ISSN 0389–8237

ION. ANT.—39

IONOSPHERIC DATA AT SYOWA STATION

(ANTARCTICA)

July 1982 — December 1982

CONTENTS

Page

Introduction 1

Ionograms

July 4
August 20
September 36
October 51
November 67
December 82

Tables 98

RADIO RESEARCH LABORATORY

MINISTRY OF POSTS AND TELECOMMUNICATIONS

TOKYO, JAPAN

INTRODUCTION

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

LOCATION OF SYOWA STATION

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

SPECIFICATIONS OF THE IONOSONDE USED AT SYOWA STATION

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

DESCRIPTION

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

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

c. Characteristics of Ionosphere

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

Symbols

(i) Descriptive Letters.

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

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

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

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

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

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

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

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

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

K Presence of particle E layer.

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

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

N Conditions are such that the measurement cannot be interpreted.

O Measurement refers to the ordinary component.

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

Q Range spread present.

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

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

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

V Forked trace which may influence the measurement.

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

X Measurement refers to the extraordinary component.

Y Lacuna phenomena, severe layer tilt.

Z Third magneto-electronic component present.

(ii) Qualifying Letters

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

D Greater than.

E — Less than.

J — Ordinary component characteristic deduced from the extraordinary component.

M — Mode interpretation uncertain.

O — Extraordinary component characterisitic deduced from the ordinary component.

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

U — Uncertain or doubtful numerical value.

Z — Measurement deduced from the third magneto-electronic component.

Definitions of the CNT, MED, UQ and LQ

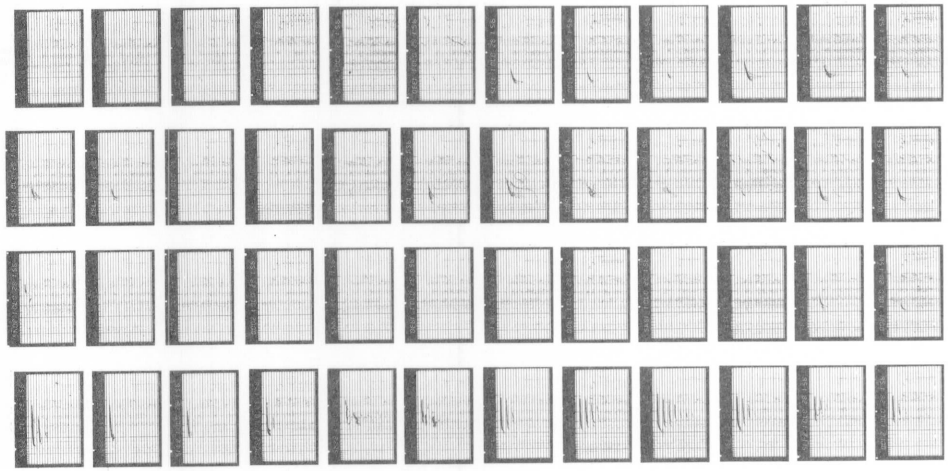
Median count (CNT) is the number of values from which a median has been computed. In addition to numerical values, the count may include certain descriptive letters.

