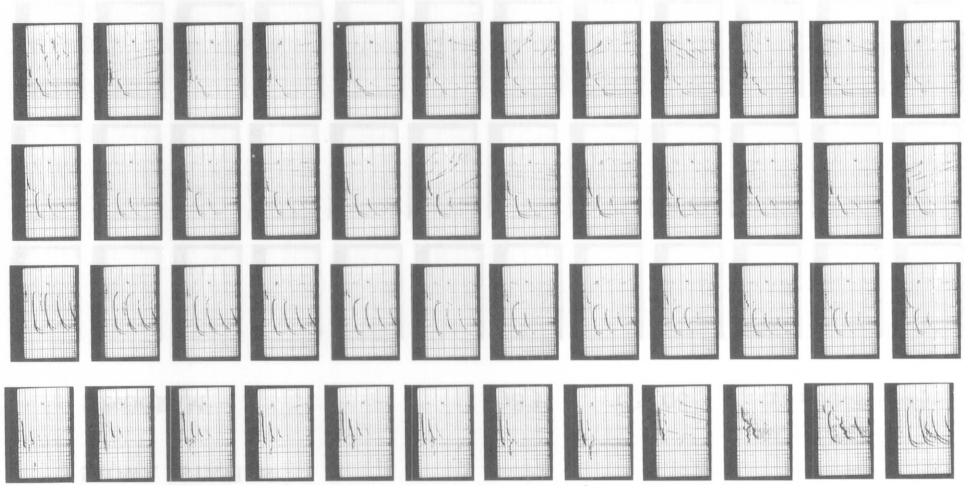
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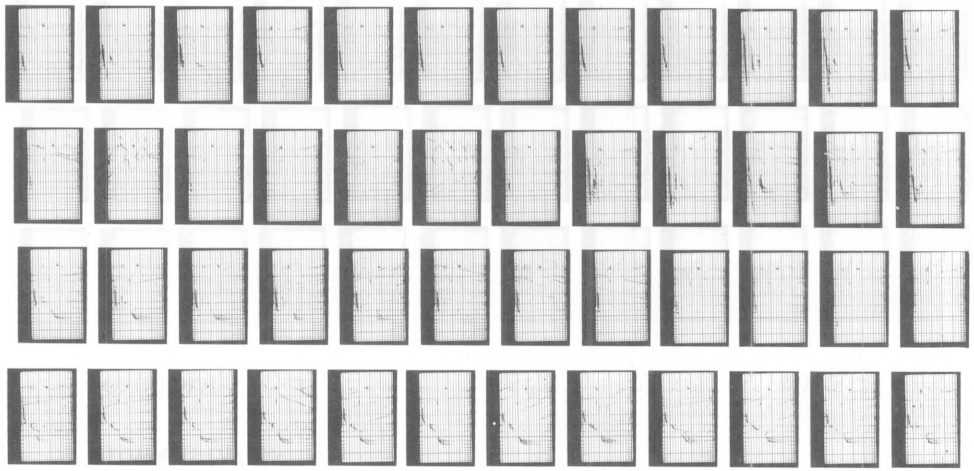
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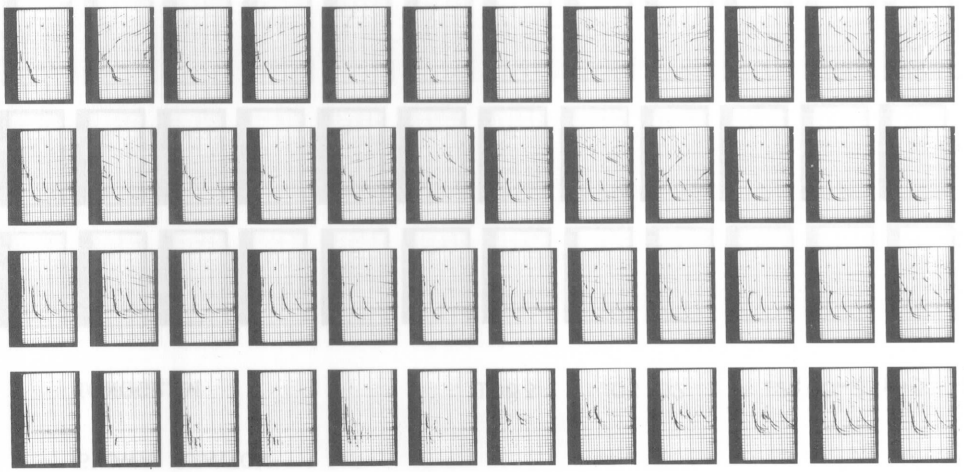
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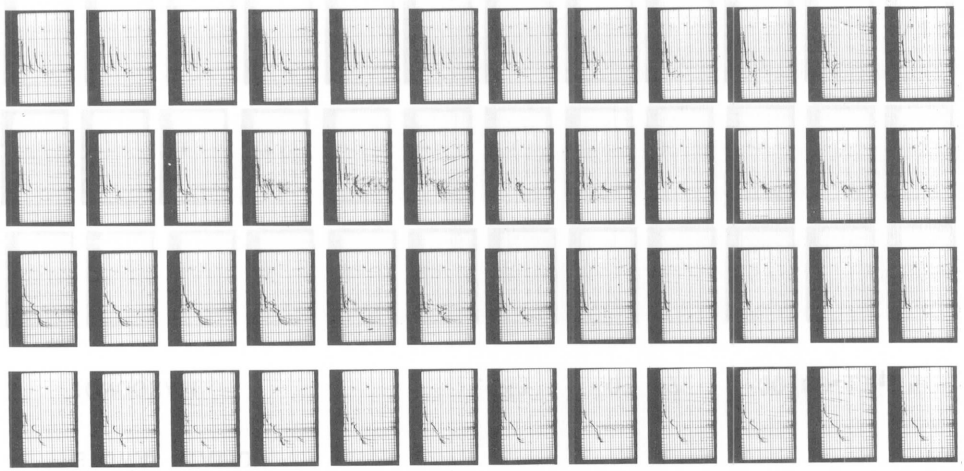
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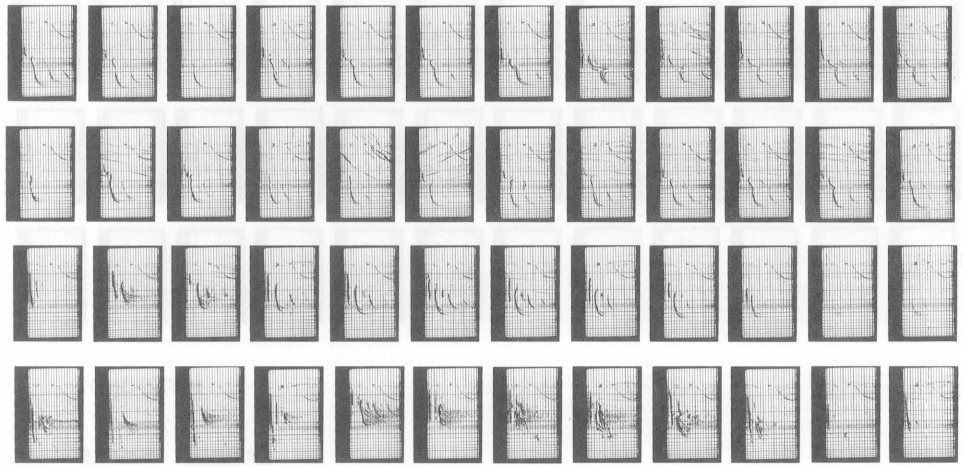
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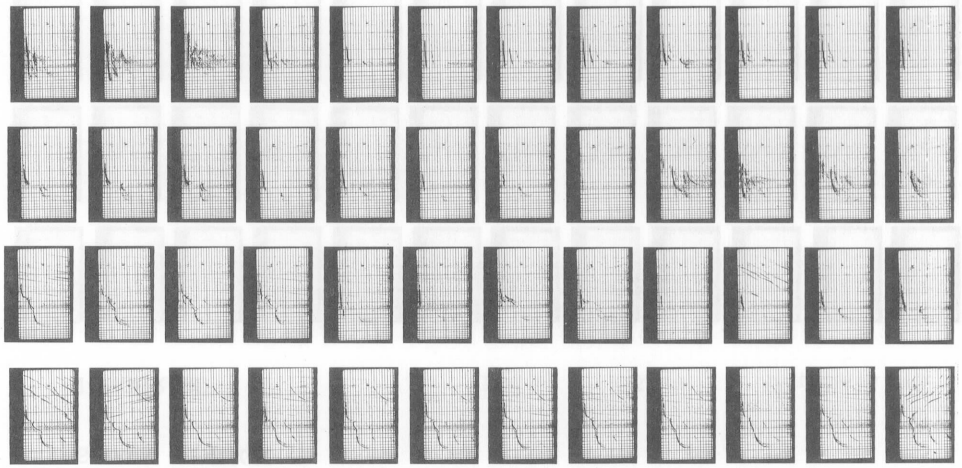
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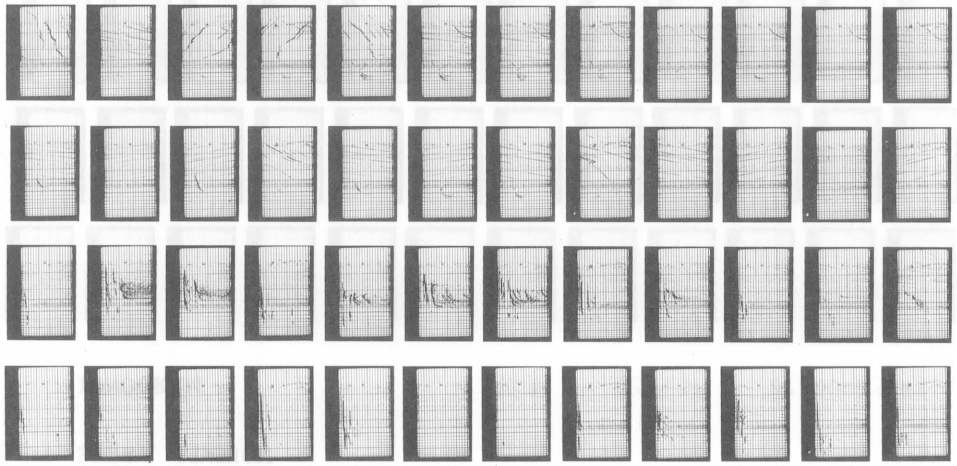
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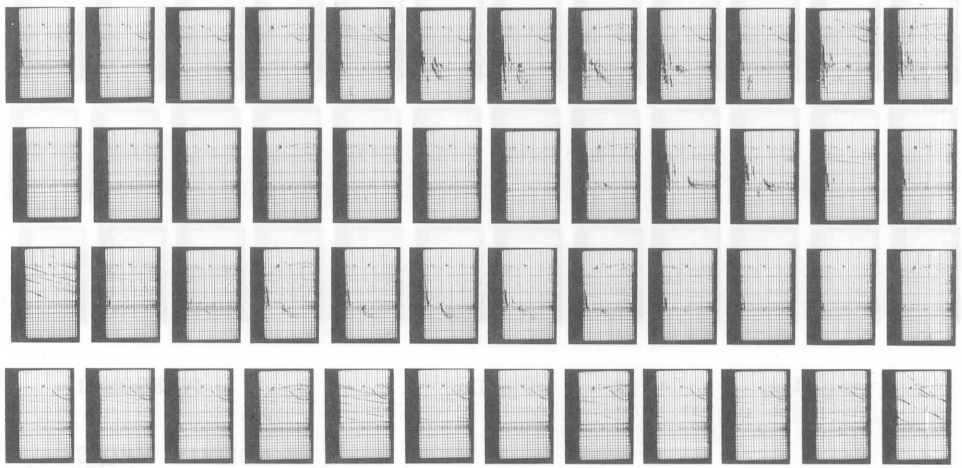
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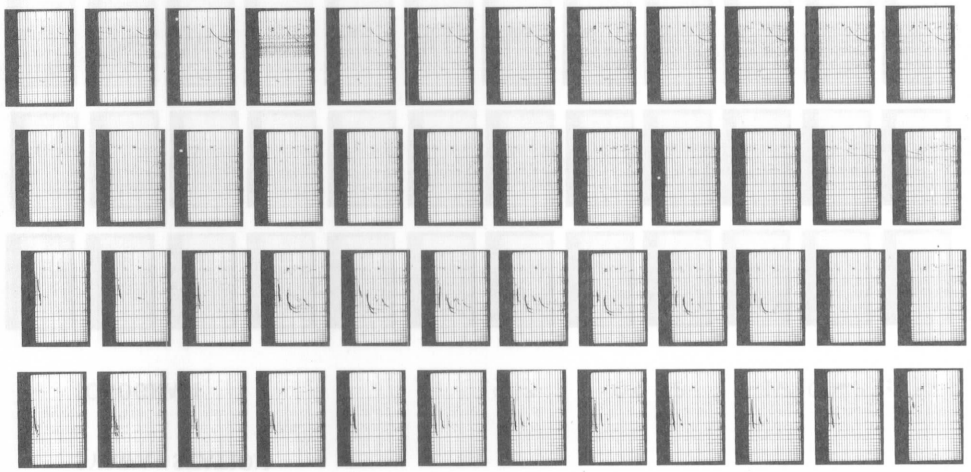
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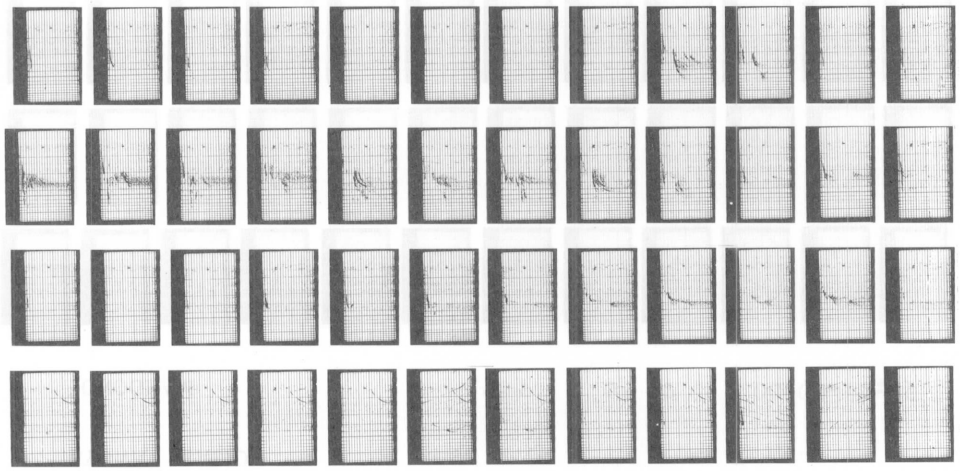
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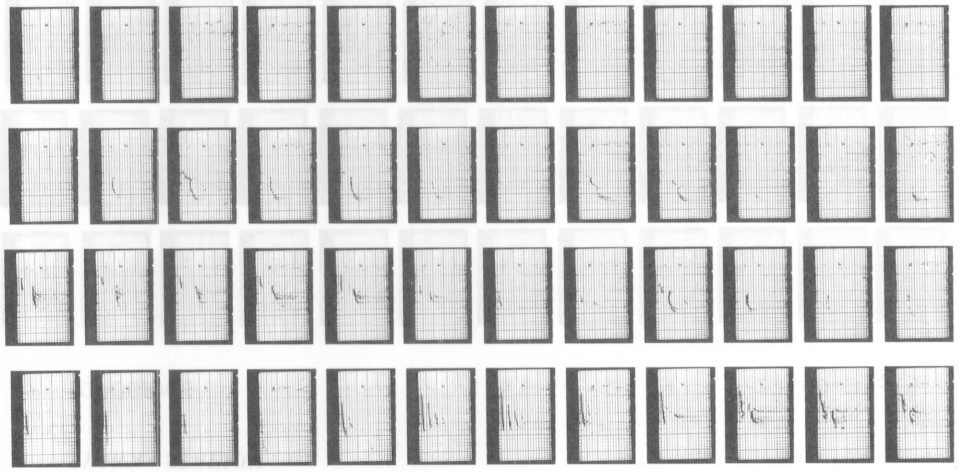
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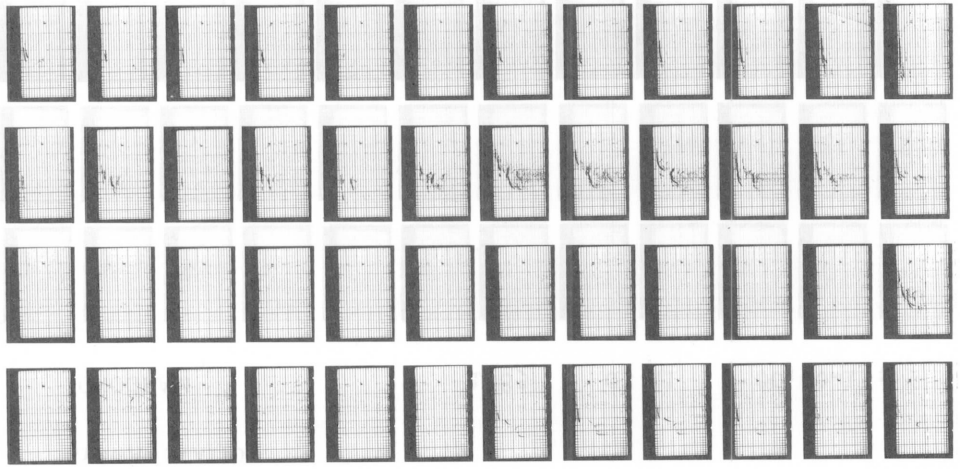
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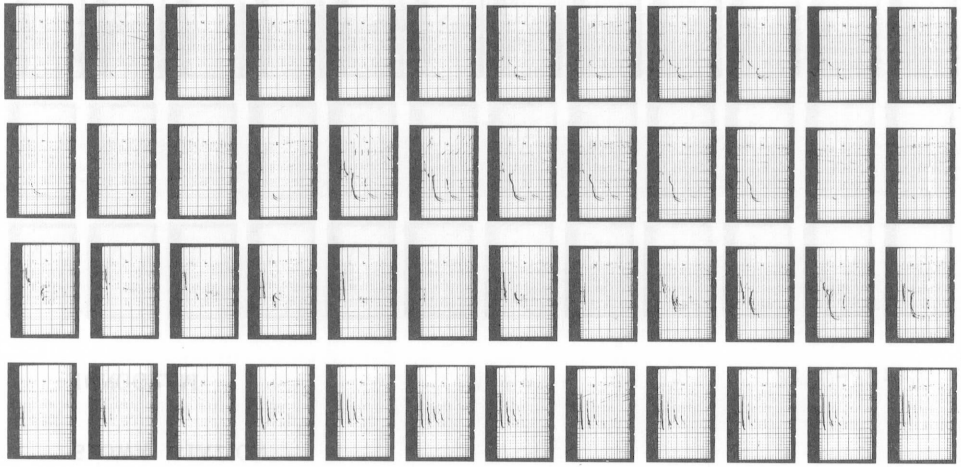
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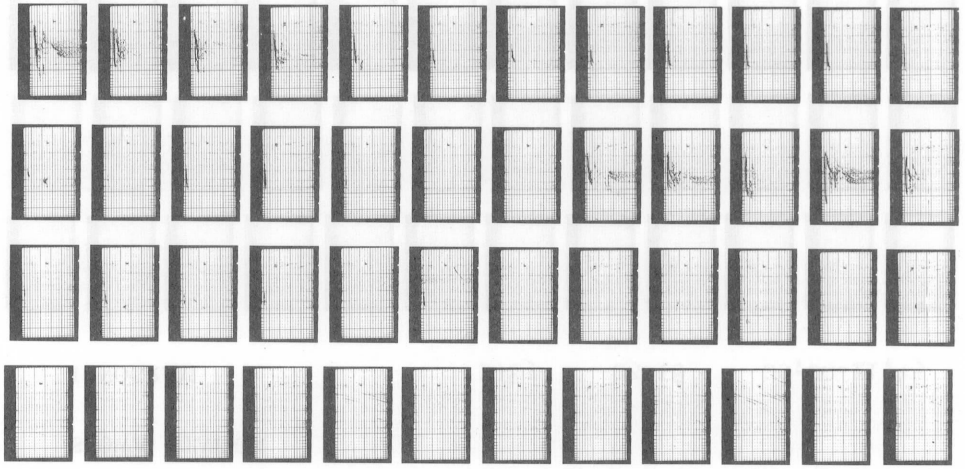
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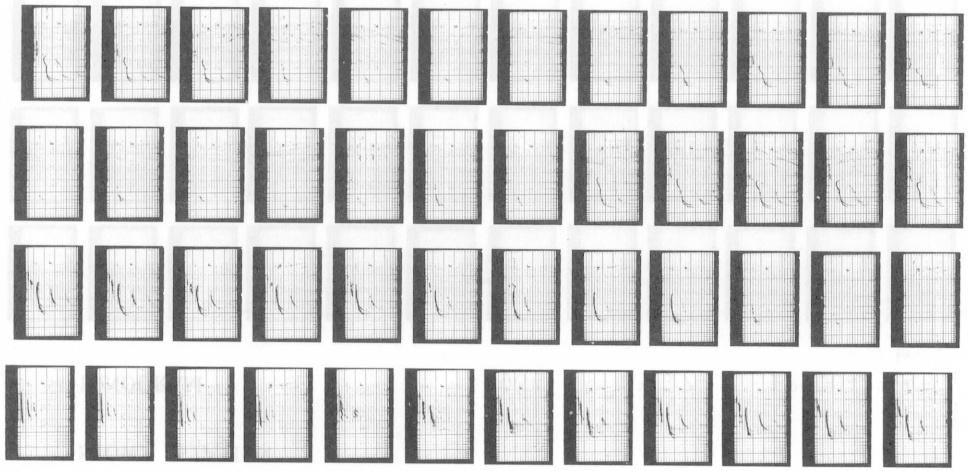
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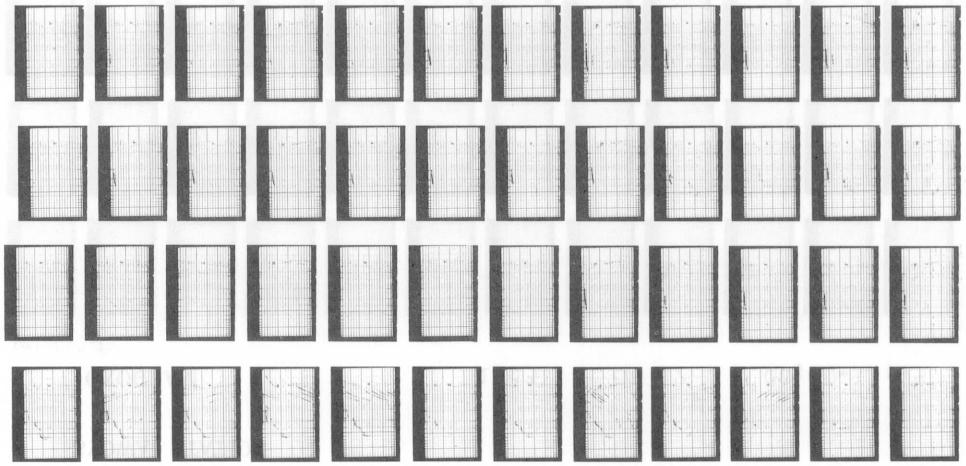
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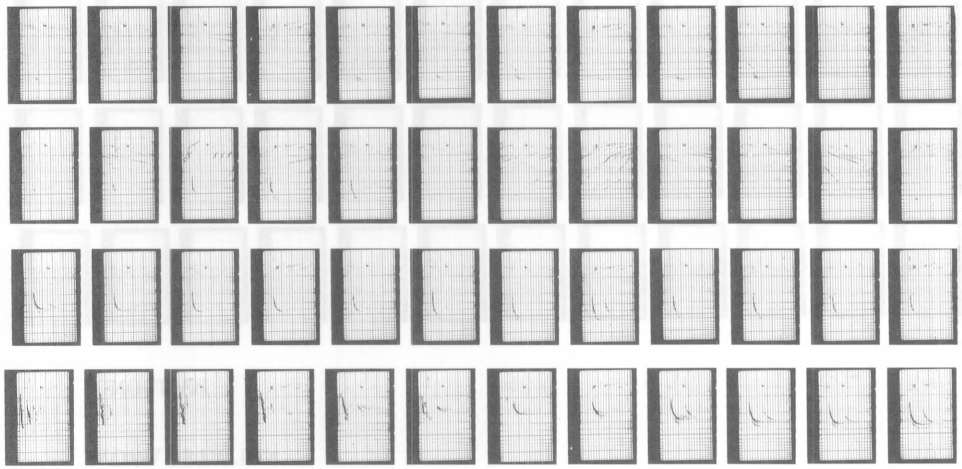
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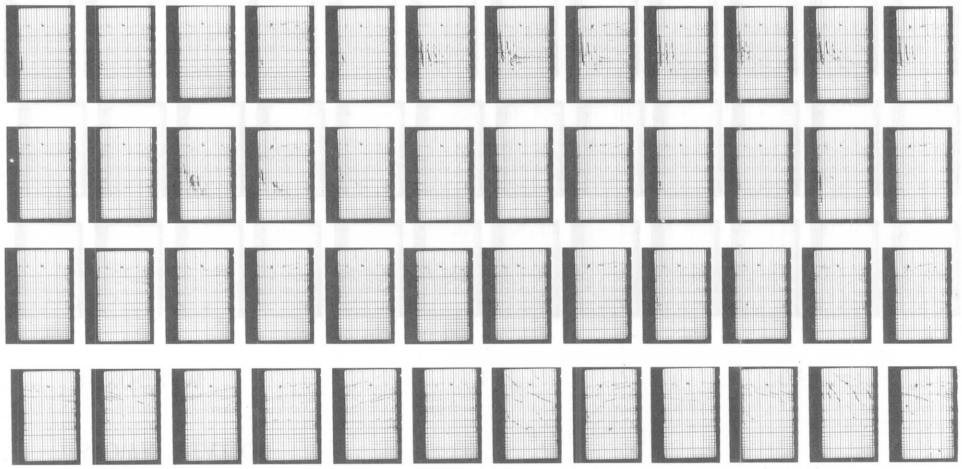
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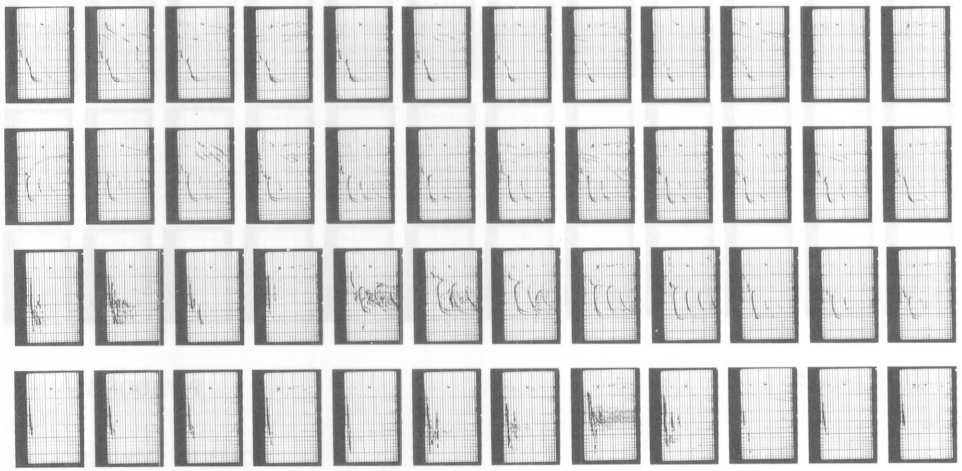
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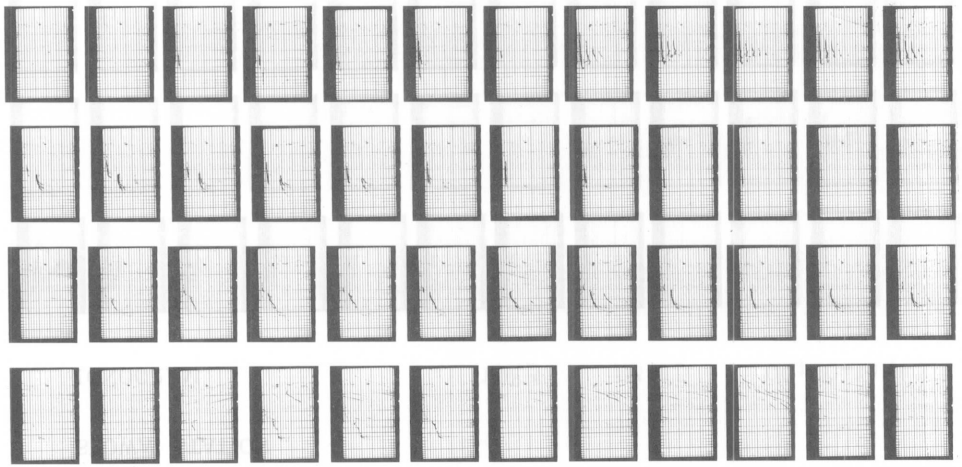
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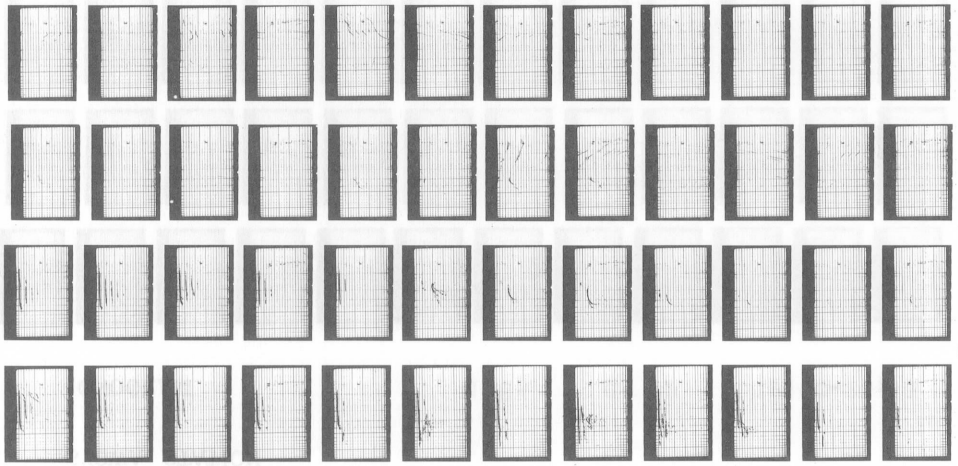
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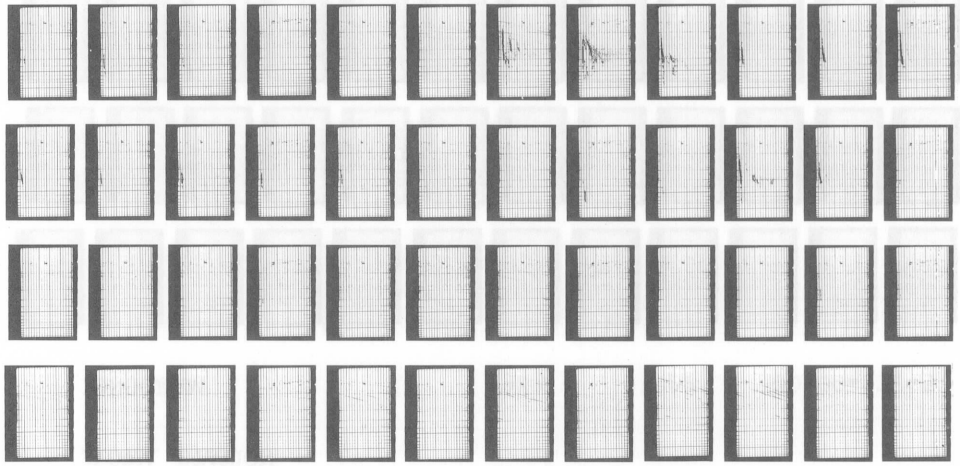
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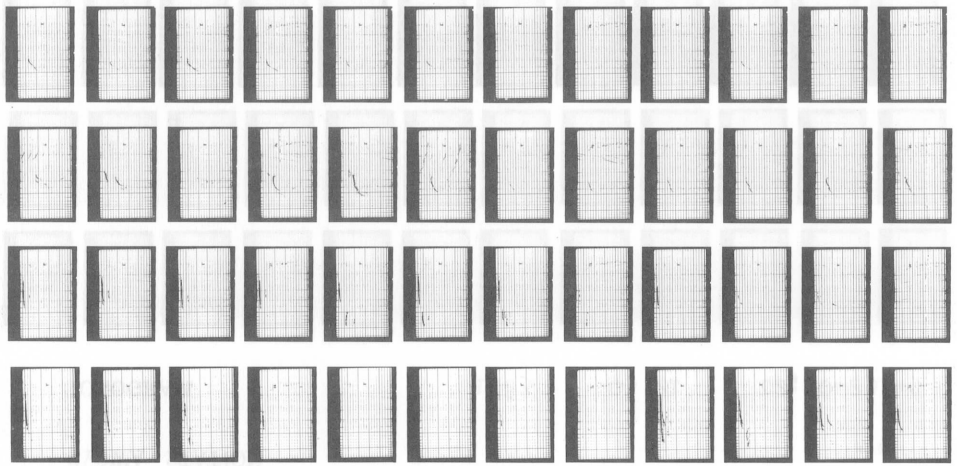
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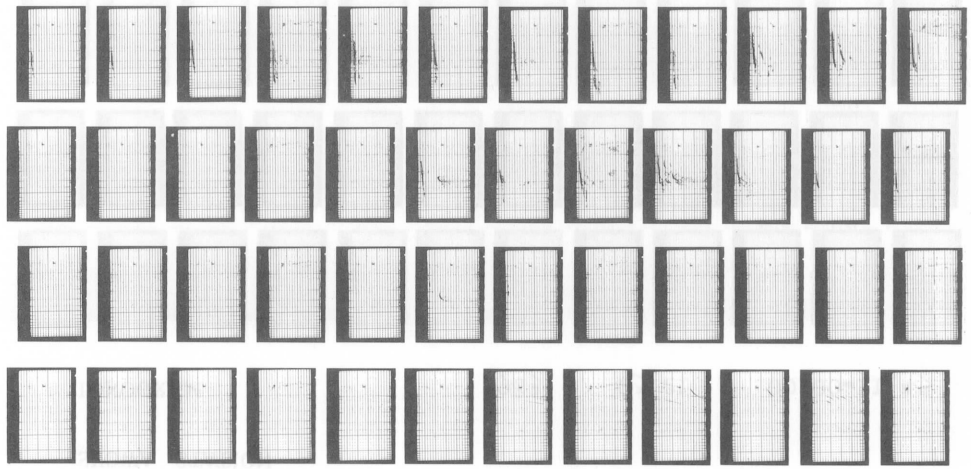
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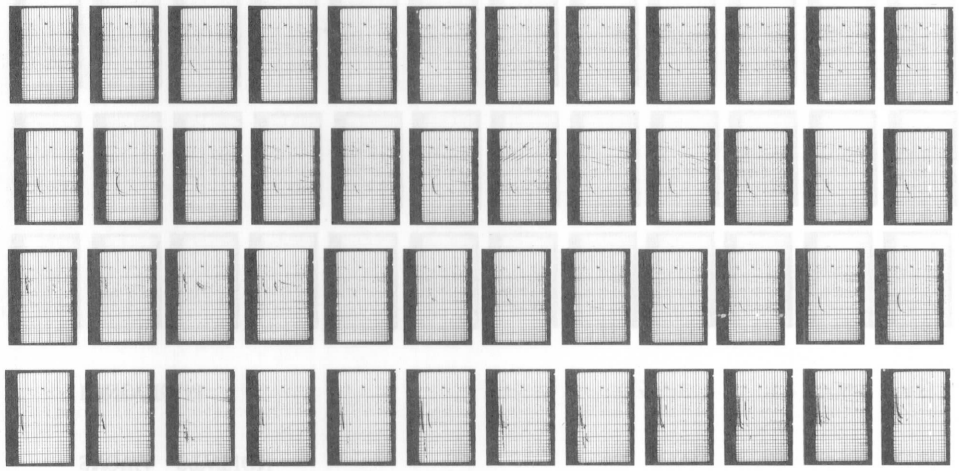
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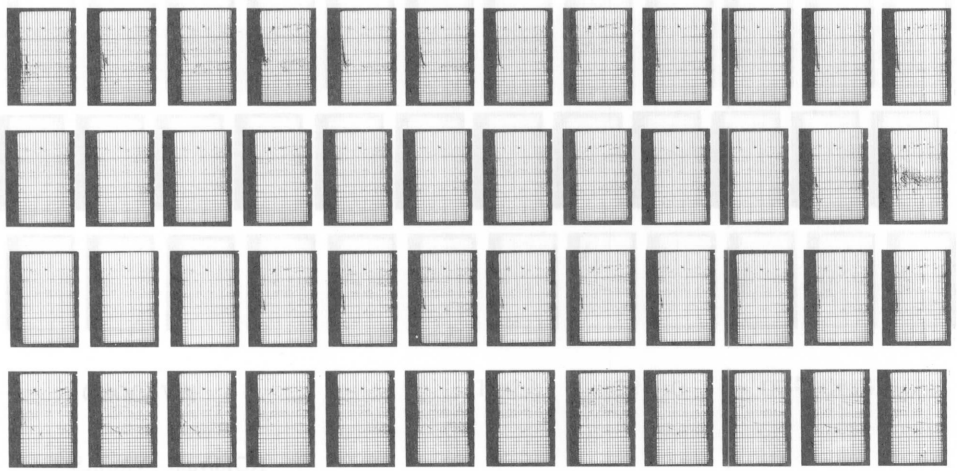
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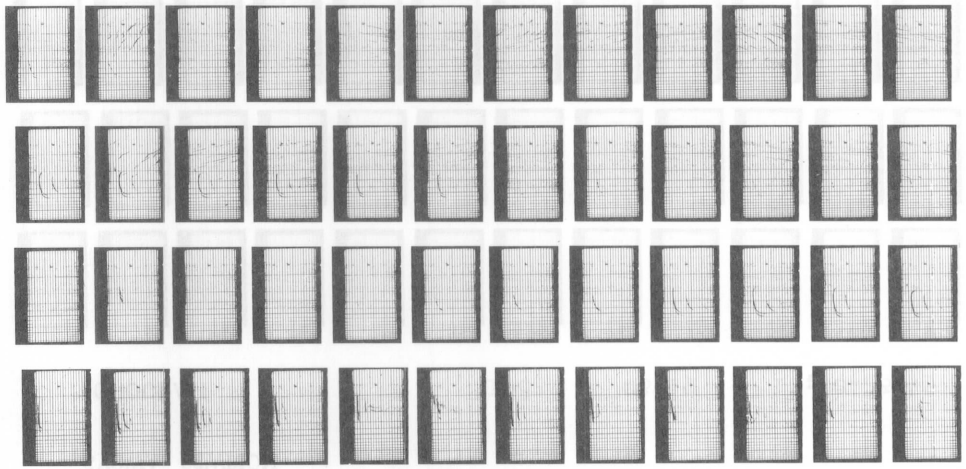
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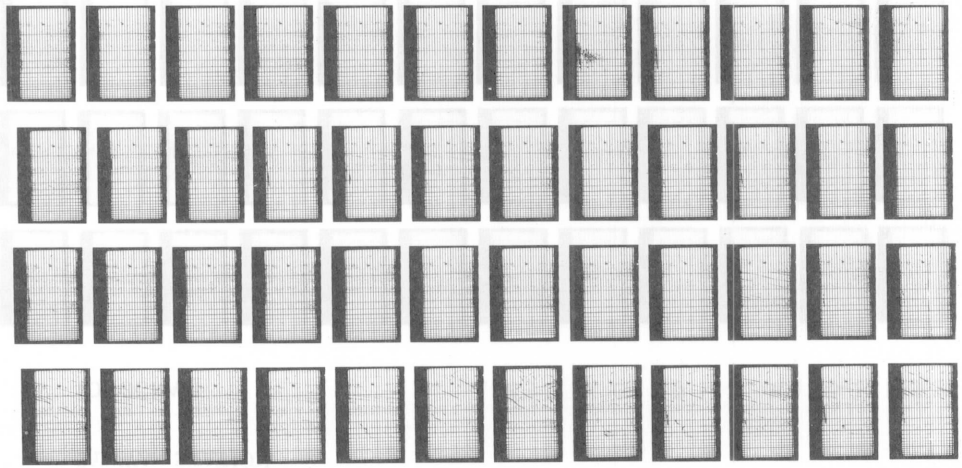
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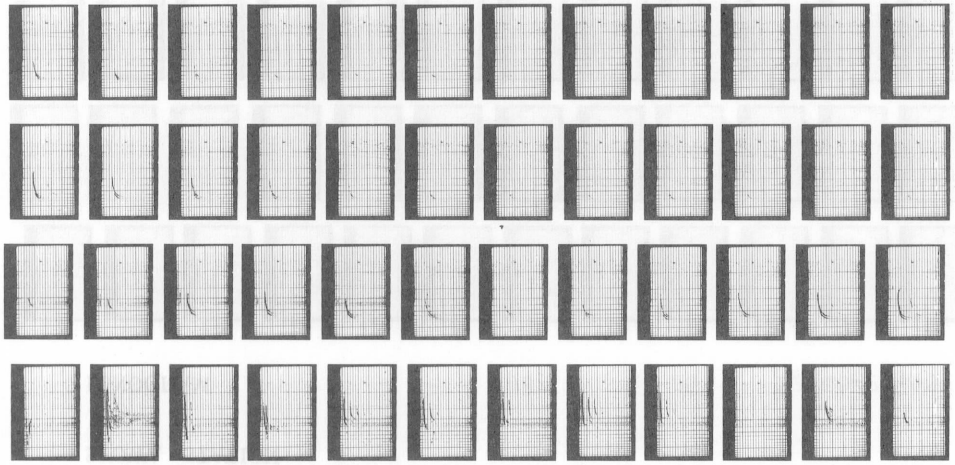
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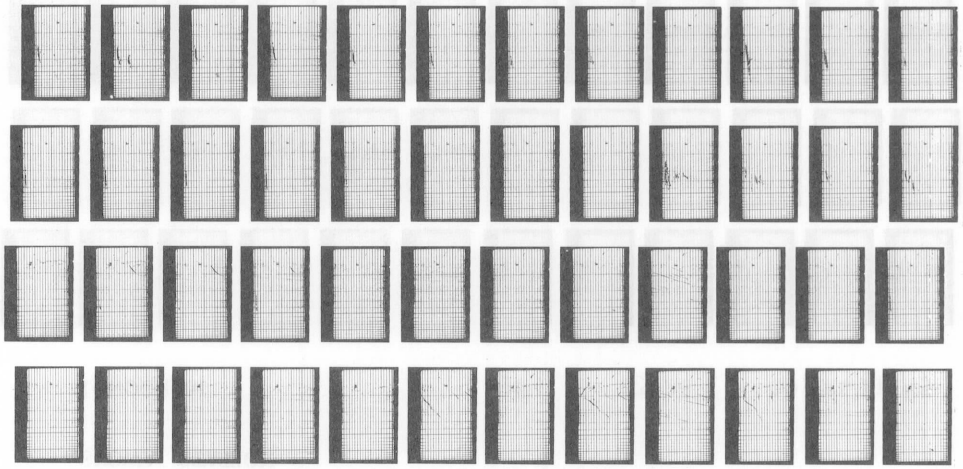
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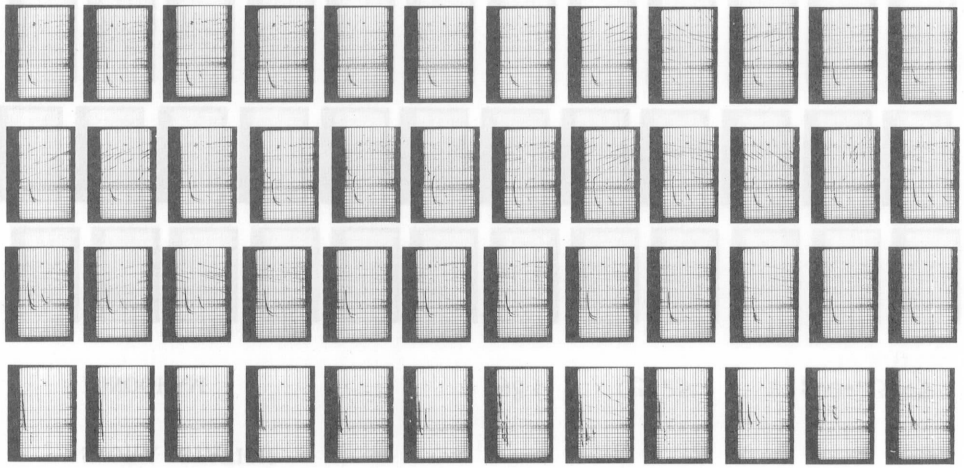
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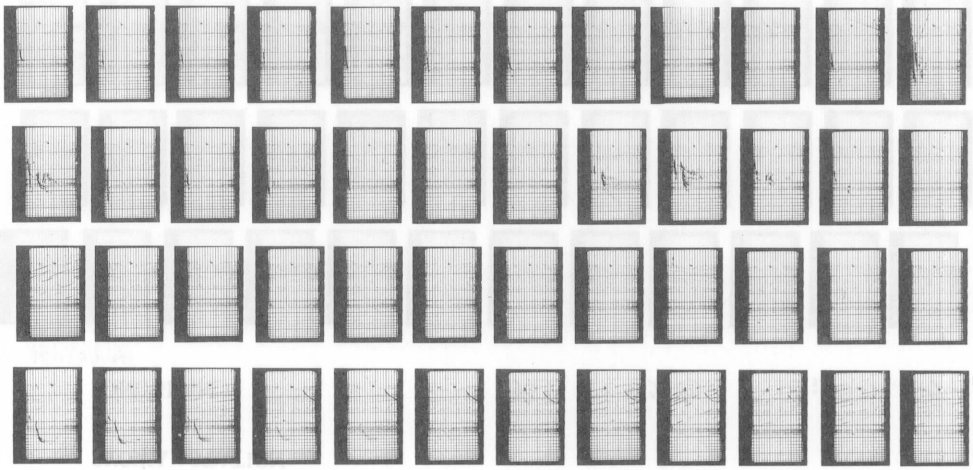
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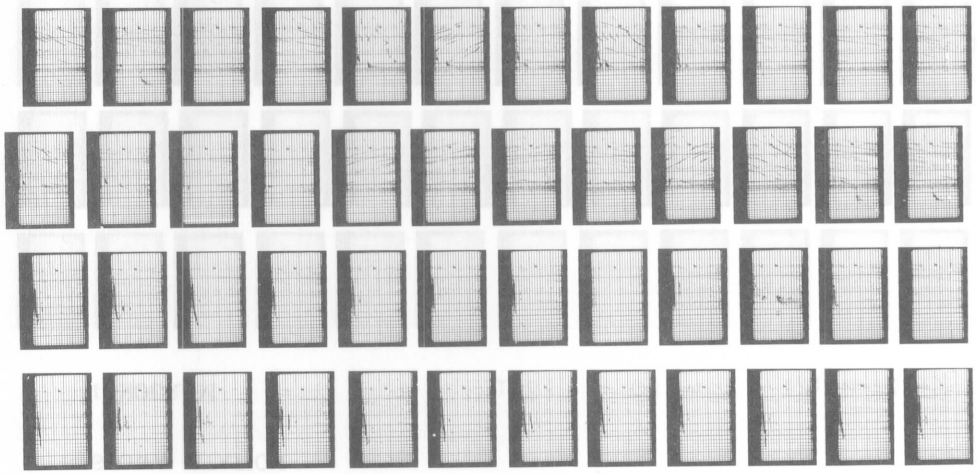
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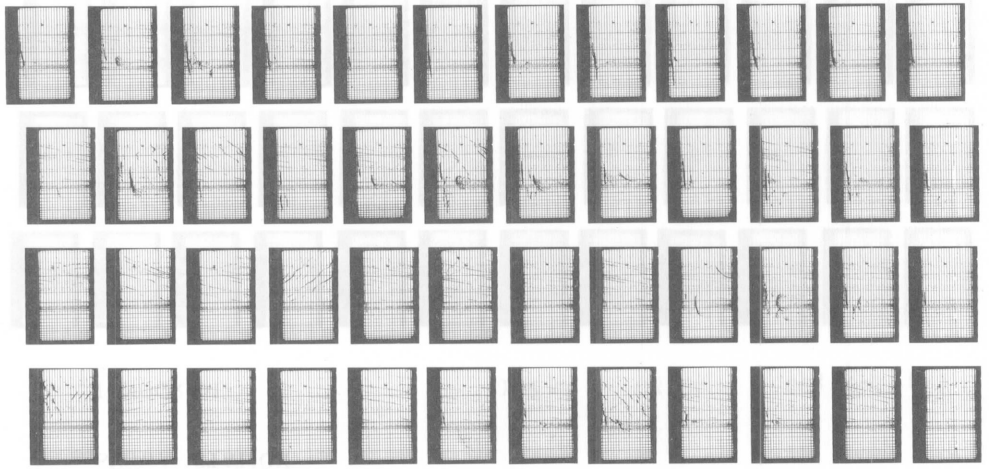
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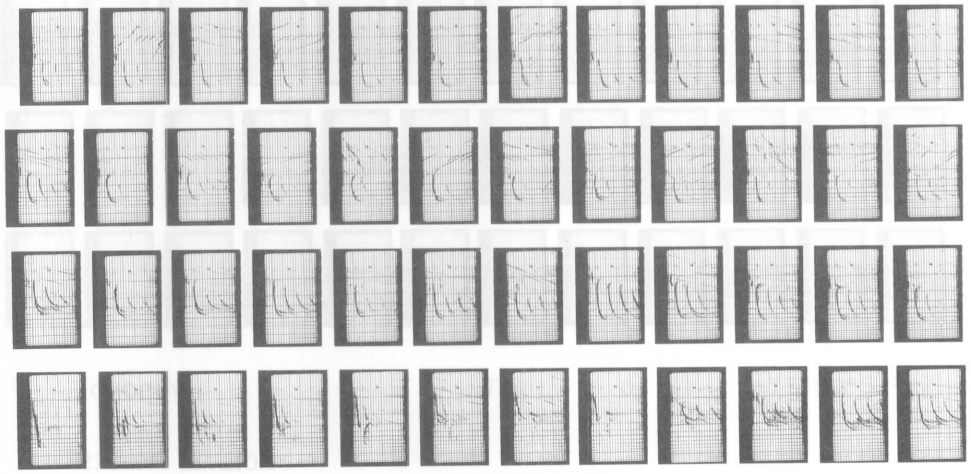
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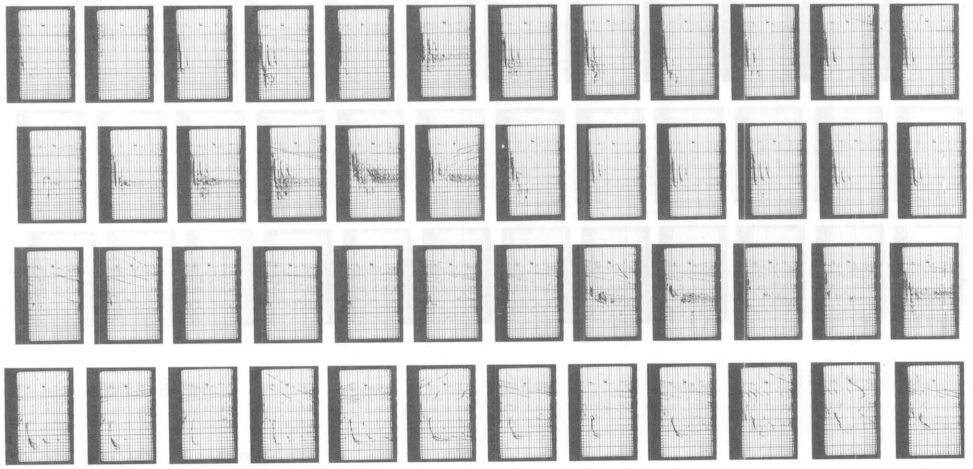
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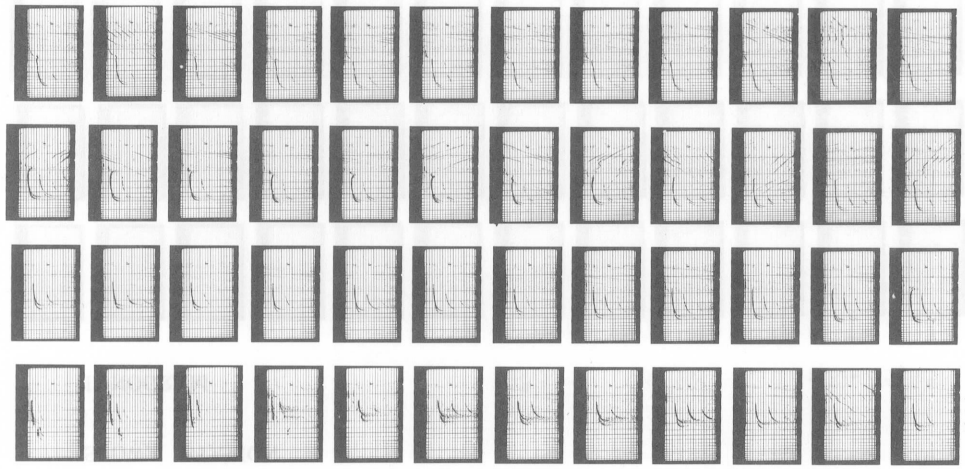
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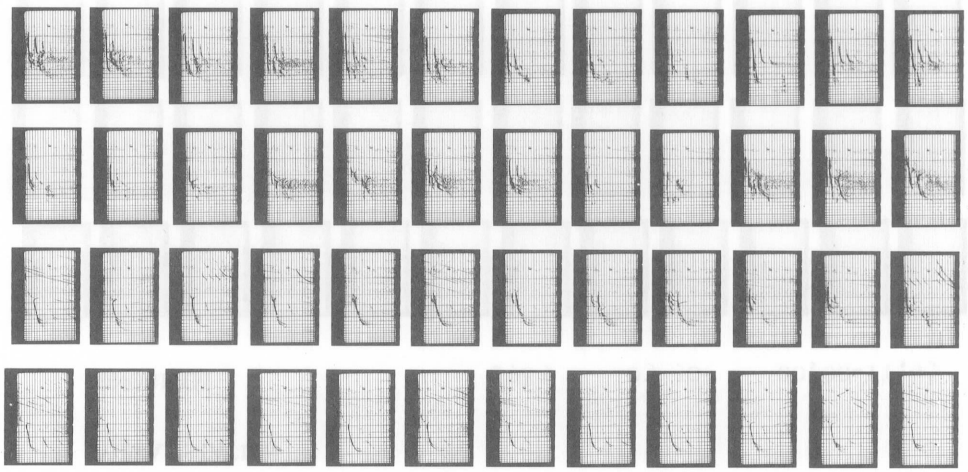
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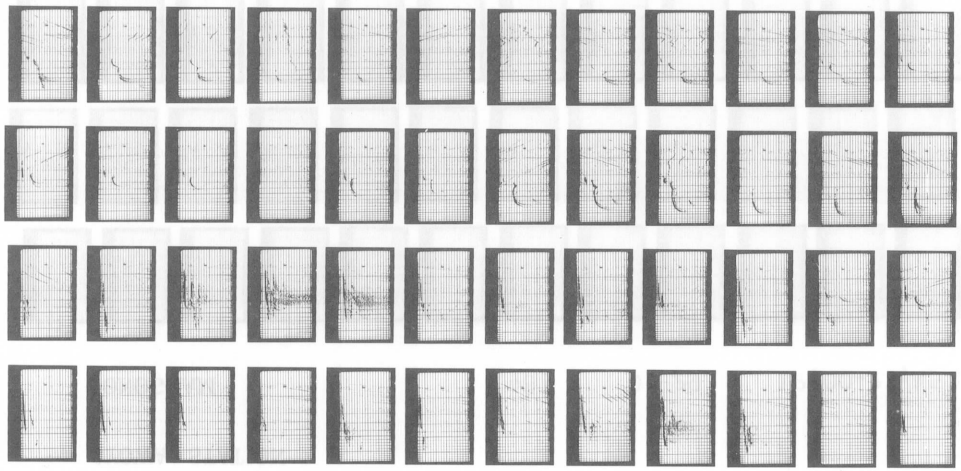
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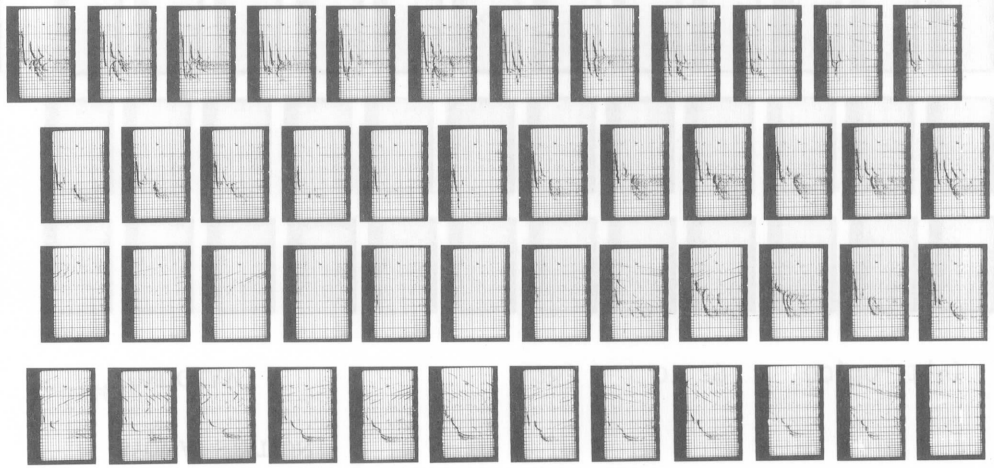
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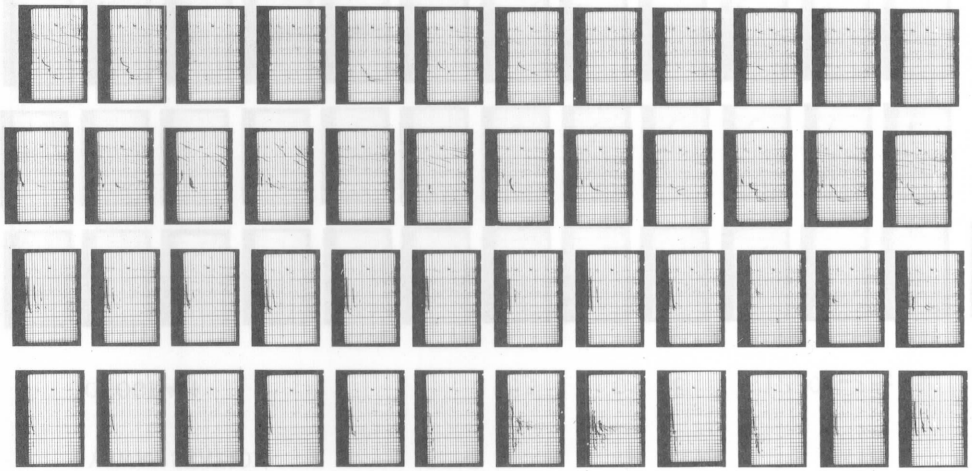