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

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

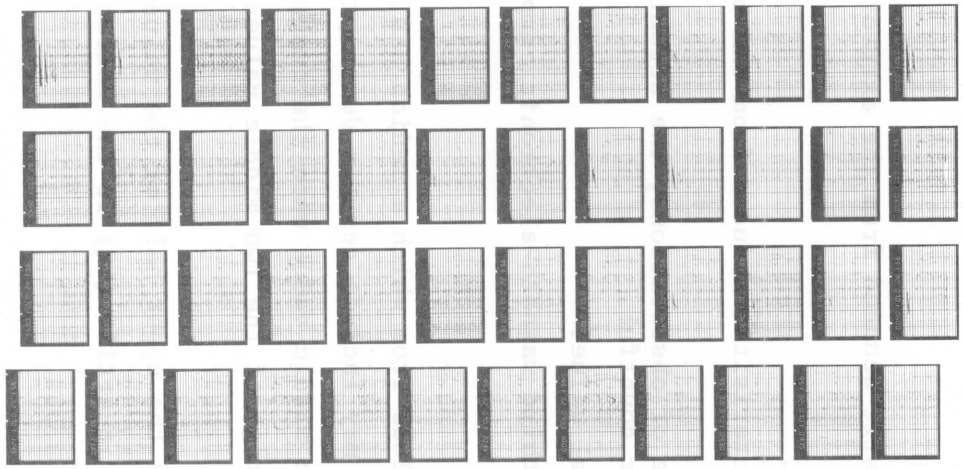
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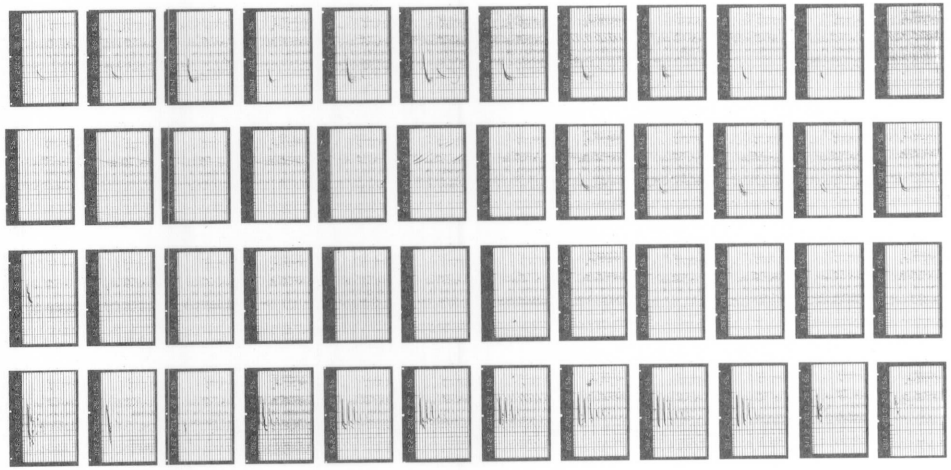
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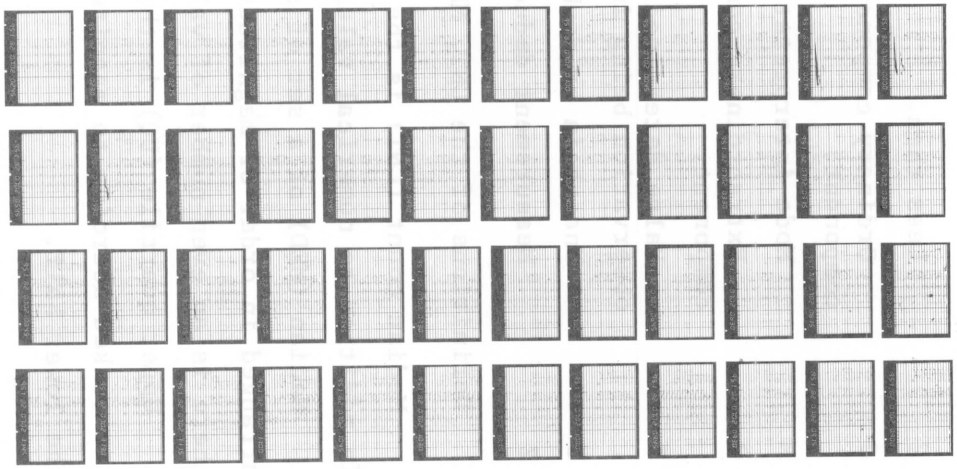
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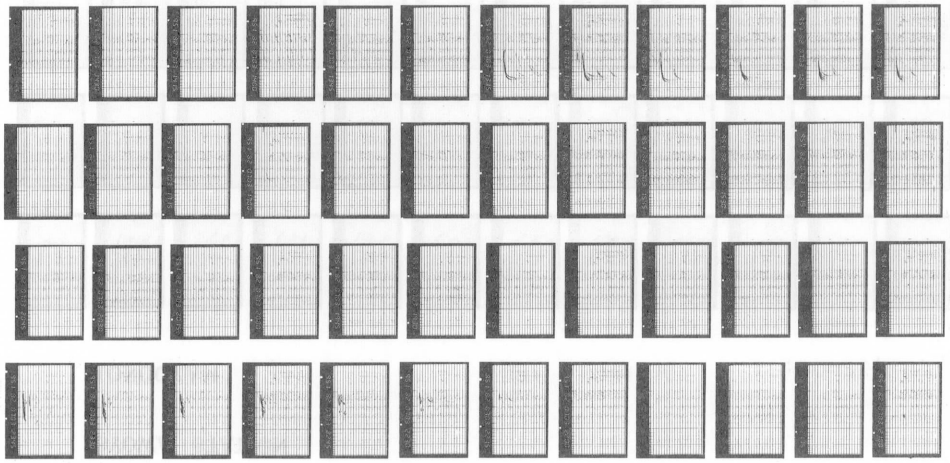
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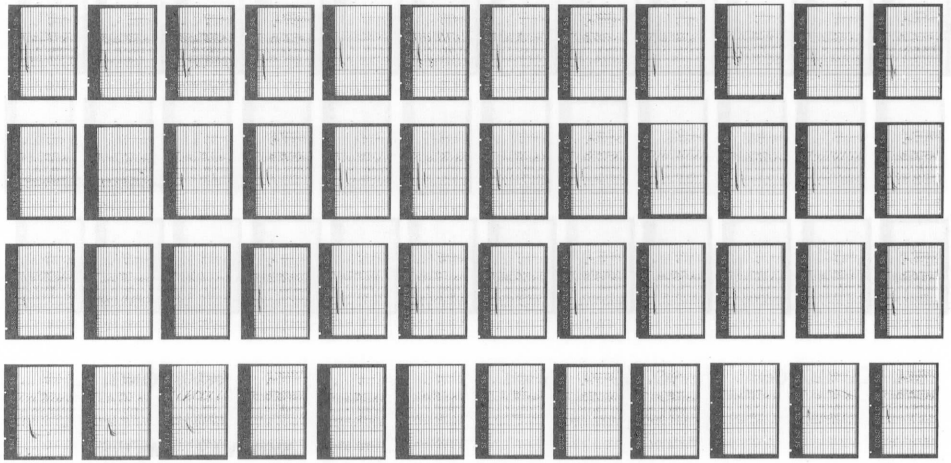
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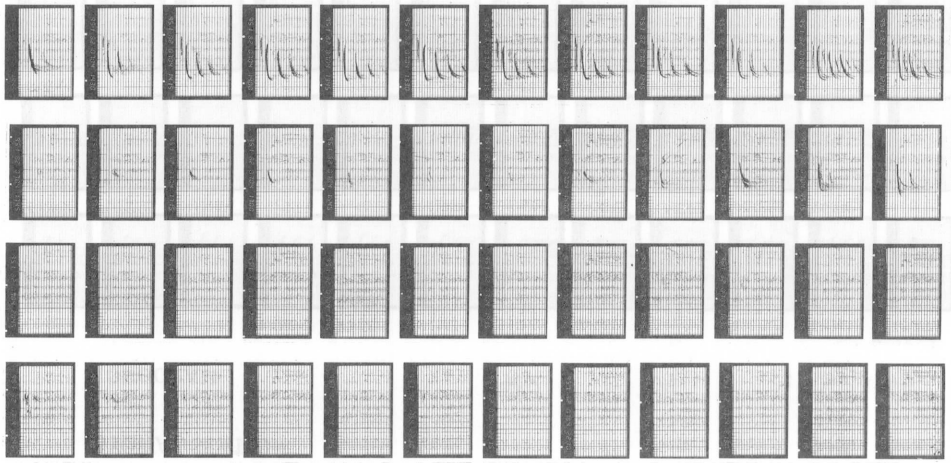
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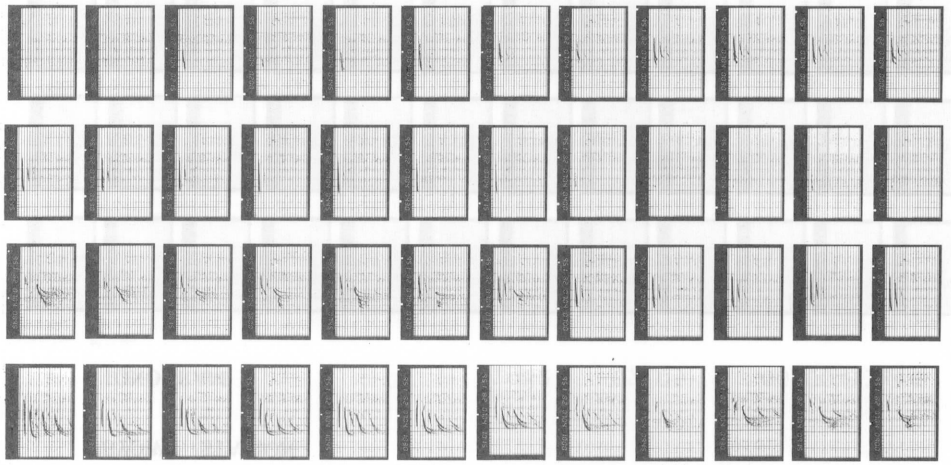
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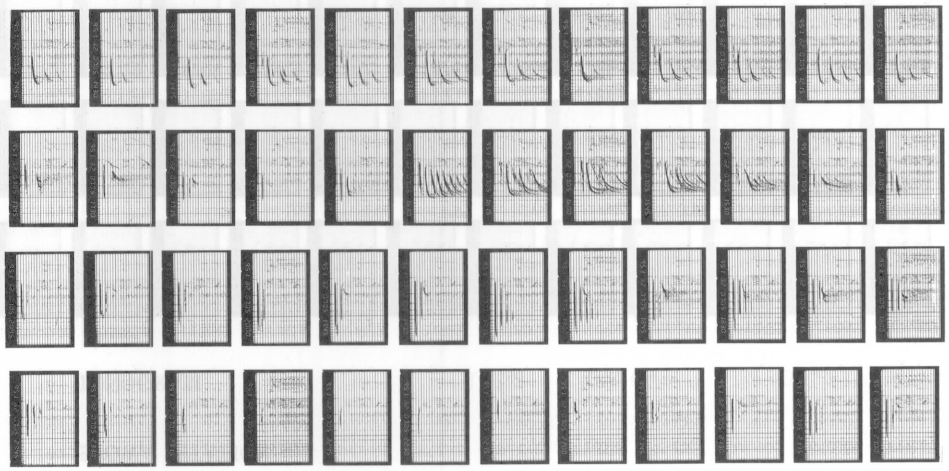
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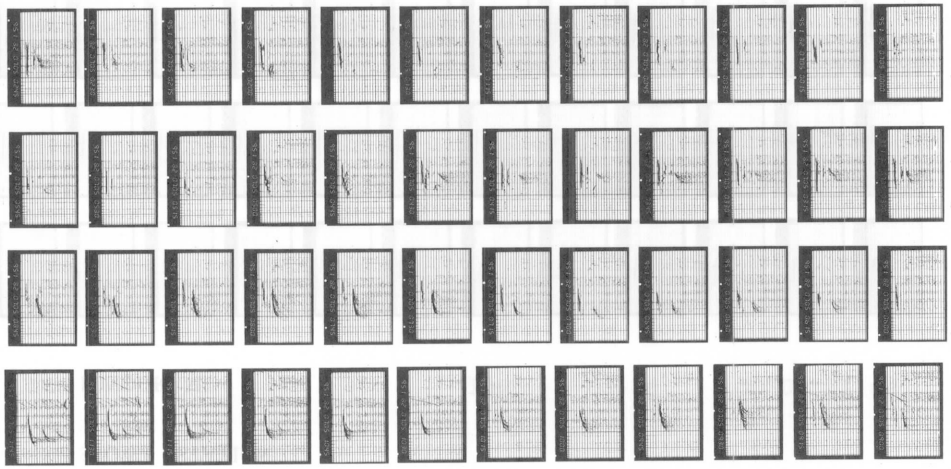
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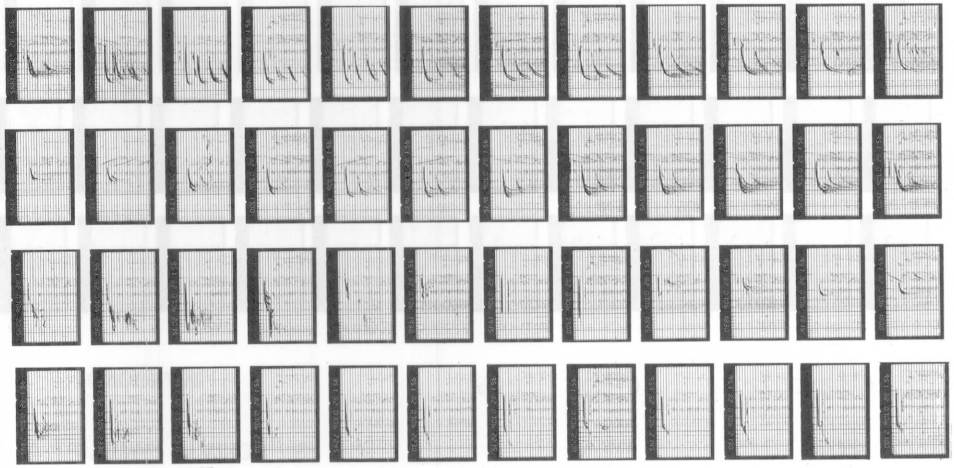
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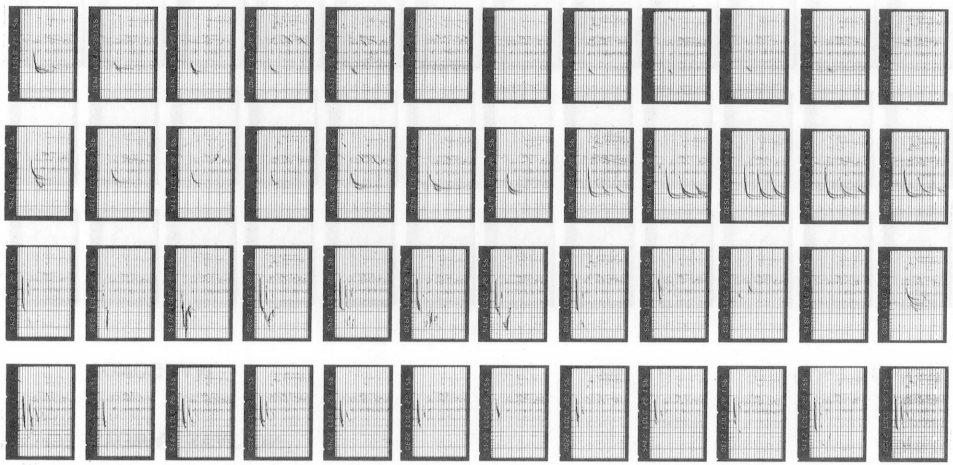
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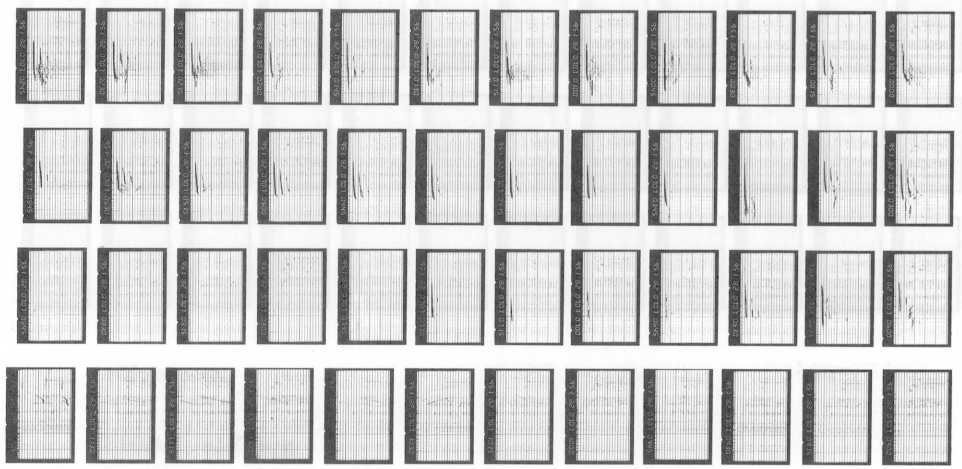
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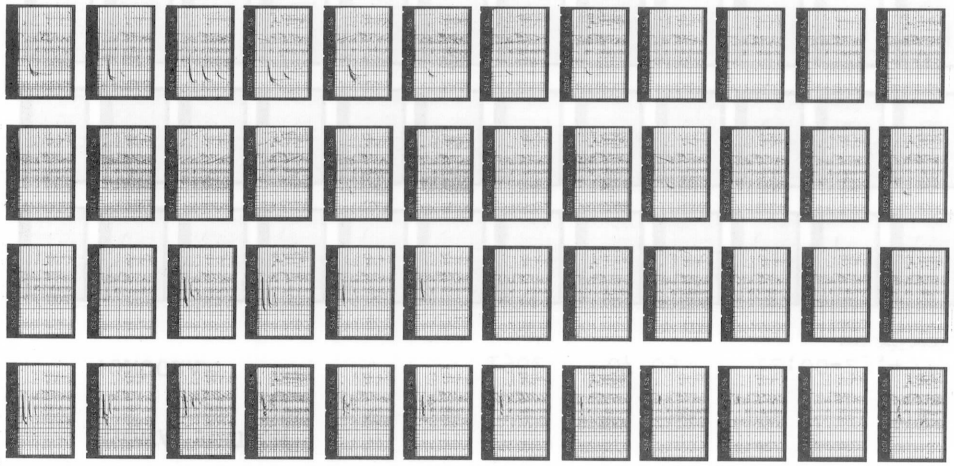
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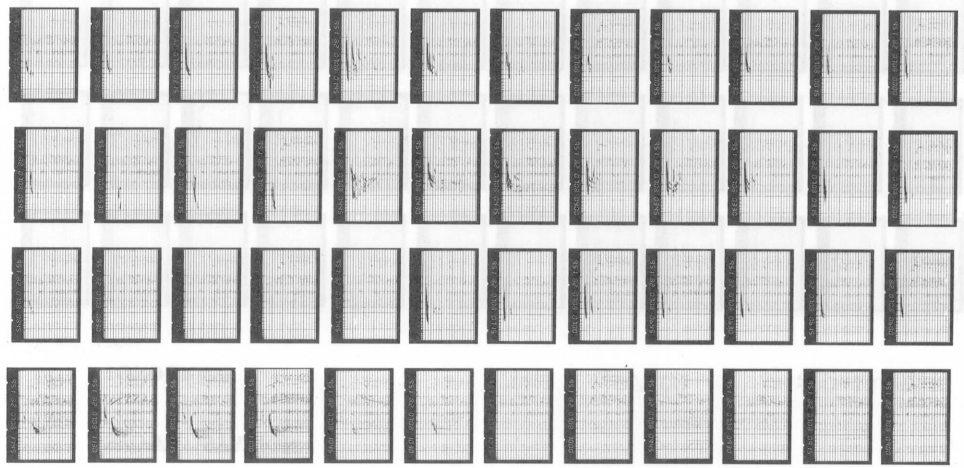
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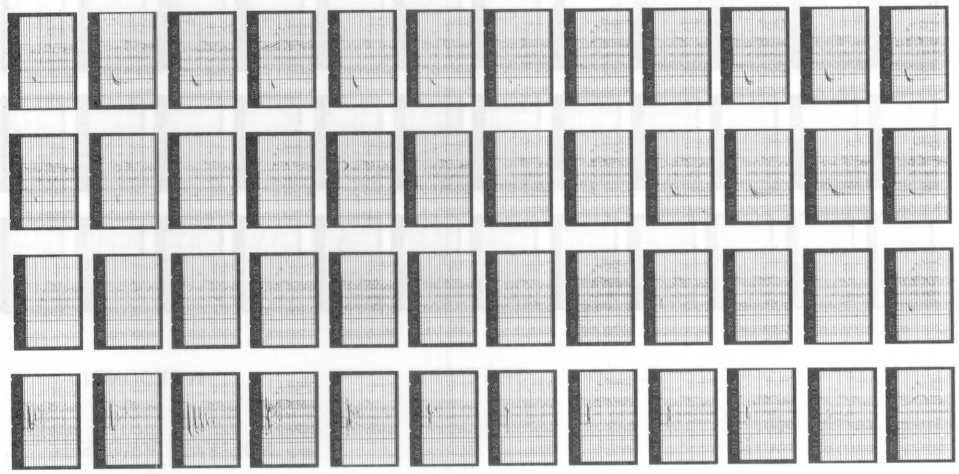
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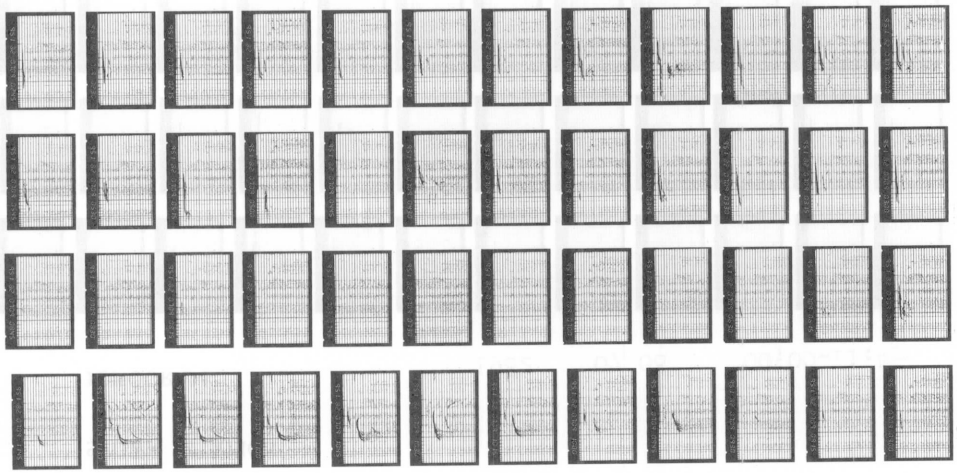
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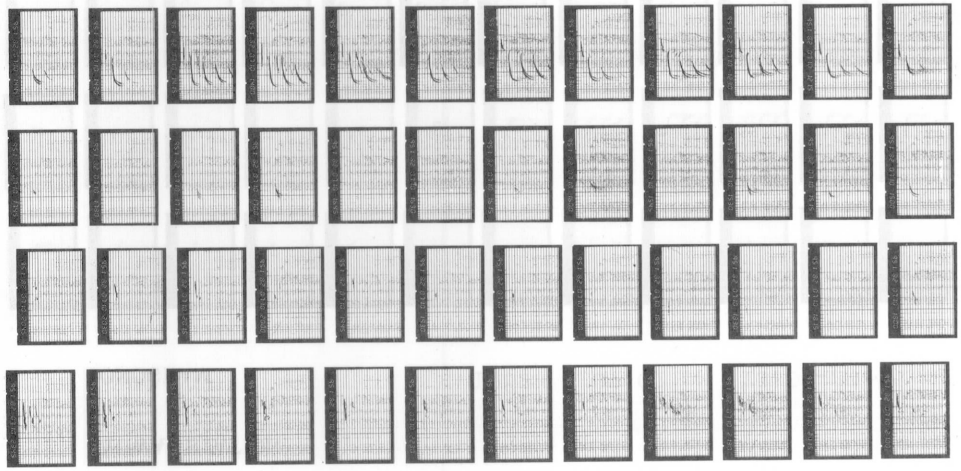
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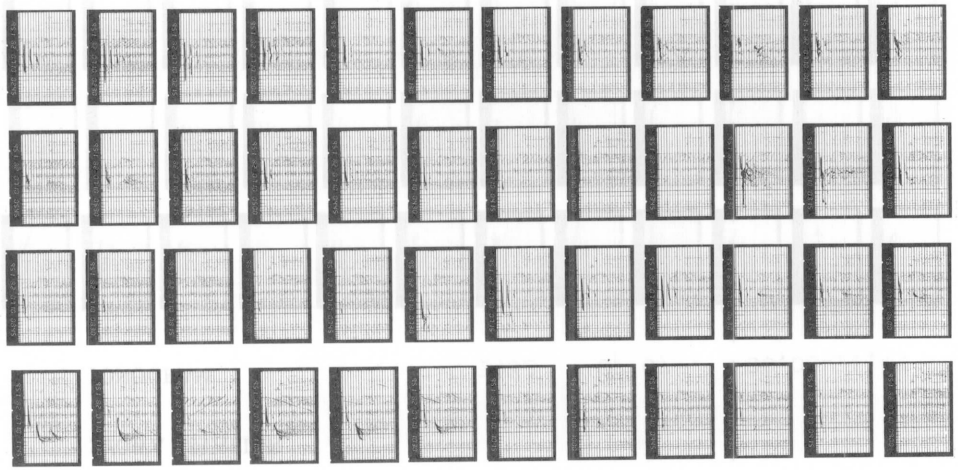
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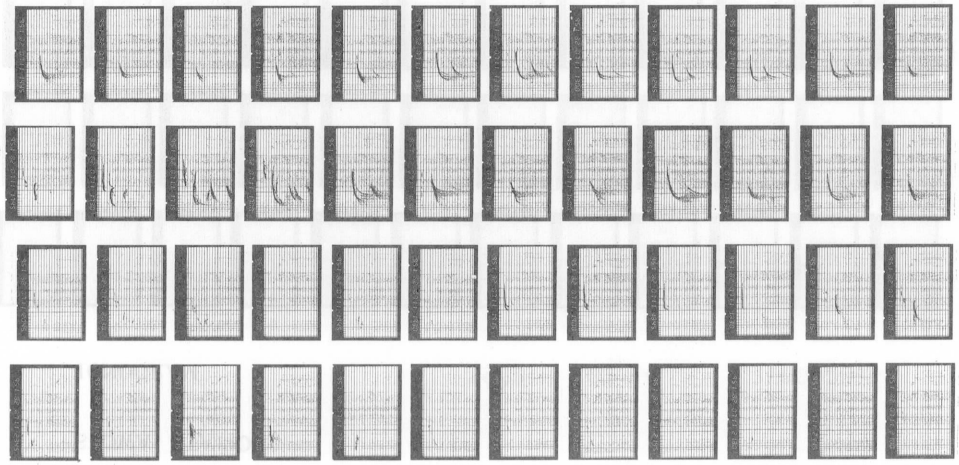
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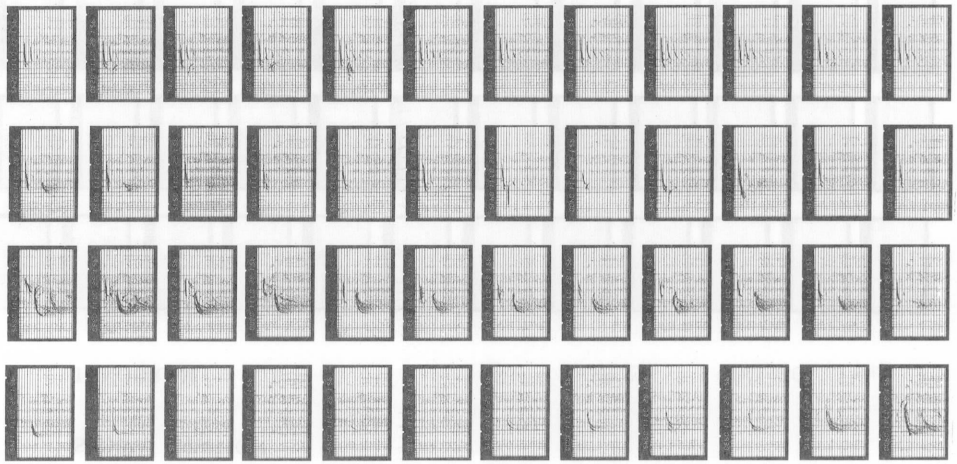
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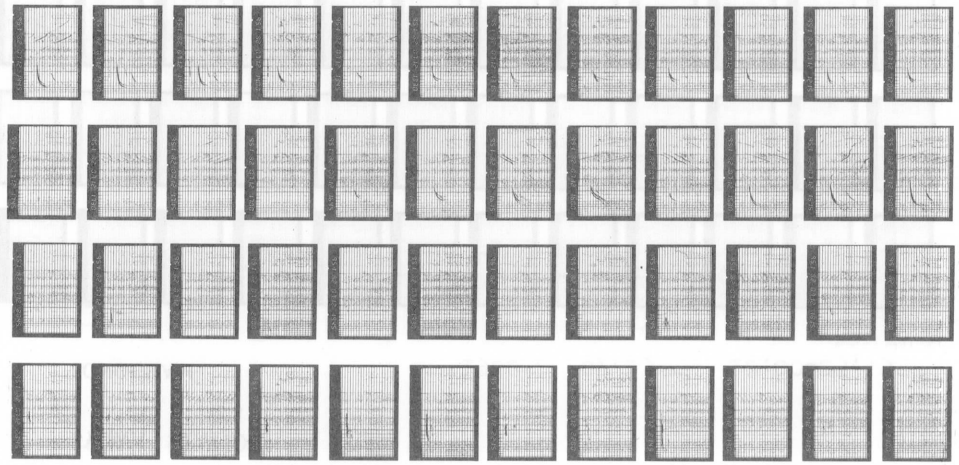
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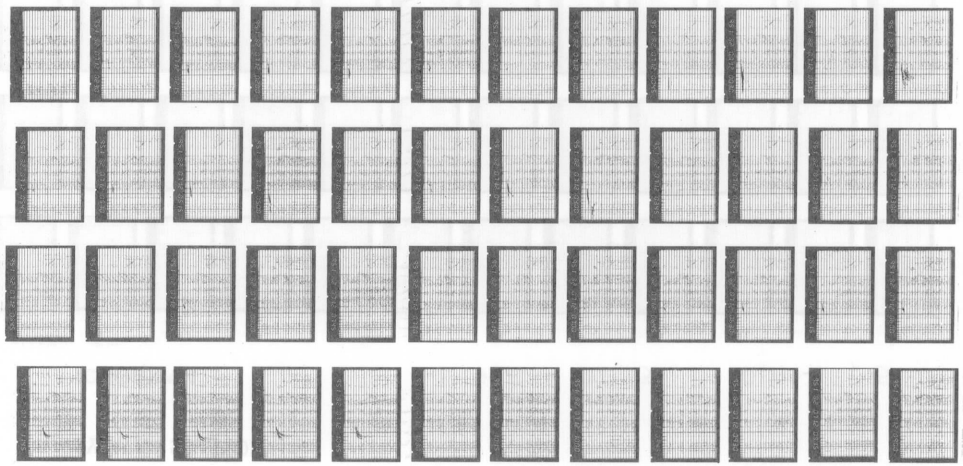
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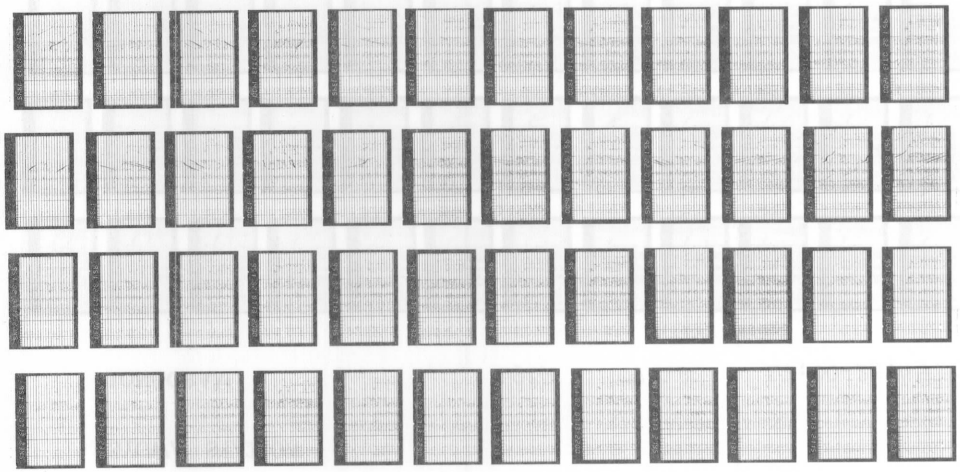
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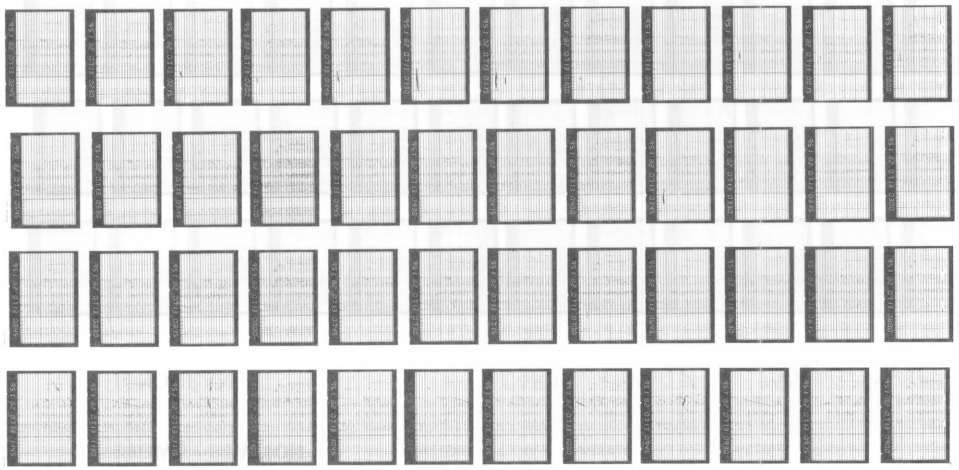
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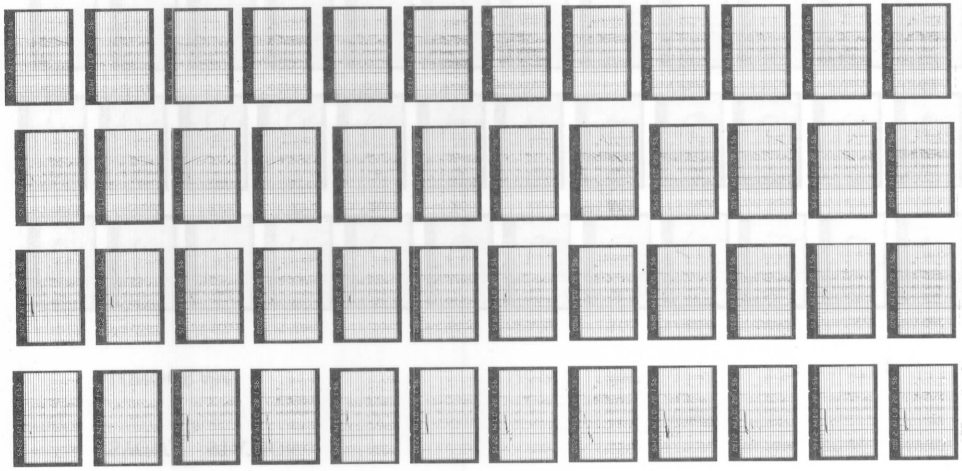
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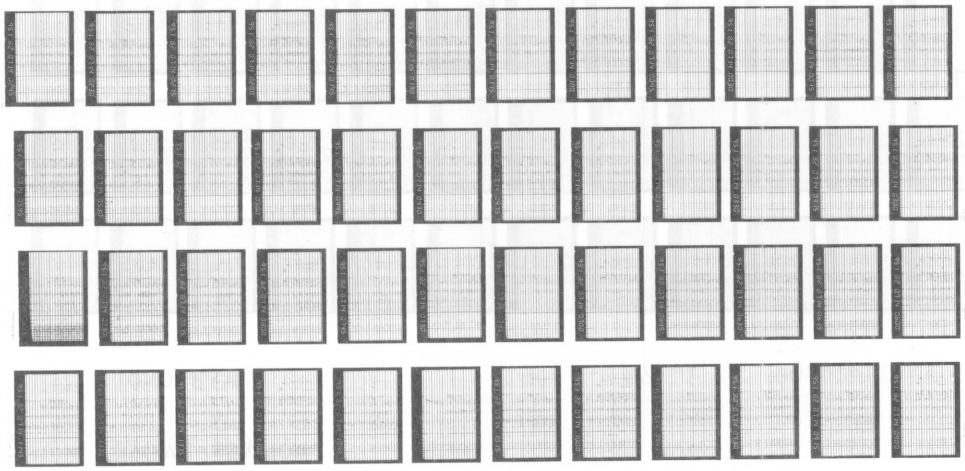
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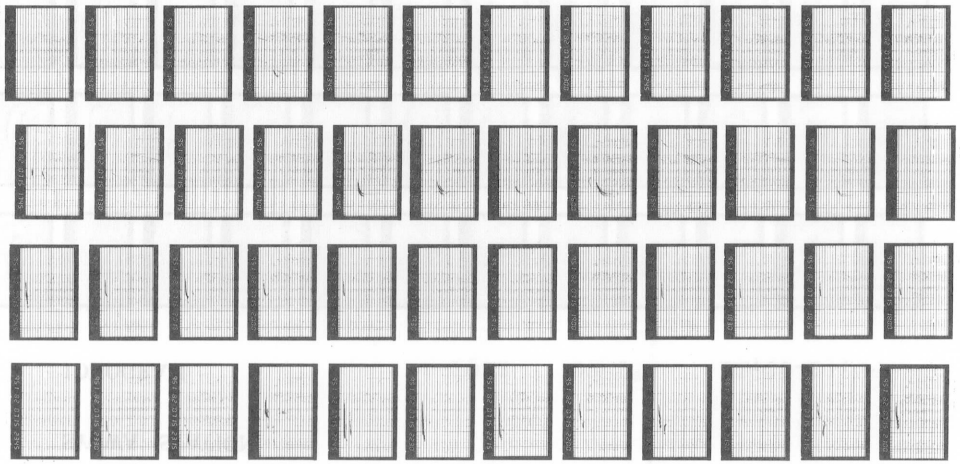
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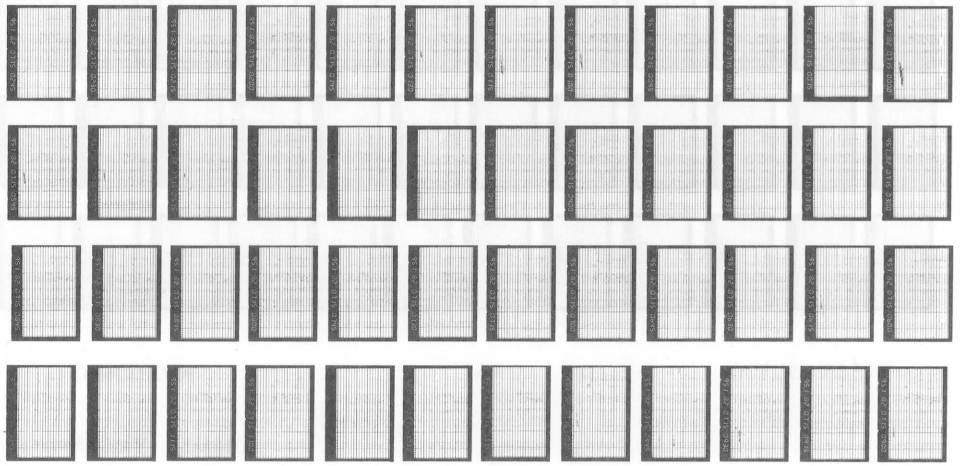
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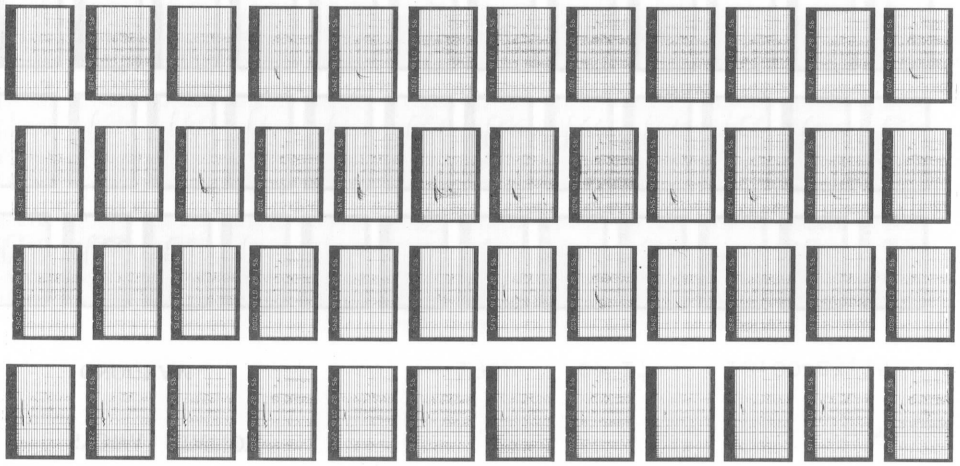
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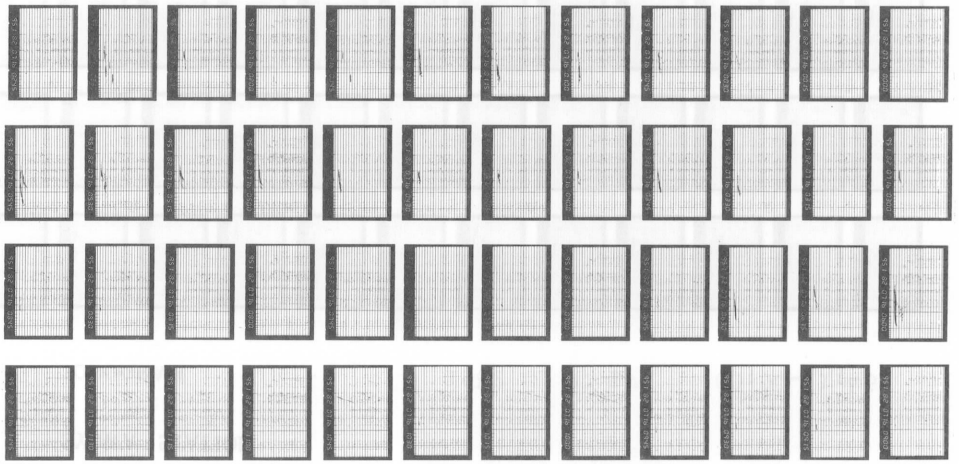
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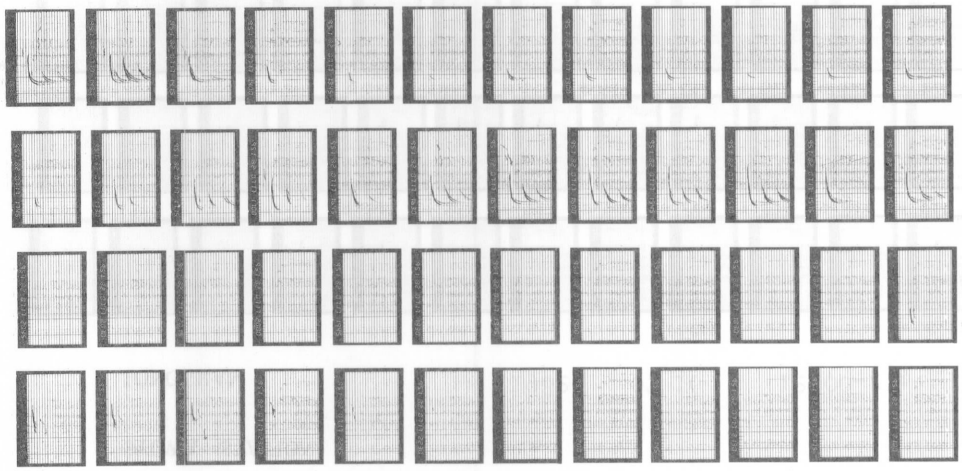
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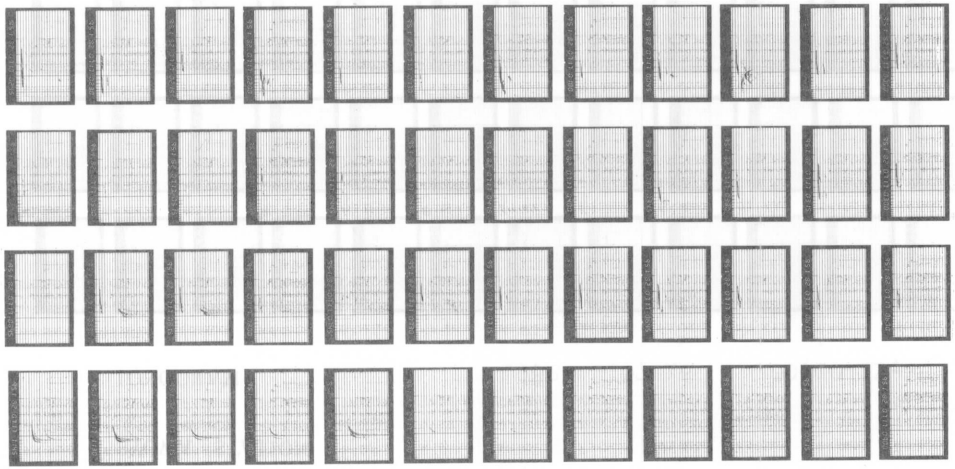
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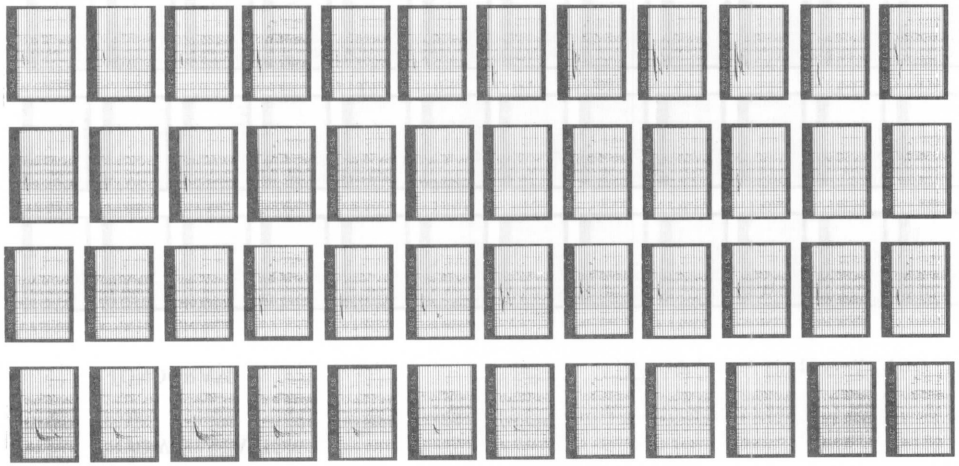
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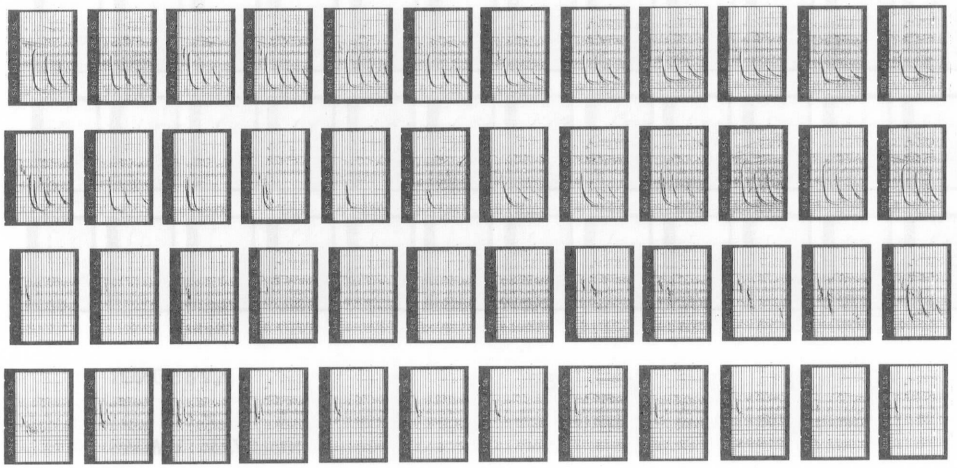
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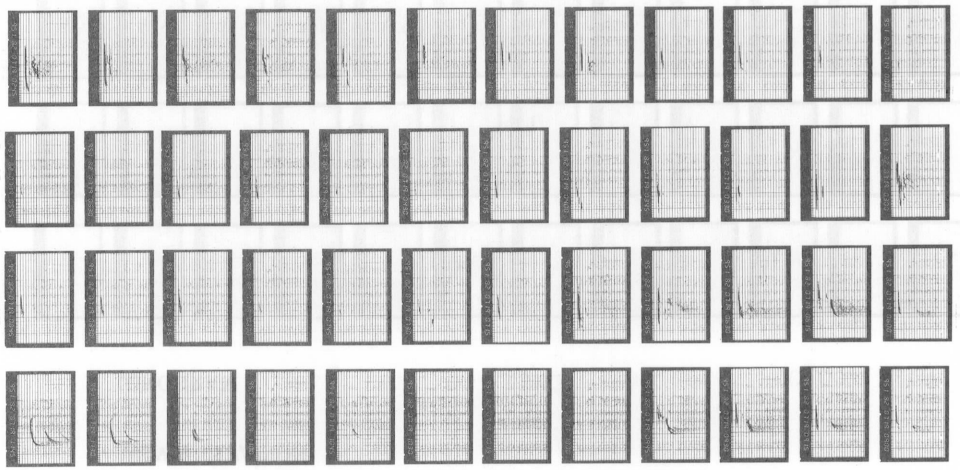
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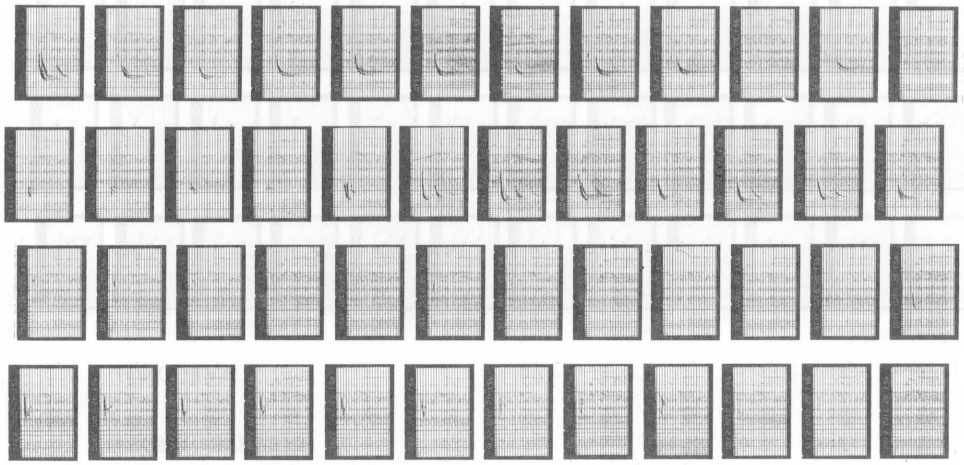
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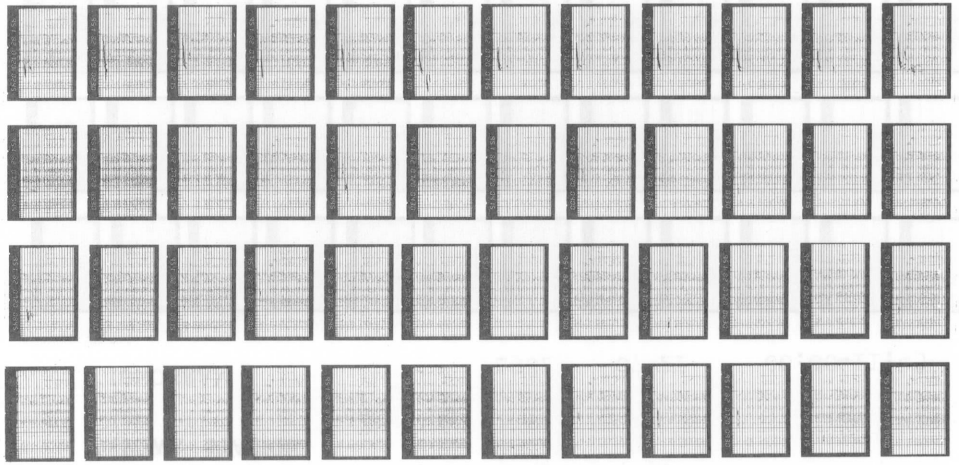
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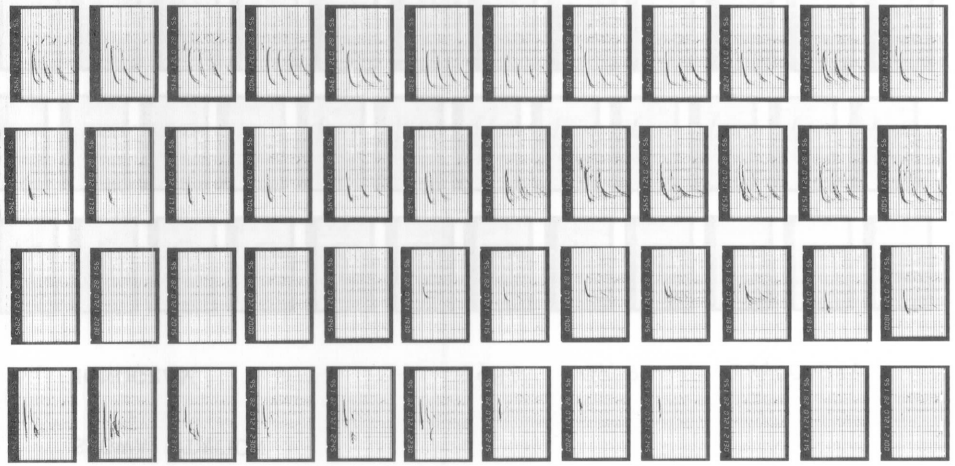
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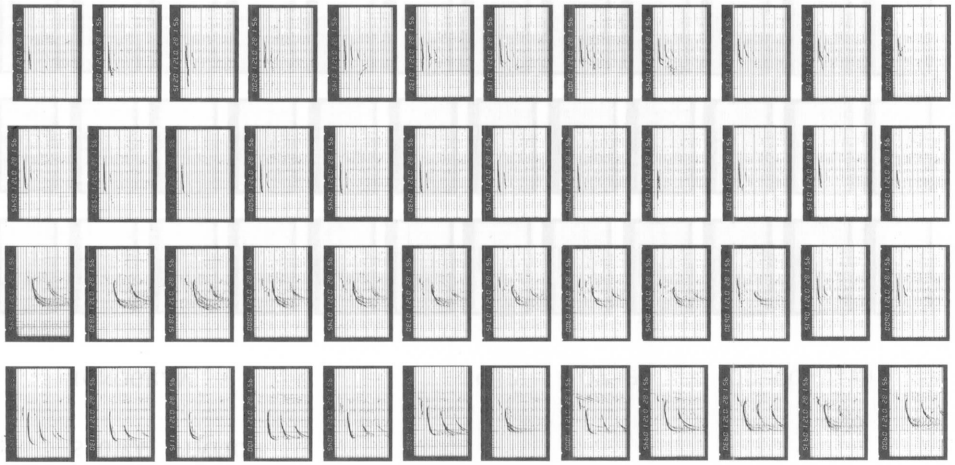
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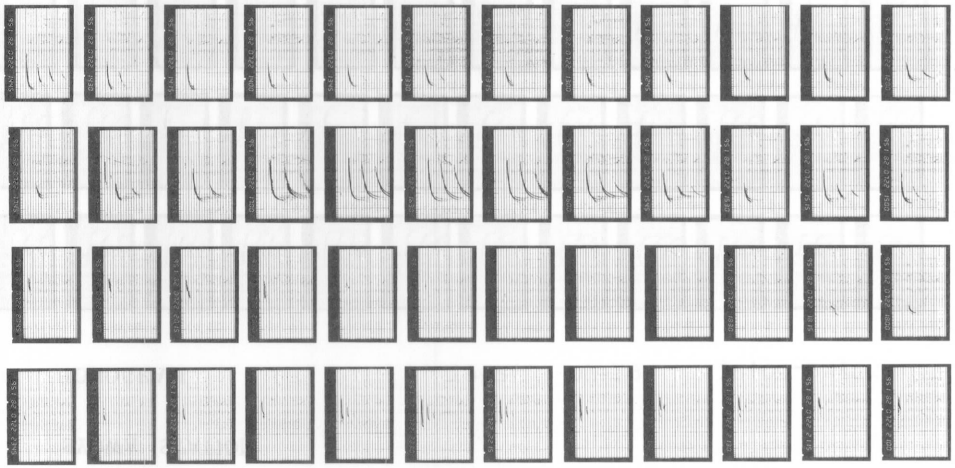
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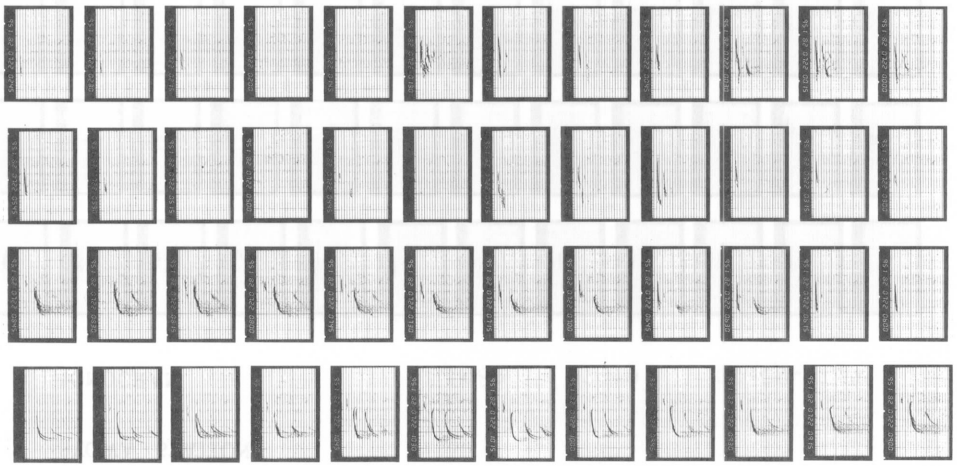
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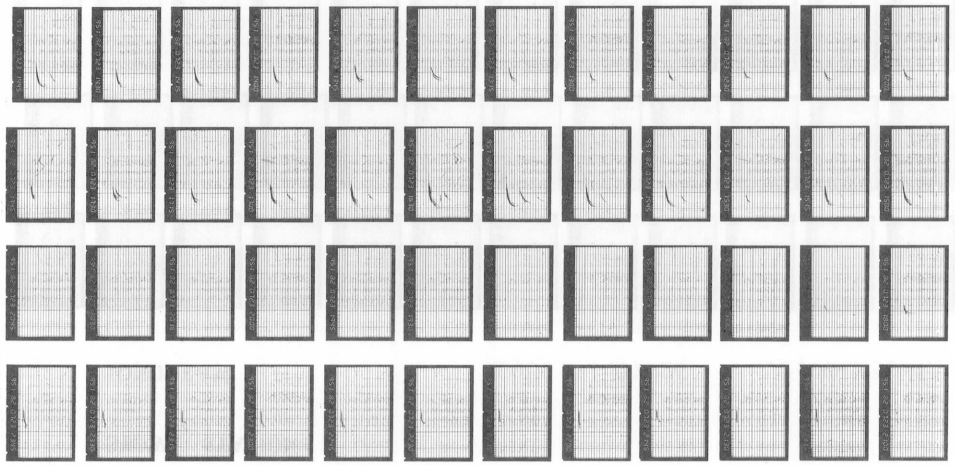
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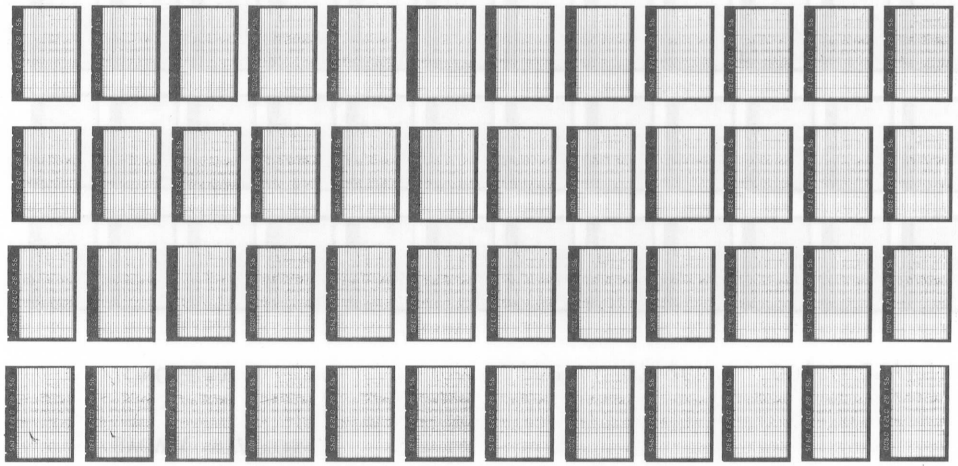
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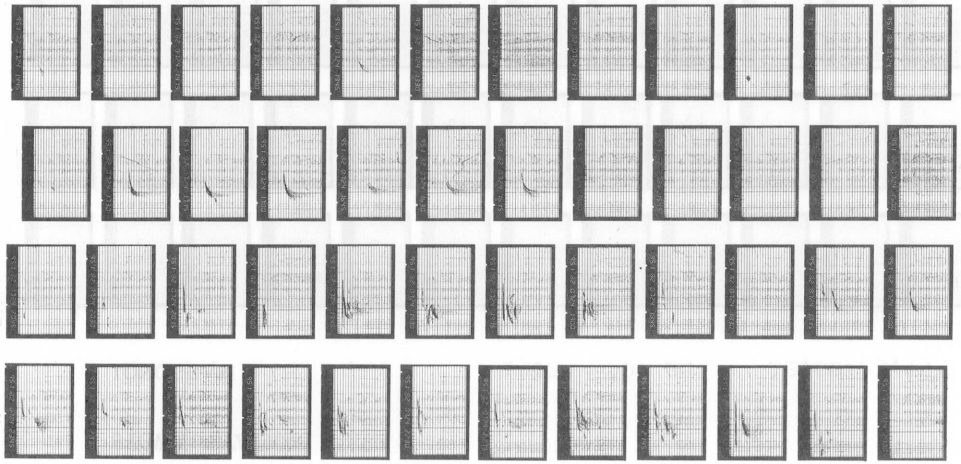
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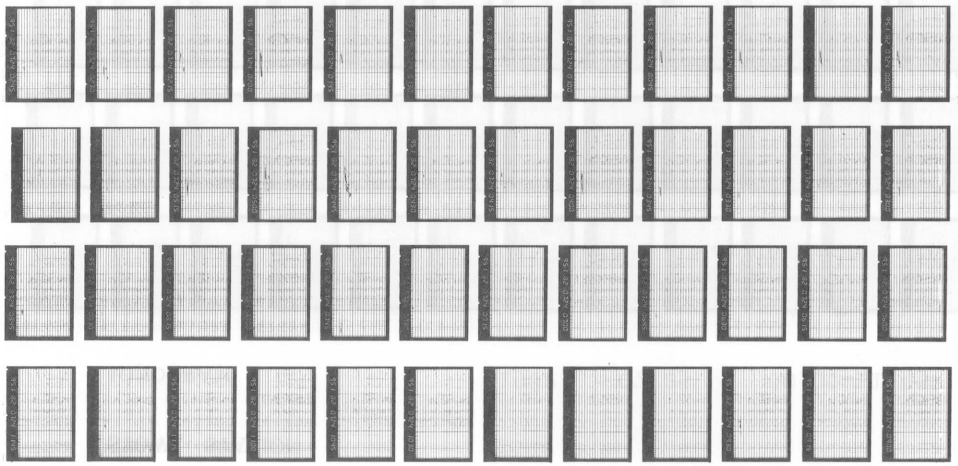
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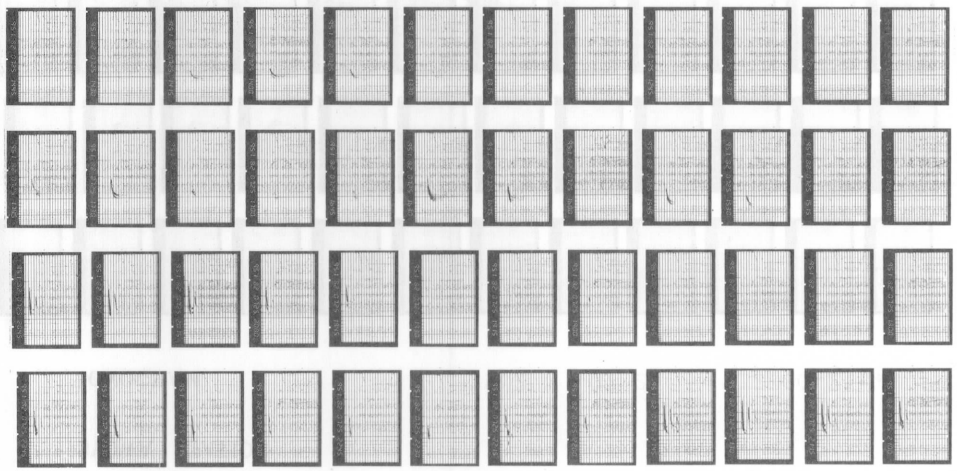
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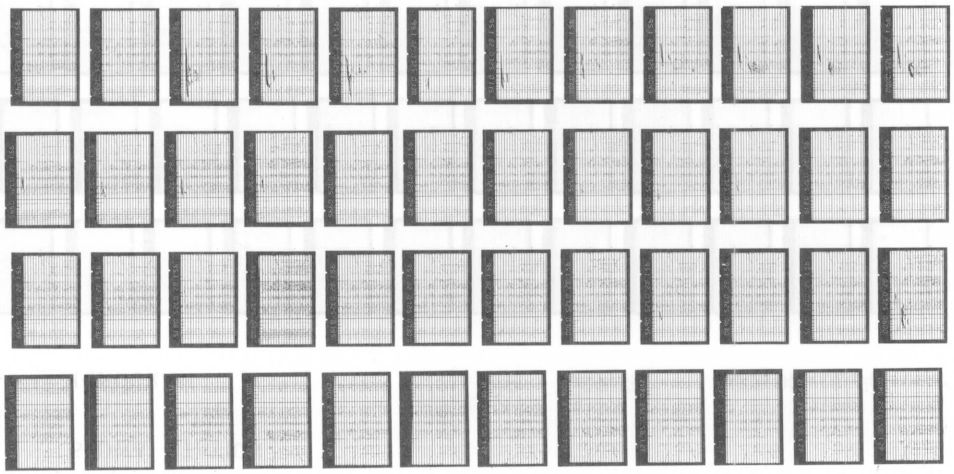
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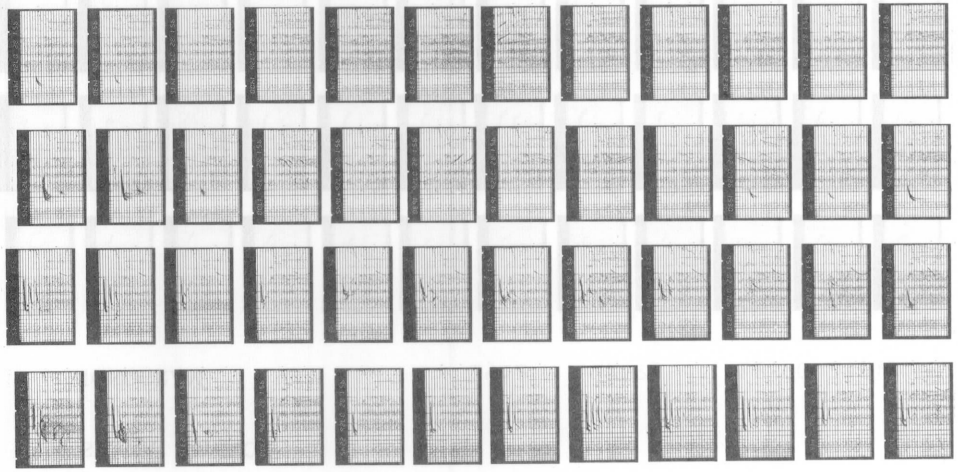
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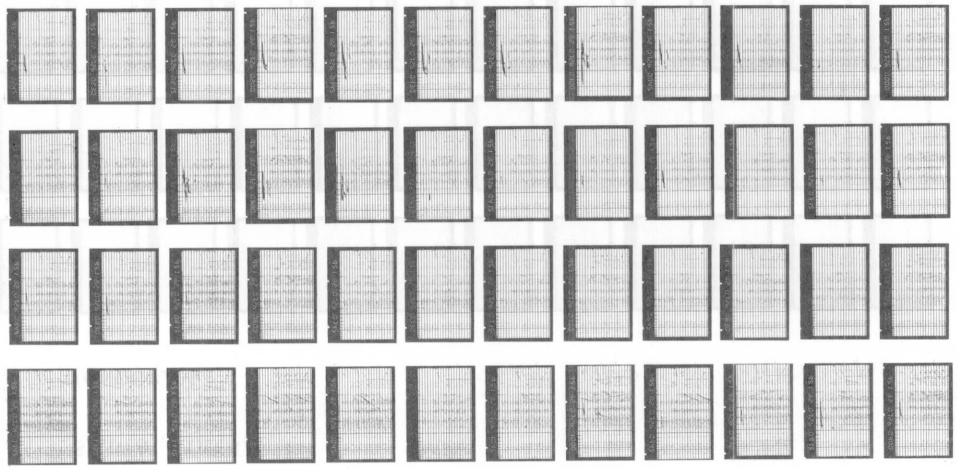
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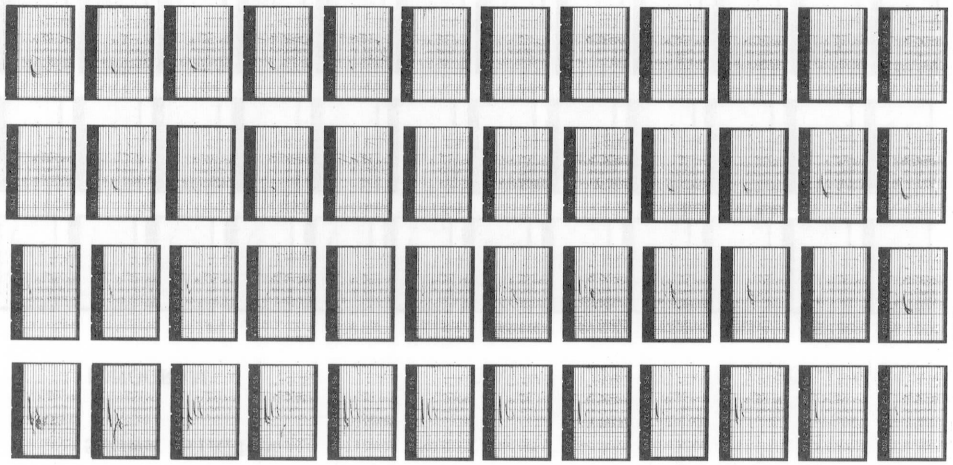
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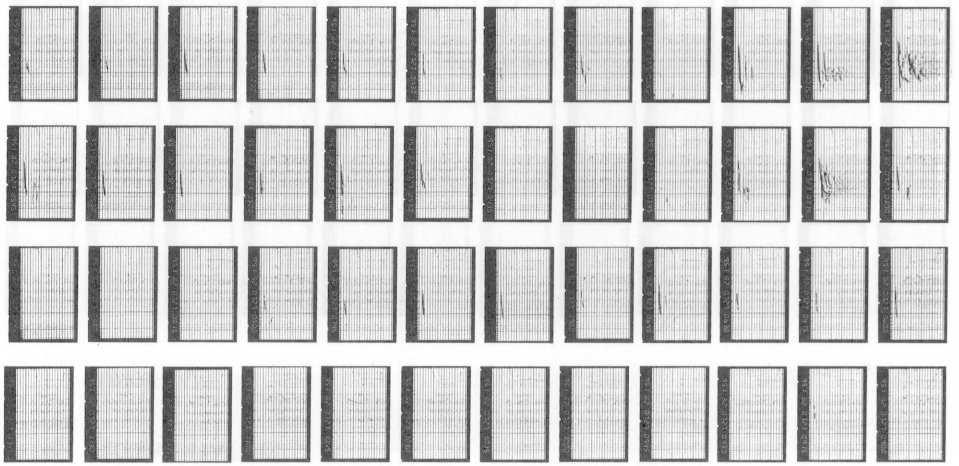
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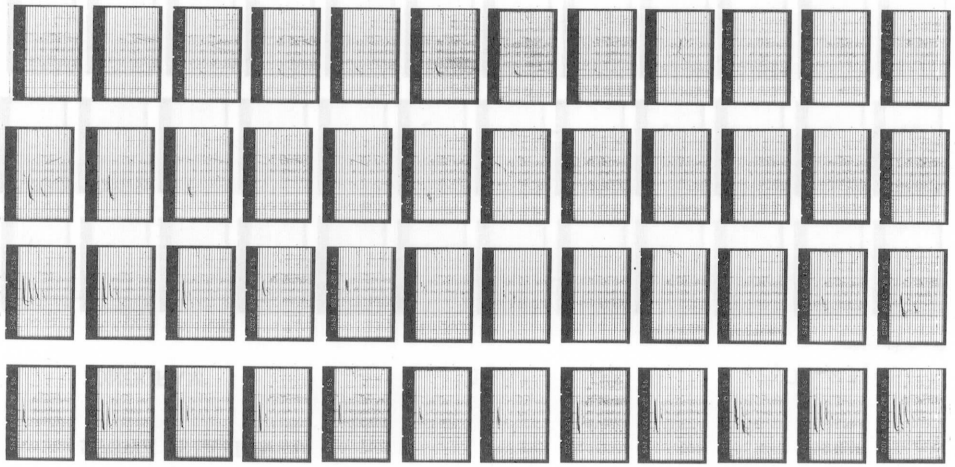
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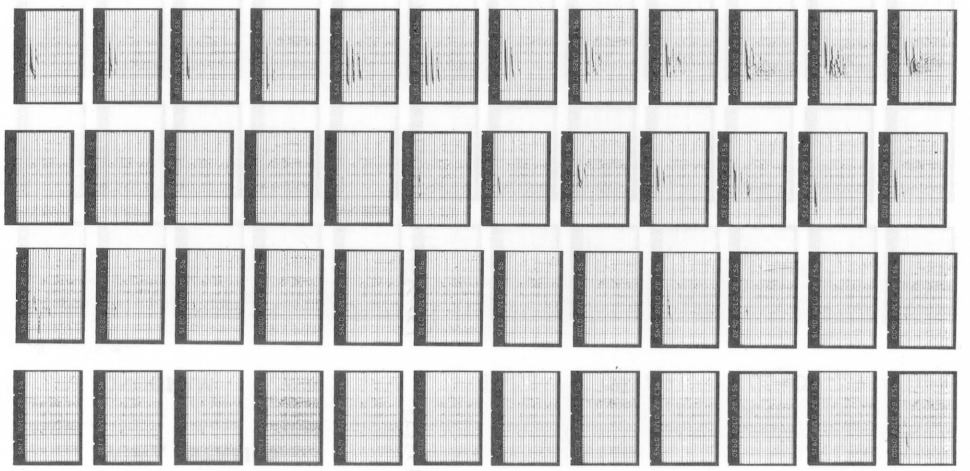
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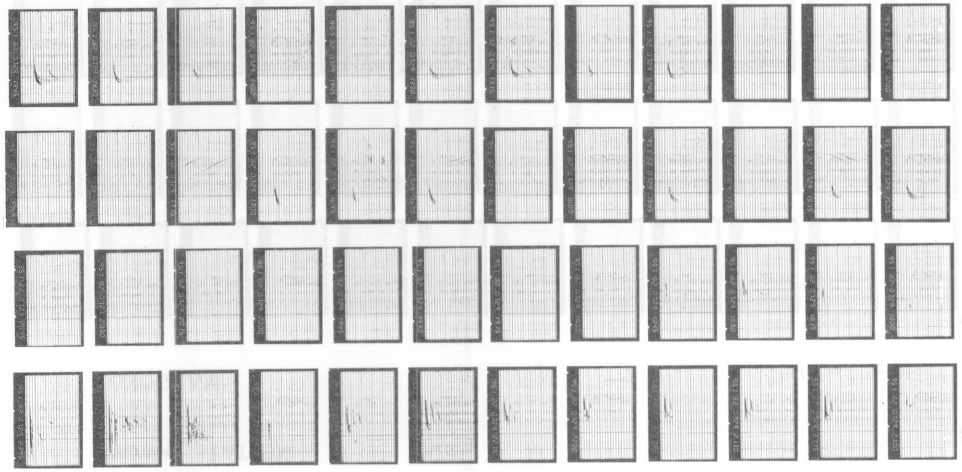
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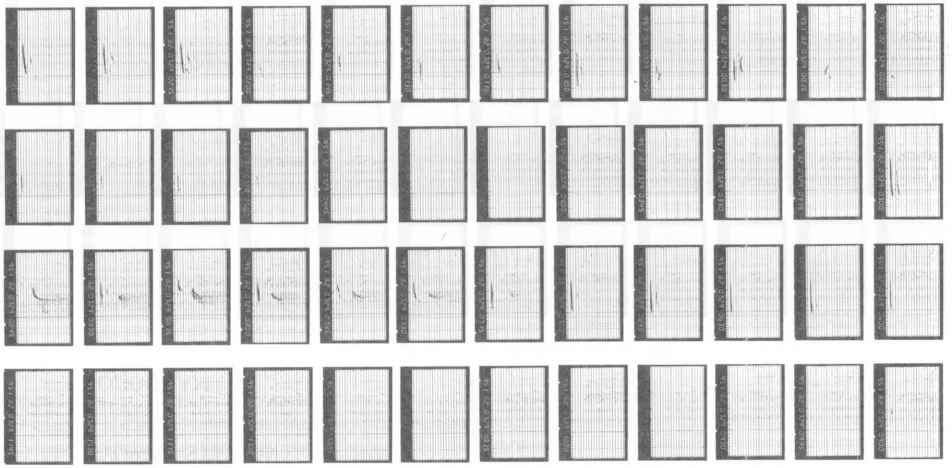
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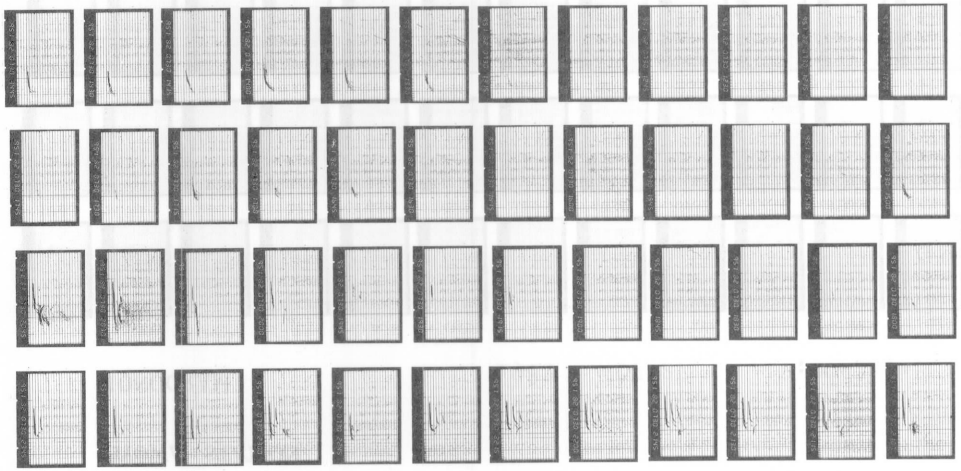
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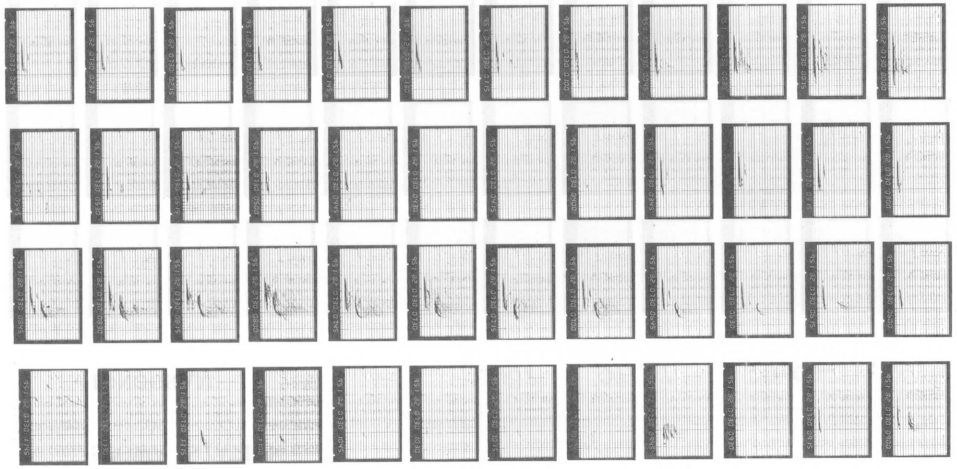
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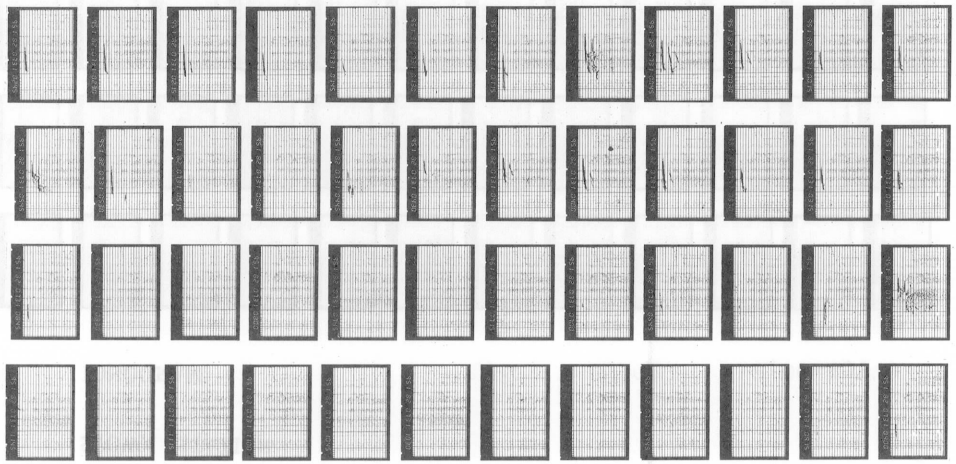
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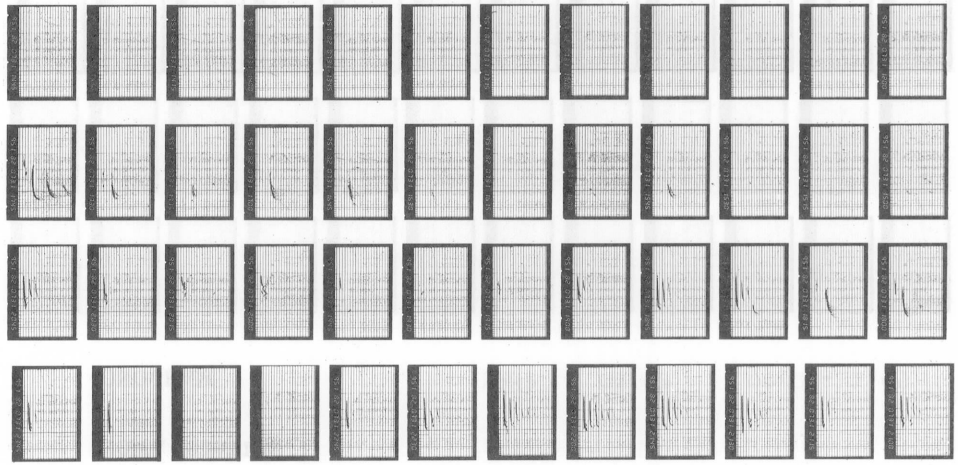
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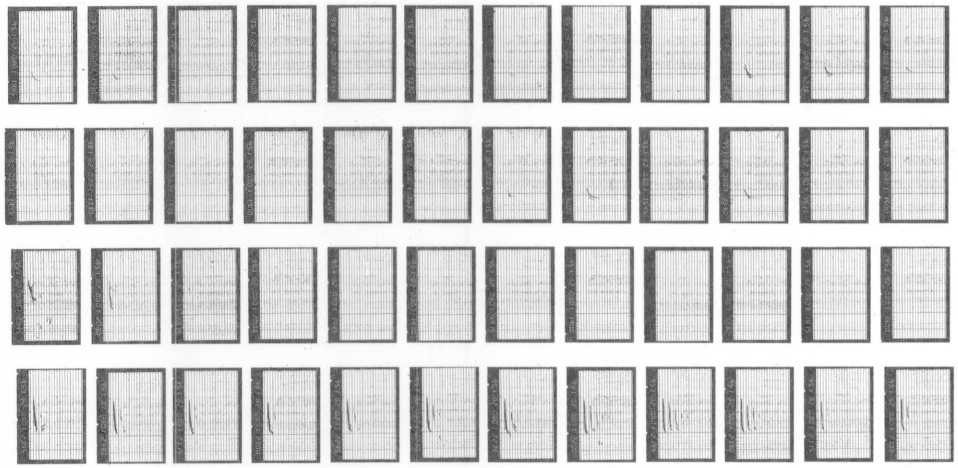
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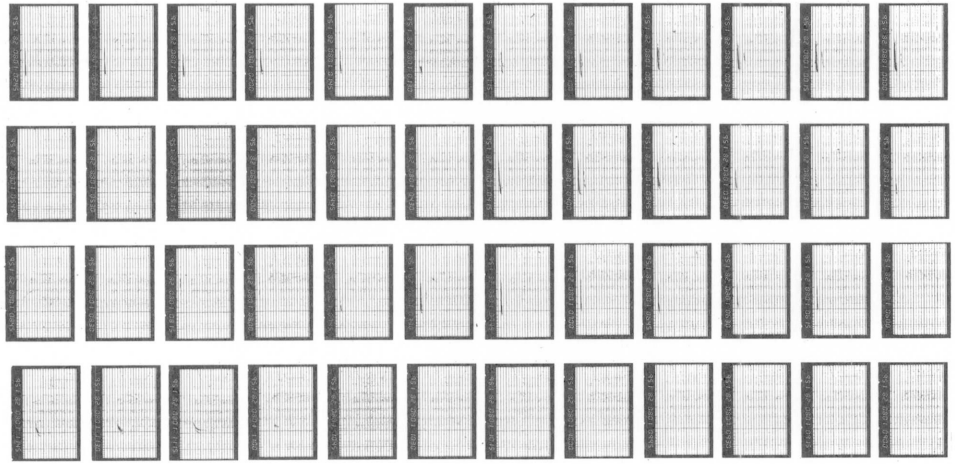