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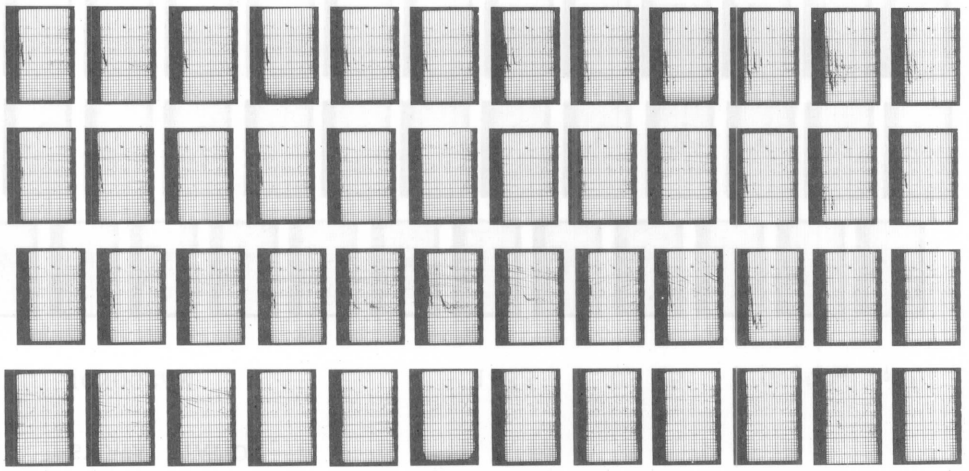
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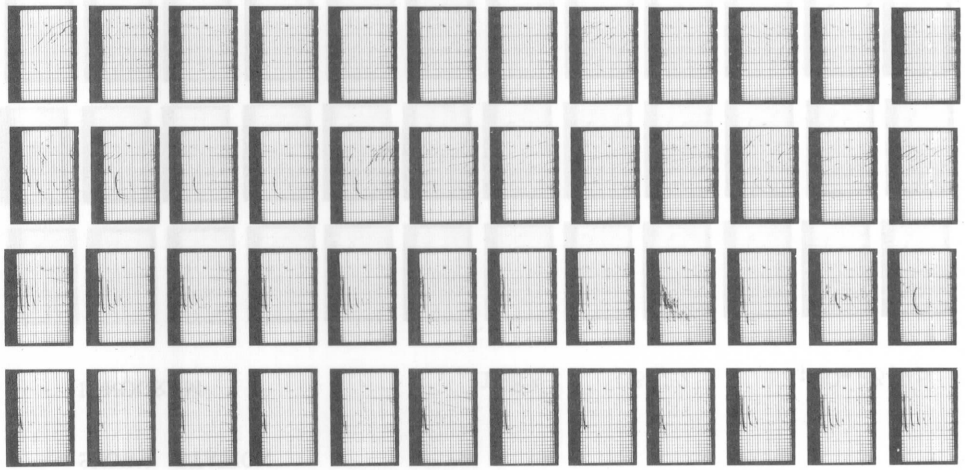
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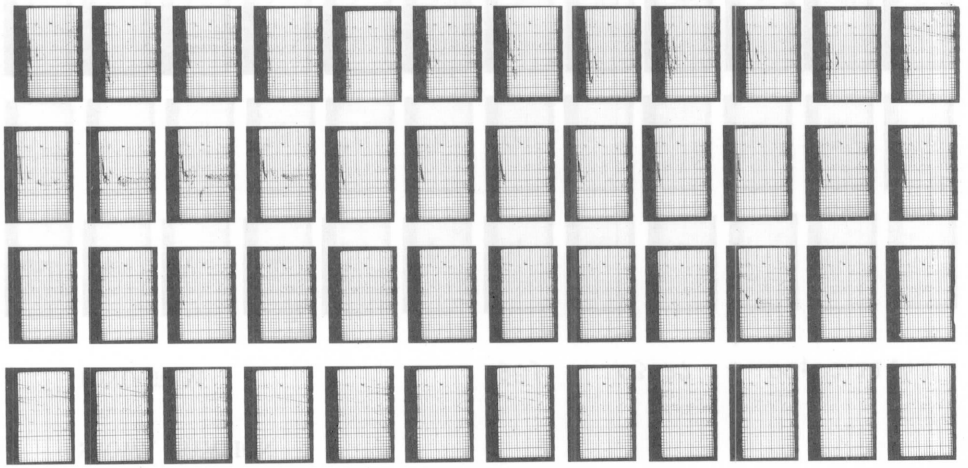
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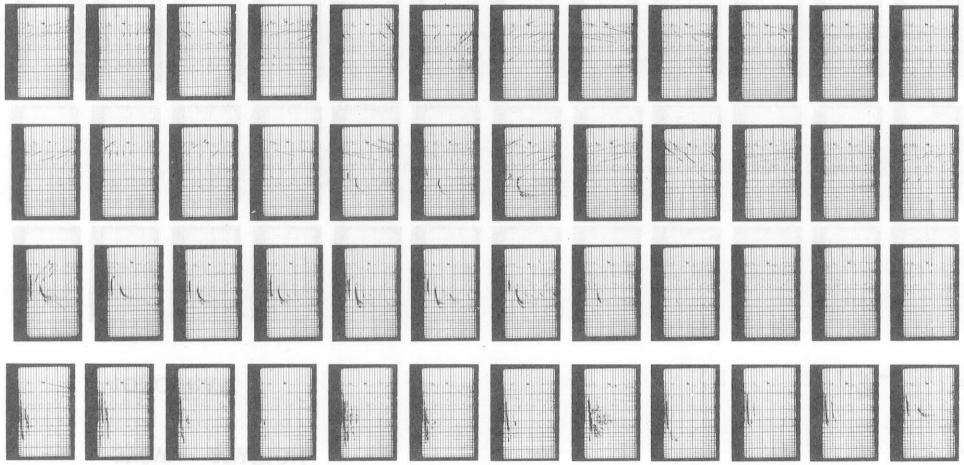
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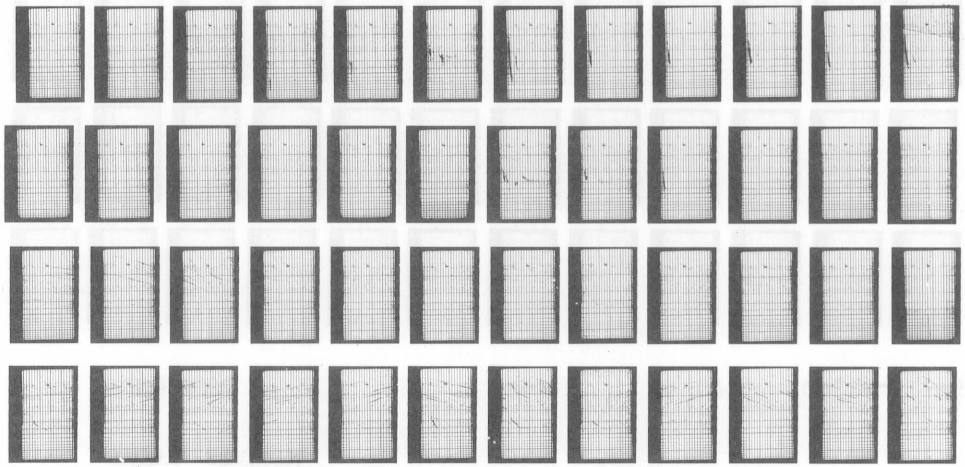
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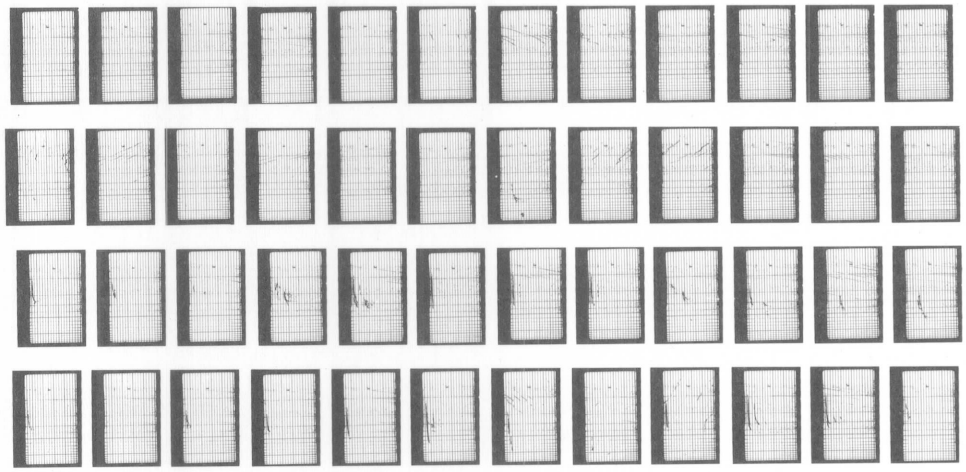
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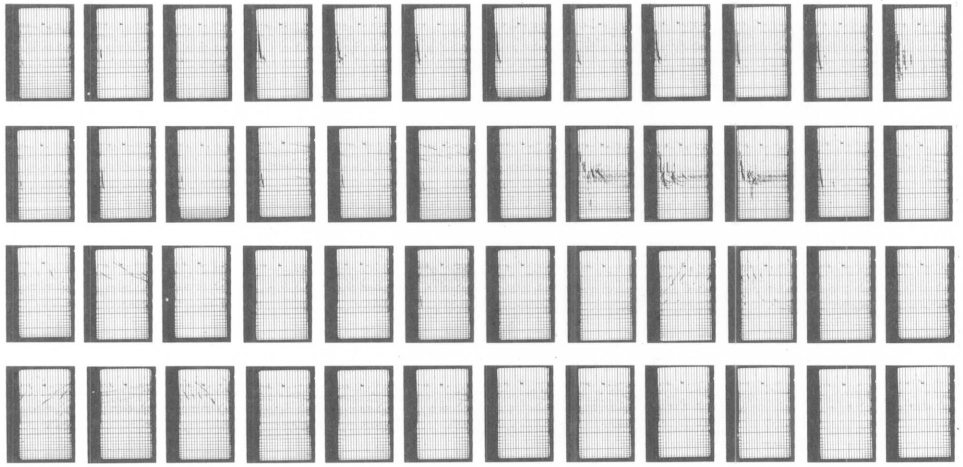
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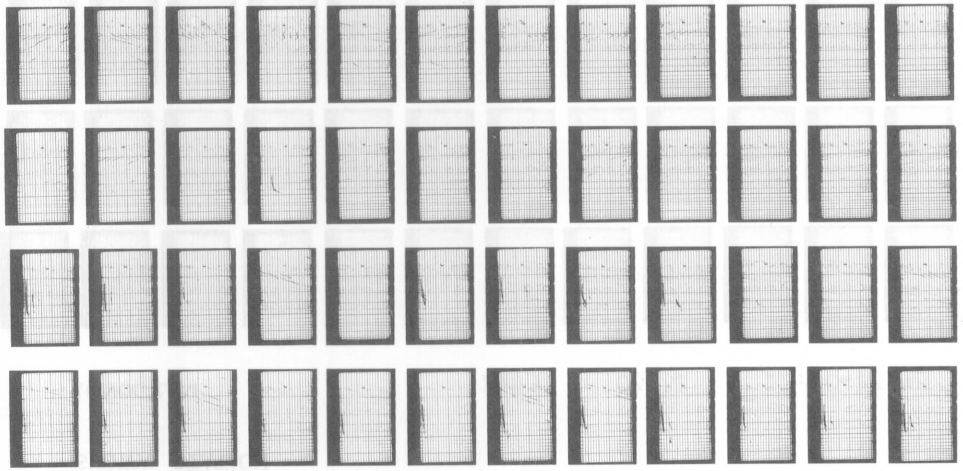
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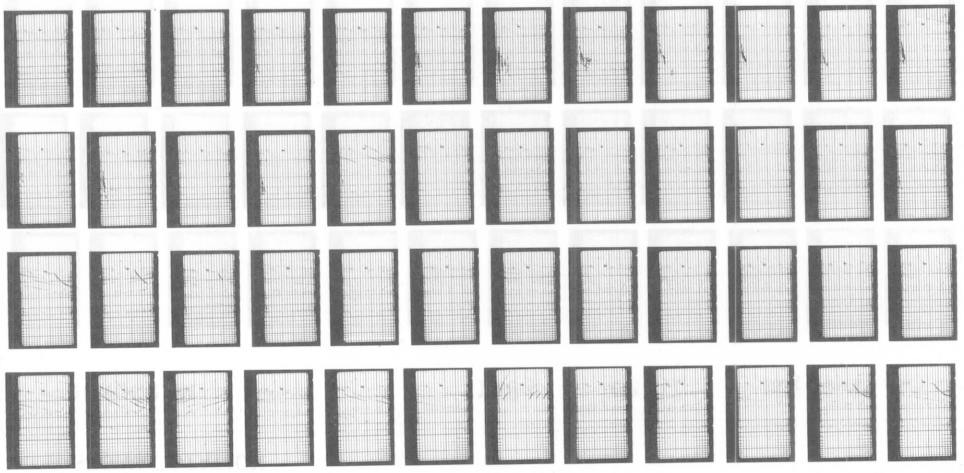
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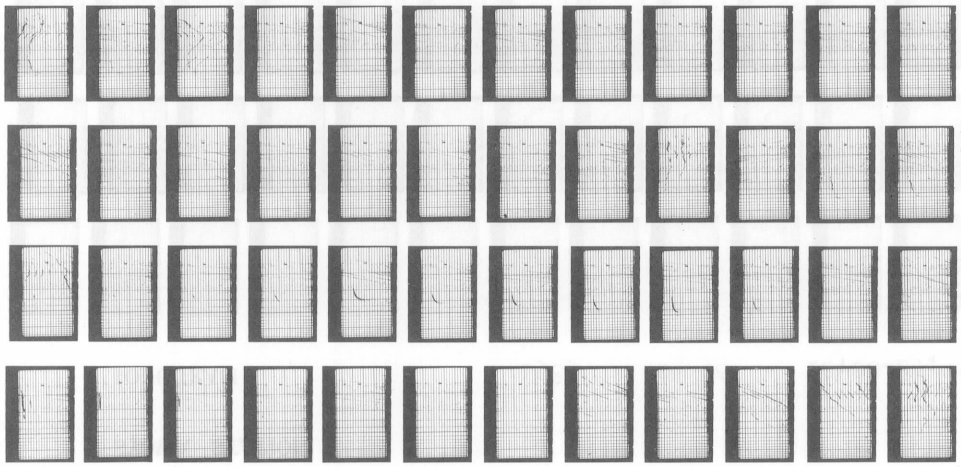
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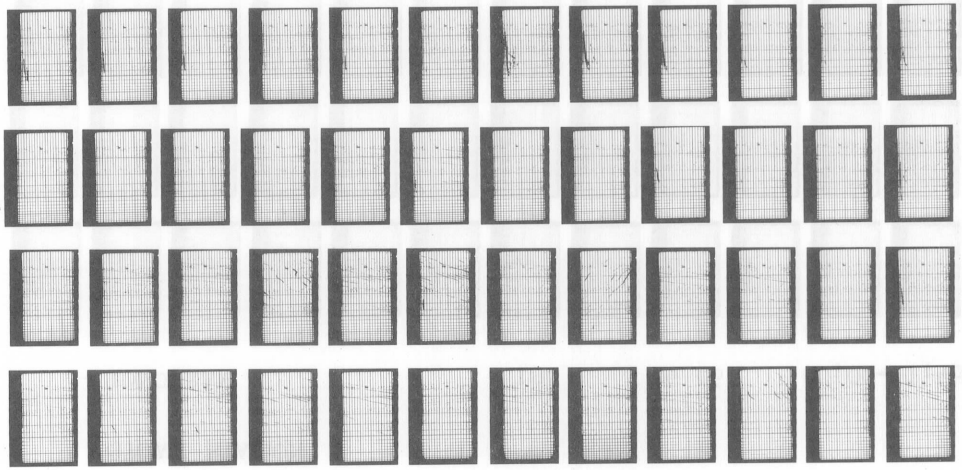
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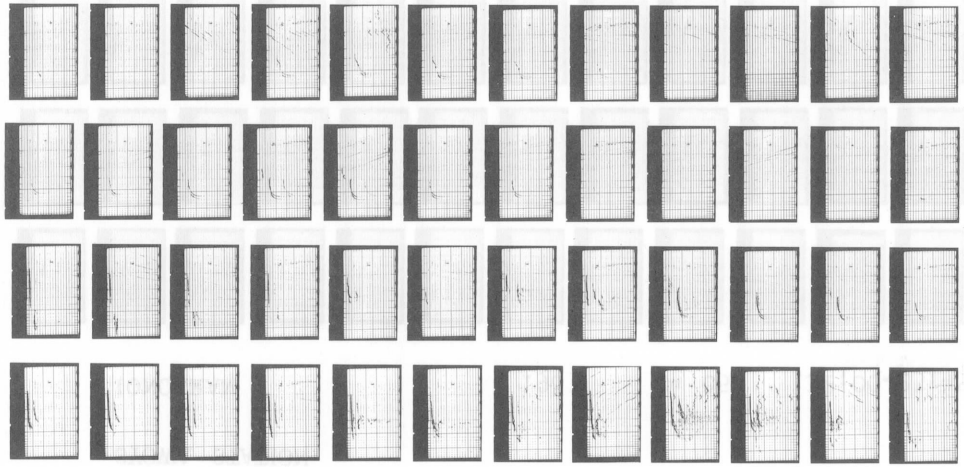
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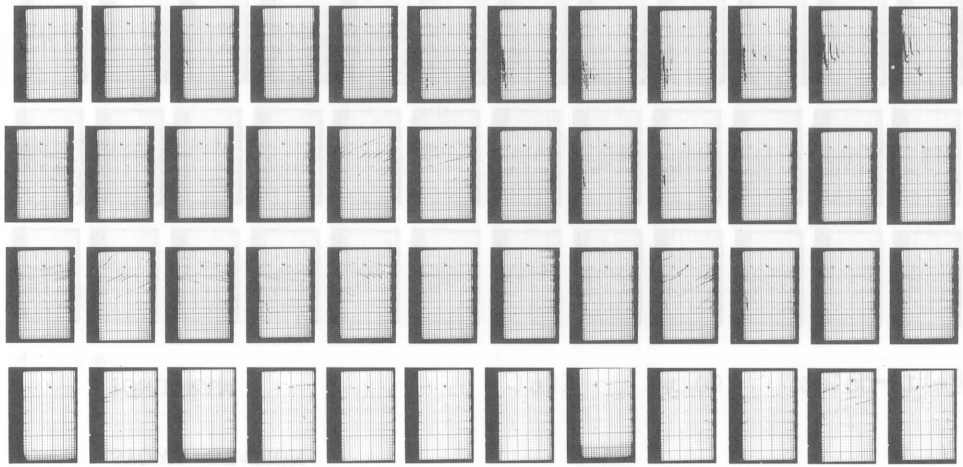
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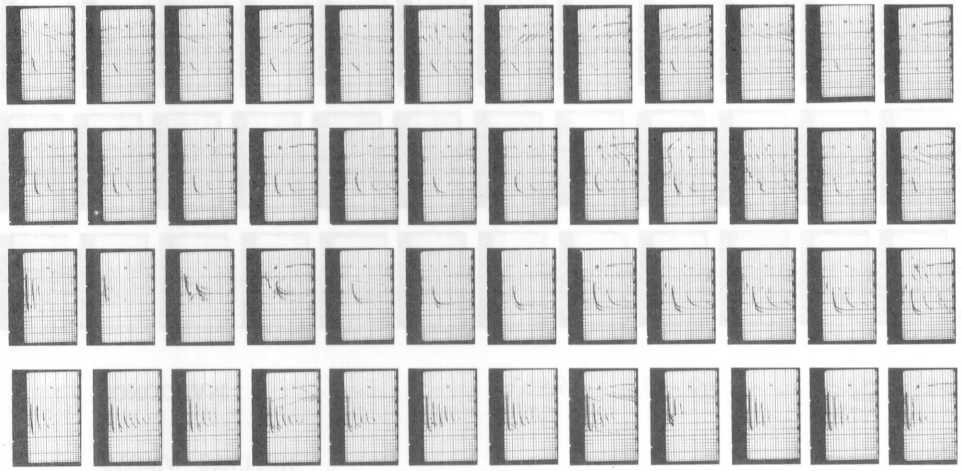
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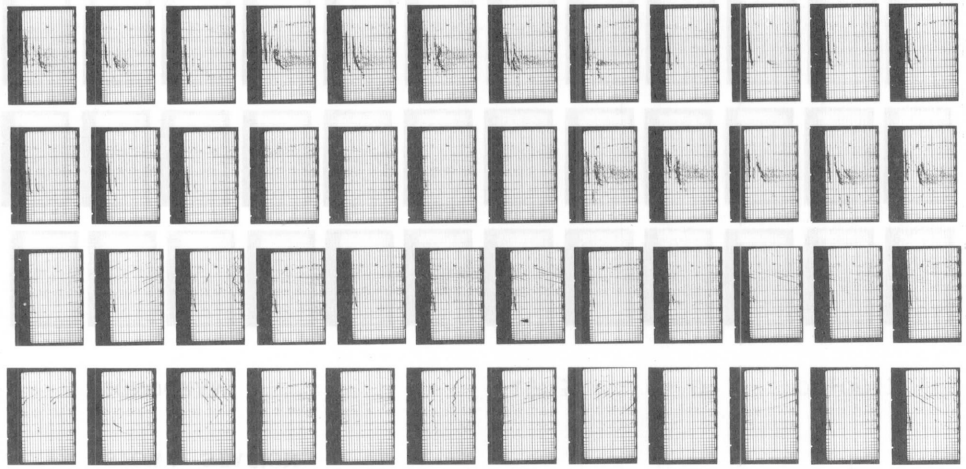
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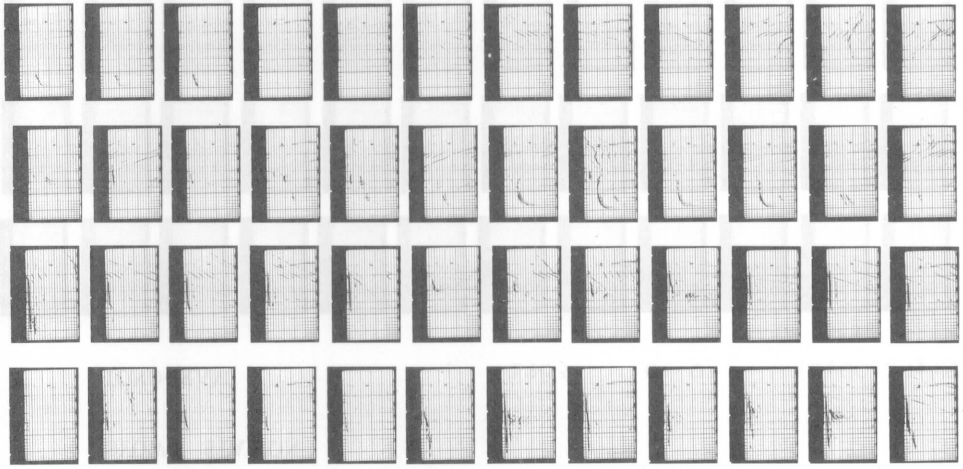
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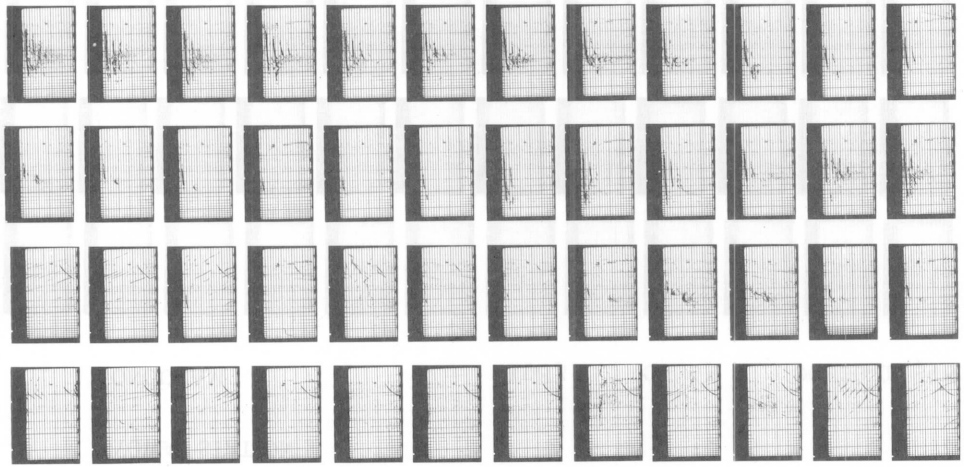
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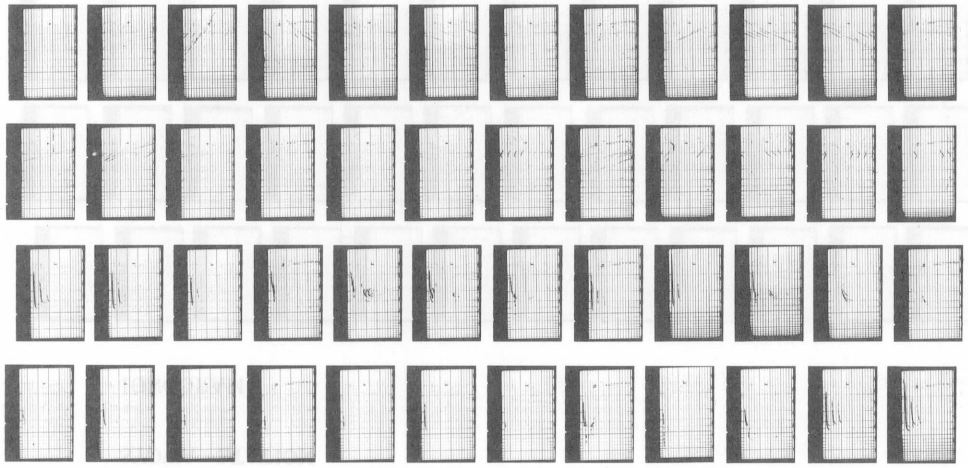
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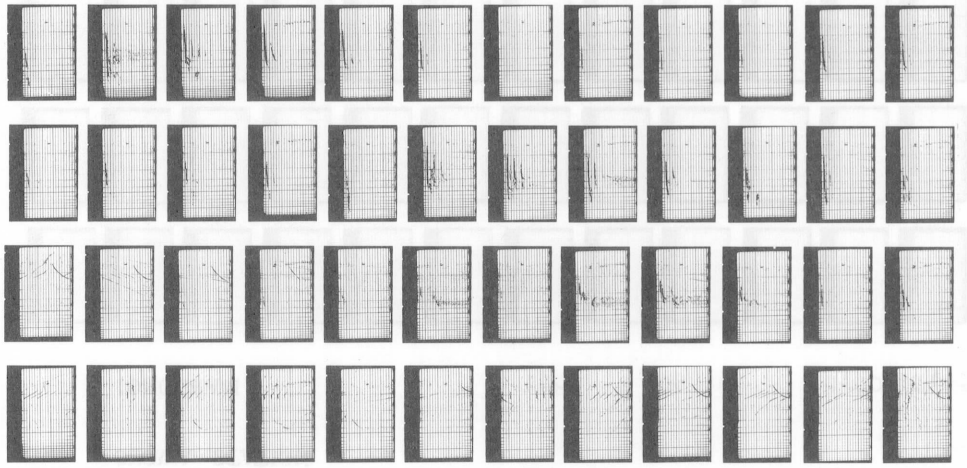
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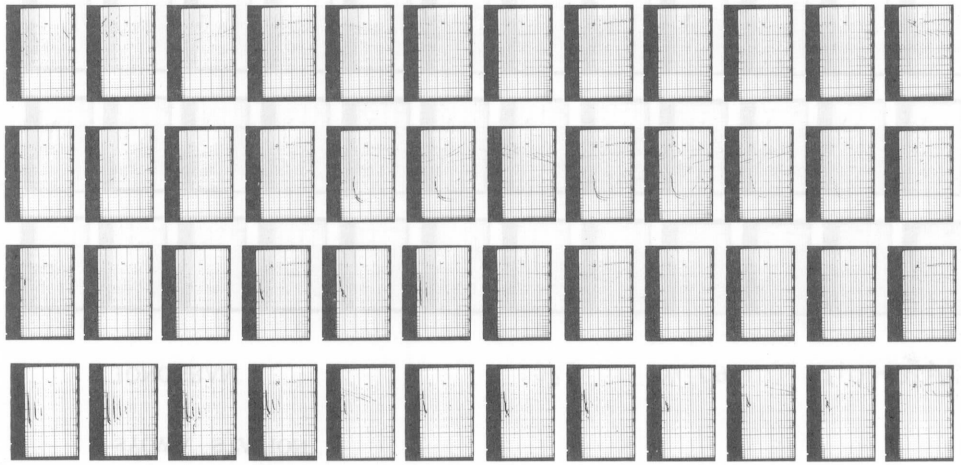
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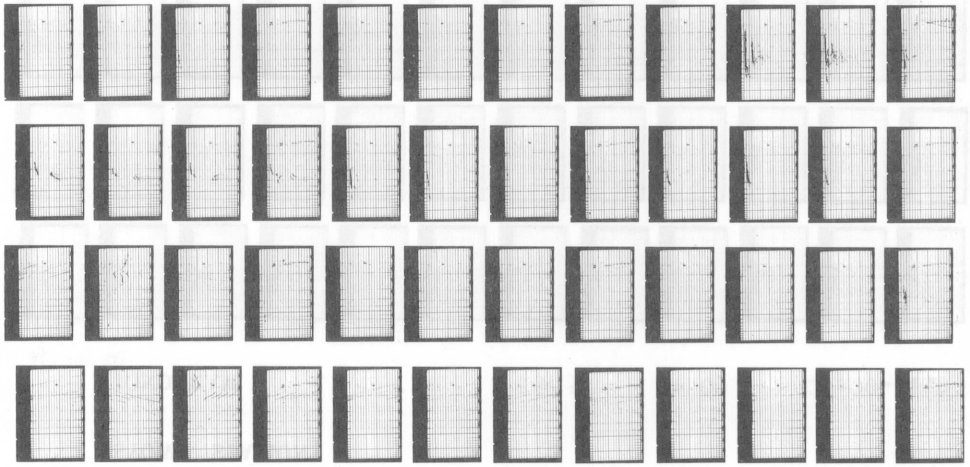
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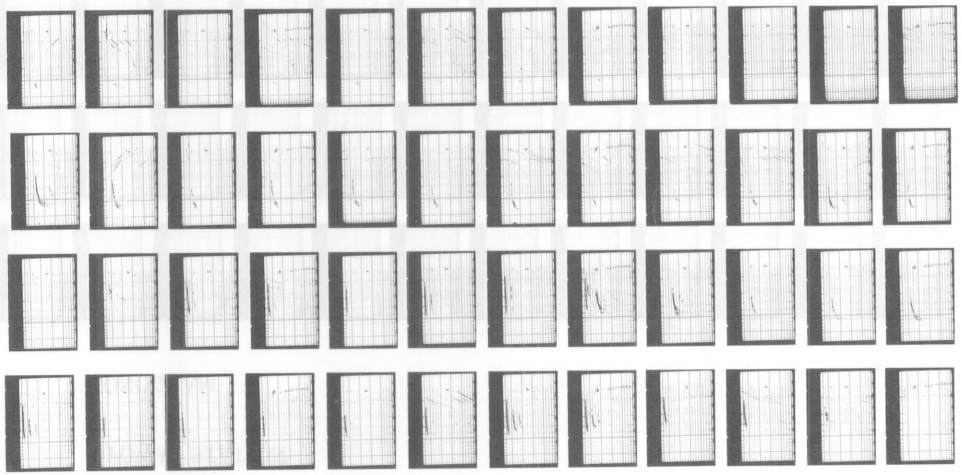
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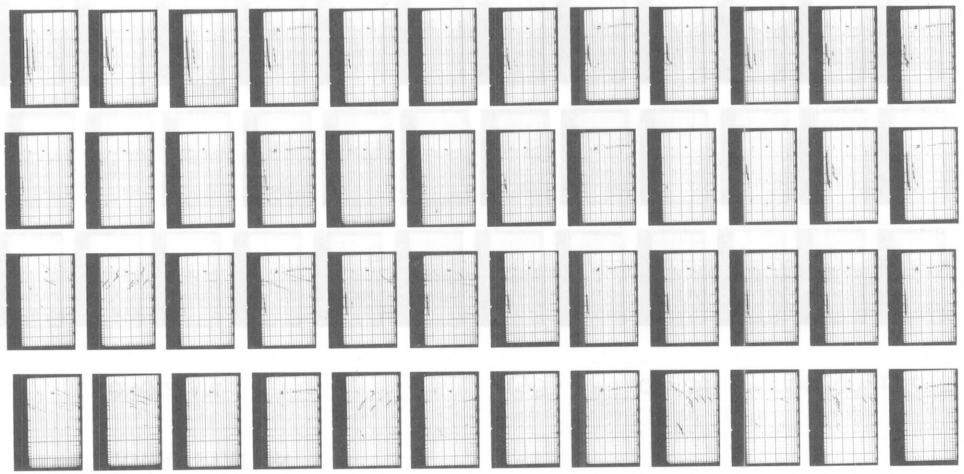
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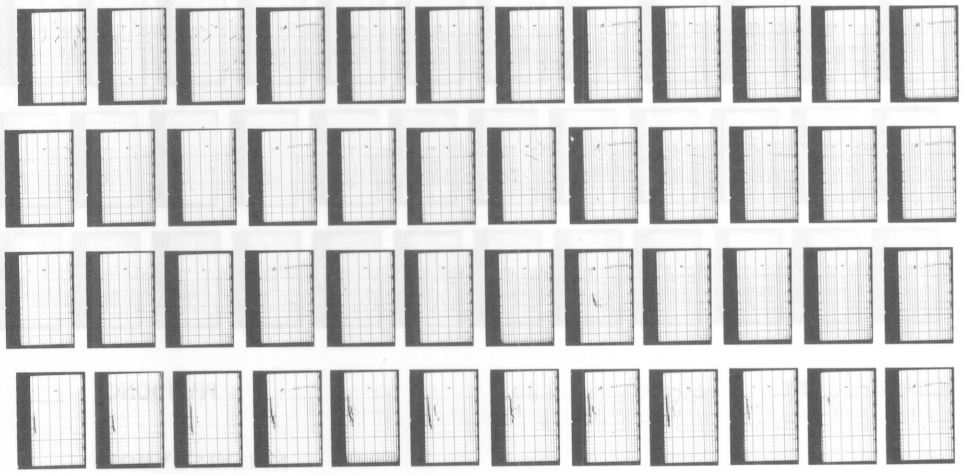
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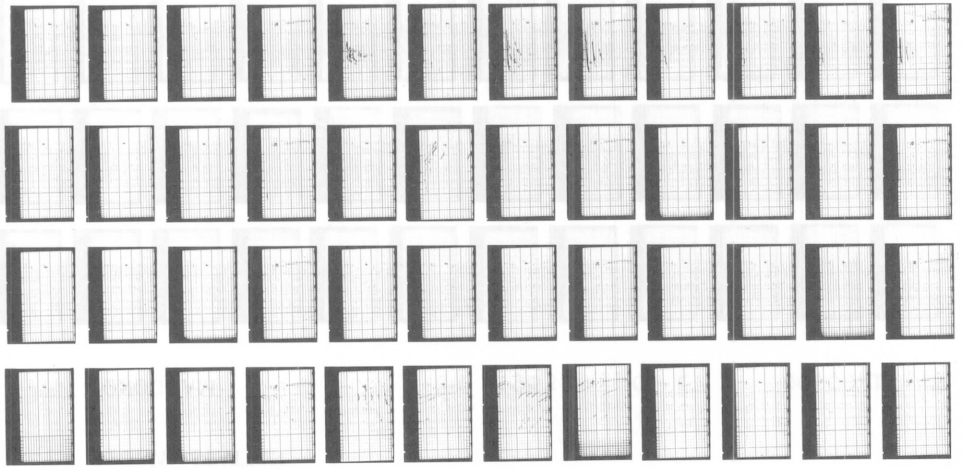
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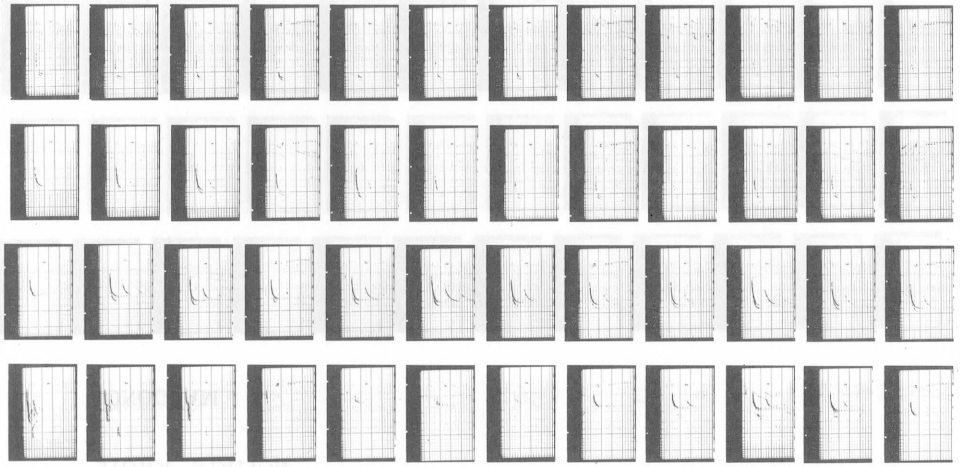
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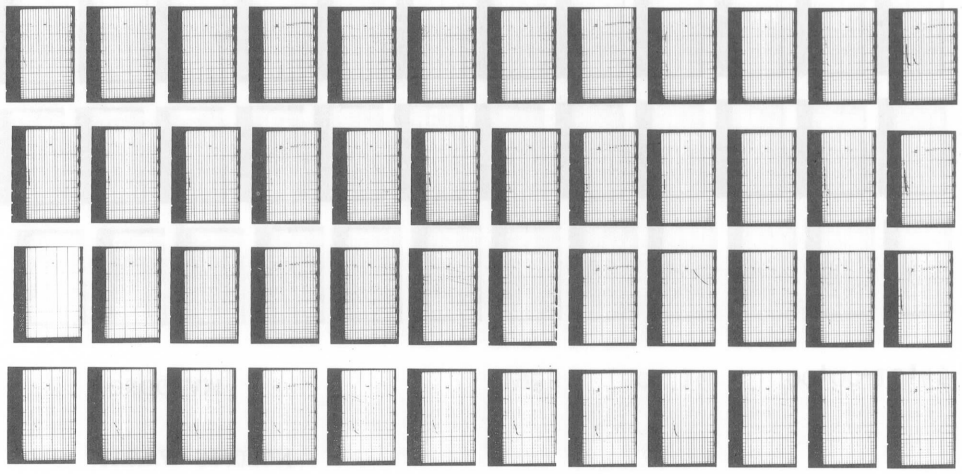
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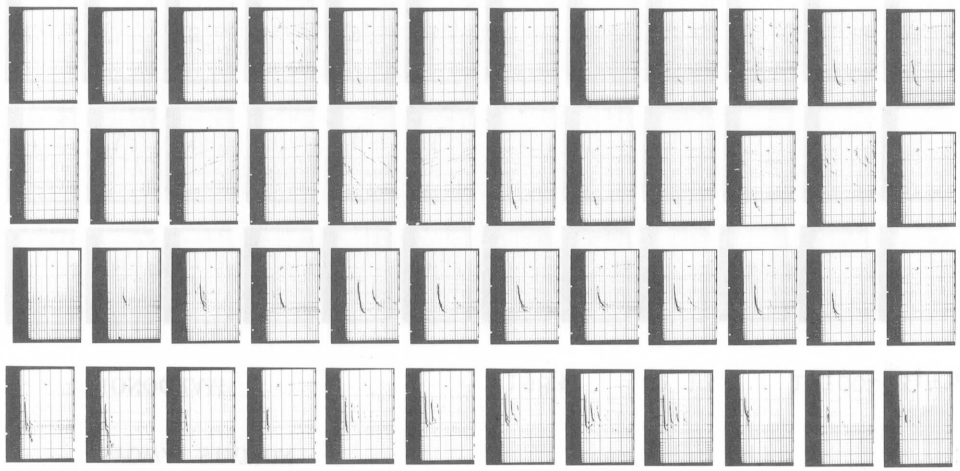
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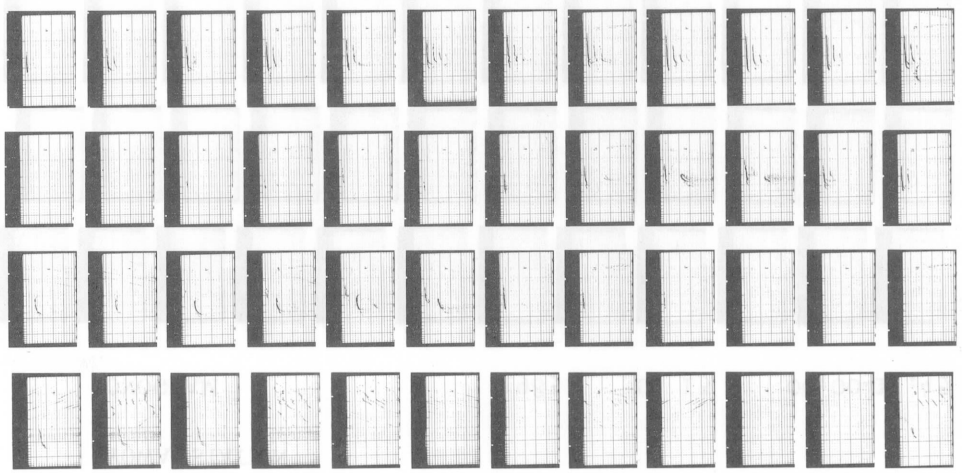
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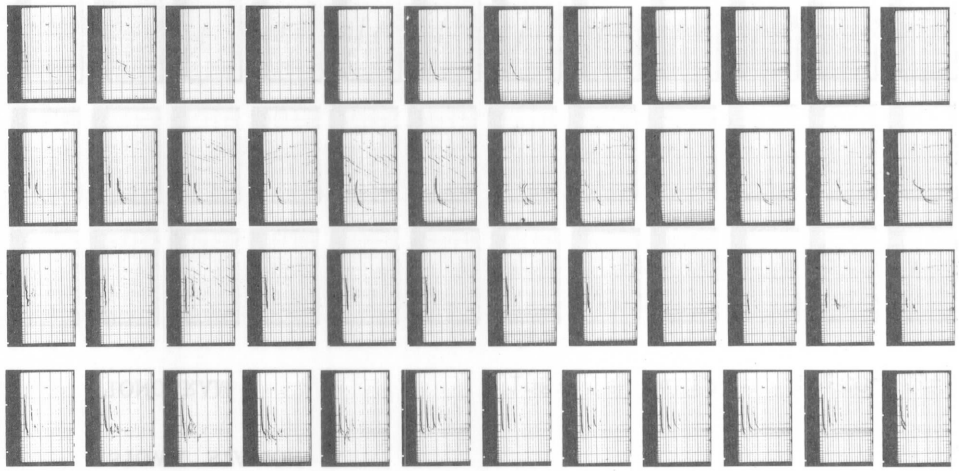
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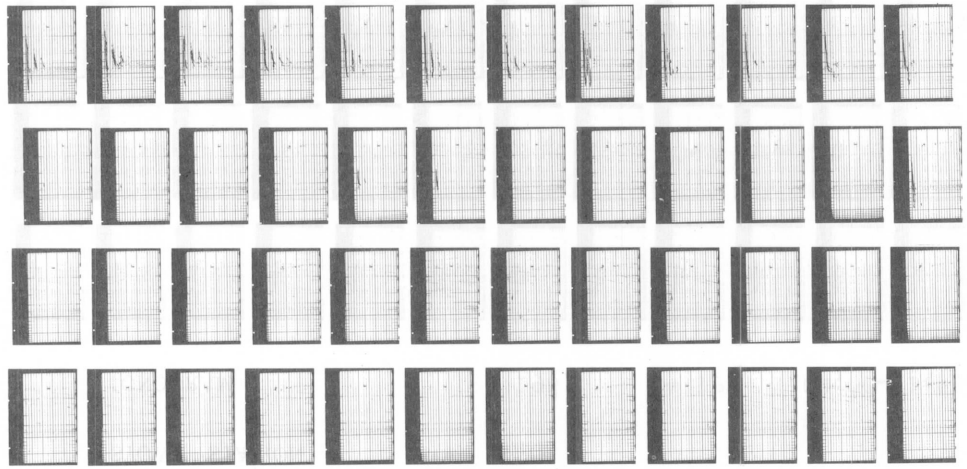
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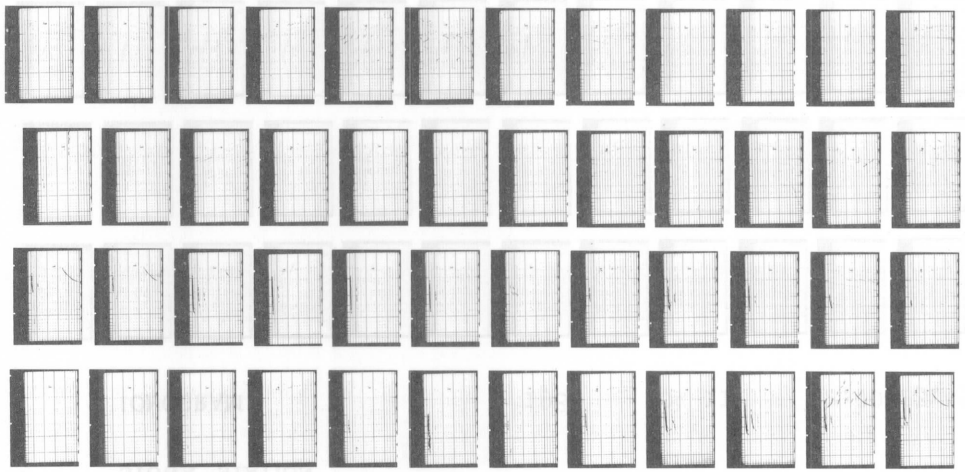
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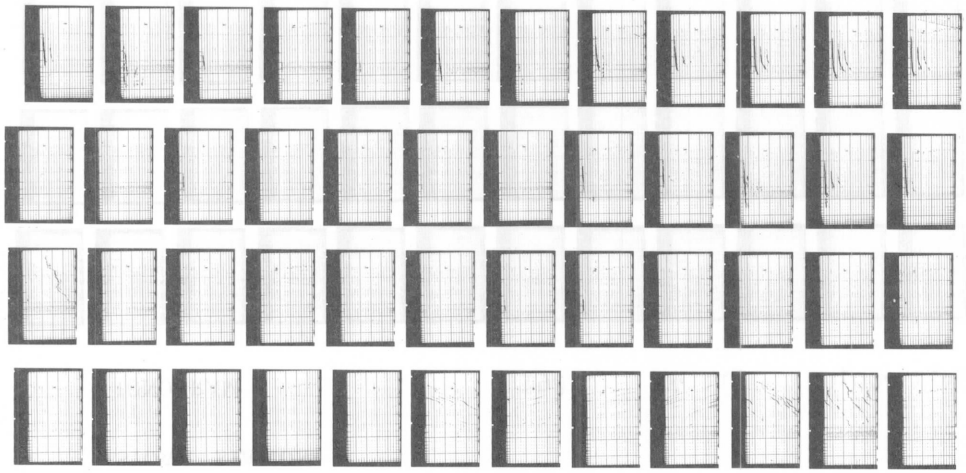
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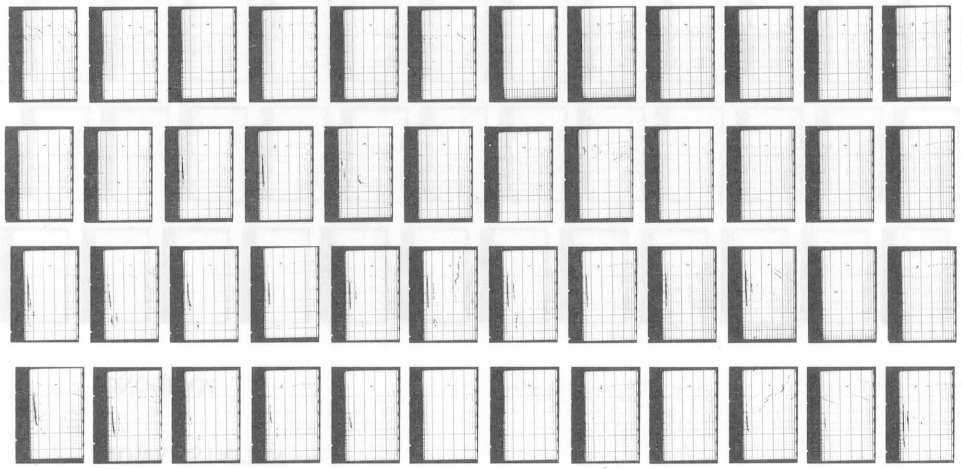
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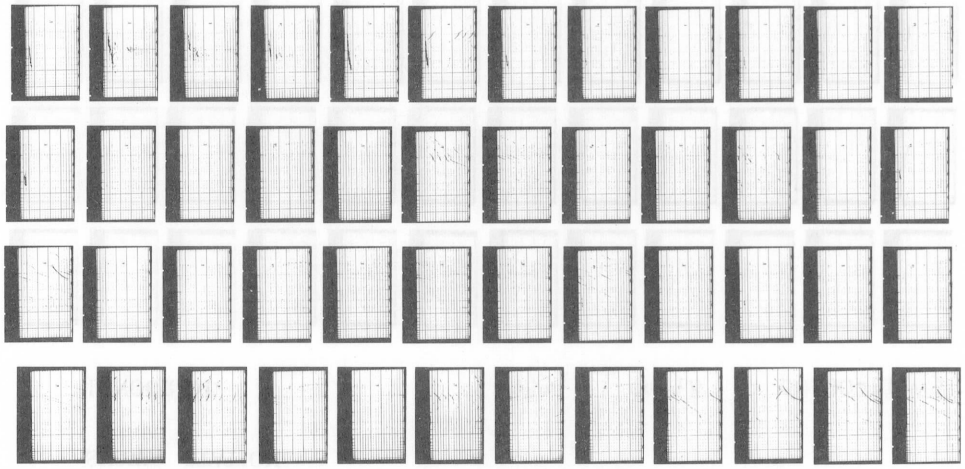
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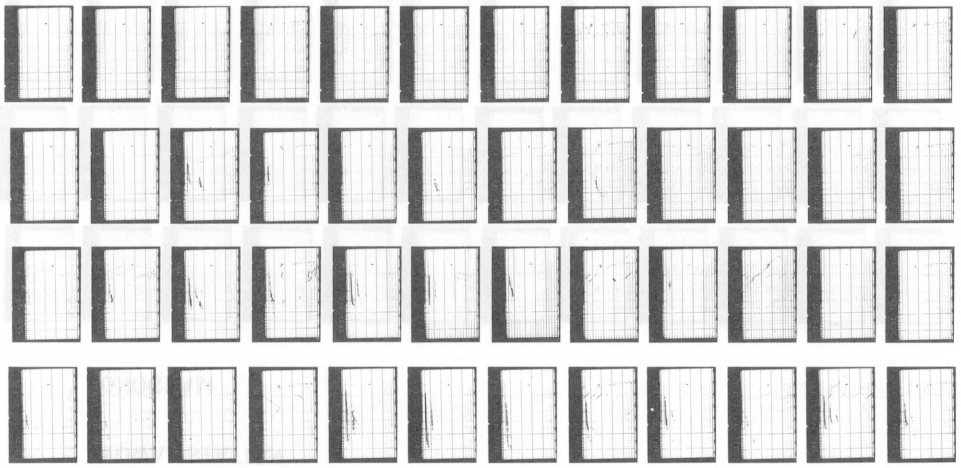
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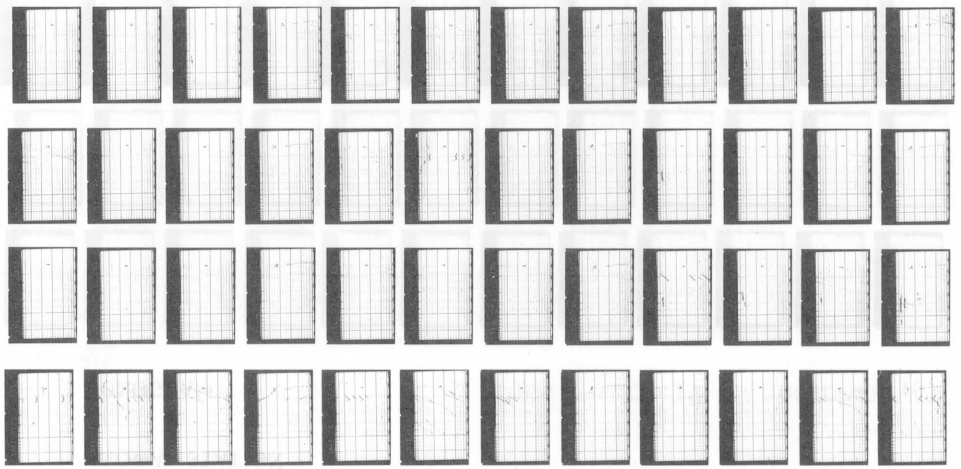
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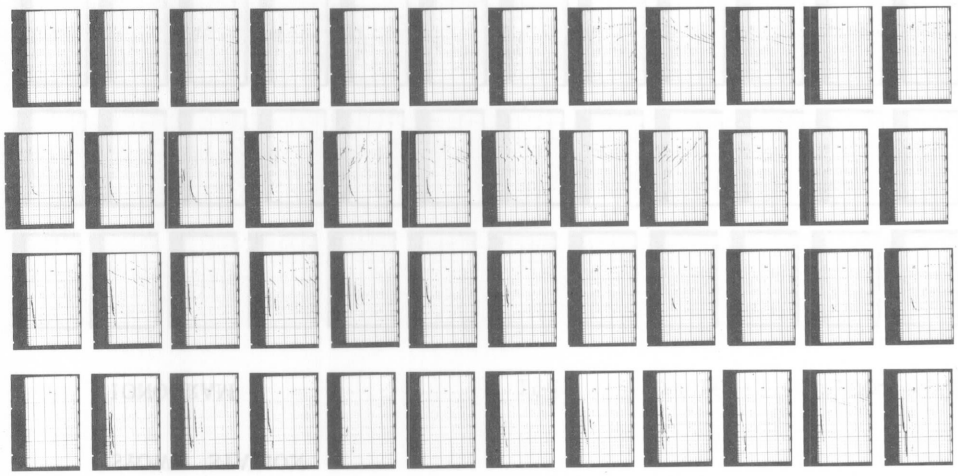
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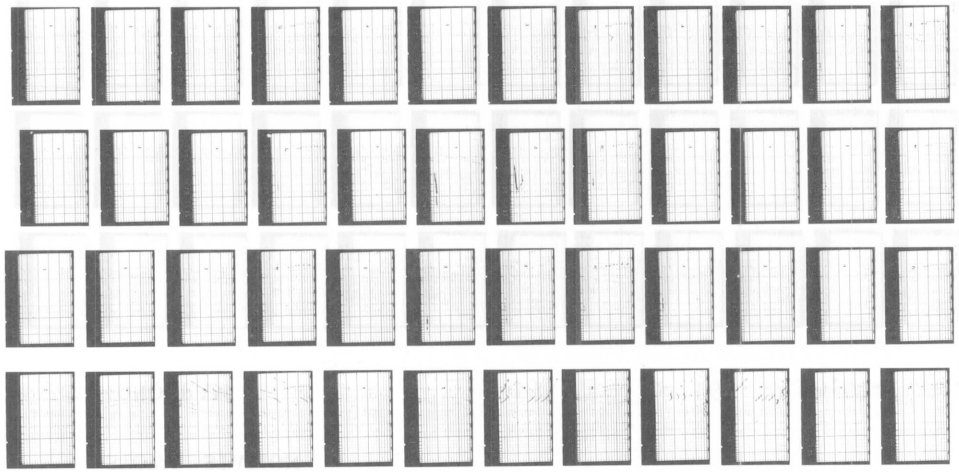
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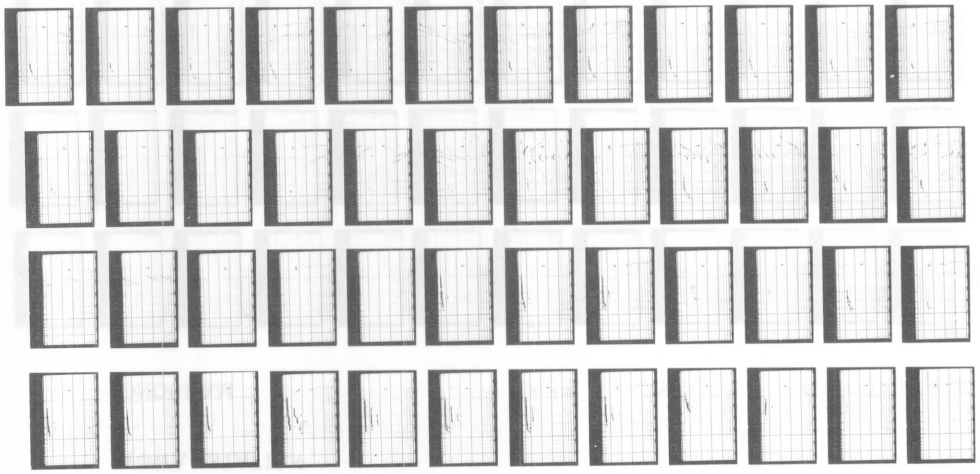
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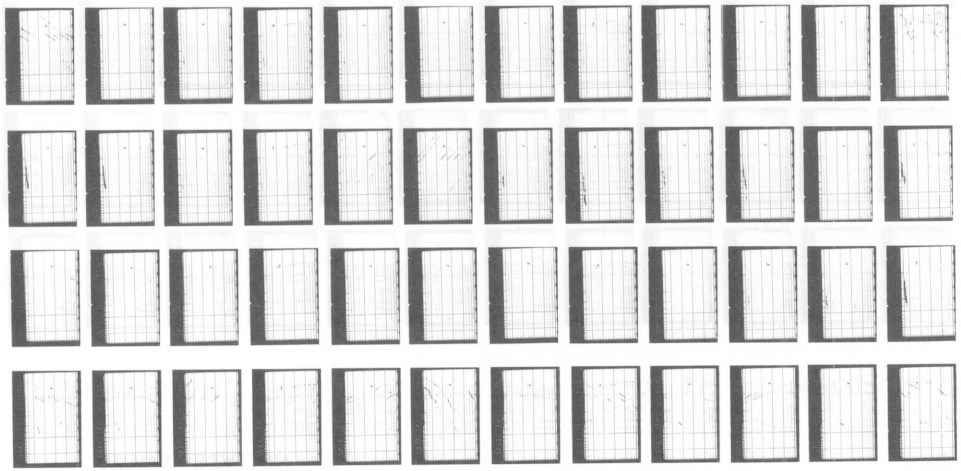
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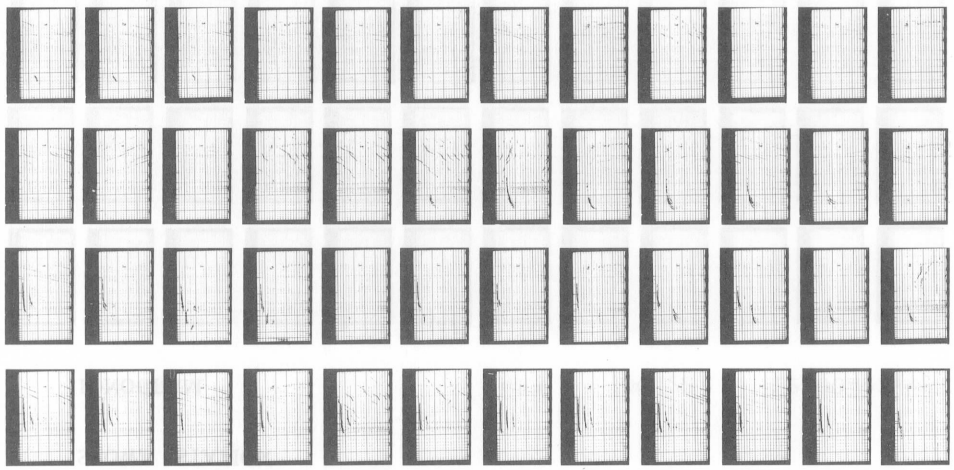
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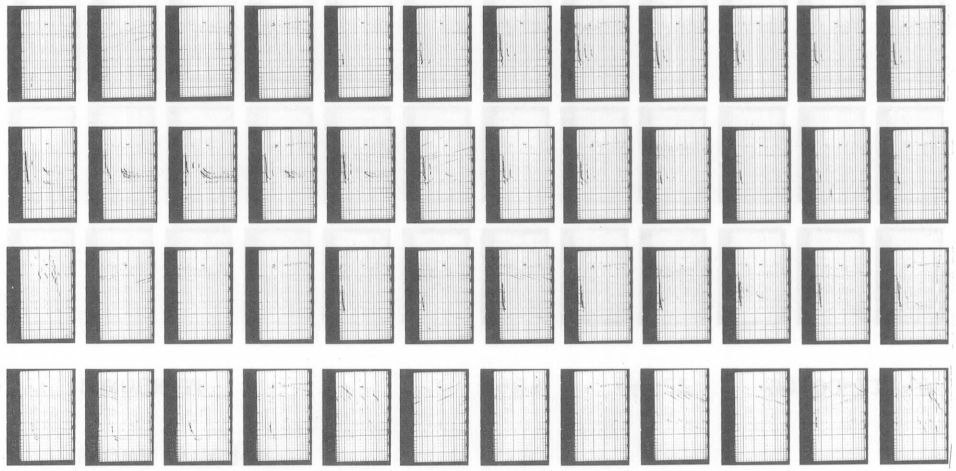
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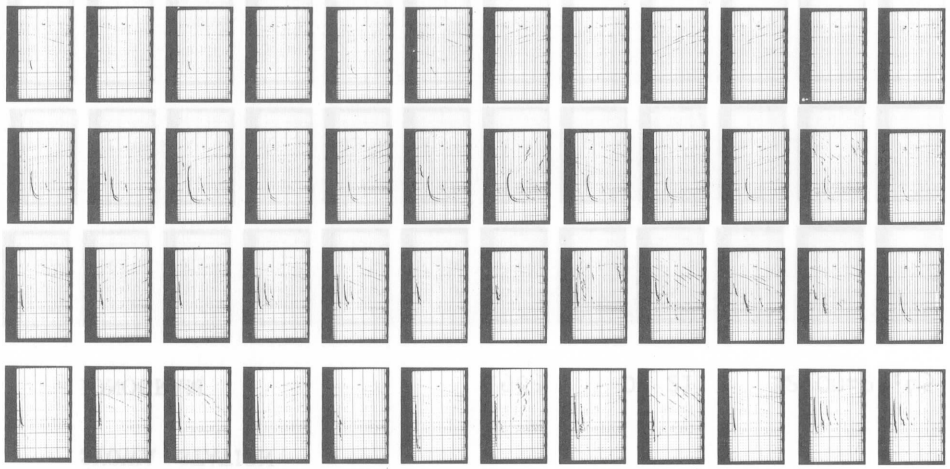
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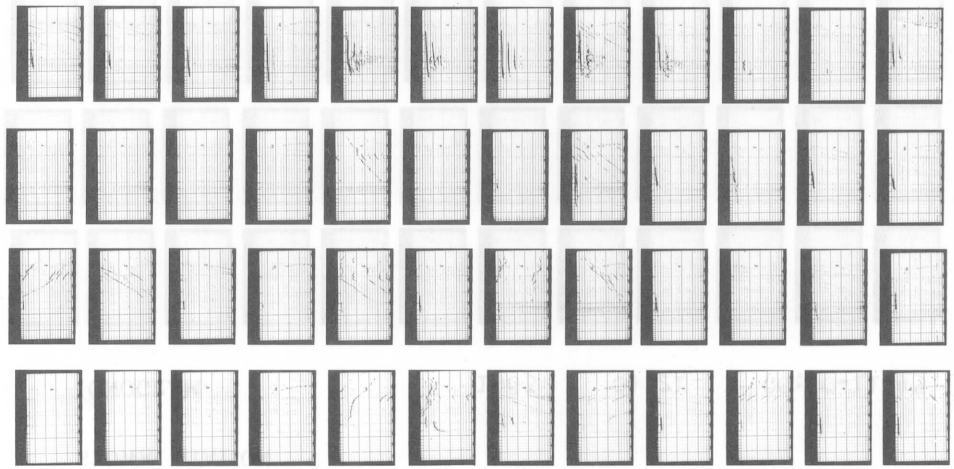
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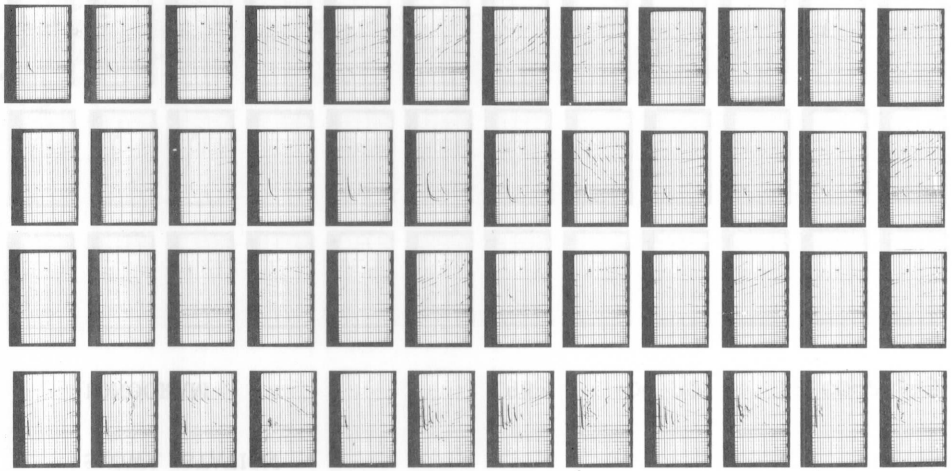
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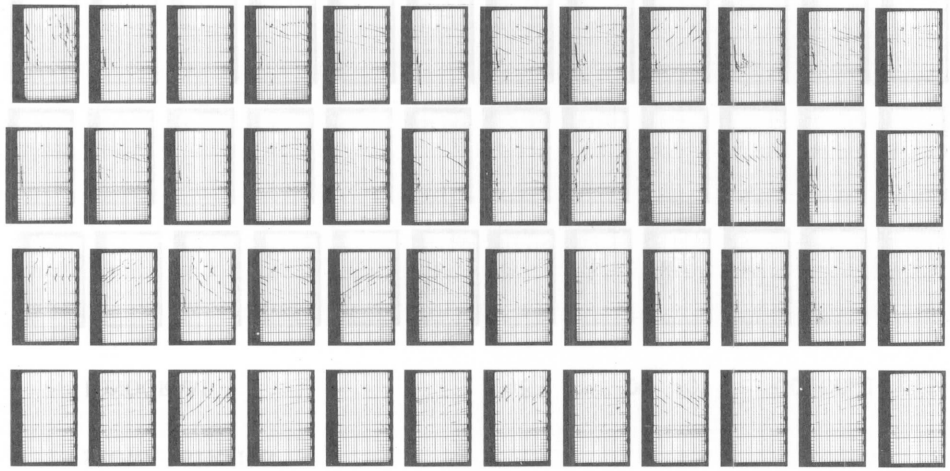
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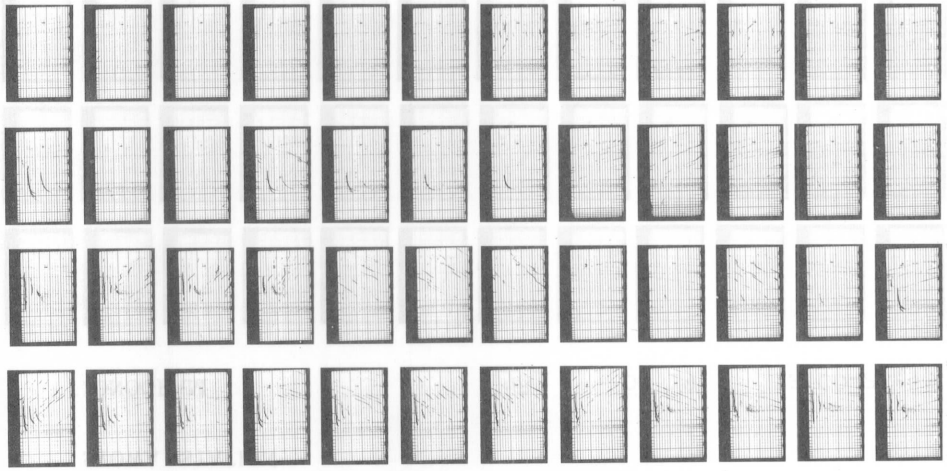
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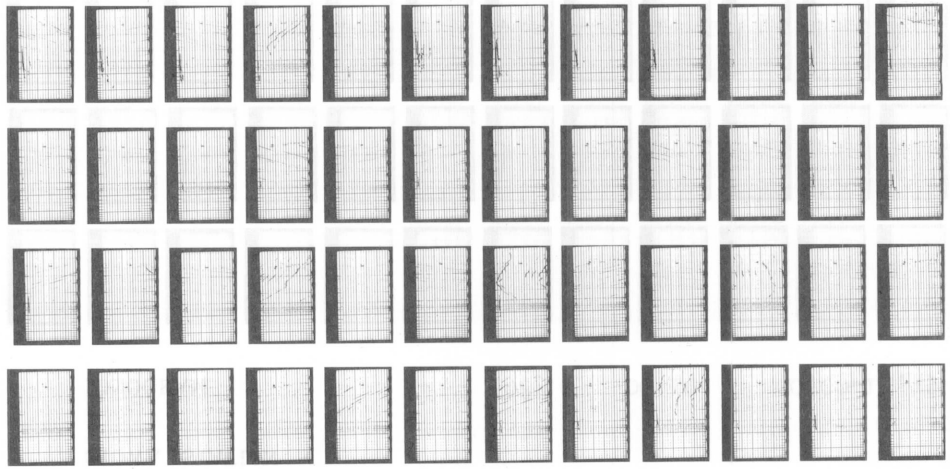
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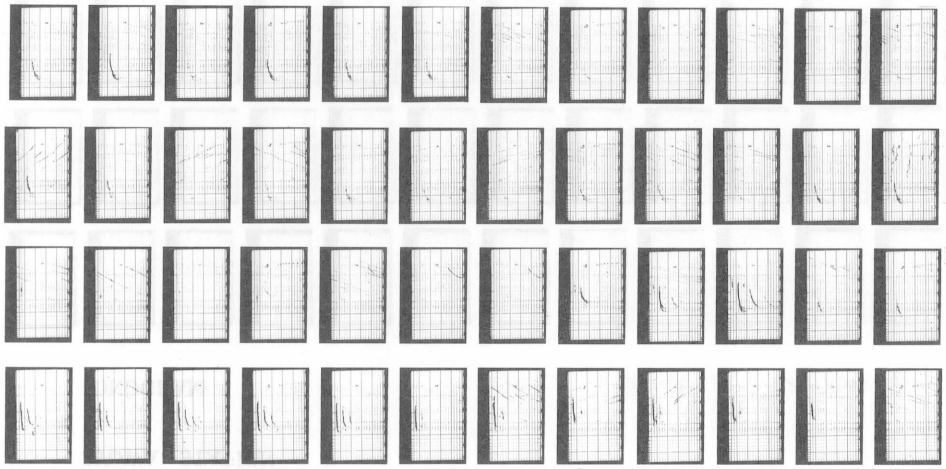
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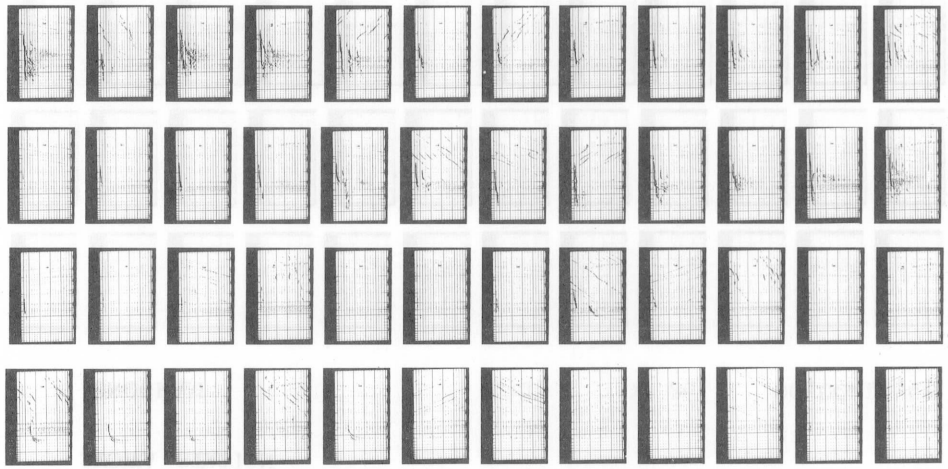
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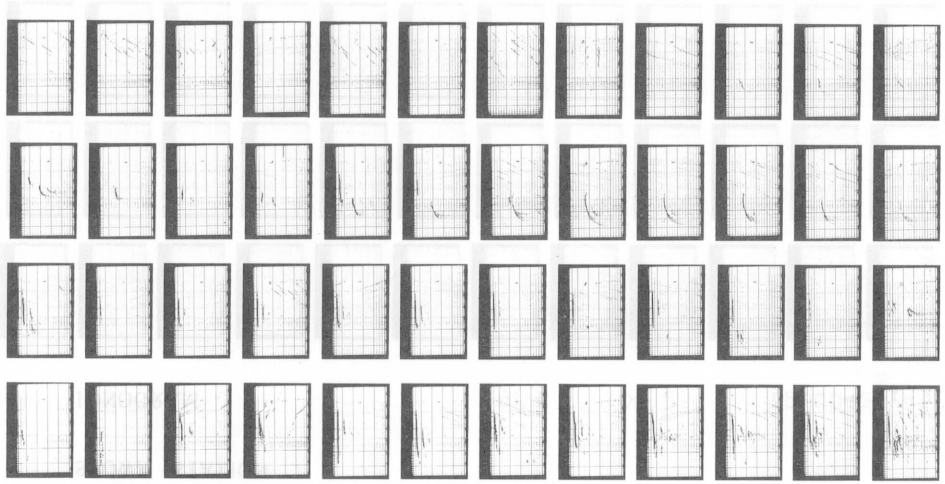
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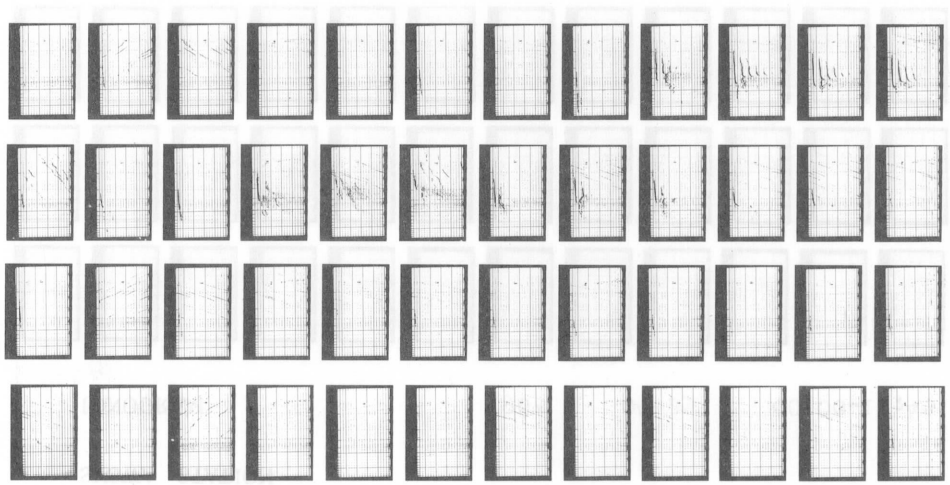
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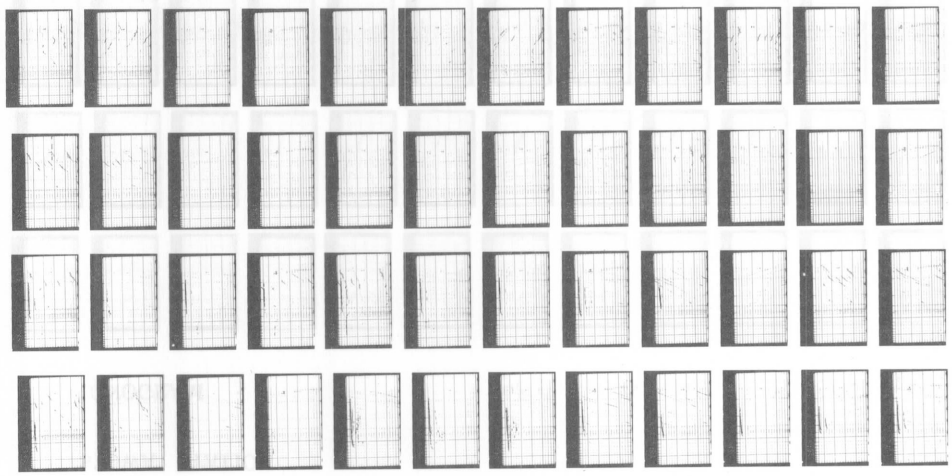
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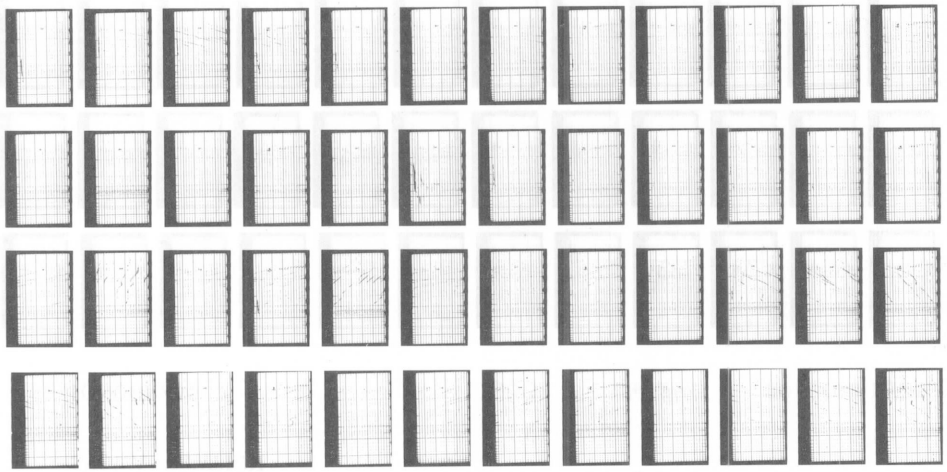
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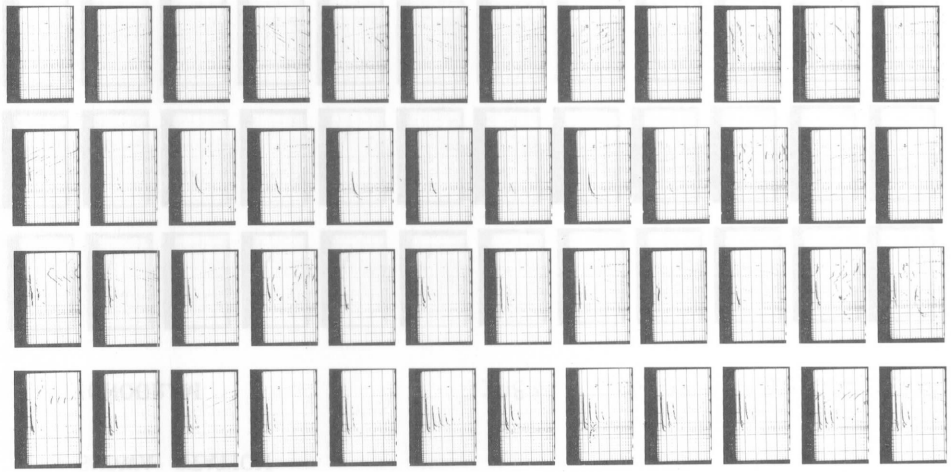
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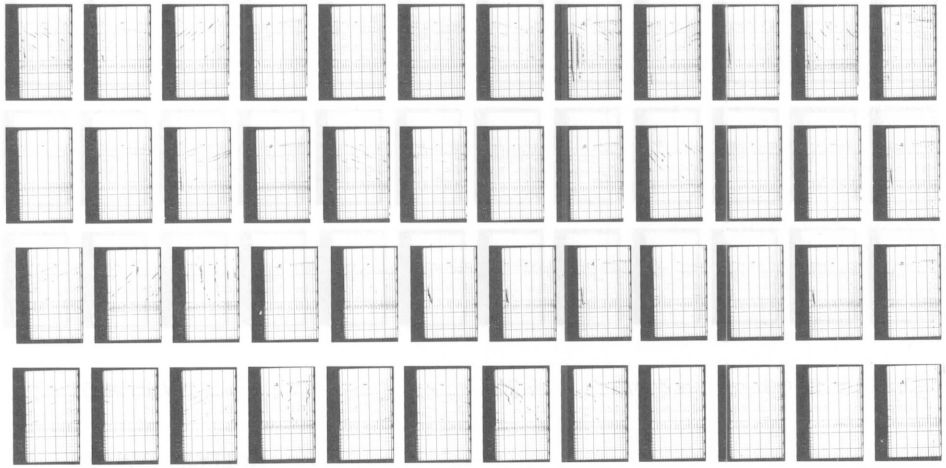
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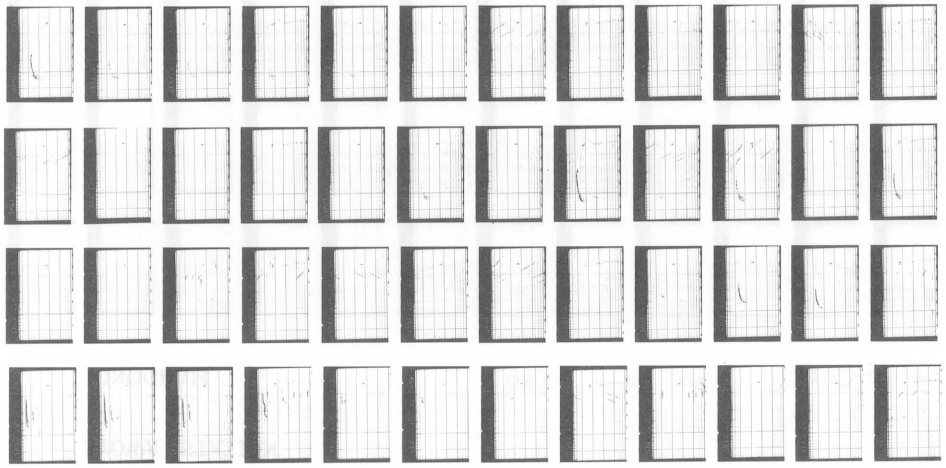
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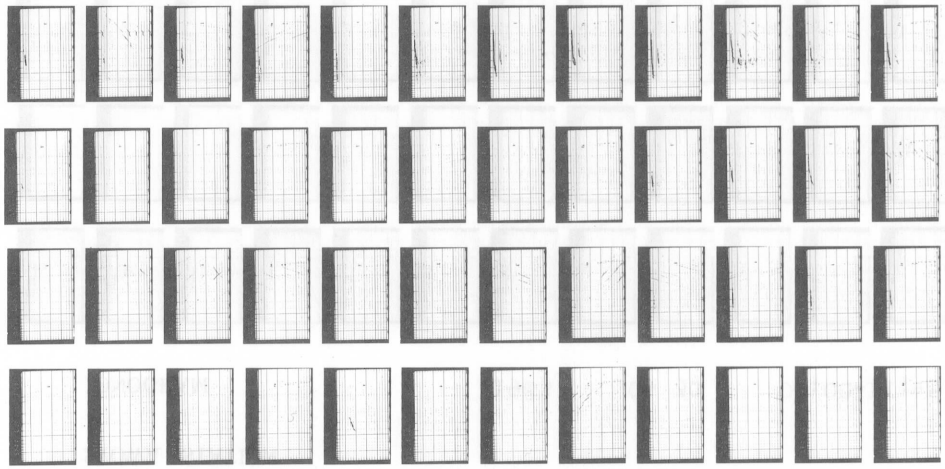
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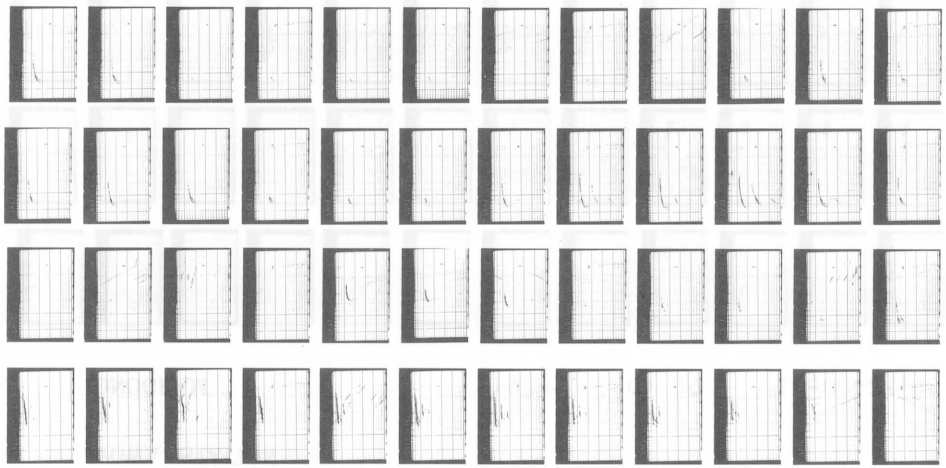
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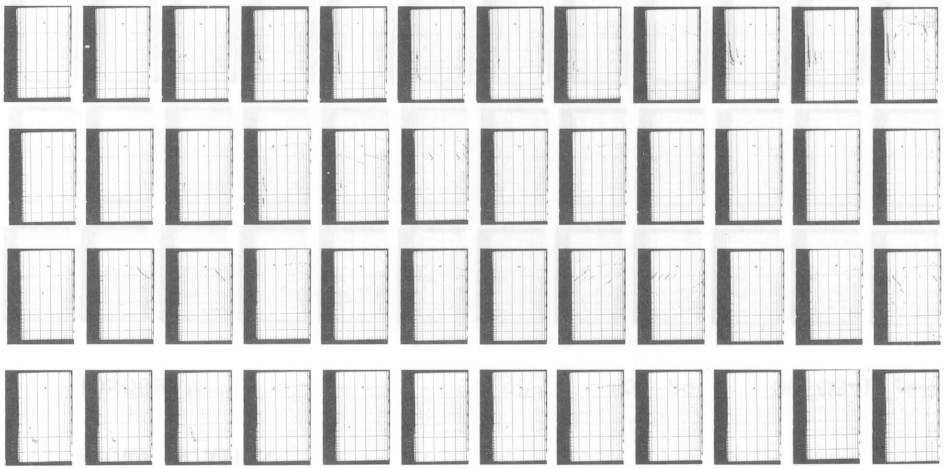
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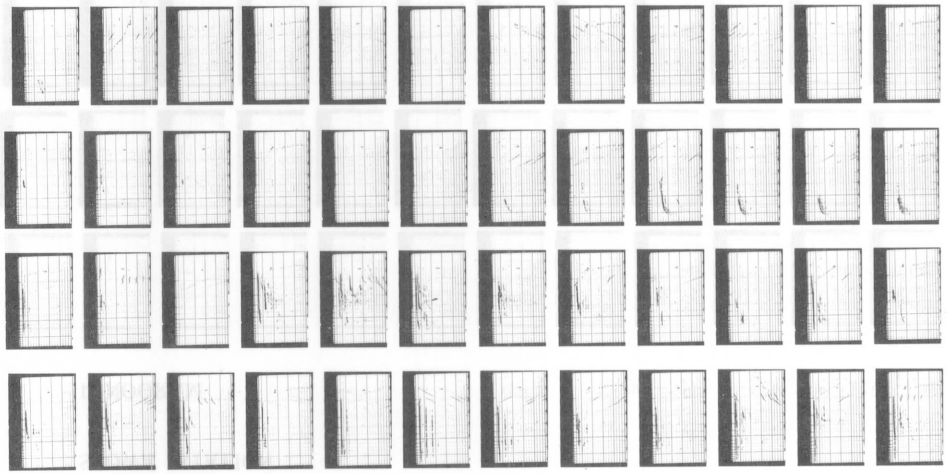
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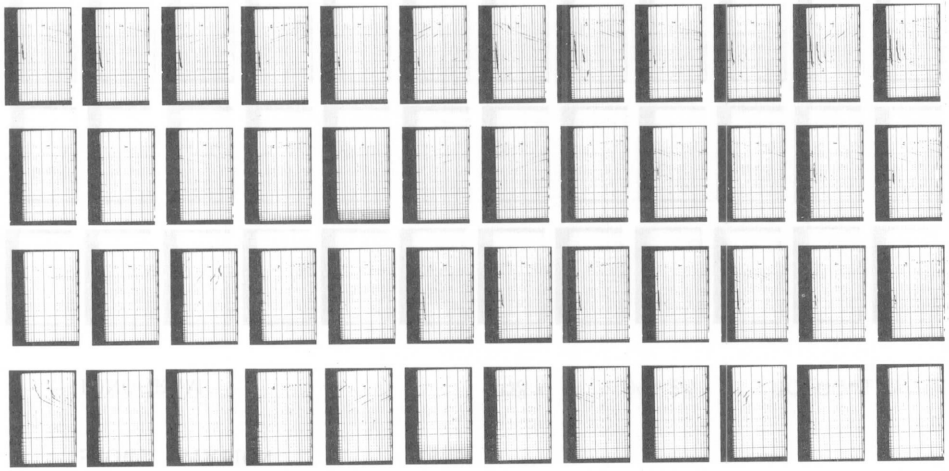
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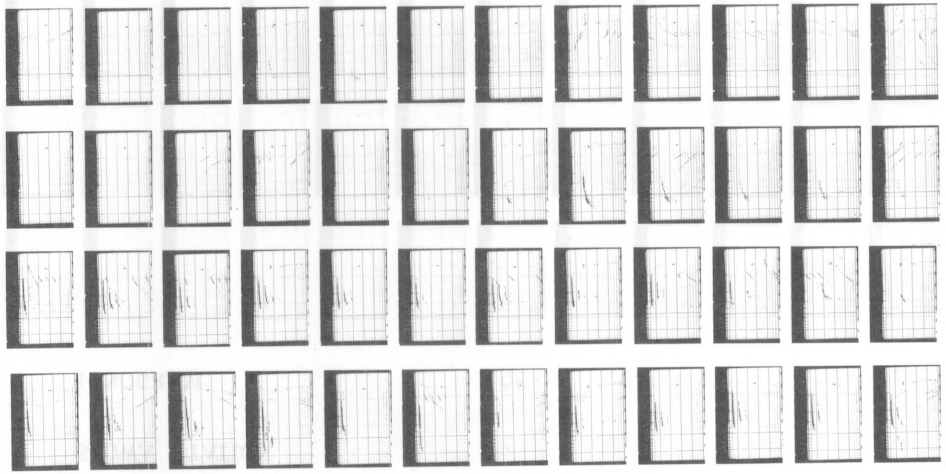
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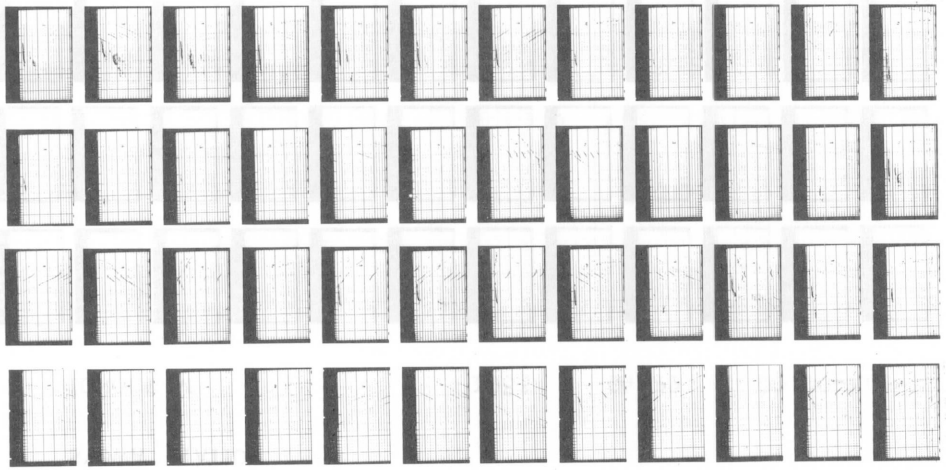
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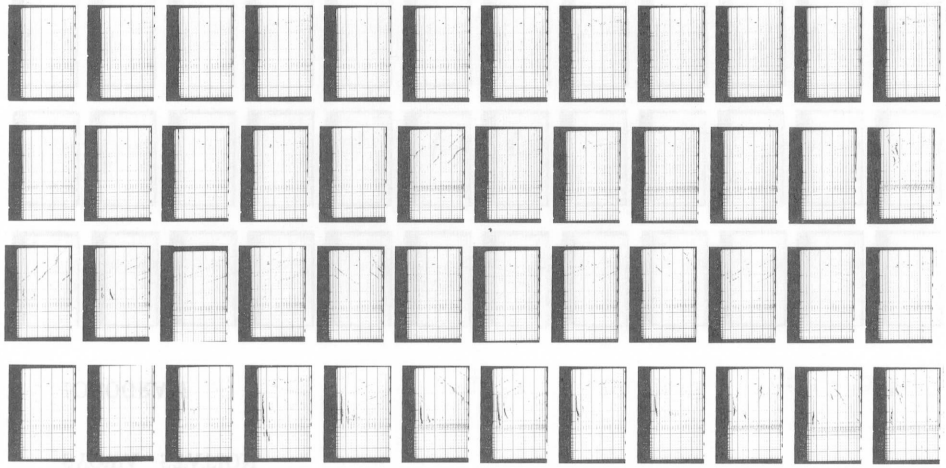
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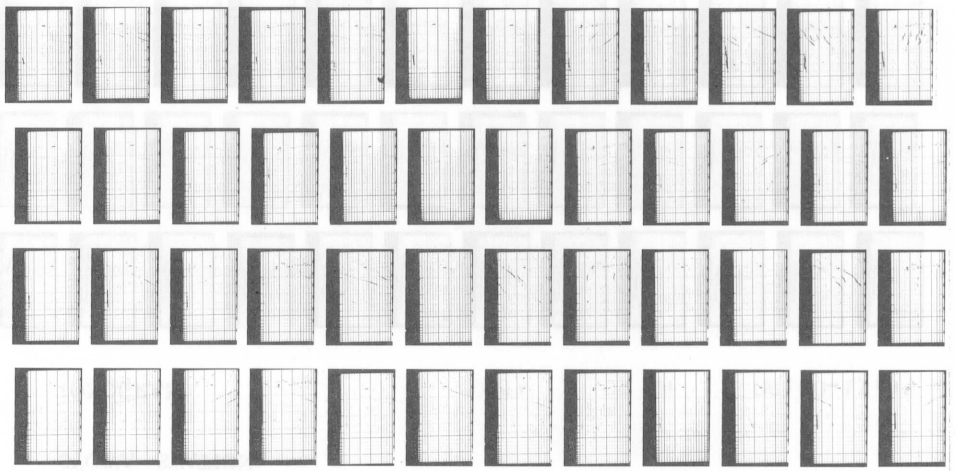
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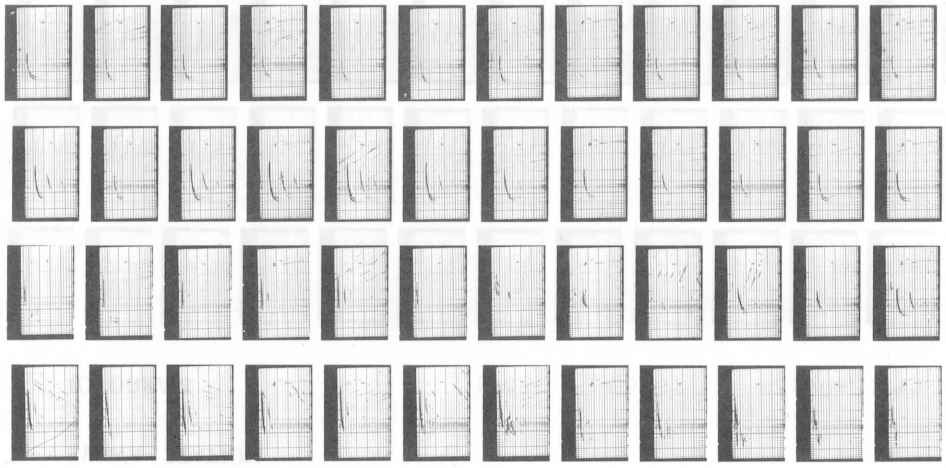
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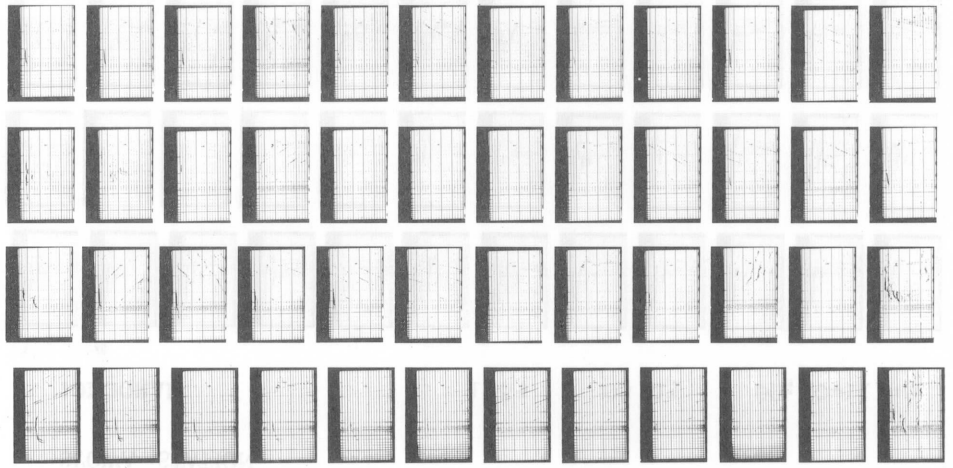
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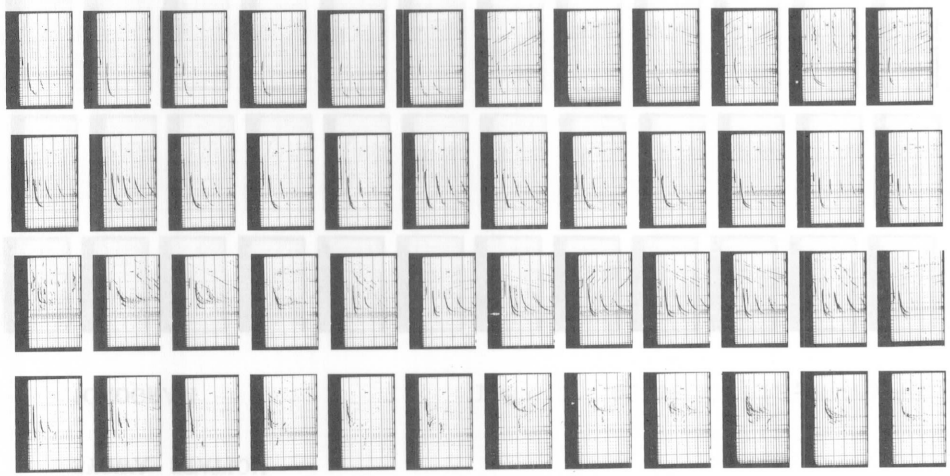
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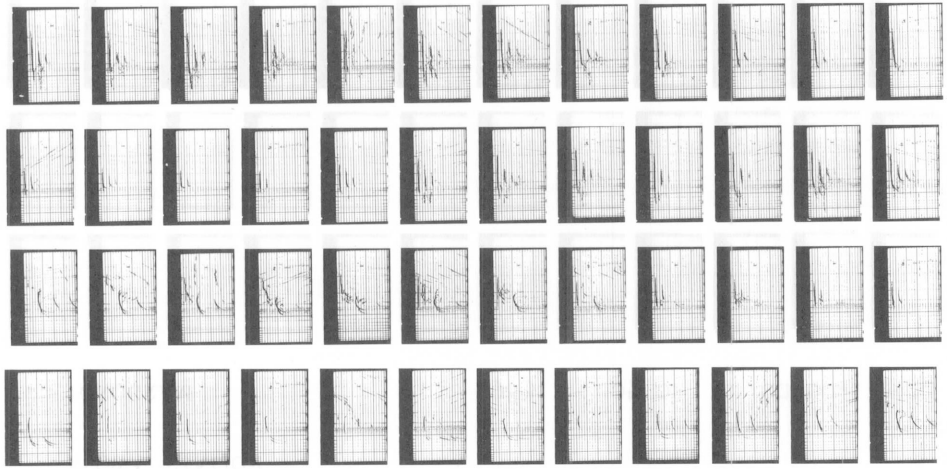
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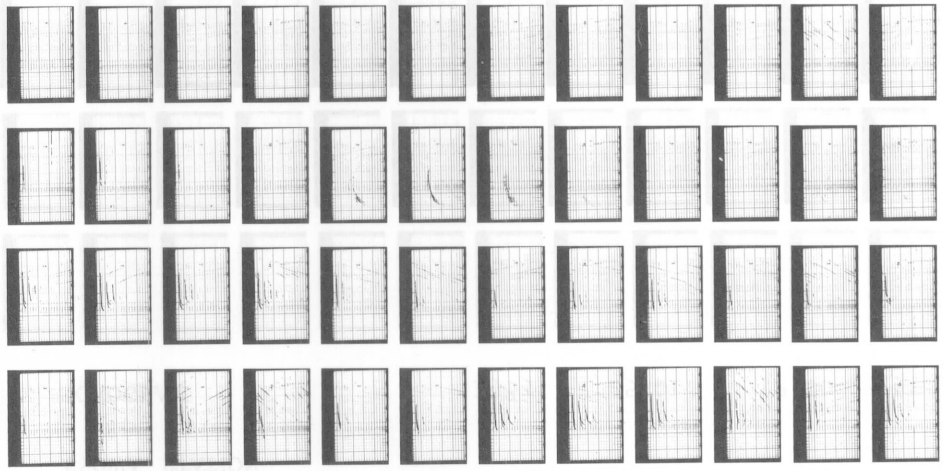
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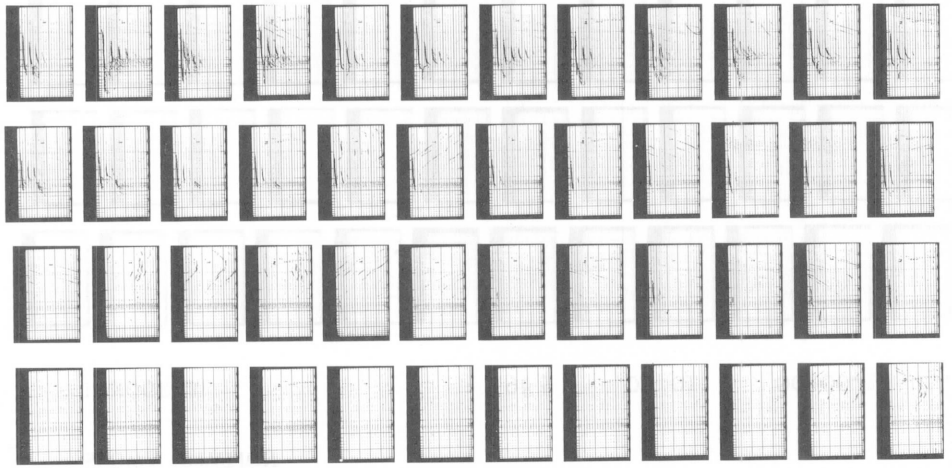
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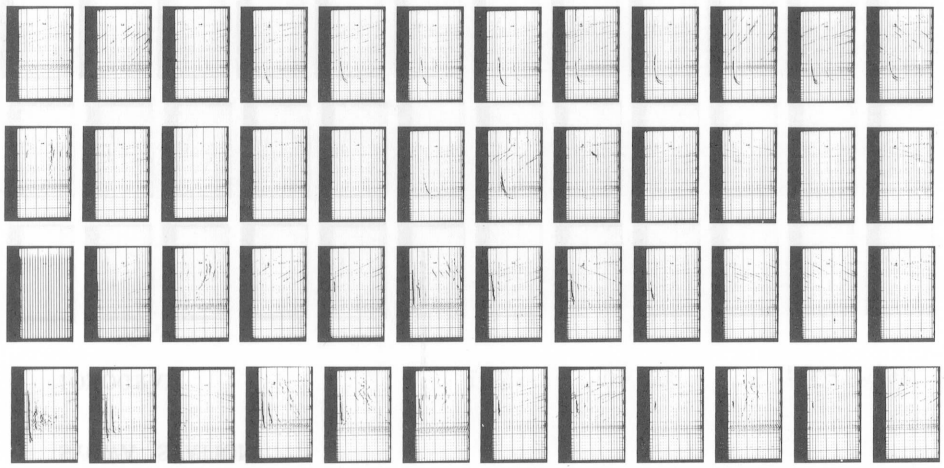
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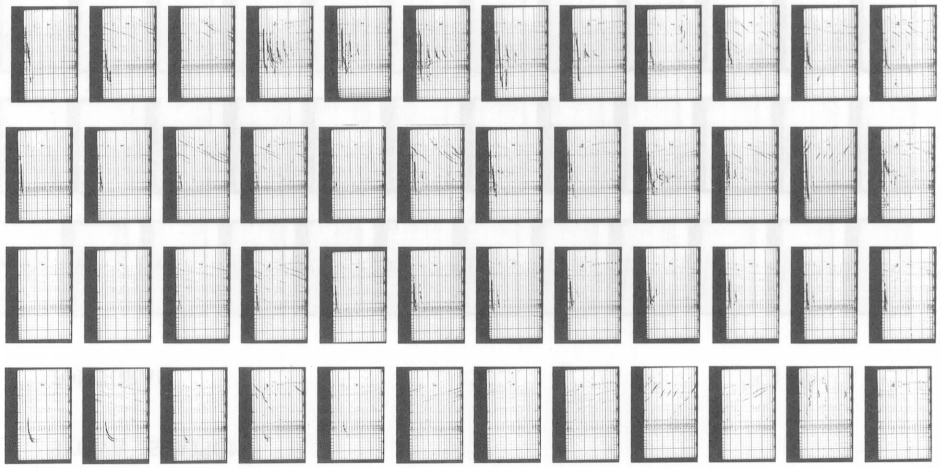
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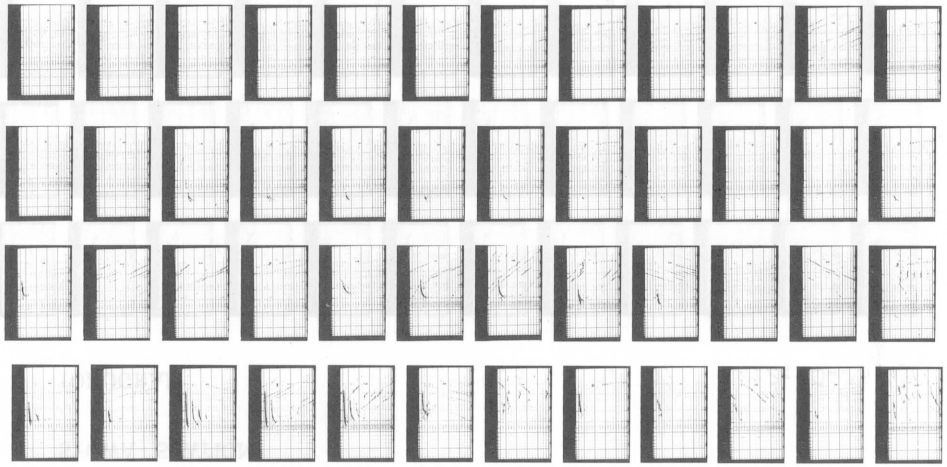
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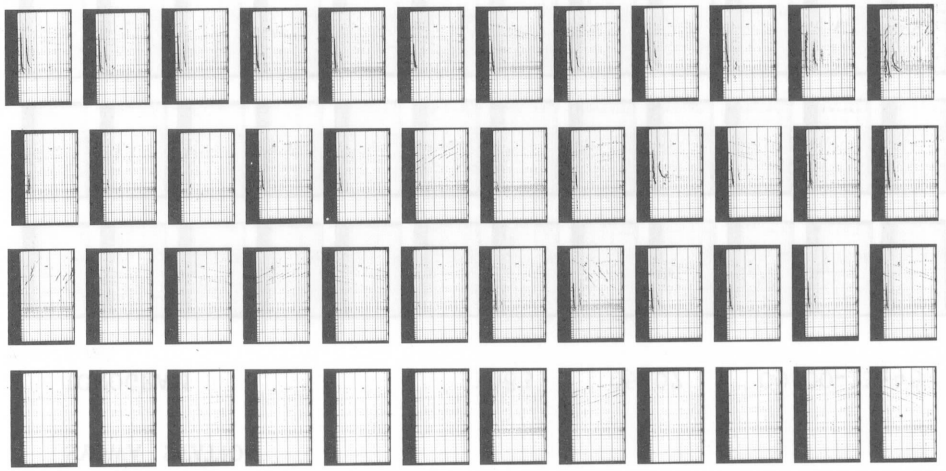
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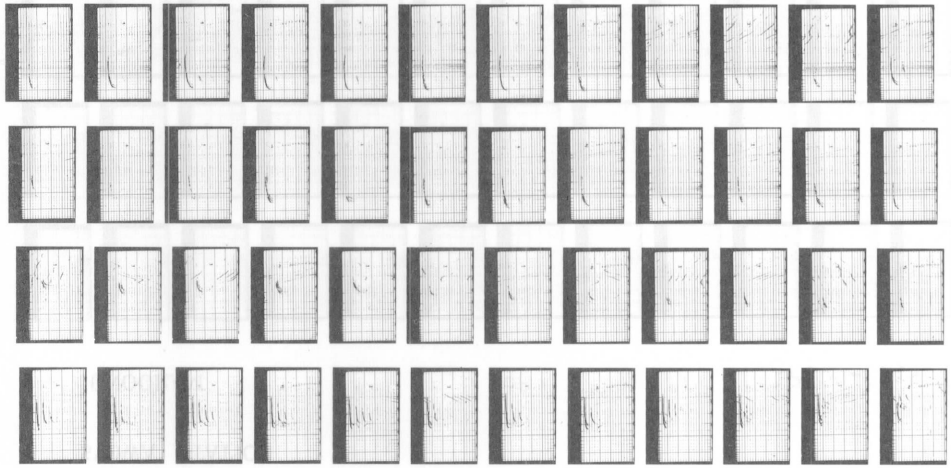
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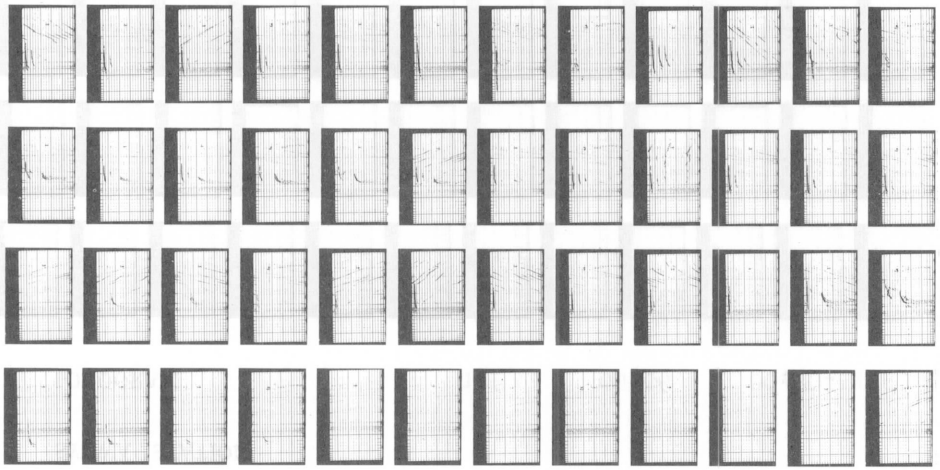
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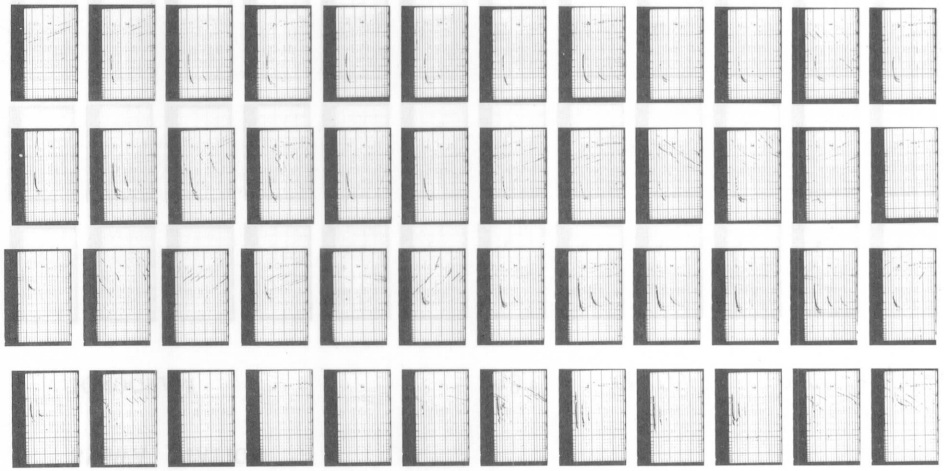
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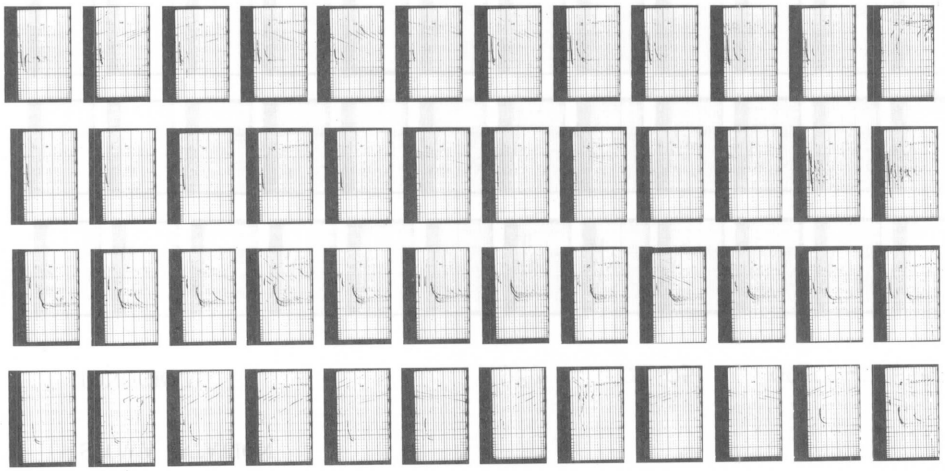