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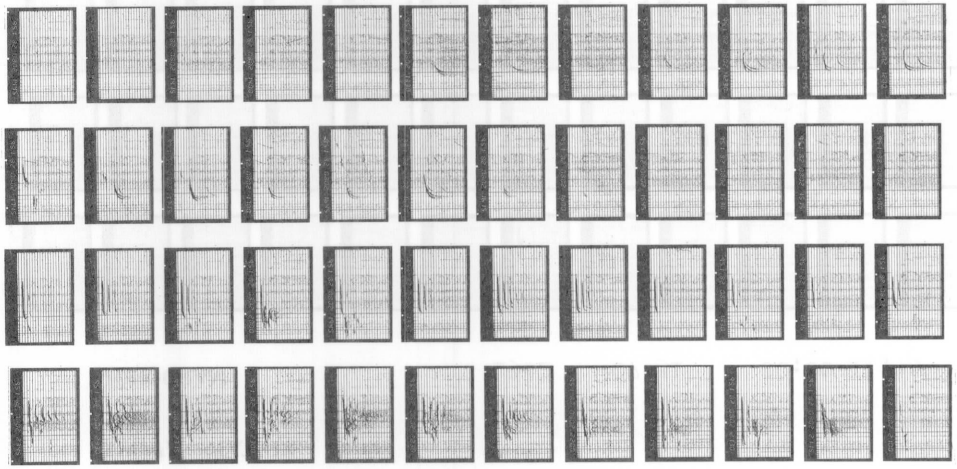
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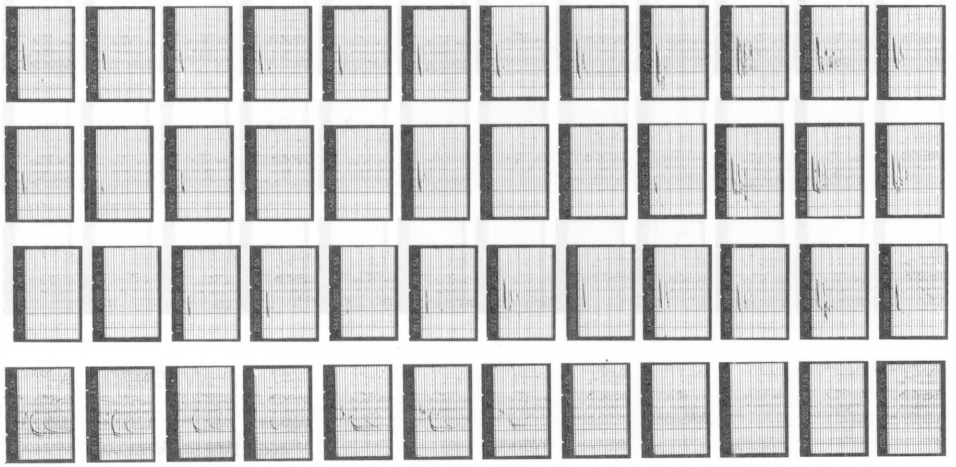
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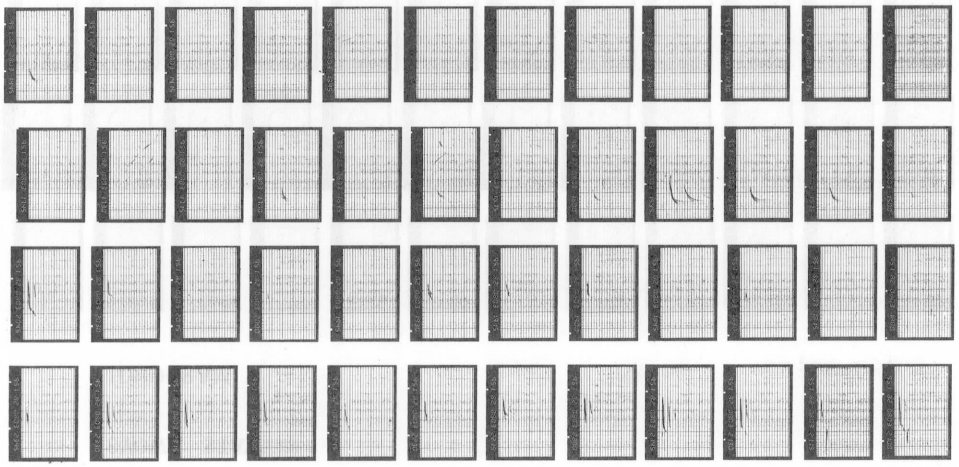
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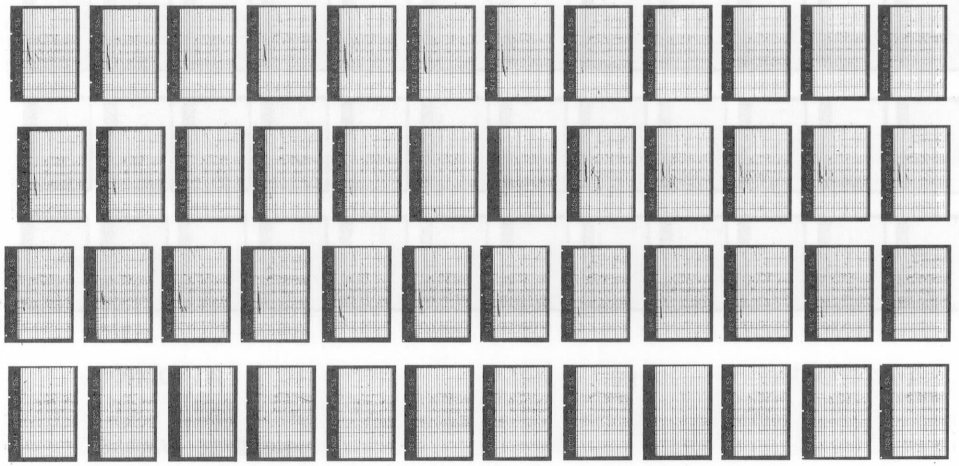
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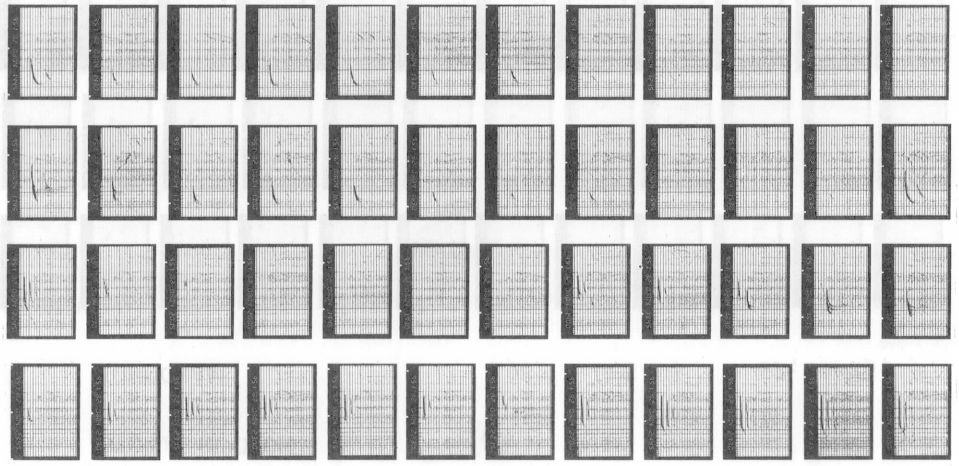
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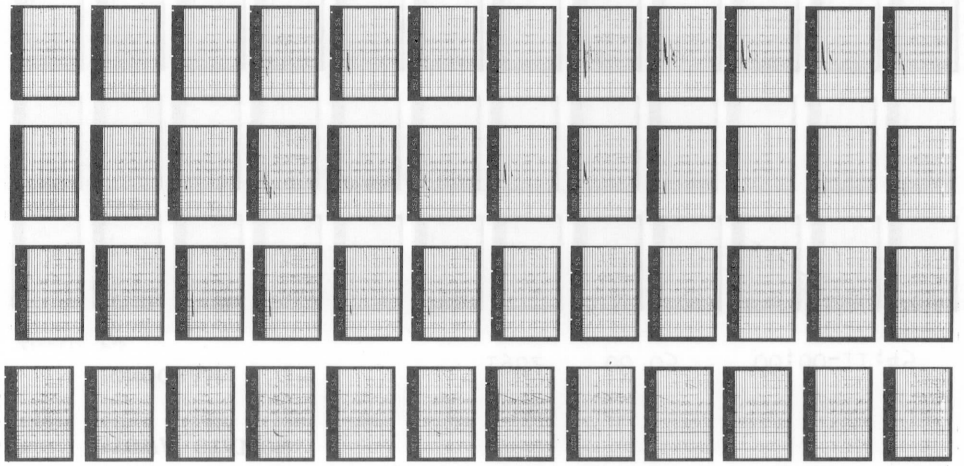
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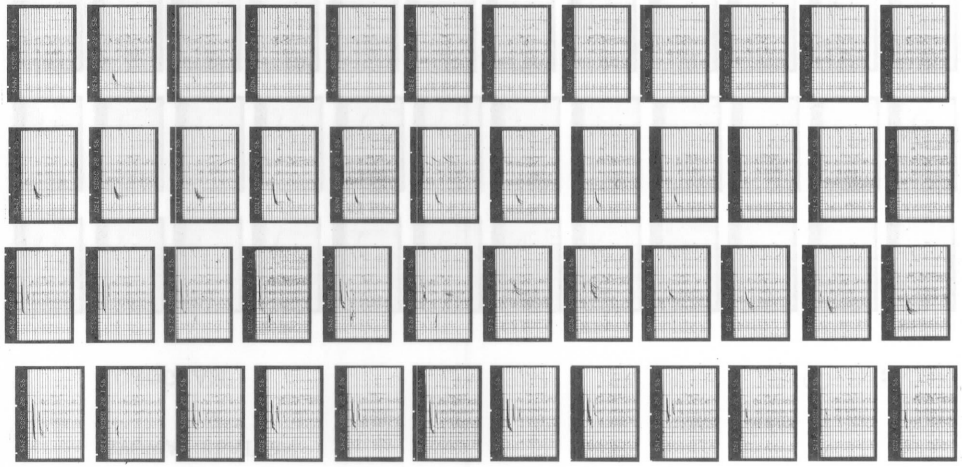
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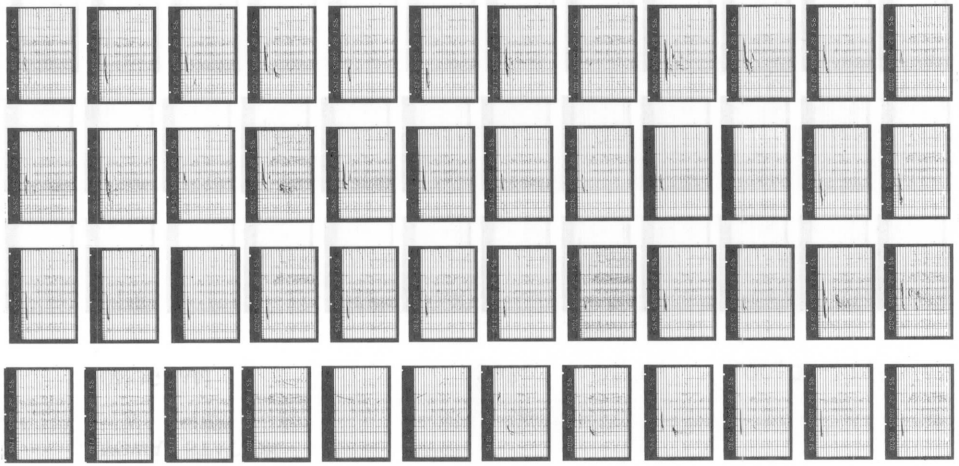
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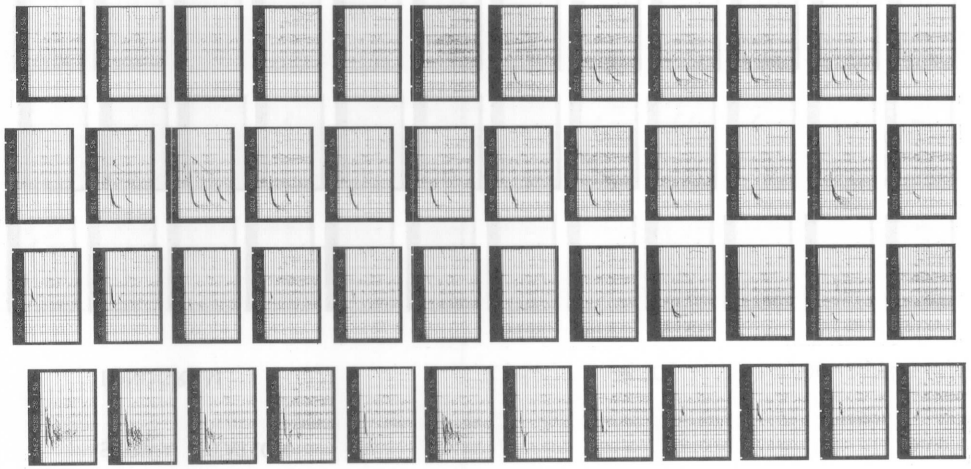
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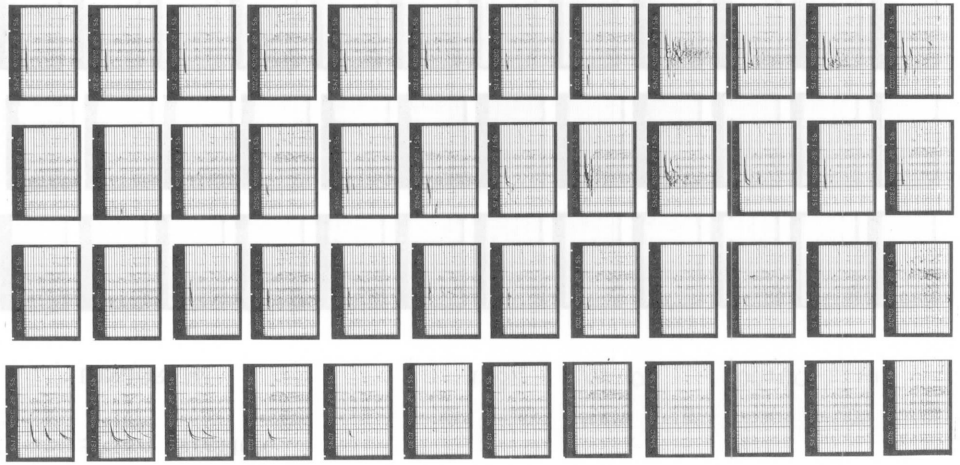
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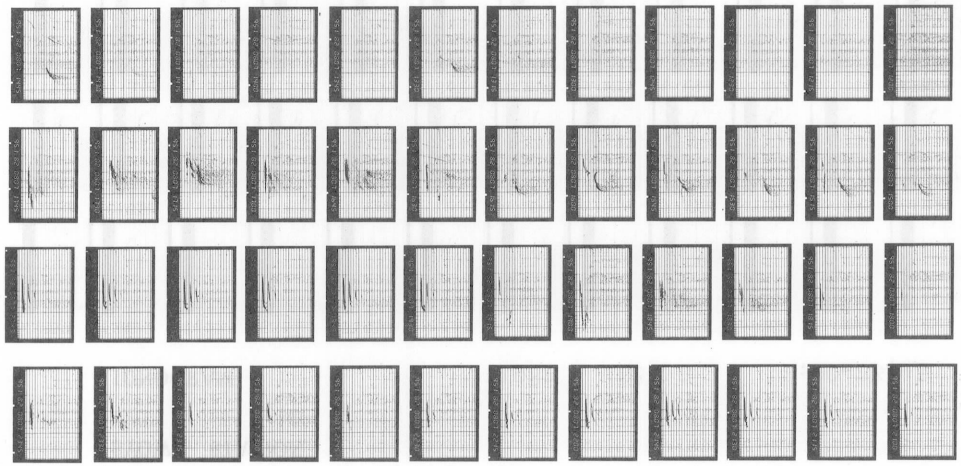
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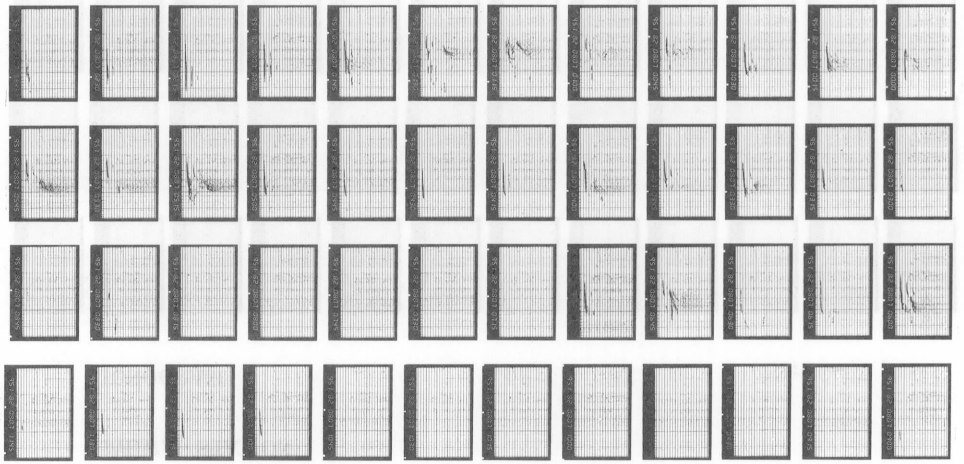
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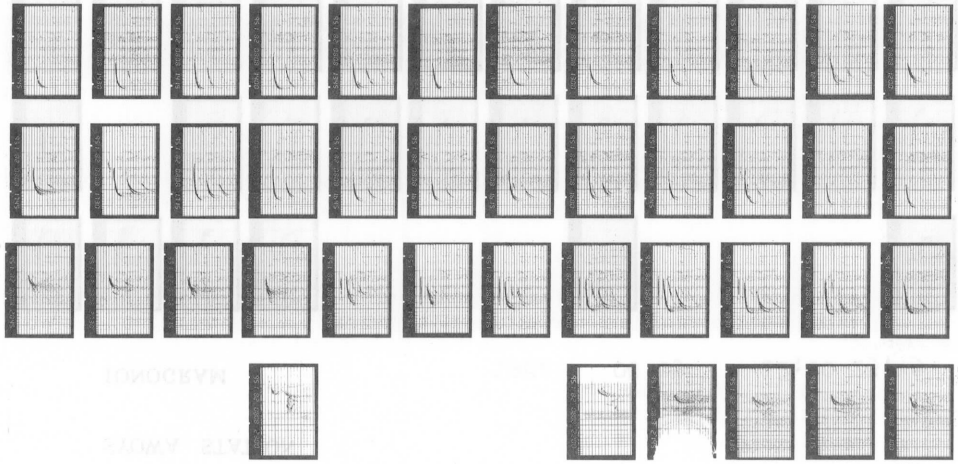
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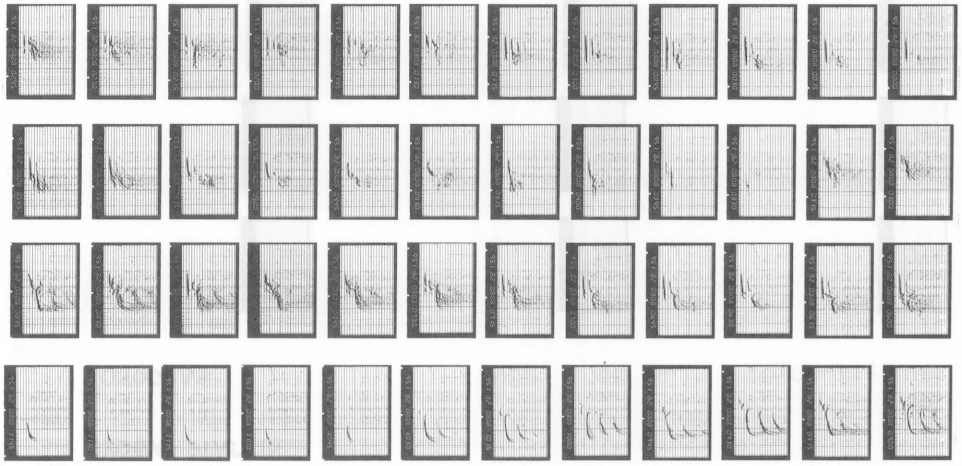
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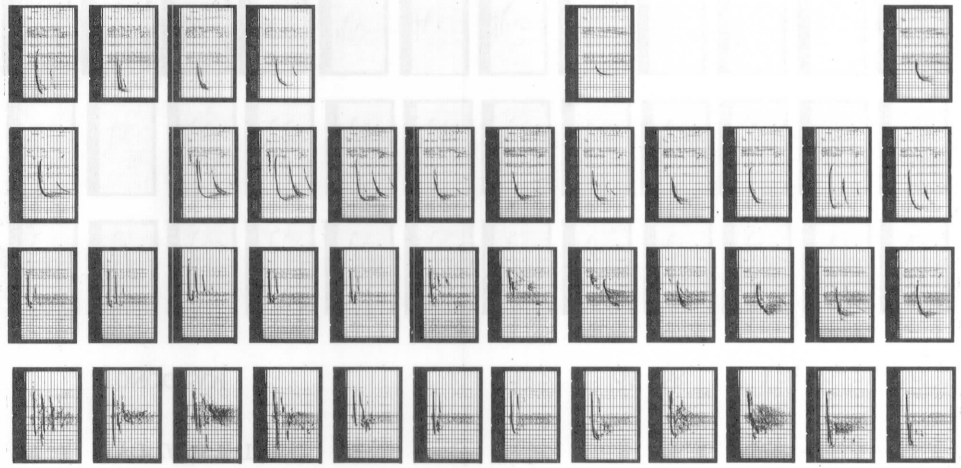
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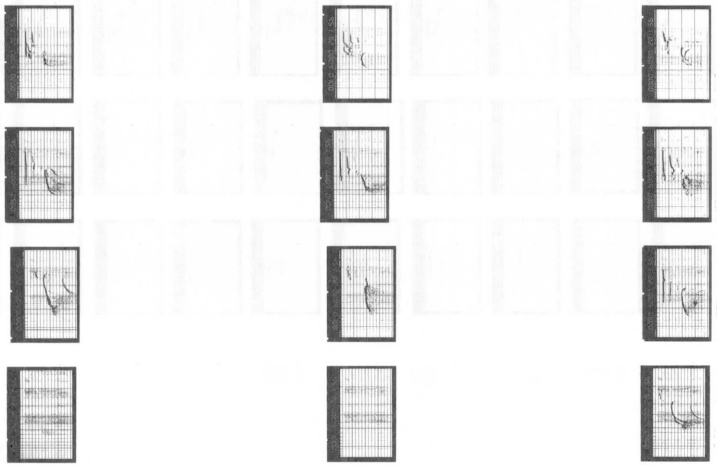
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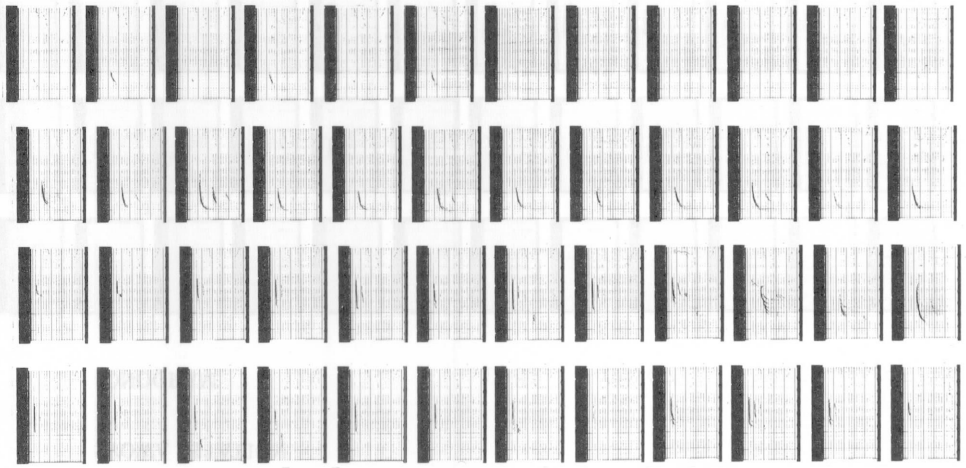
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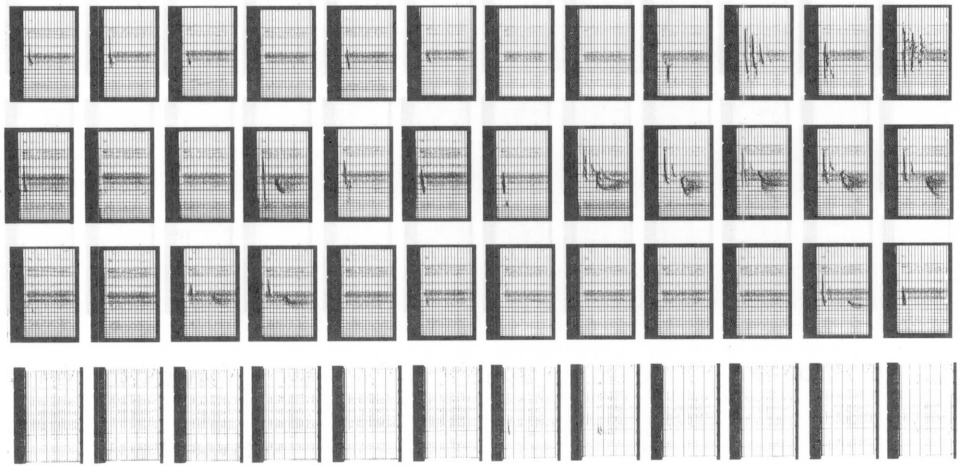
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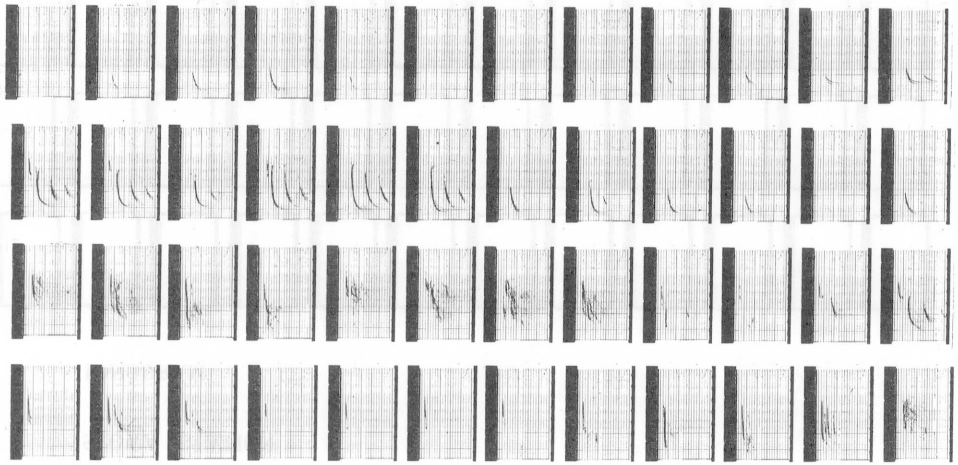
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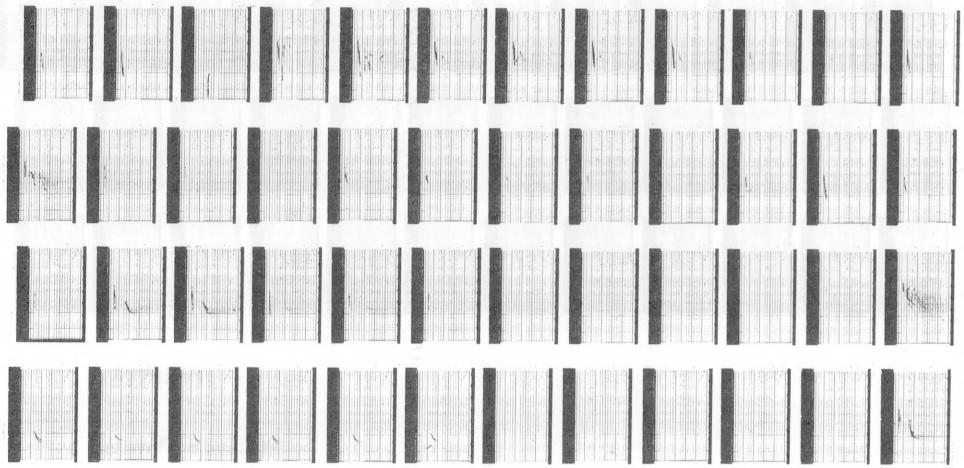
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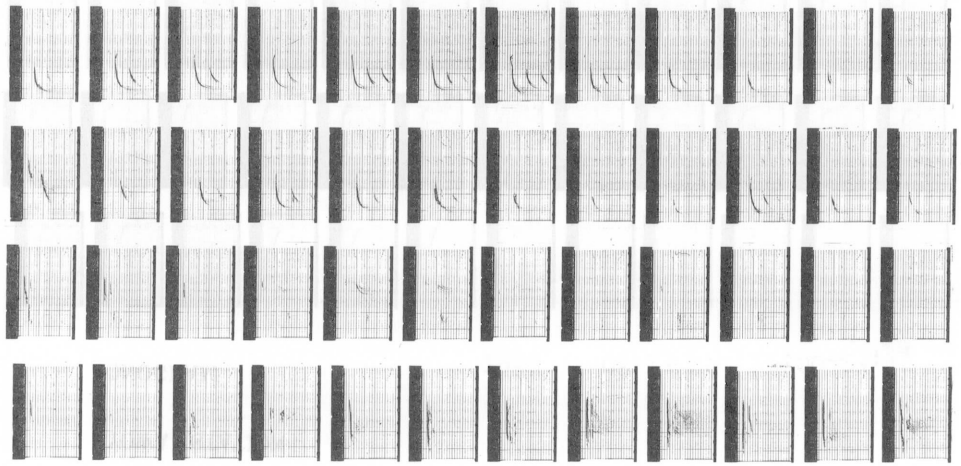
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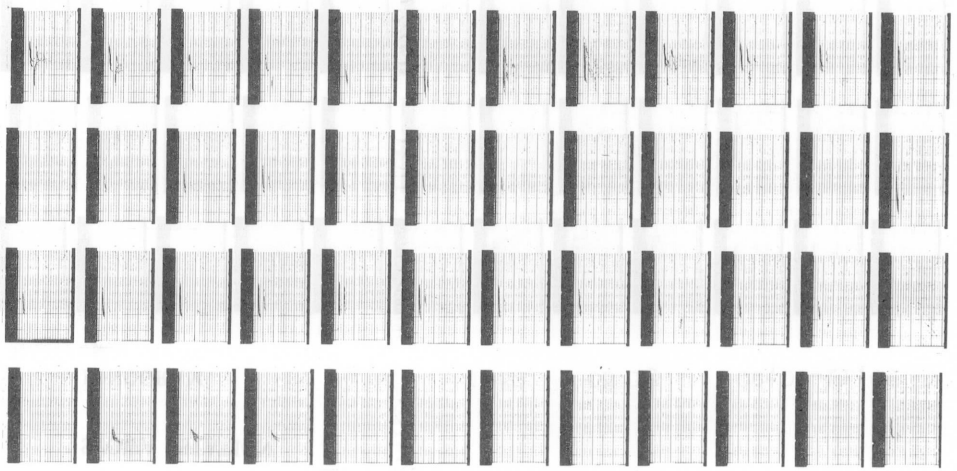
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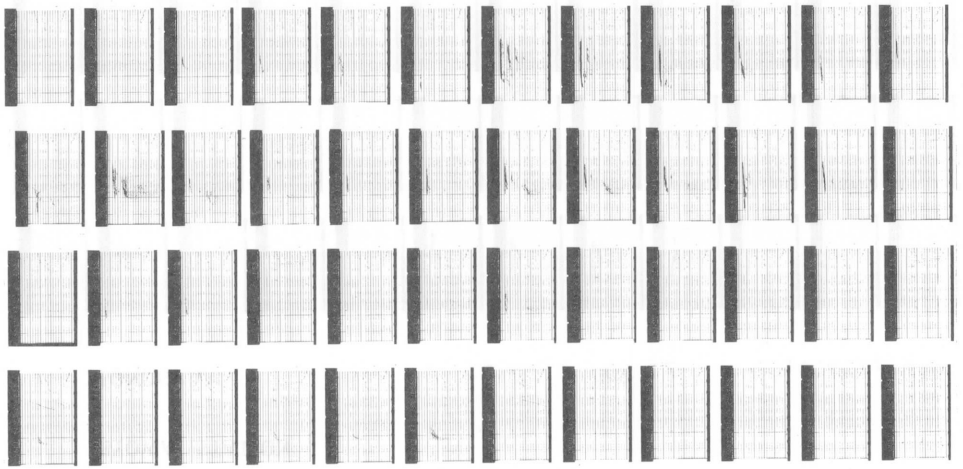
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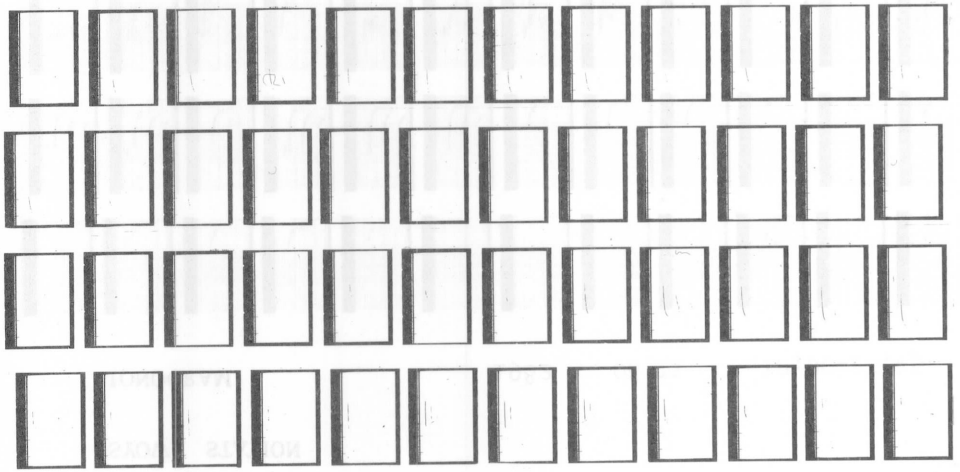
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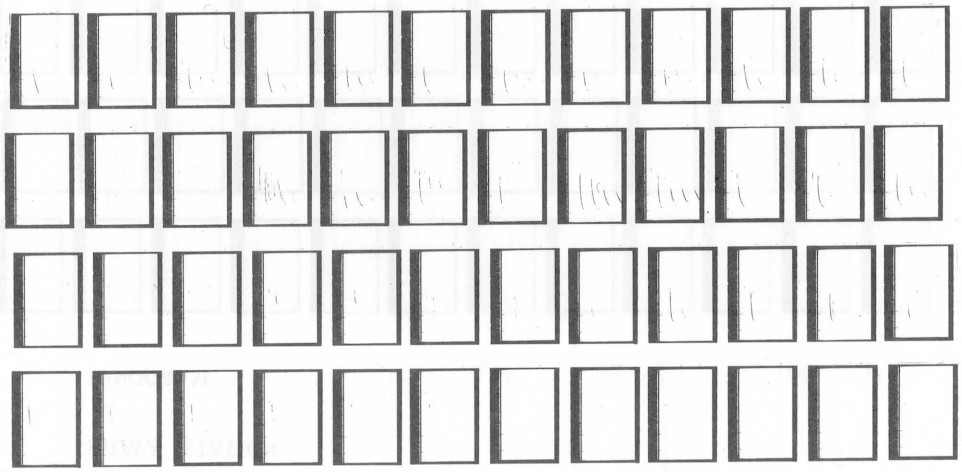
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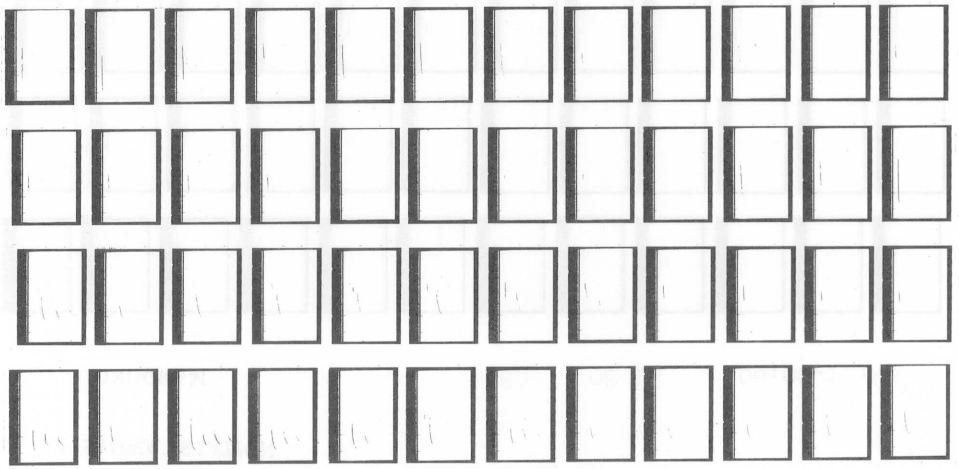
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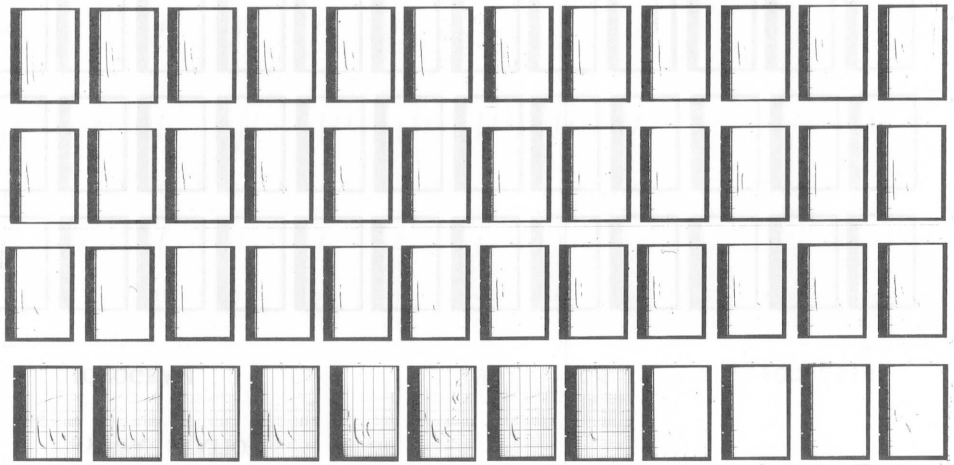
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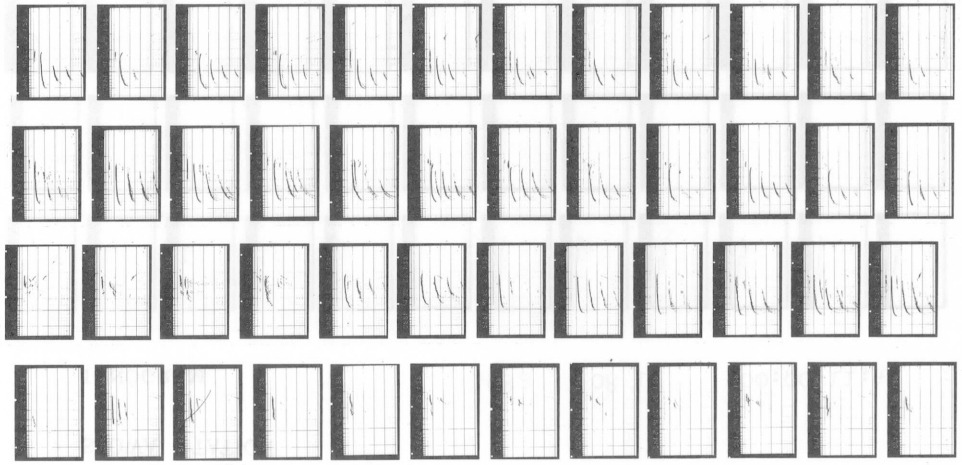
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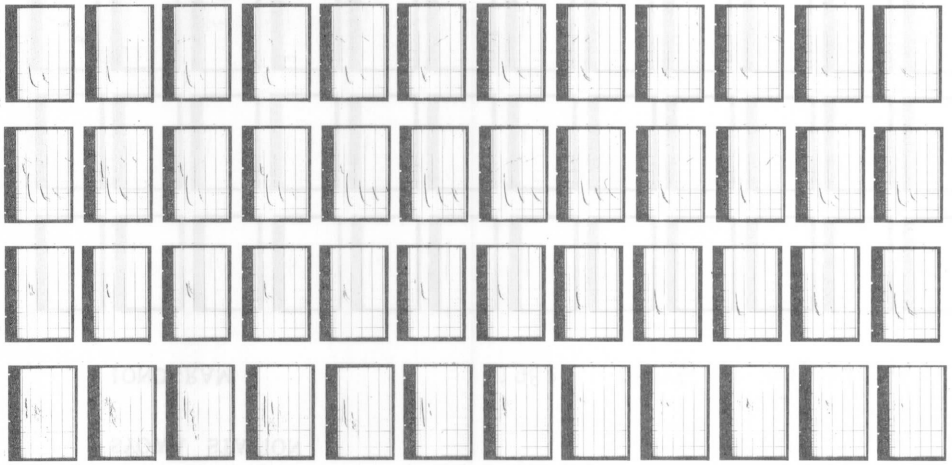
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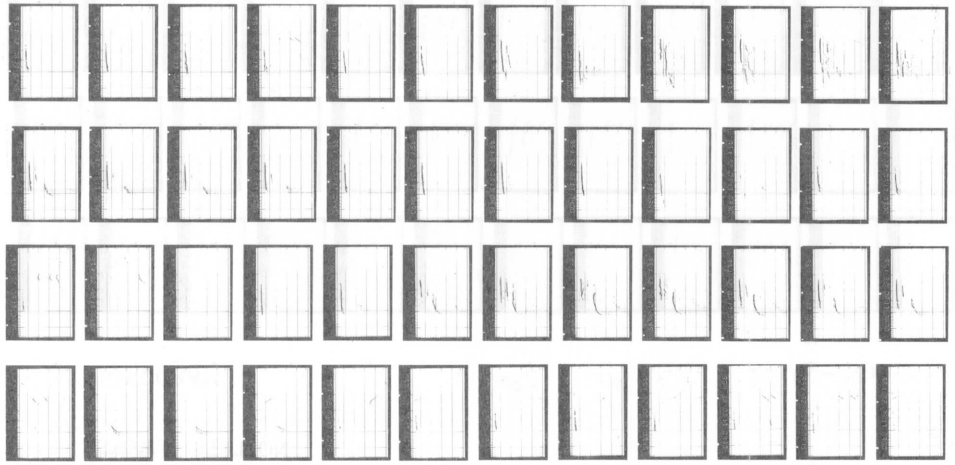