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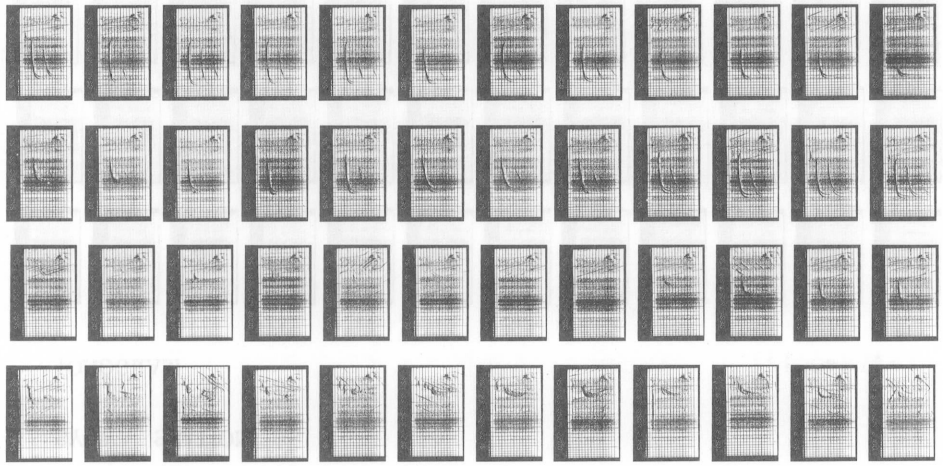
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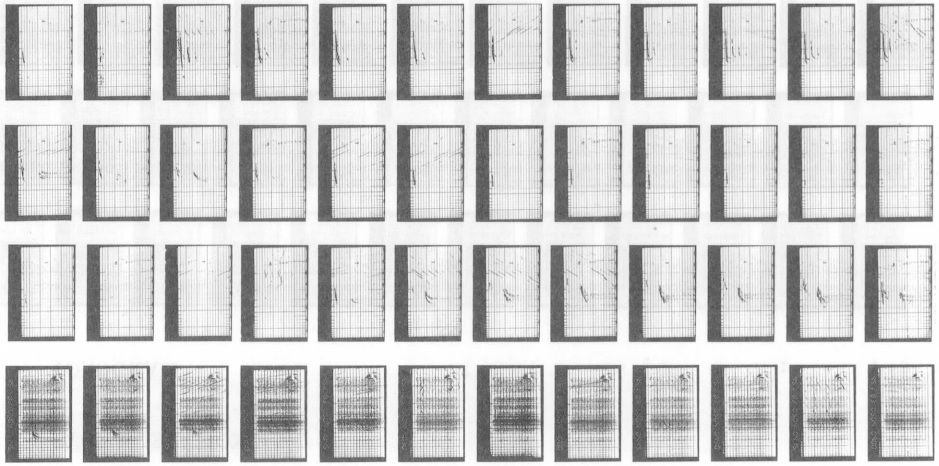
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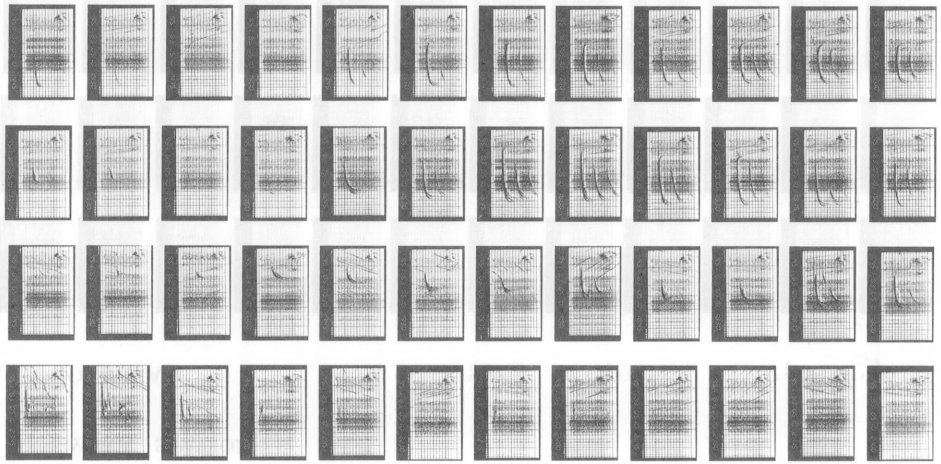
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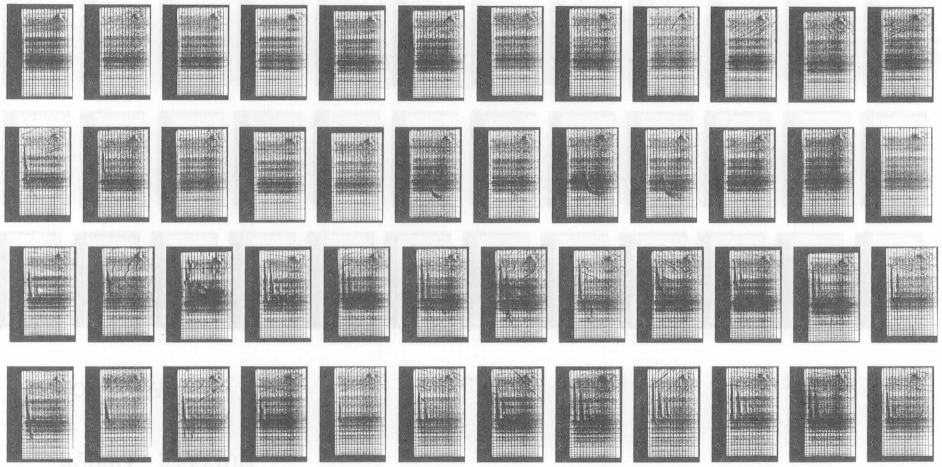
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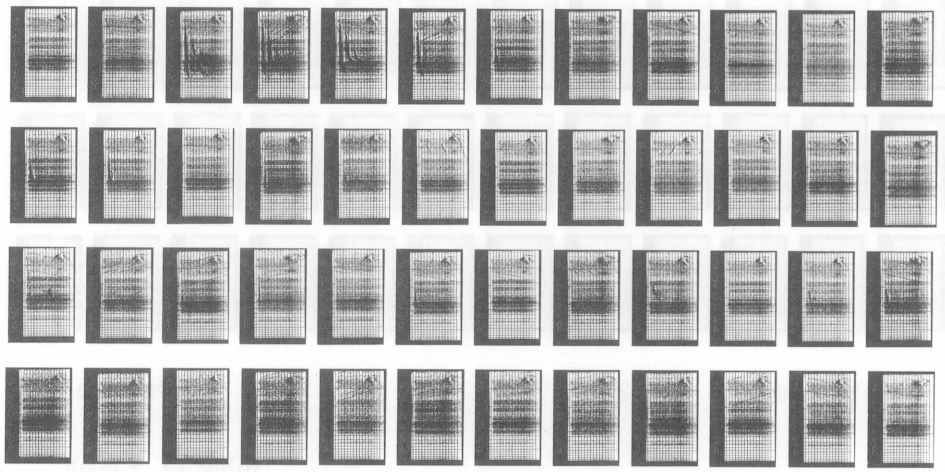
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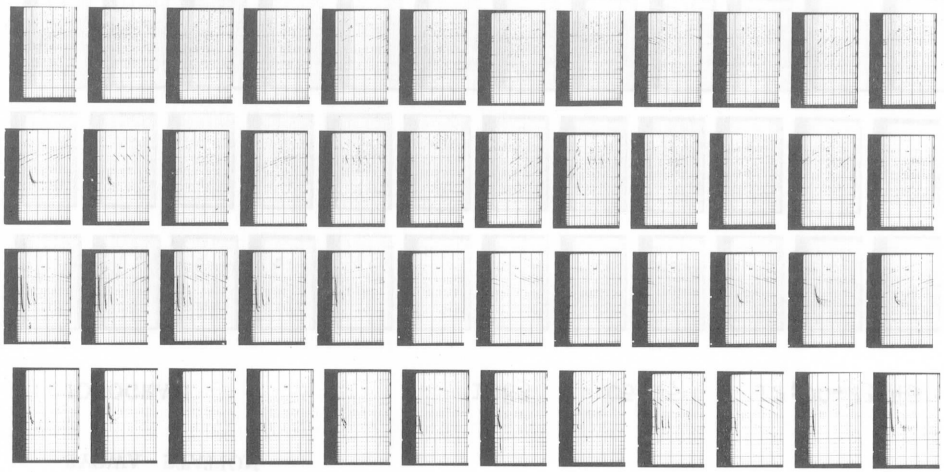
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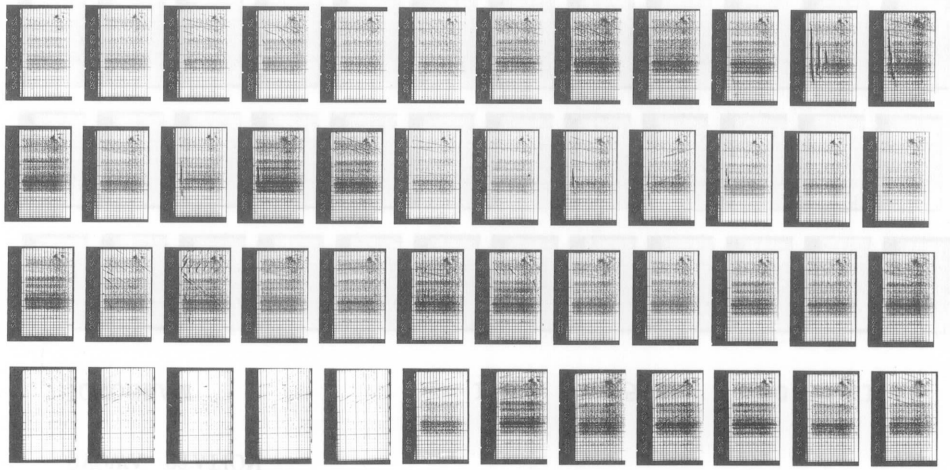
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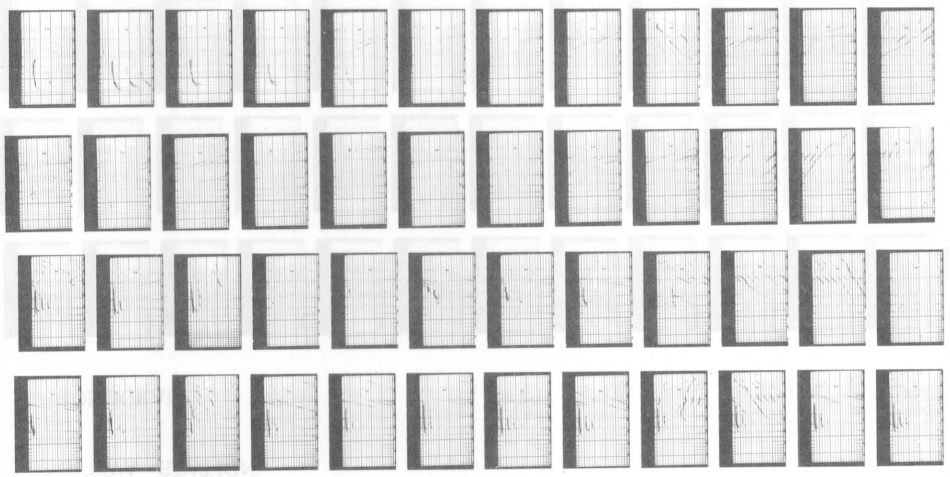
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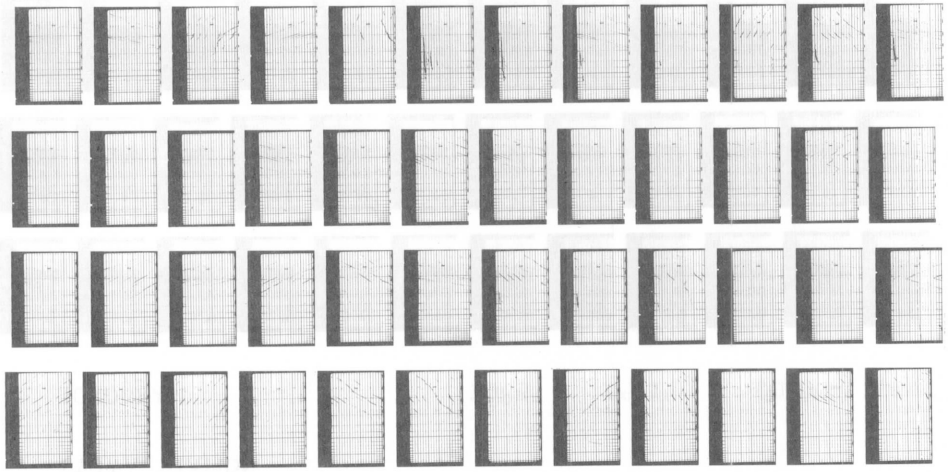
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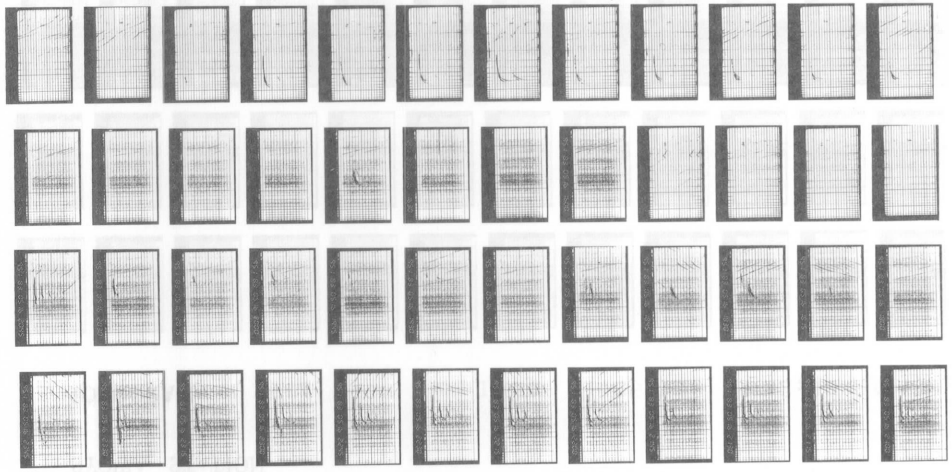
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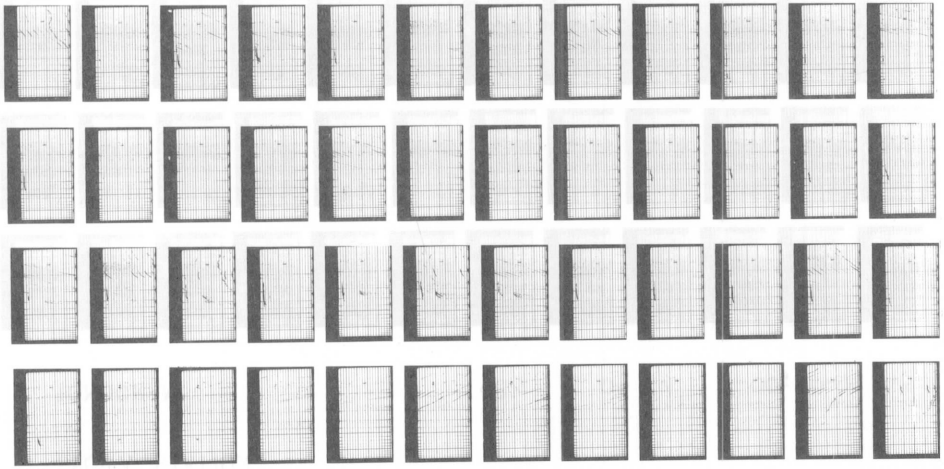
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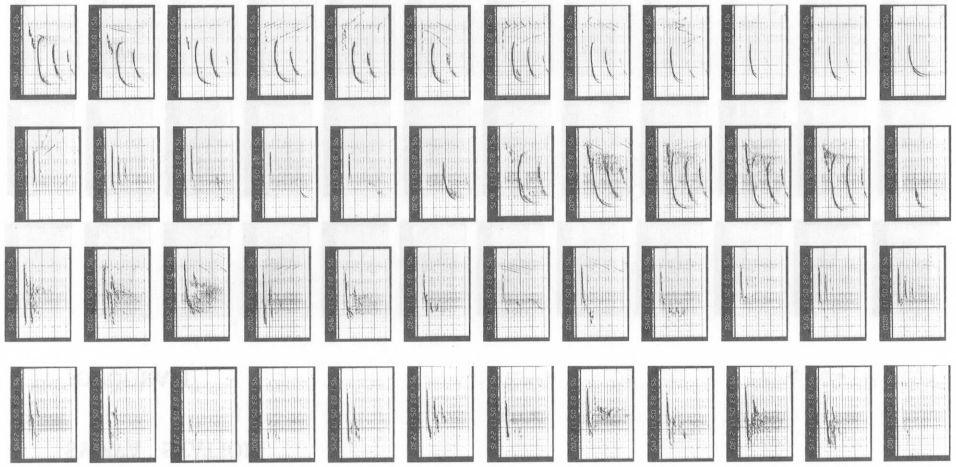
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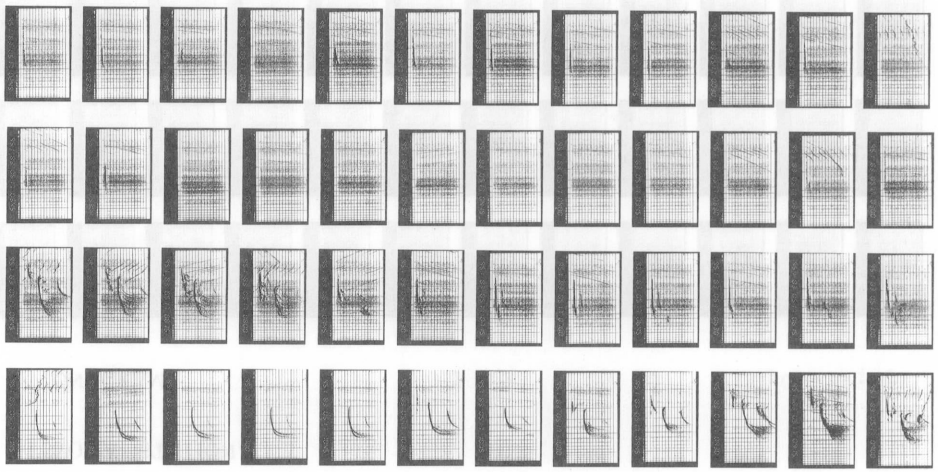
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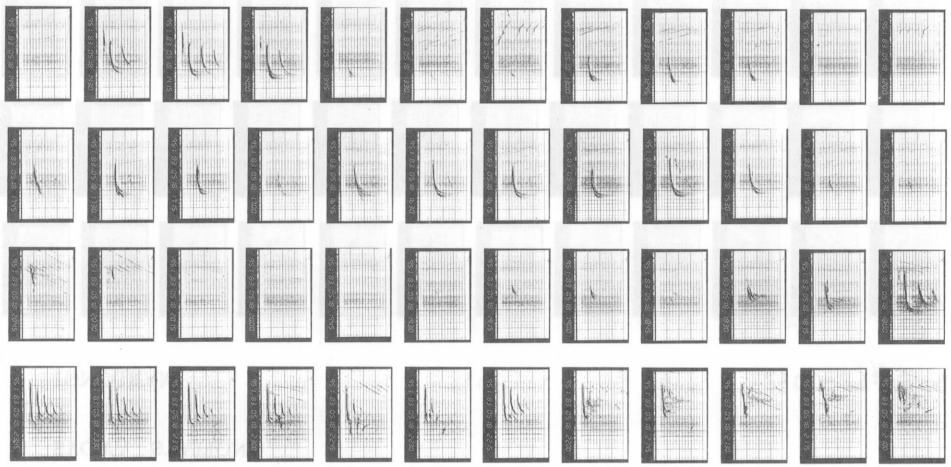
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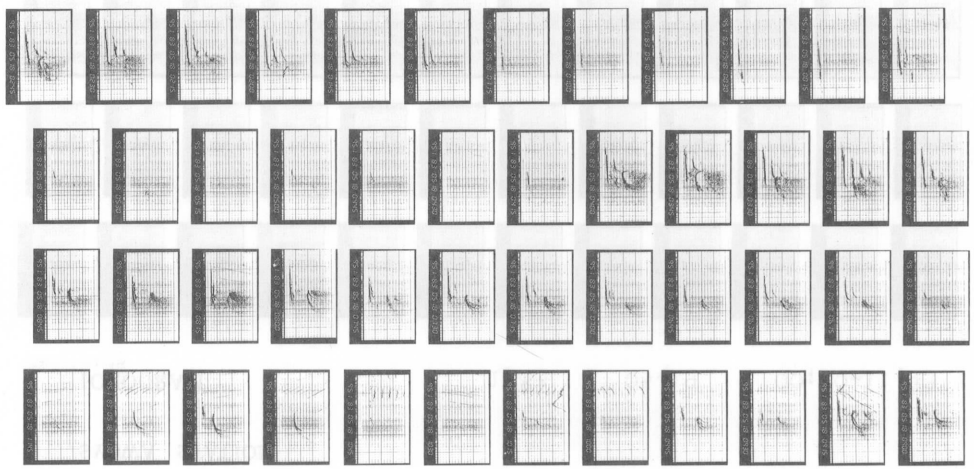
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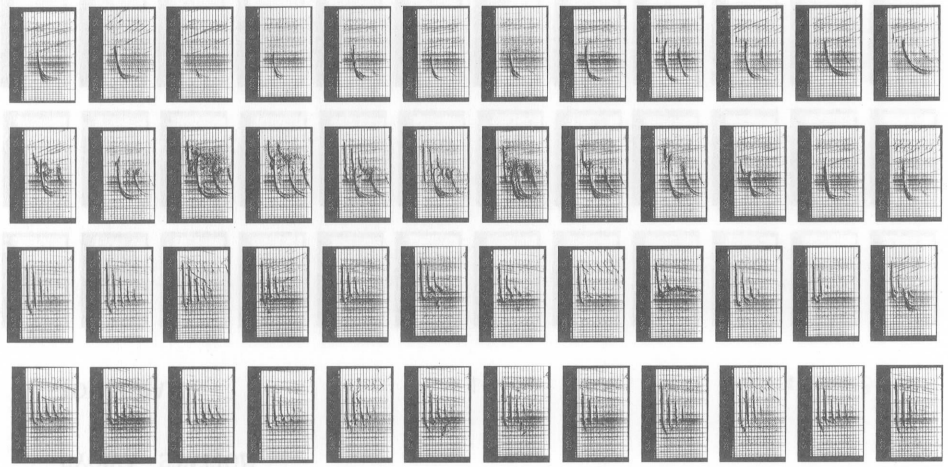
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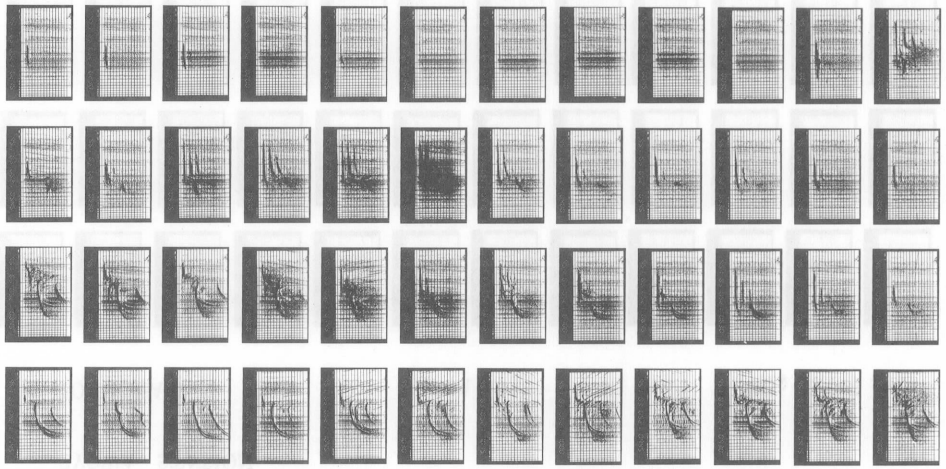
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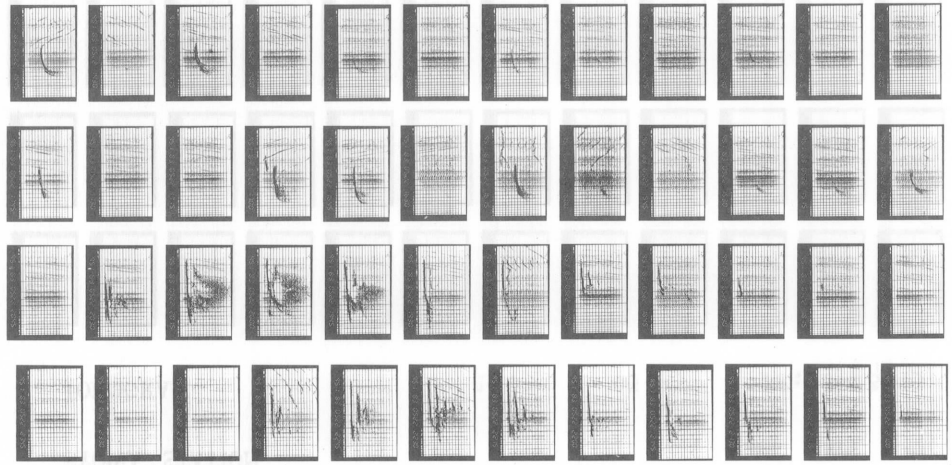
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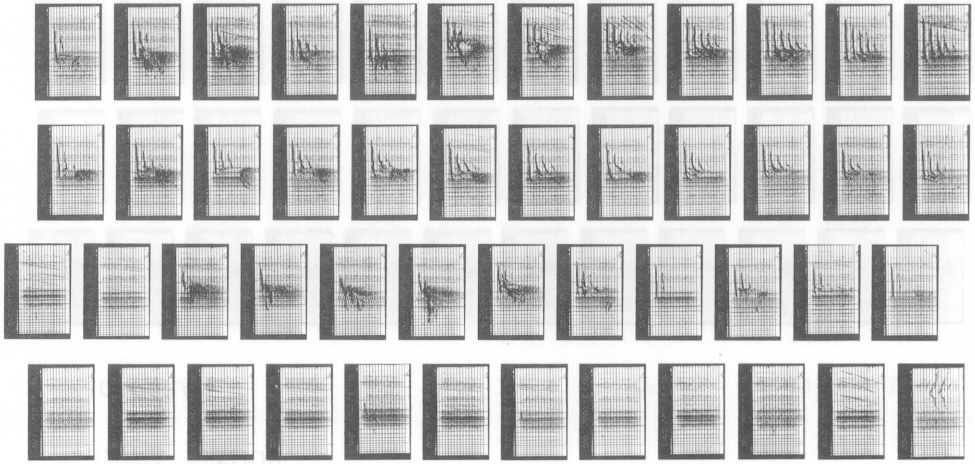
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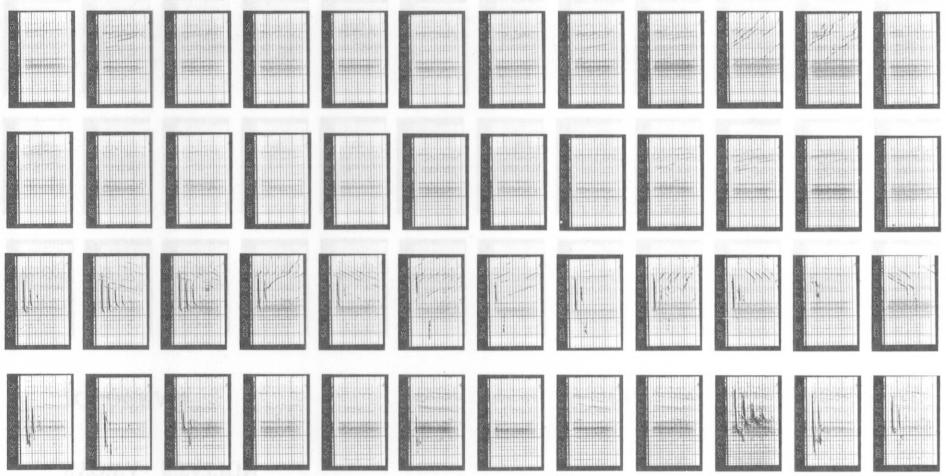
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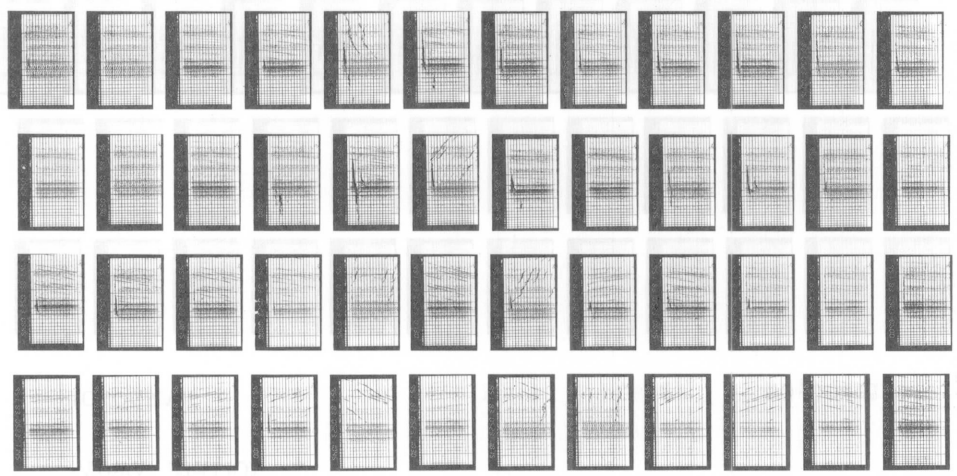
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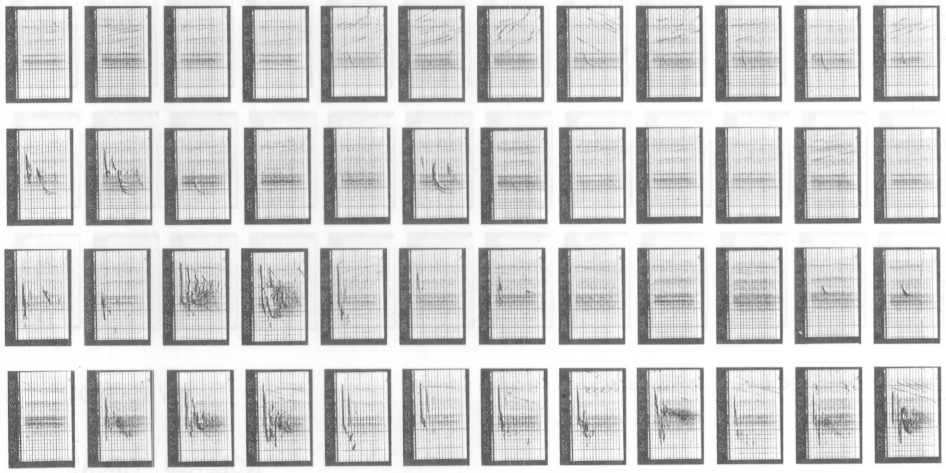
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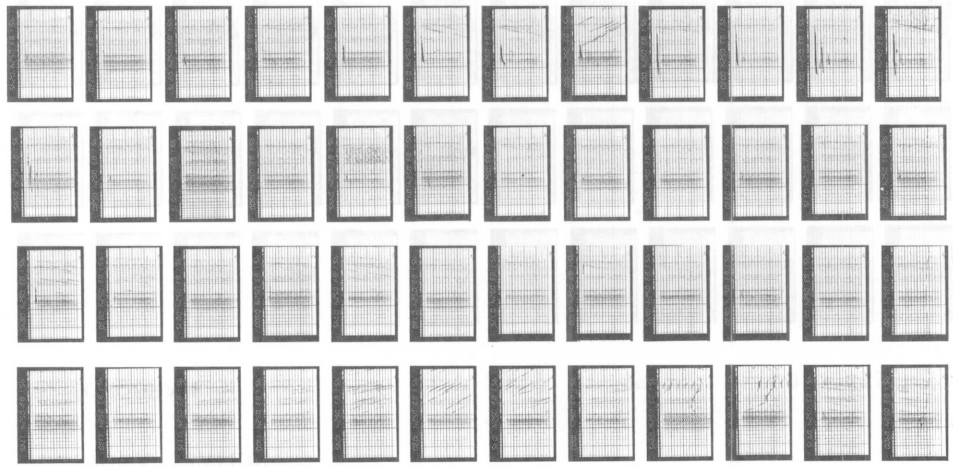
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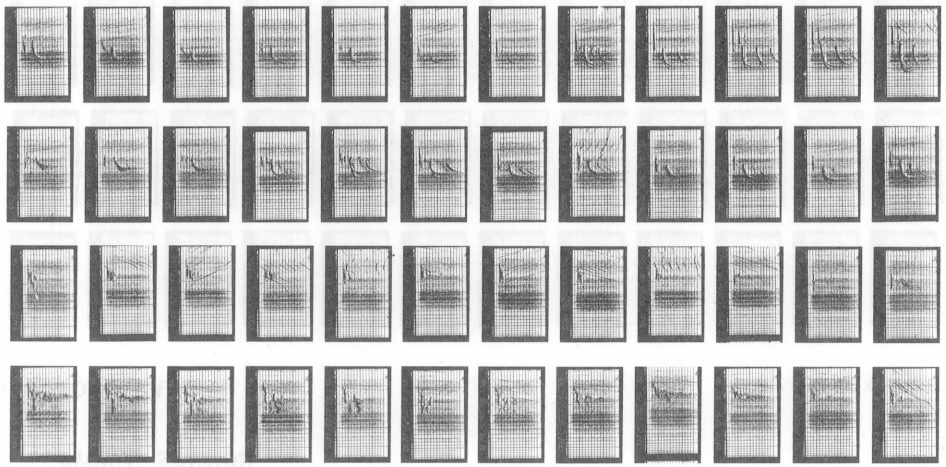
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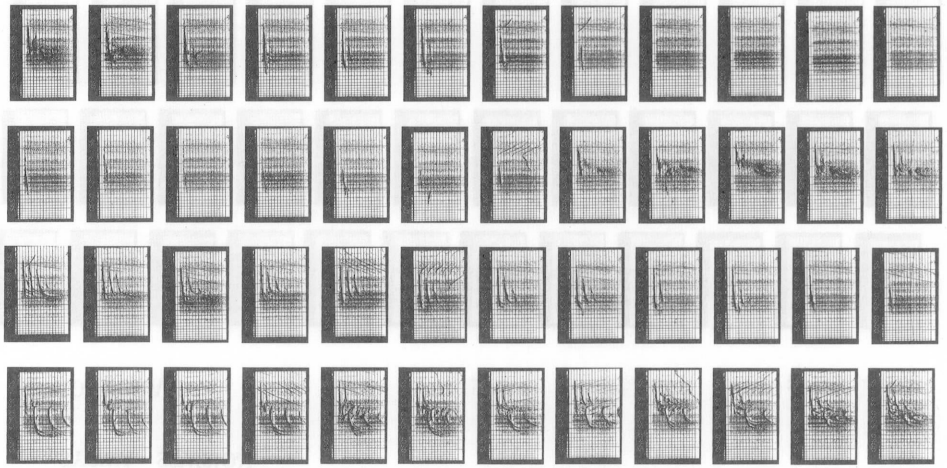
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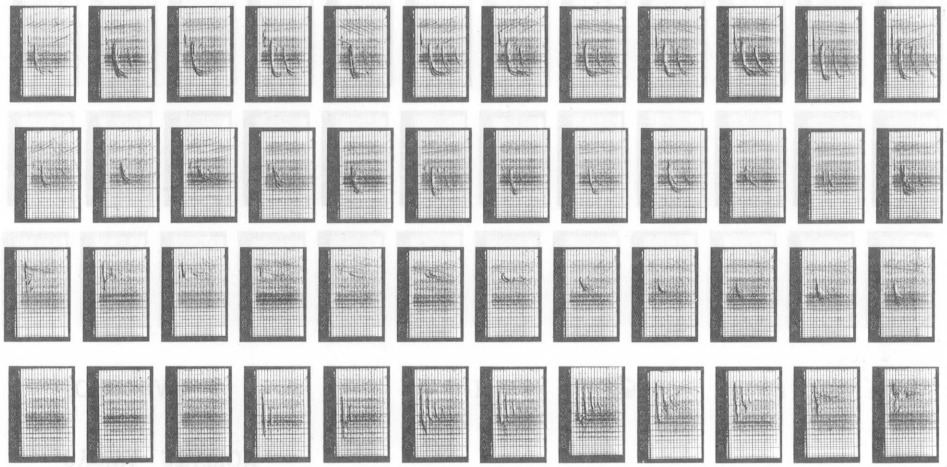
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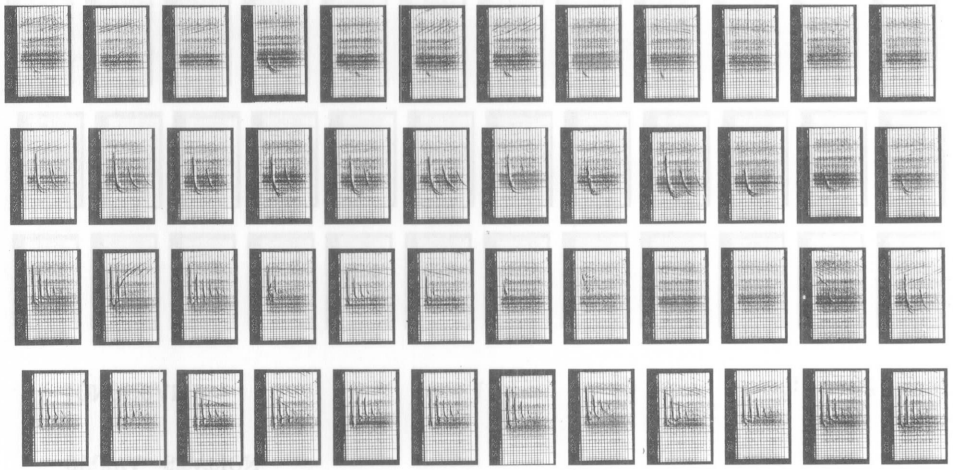
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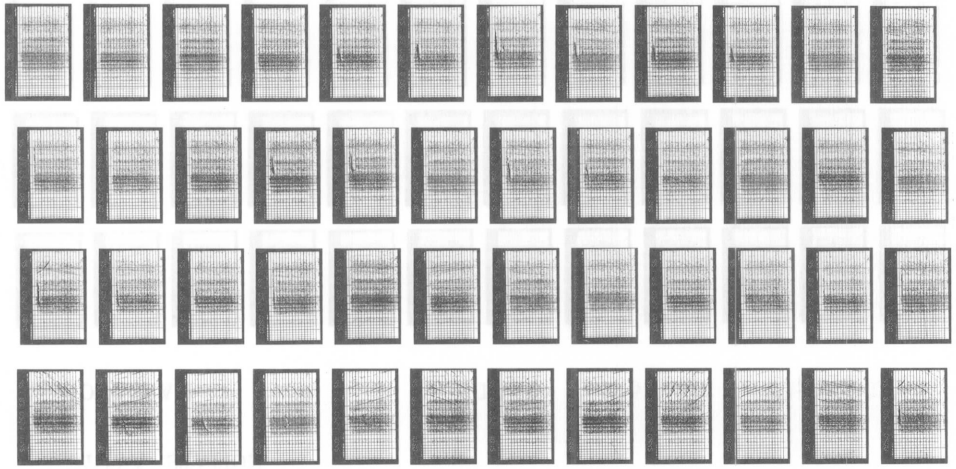
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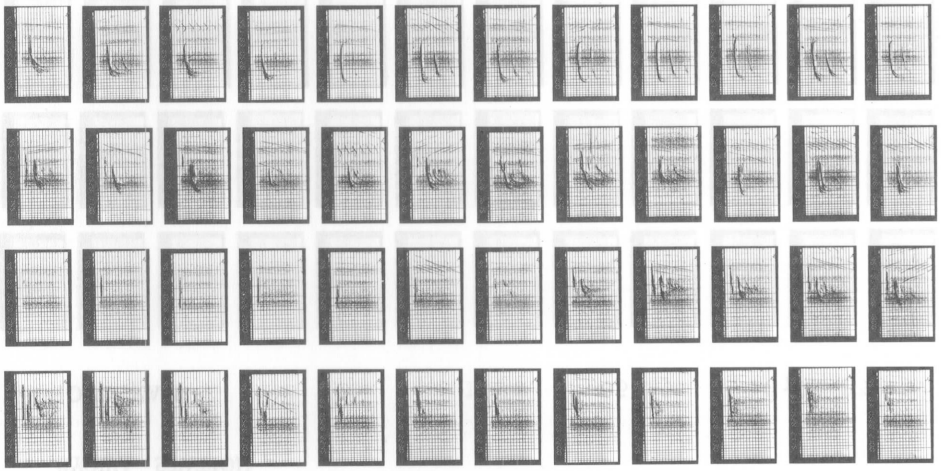
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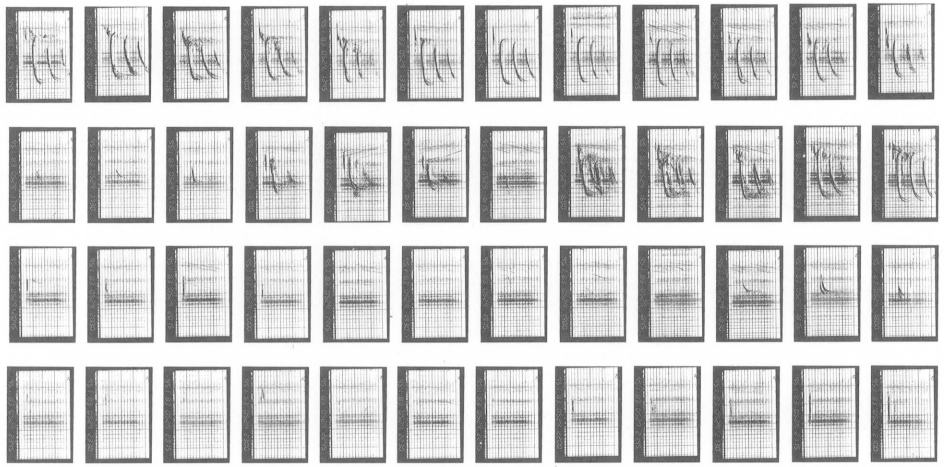
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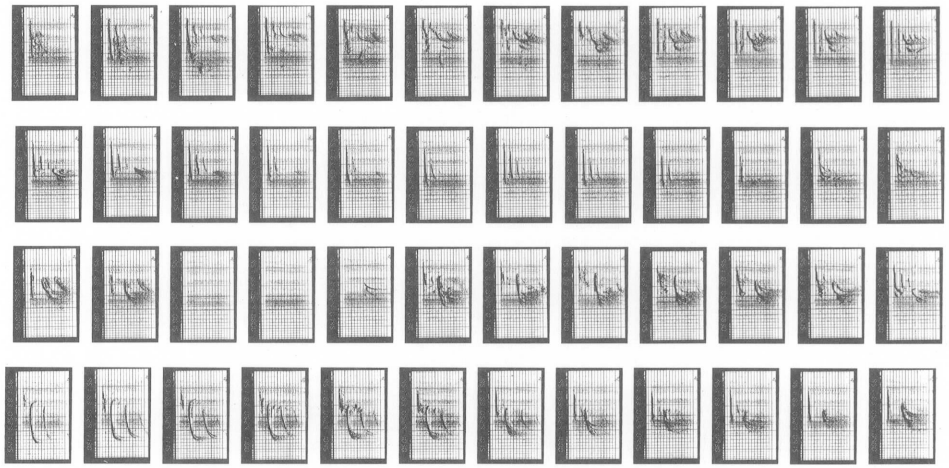
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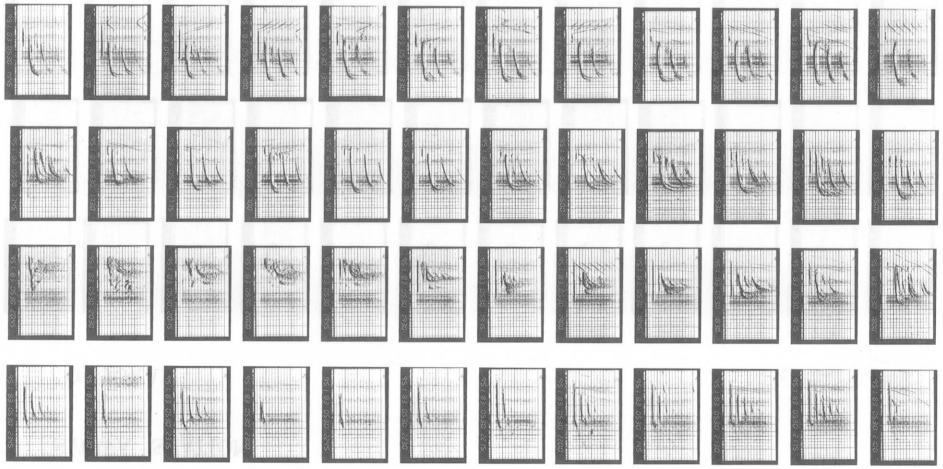
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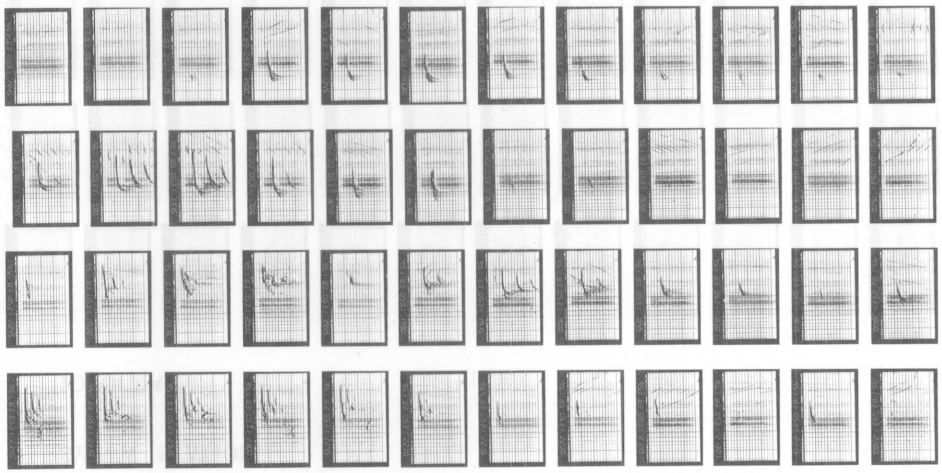
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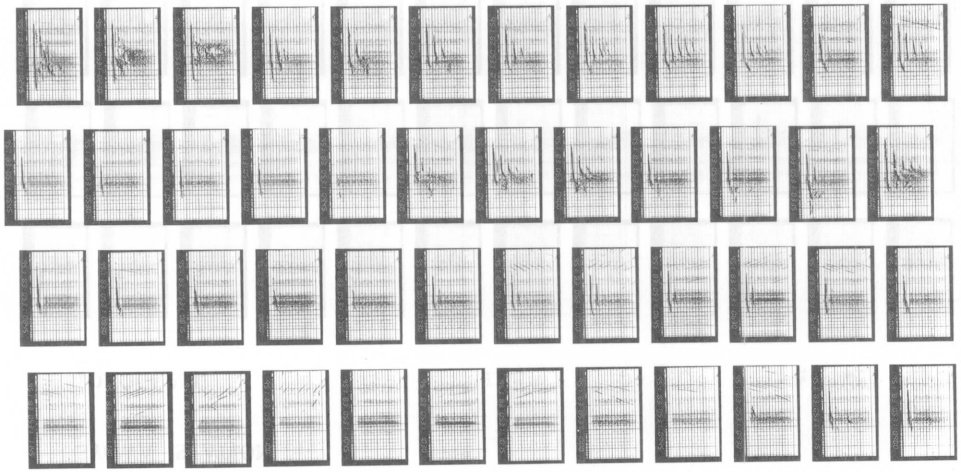
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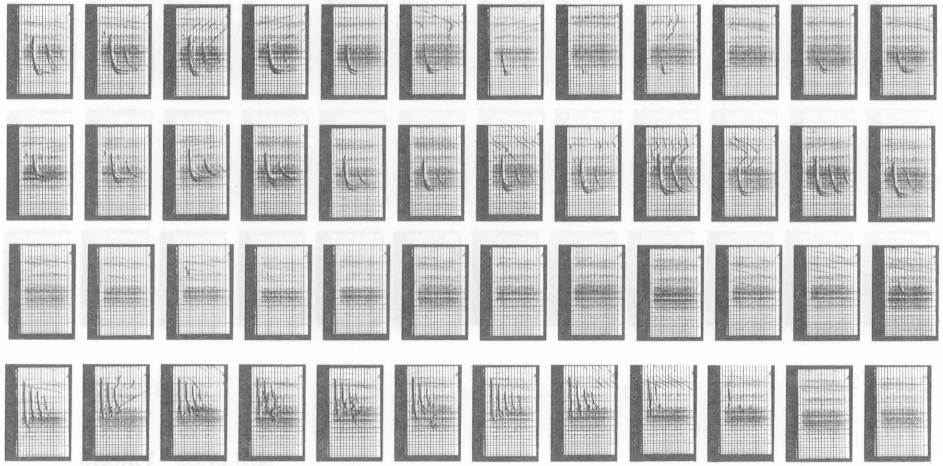
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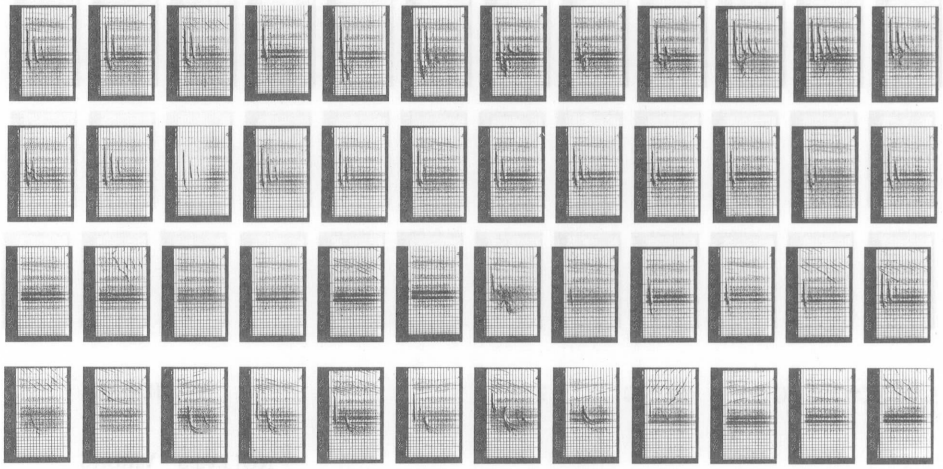
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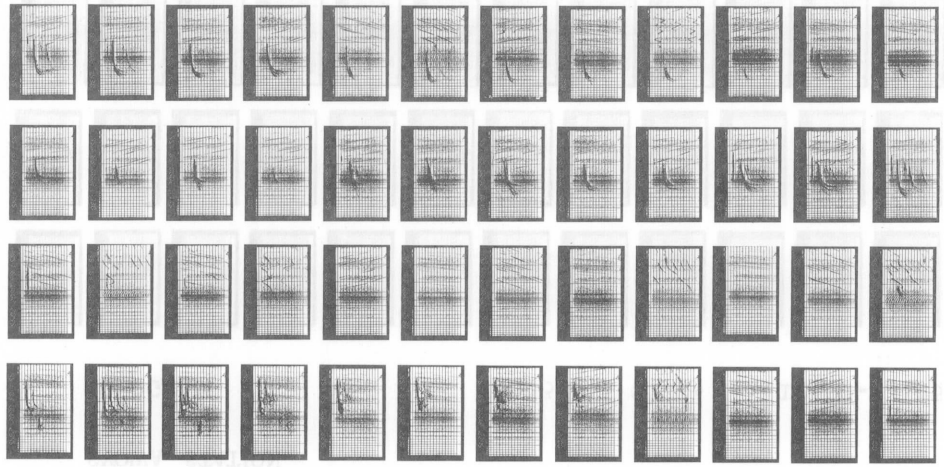
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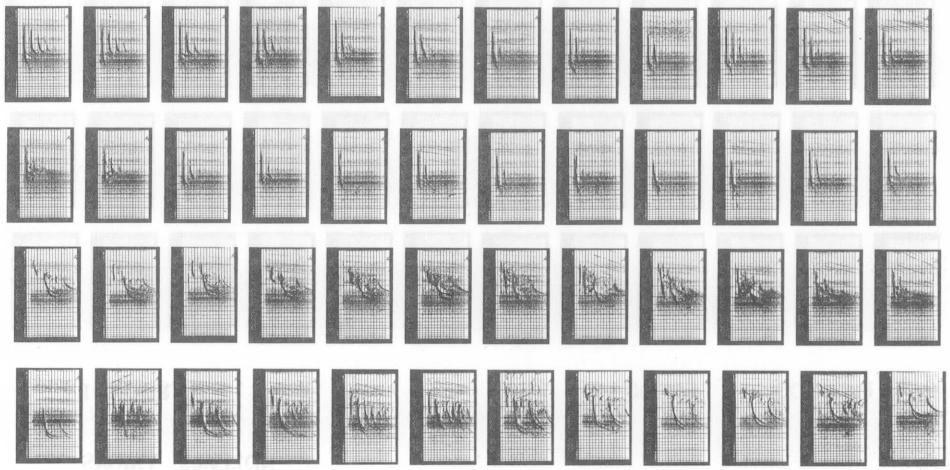
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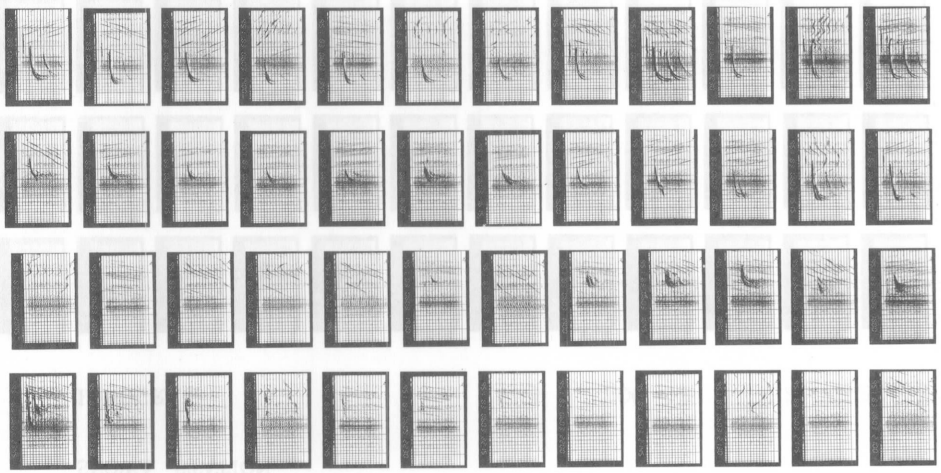
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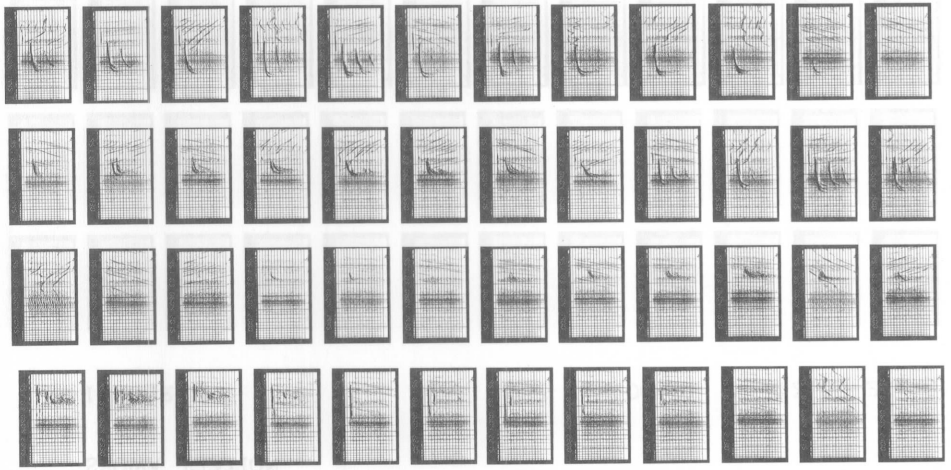
SYOWA STATION