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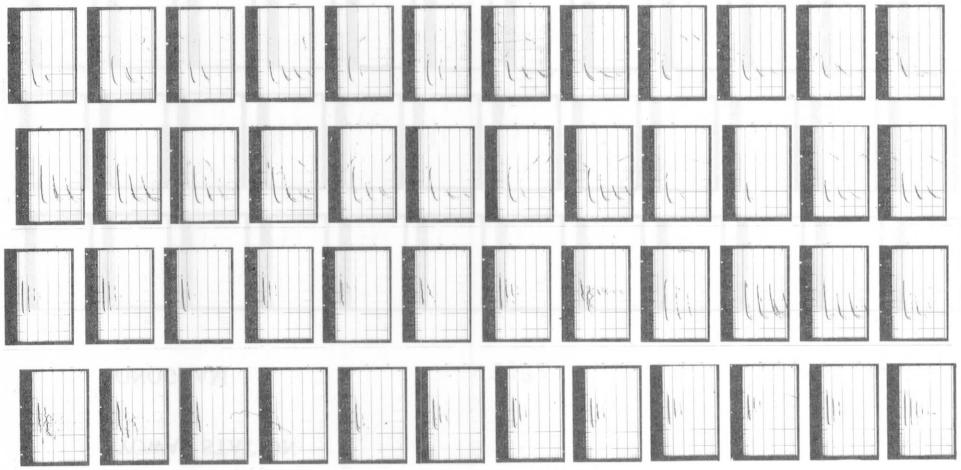
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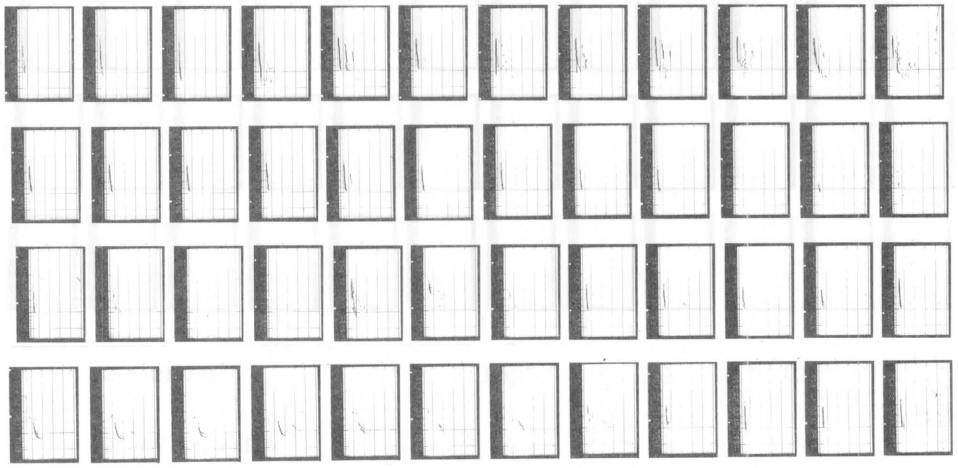
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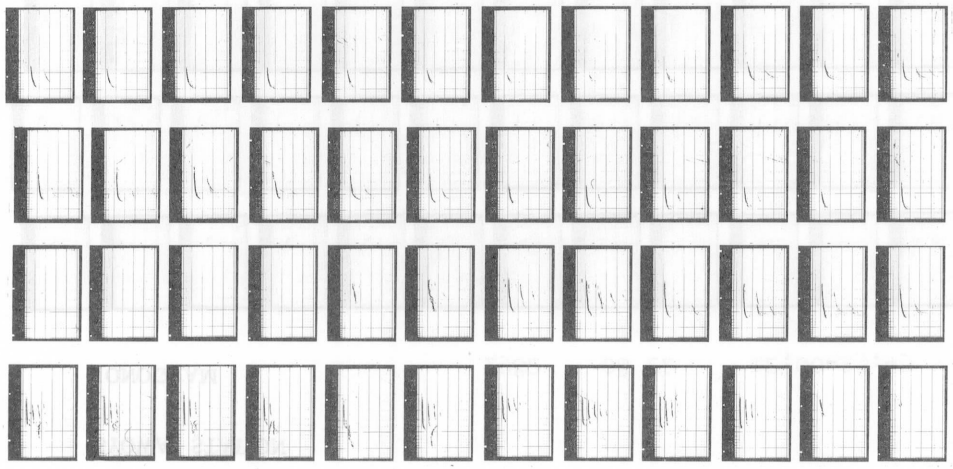
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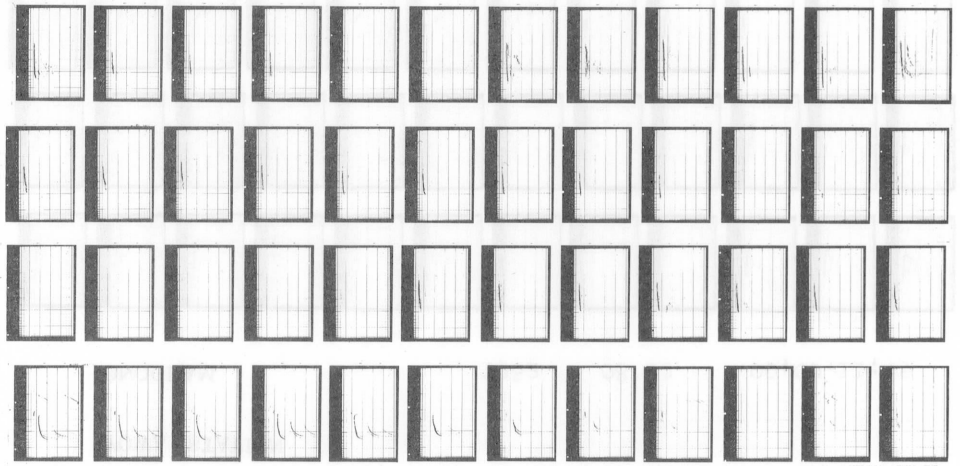
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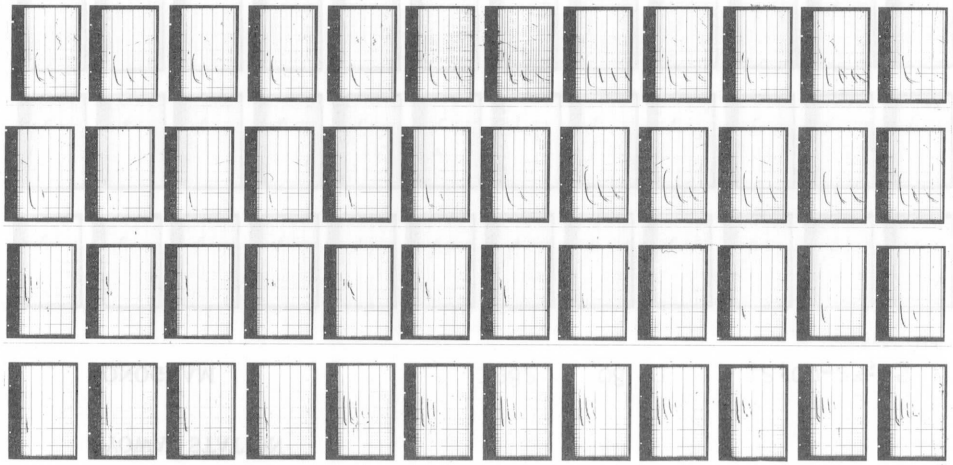
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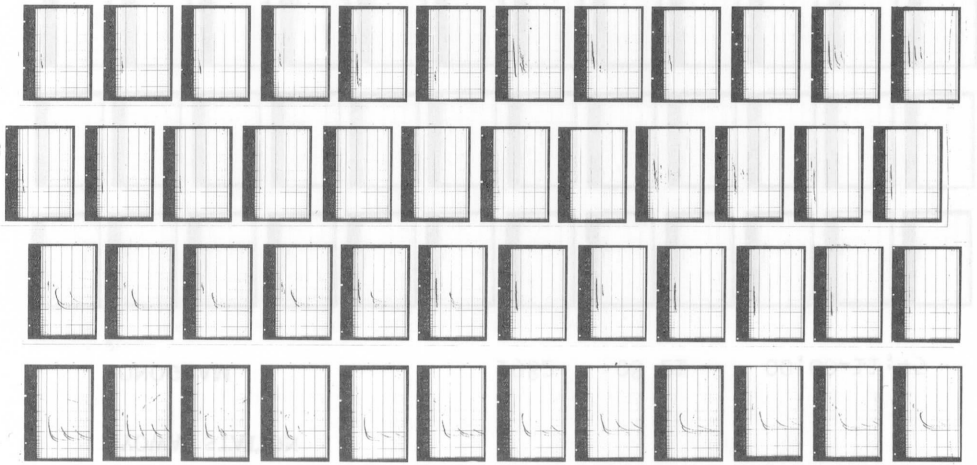
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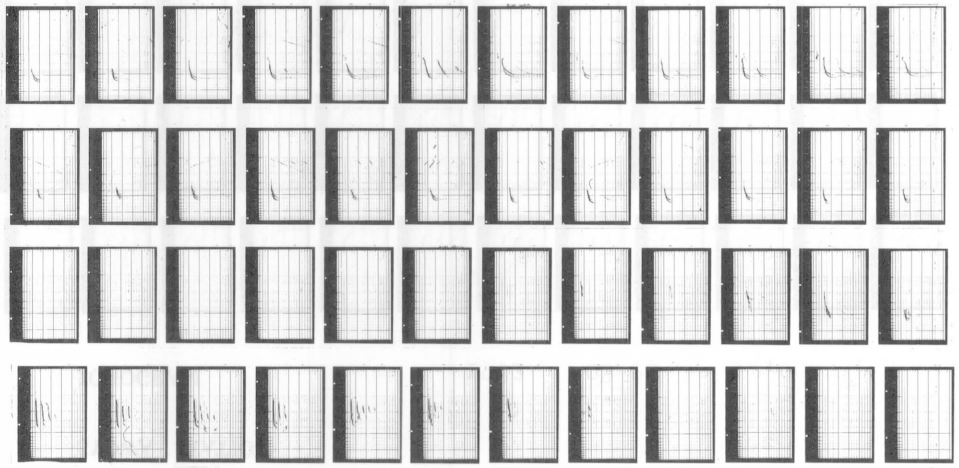
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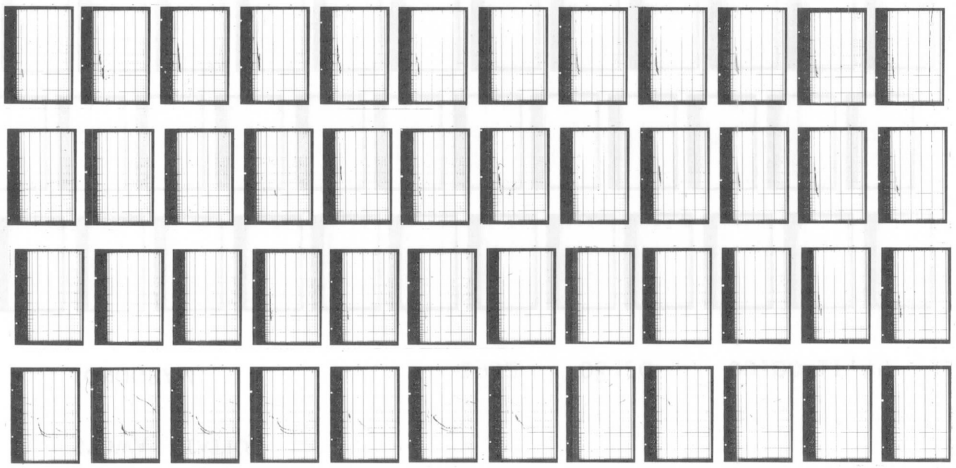
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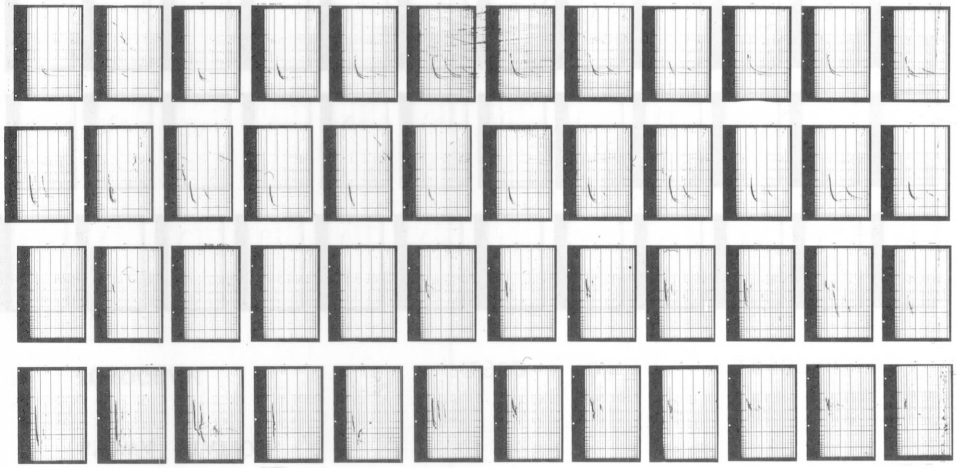
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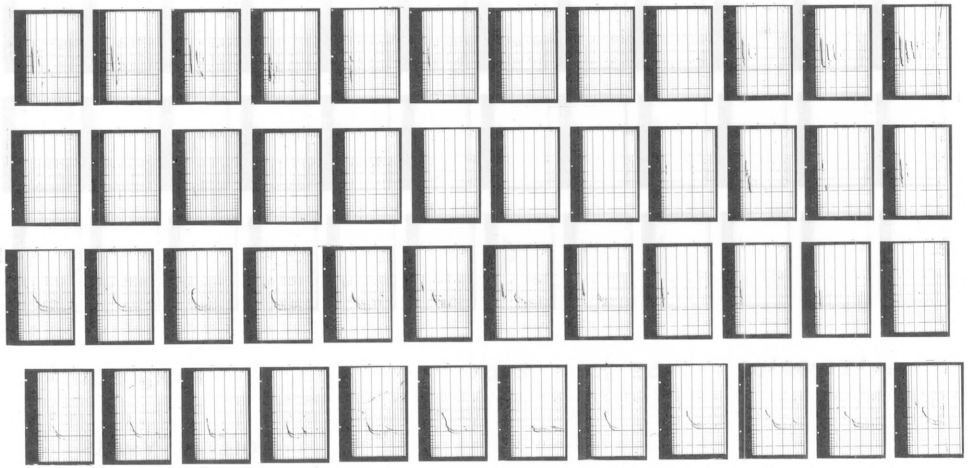
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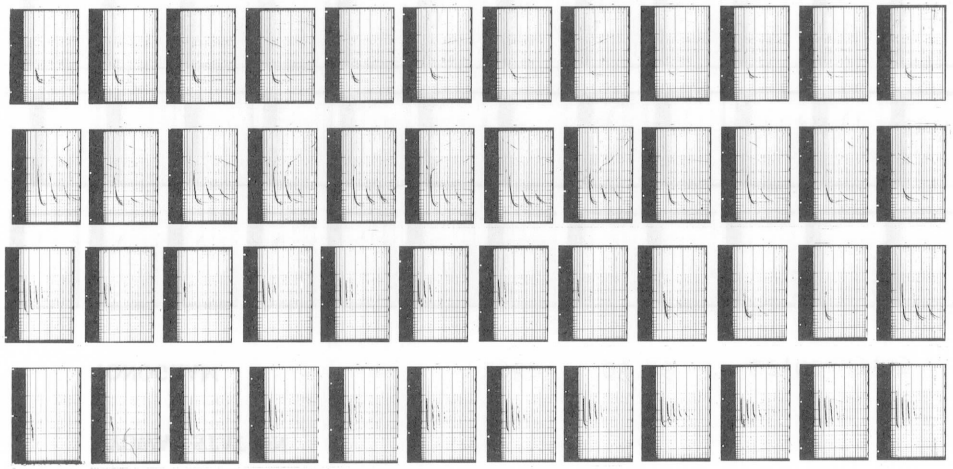
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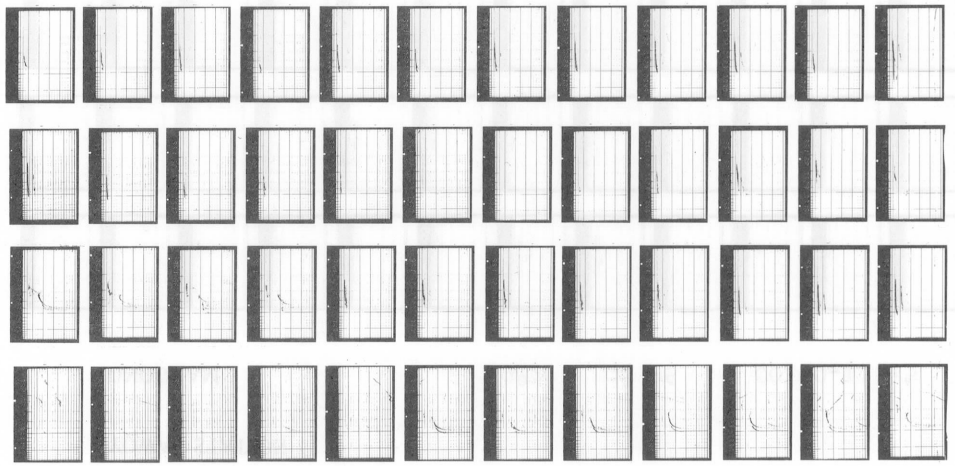
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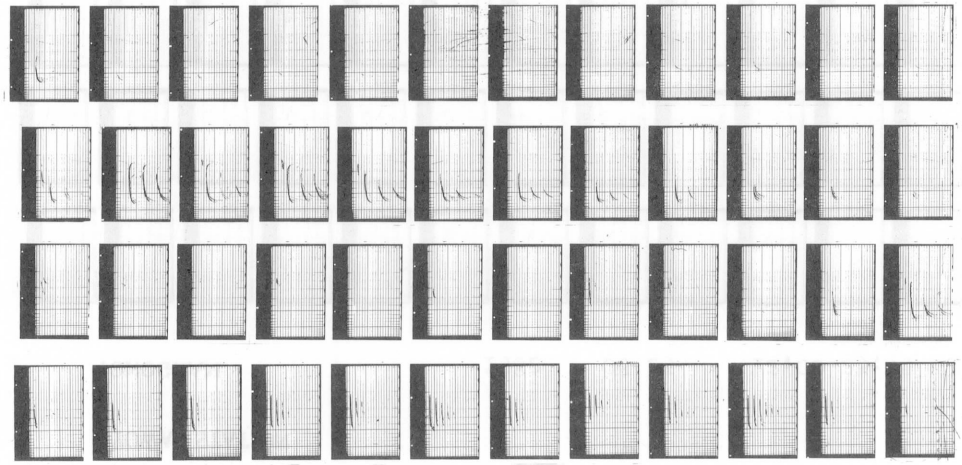
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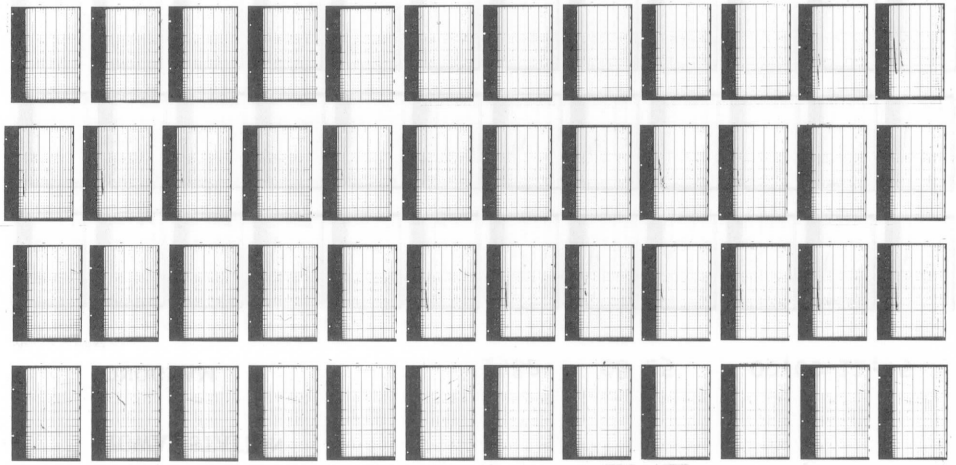
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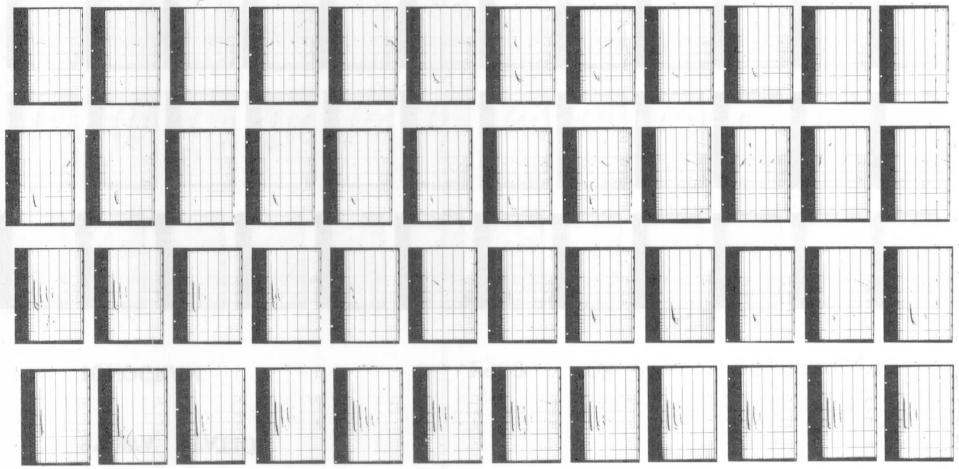
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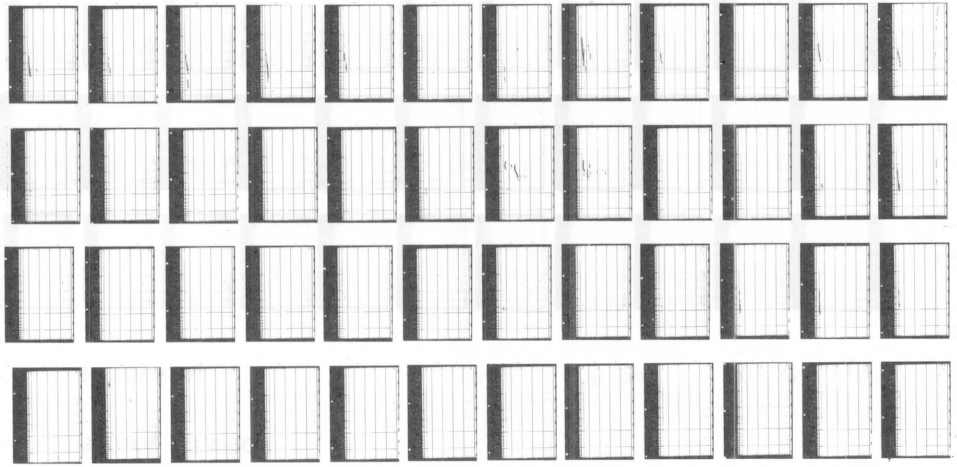
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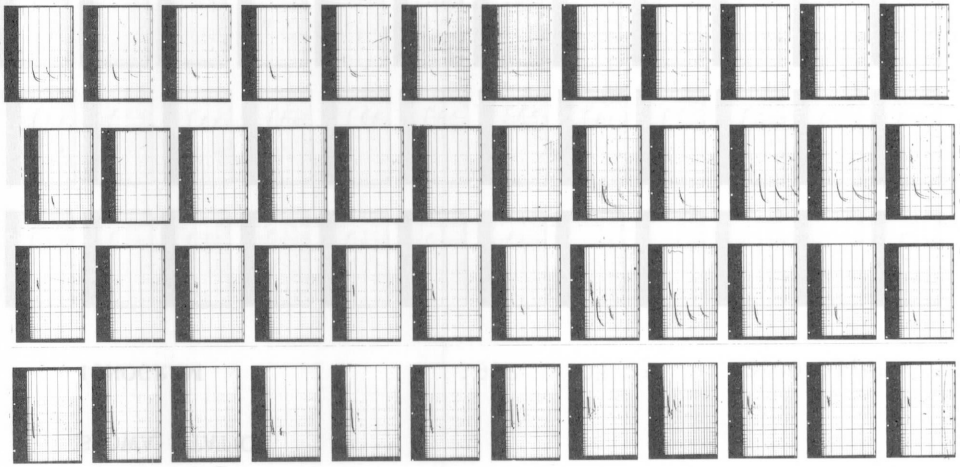
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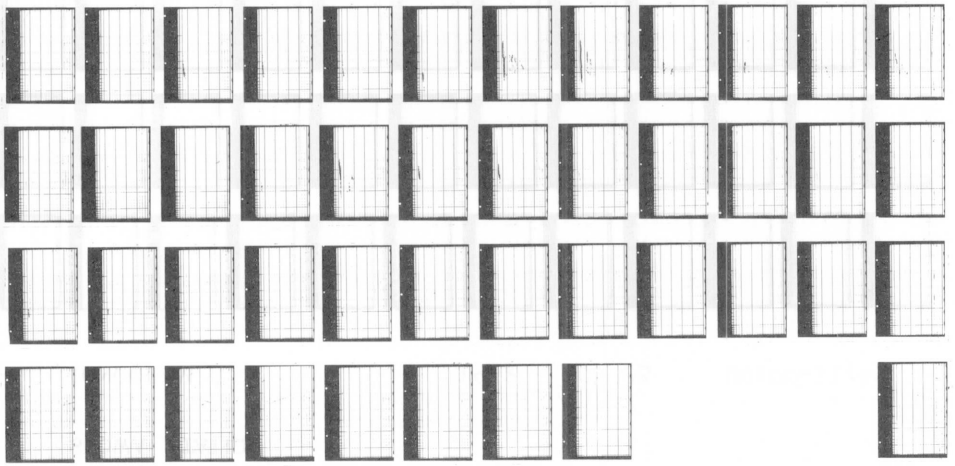
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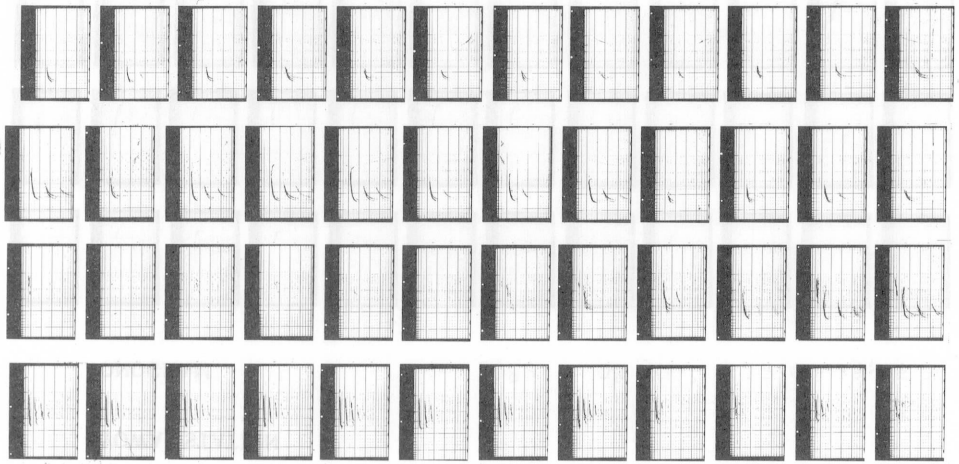
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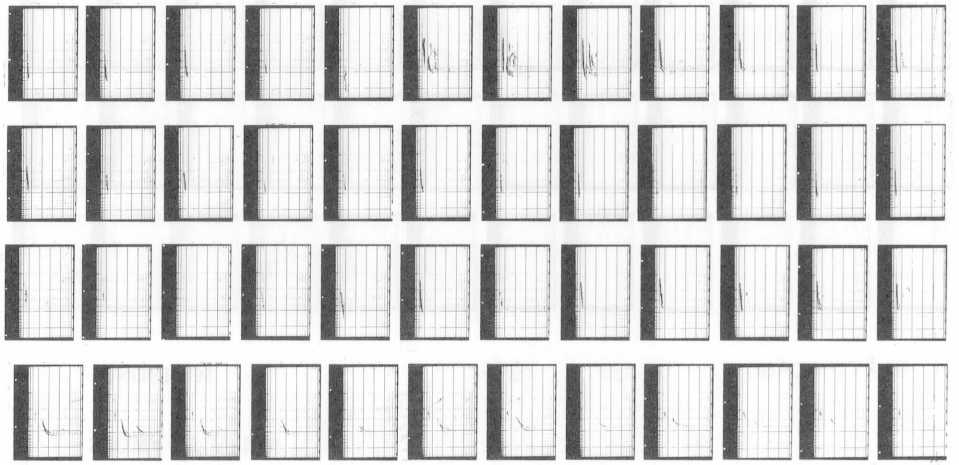
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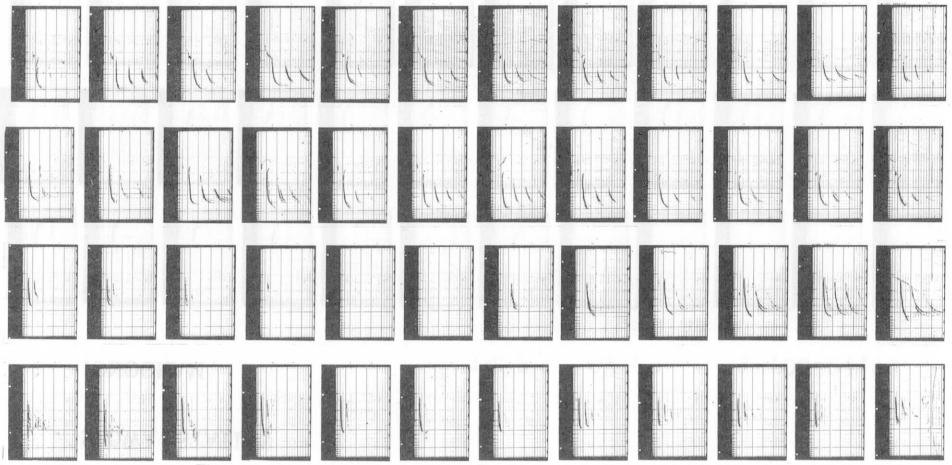
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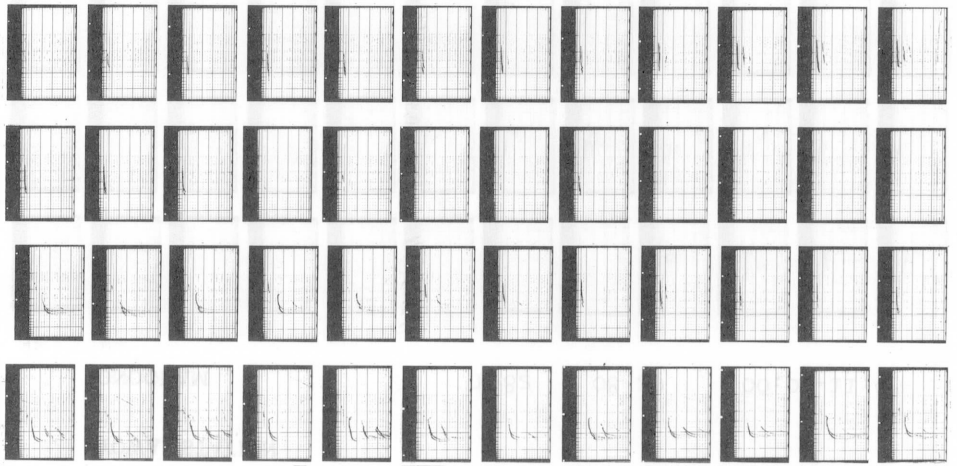
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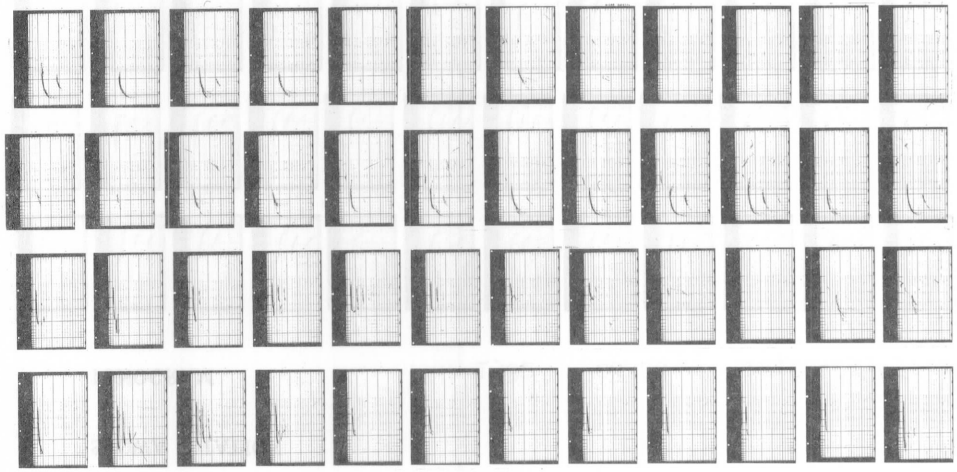
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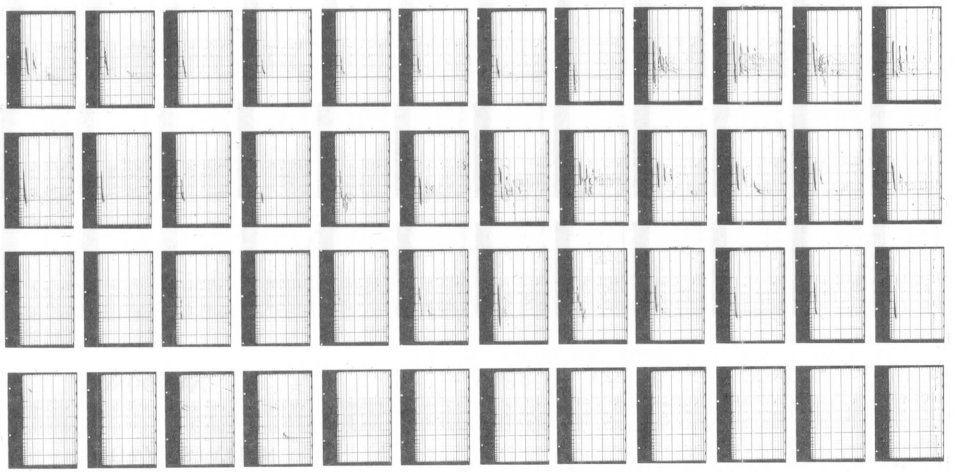
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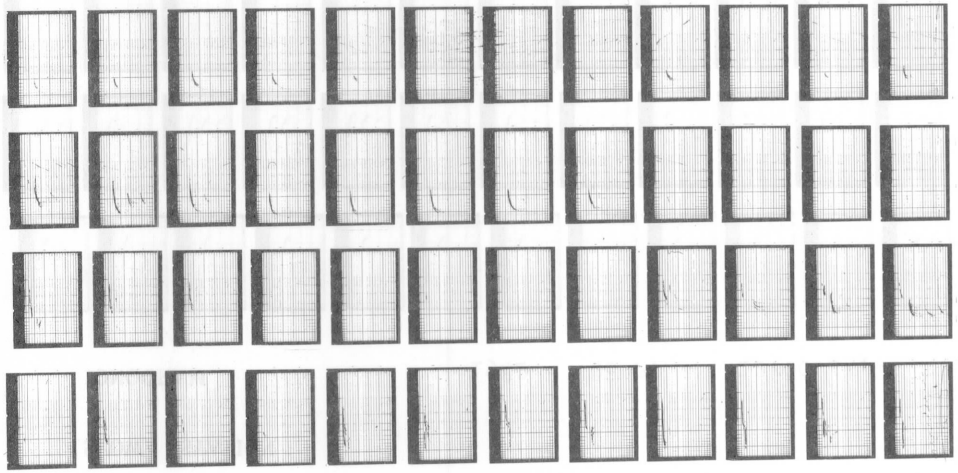
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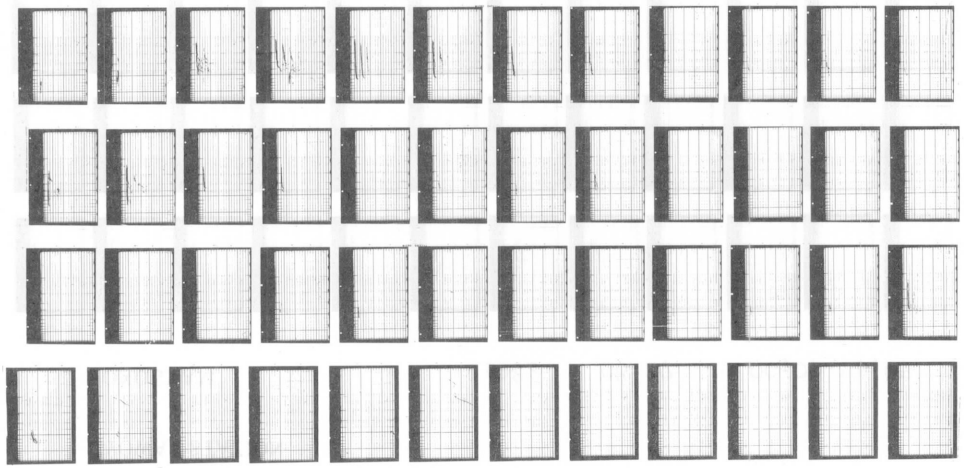
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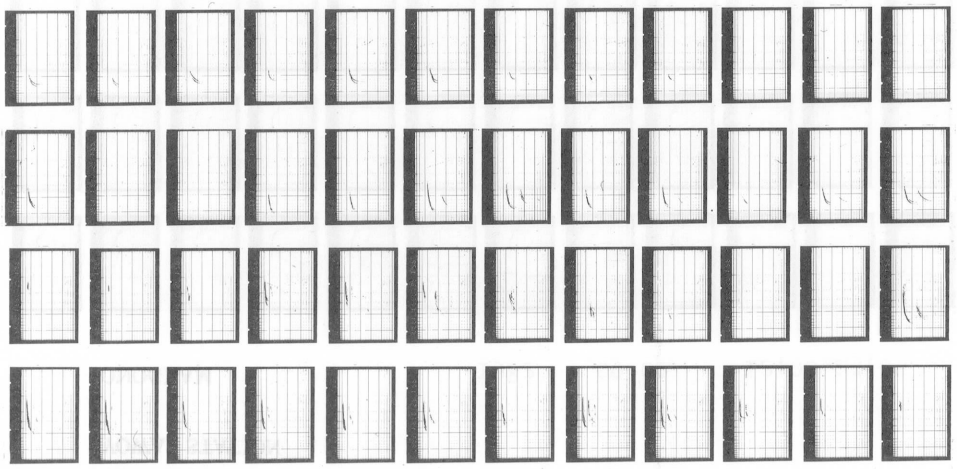
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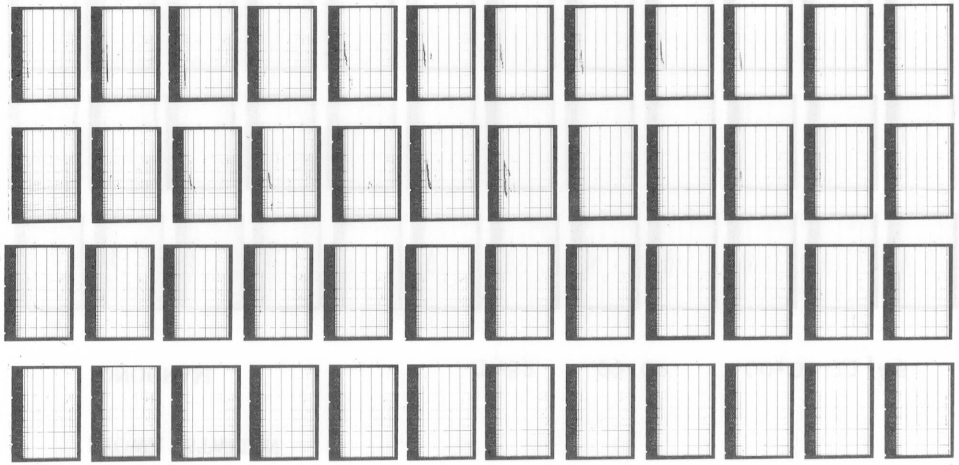
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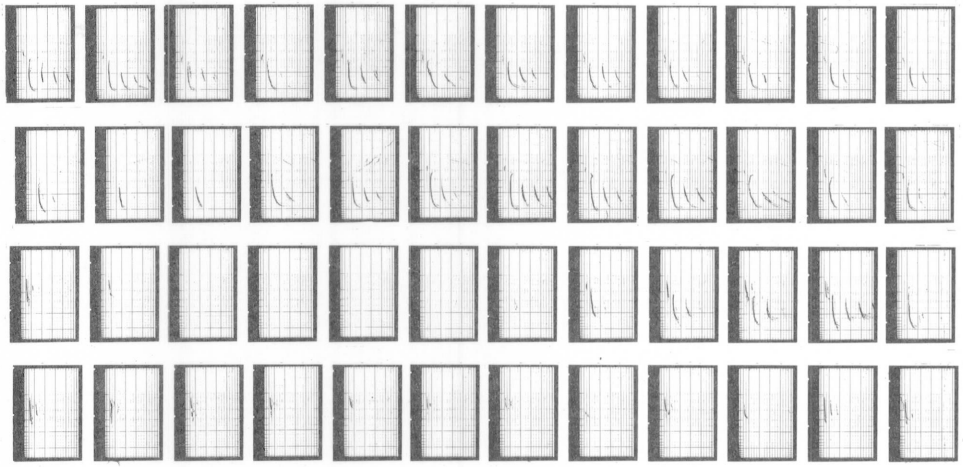
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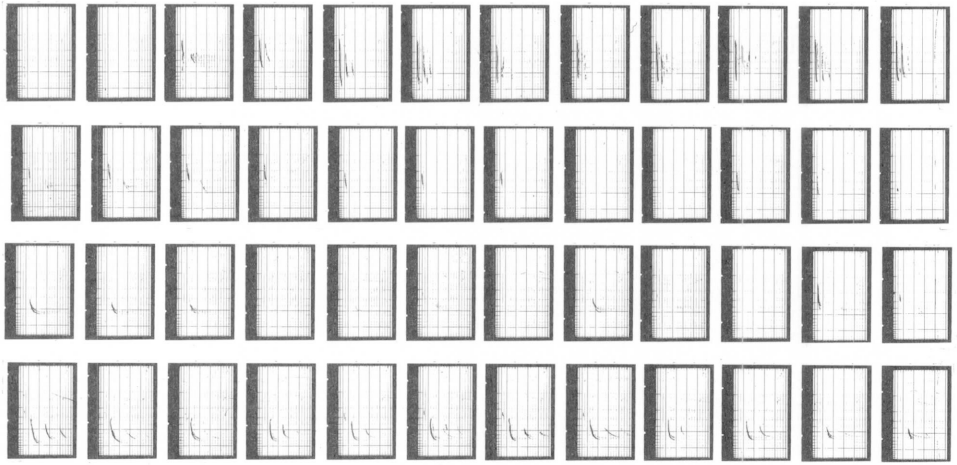
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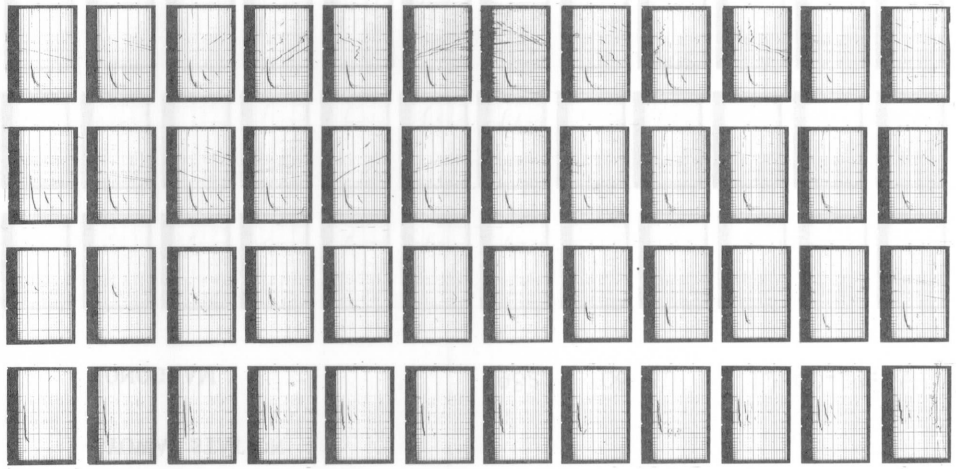
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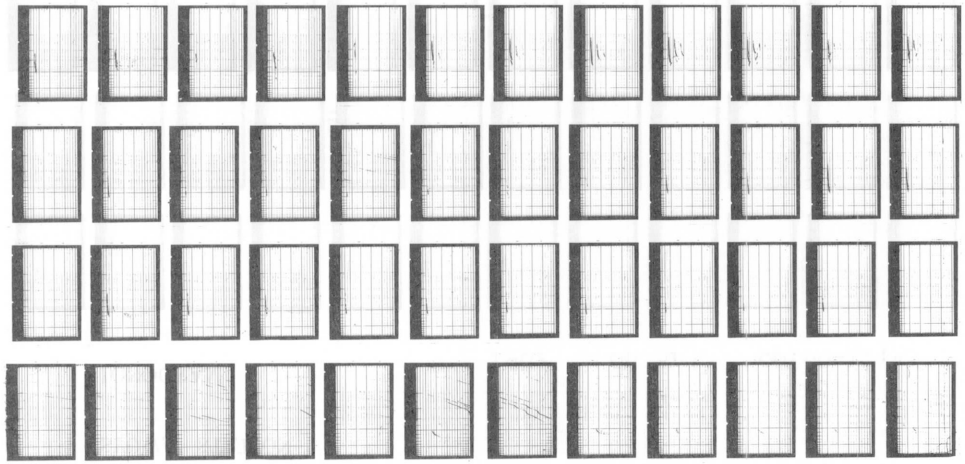
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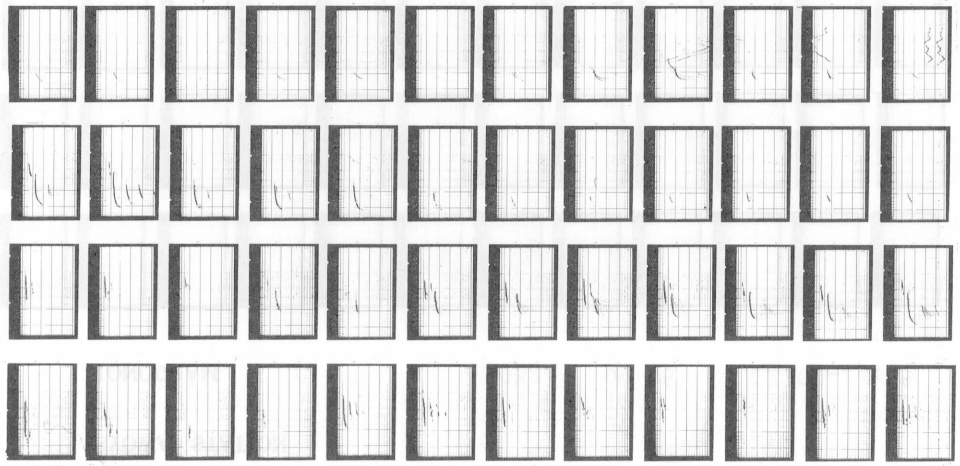
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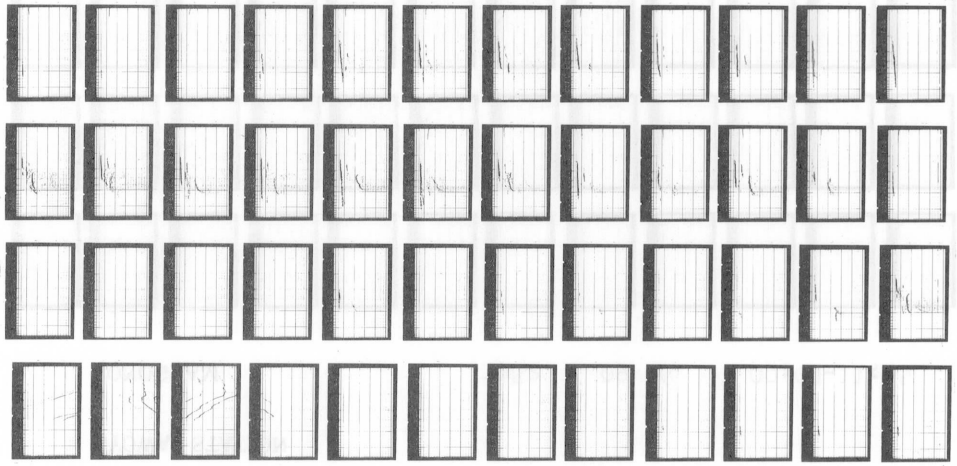
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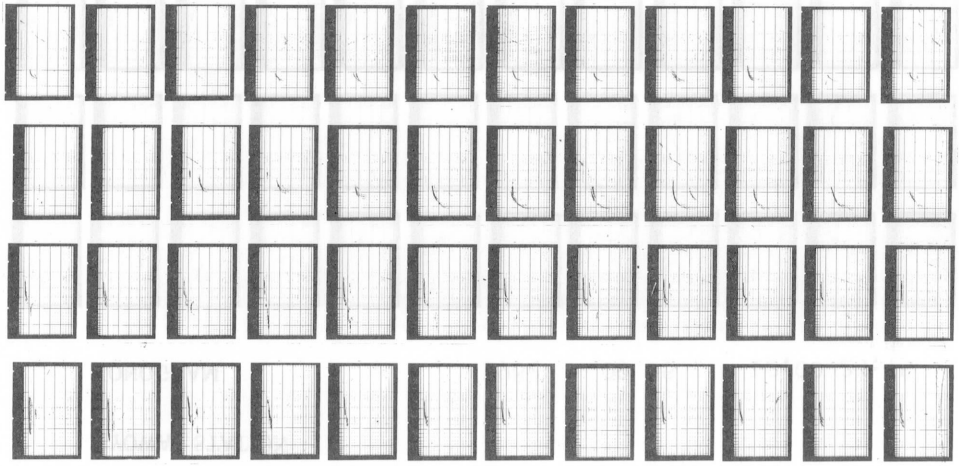
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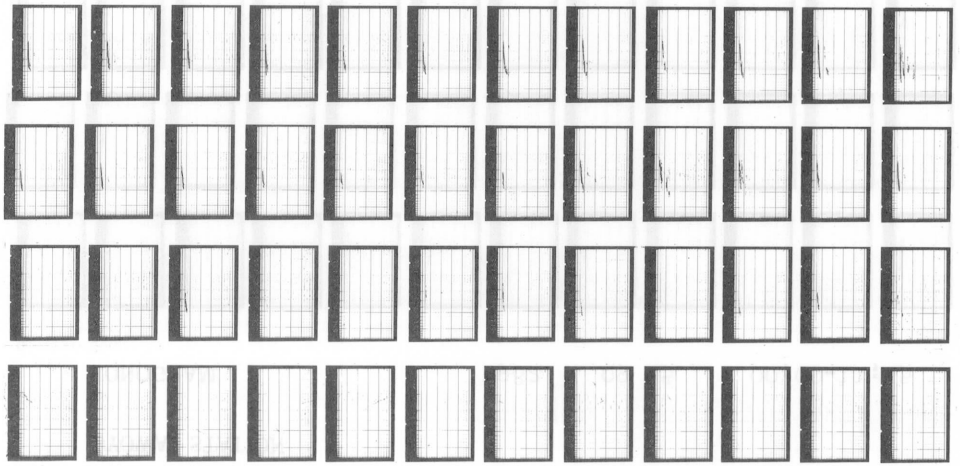
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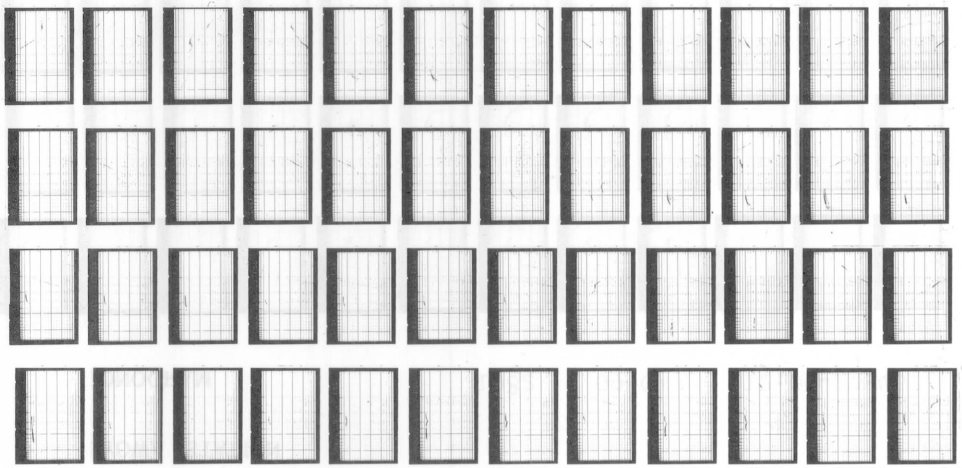
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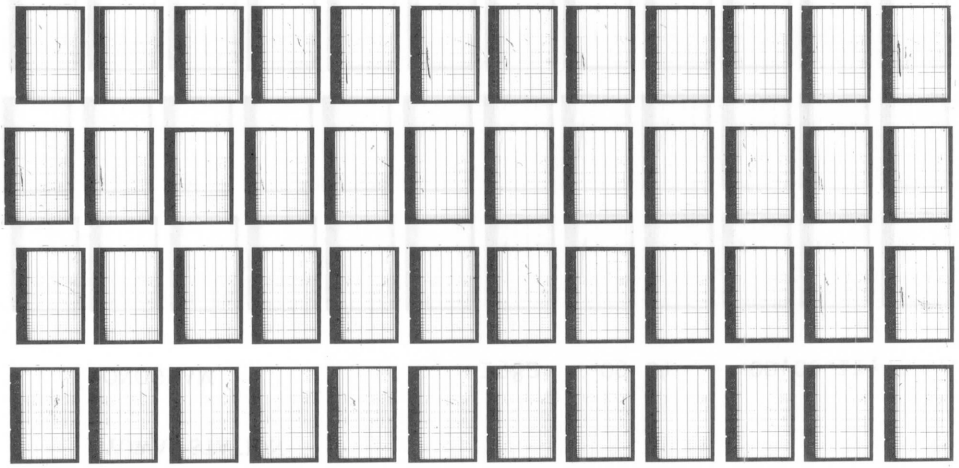
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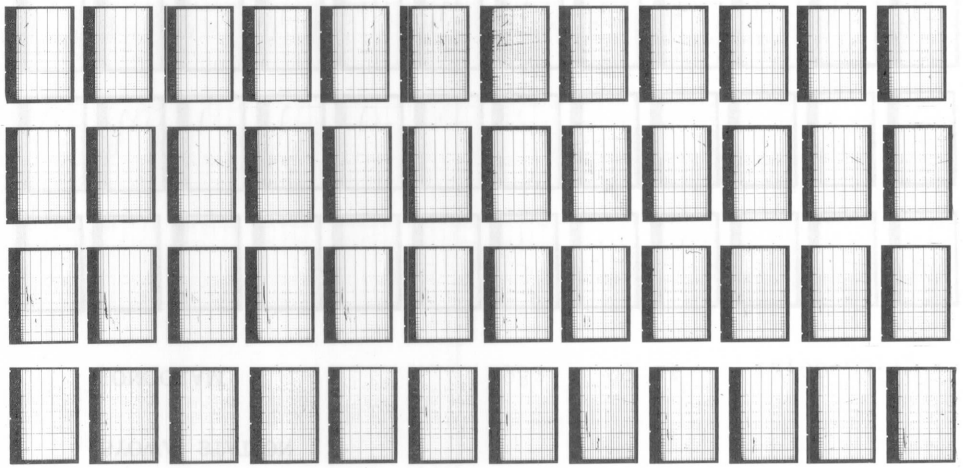
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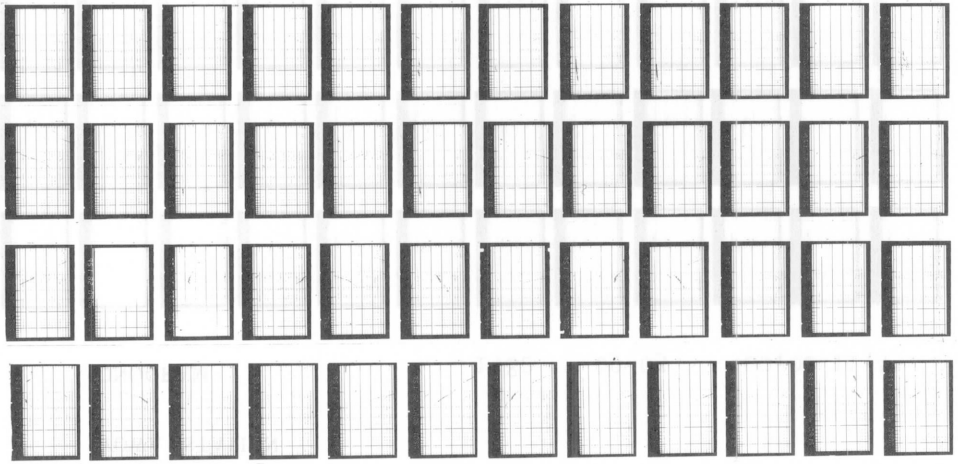
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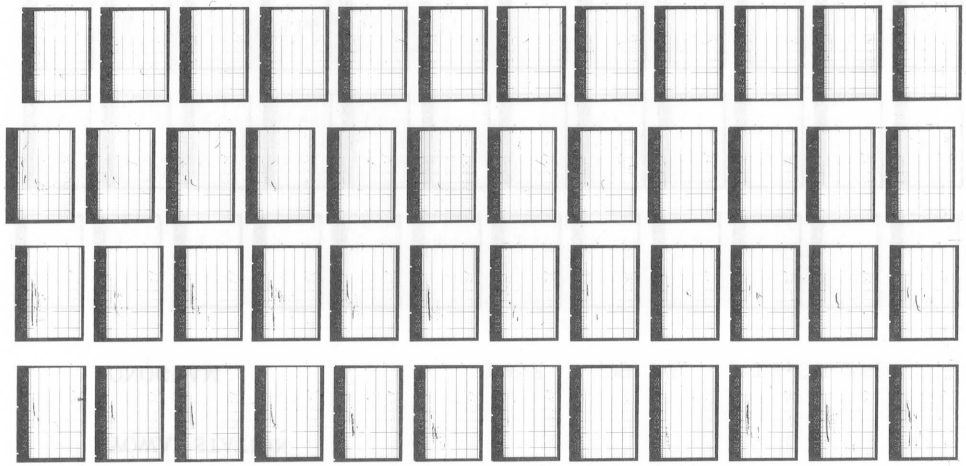
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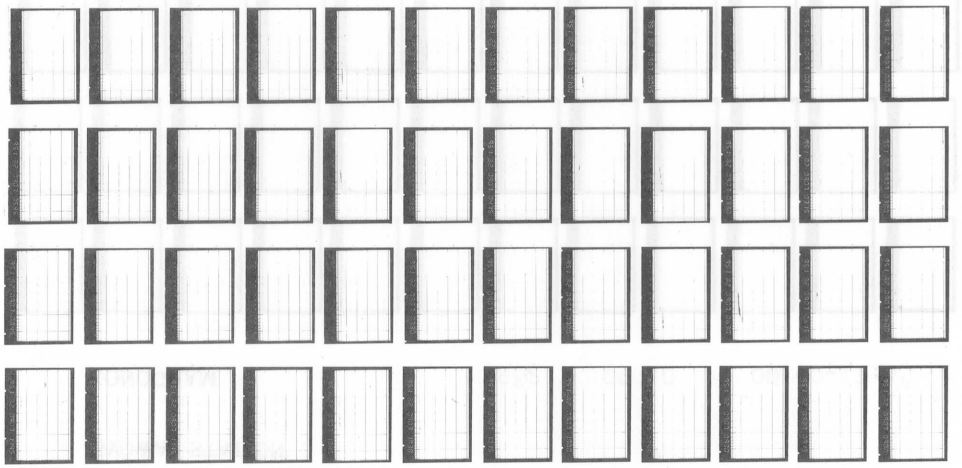
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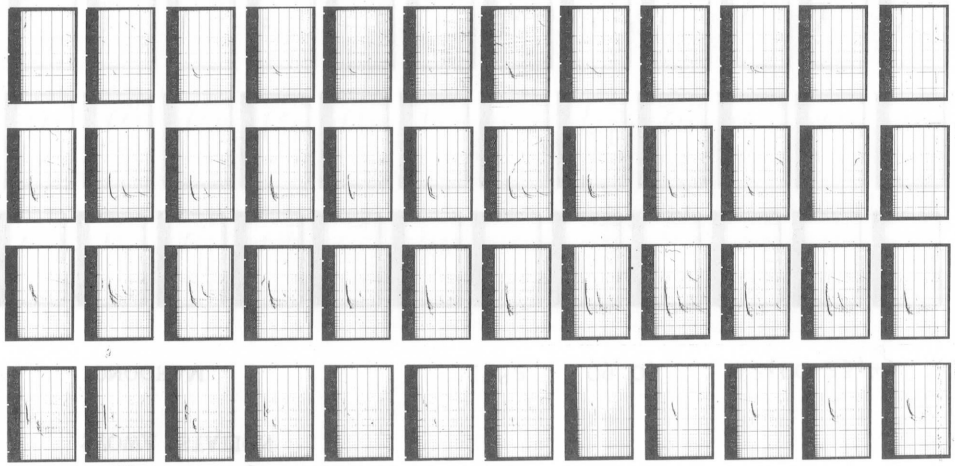
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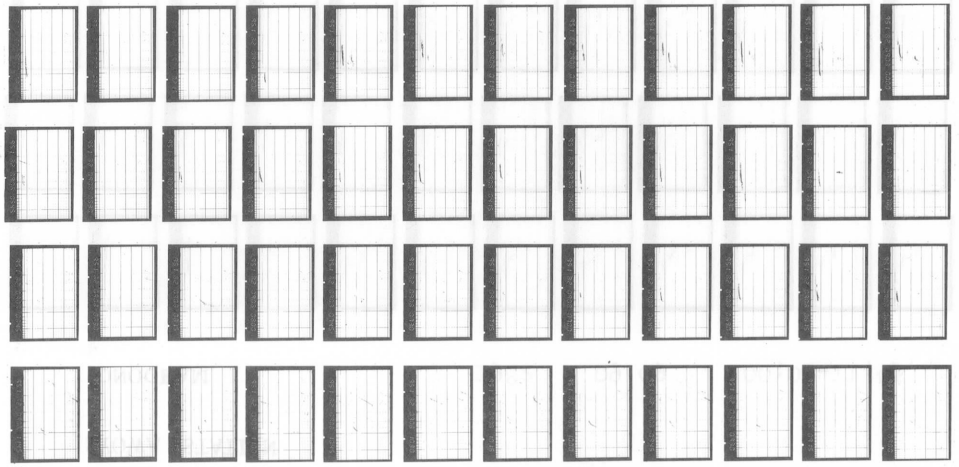
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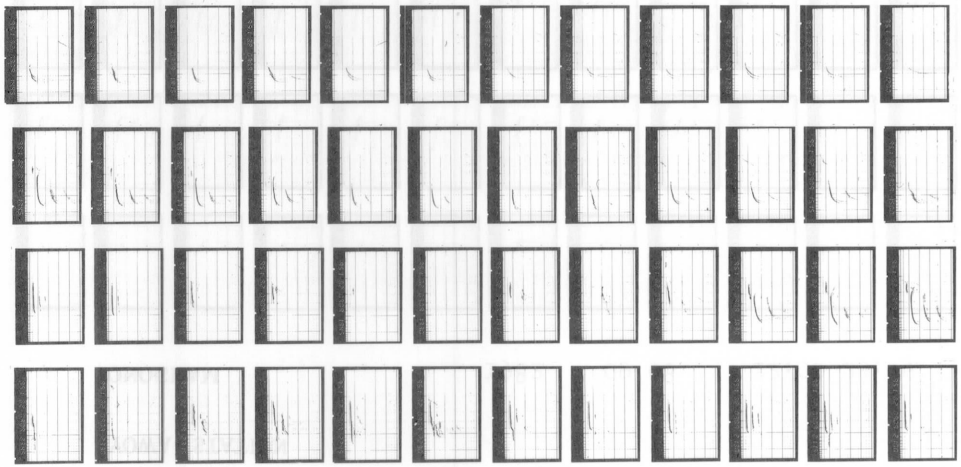
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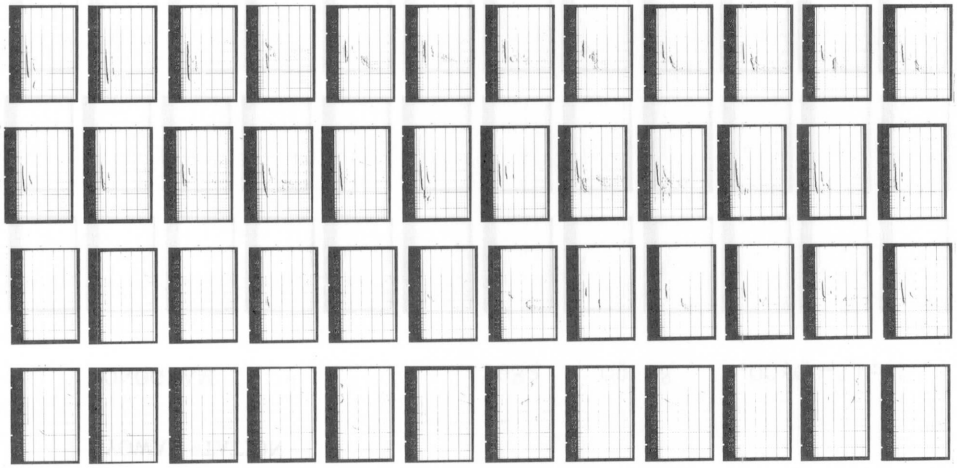
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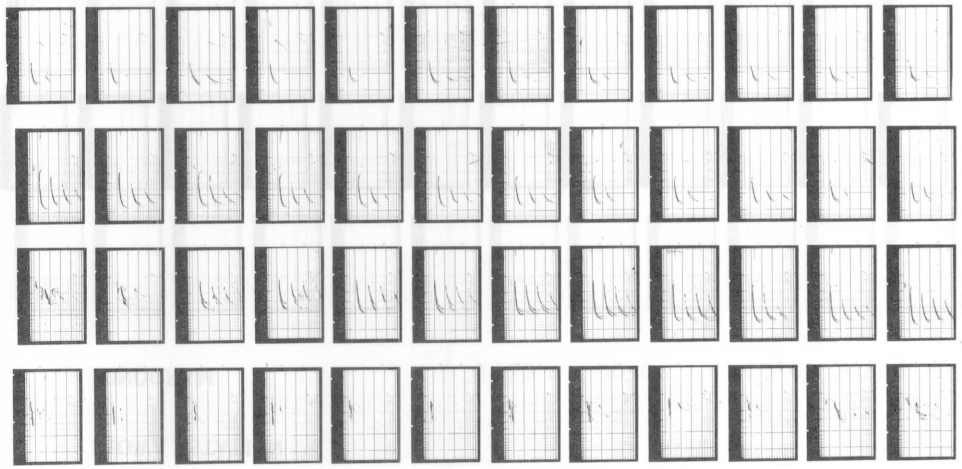
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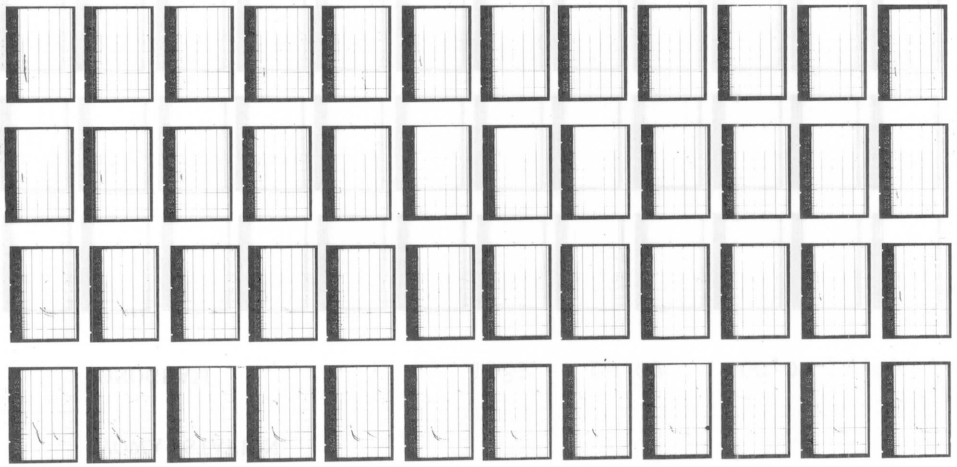
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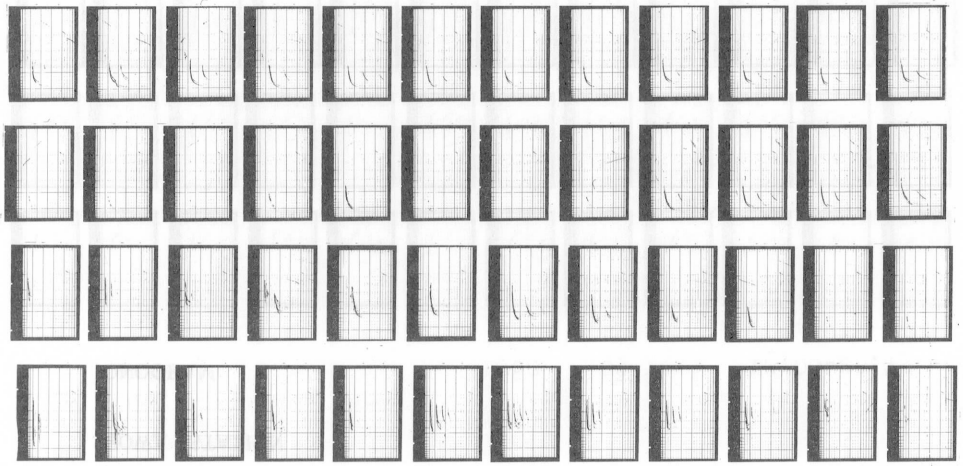
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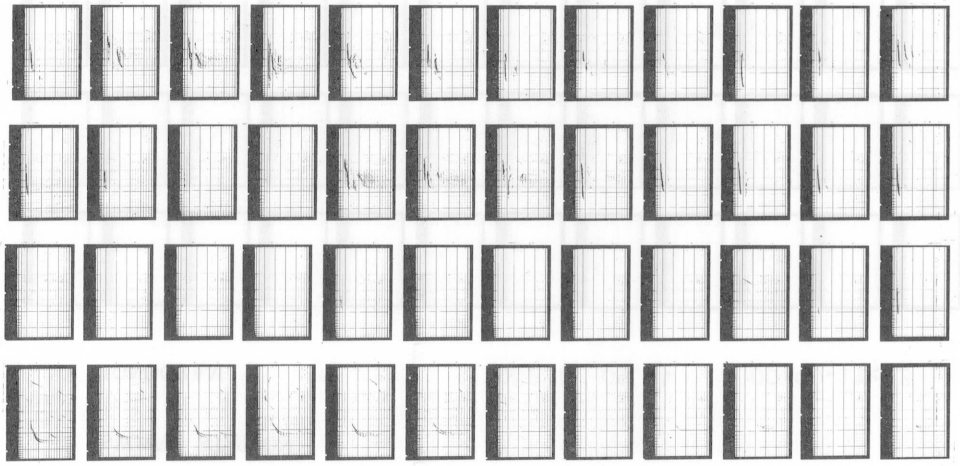
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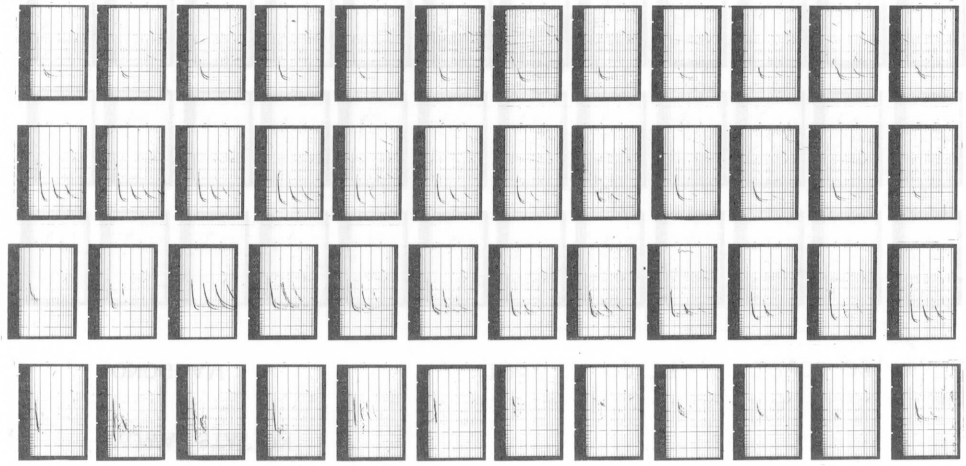
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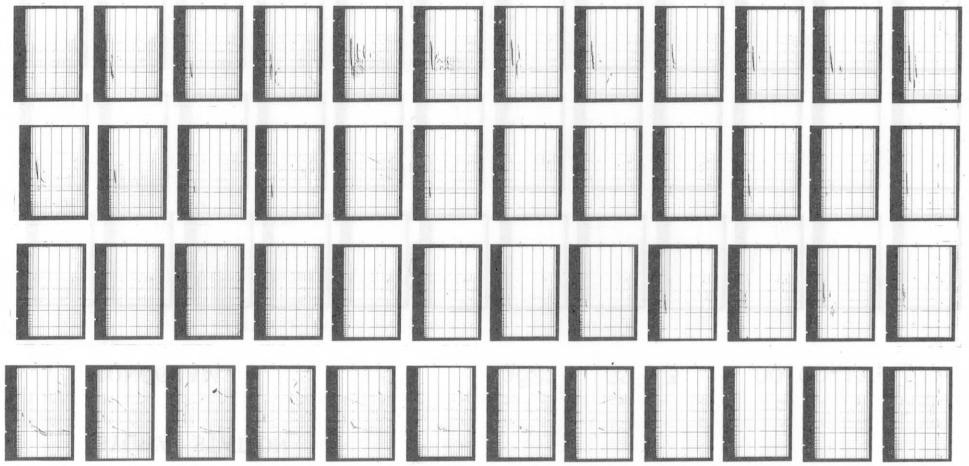
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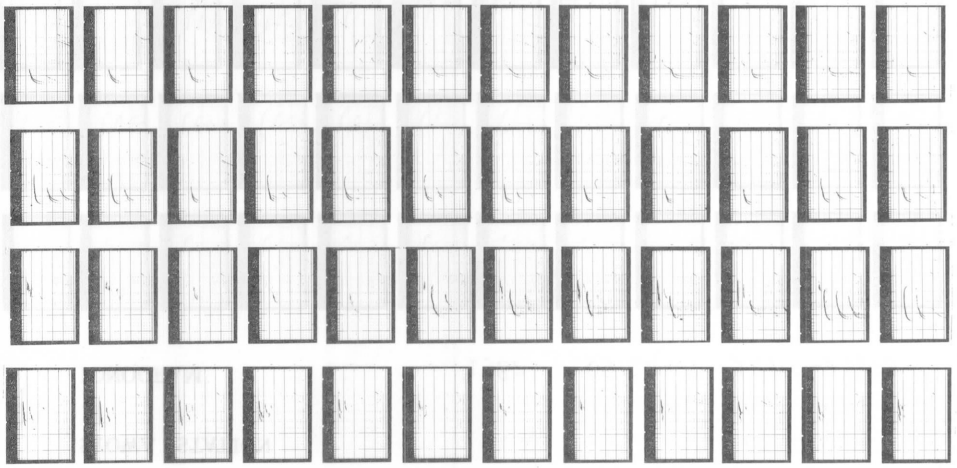
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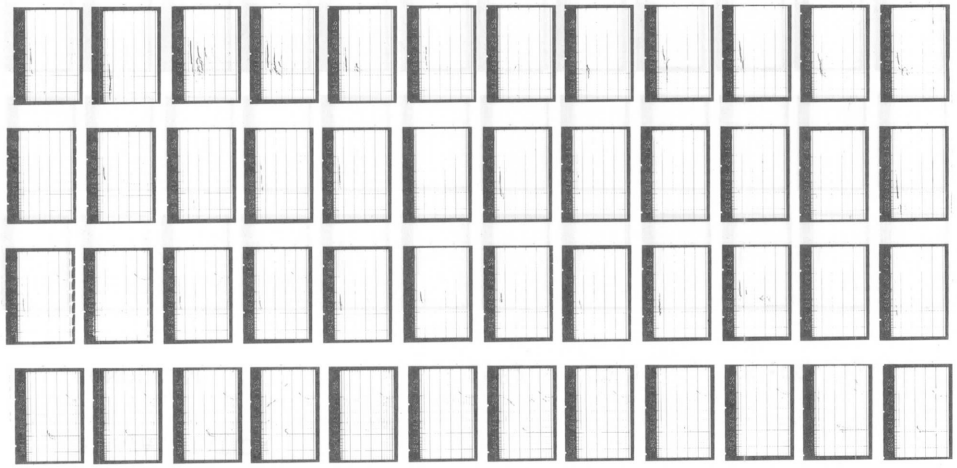
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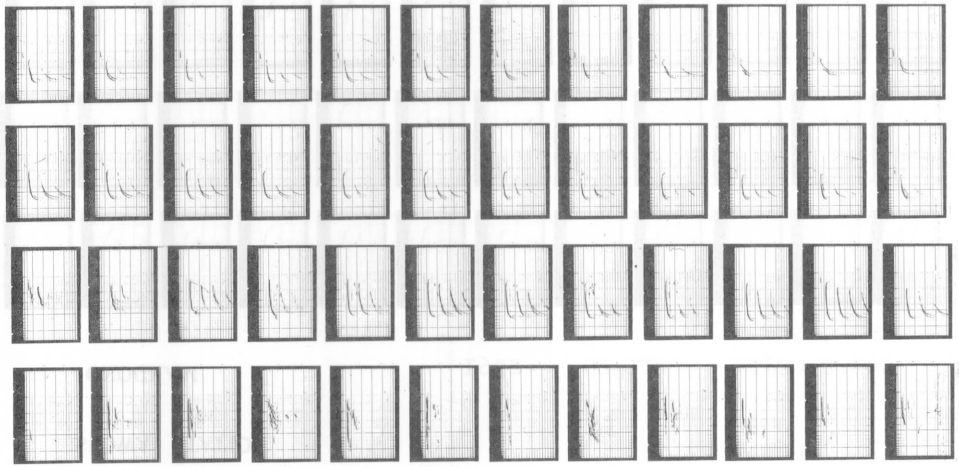
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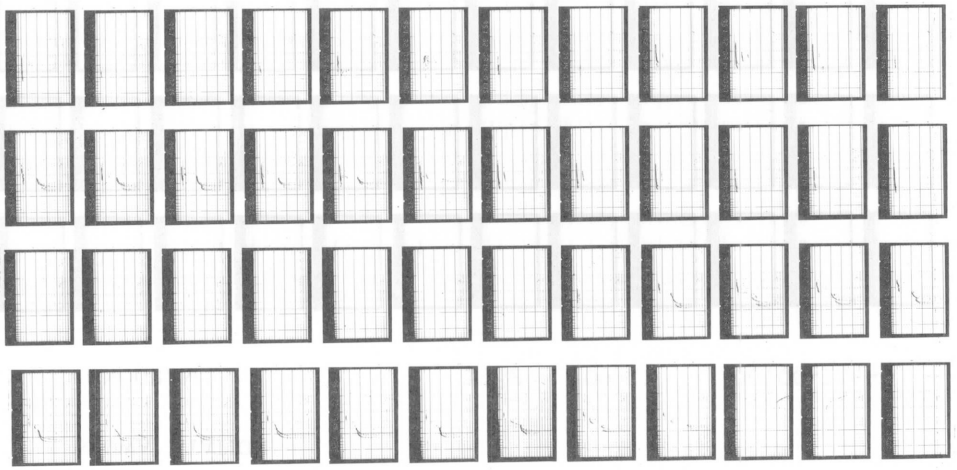
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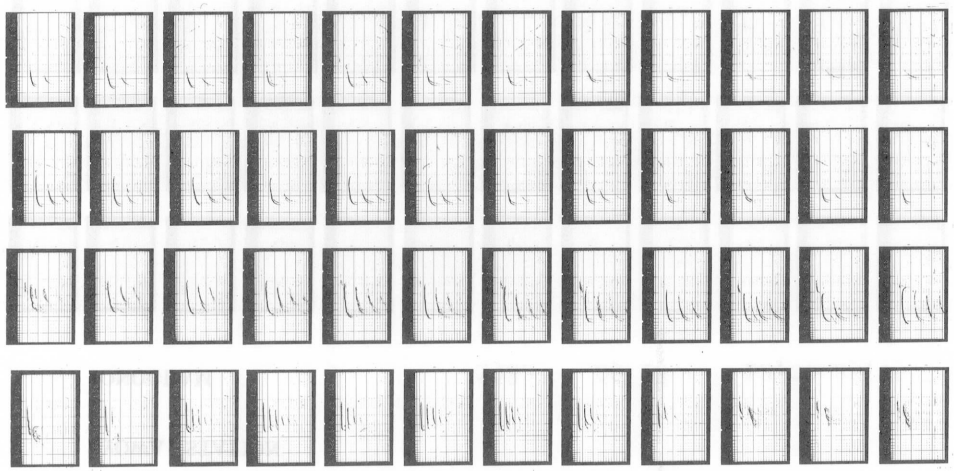
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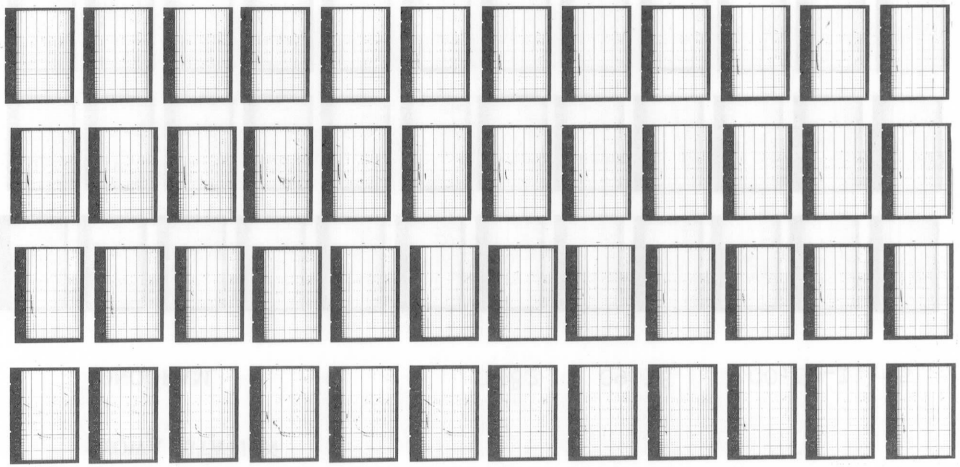
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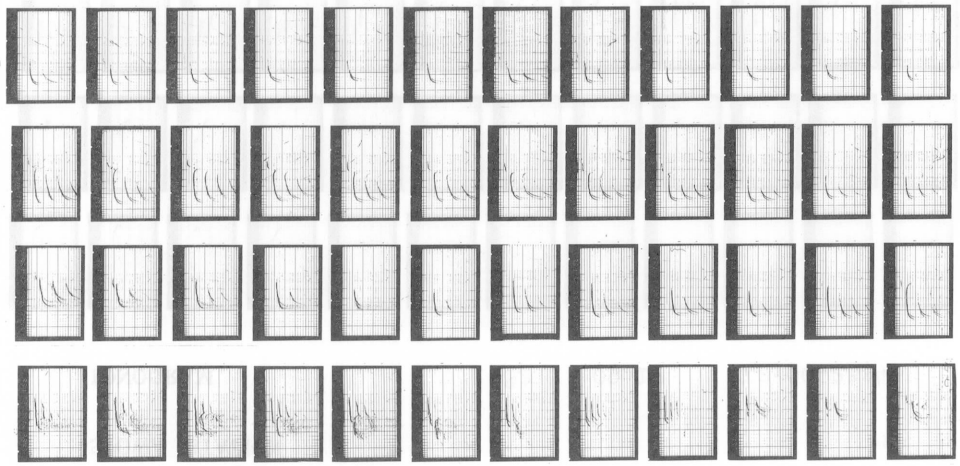
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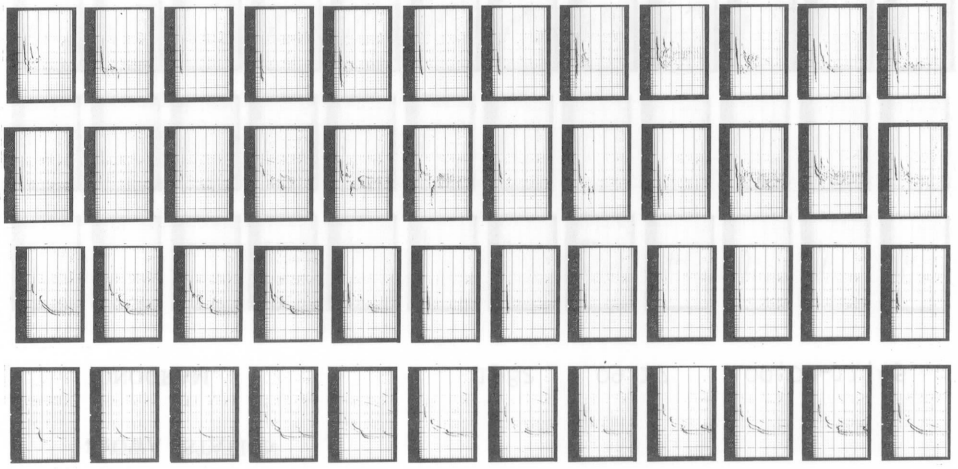
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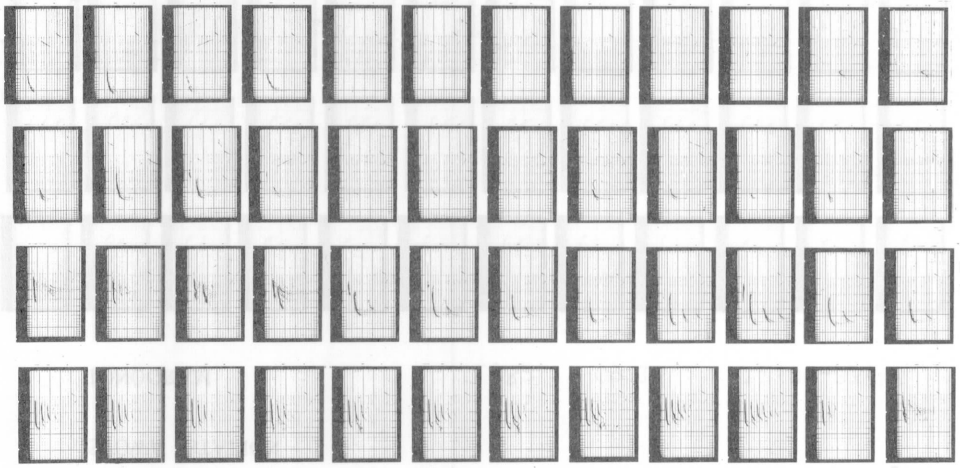