IONOGRAM 1983 06 03 00;00-11;45



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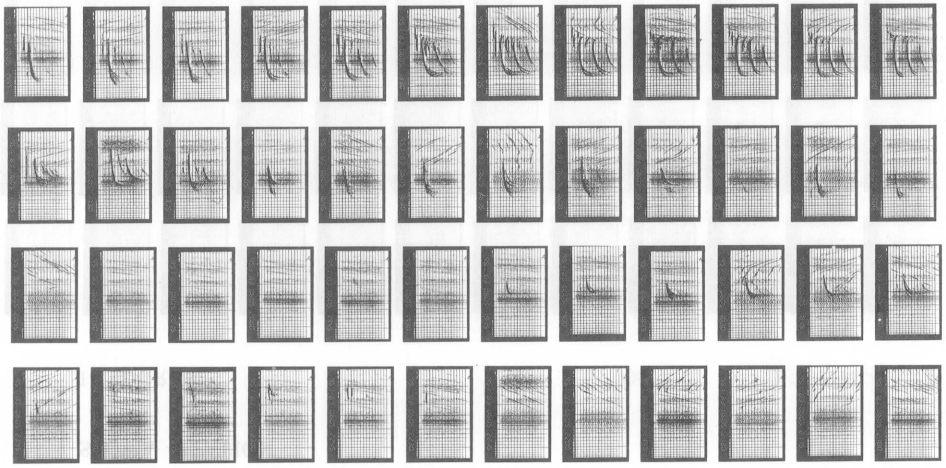
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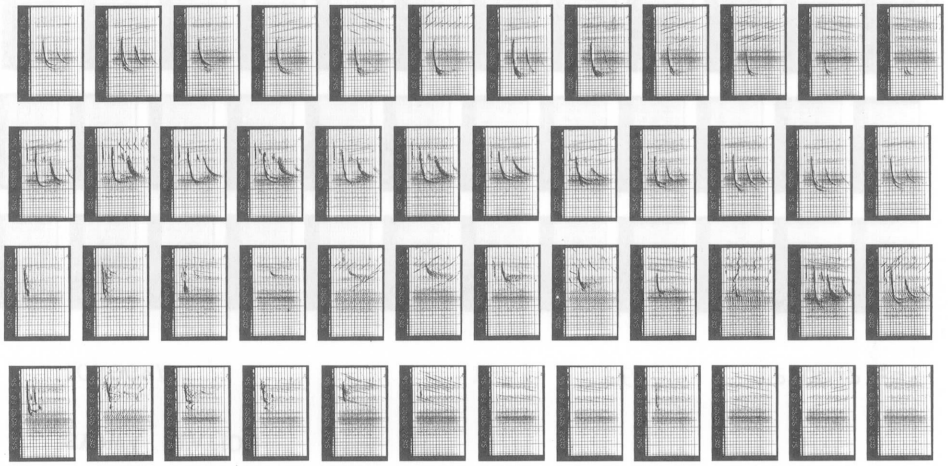
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SYOWA STATION

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SYOWA STATION

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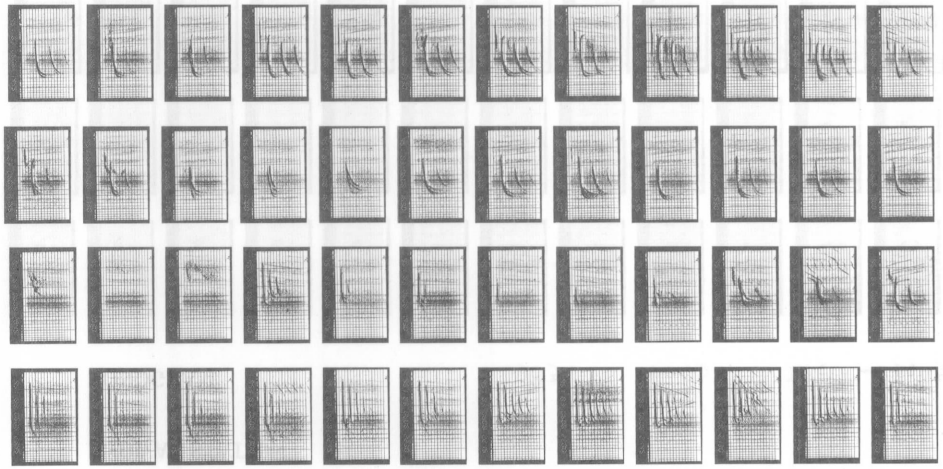
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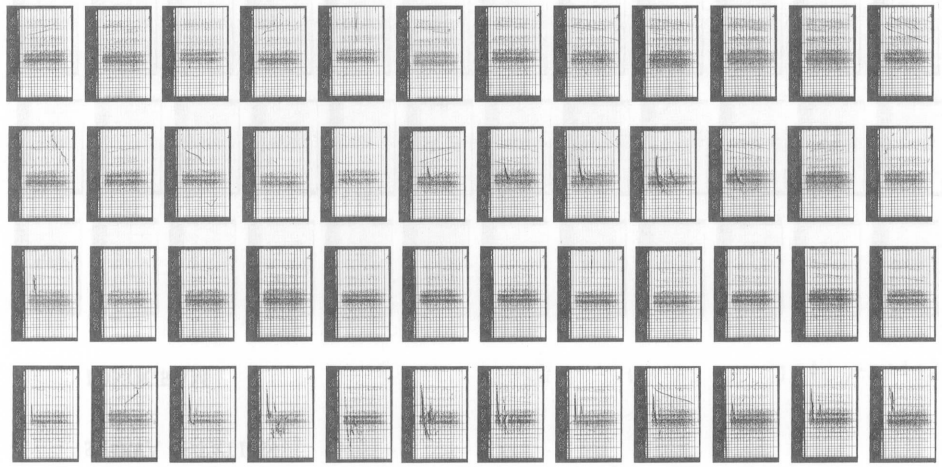
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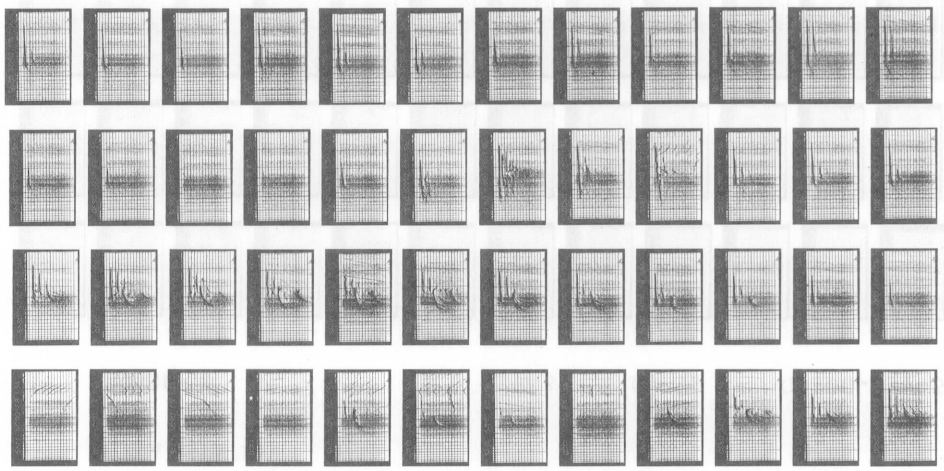
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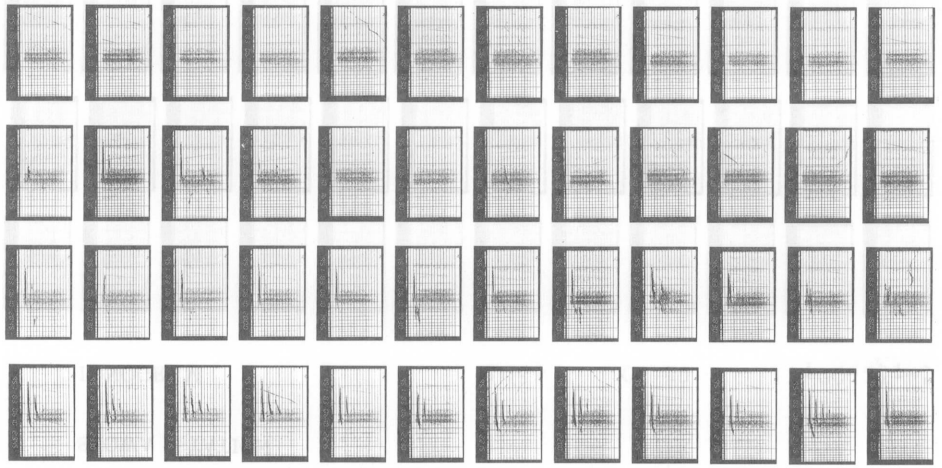
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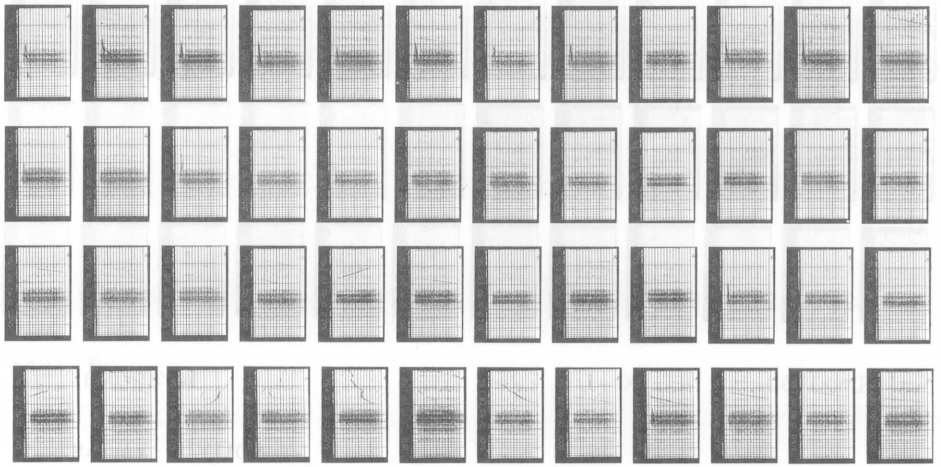
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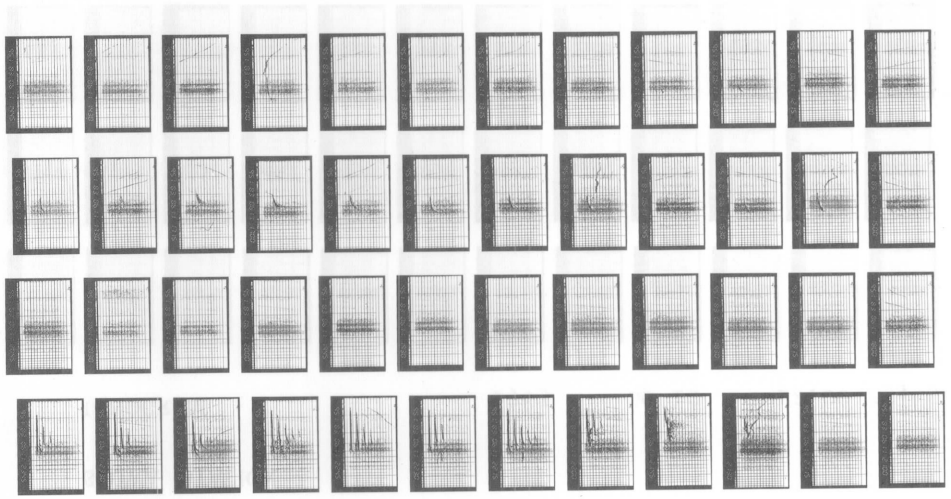
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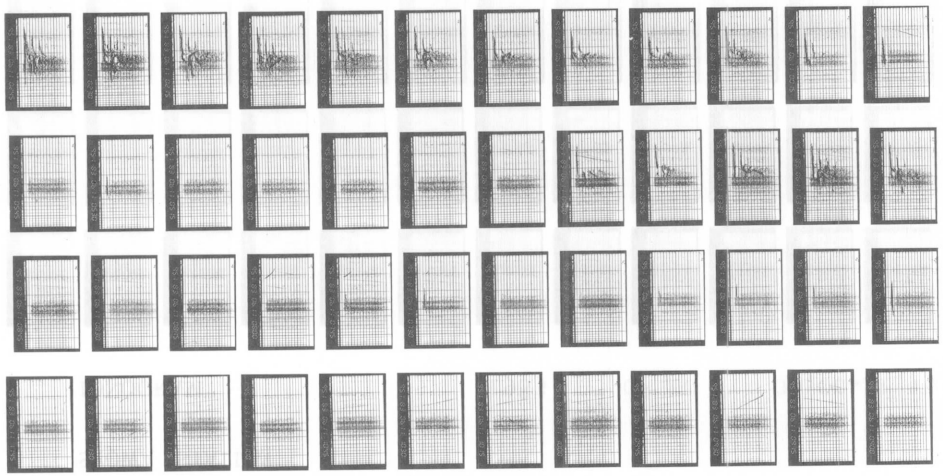
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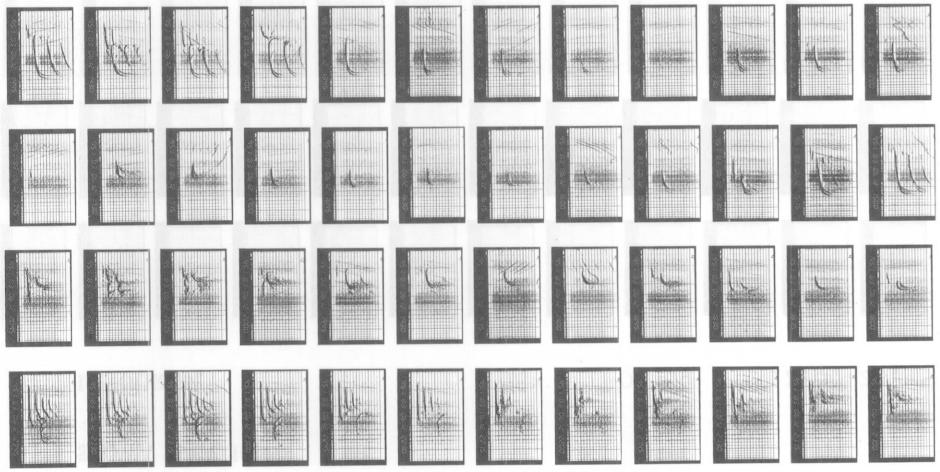
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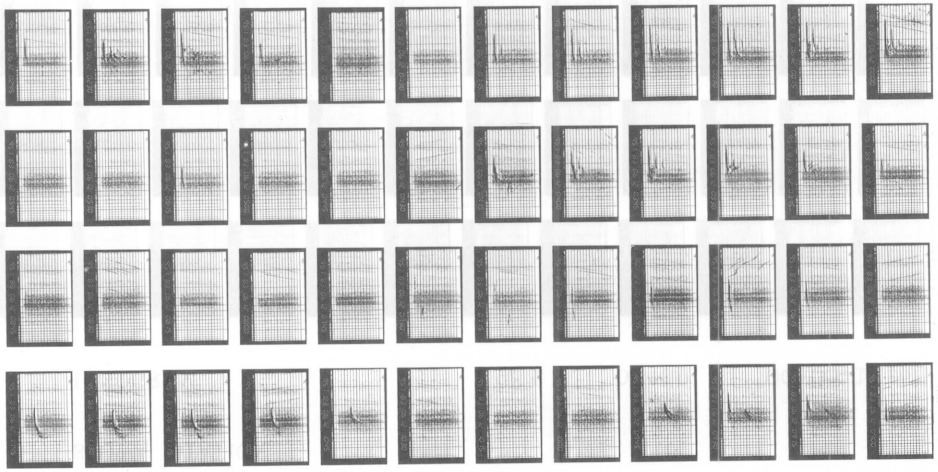
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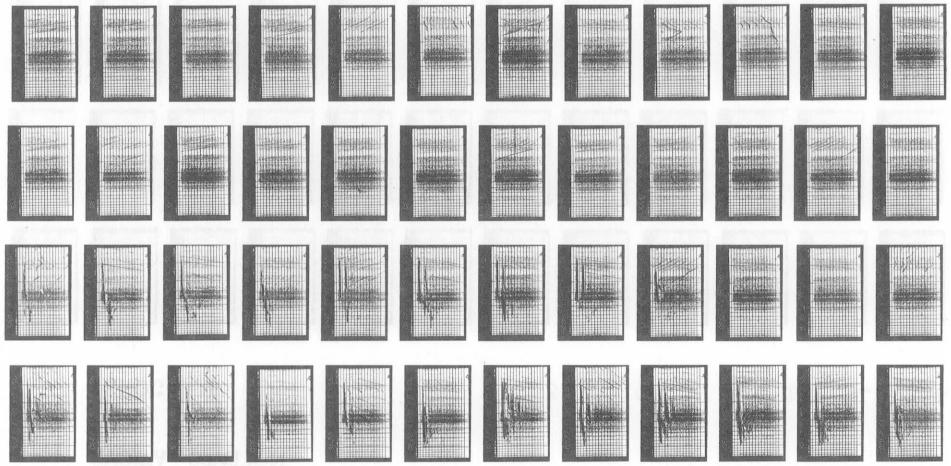
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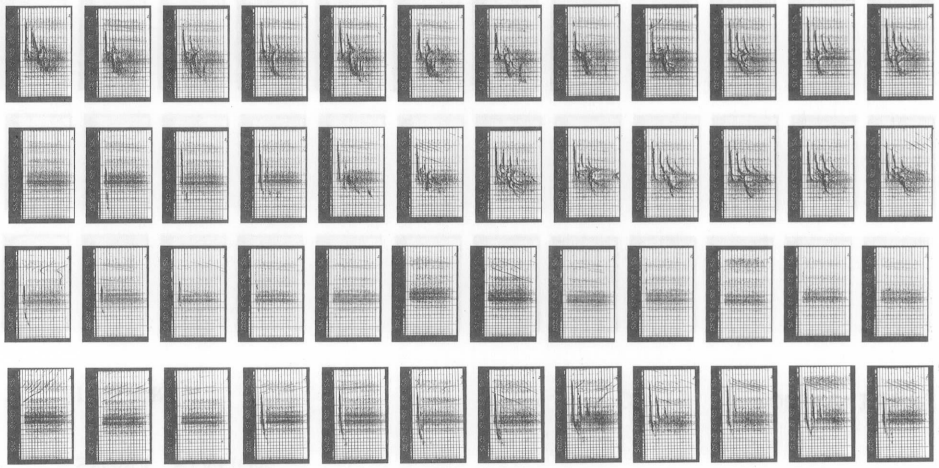
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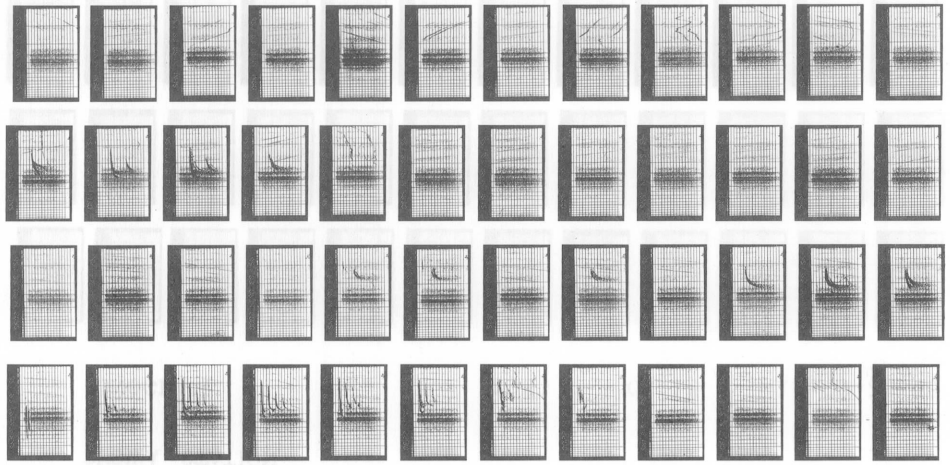
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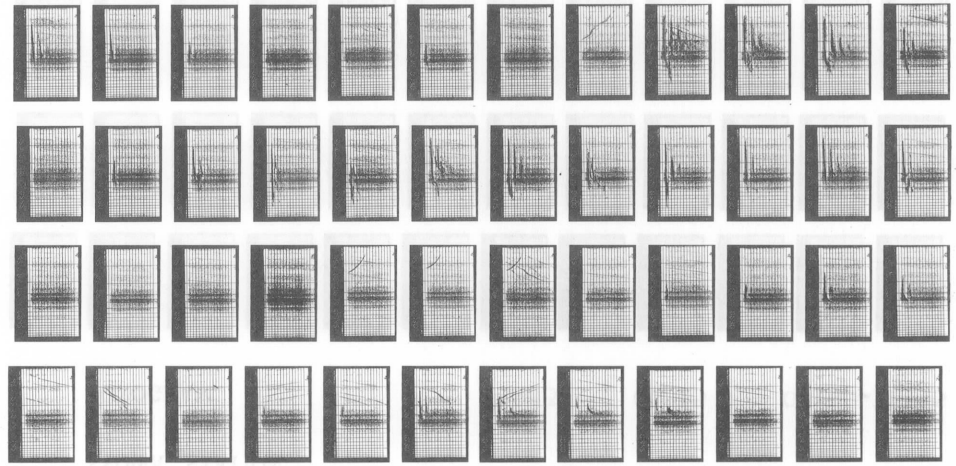
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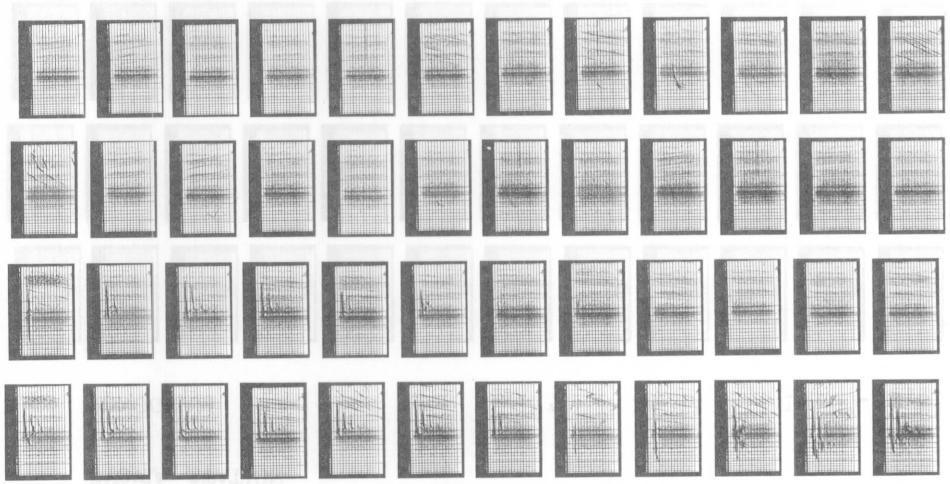
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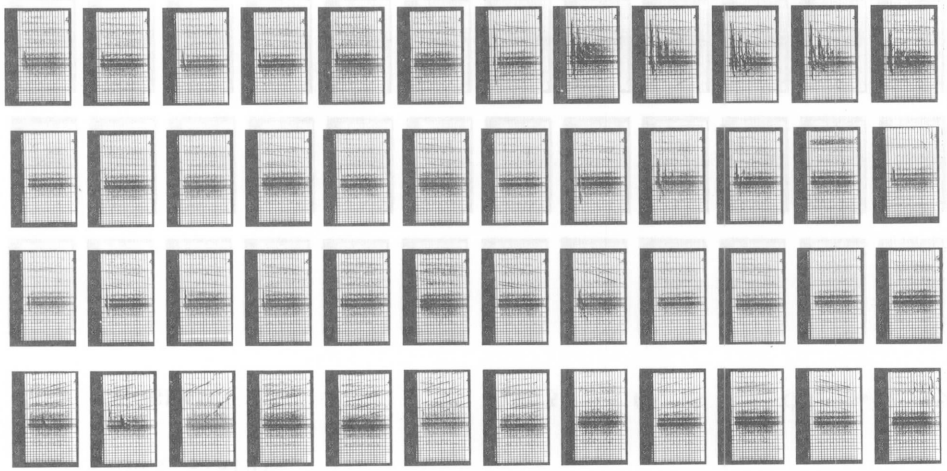
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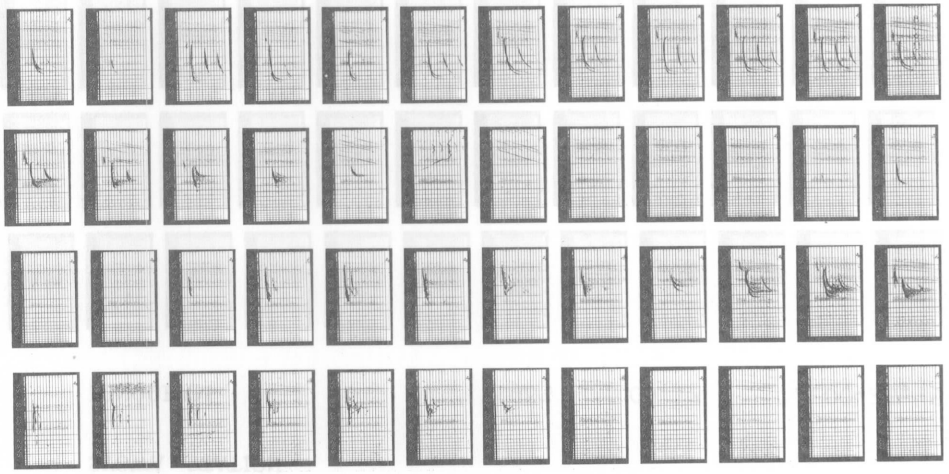
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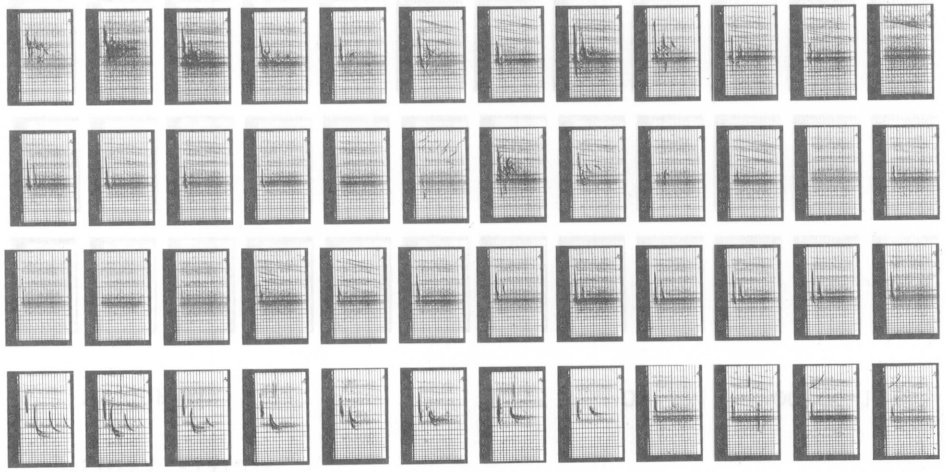
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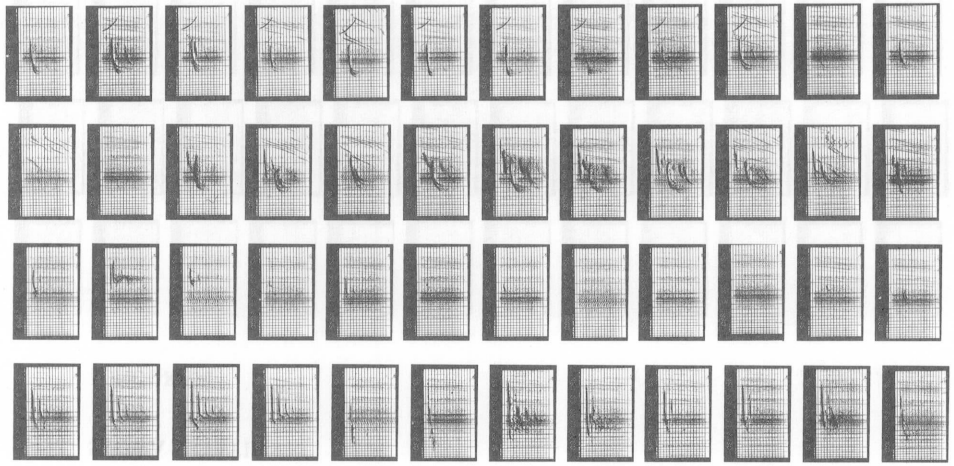
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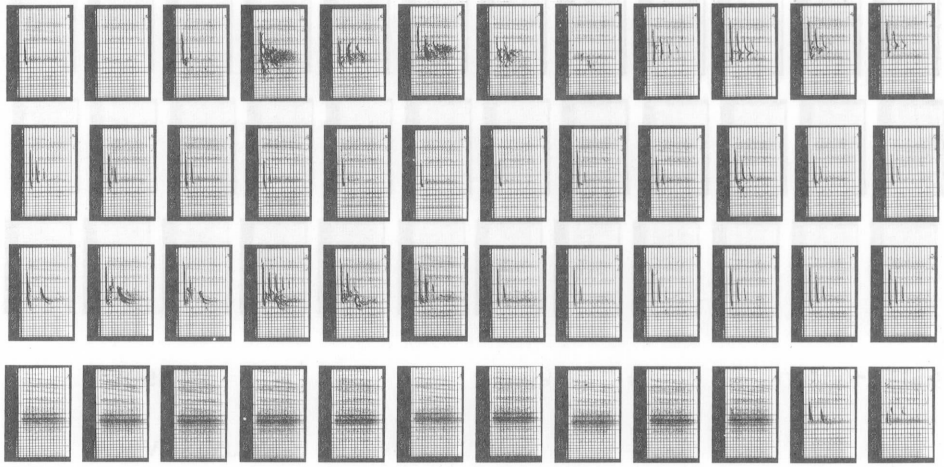
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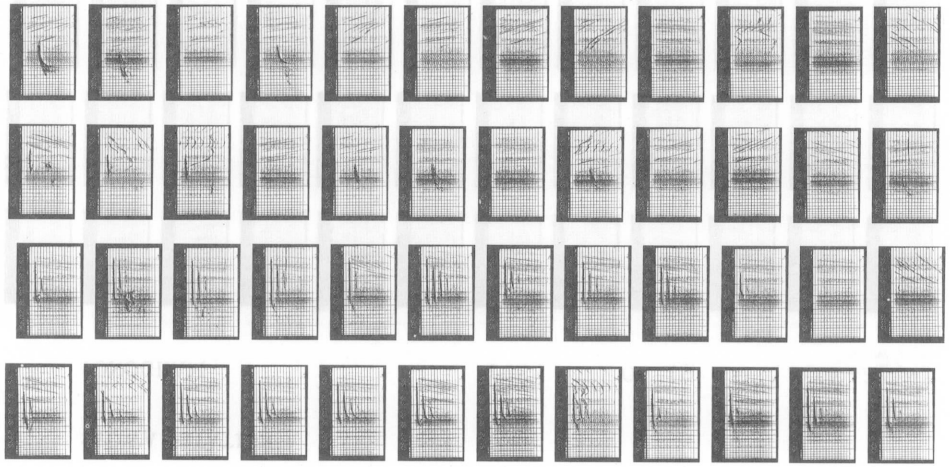
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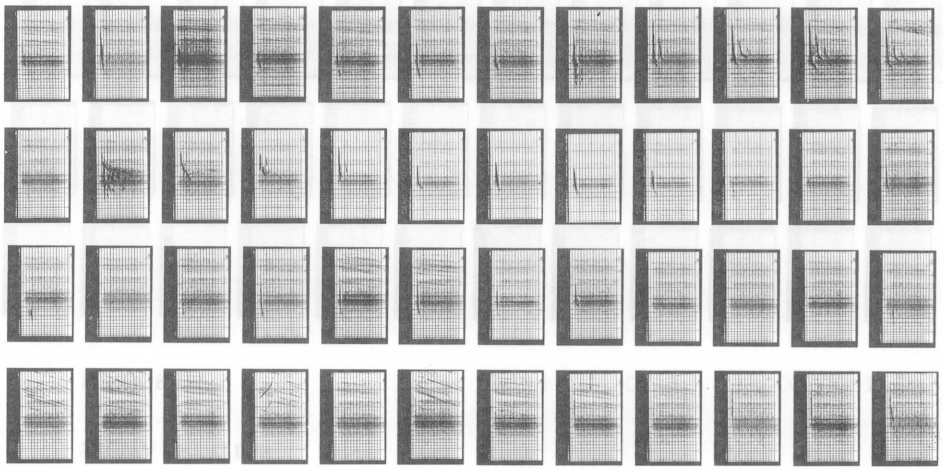
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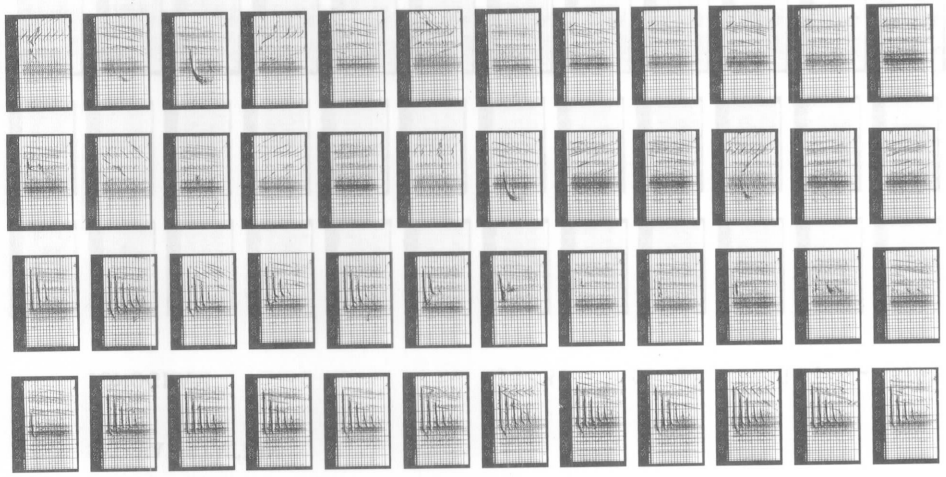
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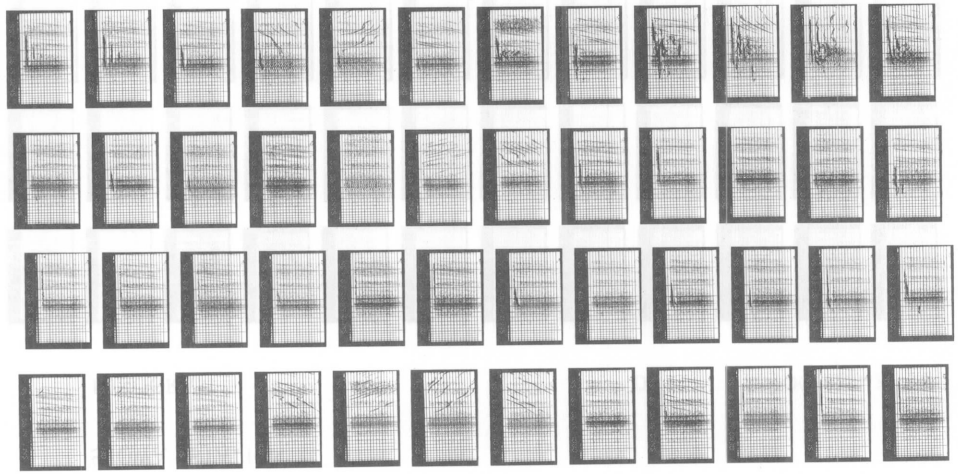
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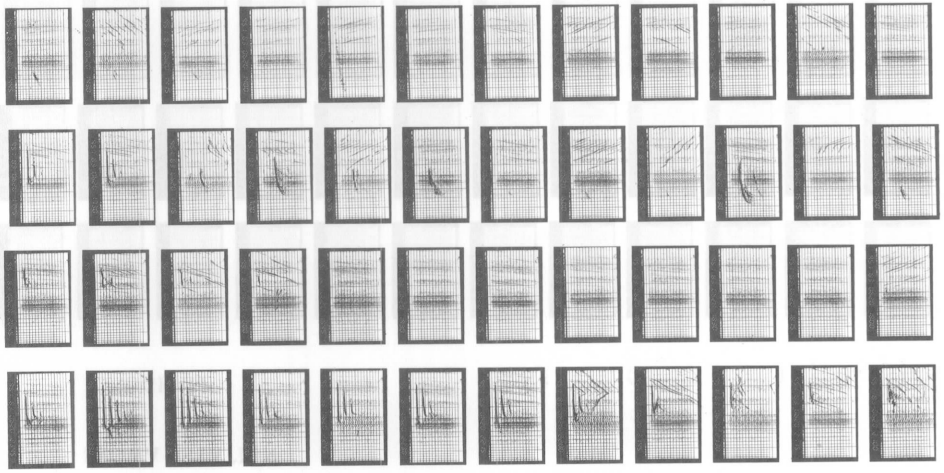
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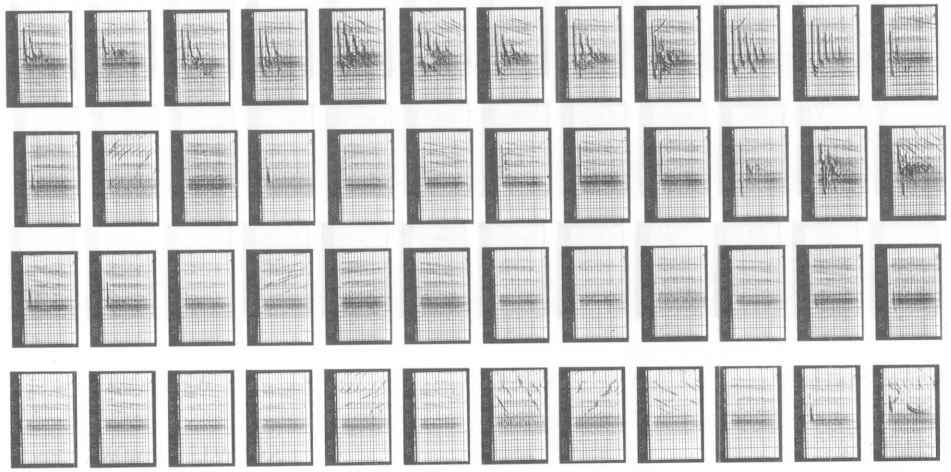
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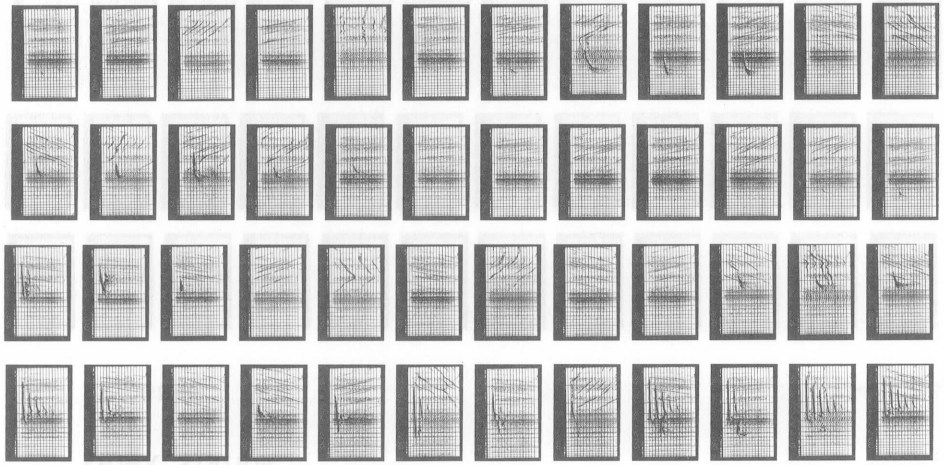
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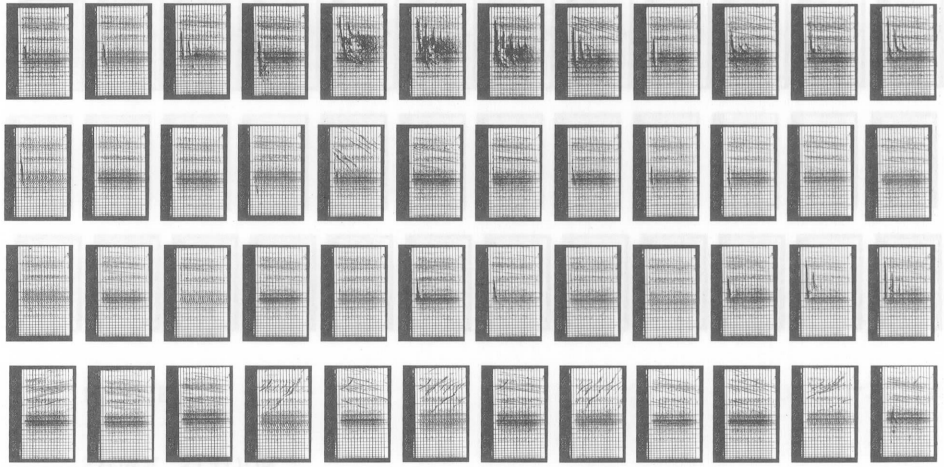
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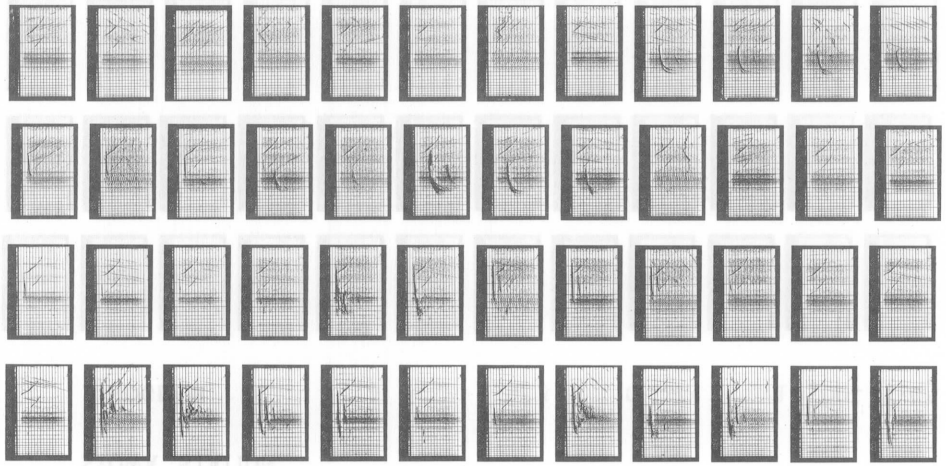
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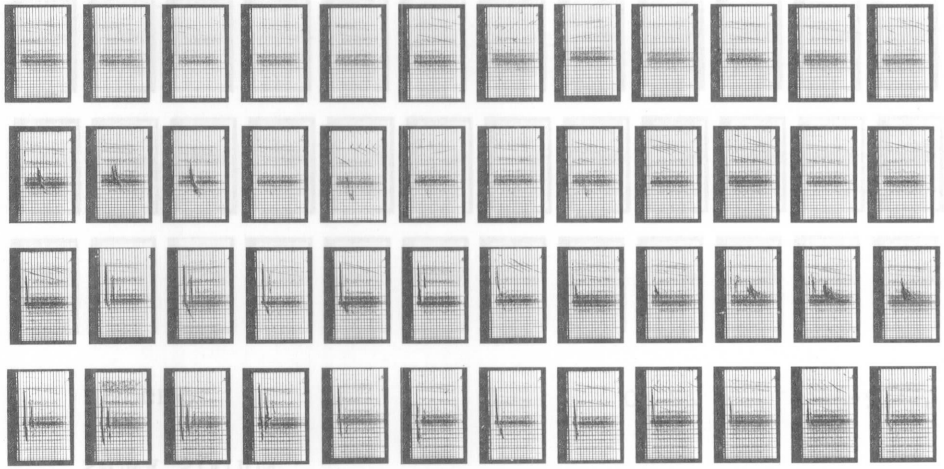
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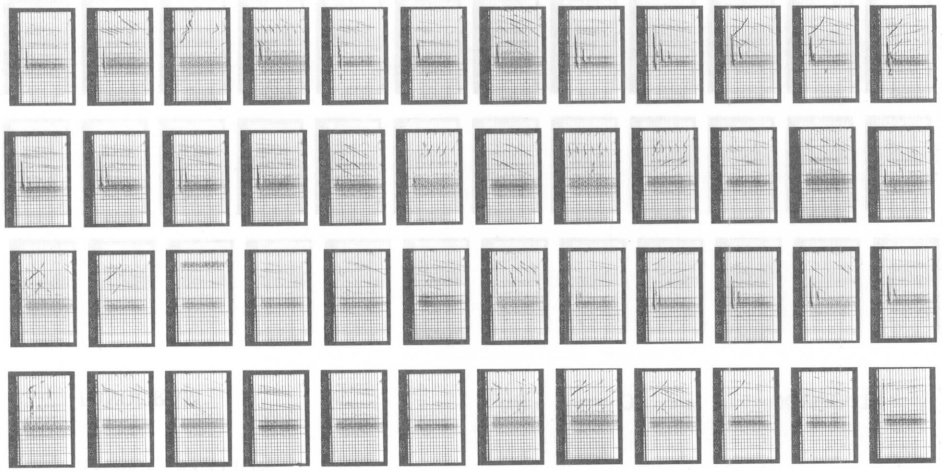
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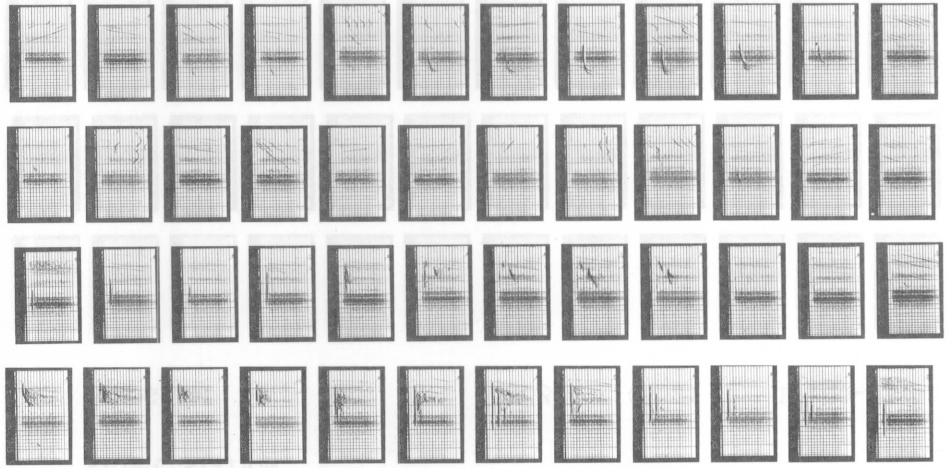
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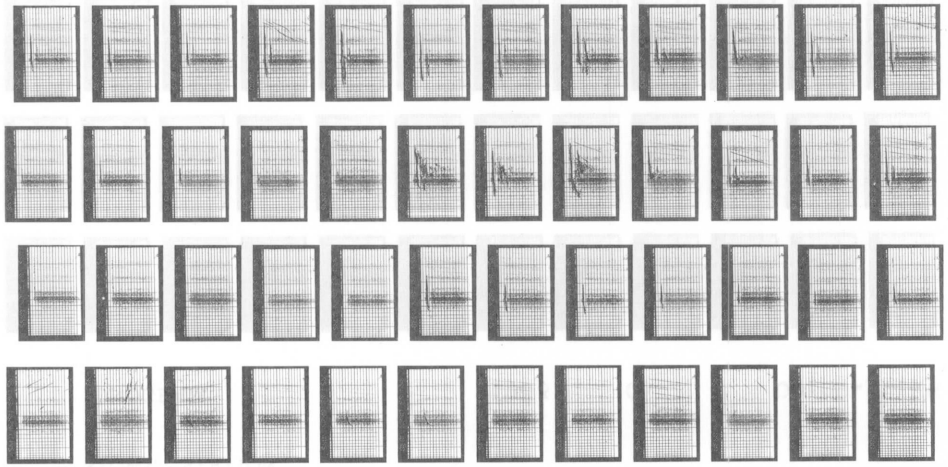
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SYOWA STATION

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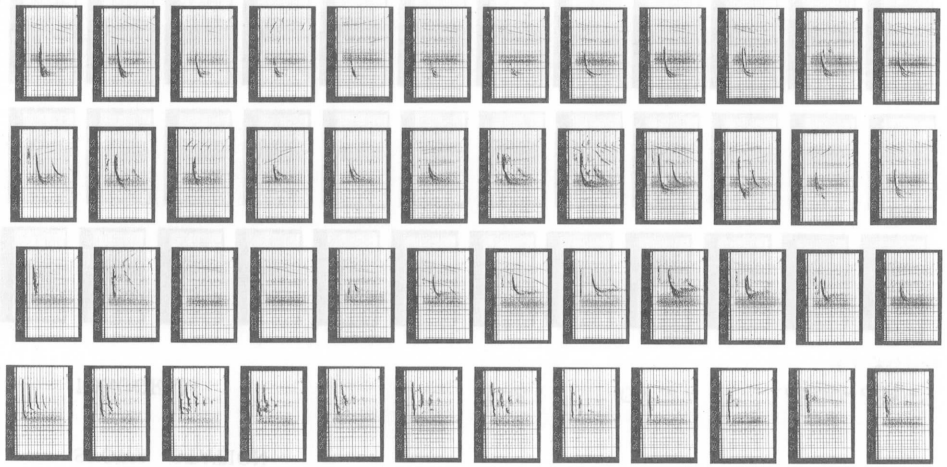
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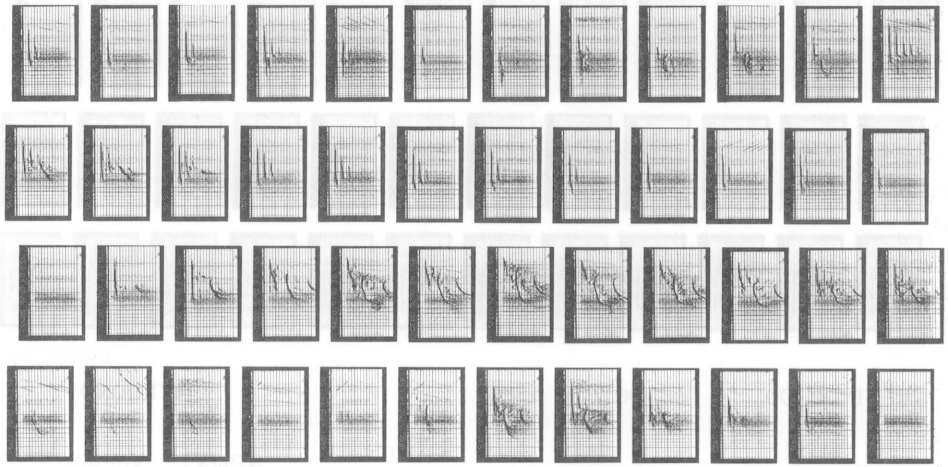
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SYOWA STATION

IONOGRAM 1983 06 26 00;00-11;45



SYOWA STATION

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IONOGRAM 1983 06 28 12;00-23;45



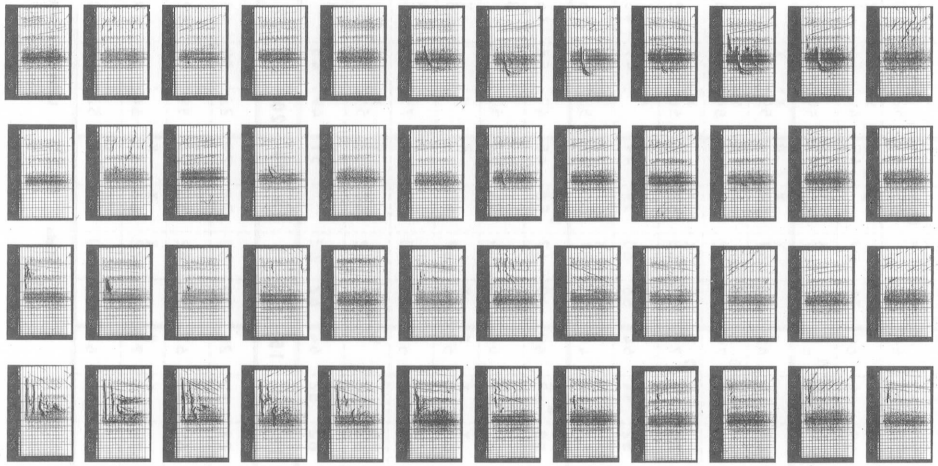
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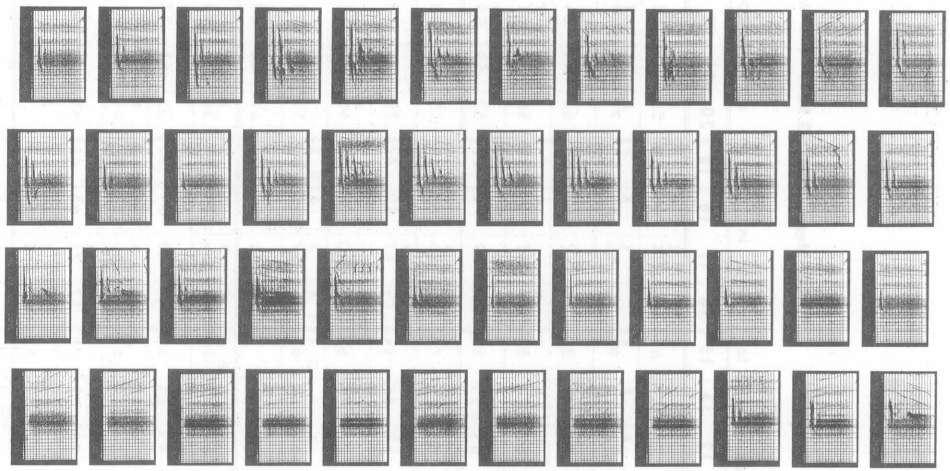
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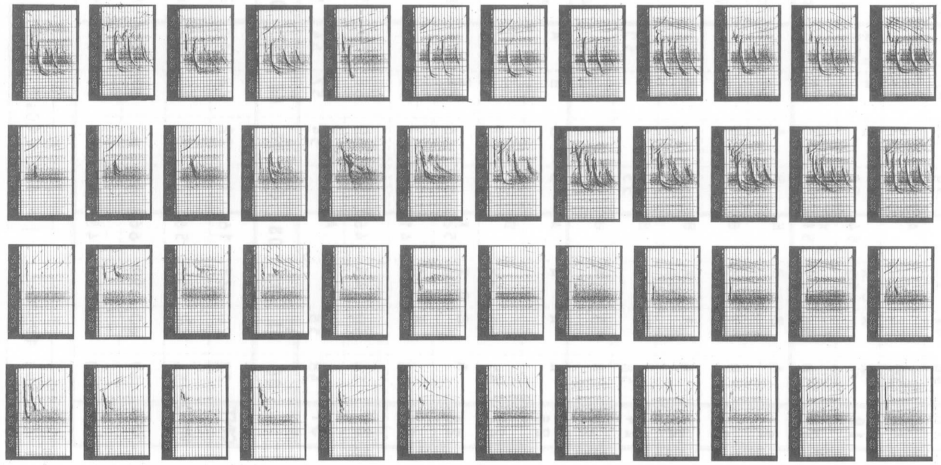
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IONOGRAM 1983 06 29 00;00-11;45



SYOWA STATION

IONOGRAM 1983 06 30 12;00-23;45



SYOWA STATION

IONOGRAM 1983 06 30 00;00-11;45



IONOSPHERIC DATA

JAN. 1933 | FXI (0.1 MHZ) | 45° E Mean Time (G.M.T. + 3 h)

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	59	62	60	62	61	56	57	75	B	B	A	52	X 56	57	X 57	X 65	68	X 74	X 66	X 65	X 57	50	50	58
2	61	B	49	65	68	60	68	58	79	79	X 81	X 90	X 93	X 92	X 91	X 92	85	X 88	X 88	X 71	X 70	X 61	X 59	62
3	56	57	58	80	66	63	69	89	90	89	X 81	80	75	75	76	80	73	62	60	58	63	X 63	64	58
4	75	59	61	61	59	64	64	74	85	85	X 77	89	89	R 81	X 79	X 82	X 74	63	B	52	56	59	X 61	X 58
5	X 53	55	57	58	60	59	75	80	84	X 82	X 85	X 83	X 83	X 83	X 83	X 80	79	79	70	63	62	X 59	X 59	X 60
6	X 63	X 64	X 66	70	73	75	85	93	98	X 98	X 94	X 92	X 93	X 80	X 76	X 76	X 75	X 76	74	X 71	68	X 61	58	X 54
7	X 54	60	66	66	A	65	79	91	100	103	100	X 92	90	X 89	X 86	X 84	X 79	X 73	X 80	X 77	70	64	65	68
8	62	64	62	70	70	60	78	80	58	73	80	73	76	78	73	68	72	80	X 76	X 72	X 65	52	52	50
9	A	58	59	A	A	62	60	O X 48	61	61	O X 65	O R 69	64	X 61	60	O X 65	X 63	X 59	X 57	O X 47	59	59	59	A
10	69	43	42	42	A	A	A	A	E G 47	B	B	E G 49	O X 50	O X 48	A	A	O X 46	44	50	X 49	47	44	X 40	43
11	A	80	A	32	A	E G 43	50	50	53	O X 51	E G 49	E G 50	O X 55	E G 52	E G 52	E G 50	A	X 55	X 54	X 54	X 56	X 49	60	X 58
12	54	53	52	50	A	52	62	63	60	B	68	X 66	62	55	O X 65	68	69	60	X 61	X 58	56	61	53	X 52
13	55	43	59	A	62	53	A	A	65	68	80	80	X 77	X 74	X 74	X 67	X 67	X 66	X 65	X 62	X 61	53	51	51
14	50	57	B	A	B	R	A	O X 61	76	75	O X 59	O X 76	79	78	72	75	X 77	X 76	65	61	64	55	47	49
15	53	53	58	A	58	54	50	A	A	50	O R 61	62	62	67	67	63	60	X 64	X 57	62	A	A	54	55
16	53	A	A	A	49	57	A	A	A	B	E G 46	E G 50	O X 55	59	O R 62	65	70	45	O R 50	52	X 54	64	56	O X 54
17	48	49	58	B	50	53	47	A	51	E G 48	E G 50	O X 48	59	64	X 69	73	58	O X 48	X 51	51	X 49	R 45	X 51	A
18	50	58	55	A	A	43	49	A	A	B	A	B	B	54	63	64	O X 68	B	O X 45	45	52	X 48	X 50	B
19	B	A	O X 48	54	58	B	A	O X 53	A	B	B	X 65	O X 66	69	66	64	71	59	B	O X 49	O X 48	53	X 49	51
20	50	56	51	O X 51	A	B	51	B	62	65	O X 62	B	O R 69	B	O X 70	O X 67	O X 67	X 61	X 59	X 57	59	X 55	49	51
21	A	B	B	B	B	A	59	60	X 61	B	58	61	62	61	61	60	62	X 61	X 64	B	X 59	X 56	50	48
22	B	B	B	B	A	B	54	66	X 71	71	X 71	B	O X 83	R	O X 77	O X 79	X 78	72	X 66	X 66	X 60	59	58	X 46
23	A	A	X 46	B	A	58	A	70	B	75	80	78	X 74	70	X 71	O X 73	X 71	X 68	X 65	67	X 66	X 66	62	58
24	58	B	A	B	53	A	A	50	A	B	B	B	O X 56	62	X 64	64	X 66	60	59	O X 49	A	X 49	O X 46	A
25	A	A	A	B	A	A	50	50	48	B	B	E G 48	E G 49	53	59	49	O R 66	O X 61	X 50	43	50	50	56	A
26	A	A	A	A	B	B	B	A	59	B	B	63	60	60	O X 68	69	69	67	O X 56	48	49	58	46	44
27	45	43	49	B	B	57	B	A	A	A	B	B	50	B	59	60	60	64	X 64	62	60	50	B	R 44
28	A	B	O X 48	X 52	60	66	X 71	78	X 85	X 85	X 81	X 81	X 78	X 67	X 63	X 67	X 64	67	60	B	B	57	X 43	A
29	48	A	A	41	50	50	56	53	A	55	58	61	60	X 62	63	X 63	X 61	60	59	54	75	70	A	55
30	54	50	45	46	52	59	68	59	58	62	64	O X 66	62	X 66	67	B	O X 67	62	60	X 52	X 51	X 46	51	50
31	48	58	A	A	B	O X 54	57	64	56	B	65	U R 64	63	62	X 62	X 64	X 62	62	B	X 51	49	45	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	22	20	21	16	16	22	22	22	22	19	23	26	30	28	30	29	30	30	28	29	23	30	28	24
MED	54	57	57	56	60	58	60	64	62	73	68	66	64	65	X 68	67	X 68	62	X 60	X 57	59	56	52	53
UQ	59	60	59	66	64	62	69	78	84	84	X 80	X 80	X 78	76	X 74	X 75	73	X 72	X 66	X 63	64	61	59	58
LQ	50	52	49	48	52	53	51	53	58	62	60	61	59	60	62	64	X 63	60	X 56	X 51	52	50	50	50

JAN. 1983 | FXI (0.1 MHZ)

IONOSPHERIC DATA

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

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

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

JAN. 1983 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	25	47	55	32	38	41	41	30	B	B	48	E B 40	E G 31	29	E B 46	E B 49	E B 40	27	E B 31	E G 25	25	25	E G 32	E G 23
2	E G 37	B	E B 40	42	28	37	42	E B 51	30	E G 32	37	58	62	75	67	33	46	E G 30	31	E G 38	28	24	E G 22	34
3	41	31	59	49	35	52	28	E G 29	E G 31	32	E G 34	31	E B 52	E B 53	E B 40	E G 34	E G 33	E G 33	E G 34	33	43	45	41	37
4	41	35	32	31	35	50	41	E G 32	E G 32	32	E G 33	34	32	E B 53	E G 33	33	E G 32	E G 31	B	32	40	42	52	31
5	47	43	35	E B 53	35	E B 51	43	29	29	33	28	32	32	E B 52	32	31	33	E G 32	E B 30	E G 30	E G 23	28	24	23
6	26	38	27	E G 24	E G 29	30	30	30	30	31	29	38	E B 51	40	36	44	43	32	28	28	23	E B 30	E B 30	28
7	30	26	K 29	40	59	45	35	29	E G 32	E G 32	E G 33	32	32	33	59	E G 36	28	30	41	31	27	113	25	E B 21
8	24	28	23	26	29	49	50	39	40	45	36	40	41	56	41	40	31	50	E B 39	E B 40	79	33	42	43
9	48	48	57	47	42	E G 29	E G 43	E B 38	E G 41	41	E B 54	E B 41	E B 49	41	E B 40	E B 52	E B 40	E B 50	30	E B 40	59	56	59	52
10	93	80	40	37	51	61	59	60	40	B	B	46	50	49	41	35	42	32	32	28	33	33	24	38
11	42	41	40	33	41	E G 29	E G 29	E G 26	E G 31	49	33	34	49	49	37	33	79	33	32	51	36	31	33	32
12	24	24	20	28	75	32	28	30	42	B	E B 48	E B 40	E G 25	33	E B 51	E B 50	E B 40	33	E B 30	27	33	32	31	36
13	39	59	33	42	56	45	45	57	60	E B 50	E B 50	E G 41	E B 38	E B 39	E G 39	41	32	E G 31	33	29	E G 26	43	41	34
14	59	50	B	47	B	E B 42	43	58	E G 30	E G 30	E B 51	E G 53	E B 40	E G 35	E G 33	E G 33	E G 31	E G 30	E G 29	E G 27	32	30	35	27
15	41	41	60	90	59	25	40	43	59	42	33	32	E B 40	E B 45	E B 40	E G 35	E G 31	26	E G 30	61	50	53	57	48
16	56	64	49	40	36	63	41	58	60	B	E G 34	E G 40	E B 39	E B 40	E B 48	E B 40	33	43	25	31	42	89	49	42
17	43	41	48	B	31	58	40	40	46	E B 40	E B 41	E B 40	E G 31	E B 39	E B 49	30	37	41	33	31	31	43	47	48
18	50	58	50	50	43	56	31	38	37	B	58	B	B	E B 50	E B 40	E B 43	E B 50	B	26	34	42	25	33	B
19	B	36	32	E B 43	33	B	62	46	50	B	B	E B 40	E B 48	E G 32	E B 40	E B 36	30	E G 32	B	E G 31	E B 40	34	41	30
20	36	31	33	65	50	B	30	B	E B 42	34	E B 52	B	E B 50	B	E B 50	E B 53	E B 45	E B 40	33	28	24	24	28	33
21	40	B	B	B	B	44	33	32	43	B	E B 40	E G 34	E G 32	E G 31	23	E G 31	30	G 23	E B 40	B	E B 40	E B 25	34	40
22	B	B	B	B	40	B	E B 30	40	E G 34	E B 40	E B 45	B	E B 54	E B 60	E B 53	E B 48	E B 48	E B 31	E B 40	E B 40	27	25	23	42
23	40	41	30	B	50	26	58	50	B	E B 52	E B 39	E B 40	E B 40	E G 34	E B 44	E B 42	50	55	32	E B 27	E B 24	E B 24	E B 23	E B 18
24	28	B	58	B	80	52	40	47	46	B	B	B	E B 40	E B 40	E B 40	38	45	52	E G 29	E B 30	50	50	43	85
25	50	47	50	B	33	42	41	40	27	B	B	E G 32	31	31	31	E B 46	E B 39	E B 36	25	32	29	41	41	41
26	44	38	59	38	B	B	B	44	45	B	B	E B 47	E B 40	E B 40	E B 49	E B 46	E B 47	E B 31	E B 40	32	33	38	40	40
27	36	41	48	B	B	40	B	56	60	50	B	B	E G 34	B	E B 46	36	33	48	28	E B 27	26	27	B	24
28	31	B	26	26	E G 29	E G 29	E G 22	E G 25	27	28	38	40	31	E B 40	33	E B 40	E B 40	E G 28	28	B	B	37	42	42
29	40	50	50	35	28	35	32	40	50	E G 31	33	E B 40	E B 39	33	32	32	E B 33	35	28	18	50	56	51	50
30	42	32	31	51	38	30	27	33	41	34	34	E B 50	E B 40	E B 50	30	B	E B 48	E B 40	34	28	31	33	30	30
31	35	68	51	58	B	40	35	33	E B 40	B	34	E B 40	E B 40	33	E B 38	E G 30	E G 30	E G 29	B	E B 30	29	44	43	38
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	26	28	24	26	27	29	30	29	20	25	26	30	29	31	30	31	30	28	29	30	31	30	30
MED	40	41	40	40	38	41	40	39	38	33	E E 37	E E 40	E B 40	E E 40	E B 40	E E 37	E E 39	29	29	30	32	33	38	36
UQ	44	50	50	49	50	50	43	46	46	41	E B 48	E B 41	E B 49	E B 50	E B 47	E B 44	E B 45	36	33	32	42	44	43	42
LQ	33	35	31	32	33	30	30	30	29	32	33	32	E E 32	E E 33	31	32	30	E G 30	26	E E 28	27	27	28	30

JAN. 1983 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	16	16	22	22	24	23	22	23	B	B	33	40	22	27	46	49	40	26	31	15	15	16	15	22
2	22	B	40	16	16	17	22	51	15	23	14	15	22	17	22	22	15	15	15	38	23	15	16	13
3	22	23	15	16	23	24	17	15	15	15	23	28	52	53	40	19	22	25	31	22	17	17	15	15
4	15	15	14	29	24	19	16	15	18	17	26	23	18	53	18	16	28	23	B	17	15	13	16	14
5	15	16	15	53	30	51	15	16	15	15	15	25	24	52	22	15	17	22	30	24	15	23	23	18
6	19	15	15	17	16	15	14	15	22	17	22	22	51	17	23	23	21	17	17	15	22	30	30	23
7	23	23	17	25	25	18	22	23	22	23	17	24	23	24	23	22	22	23	23	19	23	17	23	21
8	16	18	22	15	14	15	17	19	18	21	18	23	21	17	16	18	17	17	39	40	23	15	16	13
9	16	14	21	22	22	15	23	38	23	23	54	41	49	25	40	52	40	50	25	40	23	17	17	17
10	14	17	16	16	25	22	25	30	15	B	B	17	23	22	22	23	24	20	15	26	22	15	18	19
11	16	13	23	13	15	15	14	14	13	12	14	22	16	15	17	17	22	15	13	15	13	13	14	13
12	14	17	14	15	22	14	16	13	22	B	48	40	22	23	51	50	40	26	30	24	14	15	14	14
13	15	19	13	39	30	E S 40	22	32	23	50	50	24	38	39	23	23	20	23	15	16	16	15	22	22
14	13	13	B	22	B	42	23	23	15	15	51	53	40	23	22	23	16	19	17	22	15	19	15	15
15	14	13	15	23	17	15	24	31	24	31	26	23	40	45	40	23	23	23	20	22	22	21	13	14
16	13	40	26	23	13	15	31	25	23	B	25	40	39	40	48	40	23	23	23	23	13	15	17	16
17	18	14	14	B	14	14	24	23	23	40	41	40	24	39	49	26	23	15	23	14	17	13	16	14
18	14	15	12	17	16	25	17	22	22	B	31	B	B	50	40	43	50	B	16	16	13	17	15	B
19	B	30	30	43	14	B	23	30	24	B	B	40	48	23	40	36	23	21	B	29	40	15	15	14
20	20	14	14	23	30	B	21	B	42	23	52	B	50	B	50	53	45	40	30	23	22	22	15	22
21	22	B	B	B	B	26	22	23	22	B	40	22	23	23	23	22	17	17	40	B	40	25	14	17
22	B	B	B	B	22	B	30	18	14	40	45	B	54	60	53	48	48	31	40	40	23	15	13	22
23	25	20	18	B	24	23	21	18	B	52	39	40	40	26	44	42	20	25	23	27	24	24	23	18
24	12	B	40	B	16	18	14	14	16	B	B	B	40	40	40	26	40	22	16	30	16	13	14	22
25	22	14	25	B	25	13	15	22	16	B	B	22	23	23	23	46	39	36	24	16	16	13	16	31
26	16	23	40	23	B	B	B	23	23	B	B	47	40	40	49	46	47	31	40	27	13	13	15	13
27	13	13	14	B	B	23	B	23	30	21	B	B	23	B	46	22	23	25	22	27	23	18	B	16
28	23	B	23	23	16	16	14	17	15	15	17	23	25	40	23	40	40	22	14	B	B	15	15	23
29	13	30	35	22	12	14	13	14	15	23	22	40	39	23	17	22	33	15	13	14	23	15	23	14
30	14	13	12	13	15	13	15	17	20	23	23	50	40	50	13	B	48	40	22	24	16	15	13	14
31	14	28	22	22	B	33	25	22	40	B	25	40	40	22	38	20	17	15	B	30	22	15	17	16
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	16	17	21	23	22	18	22	22	22	31	33	40	39	27	38	23	23	23	23	24	22	15	16	16
UQ	22	29	28	48	28	U 28	24	24	23	B	52	44	40	48	45	44	40	26	31	30	23	18	18	22
LQ	14	14	14	17	16	15	16	16	15	21	22	23	23	23	22	22	20	18	16	16	15	15	15	14

JAN. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	280	310	A	A	A	A	A	250	B	B	A	225	S 260	S 255	B	B	260	240	240	240	240	290	260	250
2	A	B	B	370	270	305	250	B	210	225	240	230	E A 290	A	E A 240	220	E A 225	225	225	250	250	255	260	290
3	310	A	A	A	A	A	A	205	220	210	205	S 250	B	B	260	240	245	310	280	255	250	300	310	280
4	A	A	A	290	A	A	270	215	210	S	230	210	220	B	225	230	225	220	B	290	260	A	A	280
5	310	A	A	B	S	B	300	205	E A 270	E S 255	S 210	S 240	205	B	240	225	240	230	250	255	260	265	265	260
6	260	275	310	310	300	275	240	240	200	285	S 230	220	B	210	205	210	240	240	240	225	245	275	290	295
7	330	260	310	A	A	A	E A 260	230	230	H 200	210	205	230	S	240	225	220	240	240	225	260	255	270	E B 260
8	275	300	310	270	E A 250	A	A	250	250	250	210	200	240	220	220	E A 210	225	E A 240	B	275	255	305	A	A
9	A	A	A	A	A	300	A	245	B	A	B	E B 260	B	210	240	B	E B 230	B	250	B	A	A	A	A
10	A	A	A	A	A	A	A	A	E A 290	B	B	A	260	A	A	A	E A 250	255	280	290	280	E A 330	310	A
11	A	A	A	A	A	275	240	225	225	E A 290	E A 250	210	E A 260	E A 280	240	210	A	240	210	E A 290	240	255	255	260
12	290	300	210	H 290	A	275	230	200	250	B	B	E B 240	215	230	B	B	240	210	B	225	270	280	280	290
13	A	A	310	A	A	A	A	A	A	B	B	250	240	230	255	210	200	225	220	240	260	A	300	A
14	270	A	B	A	B	B	A	250	210	230	B	B	E A 250	220	220	220	220	225	240	250	255	255	E A 290	270
15	A	A	A	A	A	A	A	A	A	A	280	240	210	B	230	210	230	250	H 230	A	A	A	A	A
16	A	A	A	A	A	A	A	A	A	B	200	290	220	240	B	270	E A 300	A	270	A	330	A	A	A
17	A	A	290	B	A	270	A	A	A	B	E B 290	E B 250	225	E B 250	B	E Y 300	255	255	255	280	255	A	A	A
18	A	A	280	A	A	A	A	A	A	B	A	B	B	B	B	B	B	B	E A 250	Y	A	260	290	B
19	B	A	A	B	300	B	A	A	A	B	B	B	B	250	B	240	210	280	B	275	B	E A 340	A	265
20	A	280	325	A	A	B	210	B	B	230	B	B	B	B	B	B	B	E B 290	E A 220	250	250	260	290	300
21	A	B	B	B	B	A	260	225	A	B	B	210	E B 240	200	270	225	210	240	B	B	B	260	280	A
22	B	B	B	B	A	B	280	A	240	E B 250	B	B	B	B	B	B	B	240	E B 300	280	260	250	275	310
23	A	A	A	B	A	260	A	A	B	B	250	260	E B 250	230	B	B	E A 270	E A 290	225	210	240	250	250	250
24	275	B	A	B	A	A	A	A	A	B	B	B	E B 260	E B 275	E B 270	E A 260	S 310	230	260	230	A	A	A	A
25	A	A	A	B	A	A	A	A	225	B	B	250	255	220	240	B	260	260	240	A	295	320	A	A
26	A	A	A	A	B	B	B	A	A	B	B	B	E B 250	E B 255	B	B	B	245	B	230	A	A	A	A
27	A	A	A	B	B	A	B	A	A	A	B	B	210	B	B	E A 250	210	A	240	240	E A 250	A	B	A
28	A	B	Y	Y	B	280	240	230	230	220	210	E A 230	Y	250	200	E B 270	E B 250	210	220	B	B	270	A	A
29	A	A	A	A	A	A	280	E A 250	A	240	225	260	E B 230	240	210	240	250	250	225	Y	A	A	A	A
30	A	260	280	A	A	A	250	270	290	230	210	B	250	B	250	B	B	B	260	250	290	320	310	275
31	300	A	A	A	B	Y	A	280	B	B	A	E B 240	B	E A 250	E B 225	225	225	250	B	270	300	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	10	7	9	5	4	8	13	16	15	13	15	21	22	19	19	20	25	26	24	23	22	20	17	15
MED	285	280	310	290	285	275	250	232	228	223	218	230	U 226	230	235	222	232	240	240	252	253	264	280	275
UQ	310	300	310	310	300	290	270	250	242	240	238	250	E E 255	245	242	236	245	252	255	279	270	294	290	290
LQ	275	268	280	290	260	272	240	220	215	225	210	215	218	220	218	215	222	228	225	240	250	255	265	260