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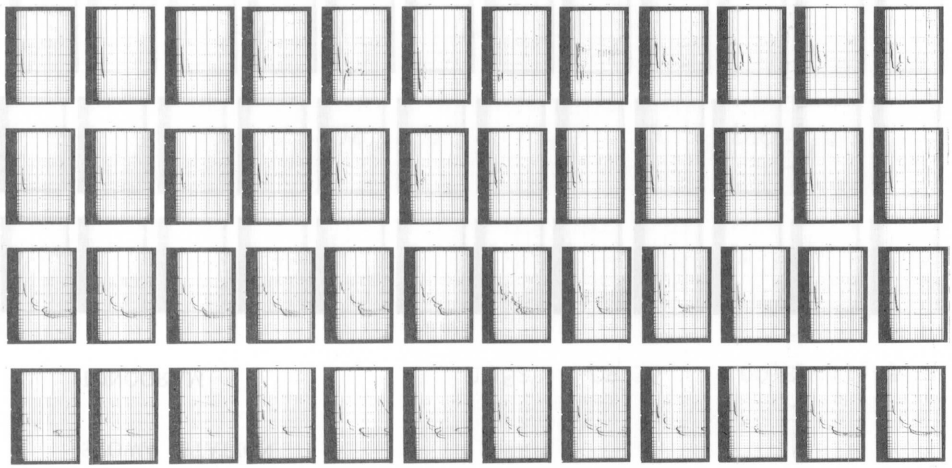
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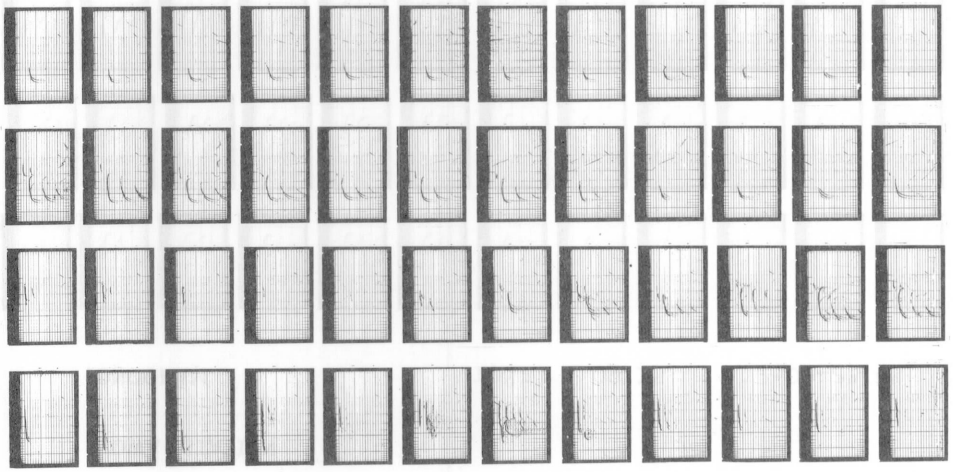
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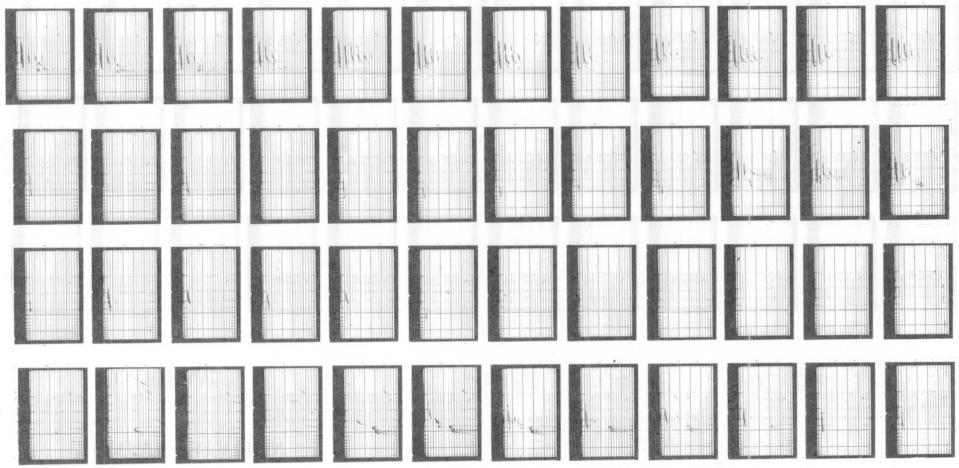
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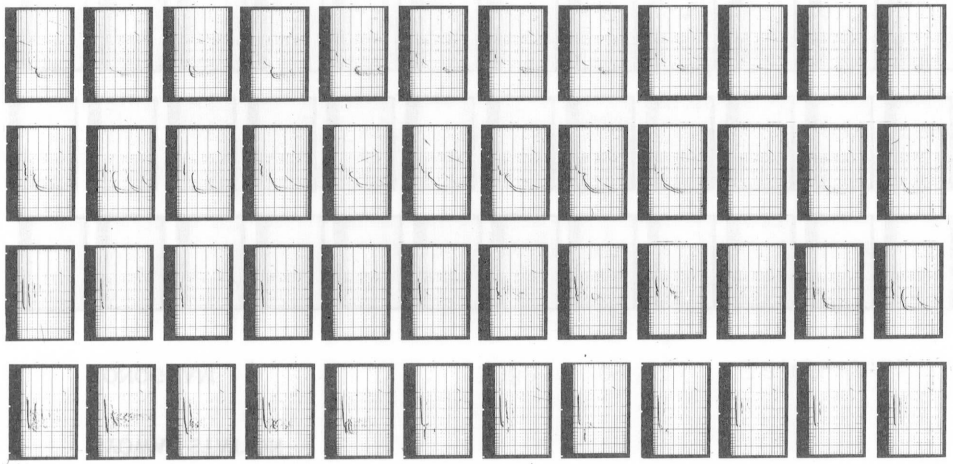
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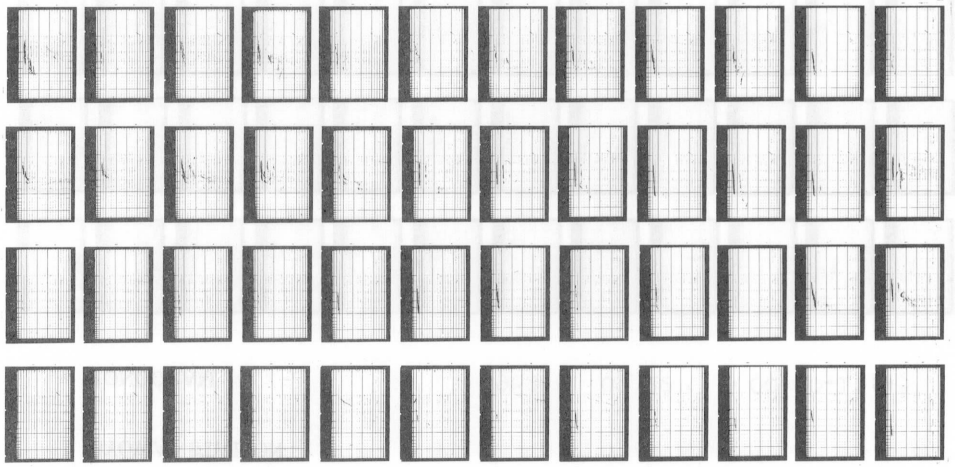
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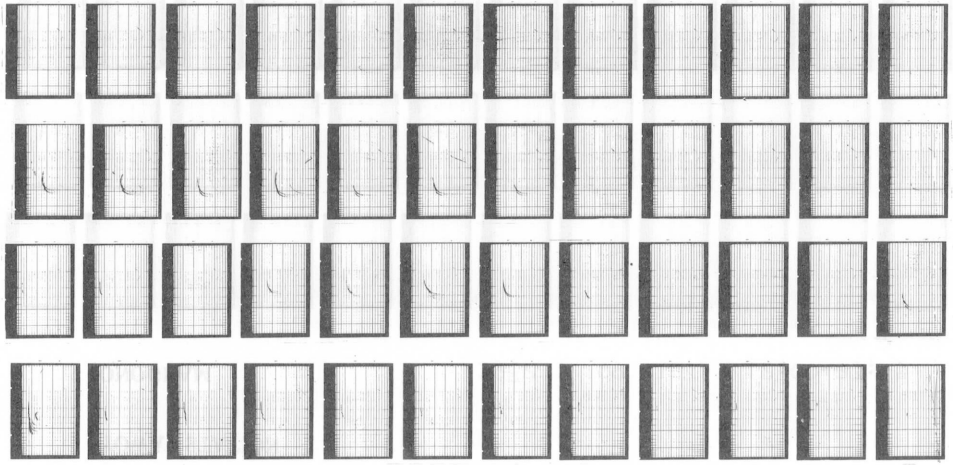
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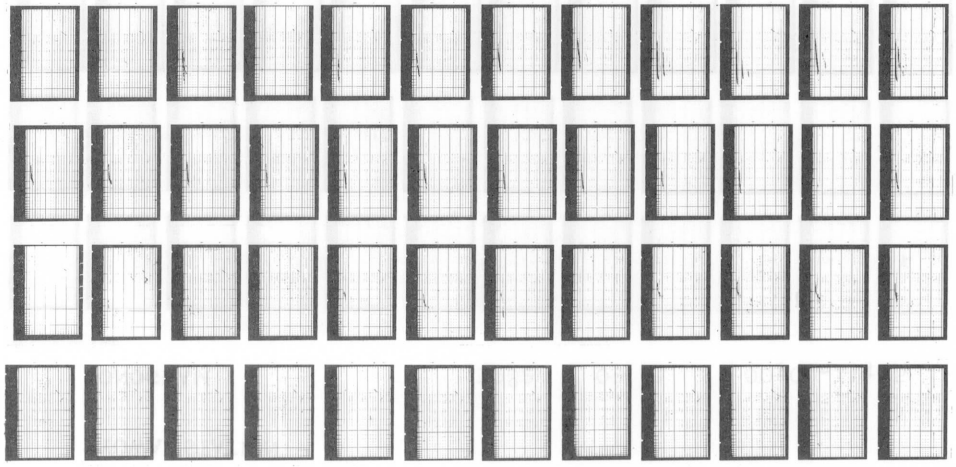
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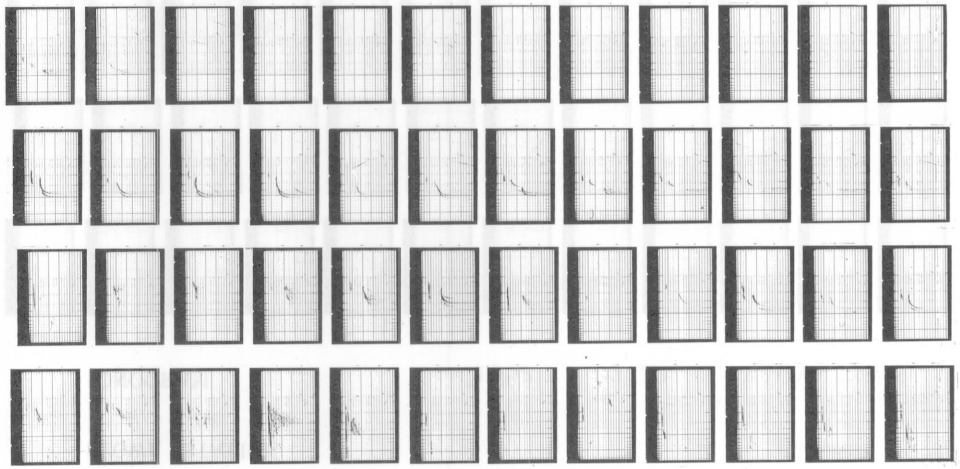
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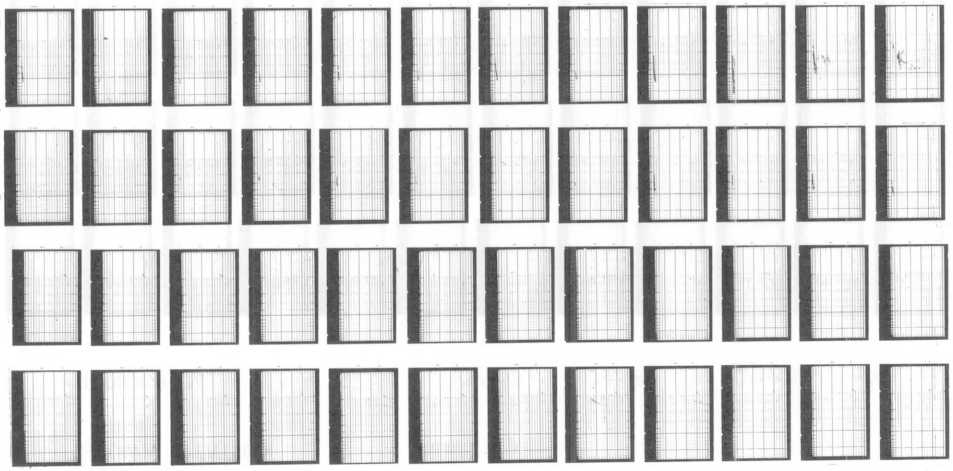
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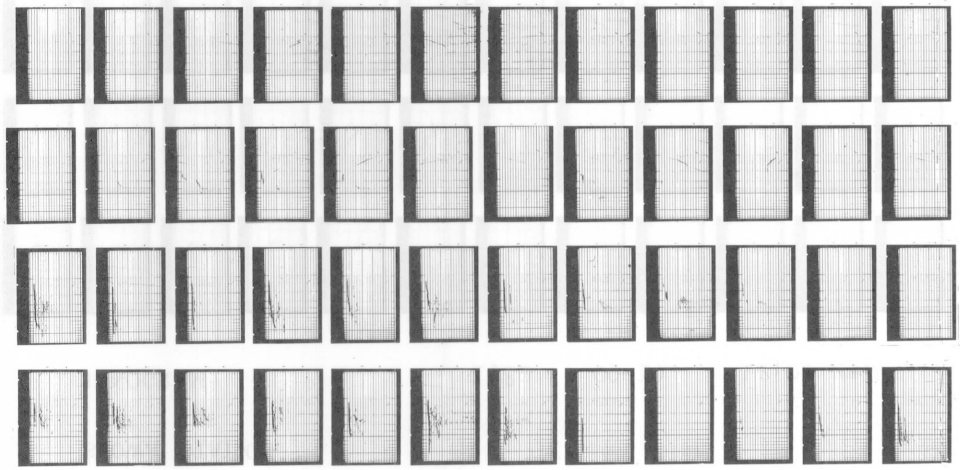
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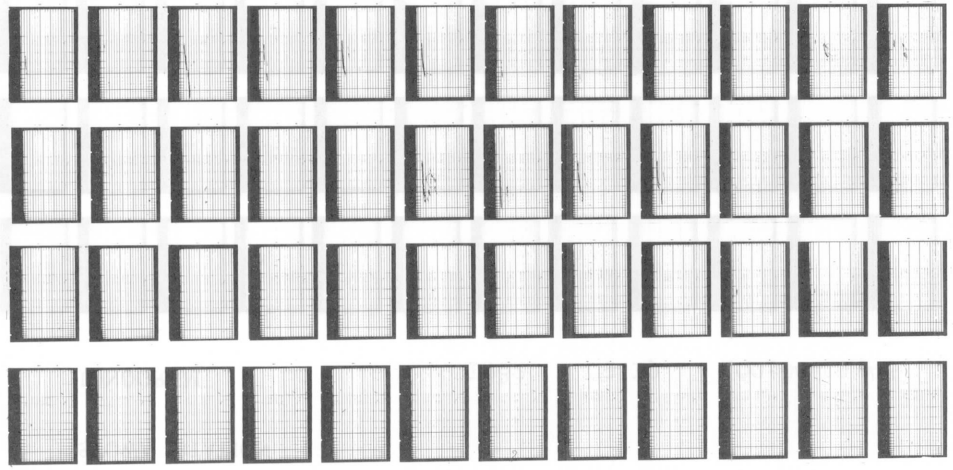
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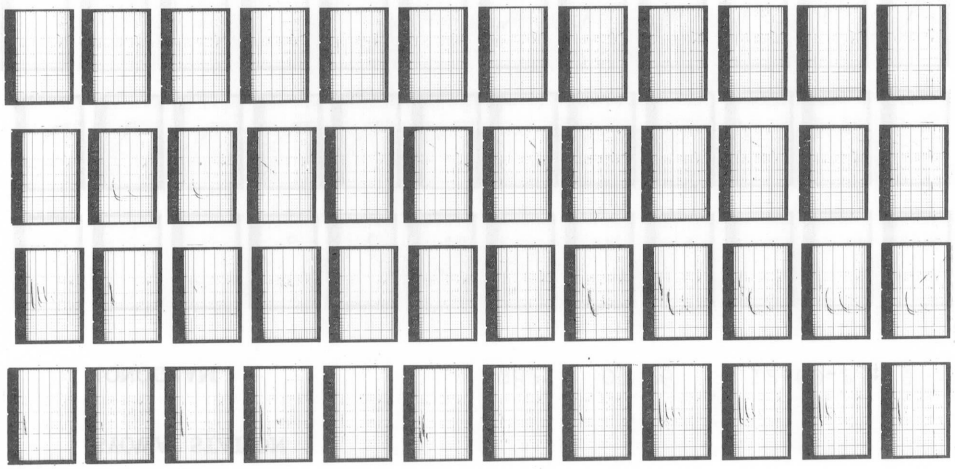
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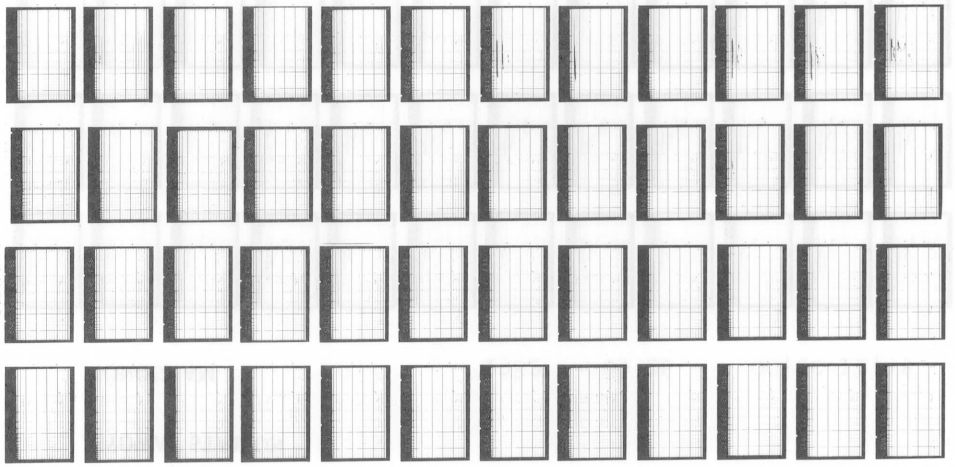
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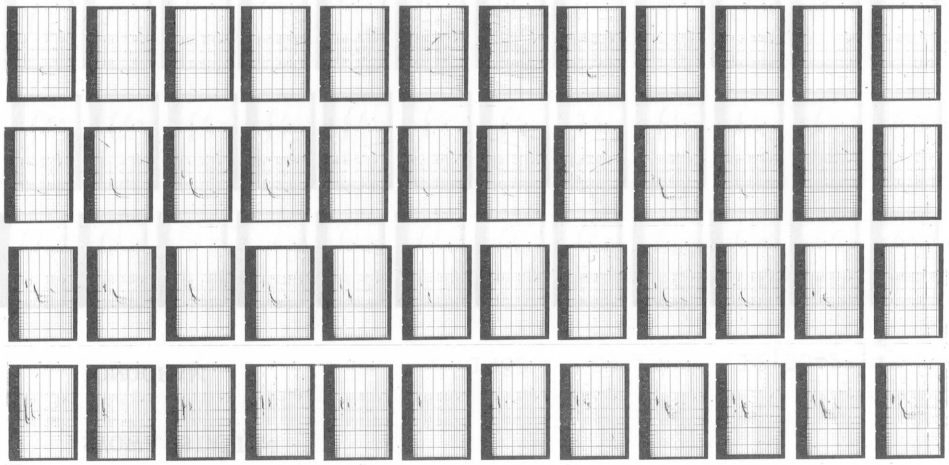
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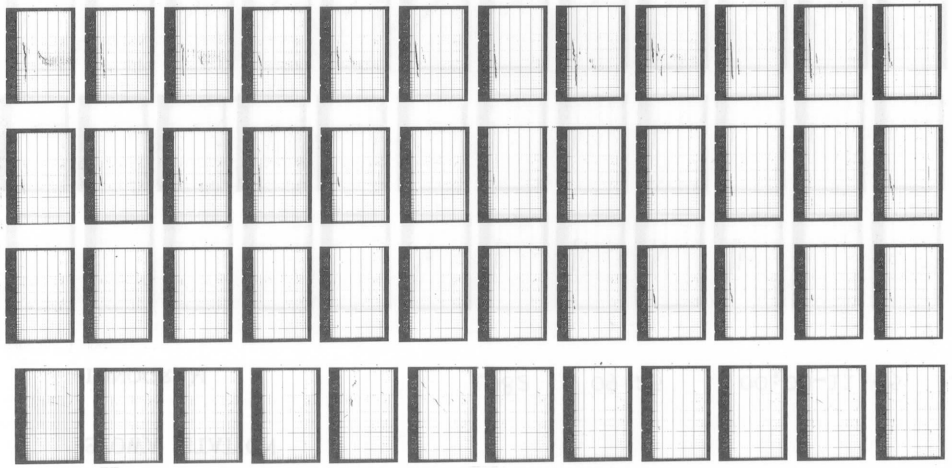
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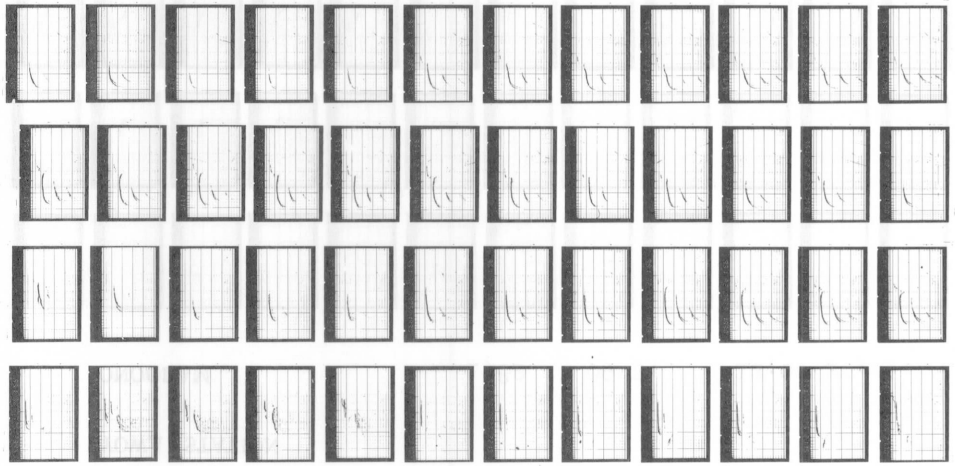
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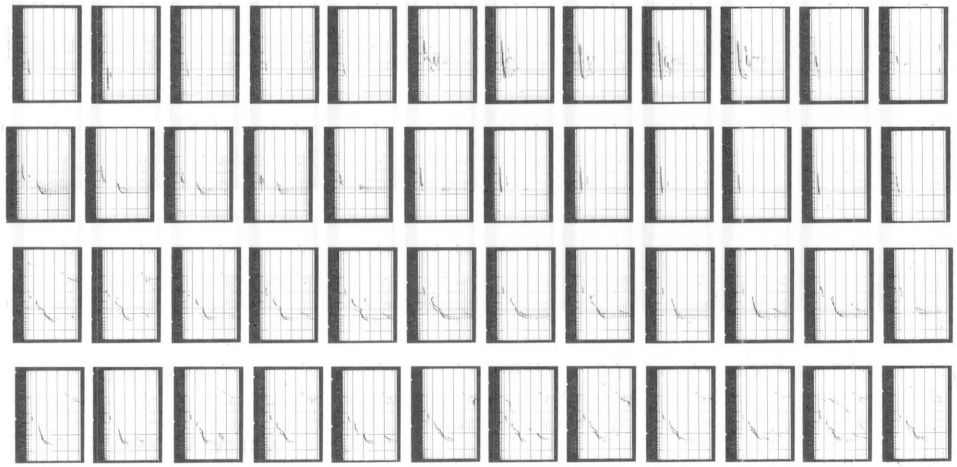
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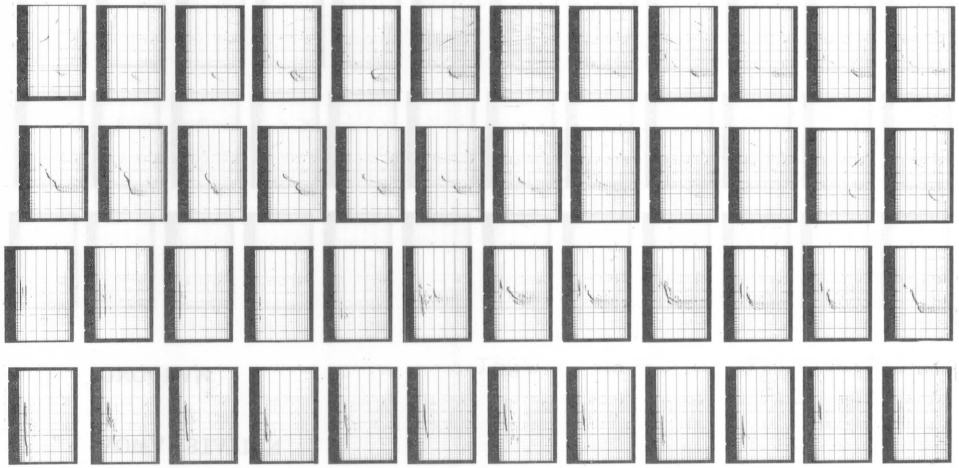
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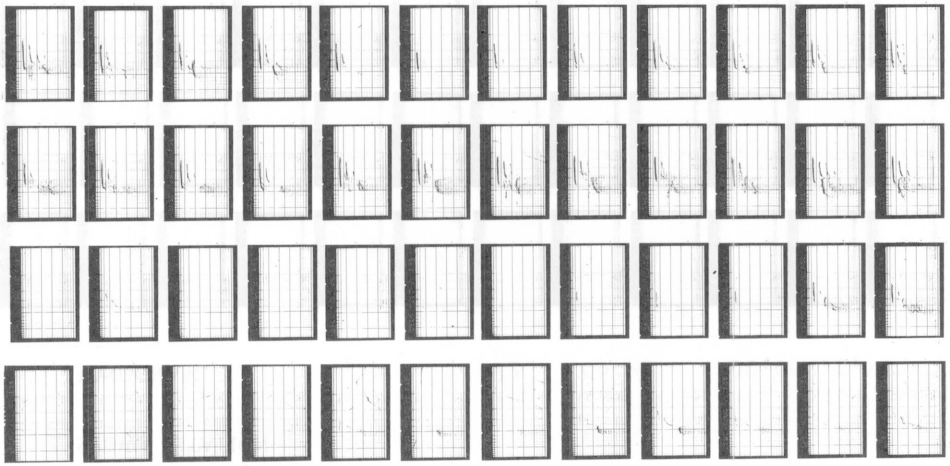
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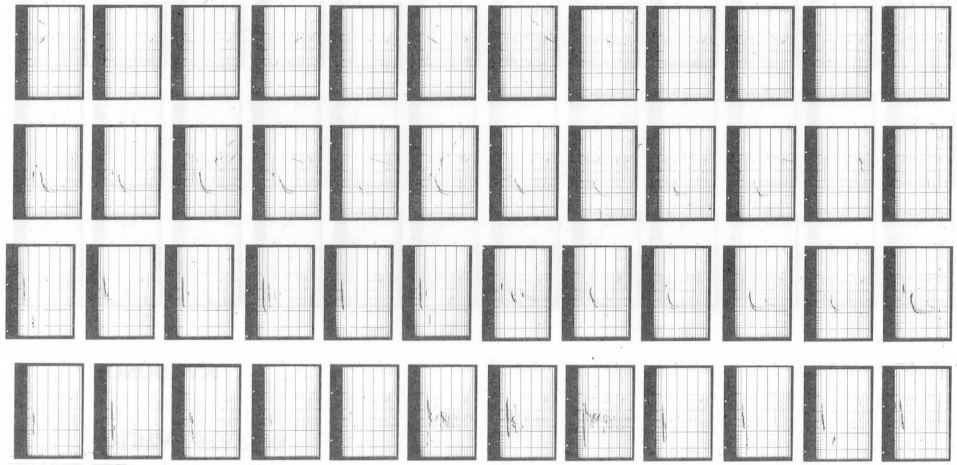
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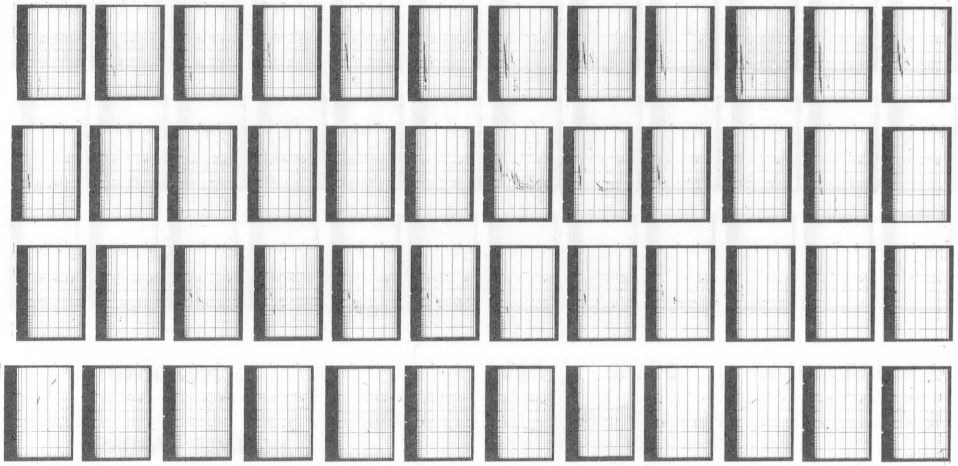
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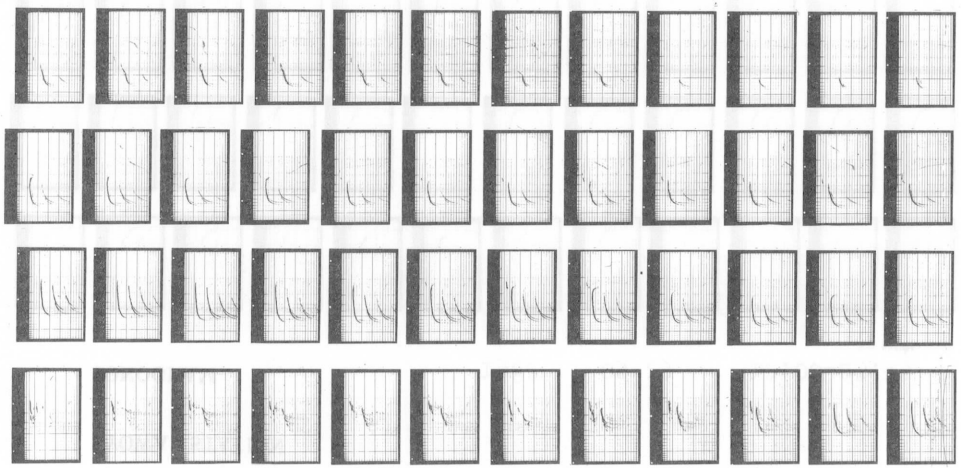
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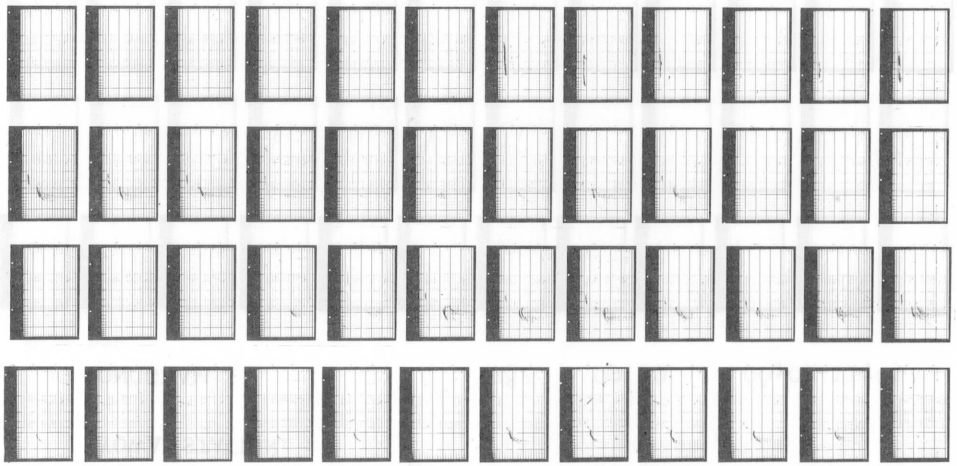
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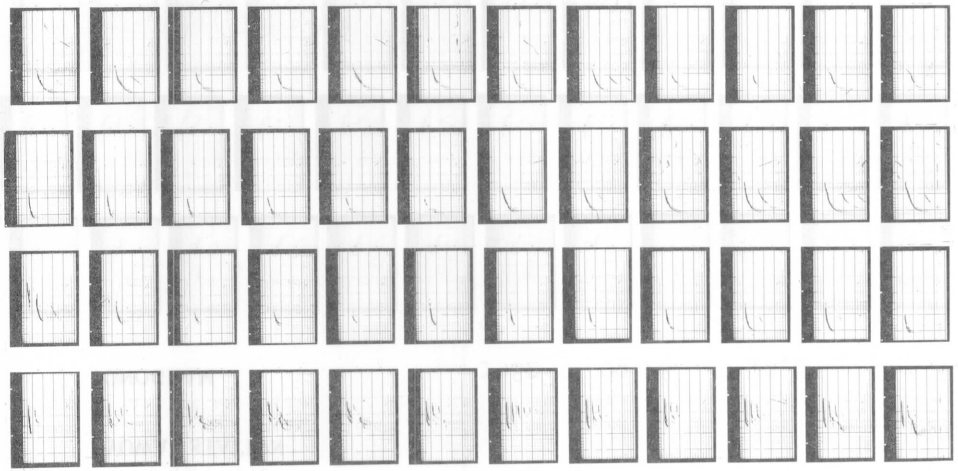
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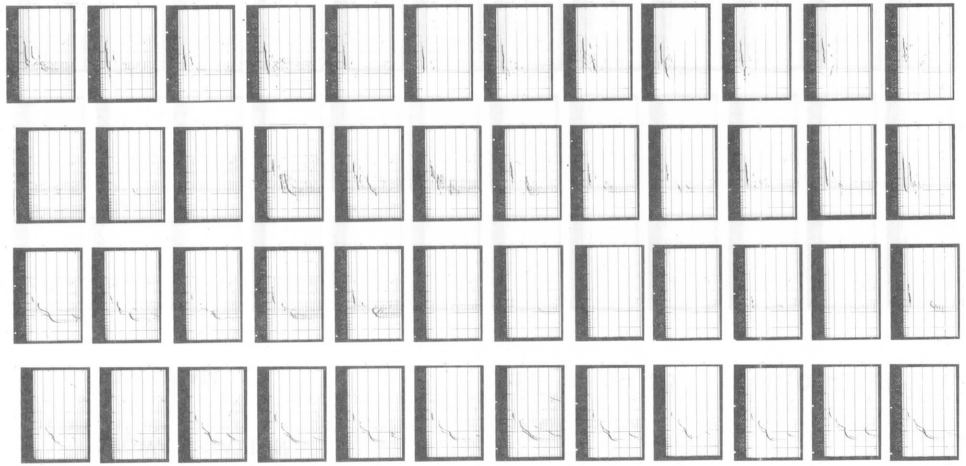
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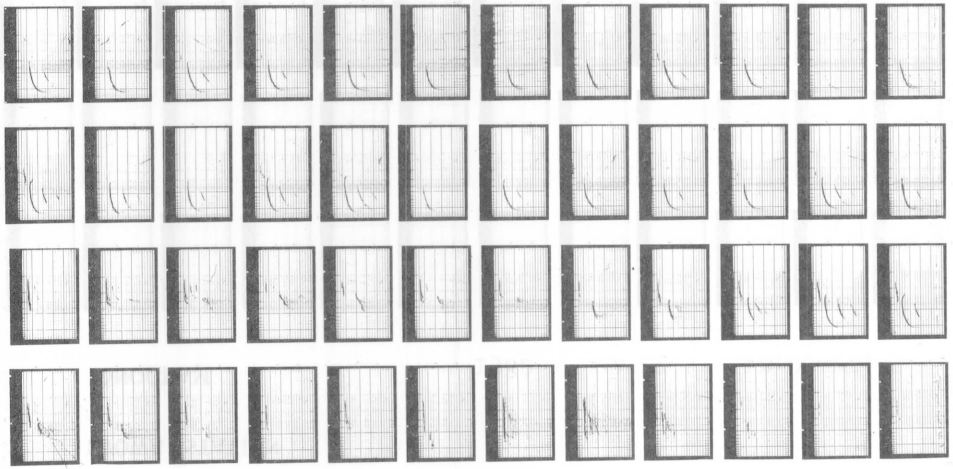
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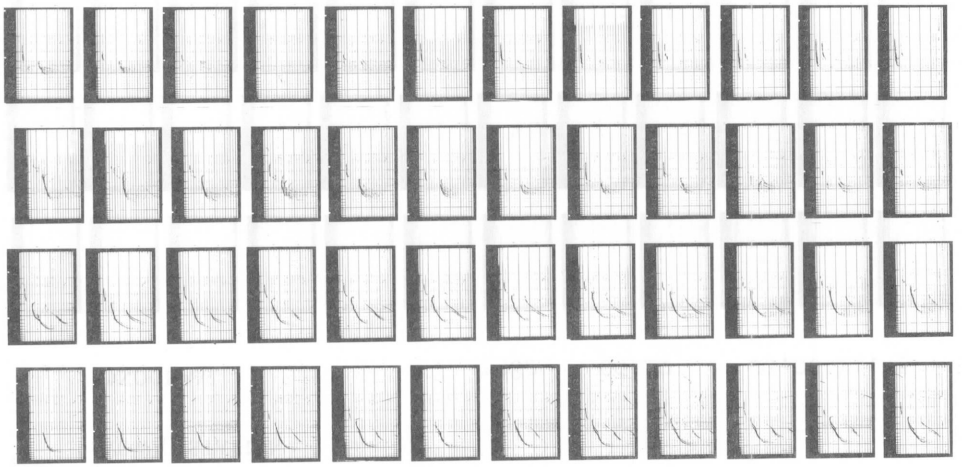
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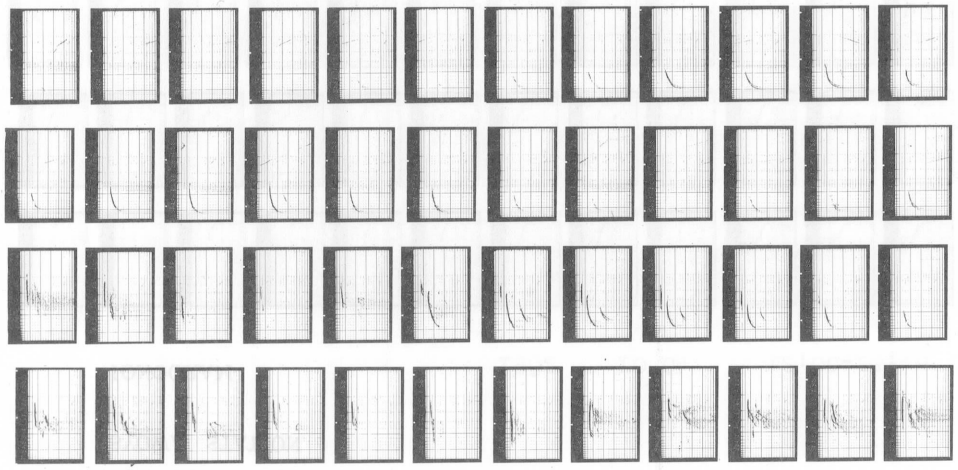
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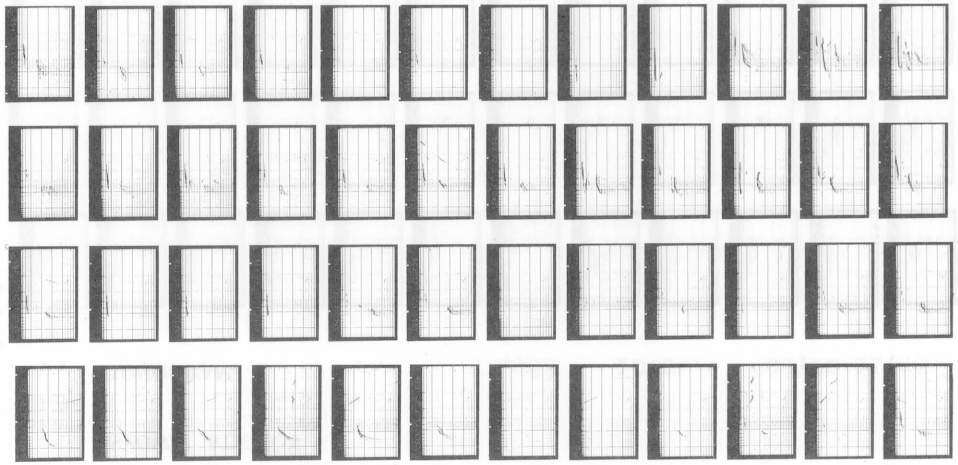
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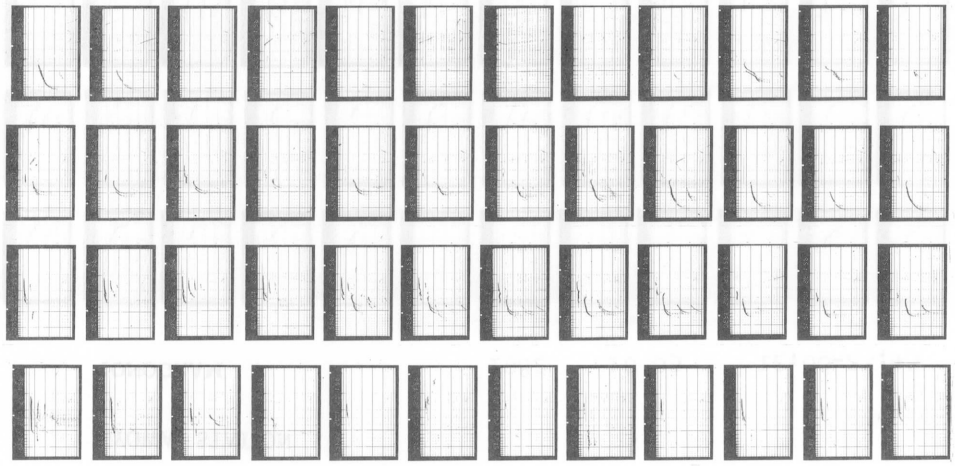
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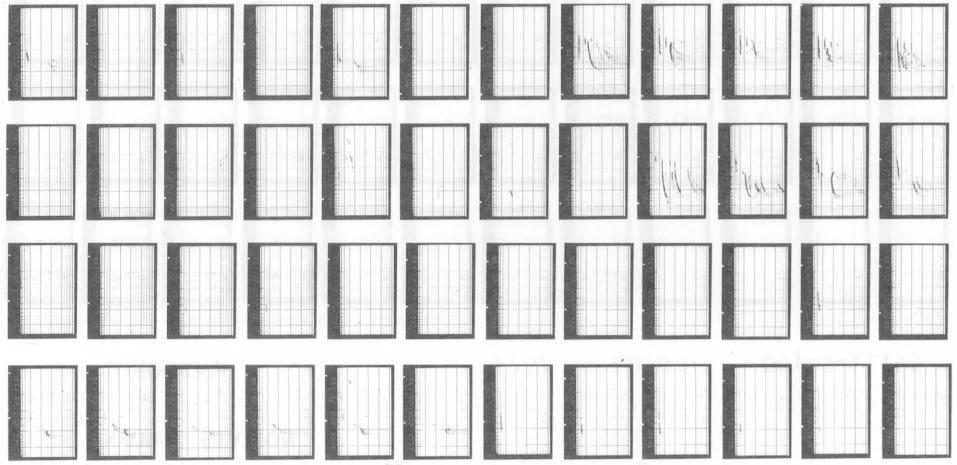