JAN. 1983 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	48	54	70	61	62	74	X 67	B	0 X 68	X 72	X 72	X 75	76	71	71	70	X 64	55	42	49	47	X 47
2	X 47	41	50	X 55	60	60	70	X 80	X 86	87	X 79	X 80	X 78	X 76	X 72	X 73	X 71	70	66	X 63	X 58	57	X 44	A
3	47	47	58	59	70	70	80	90	92	X 101	X 89	81	80	79	75	X 75	X 79	80	X 72	X 66	X 66	X 61	X 56	Y
4	A	A	A	B	B	B	B	B	B	B	B	B	B	B	0 X 68	0 X 71	0 X 72	B	B	B	B	B	B	B
5	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	0 X 45	B	33	Y	A	32	B
6	A	B	B	B	B	B	B	A	B	B	B	B	B	B	64	B	B	B	B	46	B	X 40	0 X 39	41
7	A	33	0 X 45	B	B	B	B	B	B	B	B	46	B	B	66	B	43	0 X 46	48	B	A	X 44	0 X 43	A
8	A	A	A	B	B	B	B	A	B	B	B	B	B	B	B	57	0 X 59	60	B	0 X 53	0 X 52	B	55	52
9	48	A	A	A	A	A	57	60	B	A	X 58	X 60	X 61	X 65	0 X 66	X 68	X 70	X 67	B	49	50	A	A	B
10	B	A	43	A	55	49	B	A	B	B	B	B	B	B	0 X 46	0 X 55	X 58	X 56	X 55	X 55	X 57	52	0 X 39	0 X 37
11	A	A	A	A	56	60	70	X 62	68	78	X 76	79	X 76	X 74	X 72	69	68	R 68	60	0 X 52	X 48	A	60	56
12	B	A	46	38	B	A	A	A	58	60	X 65	X 69	0 X 69	0 X 67	0 X 73	0 X 71	B	A	A	X 47	58	A	A	A
13	A	59	42	46	42	A	A	40	A	B	0 X 46	B	B	B	60	A	B	B	X 53	48	45	X 41	A	44
14	A	33	33	A	B	B	56	60	B	B	51	B	B	B	0 X 67	0 X 69	0 X 71	0 X 70	B	B	43	X 41	34	A
15	A	A	B	A	45	43	48	B	B	B	B	B	B	B	58	X 61	X 63	0 X 61	B	43	0 X 45	A	A	A
16	A	37	A	43	A	X 46	B	B	B	B	B	B	B	B	0 X 64	0 X 67	X 71	59	A	B	A	A	A	30
17	A	A	A	B	A	A	B	B	B	B	0 X 63	60	70	78	74	X 76	0 X 76	X 69	X 56	R	57	A	32	A
18	A	A	A	B	B	B	B	B	B	B	B	B	B	B	0 X 61	X 63	0 X 66	0 X 64	X 61	X 53	50	A	A	A
19	A	A	A	A	47	X 57	62	70	76	80	0 X 81	R	78	R	77	71	70	0 X 68	0 X 62	X 58	58	50	B	25
20	A	A	A	B	B	B	Y	A	50	B	B	B	B	B	B	X 66	66	X 57	B	B	A	58	59	A
21	A	A	A	B	B	B	B	B	0 X 38	B	B	B	B	B	B	B	60	X 56	0 X 44	B	A	A	A	A
22	A	A	B	A	B	A	B	B	B	B	B	B	X 60	0 X 64	X 60	0 X 64	X 56	B	X 49	X 49	X 44	X 43	A	A
23	A	B	A	A	B	A	B	B	B	B	60	58	X 58	X 58	63	60	55	X 58	X 51	X 53	41	A	24	A
24	A	33	A	B	B	B	43	B	B	B	B	B	60	59	58	X 61	X 63	B	B	46	B	A	A	A
25	A	34	A	41	42	B	0 R 56	A	A	49	61	X 60	60	0 X 64	B	0 X 56	X 59	X 53	X 61	52	B	A	A	A
26	A	A	A	41	46	51	A	58	63	68	70	X 57	X 66	0 X 66	X 66	X 65	X 62	X 64	X 66	X 63	X 60	54	24	A
27	A	49	A	45	A	54	47	B	A	X 70	X 70	X 69	X 68	X 70	X 68	X 65	X 67	X 60	X 57	X 59	X 58	X 50	46	58
28	44	58	A	50	58	57	58	60	66	75	X 80	X 81	X 84	X 90	X 95	X 90	85	X 76	X 72	X 67	X 67	55	A	A
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	4	10	8	10	11	11	12	10	10	9	15	13	15	14	23	23	24	22	17	21	19	14	15	9
MED	47	39	46	46	55	57	58	61	66	75	X 68	X 69	X 69	X 68	X 66	X 67	X 66	X 62	X 60	X 53	X 52	50	43	44
UQ	48	49	49	54	59	60	66	74	76	80	X 78	X 79	X 77	X 76	X 72	X 71	X 71	X 69	X 64	X 58	X 58	55	51	52
LQ	46	33	42	41	46	50	52	60	58	63	X 60	X 60	X 60	0 X 64	62	X 62	X 60	X 58	X 53	48	45	X 43	33	37

FEB. 1983 | FXI (0.1 MHZ)

IONOSPHERIC DATA

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

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

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	F	F	F	F	F	F	61	B	62	66	66	68	F	F 63	F	F 61	58	F	F	F	38	41
2	41	F	F	49	F	F	F	73	80	J F 81	72	74	71	70	66	67	65	63	F 59	57	52	49	38	A
3	F	F	F	F	F	F	F	F	J F 86	95	U R 83	F 73	F	F 71	F	69	72	72	66	60	60	55	50	Y
4	A	A	A	B	B	B	B	B	B	B	B	B	B	B	62	65	66	B	B	B	B	B	B	B
5	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E G 39	B	F	Y	A	F	B
6	A	B	B	B	B	B	B	A	B	B	B	B	B	B	F 56	B	B	B	B	F	B	34	33	32
7	A	F	37	B	B	B	B	B	B	B	B	F	B	B	F	B	F	E G 40	F	B	A	38	37	A
8	A	A	A	B	B	B	B	A	B	B	B	B	B	B	B	F	53	F	B	47	R 46	B	F	F
9	F 36	A	A	A	A	A	F	F	B	A	51	53	55	59	60	61	63	60	B	41	F	A	A	B
10	B	A	F	A	F	F	B	A	B	B	B	B	B	B	E G 43	49	51	50	49	49	50	F 44	33	31
11	A	A	A	A	F	F	F	55	F	F 65	70	F 70	70	68	66	F	F 61	J R 62	F 50	46	42	A	F	F
12	B	A	F	F	B	A	A	A	50	F 53	59	63	63	60	67	R 65	B	A	A	40	F 43	A	A	A
13	A	F	F	F	F	A	A	F	A	B	E G 40	B	B	B	F	A	B	B	46	F	F	35	A	F
14	A	F	F	A	B	B	F	F 52	B	B	F	B	B	B	61	63	65	64	B	B	F	35	F	A
15	A	A	B	A	F	F	F	B	B	B	B	B	B	B	50	55	57	55	B	F 36	R 38	A	A	A
16	A	F	A	F	A	40	B	B	B	B	B	B	B	B	R 58	61	65	F	A	B	A	A	A	F
17	A	A	A	B	A	A	B	B	B	B	F 56	F	F 62	F 70	F	70	70	63	50	D R 37	F	A	F 23	A
18	A	A	A	B	B	B	B	B	B	B	B	B	B	B	55	57	R 60	R 58	55	47	F	A	A	A
19	A	A	A	A	F	50	F	F	F	J F 74	75	D R 65	F	D R 67	F	F	F	62	56	52	F 49	F	B	F
20	A	A	A	B	B	B	Y	A	F	B	B	B	B	B	B	60	F	51	B	B	A	F	F	A
21	A	A	A	B	B	B	B	B	E G 32	B	B	B	B	B	B	B	F	50	38	B	A	A	A	A
22	A	A	B	A	B	A	B	B	B	B	B	B	54	58	54	58	50	B	43	43	38	37	A	A
23	A	B	A	A	B	A	B	B	B	B	52	F 50	52	52	F 55	F	F	52	45	47	33	A	F	A
24	A	F	A	B	B	B	F	B	B	B	B	B	F 51	F 50	F 50	55	57	B	B	F 39	B	A	A	A
25	A	F	A	F	F	B	F 48	A	A	F	F 54	54	F	58	B	50	53	52	55	F	B	A	A	A
26	A	A	A	F	F	F	A	F	F 53	F	J F 73	50	60	60	60	59	55	58	60	57	54	F	F	A
27	A	F	A	F	A	F	F	B	A	63	64	63	62	64	62	59	61	54	51	53	52	44	F 38	F
28	F	F	A	F	F	F	F	F	F	J F 69	73	75	78	84	89	84	75	70	66	* 61	59	F	A	A
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2		1	1		2	1	3	6	7	14	12	12	15	17	19	18	20	16	17	13	9	8	3
MED	38		37	49		45	F 48	55	57	F 69	63	64	62	64	60	61	61	58	53	47	49	38	38	32
UQ								64	80	J F 73	73	73	68	70	62	65	65	62	58	53	52	44	38	36
LQ								54	50	F 64	54	54	54	58	55	58	55	52	48	42	42	35	33	32

FEB. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	60	42	34	42	25	36	42	32	50	B	E B 53	E B 49	E B 38	33	E B 41	E B 41	26	E B 30	E G 28	32	42	35	37	38
2	38	54	41	49	33	42	48	41	40	33	33	65	60	34	E G 33	33	33	32	27	27	23	34	K 21	41
3	37	41	32	42	32	32	42	42	30	E B 50	E B 56	E B 41	E B 40	28	E B 39	32	28	32	K 28	26	22	E B 22	E B 23	29
4	32	41	42	B	B	B	B	B	B	B	B	B	B	B	E B 49	E B 50	E B 55	B	B	B	B	B	B	B
5	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 32	B	E B 28	27	78	E B 23	B
6	50	B	B	B	B	B	B	42	B	B	B	B	B	B	E B 49	B	B	B	B	K 26	B	29	K 27	30
7	41	33	49	B	B	B	B	B	B	B	B	E B 35	B	B	E B 42	B	25	E G 26	E B 28	B	42	32	33	42
8	54	30	59	B	B	B	B	41	B	B	B	B	B	B	B	54	E B 43	E G 28	B	50	E B 30	B	18	23
9	31	60	52	59	45	37	30	E B 53	B	53	38	E B 36	33	E B 40	E B 51	E B 36	25	28	B	K 26	45	50	48	B
10	B	54	42	40	32	24	B	57	B	B	B	B	B	B	E B 33	E B 31	E B 32	E B 30	32	30	30	26	41	38
11	46	49	78	37	28	22	E B 40	E B 43	41	E B 36	E B 46	E B 39	E B 40	24	28	26	E B 32	E B 60	28	E B 40	25	45	58	41
12	B	42	40	18	B	32	56	57	41	33	E B 42	E B 43	E B 49	E B 46	E B 49	E B 60	B	30	38	30	41	46	50	44
13	43	53	33	33	110	52	57	28	41	B	32	B	B	B	E B 45	32	B	B	29	24	25	25	37	43
14	67	52	63	80	B	B	33	G 26	B	B	E B 32	B	B	B	E B 49	E B 45	E B 52	E B 46	B	B	37	32	40	47
15	43	45	B	35	43	25	27	B	B	B	B	B	B	B	E G 30	E B 31	E G 33	E B 40	B	K 28	E B 30	90	50	43
16	41	41	59	87	35	33	B	B	B	B	B	B	B	B	E B 53	E B 46	E B 30	26	32	B	33	39	40	31
17	64	85	33	B	34	42	B	B	B	B	E B 50	E B 50	E B 48	E B 43	31	E B 32	E B 50	E B 40	31	E B 30	23	40	E B 16	34
18	51	33	34	B	B	B	B	B	B	B	B	B	B	B	E B 50	E B 46	E B 50	E B 50	E B 30	E B 23	E B 22	37	42	58
19	41	33	42	33	35	31	21	E G 23	25	28	E B 49	E B 57	E B 51	E B 53	E G 30	E G 31	E B 29	E B 49	E B 40	E B 22	18	23	B	26
20	35	43	80	B	B	B	32	48	32	B	B	B	B	B	B	E B 30	29	E B 28	B	B	47	23	59	110
21	43	109	32	B	B	B	B	B	26	B	B	B	B	B	B	B	29	28	31	B	38	36	60	46
22	36	92	B	38	B	30	B	B	B	B	B	B	E B 40	E B 50	E B 31	E G 36	E B 31	B	E B 30	E B 23	23	32	35	109
23	42	B	50	50	B	32	B	B	B	B	E B 41	31	E B 35	E B 45	E B 49	E G 29	E B 40	E G 26	K 27	25	26	36	29	39
24	34	60	32	B	B	B	24	B	B	B	B	B	E B 43	26	E B 31	E B 32	E B 45	B	B	30	B	38	42	31
25	32	31	42	28	27	B	E B 40	41	47	E B 40	E G 32	30	E G 31	E B 43	B	E B 45	30	25	30	K 23	K 30	51	42	41
26	45	40	42	38	43	32	34	33	E G 29	E G 28	E G 29	30	E G 30	E B 48	E B 50	32	59	25	28	26	17	32	28	39
27	49	60	50	43	49	32	32	B	56	32	E G 30	43	50	48	35	36	27	25	27	28	32	20	30	35
28	32	30	59	42	34	32	30	34	42	32	43	32	57	32	33	30	31	E B 28	E B 38	K 21	K 17	31	39	48
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	25	25	24	18	15	17	16	16	13	10	15	14	15	15	23	24	24	23	19	22	25	26	26	25
MED	42	43	42	41	34	32	33	40	41	32	E B 41	E B 40	E B 40	E B 43	E B 41	E B 32	E E 32	E E 30	29	26	30	34	38	41
UQ	49	54	56	49	43	36	42	44	42	E B 40	E B 48	E B 49	E B 50	E B 47	E B 49	E B 45	E B 44	E B 36	31	29	37	40	42	44
LQ	36	40	34	35	32	31	30	32	30	32	E E 32	31	E B 36	30	E E 32	E E 31	28	26	28	24	23	29	28	34

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	12	30	23	16	15	23	13	17	31	B	53	49	38	30	41	41	23	30	23	15	17	15	12	12
2	12	31	12	23	21	30	20	23	23	24	18	22	18	23	23	19	18	15	13	17	16	19	16	13
3	13	13	13	16	16	17	23	17	17	50	56	41	40	23	39	23	19	13	23	16	20	22	23	23
4	22	23	31	B	B	B	B	B	B	B	B	B	B	B	49	50	55	B	B	B	B	B	B	B
5	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	32	B	28	23	30	23	B
6	22	B	B	B	B	B	B	25	B	B	B	B	B	B	49	B	B	B	B	23	B	21	19	15
7	15	20	20	B	B	B	B	B	B	B	B	35	B	B	42	B	22	22	28	B	20	17	21	20
8	20	23	19	B	B	B	B	23	B	B	B	B	B	B	B	22	43	21	B	30	30	B	16	13
9	14	15	23	23	23	23	16	53	B	24	22	36	24	40	51	36	23	23	B	23	15	17	12	B
10	B	23	15	22	22	16	B	45	B	B	B	B	B	B	33	31	32	30	23	21	16	15	13	13
11	13	16	20	28	16	12	40	43	23	36	46	39	40	22	15	15	32	60	16	40	16	16	13	13
12	B	22	20	13	B	24	23	20	17	17	42	43	49	46	49	60	B	22	17	16	15	15	13	13
13	11	10	12	9	15	23	23	18	30	B	20	B	B	B	45	23	B	B	20	19	16	14	11	11
14	22	20	17	15	B	B	21	22	B	B	32	B	B	B	47	45	52	46	B	B	30	15	15	22
15	12	17	B	22	16	20	16	B	B	B	B	B	B	B	25	31	15	40	B	23	30	23	16	15
16	10	15	18	15	22	14	B	B	B	B	B	B	B	B	53	46	30	24	22	B	16	14	11	16
17	15	15	22	B	17	23	B	B	B	B	50	50	48	43	21	32	50	40	15	30	14	15	16	13
18	22	17	16	B	B	B	B	B	B	B	B	B	B	B	50	46	50	50	30	23	22	15	13	21
19	21	26	22	25	17	17	16	13	15	17	49	57	51	53	24	16	29	49	40	22	16	13	B	11
20	13	13	14	B	B	B	23	17	17	B	B	B	B	B	B	30	27	23	B	B	16	15	15	17
21	16	39	23	B	B	B	B	B	15	B	B	B	B	B	B	B	26	26	17	B	18	22	14	11
22	13	21	B	17	B	21	B	B	B	B	B	B	48	50	31	36	31	B	30	23	16	13	13	16
23	13	B	21	30	B	23	B	B	B	B	41	22	35	45	49	18	40	22	17	19	16	15	16	13
24	16	13	23	B	B	B	22	9	B	B	B	B	43	17	31	32	45	B	B	20	B	13	16	16
25	17	15	16	13	13	B	40	25	24	40	21	20	22	43	B	45	20	22	17	15	23	21	17	13
26	12	20	22	15	18	17	23	18	19	15	17	18	20	47	50	27	25	17	15	14	13	20	15	12
27	14	16	23	17	21	17	17	B	22	17	17	16	22	20	29	23	22	18	24	16	17	16	13	13
28	13	13	16	16	22	16	22	22	22	23	22	19	16	23	28	15	25	28	38	18	15	14	12	14
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
MED	14	20	20	23	22	23	32	44	B	B	54	D B 57	50	52	47	32	30	29	26	23	16	16	15	14
UQ	22	24	23	B	B	B	B	B	B	B	B	B	B	B	50	46	50	50	B	35	23	21	16	13
LQ	13	15	16	16	17	17	22	21	22	30	27	36	36	35	30	23	23	22	17	18	16	15	13	13

FEB. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	A	A	235	A	B	B	B	E B 240	240	E B 260	270	Y 240	220	220	H 290	A	A	A	A
2	280	B	A	A	A	A	A	A	280	240	240	220	E A 240	220	220	E A 235	220	220	230	230	245	A	280	A
3	A	A	A	A	A	260	A	250	210	B	B	260	E B 255	E Y 240	240	230	225	230	225	240	250	250	255	A
4	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
5	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	240	B	B	A	A	B	B
6	A	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	275	B	345	330	A
7	A	A	A	B	B	B	B	B	B	B	B	200	B	B	B	B	B	230	240	B	A	A	A	A
8	A	A	A	B	B	B	B	A	B	B	B	B	B	B	B	220	B	250	B	E B 300	B	B	270	280
9	A	A	A	A	A	A	A	B	B	A	A	220	235	E B 250	B	E B 250	H 230	250	B	240	A	A	A	B
10	B	A	A	A	A	A	B	A	B	B	B	B	B	B	250	230	220	230	E B 250	260	260	255	A	A
11	A	A	A	A	A	H 250	B	B	A	E B 250	B	E B 250	E B 250	Y	220	225	255	B	245	B	260	A	A	A
12	B	A	A	320	B	A	A	A	A	A	B	B	B	B	B	B	B	A	A	270	A	A	A	A
13	A	A	A	A	A	A	A	A	A	B	E A 250	B	B	B	B	A	B	B	275	210	275	300	A	A
14	A	A	A	A	B	B	A	300	B	B	245	B	B	B	B	B	B	310	B	B	A	A	A	A
15	A	A	B	A	A	A	A	B	B	B	B	B	B	B	230	240	300	B	B	305	B	A	A	A
16	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	225	225	A	B	A	A	A	A
17	A	A	A	B	A	A	B	B	B	B	B	B	B	B	220	230	B	B	305	E B 260	280	A	340	A
18	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 250	240	B	A	A	A
19	A	A	A	A	A	A	285	250	230	220	B	B	B	B	235	240	225	B	B	240	250	280	B	A
20	A	A	A	B	B	B	Y	A	A	B	B	B	B	B	B	240	250	250	B	B	A	A	A	A
21	A	A	A	B	B	B	B	B	280	B	B	B	B	B	B	B	250	E A 250	300	B	A	A	A	A
22	A	A	B	A	B	A	B	B	B	B	B	B	B	B	230	E B 250	230	B	E B 250	275	250	255	A	A
23	A	B	A	A	B	A	B	B	B	B	B	240	B	B	B	230	B	230	250	255	310	A	A	A
24	A	A	A	B	B	B	Y	B	B	B	B	B	B	220	210	240	B	B	B	A	B	A	A	A
25	A	A	A	A	A	B	B	A	A	B	250	240	230	B	B	B	230	245	E A 250	260	B	A	A	A
26	A	A	A	A	A	A	A	A	260	240	205	250	240	B	B	Y	E A 250	210	250	240	240	A	A	A
27	A	A	A	A	A	A	E A 250	B	A	Y	215	E A 280	A	A	A	E A 250	235	250	250	260	250	255	300	A
28	A	A	A	A	A	A	A	A	A	250	245	230	E A 250	220	210	230	220	225	E B 250	240	250	A	A	A
29																								
30																								
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1			1		2	2	4	5	5	7	10	8	6	11	16	16	17	16	19	12	7	6	1
MED	280			320		255	268	250	260	240	242	232	E E 240	225	225	234	230	230	250	250	250	255	290	280
UQ								275	280	250	246	245	E E 250	E E 240	235	242	250	250	250	268	268	290	330	
LQ								242	230	240	228	220	234	220	220	230	225	225	232	240	250	255	270	

FEB. 1983 | H'F (KM)

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	48	53	60	60	70	57	Y	A	56	68	X 74	X 76	X 78	X 78	X 75	X 75	X 71	59	45	A	A	A
2	A	A	A	A	A	32	B	B	A	A	48	A	A	B	59	B	A	Y	O X 40	B	A	B	A	A
3	A	B	A	A	A	A	B	B	B	B	A	B	B	B	B	B	B	B	O X 41	A	X 42	A	A	A
4	A	A	A	A	36	B	A	B	B	B	B	B	B	B	B	62	61	52	X 47	X 46	33	A	A	B
5	B	A	42	65	52	B	B	B	B	B	B	B	O X 45	B	B	B	66	X 63	O X 44	O X 46	45	A	A	45
6	A	B	A	42	A	X 44	33	O X 40	O X 50	O X 41	51	X 56	X 57	X 57	X 58	X 62	X 61	X 61	X 60	X 65	59	37	A	A
7	A	A	A	35	A	60	A	B	B	C	72	80	80	X 80	X 76	80	X 71	X 67	X 65	X 63	58	X 52	49	X 46
8	43	A	A	A	A	B	B	O X 53	61	X 66	69	X 68	X 68	X 72	X 74	X 78	X 80	O X 76	X 74	X 60	A	A	A	A
9	A	A	A	A	A	B	B	A	X 64	65	70	70	X 66	X 66	X 65	X 65	69	X 65	X 64	X 64	X 60	X 47	70	54
10	A	A	51	58	47	56	53	59	73	72	72	80	X 74	74	74	73	X 70	X 67	X 65	64	X 56	X 52	32	A
11	A	O X 41	39	59	B	68	70	67	83	90	97	90	X 91	O X 91	X 93	X 94	96	X 84	O X 64	60	X 48	A	60	31
12	A	80	B	A	A	B	B	56	60	B	B	B	B	64	68	B	63	X 56	45	33	A	A	A	A
13	A	B	A	A	46	48	35	35	A	A	42	B	B	62	62	B	B	B	B	X 46	42	A	A	A
14	A	A	A	35	45	48	51	A	B	O X 54	62	B	B	B	B	X 76	X 70	X 66	59	O X 40	34	37	A	A
15	A	A	40	A	30	A	B	B	A	B	B	B	B	69	B	O X 70	X 72	X 77	67	A	46	A	A	A
16	A	A	A	51	A	A	A	A	B	B	62	62	68	X 72	X 75	X 75	X 80	92	O X 70	66	54	58	52	A
17	A	X 32	A	B	B	43	B	B	B	B	45	B	B	X 67	B	O X 71	B	60	X 58	X 59	X 50	41	26	A
18	A	A	A	A	O X 50	59	45	59	62	B	B	70	B	X 74	72	77	X 74	68	X 64	X 56	A	A	37	A
19	A	50	B	A	A	A	B	B	B	B	B	B	B	B	B	B	O X 52	B	O X 60	X 42	A	A	45	A
20	A	A	A	A	33	B	B	B	B	B	B	B	B	B	O X 51	R 55	O X 53	X 53	B	A	A	A	B	A
21	A	A	A	35	B	B	A	A	A	43	B	B	O X 55	O X 55	49	56	O X 54	O X 53	O X 53	O X 41	23	A	A	A
22	B	40	A	B	B	A	A	B	B	Y	62	O X 60	B	B	B	61	O X 62	X 61	X 60	52	B	26	A	A
23	A	A	A	51	B	A	A	B	A	B	B	B	B	B	O X 74	X 77	O X 80	X 73	X 72	70	X 64	42	A	A
24	A	A	A	B	60	A	B	B	B	B	B	65	79	90	100	X 90	X 91	X 79	80	70	X 57	36	A	A
25	A	A	A	A	O R 39	A	A	B	B	B	44	B	B	42	B	62	O X 36	B	B	A	A	A	A	A
26	A	58	A	A	A	57	33	36	A	O R 56	70	X 35	89	90	X 86	X 76	69	X 61	X 66	X 60	X 47	42	44	A
27	A	A	51	51	35	59	69	70	80	90	X 85	94	X 96	X 98	X 95	X 92	X 77	72	X 66	X 58	X 49	42	35	27
28	A	59	59	68	70	59	68	58	B	60	70	70	62	71	70	104	88	B	X 37	A	43	A	59	A
29	A	A	A	A	B	A	B	A	A	B	B	B	B	B	B	66	O X 46	43	X 38	A	A	A	50	A
30	A	A	A	A	A	30	A	B	B	B	B	B	B	B	B	B	B	X 57	X 47	A	A	A	A	A
31	A	A	A	B	A	B	B	B	B	B	O X 47	O X 48	B	B	B	B	B	B	B	O R 40	38	O R 33	36	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	7	7	12	13	14	10	11	8	10	18	15	14	19	19	23	25	24	27	23	21	13	13	5
MED	43	50	48	51	46	56	52	57	63	62	62	70	X 71	X 72	X 74	X 75	X 70	X 66	X 60	X 59	47	42	45	45
UQ		58	51	58	52	59	69	59	76	72	70	80	X 80	X 78	X 77	X 78	X 77	X 74	X 66	64	X 56	47	52	46
LQ		40	41	38	36	44	35	46	60	O 54	48	64	X 62	65	64	64	X 61	X 58	X 47	X 46	42	37	36	31

MAR. 1983 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

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

MAR. 1983 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	48	55	32	31	40	30	59	31	24	43	E B 34	E G 30	37	56	32	31	39	35	25	22	E B 19	51	50	55
2	48	41	60	49	47	31	B	B	24	53	30	26	35	B	E G 30	B	30	26	30	B	25	B	37	43
3	32	B	48	39	41	47	B	B	B	B	36	B	B	B	B	B	B	B	29	34	30	41	45	43
4	42	41	42	36	26	B	38	B	B	B	B	B	B	B	B	E G 27	25	E B 28	28	25	24	30	41	B
5	26	51	35	37	27	B	B	B	B	B	B	B	E B 33	B	B	B	E B 40	E G 27	31	30	35	40	42	89
6	42	B	40	58	39	33	22	32	34	36	31	E G 30	E G 30	31	34	41	33	K 24	24	23	20	36	36	37
7	42	42	45	33	42	34	36	B	B	C	E B 43	25	E B 56	28	26	E G 29	E B 28	E B 25	E G 23	23	27	E B 16	26	E B 15
8	24	35	36	44	42	B	B	35	E G 31	26	E G 29	E G 29	E G 29	30	23	30	27	E B 57	E B 30	E B 19	36	43	48	40
9	37	41	34	57	70	B	B	42	41	28	E G 27	E G 29	30	29	35	28	29	E G 24	K 18	K 16	13	E B 8	36	33
10	38	39	41	41	39	32	40	45	34	E G 26	E G 28	E G 28	E G 30	30	30	26	E G 26	25	21	17	15	16	26	70
11	44	40	35	32	B	42	43	40	28	E G 24	E G 25	30	28	41	23	29	E G 25	E B 23	E B 40	34	32	47	33	34
12	58	85	B	35	28	B	B	39	35	B	B	B	B	E B 30	E B 52	B	E B 56	E B 33	E B 19	49	70	91	104	105
13	36	B	42	47	13	28	26	22	36	30	34	B	B	E B 57	E B 56	B	B	B	B	26	27	33	41	43
14	80	41	34	34	16	46	32	35	B	32	25	B	B	B	B	E B 50	E B 26	E B 24	E B 23	31	15	22	33	90
15	40	37	45	47	33	42	B	B	34	B	B	B	B	E G 29	B	E B 55	E G 23	E B 56	31	34	31	35	42	48
16	48	48	34	32	35	36	42	43	B	B	E G 27	30	29	E B 40	E B 33	E G 23	E B 23	E B 67	E B 59	E B 19	16	20	30	36
17	35	35	39	B	B	29	B	B	B	B	26	B	B	E B 56	B	E B 58	B	24	E B 21	E B 20	E B 23	E B 13	E B 14	29
18	35	41	36	36	42	33	20	20	E G 22	B	B	E B 30	B	E B 30	26	E G 25	22	26	25	K 15	45	37	59	48
19	37	51	B	35	78	44	B	B	B	B	B	B	B	B	B	B	E B 30	B	E B 24	17	39	46	32	42
20	36	82	77	42	52	B	B	B	B	B	B	B	B	B	E G 25	E G 23	E B 31	K 24	B	34	42	41	B	41
21	40	35	31	59	B	B	42	37	36	E B 32	B	B	30	E B 30	E B 30	E B 24	E B 30	E B 25	E B 20	E B 30	20	29	34	31
22	B	42	40	B	B	35	35	B	B	37	E B 50	E B 33	B	B	B	E B 30	E B 30	E B 23	K 19	E B 23	B	E B 13	30	33
23	35	40	31	32	B	45	42	B	46	B	B	B	B	B	E B 57	E B 60	E B 60	E B 33	20	E B 33	39	E B 24	39	45
24	60	41	34	B	22	52	B	B	B	B	B	E B 39	E B 33	E B 50	E B 31	E B 30	E B 24	25	E B 30	E B 20	E B 19	E B 13	90	42
25	40	46	40	47	34	95	45	B	B	B	33	B	B	35	B	E B 50	31	B	B	32	48	51	45	70
26	45	46	45	42	34	42	35	27	34	30	27	27	26	28	24	22	20	24	18	13	E B 10	10	28	45
27	35	35	41	32	45	29	37	30	26	E G 22	E G 23	E B 29	E G 28	E G 27	E G 26	E G 25	23	K 21	E B 17	15	E B 14	E B 13	12	28
28	47	55	47	36	35	40	36	34	B	E B 40	34	E G 27	E G 28	E B 30	E B 40	33	29	B	24	90	65	37	42	42
29	69	63	42	34	B	34	B	21	33	B	B	B	B	B	B	25	27	33	36	37	39	41	70	38
30	59	72	45	36	31	29	51	B	B	B	B	B	B	B	B	B	B	E B 22	E B 16	42	40	40	36	40
31	41	37	60	B	27	B	B	B	B	B	E B 30	E B 30	B	B	B	B	B	B	B	18	29	25	70	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	30	28	29	27	25	23	18	16	16	14	19	16	15	19	19	23	26	25	27	30	30	30	30	30
MED	40	41	40	36	35	35	38	34	34	30	E E 30	E E 30	E E 30	E E 30	E E 30	E E 29	E E 28	E E 25	21	23	28	34	40	42
UQ	48	51	45	46	42	43	42	40	36	36	32	E E 30	32	35	E B 34	E B 37	E B 31	E E 33	28	34	39	41	48	48
LQ	36	40	35	34	28	32	35	28	26	26	E G 27	E E 28	E G 28	E 30	26	E E 25	E E 25	E E 24	E E 20	17	17	13	33	36

MAR. 1983 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	14	20	11	11	14	14	14	14	14	21	34	20	18	20	22	14	14	14	14	14	19	14	14	14
2	20	14	15	18	19	14	B	B	14	23	14	15	26	B	20	B	15	16	10	B	13	B	14	14
3	8	B	15	16	19	22	B	B	B	B	21	B	B	B	B	B	B	B	23	15	15	11	13	15
4	6	14	19	20	16	B	22	B	B	B	B	B	B	B	B	20	19	23	22	20	10	8	14	B
5	22	14	13	13	8	B	B	B	B	B	B	B	33	B	B	B	40	23	19	20	10	10	11	8
6	10	B	19	15	14	14	16	18	18	25	14	14	18	14	20	20	18	20	13	9	8	9	9	10
7	13	11	14	21	14	13	24	B	B	C	43	23	56	25	23	21	28	25	18	16	13	16	13	15
8	10	10	15	19	13	B	B	13	19	19	14	15	22	18	16	13	19	57	30	19	11	13	11	15
9	10	10	14	13	10	B	B	19	15	18	18	19	15	15	18	14	13	15	13	12	9	8	8	8
10	10	10	9	10	13	11	15	14	13	15	19	14	24	17	19	21	18	15	14	13	11	9	11	19
11	12	11	13	10	B	19	14	18	14	15	15	15	14	14	18	17	16	23	40	12	10	11	8	9
12	13	18	B	15	8	B	B	18	16	B	B	B	B	30	52	B	56	33	19	13	16	16	14	9
13	17	B	23	14	8	14	20	15	20	26	24	B	B	57	56	B	B	B	B	17	11	11	11	17
14	11	23	20	13	9	15	11	23	B	23	20	B	B	B	B	50	26	24	23	23	10	10	8	24
15	13	15	8	9	9	15	B	B	20	B	B	B	B	23	B	55	19	56	15	14	11	7	8	12
16	19	15	23	23	16	21	23	18	B	B	22	19	19	40	33	13	23	67	59	19	11	19	9	11
17	9	9	30	B	B	18	B	B	B	B	24	B	B	56	B	58	B	20	21	20	23	13	14	8
18	8	9	23	23	19	14	15	17	15	B	B	30	B	30	20	18	18	15	18	12	9	14	8	10
19	10	14	B	26	32	21	B	B	B	B	B	B	B	B	B	B	30	B	24	14	8	18	8	8
20	8	13	13	19	13	B	B	B	B	B	B	B	B	B	21	19	31	22	B	16	13	18	B	20
21	11	13	8	11	B	B	21	23	23	32	B	B	24	30	30	24	30	25	20	30	11	8	14	15
22	B	14	23	B	B	13	23	B	B	31	50	33	B	B	B	30	30	23	15	23	B	13	9	9
23	24	23	15	20	B	23	23	B	22	B	B	B	B	B	57	60	60	33	18	33	23	24	10	16
24	10	25	20	B	15	18	B	B	B	B	B	39	33	50	31	30	24	18	30	20	19	13	10	14
25	11	15	14	20	16	20	21	B	B	B	14	B	B	14	B	50	26	B	B	15	13	10	8	13
26	11	10	8	13	11	10	10	18	23	20	23	24	23	20	13	19	18	18	13	8	10	8	8	8
27	8	11	8	8	16	15	13	17	21	19	19	29	20	21	21	20	19	16	17	13	14	13	10	18
28	13	8	8	8	8	15	14	20	B	40	24	23	20	30	40	24	22	B	13	10	8	18	9	24
29	8	27	19	19	B	16	B	13	18	B	B	B	B	B	B	23	23	18	20	8	10	10	15	15
30	14	8	25	11	13	13	23	B	B	B	B	B	B	B	B	B	B	22	16	10	8	9	13	15
31	10	13	30	B	19	B	B	B	B	B	30	30	B	B	B	B	B	B	B	15	11	11	12	30
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	30	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	11	14	15	16	15	18	23	23	23	B	30	39	B	40	40	24	24	23	19	15	11	11	11	14
UQ	14	19	23	20	19	D B 23	B	B	B	B	B	B	B	B	B	D B 60	36	56	27	20	14	15	14	16
LQ	10	10	13	12	12	14	16	18	18	23	20	22	22	20	20	20	18	18	15	12	10	10	8	10

MAR. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

MAR. 1983 | H*F (KM) | 45° E Mean Time (G.M.T. + 3 h)

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	A	A	A	Y	A	E B 290	250	230	250	240	250	250	250	255	255	B	A	A	A
2	A	A	A	A	A	A	B	B	A	A	200	A	A	B	275	B	A	Y	A	B	A	B	A	A
3	A	B	A	A	A	A	B	B	B	B	A	B	B	B	B	B	B	B	290	A	A	A	A	A
4	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	240	245	B	275	290	A	A	A	B
5	B	A	A	A	A	B	B	B	B	B	B	B	255	B	B	B	B	250	A	A	A	A	A	A
6	A	B	A	A	A	A	A	A	A	A	250	250	250	240	240	230	255	240	255	250	240	A	A	A
7	A	A	A	A	A	A	A	B	B	C	B	Y	B	240	230	240	240	240	250	245	240	250	260	260
8	290	A	A	A	A	B	B	Y	B	240	230	230	H 240	240	240	225	230	E B 275	240	255	A	A	A	A
9	A	A	A	A	A	B	B	A	A	A	H 225	260	235	245	230	225	250	245	240	240	230	240	A	A
10	A	A	A	A	A	A	A	A	A	240	210	250	240	240	230	220	230	245	245	240	230	235	325	A
11	A	A	A	290	B	A	A	A	270	245	250	240	230	250	240	235	240	240	255	240	260	A	A	A
12	A	A	B	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	200	A	A	A	A	A
13	A	B	A	A	A	A	A	200	A	A	A	B	B	B	B	B	B	B	B	275	290	A	A	A
14	A	A	A	A	A	A	A	A	B	A	A	B	B	B	B	B	270	250	270	A	A	A	A	A
15	A	A	A	A	A	A	B	B	A	B	B	B	B	255	B	B	245	B	A	A	A	A	A	A
16	A	A	A	A	A	A	A	A	B	B	230	260	240	B	E B 250	230	240	B	B	230	255	255	255	A
17	A	A	A	B	B	A	B	B	B	B	Y	B	B	B	B	B	B	250	240	245	245	230	290	A
18	A	A	A	A	A	A	A	255	225	B	B	255	B	240	230	220	225	240	240	245	A	A	A	A
19	A	A	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	275	A	A	A	A
20	A	A	A	A	A	B	B	B	B	B	B	B	B	B	250	255	E B 260	285	B	A	A	A	B	A
21	A	A	A	A	B	B	A	A	A	B	B	B	250	250	E B 240	240	250	260	255	B	A	A	A	A
22	B	A	A	B	B	A	A	B	B	A	B	E B 270	B	B	B	250	260	250	245	250	B	B	A	A
23	A	A	A	265	B	A	A	B	A	B	B	B	B	B	B	B	B	250	240	265	250	260	A	A
24	A	A	A	B	275	A	B	B	B	B	B	E B 290	250	260	240	245	240	235	240	225	240	260	A	A
25	A	A	A	A	A	A	A	B	B	B	240	B	B	250	B	B	A	B	B	A	A	A	A	A
26	A	A	A	A	A	A	A	A	A	260	260	250	210	225	240	240	240	230	215	220	215	235	A	A
27	A	A	A	A	A	A	A	280	255	240	230	240	230	225	230	240	225	230	215	230	235	240	250	A
28	A	A	A	A	A	A	A	A	B	B	B	245	250	290	B	300	280	B	340	A	A	A	A	A
29	A	A	A	A	B	A	B	A	A	B	B	B	B	B	B	270	310	270	A	A	A	A	A	A
30	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	290	295	A	A	A	A	A
31	A	A	A	B	A	B	B	B	B	B	E B 280	E B 250	B	B	B	B	B	B	B	300	275	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1			2	1			3	3	5	12	14	13	15	15	18	20	20	21	19	13	9	5	1
MED	290			278	275			255	255	240	232	249	240	245	240	240	244	249	245	245	240	240	260	260
UQ								268	262	245	250	255	250	250	240	250	255	252	255	260	255	255	290	
LQ								228	240	240	228	242	230	240	230	230	240	240	240	240	235	235	255	

MAR. 1983 | H*F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	B	33	A	B	B	B	B	B	B	B	B	B	B	B	B	70	A	32	A	B	A
2	A	40	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	O X 51	B	A	B	A	A	A
3	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	X 59	B	B	B	O R 48	32	B	B	B
4	55	A	B	B	A	B	B	B	B	B	B	B	B	X 64	X 64	68	X 63	X 68	63	44	A	A	A	A
5	A	59	42	36	33	B	A	A	A	A	B	B	X 54	X 51	X 51	O X 51	X 51	X 55	X 51	X 43	29	A	A	A
6	A	45	43	41	A	A	36	36	B	B	B	B	B	B	B	80	97	75	A	30	A	A	A	A
7	A	A	A	A	35	A	A	37	A	B	B	O X 48	B	B	B	B	B	B	O X 41	A	A	A	51	A
8	A	B	B	B	A	34	31	B	B	B	B	B	B	B	B	B	X 66	B	B	B	A	B	A	A
9	A	A	A	A	B	A	A	A	A	B	B	B	B	O X 69	R	X 36	U R 78	73	X 65	44	A	B	A	A
10	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 76	B	B	34	B	B	A	A
11	A	B	B	A	B	B	A	B	B	B	58	O X 55	X 63	70	70	X 63	X 64	X 58	X 46	X 41	X 36	O X 29	O X 22	A
12	A	28	A	A	26	31	B	A	44	O X 51	B	X 66	X 74	B	87	B	36	B	B	45	42	30	A	A
13	A	A	35	A	B	B	B	B	B	B	B	B	B	B	B	69	X 77	71	42	A	A	A	A	A
14	A	A	B	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	B
15	B	A	26	A	B	B	B	A	B	B	B	B	B	B	B	B	B	A	B	A	A	A	B	A
16	B	B	B	B	B	B	33	B	B	B	B	B	B	B	B	B	63	A	B	B	A	A	A	B
17	A	B	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	X 57	O X 37	B	A	A	A	A
18	B	B	A	A	A	B	A	B	B	O X 42	B	B	X 58	X 60	X 61	X 58	R	R	R	A	B	B	A	41
19	A	A	B	A	A	26	35	A	B	B	B	61	B	B	B	70	91	B	80	A	A	A	A	A
20	A	60	A	A	30	B	A	B	B	A	B	B	B	B	O X 57	X 61	X 65	X 70	65	31	A	A	A	A
21	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	O X 55	X 60	X 58	B	B	B	A	A	A
22	A	A	A	A	B	A	B	B	B	B	A	B	B	B	B	B	B	X 51	X 49	B	22	31	A	A
23	A	A	40	45	A	A	B	52	B	B	B	B	69	X 70	74	74	68	72	57	37	25	B	A	A
24	A	A	B	A	68	58	A	A	B	A	B	B	R 60	B	B	88	X 90	45	O R 31	A	A	76	A	A
25	A	A	A	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
26	B	A	B	A	B	B	B	A	B	B	B	B	B	B	B	B	60	O X 57	61	A	26	A	A	A
27	A	A	A	A	B	B	A	A	B	B	B	B	B	B	X 67	X 74	X 73	B	B	B	B	B	B	A
28	A	51	A	B	B	A	B	B	B	B	B	B	X 71	R	R 79	X 79	X 86	X 76	X 76	37	B	B	A	A
29	A	A	A	A	B	B	A	A	B	B	B	B	B	B	B	113	105	63	70	59	62	60	A	A
30	A	A	A	A	B	B	A	A	B	B	B	B	B	B	X 65	70	90	B	42	O X 31	A	A	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	6	5	3	6	4	4	3	1	2	1	4	7	6	10	17	20	16	17	13	9	5	2	1
MED	55	48	40	41	33	32	34	37	44	O X 46	58	X 58	X 63	X 66	X 66	X 70	X 74	X 60	57	41	32	31	36	41
UQ		59	42	43	35	46	36	44				64	X 70	X 70	74	79	88	72	65	44	36	60		
LQ		40	35	38	30	28	32	36				O X 52	X 59	X 60	X 61	X 61	X 64	X 56	X 42	34	26	30		

APR. 1983 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	B	F	A	B	B	B	B	B	B	B	B	B	B	B	B	F	A	F	A	B	A
2	A	F	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	45	B	A	B	A	A	A
3	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	53	B	B	B	F 41	F	B	B	B
4	F	A	B	B	A	B	B	B	B	B	B	B	B	58	58	F	57	62	F 56	F 36	A	A	A	A
5	A	F	F	F	F	B	A	A	A	A	B	B	48	45	45	45	45	49	45	37	F 21	A	A	A
6	A	F	F	F	A	A	F	F	B	B	B	B	B	B	B	F	J F 91	F	A	F	A	A	A	A
7	A	A	A	A	F	A	A	F	A	B	B	42	B	B	B	B	B	B	R 35	A	A	A	F	A
8	A	B	B	B	A	F	F	B	B	B	B	B	B	B	B	B	60	B	B	B	A	B	A	A
9	A	A	A	A	B	A	A	A	A	B	B	B	B	63	D R 62	80	U R 72	F 66	59	F	A	B	A	A
10	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	70	B	B	F	B	B	A	A
11	A	B	B	A	B	B	A	B	B	B	50	49	57	F	F 63	57	58	52	40	35	30	23	16	A
12	A	F	A	A	F	F	B	A	F	45	B	60	68	B	F	B	F	B	B	F	F	F	A	A
13	A	A	F	A	B	B	B	B	B	B	B	B	B	B	B	61	70	65	F	A	A	A	A	A
14	A	A	B	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	B
15	B	A	F	A	B	B	B	A	B	B	B	B	B	B	B	B	B	A	B	A	A	A	B	A
16	B	B	B	B	B	B	F	B	B	B	B	B	B	B	B	B	F	A	B	B	A	A	A	B
17	A	B	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	51	31	B	A	A	A	A
18	B	B	A	A	A	B	A	B	B	36	B	B	52	53	54	52	D R 45	D R 42	R 41	A	B	B	A	F
19	A	A	B	A	A	F	F	A	B	B	B	F	B	B	B	F	J F 85	B	F	A	A	A	A	A
20	A	F	A	A	F	B	A	B	B	A	B	B	B	B	51	56	59	63	53	F	A	A	A	A
21	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	49	54	52	B	B	B	A	A	A
22	A	A	A	A	B	A	B	B	B	B	A	B	B	B	B	B	B	45	43	B	F	F 23	A	A
23	A	A	F	F	A	A	B	F	B	B	B	B	F 61	64	F 67	F 65	F 60	F 60	F	F	F	B	A	A
24	A	A	B	A	F	F	A	A	B	A	B	B	R 53	B	B	F	J R 84	F	F 23	A	A	F	A	A
25	A	A	A	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
26	B	A	B	A	B	B	B	A	B	B	B	B	B	B	B	B	51	51	F	A	F	A	A	A
27	A	A	A	A	B	B	A	A	B	B	B	B	B	B	61	68	67	B	B	B	B	B	B	A
28	A	F	A	B	B	A	B	B	B	B	B	B	65	D R 68	R 73	73	80	70	70	F	B	B	A	A
29	A	A	A	A	B	B	A	A	B	B	B	B	B	B	B	F	F	F	F	F	F	F	A	A
30	A	A	A	A	B	B	A	A	B	B	B	B	B	B	59	F	F 66	B	F	25	A	A	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT										2	1	3	7	6	10	11	18	14	11	5	2	2	1	
MED										40	50	49	57	60	60	57	64	54	43	36	26	23	16	
UQ												54	63	64	65	66	72	63	54	F 37				
LQ												46	52	53	54	52	58	50	38	35				

APR. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	70	35	30	B	26	42	B	B	B	B	B	B	B	B	B	B	B	B	E B 23	32	24	24	B	37
2	34	32	42	42	B	40	B	B	B	B	B	B	B	B	B	B	B	E B 21	B	34	B	43	35	41
3	43	37	41	70	B	B	34	B	B	B	B	B	B	B	B	E B 24	B	B	B	E B 24	E B 23	B	B	B
4	31	80	B	B	40	B	B	B	B	B	B	B	B	E B 33	E B 30	E B 56	E B 41	28	E B 30	34	41	70	68	60
5	42	38	32	27	32	B	36	35	43	41	B	B	E B 38	E B 30	E B 24	E B 23	E B 20	E B 20	18	E B 13	16	39	40	42
6	49	38	51	69	90	43	30	25	B	B	B	B	B	B	B	E B 51	28	24	40	26	35	46	100	42
7	45	51	37	70	70	42	41	27	37	B	B	E B 25	B	B	B	B	B	B	E B 23	44	30	41	35	42
8	92	B	B	B	31	23	34	B	B	B	B	B	B	B	B	B	E B 22	B	B	B	28	B	26	28
9	35	33	38	41	B	35	49	42	38	B	B	B	B	E B 55	E B 57	E B 30	E B 57	E B 23	E B 25	35	41	B	39	42
10	38	51	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 57	B	B	E B 19	B	B	28	33
11	39	B	B	42	B	B	36	B	B	B	E B 30	E B 30	E B 34	E B 30	E B 35	E B 30	E B 25	E B 20	E B 15	E B 13	E B 14	E B 13	E B 10	14
12	36	31	36	36	34	33	B	35	23	E B 23	B	E S 50	E B 24	B	E B 60	B	E B 50	B	B	E B 15	E B 16	26	34	44
13	41	88	42	90	B	B	B	B	B	B	B	B	B	B	B	23	33	35	33	42	36	35	41	59
14	43	38	B	48	37	B	B	38	B	B	B	B	B	B	B	B	B	B	29	24	41	27	36	B
15	B	35	30	27	B	B	B	36	B	B	B	B	B	B	B	B	B	35	B	35	35	34	B	30
16	B	B	B	B	B	B	70	B	B	B	B	B	B	B	B	B	E B 23	24	B	B	35	37	59	B
17	41	B	B	B	32	B	B	B	B	B	B	B	B	B	B	B	B	E B 30	E B 24	B	43	40	42	35
18	B	B	35	26	79	B	36	B	B	E B 30	B	B	E B 33	21	E B 30	E B 29	E B 35	E B 40	E B 24	41	B	B	32	35
19	35	38	B	31	34	30	35	37	B	B	B	E B 30	B	B	B	E B 57	E B 30	B	E B 30	35	41	36	48	42
20	39	52	71	26	80	B	50	B	B	45	B	B	B	B	E B 33	E B 30	E G 20	E B 26	E B 20	35	40	42	59	48
21	41	35	36	28	62	B	51	B	B	B	B	B	B	B	B	E B 34	E B 22	E B 23	B	B	B	16	34	31
22	45	42	71	51	B	36	B	B	B	B	42	B	B	B	B	B	B	E B 20	16	B	20	32	31	34
23	35	35	35	45	80	36	B	35	B	B	B	B	E B 50	E B 40	E B 23	E B 30	E B 33	E B 30	E B 26	21	30	B	30	45
24	42	130	B	42	35	33	49	58	B	45	B	B	E B 30	B	B	E B 32	E B 23	35	27	36	42	34	43	39
25	61	35	41	B	B	B	B	B	40	B	B	B	B	B	B	B	B	B	B	42	34	43	44	82
26	B	71	B	34	B	B	B	36	B	B	B	B	B	B	B	B	E B 20	E B 23	34	37	29	42	40	45
27	41	37	72	34	B	B	36	41	B	B	B	B	B	B	E B 41	E B 23	E B 17	B	B	B	B	B	B	31
28	34	42	29	B	B	42	B	B	B	B	B	B	E B 30	E B 56	E B 57	E B 24	E B 19	E B 23	E B 26	E B 30	B	B	31	31
29	39	41	42	33	B	B	35	42	B	B	B	B	B	B	B	E B 30	E B 30	E B 25	27	35	62	127	36	50
30	80	37	53	33	B	B	33	35	B	B	B	B	B	B	E B 29	E B 32	E B 22	B	E B 23	36	37	37	45	80
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	26	25	20	22	15	12	16	14	5	5	2	4	7	7	11	17	21	19	20	24	24	22	26	27
MED	41	38	40	38	37	36	36	36	38	41	36	E B 30	E B 33	E B 33	E B 35	E B 30	E B 25	E B 24	E B 26	34	35	38	38	42
UQ	45	51	46	48	74	42	49	41	40	45		E E 40	E B 36	E B 48	E B 49	E B 32	E B 33	27	30	36	41	43	44	45
LQ	36	35	35	31	33	33	34	35	37	E B 30		E B 28	E B 30	E B 30	E B 30	E B 24	E B 22	E B 23	E B 23	22	26	32	32	34

APR. 1983 | FES (0.1 MHZ)

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	10	20	10	B	10	23	B	B	B	B	B	B	B	B	B	B	B	B	23	11	13	13	B	15
2	13	15	30	23	B	23	B	B	B	B	B	B	B	B	B	B	B	21	B	13	B	13	13	24
3	19	8	30	14	B	B	19	B	B	B	B	B	B	B	B	24	B	B	B	24	23	B	B	B
4	8	24	B	B	20	B	B	B	B	B	B	B	B	33	30	56	41	19	30	10	10	19	8	9
5	8	9	8	7	8	B	15	23	24	23	B	B	38	30	24	23	20	20	15	13	9	8	8	9
6	12	8	8	9	10	30	18	19	B	B	B	B	B	B	B	51	20	21	14	14	9	11	12	23
7	13	18	8	23	9	15	13	11	24	B	B	25	B	B	B	B	B	B	23	10	9	8	13	23
8	21	B	B	B	23	15	15	B	B	B	B	B	B	B	B	B	22	B	B	B	13	B	7	9
9	14	14	9	8	B	15	15	19	20	B	B	B	B	55	57	30	57	23	25	9	11	B	10	15
10	13	10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	57	B	B	19	B	B	7	9
11	13	B	B	11	B	B	15	B	B	B	30	30	34	30	35	30	25	20	15	13	14	13	10	8
12	9	8	11	13	14	24	B	19	15	23	B	E S 50	24	B	60	B	50	B	B	15	16	19	8	19
13	8	8	8	13	B	B	B	B	B	B	B	B	B	B	B	14	23	23	22	13	9	8	8	10
14	8	9	B	11	14	B	B	23	B	B	B	B	B	B	B	B	B	B	23	14	9	8	15	B
15	B	28	13	19	B	B	B	23	B	B	B	B	B	B	B	B	B	9	B	8	14	14	B	14
16	B	B	B	B	B	B	23	B	B	B	B	B	B	B	B	B	23	14	B	B	10	14	13	B
17	24	B	B	B	25	B	B	B	B	B	B	B	B	B	B	B	B	30	24	B	11	9	10	11
18	B	B	24	14	21	B	14	B	B	30	B	B	33	18	30	29	35	40	24	10	B	B	9	9
19	14	11	B	23	13	9	11	14	B	B	B	30	B	B	B	57	30	B	30	13	13	19	10	11
20	11	8	11	14	14	B	16	B	B	22	B	B	B	B	35	30	14	26	20	11	10	11	9	10
21	10	13	23	11	23	B	30	B	B	B	B	B	B	B	B	34	22	23	B	B	B	11	9	21
22	20	20	30	23	B	30	B	B	B	B	32	B	B	B	B	B	B	20	13	B	10	8	9	9
23	10	13	8	8	14	15	B	19	B	B	B	B	50	40	23	30	33	30	26	15	19	B	10	13
24	11	23	B	15	12	11	24	30	B	21	B	B	30	B	B	32	23	24	13	11	10	9	9	10
25	33	24	18	B	B	B	B	B	23	B	B	B	B	B	B	B	B	B	B	9	8	11	10	33
26	B	10	B	18	B	B	B	18	B	B	B	B	B	B	B	B	20	23	10	11	10	8	9	13
27	14	9	24	14	B	B	19	30	B	B	B	B	B	B	41	23	17	B	B	B	B	B	B	10
28	9	30	16	B	B	24	B	B	B	B	B	B	30	56	57	24	19	23	26	30	B	B	11	10
29	11	10	19	20	B	B	23	22	B	B	B	B	B	B	B	30	30	25	18	13	8	10	16	11
30	20	23	16	14	B	B	20	15	B	B	B	B	B	B	29	32	22	B	23	10	11	11	15	11
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	13	14	24	16	D B 25	B	27	B	B	B	B	B	B	B	B	54	32	26	24	13	11	13	10	11
UQ	20	24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	24	19	B	13	21
LQ	10	9	11	13	14	23	16	19	B	B	B	B	B	B	41	30	22	21	20	11	10	9	9	10

The Radio Research Laboratory, Japan

APR. 1983 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	240	A	A	A	B	A
2	A	A	A	A	B	A	B	B	B	B	B	B	B	B	B	B	B	270	B	A	B	A	A	A
3	A	A	A	A	B	B	A	B	B	B	B	B	B	B	B	260	B	B	B	250	B	B	B	B
4	A	A	B	B	A	B	B	B	B	B	B	B	B	E B 290	250	B	B	275	260	A	A	A	A	A
5	A	A	A	A	A	B	A	A	A	A	B	B	B	E B 260	250	260	250	260	240	255	335	A	A	A
6	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	300	A	A	A	A	A	A	A
7	A	A	A	A	A	A	A	A	A	B	B	E B 250	B	B	B	B	B	B	B	A	A	A	A	A
8	A	B	B	B	A	230	A	B	B	B	B	B	B	B	B	B	290	B	B	B	A	B	A	A
9	A	A	A	A	B	A	A	A	A	B	B	B	B	B	B	E B 260	B	225	250	A	A	B	A	A
10	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A
11	A	B	B	A	B	B	A	B	B	B	270	255	E B 275	E B 250	E B 250	240	240	210	210	240	245	240	255	A
12	A	A	A	A	A	A	B	A	A	270	B	S	230	B	B	B	E B 260	B	B	260	290	A	A	A
13	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	320	A	A	A	A	A	A	A	A
14	A	A	B	A	A	B	B	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	B
15	B	A	A	A	B	B	B	A	B	B	B	B	B	B	B	B	B	A	B	A	A	A	B	A
16	B	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	240	A	B	B	A	A	A	B
17	A	B	B	B	A	B	B	A	B	B	B	B	B	B	B	B	B	260	260	B	A	A	A	A
18	B	B	A	A	A	B	A	B	B	B	B	B	B	250	250	255	B	B	260	A	B	B	A	A
19	A	A	B	A	A	A	A	A	B	B	B	290	B	B	B	B	230	B	E B 300	A	A	A	A	A
20	A	A	A	A	A	B	A	B	B	A	B	B	B	B	275	290	260	250	275	A	A	A	A	A
21	A	A	A	A	A	B	A	B	B	B	B	B	B	B	B	E B 290	260	235	B	B	B	A	A	A
22	A	A	A	A	B	A	B	B	B	B	A	B	B	B	B	B	B	270	255	B	A	A	A	A
23	A	A	A	A	A	A	B	A	B	B	B	B	B	290	270	250	270	250	260	240	A	B	A	A
24	A	A	B	A	A	A	A	A	B	A	B	B	E B 270	B	B	B	320	A	A	A	A	A	A	A
25	A	A	A	B	B	B	B	B	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A
26	B	A	B	A	B	B	B	A	B	B	B	B	B	B	B	B	250	310	A	A	A	A	A	A
27	A	A	A	A	B	B	A	A	B	B	B	B	B	B	260	240	225	B	B	B	B	B	B	A
28	A	A	A	B	B	A	B	B	B	B	B	B	250	E B 270	E B 260	240	220	270	225	260	B	B	A	A
29	A	A	A	A	B	B	A	A	B	B	B	B	B	B	B	B	265	B	A	A	A	A	A	A
30	A	A	A	A	B	B	A	A	B	B	B	B	B	B	260	270	250	B	B	A	A	A	A	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						1				1	1	3	4	6	9	12	16	12	12	6	3	1	1	
MED						230				270	270	255	U 245	E B 265	260	256	252	260	255	252	290	240	255	
UQ												272	E B 272	E B 290	260	272	268	270	260	260	312			
LQ												252	240	E B 250	250	242	240	242	240	240	268			

APR. 1983 | H'F (KM)

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	B	A	B	B	B	A	O X 41	B	B	B	B	B	B	B	B	B	B	A	A	A
2	B	A	B	A	B	23	31	B	A	56	B	67	70	O X 74	X 70	X 70	63	69	70	41	A	A	A	A
3	A	84	48	A	A	A	A	45	50	50	S	X 68	X 74	X 99	X 106	X 86	75	71	58	45	33	27	27	34
4	A	A	A	A	A	49	A	B	B	B	B	B	B	B	B	70	90	B	A	A	A	A	A	A
5	A	25	51	A	A	A	A	A	A	B	B	70	X 68	80	U R 80	B	69	B	B	A	B	B	A	A
6	X 48	A	A	A	A	A	A	A	B	B	B	B	B	B	B	O X 77	70	70	61	S	B	A	A	A
7	A	A	A	A	A	33	32	A	A	B	B	O X 71	81	102	100	X 90	34	72	37	O R 33	22	A	A	36
8	B	33	31	31	A	A	31	31	34	45	42	X 66	X 71	X 81	X 86	B	65	70	43	42	29	O X 21	A	B
9	A	A	A	A	A	30	33	35	B	A	B	B	80	X 87	X 95	X 74	60	65	X 37	B	S	O X 19	O R 22	O R 20
10	A	34	42	44	42	42	43	35	60	63	72	X 76	X 84	X 96	B	100	85	O X 67	X 45	S 38	O R 24	B	A	A
11	S	A	O X 45	70	60	A	70	A	70	80	86	B	B	B	B	84	80	90	106	89	63	B	A	70
12	65	A	B	B	B	B	B	A	A	B	B	B	B	B	B	B	B	S	B	A	A	A	A	A
13	B	B	A	B	B	A	A	B	A	B	B	B	B	B	B	B	67	B	A	A	56	A	A	A
14	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	B	O X 48	B	O X 35	B	A	34	B	A
15	B	A	B	B	B	B	B	A	B	B	B	B	B	B	X 71	B	B	B	B	A	B	A	A	A
16	A	B	A	A	B	B	A	A	A	B	B	B	X 76	83	X 90	B	B	B	B	S	A	A	A	A
17	B	A	B	A	B	B	A	A	60	66	55	X 66	X 74	X 92	90	105	100	S	A	A	A	B	35	S
18	A	A	A	70	45	S	X 50	54	57	43	B	61	B	73	72	S	65	62	53	32	B	23	29	50
19	A	A	A	A	A	A	45	34	70	43	B	72	90	B	90	73	63	55	57	35	B	B	B	A
20	A	52	35	A	A	42	60	70	B	B	B	79	83	90	X 77	70	55	59	52	34	B	B	B	32
21	52	A	B	A	54	52	60	71	69	73	71	68	68	80	X 77	80	72	72	60	A	A	A	A	A
22	A	34	43	A	42	45	A	60	49	B	B	B	B	R	B	69	70	90	B	A	70	A	53	62
23	A	A	Y	B	B	B	B	A	A	B	B	A	B	B	B	B	B	B	B	A	A	A	B	B
24	A	A	B	B	B	B	B	B	B	B	B	B	R	O X 54	B	B	B	B	O X 38	B	63	67	60	52
25	B	A	A	35	30	A	A	A	A	43	50	59	59	X 53	O X 49	X 44	X 36	O X 34	23	A	A	A	23	29
26	25	27	29	30	32	30	30	30	31	42	60	69	X 76	69	72	62	60	50	48	O R 32	17	17	A	A
27	B	A	B	B	A	A	B	B	B	A	B	B	B	R	X 66	X 66	64	68	59	A	A	A	A	A
28	A	70	43	41	55	48	A	B	A	A	61	X 71	X 79	X 87	75	70	55	O X 51	48	31	A	A	A	A
29	28	26	O X 23	O X 37	A	A	33	42	B	52	62	75	87	91	87	X 82	60	56	O X 39	B	A	A	A	A
30	A	52	57	40	45	45	47	66	64	60	70	78	90	75	82	69	50	59	41	31	22	A	A	A
31	A	A	A	51	60	A	A	A	A	A	B	B	68	75	72	B	46	62	S	S 30	24	S	A	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	5	10	11	10	10	11	13	12	11	13	11	16	18	19	20	19	25	20	20	13	11	7	7	10
MED	48	34	43	40	45	42	45	44	60	52	61	70	76	81	78	73	65	66	48	34	29	23	29	36
UQ	52	52	46	51	55	46	50	63	66	66	70	74	83	X 90	90	83	72	70	58	41	60	30	44	52
LQ	28	27	33	35	42	32	32	34	50	45	52	66	X 70	74	X 72	70	60	58	38	32	23	20	25	32

MAY. 1983 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

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

MAY. 1983 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	35	41	30	35	B	22	B	B	B	36	E B 30	B	B	B	3	B	B	B	B	B	B	32	29	60
2	B	34	B	34	B	18	20	B	44	29	B	E B 30	23	E B 51	E B 27	20	E B 19	E B 14	K 19	24	43	35	60	52
3	42	35	53	45	45	42	42	34	16	16	20	E B 22	23	E B 29	25	33	32	27	30	13	E B 12	E B 11	E B 10	30
4	39	59	41	52	49	41	49	B	B	B	B	B	B	B	B	E B 50	E B 54	B	32	42	40	36	40	57
5	43	71	40	45	30	35	44	35	41	B	B	E B 50	E B 30	E B 30	E B 32	B	E B 51	B	B	34	B	B	20	41
6	59	48	40	43	36	42	41	42	B	B	B	B	B	B	B	E B 57	E B 58	E B 50	E B 56	E B 20	B	25	21	39
7	35	40	51	40	35	25	23	41	31	B	B	E B 50	E B 25	E B 24	E B 22	E B 30	E B 24	E B 23	E B 23	E B 19	14	30	37	37
8	B	35	35	60	28	36	24	15	13	16	E B 32	28	E B 24	E B 23	E B 23	B	E B 30	E B 20	E B 20	E B 11	E B 16	13	38	B
9	34	35	35	41	37	29	33	16	B	32	B	B	E B 34	E B 23	E B 19	17	E B 18	E B 19	E B 19	B	E B 14	E B 11	E B 9	13
10	26	29	31	30	16	31	31	46	17	18	20	18	E B 20	E B 20	B	E B 20	E B 13	E B 58	E B 13	E B 11	E B 11	B	34	29
11	20	28	42	42	34	36	42	36	35	33	25	B	B	B	B	23	E B 30	E B 23	E S 57	36	59	B	48	102
12	35	39	B	B	B	B	B	35	42	B	B	B	B	B	B	B	B	E B 25	B	40	41	25	40	70
13	B	B	62	B	B	42	35	B	42	B	B	B	B	B	B	B	E B 26	B	35	35	37	41	43	37
14	65	34	B	B	41	36	B	B	B	B	B	B	B	B	B	B	E B 23	B	E B 19	B	41	35	B	41
15	B	69	B	B	B	B	B	35	B	B	B	B	B	B	E B 24	B	B	B	B	28	B	40	38	39
16	40	B	33	35	B	B	40	29	36	B	B	B	E B 33	25	E B 23	B	B	B	B	E B 21	18	35	40	41
17	B	46	B	30	B	B	37	51	34	29	23	E B 22	E B 23	E B 20	19	E S 50	12	30	41	41	90	B	61	100
18	60	45	50	41	35	26	31	41	36	31	B	E B 24	B	E B 30	23	E B 33	E B 21	E B 24	16	E B 20	B	17	33	40
19	40	36	42	45	35	42	31	42	30	E B 21	B	E B 23	E B 30	B	E B 20	E B 20	E B 23	E B 21	E B 14	E B 13	B	B	B	29
20	32	36	32	41	33	30	21	35	B	B	B	E B 23	20	18	19	E B 13	E B 13	E B 16	E B 14	E B 20	B	B	B	28
21	59	42	B	45	42	48	40	37	29	16	16	28	18	E B 20	E B 31	E B 20	22	23	40	40	41	58	52	45
22	45	32	34	42	36	34	35	31	31	B	B	B	B	E B 35	B	E B 30	E B 51	28	B	34	70	36	72	70
23	43	42	36	B	B	B	B	40	45	B	B	42	B	B	B	B	B	B	B	37	40	47	B	B
24	68	27	B	B	B	B	B	B	B	B	B	B	E B 31	E B 30	B	B	B	B	E B 20	B	52	43	40	72
25	B	55	64	30	30	59	43	43	38	36	30	27	20	26	26	25	26	20	23	19	17	20	20	19
26	16	25	23	26	25	19	26	15	16	29	31	26	25	21	20	25	E B 23	E B 21	E B 20	E B 16	15	28	42	60
27	B	31	B	B	41	26	B	B	B	41	B	B	B	E B 57	E B 34	E B 35	E B 20	E B 13	E B 13	17	33	41	37	43
28	42	60	42	40	31	42	63	B	37	37	20	30	E B 20	E B 19	E B 19	E B 23	E B 13	E B 23	30	21	37	16	24	25
29	42	16	32	34	45	37	30	16	B	35	34	27	28	20	17	16	30	23	E B 22	B	31	35	29	15
30	17	27	30	30	33	37	35	31	35	25	21	21	17	19	37	21	16	14	10	35	12	36	45	41
31	60	45	70	59	60	62	59	60	41	50	B	B	E B 55	E B 32	E B 23	B	E B 30	E B 13	E B 20	E B 10	17	S	28	31
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	24	29	23	24	22	25	24	23	21	18	12	17	19	21	20	20	25	22	24	26	24	24	27	29
MED	41	36	40	41	35	36	35	35	35	30	22	22	E B 24	E B 24	E B 23	E B 24	E B 23	E B 23	E B 20	21	35	35	38	41
UQ	52	45	46	45	41	42	42	42	41	36	29	28	E B 30	E B 30	E B 26	E B 33	E B 30	E B 25	28	35	41	38	42	57
LQ	34	32	32	34	31	29	30	31	30	21	20	E B 23	19	E B 20	E B 20	18	E B 19	E B 19	E B 18	E B 17	16	22	28	30

MAY. 1983 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	19	23	20	25	B	15	B	B	B	18	30	B	B	B	B	B	B	B	B	B	B	20	11	11
2	B	26	B	19	B	14	11	B	20	15	B	30	18	51	27	18	19	14	15	21	12	14	14	8
3	9	9	8	10	9	18	14	13	10	14	16	22	21	29	23	29	10	8	8	9	12	11	10	9
4	11	10	8	9	14	11	14	B	B	B	B	B	B	B	B	50	54	B	10	13	9	8	10	14
5	18	10	8	10	8	20	13	13	14	B	B	50	30	30	32	B	51	B	B	10	B	B	10	10
6	13	10	10	8	20	19	15	14	B	B	B	B	B	B	B	57	58	50	56	20	B	13	10	9
7	20	33	14	19	13	14	10	15	20	B	B	50	25	24	22	30	24	23	23	19	10	13	10	10
8	B	11	13	9	20	16	12	11	11	13	32	25	24	23	23	B	30	20	20	11	16	11	8	B
9	11	10	9	30	20	15	14	13	B	25	B	B	34	23	19	15	18	19	19	B	14	11	9	8
10	8	9	8	8	8	10	9	12	11	10	11	14	20	20	B	20	13	58	13	11	11	B	19	21
11	11	10	11	12	13	16	11	19	13	8	11	B	B	B	B	14	30	23	E S 57	9	8	B	11	13
12	11	11	B	B	B	B	B	23	25	B	B	B	B	B	B	B	B	25	B	10	10	11	10	9
13	B	B	10	B	B	23	22	B	20	B	B	B	B	B	B	B	26	B	10	8	B	14	8	16
14	10	29	B	B	23	20	B	B	B	B	B	B	B	B	B	B	23	B	19	B	11	8	B	30
15	B	21	B	B	B	B	B	20	B	B	B	B	B	B	24	B	B	B	B	13	B	13	13	13
16	29	B	16	19	B	B	24	15	13	B	B	B	33	16	23	B	B	B	B	21	11	14	12	14
17	B	16	B	9	B	B	13	14	12	11	16	22	23	20	13	E S 50	9	13	11	10	14	B	11	E S 54
18	14	30	10	9	9	23	24	13	11	13	B	24	B	30	13	33	21	24	11	20	B	8	8	9
19	8	11	13	13	17	14	15	13	13	21	B	23	30	B	20	20	23	21	14	13	B	B	B	10
20	8	8	7	9	8	8	10	10	B	B	B	23	16	16	13	13	13	16	14	20	B	B	B	8
21	8	13	B	20	14	8	20	11	9	8	8	13	15	20	31	20	13	8	10	7	8	8	13	9
22	8	8	9	10	9	9	11	9	11	B	B	B	B	35	B	30	51	16	B	10	B	23	11	14
23	20	11	30	B	B	B	B	30	30	B	B	21	B	B	B	B	B	B	B	10	11	11	B	B
24	13	22	B	B	B	B	B	B	B	B	B	B	31	30	B	B	B	B	20	B	B	13	8	8
25	B	23	13	9	11	30	20	10	8	9	8	8	10	13	21	13	13	14	13	10	12	12	11	8
26	8	8	8	8	8	8	10	9	9	9	11	9	9	11	13	15	23	21	20	16	10	9	8	13
27	B	19	B	B	20	14	B	B	B	20	B	B	B	57	34	35	20	13	13	13	10	9	9	10
28	13	8	8	18	22	11	20	B	23	25	13	13	20	19	19	23	13	23	13	10	14	13	11	8
29	8	7	7	13	11	11	9	9	B	11	11	11	12	11	8	8	10	13	22	B	19	15	18	11
30	13	14	8	8	11	13	9	9	7	8	7	16	13	14	13	13	13	11	8	8	7	8	8	20
31	10	9	11	8	11	16	16	15	23	10	B	B	55	32	23	B	30	13	20	10	9	16	15	8
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	13	11	11	13	17	16	15	14	20	21	B	50	31	30	24	32	23	23	19	13	11	13	11	10
UQ	24	22	D B 30	28	B	23	24	D B 30	B	B	B	B	B	B	B	B	52	B	U 48	20	18	18	14	14
LQ	10	10	8	9	11	12	11	12	11	11	14	22	20	20	20	19	13	14	13	10	10	11	10	9

MAY. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

Station SYOWA STATION Lat. 69° 00.4' S, Long. 39° 35.4' E Sweep. 4 MHz to 15 MHz in 20sec 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	B	A	B	B	B	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A
2	B	A	B	A	B	A	A	B	A	290	B	250	240	B	250	235	250	230	255	A	A	A	A	A
3	A	A	A	A	A	A	A	A	A	290	230	240	230	240	210	210	205	205	200	210	205	220	B	A
4	A	A	A	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A
5	A	A	A	A	A	A	A	A	A	B	B	B	240	250	240	B	B	B	B	A	B	B	A	A
6	270	A	A	A	A	A	A	A	B	B	B	B	B	B	B	E B 270	B	B	B	250	B	A	A	A
7	A	A	A	A	A	A	A	A	A	B	B	260	240	230	210	210	B	210	B	230	A	A	A	A
8	B	A	A	A	A	A	A	A	310	290	B	250	240	250	210	B	220	210	240	225	B	270	A	B
9	A	A	A	A	A	A	A	A	B	A	B	B	240	220	205	200	200	210	230	B	B	B	260	A
10	A	A	A	A	A	A	A	A	A	250	210	205	210	230	B	200	205	B	230	220	260	B	A	A
11	A	A	A	A	A	A	A	A	A	A	280	B	B	B	B	260	B	300	S	A	A	B	A	A
12	A	A	B	B	B	B	B	A	A	B	B	B	B	B	B	B	B	E B 280	B	A	A	A	A	A
13	B	B	A	B	B	A	A	B	A	B	B	B	B	B	B	B	315	B	A	A	A	A	A	A
14	A	A	B	B	A	A	B	B	B	B	B	B	B	B	B	B	255	B	300	B	A	A	B	A
15	B	A	B	B	B	B	B	A	B	B	B	B	B	B	275	B	B	B	B	A	B	A	A	A
16	A	B	A	A	B	B	A	A	A	B	B	B	230	235	240	B	B	B	B	270	A	A	A	A
17	B	A	B	A	B	B	A	A	A	A	300	260	270	230	250	B	230	A	A	A	A	B	A	S
18	A	A	A	A	A	A	A	A	A	A	B	295	B	230	205	255	245	280	210	245	B	A	A	A
19	A	A	A	A	A	A	A	A	300	300	B	250	225	B	215	200	250	260	260	250	B	B	B	A
20	A	A	A	A	A	A	A	A	B	B	B	210	200	200	200	210	200	210	220	240	B	B	B	A
21	A	A	B	A	A	A	A	S	A	300	270	260	255	210	230	230	250	245	315	A	A	A	A	A
22	A	A	A	A	A	A	A	A	A	B	B	E	B	B	B	B	B	250	B	A	A	A	A	A
23	A	A	Y	B	B	B	B	A	A	B	B	A	B	B	B	B	B	B	B	A	A	A	B	B
24	A	A	B	B	B	B	B	B	B	B	B	B	280	260	B	B	B	B	270	B	A	A	A	A
25	B	A	A	A	A	A	A	A	A	A	280	260	220	240	275	260	270	270	A	A	A	A	A	A
26	A	A	A	A	A	A	A	A	325	260	240	230	205	210	215	200	240	205	230	250	A	A	A	A
27	B	A	B	B	A	A	B	B	B	A	B	B	B	E B 250	235	230	240	225	235	A	A	A	A	A
28	A	A	A	A	A	A	A	B	A	A	230	240	205	215	200	240	A	240	220	240	A	A	A	A
29	A	290	220	A	A	A	A	A	B	320	280	225	225	205	200	215	200	210	250	B	A	A	A	A
30	A	A	A	A	A	A	A	310	275	245	230	220	240	205	215	200	230	215	215	250	300	A	A	A
31	A	A	A	A	A	A	A	A	A	A	B	B	B	230	240	B	260	230	250	250	A	S	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1	1	1					1	4	9	10	15	18	19	20	17	18	19	17	13	3	2	1	
MED	270	290	220					310	305	290	255	250	235	230	215	212	240	228	235	250	260	245	260	
UQ									318	300	280	260	240	239	240	238	250	252	255	250	280			
LQ									288	260	230	228	220	212	208	200	205	210	220	240	232			

MAY. 1983 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	A	A	A	B	B	54	56	68	R	70	74	64	54	O R 38	B	B	B	A	41
2	A	A	A	A	35	A	35	39	35	X 34	X 46	O R 65	X 74	90	73	68	53	O X 48	35	B	B	A	19	21
3	59	A	45	A	A	45	A	A	52	X 43	51	62	X 74	X 70	X 79	72	46	X 36	28	21	B	B	B	A
4	29	36	30	A	43	A	42	53	46	34	45	B	B	71	70	57	46	29	26	O R 23	O X 23	B	B	14
5	17	22	31	31	29	38	48	59	67	40	60	70	X 72	X 70	30	71	72	62	38	O X 37	B	B	B	14
6	A	45	A	A	O R 33	37	A	45	49	54	53	63	O R 76	72	67	X 53	45	X 40	X 45	27	O X 23	B	B	A
7	A	A	27	A	A	A	A	40	39	B	40	58	70	70	63	55	49	51	33	23	O R 24	22	A	34
8	30	A	A	A	A	28	35	41	34	35	45	64	78	76	75	69	70	69	X 53	A	A	A	A	A
9	A	A	A	A	42	A	A	48	45	37	B	B	B	B	B	B	O X 40	B	B	B	B	A	A	70
10	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	23	60	A	A	A	A	A
11	A	44	48	56	30	B	A	B	B	B	B	B	B	B	53	B	O X 46	O X 36	B	B	B	B	A	A
12	A	A	41	A	36	B	B	A	B	A	B	58	63	65	70	68	O X 53	40	28	O X 26	23	20	28	43
13	70	70	70	69	60	A	B	B	B	A	A	A	B	B	B	B	B	B	B	A	A	A	A	A
14	A	B	A	A	A	A	A	B	B	B	O R 36	S	B	B	B	B	B	O R 34	O R 30	O R 35	B	B	A	A
15	43	45	A	A	A	B	B	A	A	B	B	B	O X 49	O X 74	B	B	B	B	B	A	A	43	A	A
16	B	S	40	A	A	A	A	A	A	A	S	50	X 58	X 60	X 74	O X 51	B	41	35	25	A	B	B	A
17	A	B	45	A	A	A	A	A	53	41	B	B	60	70	X 60	60	58	60	S	B	A	57	57	A
18	A	A	A	A	A	33	B	A	A	A	B	B	B	B	105	62	50	B	B	A	A	A	A	A
19	42	A	A	A	A	B	A	B	A	A	B	B	O X 47	B	B	B	B	B	27	B	A	A	A	A
20	A	48	A	37	A	A	A	B	B	O X 35	B	B	B	B	B	35	72	60	Y	B	35	A	A	A
21	A	A	A	B	A	B	A	B	B	A	B	B	B	X 66	B	67	B	35	O R 32	B	B	A	A	34
22	A	A	B	A	A	A	O X 39	34	O X 29	B	A	X 59	X 60	B	B	B	68	60	B	A	B	A	40	A
23	A	A	A	A	B	A	A	A	B	A	B	B	B	B	B	B	67	60	36	A	A	A	A	A
24	A	A	A	A	35	B	A	A	B	B	B	B	B	X 67	68	B	B	B	B	25	A	A	A	20
25	A	25	A	48	53	42	45	59	54	33	42	X 58	63	67	62	59	48	56	32	17	A	A	A	A
26	A	60	A	A	A	A	42	45	39	B	60	B	61	69	62	70	46	40	34	32	B	A	A	25
27	A	A	60	A	34	A	A	40	37	X 44	B	60	71	63	63	B	30	X 39	O R 25	O R 24	O X 19	A	31	A
28	A	A	57	A	A	A	O R 30	31	31	30	X 40	X 55	O X 56	X 60	X 61	X 61	52	41	46	B	B	24	A	A
29	A	A	56	A	A	A	A	A	O X 36	32	B	B	B	69	B	B	B	47	B	B	B	A	A	45
30	38	38	56	A	A	A	35	43	40	33	X 38	X 46	X 64	X 68	64	X 58	52	43	30	B	O R 23	A	B	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	10	13	5	11	6	9	13	16	14	13	14	18	19	19	18	21	24	20	12	7	5	5	11
MED	40	44	45	48	35	38	39	43	40	35	45	58	64	69	63	64	52	42	34	25	O 23	24	31	34
UQ	51	48	56	56	42	42	42	48	50	41	53	63	72	70	74	70	64	53	38	30	O 24	43	40	42
LQ	30	36	40	37	34	33	35	40	36	33	40	56	X 60	66	62	58	46	38	29	23	O 23	22	28	20

JUN. 1983 | FXI (0.1 MHZ)

IONOSPHERIC DATA

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

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

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	A	A	A	B	B	F 40	48	F	R 68	F 60	F 62	J F 58	F 40	F 31	B	B	B	A	F
2	A	A	A	A	F	A	F	F	F 27	23	40	F 56	68	F	F 60	F 53	F	42	F	B	B	A	F	F
3	F	A	F	A	A	F	A	A	F	37	J F 45	F 52	68	64	72	J F 66	F 37	30	F 20	F	B	B	B	A
4	F	F	F	A	F	A	F	F	F	F	37	B	B	61	63	49	F 39	F	18	F 16	17	B	B	F
5	F	F	F	F	F	F	F	F	F	F	F 37	F	66	64	69	F	F	F 42	F 31	31	B	B	B	F
6	A	F	A	A	F 25	F	A	F	F	F	F 45	J F 57	F 69	F	F	47	F 35	34	37	F	16	B	B	A
7	A	A	F	A	A	A	A	F	F	B	F	F 48	F 58	F 60	F 53	F 46	F 40	J F 45	F 25	F	F 15	F	A	F
8	F	A	A	A	A	F	F	F	F	F	F	F	F	F 65	F 65	F 60	J F 64	F	46	A	A	A	A	A
9	A	A	A	A	F	A	A	F	J F 39	F	B	B	3	B	3	B	34	B	B	B	B	A	A	F
10	B	A	A	B	B	B	B	B	B	3	B	B	B	B	3	B	B	F	F	A	A	A	A	A
11	A	F	F	F	F	B	A	B	B	B	B	B	B	B	F	B	40	30	B	B	B	B	A	A
12	A	A	F	A	F	B	B	A	B	A	B	42	F	F	61	F 58	46	F	F	20	F	F	F	F
13	F	F	F	F	F	A	B	B	B	A	A	A	B	B	B	B	B	B	B	A	A	A	A	A
14	A	B	A	A	A	A	A	B	B	3	F 26	S	B	B	B	B	B	F 25	F 22	F 17	B	B	A	A
15	F	F	A	A	A	B	B	A	A	3	B	B	43	68	B	B	B	B	B	A	A	F	A	A
16	B	S 35	F	A	A	A	A	A	A	A	S 20	F 40	52	54	63	45	B	F 29	F 25	F	A	B	B	A
17	A	B	F	A	A	A	A	A	F	F	B	B	F	F	54	F	F	51	S 35	B	A	F	F	A
18	A	A	A	A	A	F	B	A	A	A	B	B	B	B	F 43	F	F	B	B	A	A	A	A	A
19	F	A	A	A	A	B	A	B	A	A	B	B	41	B	B	B	B	B	F	B	A	A	A	A
20	A	F	A	F	A	A	A	B	B	29	B	B	B	B	B	F	F	F	Y	B	F	A	A	A
21	A	A	A	B	A	B	A	B	B	A	B	B	B	60	B	F	B	F	F 23	B	B	A	A	F
22	A	A	B	A	A	A	33	J F 28	23	B	A	J R 53	54	B	B	B	F	F	B	A	B	A	F	A
23	A	A	A	A	B	A	A	A	B	A	B	B	B	B	B	B	F	F	F	A	A	A	A	A
24	A	A	A	A	F	B	A	A	B	B	B	B	B	61	F	B	B	B	B	F	A	A	A	F
25	A	F	A	F	F	F	F	F	F	F 23	F 35	52	J F 57	J F 61	F	F	F	F	F	F	A	A	A	A
26	A	F	A	A	A	A	F	J F 39	F 30	B	F	B	52	60	F	F	F	F 32	F	F 23	B	A	A	F
27	A	A	F	A	F	A	A	F	J F 31	38	B	F	F 60	F	F	B	F	33	F 17	F 16	13	A	F	A
28	A	A	F	A	A	A	F 22	F 20	F 20	F 21	34	49	50	54	55	55	F 38	32	F	B	B	F	A	A
29	A	A	F	A	A	A	A	A	30	F 25	B	B	B	F	B	B	B	F 40	B	B	B	A	A	F
30	F	29	F	A	A	A	F 24	F	F	F	32	40	58	62	43	52	J F 66	F	F	B	F 14	A	B	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		2			1		3	3	7	7	11	11	14	14	13	11	11	14	12	6	5			
MED		32			F 25		F 24	J F 28	F 30	28	F 37	49	58	61	60	F 53	F 40	34	F 25	F 18	15			
UQ							28	J F 34	F 30	33	F 40	52	66	64	65	F 59	F 52	F 42	33	23	16			
LQ							F 23	F 24	25	F 24	33	45	52	60	F 54	48	F 38	30	F 21	F 16	F 14			

JUN. 1983 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	36	43	45	51	49	48	48	41	B	B	26	36	E B 31	E B 52	E B 21	E B 20	E B 18	E B 15	E B 20	B	B	B	36	35
2	43	48	45	42	59	42	35	28	18	14	16	20	E B 33	E B 40	E B 21	34	E B 20	E B 25	E B 22	B	B	30	17	31
3	30	45	42	49	59	59	48	50	36	22	18	15	25	32	E B 38	26	E B 20	E B 20	27	E B 11	B	B	B	26
4	32	31	28	36	89	45	32	34	17	15	28	B	B	21	26	16	16	16	E B 13	E B 13	E B 13	B	26	26
5	19	21	26	24	18	16	13	14	13	17	20	20	16	23	26	E B 31	E B 19	E B 20	E B 16	E B 19	B	B	B	16
6	20	37	45	42	35	33	48	35	27	18	21	26	E B 53	E B 20	E B 18	E B 17	E B 15	15	16	E B 11	E B 13	B	B	25
7	35	44	26	39	48	58	46	31	30	B	35	35	22	25	32	37	19	16	25	E B 11	E B 10	14	35	27
8	30	31	31	34	30	22	24	15	28	15	14	25	25	30	27	E B 19	16	E B 21	17	40	39	41	42	42
9	45	44	43	43	70	41	41	38	28	32	B	B	B	B	B	B	E B 15	B	B	B	B	24	33	35
10	B	35	38	B	B	B	B	B	B	B	B	B	B	B	B	B	B	24	35	38	45	44	44	40
11	41	31	30	30	35	B	51	B	B	B	B	B	B	B	E B 23	B	E B 23	E B 20	B	B	B	B	33	36
12	36	36	30	35	35	B	B	73	B	43	B	E B 20	20	E B 33	E B 16	13	E B 28	E B 20	20	E B 12	31	30	29	35
13	43	31	36	35	34	52	B	B	B	58	52	65	B	B	B	B	B	B	B	42	43	73	100	70
14	60	B	41	43	56	80	41	B	B	B	23	30	B	B	B	B	B	E B 15	E B 12	E B 12	B	B	19	33
15	60	60	40	38	80	B	B	43	40	B	B	B	E B 30	E B 58	B	B	B	B	B	35	35	70	70	35
16	B	70	34	34	42	42	40	40	34	34	35	30	20	16	16	E B 21	B	E B 20	21	31	32	B	B	35
17	38	B	58	45	48	50	51	50	46	40	B	B	E B 20	E B 23	E B 23	20	35	35	E B 27	B	23	50	70	43
18	43	80	50	42	49	25	B	41	67	32	B	B	B	B	E B 23	E B 33	E B 23	B	B	41	52	42	41	45
19	45	70	32	65	46	B	39	B	31	28	B	B	E B 32	B	B	B	B	B	E B 22	B	35	42	48	42
20	70	50	57	68	35	34	51	B	B	28	B	B	B	B	B	E B 50	E B 57	E B 14	31	B	19	21	34	35
21	36	54	70	B	36	B	36	B	B	60	B	B	B	E B 30	B	E B 59	B	E B 24	E B 15	B	B	34	23	32
22	39	43	B	43	59	47	33	21	35	B	30	24	23	B	B	B	E B 27	26	B	40	B	85	64	62
23	59	45	34	41	B	43	40	41	B	30	B	B	B	B	B	B	E B 40	E B 50	E B 16	30	57	44	70	70
24	68	45	70	49	59	B	43	63	B	B	B	B	B	E B 23	E B 55	B	B	B	B	13	35	68	28	17
25	28	32	35	34	30	17	19	25	36	E B 11	23	21	49	52	53	40	60	63	26	19	31	34	28	40
26	40	70	68	45	58	45	29	20	29	B	34	B	E B 23	E B 26	E B 40	E B 23	E B 13	E B 20	E B 19	31	B	30	32	30
27	38	42	32	92	42	48	46	32	35	28	B	35	E B 23	E B 56	E B 53	B	E B 25	E B 13	14	E B 9	E B 11	32	35	40
28	39	32	64	48	48	35	42	30	14	16	14	25	16	18	16	E B 18	E B 18	E B 16	14	B	B	33	35	37
29	48	66	70	52	51	50	44	39	48	31	B	B	B	E B 23	B	B	B	E B 23	B	B	B	19	23	31
30	47	38	43	108	52	38	33	25	27	17	27	30	19	16	26	22	11	29	30	B	20	28	B	21
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	28	28	29	28	28	23	25	23	20	21	16	16	18	20	19	18	21	24	22	19	18	22	25	30
MED	40	44	41	42	48	43	41	35	30	28	24	26	20	E B 26	E B 26	E B 22	E B 20	E B 20	17	19	32	34	35	35
UQ	46	52	50	49	58	49	46	41	36	32	32	32	E B 31	E B 36	30	E B 34	E B 27	E B 24	26	36	39	44	44	40
LQ	36	34	32	36	35	34	33	26	27	17	19	20	18	19	E B 21	E B 19	E B 16	E B 16	E B 16	E B 12	19	30	28	30

JUN. 1983 | FES (0.1 MHZ)

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	8	11	13	13	12	11	13	24	B	B	20	13	31	52	21	20	18	15	20	B	B	B	7	7
2	11	11	9	11	13	11	10	9	11	9	9	10	33	40	21	14	20	25	22	B	B	14	9	8
3	13	11	10	8	19	16	14	13	8	9	10	11	11	18	38	10	20	20	16	11	B	B	B	11
4	8	8	8	9	21	13	9	13	8	9	8	B	B	15	11	14	14	15	13	13	13	B	10	8
5	8	7	7	8	8	9	8	7	8	11	13	13	11	11	14	31	19	20	16	19	B	B	B	9
6	13	7	8	10	11	10	9	9	9	8	10	13	53	20	18	17	15	8	11	11	13	B	B	8
7	7	16	13	16	13	18	15	13	10	B	15	30	13	13	9	10	11	13	14	11	10	8	7	7
8	7	8	8	18	10	9	7	8	7	9	10	19	13	8	8	19	10	21	11	21	8	8	7	7
9	7	9	7	7	9	25	20	11	10	10	B	B	B	B	B	B	15	B	B	B	B	12	13	11
10	B	20	19	B	B	B	B	B	B	B	B	B	B	B	B	B	B	19	19	11	10	10	11	7
11	16	10	7	8	8	B	17	B	B	B	B	B	B	B	23	B	23	20	B	B	B	B	8	7
12	9	11	18	20	13	B	B	22	B	20	B	20	18	33	10	9	28	20	13	12	10	7	7	7
13	7	10	9	8	8	9	B	B	B	16	7	13	B	B	B	B	B	B	B	9	14	13	10	13
14	13	B	14	8	14	11	16	B	B	B	16	21	B	B	B	B	B	15	12	12	B	B	11	7
15	13	7	23	23	13	B	B	21	21	B	B	B	30	58	B	B	B	B	B	21	11	10	24	9
16	B	9	13	23	13	23	15	11	18	26	18	16	13	13	15	21	B	20	11	11	9	B	B	11
17	10	B	13	14	12	18	12	11	9	23	B	B	20	23	23	15	9	11	27	B	20	14	10	10
18	10	15	27	15	20	13	B	20	21	8	B	B	B	B	23	33	23	B	B	9	8	9	13	9
19	8	20	21	23	18	B	15	B	23	7	B	B	32	B	B	B	B	B	22	B	8	9	8	8
20	13	8	9	9	9	19	30	B	B	15	B	B	B	B	B	50	57	14	25	B	13	10	8	8
21	8	11	20	B	22	B	9	B	B	29	B	B	B	30	B	59	B	24	15	B	B	7	19	21
22	9	10	B	21	16	13	10	9	7	B	21	22	21	B	B	B	27	23	B	9	B	10	10	11
23	16	13	19	23	B	18	14	23	B	8	B	B	B	B	B	B	40	50	16	7	8	11	16	7
24	13	10	10	11	9	B	21	21	B	B	B	B	B	23	55	B	B	B	B	10	13	20	9	9
25	7	7	7	8	8	8	8	9	10	11	13	14	8	8	12	9	7	8	10	8	8	8	8	7
26	9	16	10	21	13	11	9	8	8	B	10	B	23	26	40	23	13	20	19	10	B	12	10	7
27	8	8	14	15	9	15	11	8	8	7	B	21	23	56	53	B	25	13	12	9	11	7	7	8
28	8	13	9	18	19	11	13	10	10	10	9	10	10	11	10	18	18	16	10	B	B	8	7	8
29	10	13	7	13	9	12	21	13	14	14	B	B	B	23	B	B	B	23	B	B	B	10	15	8
30	7	7	8	8	10	8	9	7	7	8	8	9	11	13	14	10	9	12	23	B	11	9	B	9
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
MED	9	10	10	14	13	14	14	13	12	14	20	26	32	32	30	32	23	20	19	12	13	10	10	8
UQ	13	13	18	21	18	25	21	24	B	B	B	B	B	B	B	B	B	25	B	B	B	B	16	9
LQ	8	8	8	8	9	11	9	9	8	9	10	13	13	15	14	15	15	15	13	10	10	9	8	7

JUN. 1983 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

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

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

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	A	A	A	B	B	290	270	260	E B 240	240	210	235	210	E B 250	B	B	B	A	A
2	A	A	A	A	A	A	A	325	340	295	250	225	250	230	200	200	240	260	260	B	B	A	A	A
3	A	A	A	A	A	A	A	A	A	280	245	230	240	205	235	205	205	250	225	260	B	B	B	A
4	A	A	A	A	A	A	A	A	260	300	245	B	B	210	205	210	200	250	270	E B 300	240	B	B	A
5	A	A	A	A	A	A	A	A	300	300	260	220	210	225	200	220	240	240	270	250	B	B	B	A
6	A	A	A	A	A	A	A	A	A	255	240	220	B	225	200	225	205	230	210	220	310	B	B	A
7	A	A	A	A	A	A	A	A	A	B	A	265	230	230	210	200	200	220	220	220	220	A	A	A
8	A	A	A	A	A	A	A	320	270	280	280	240	225	200	220	220	205	250	225	A	A	A	A	A
9	A	A	A	A	A	A	A	A	300	A	B	B	B	B	B	B	210	B	B	B	B	A	A	A
10	B	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	A	A	A
11	A	A	A	A	A	B	A	B	B	B	B	B	B	B	210	B	240	240	B	B	B	B	A	A
12	A	A	A	A	A	B	B	A	B	A	B	270	230	240	250	200	250	230	290	285	240	A	A	A
13	A	A	A	A	A	A	B	B	B	A	A	A	B	B	B	B	B	B	B	A	A	A	A	A
14	A	B	A	A	A	A	A	B	B	B	300	S	B	B	B	B	B	E B 255	255	290	B	B	A	A
15	A	A	A	A	A	B	B	A	A	B	B	B	E B 300	B	B	B	B	B	B	A	A	A	A	A
16	B	250	A	A	A	A	A	A	A	A	325	250	220	205	210	200	B	300	250	A	A	B	B	A
17	A	B	A	A	A	A	A	A	A	A	B	B	245	220	220	200	275	280	250	B	A	A	A	A
18	A	A	A	A	A	A	B	A	A	A	B	B	B	B	305	290	B	B	B	A	A	A	A	A
19	A	A	A	A	A	B	A	B	A	A	B	B	B	B	B	B	B	B	B	B	A	A	A	A
20	A	A	A	A	A	A	A	B	B	A	B	B	B	B	B	B	B	275	Y	B	Y	A	A	A
21	A	A	A	B	A	B	A	B	B	A	B	B	B	235	B	B	B	285	260	B	B	A	A	A
22	A	A	B	A	A	A	A	A	A	B	A	250	260	B	B	B	240	A	B	A	B	A	A	A
23	A	A	A	A	B	A	A	A	B	A	B	B	B	B	B	B	B	B	310	A	A	A	A	A
24	A	A	A	A	A	B	A	A	B	B	B	B	B	240	B	B	B	B	B	275	A	A	A	A
25	A	A	A	A	A	A	320	300	E B 300	270	255	210	205	220	220	200	250	210	210	A	A	A	A	A
26	A	A	A	A	A	A	A	320	370	B	A	B	245	225	240	225	200	280	245	300	B	A	A	A
27	A	A	A	A	A	A	A	A	320	A	B	A	245	B	B	B	B	240	260	245	300	A	A	A
28	A	A	A	A	A	A	A	A	280	305	270	280	200	200	230	230	235	250	245	B	B	A	A	A
29	A	A	A	A	A	A	A	A	A	A	B	B	B	250	B	B	B	250	B	B	B	A	A	A
30	A	A	A	A	A	A	A	320	300	250	260	235	240	205	205	215	210	250	E B 250	B	A	A	B	A
31																								

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		1					1	5	10	9	12	13	16	18	17	16	17	21	19	10	5			
MED		250					320	320	300	280	260	240	238	224	220	210	235	250	250	262	240			
UQ								320	320	300	285	265	246	232	235	222	240	260	260	288	300			
LQ								320	275	270	248	225	222	205	205	200	205	240	228	245	240			

IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)
ION. ANT. — 40 January 1983—June 1983 (Not for Sale)

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