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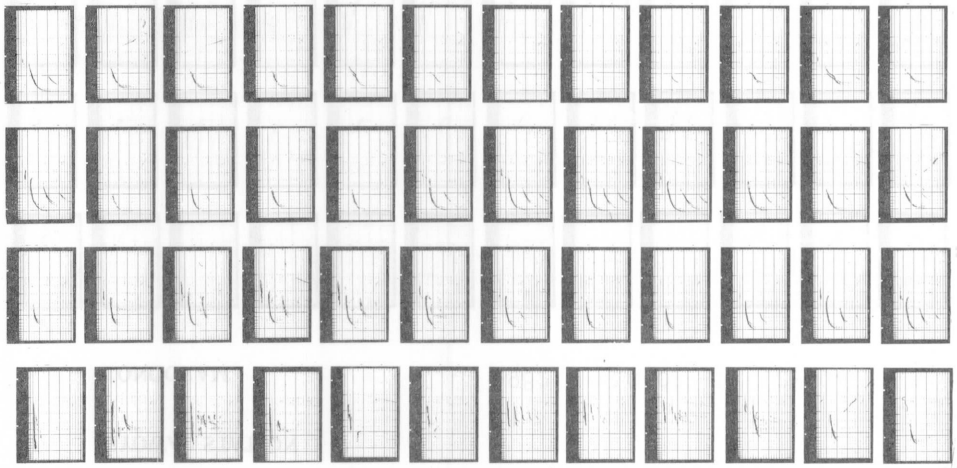
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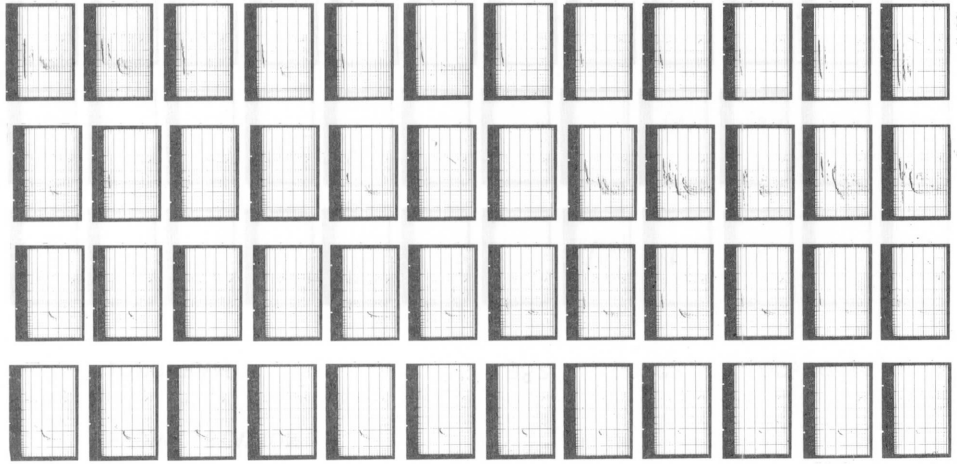
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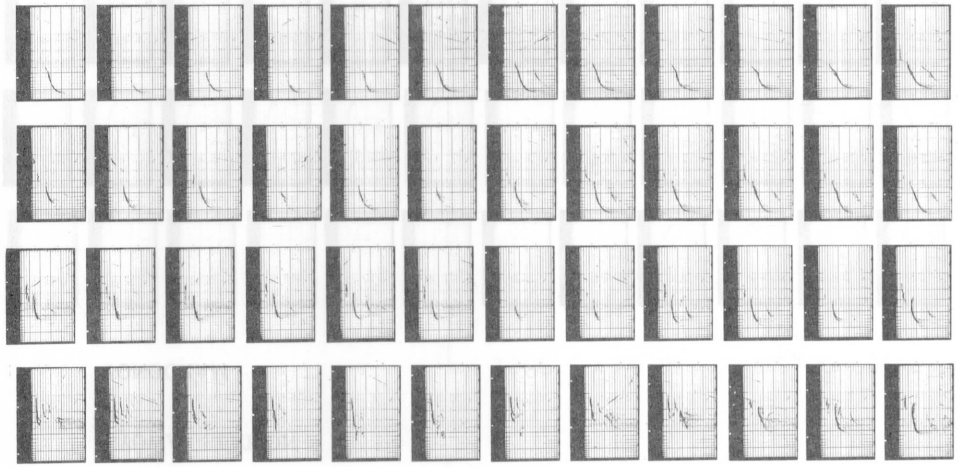
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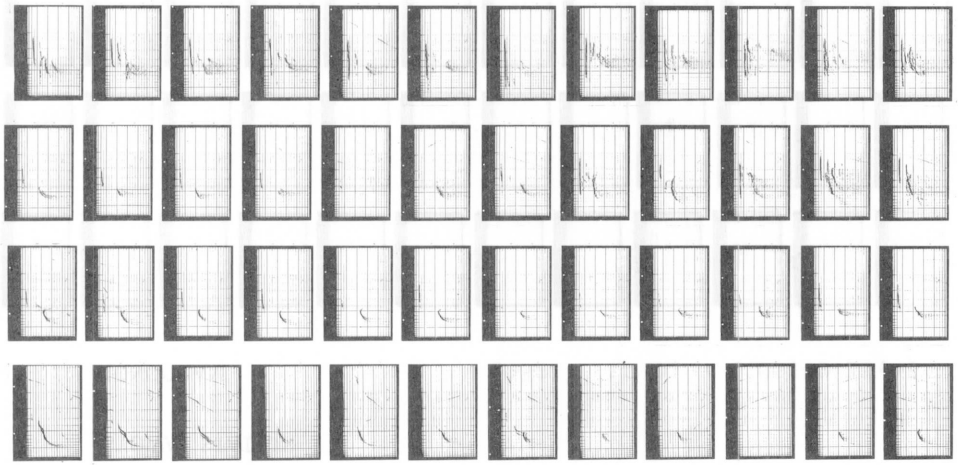
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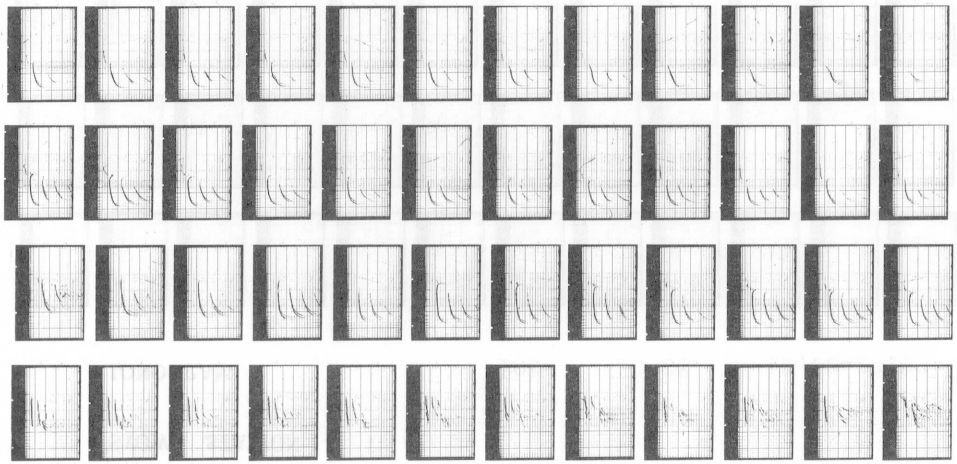
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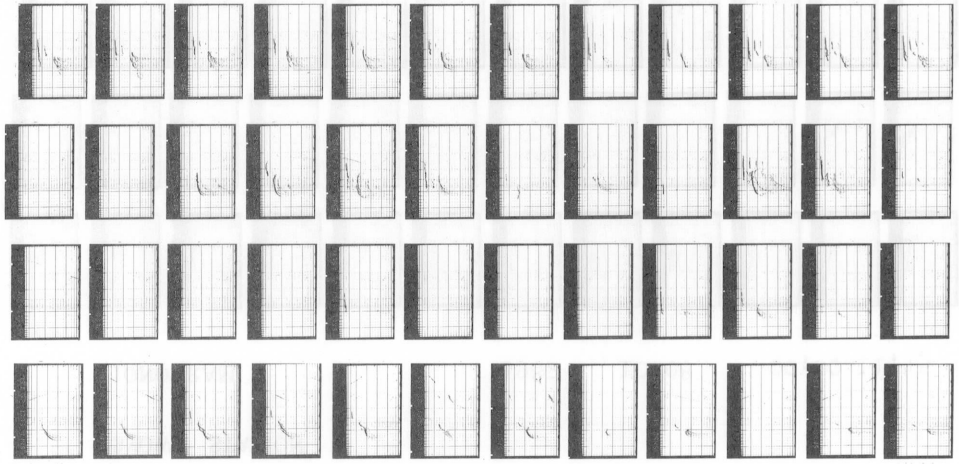
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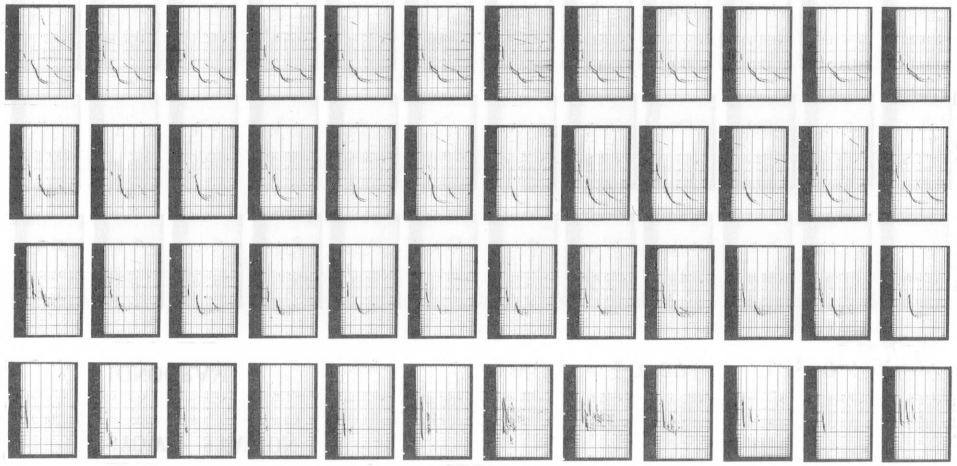
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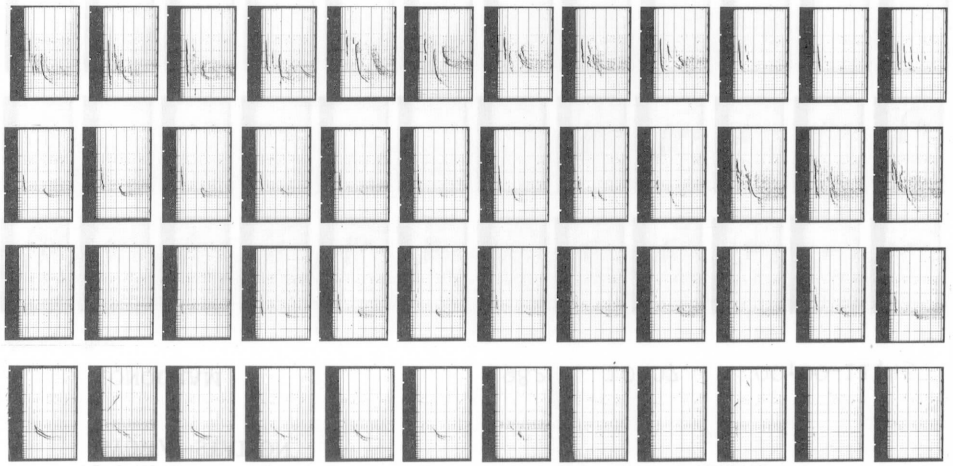
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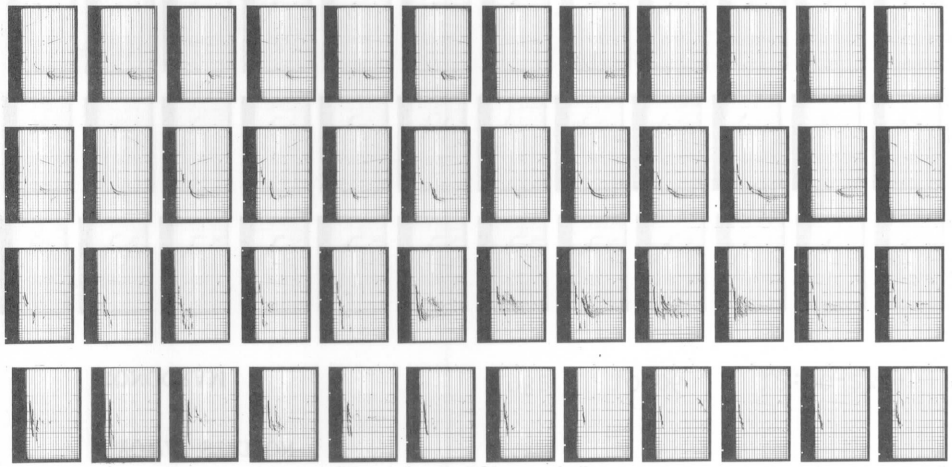
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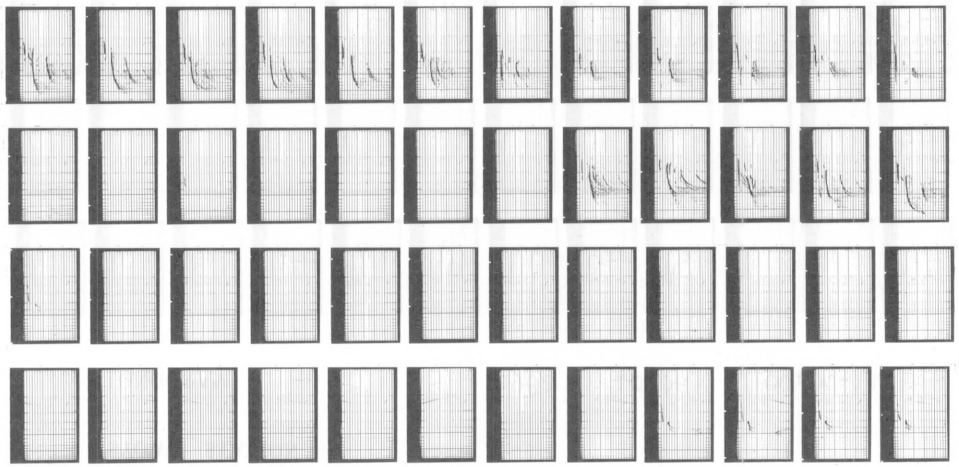
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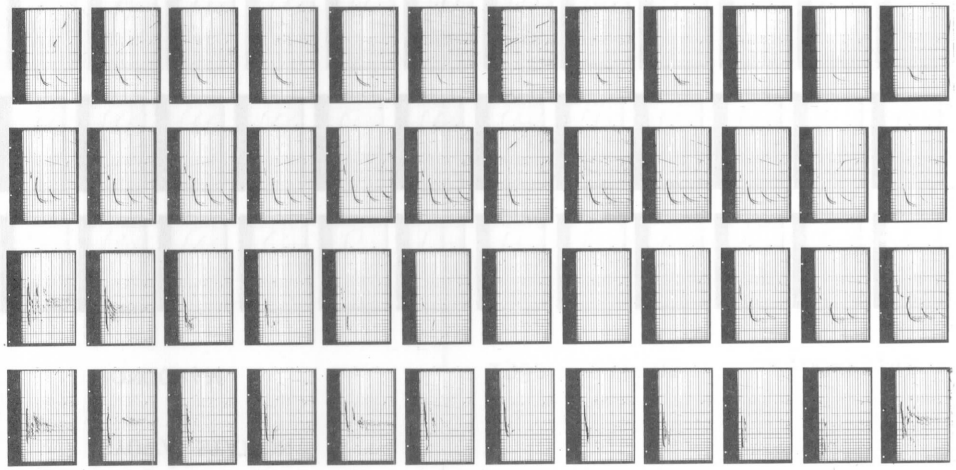
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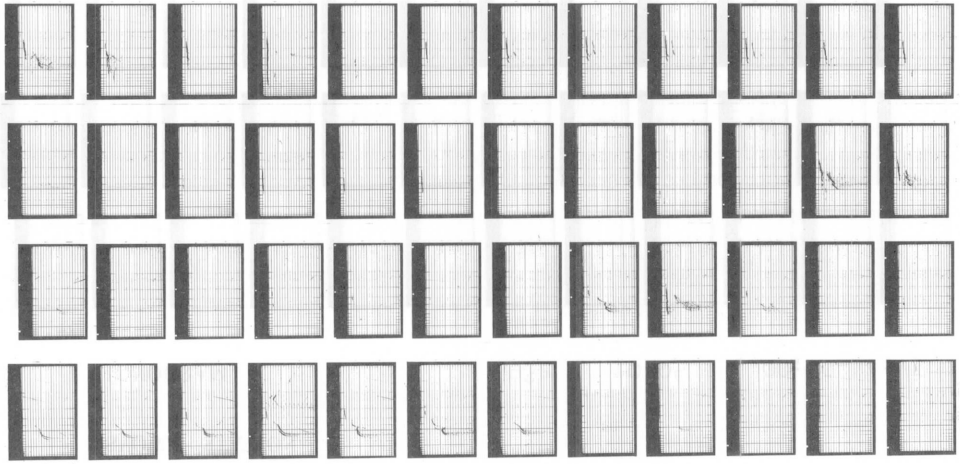
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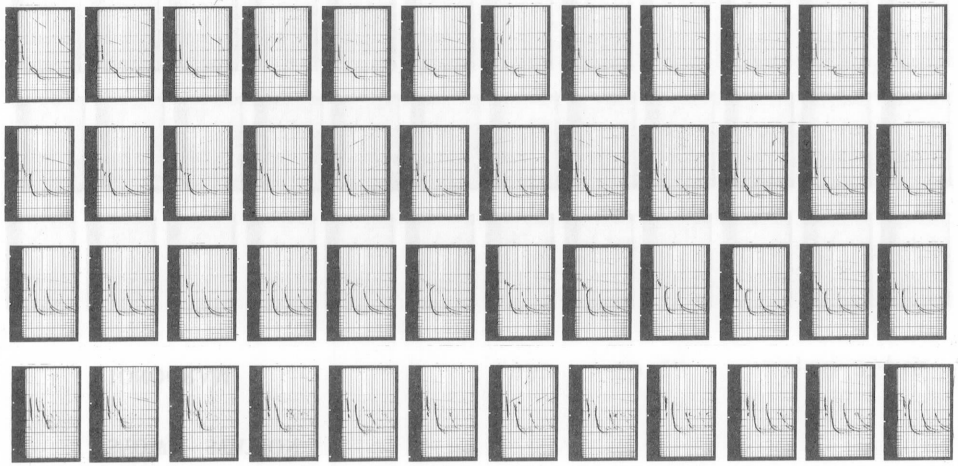
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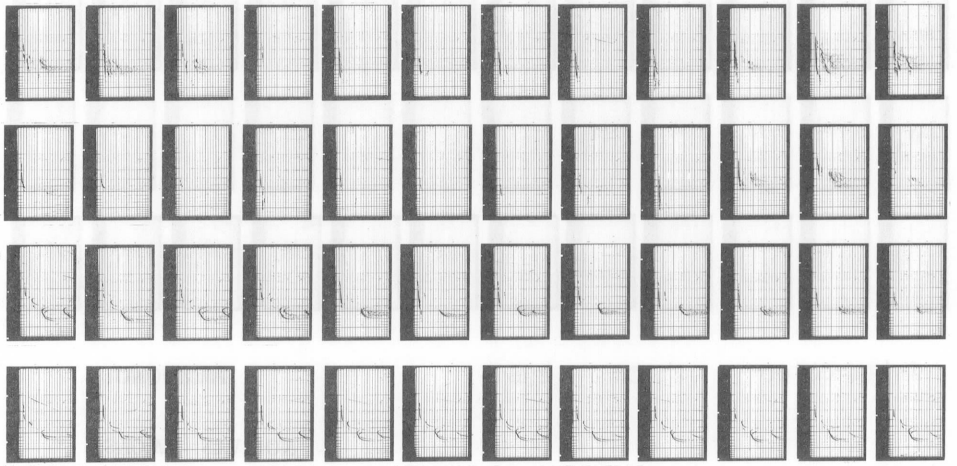
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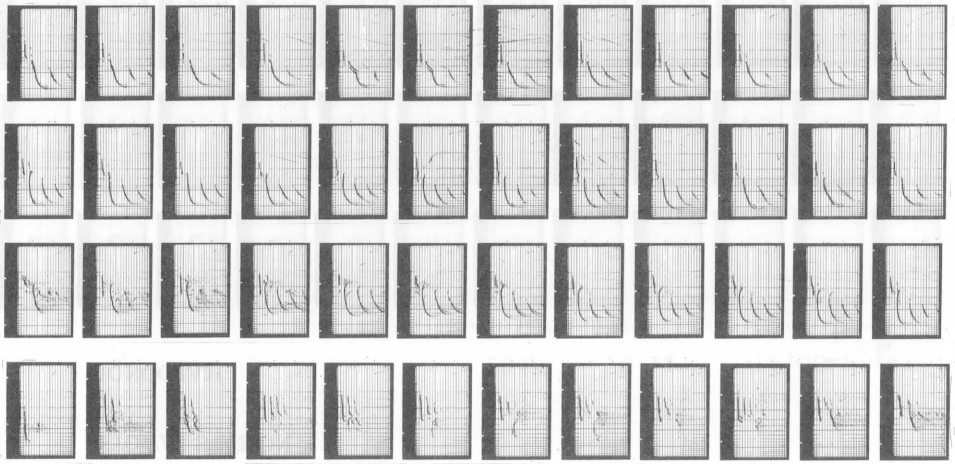
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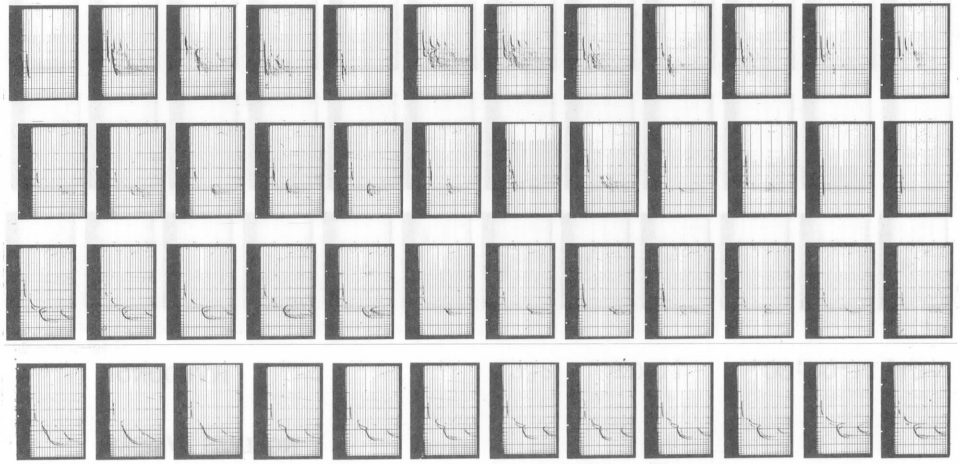
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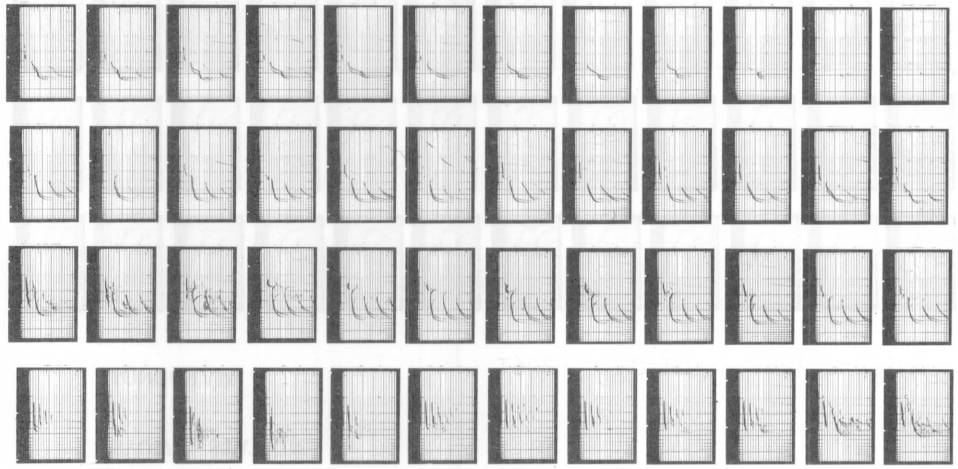
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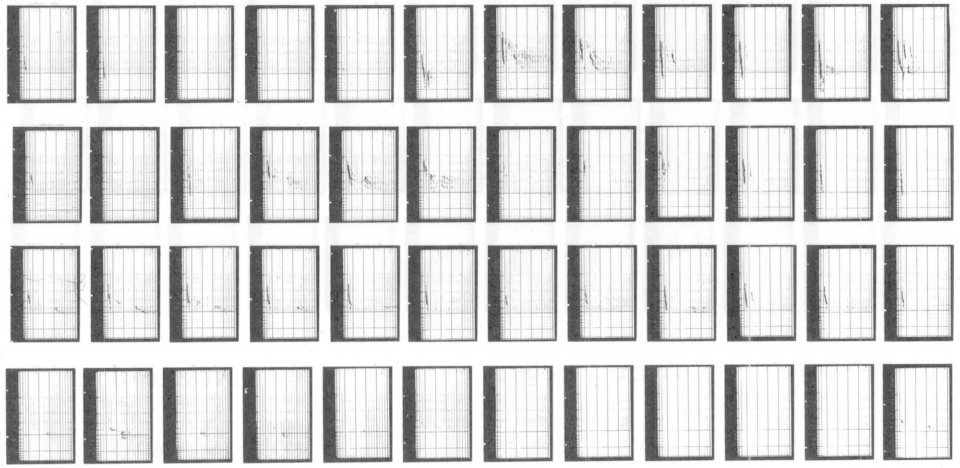
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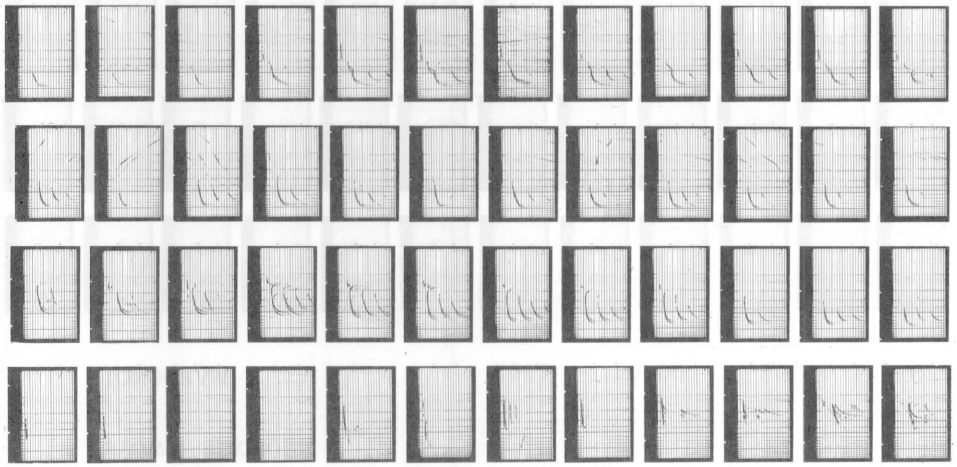
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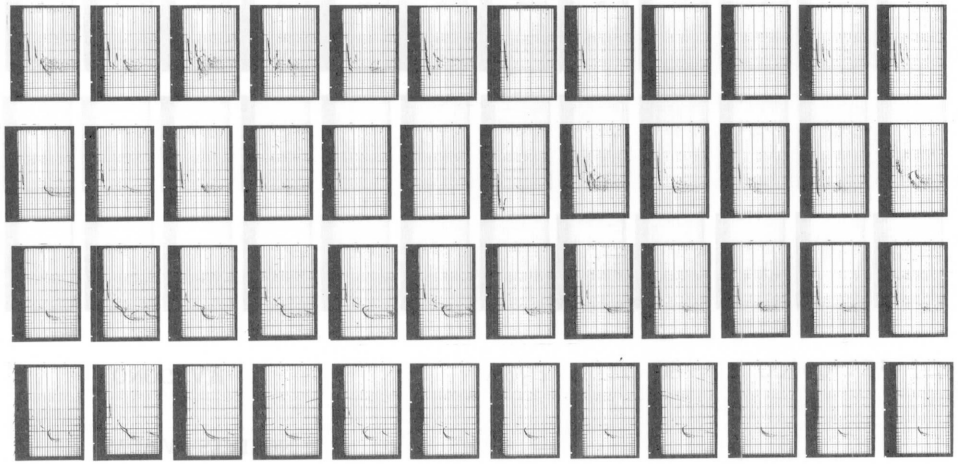
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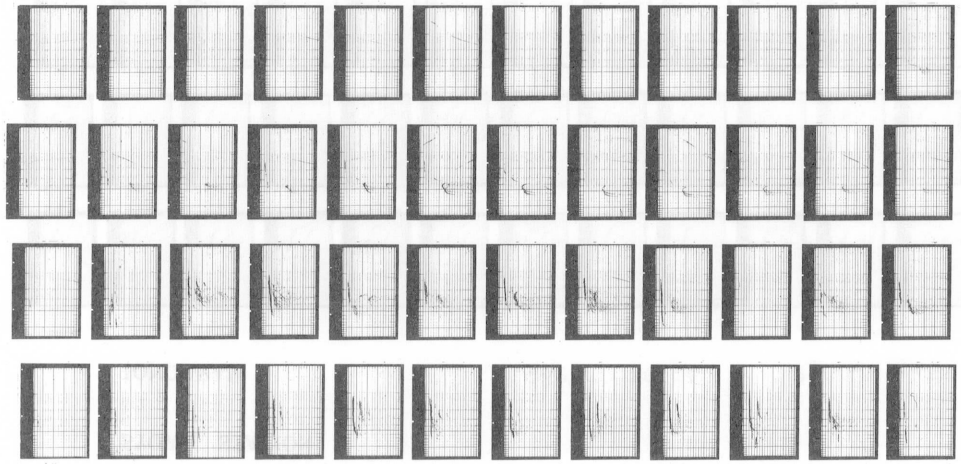
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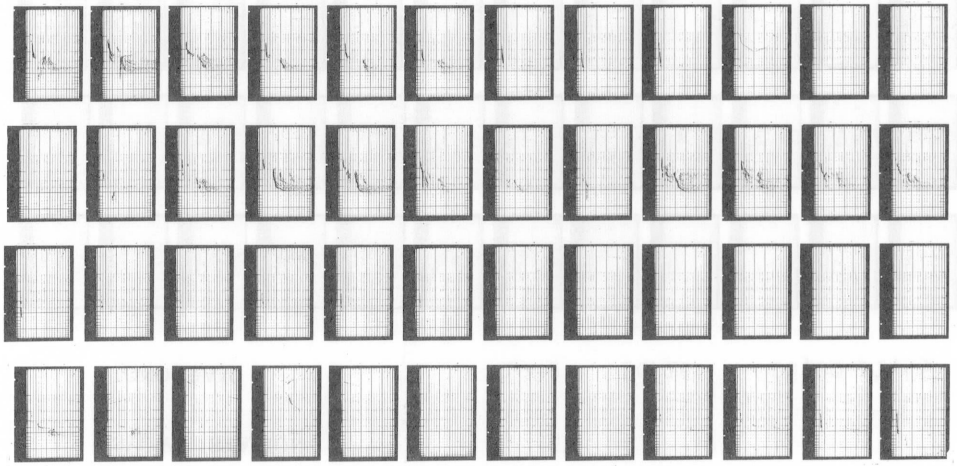
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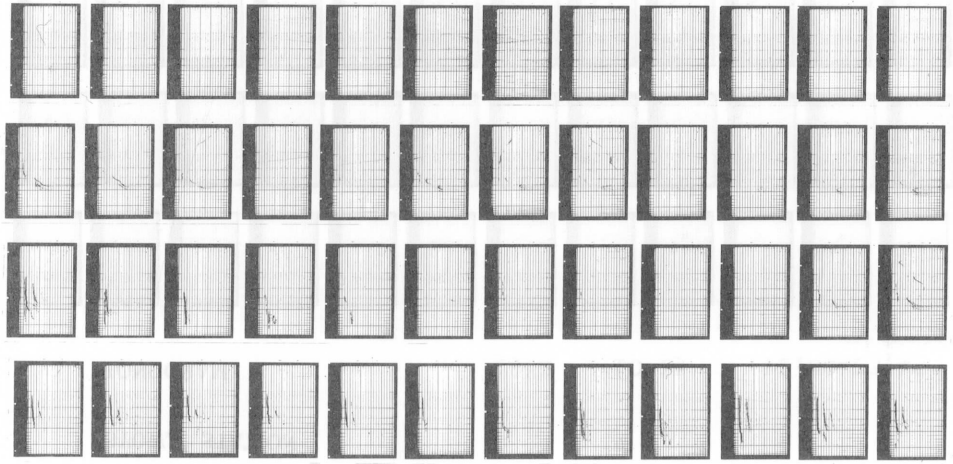
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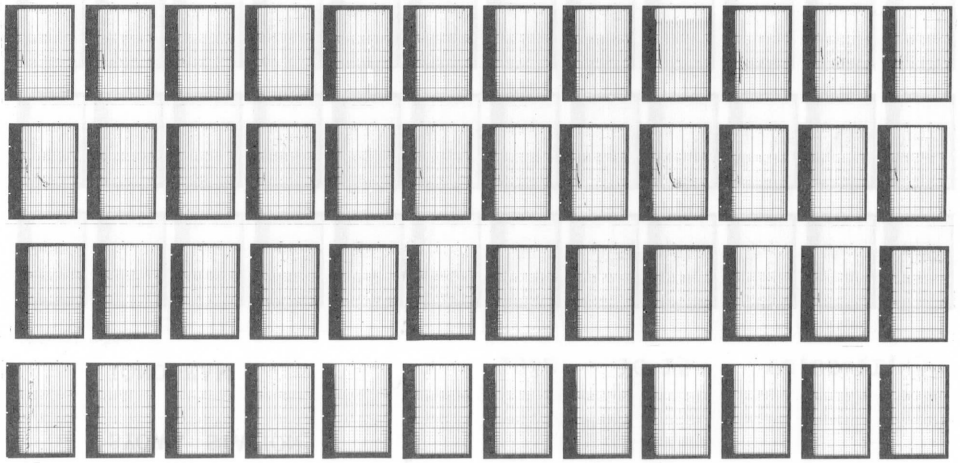
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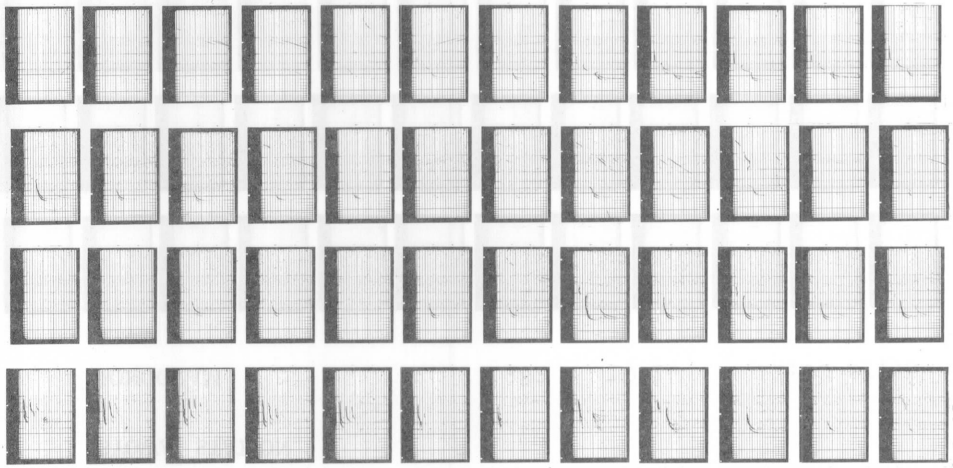
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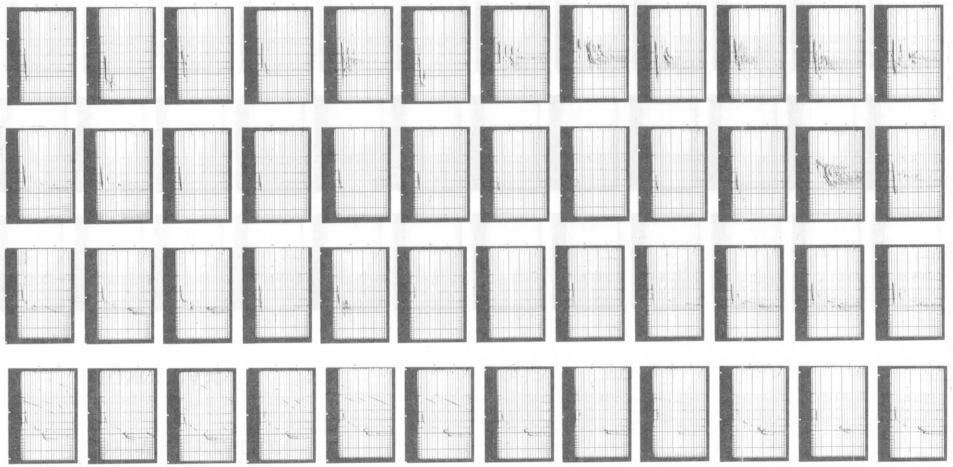
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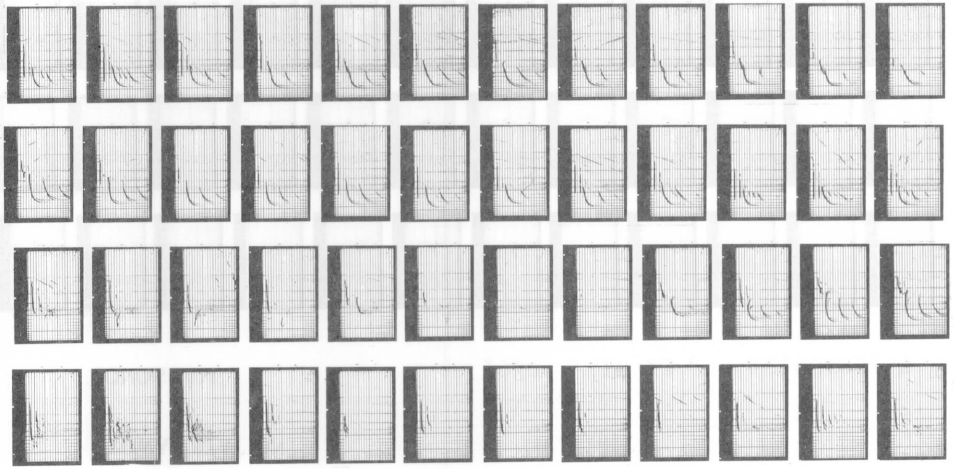
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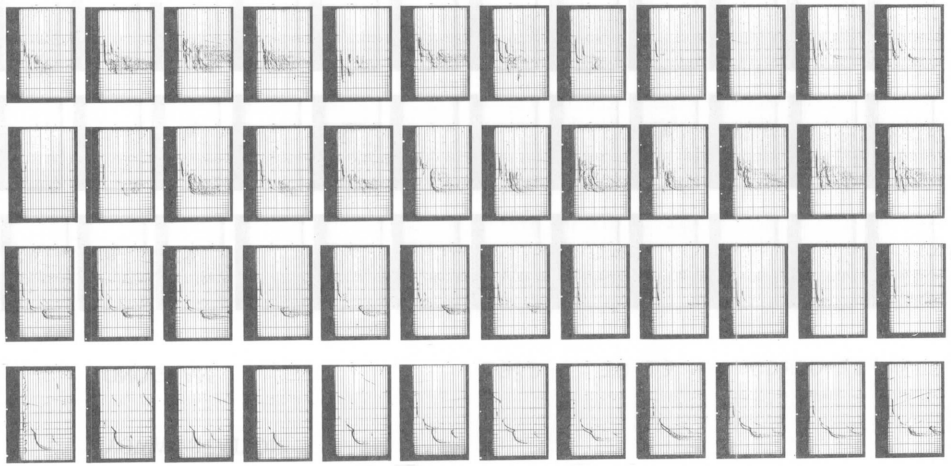
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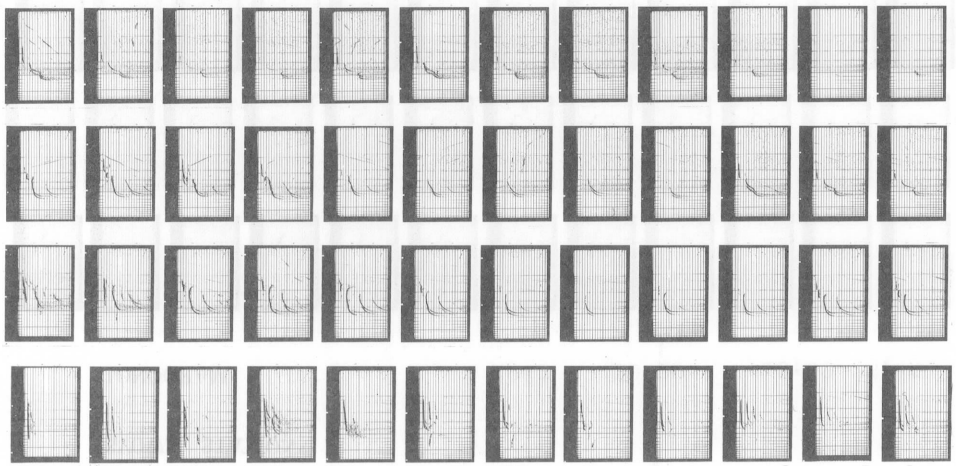
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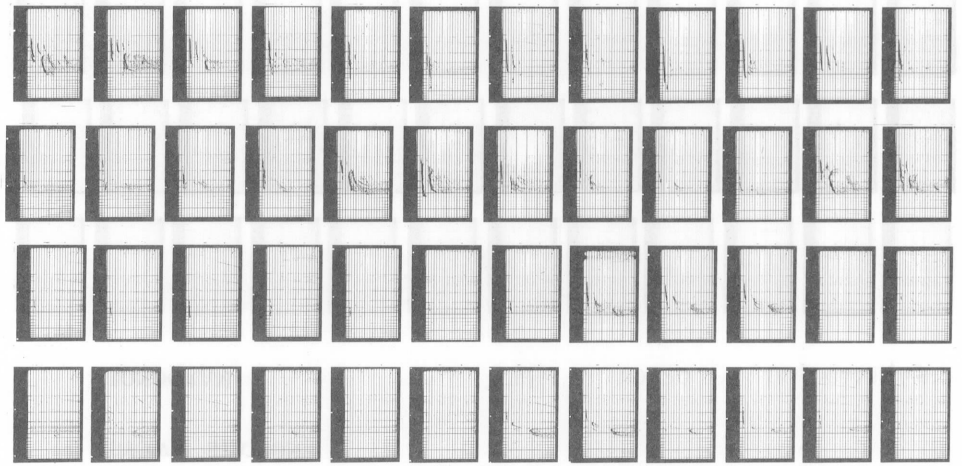
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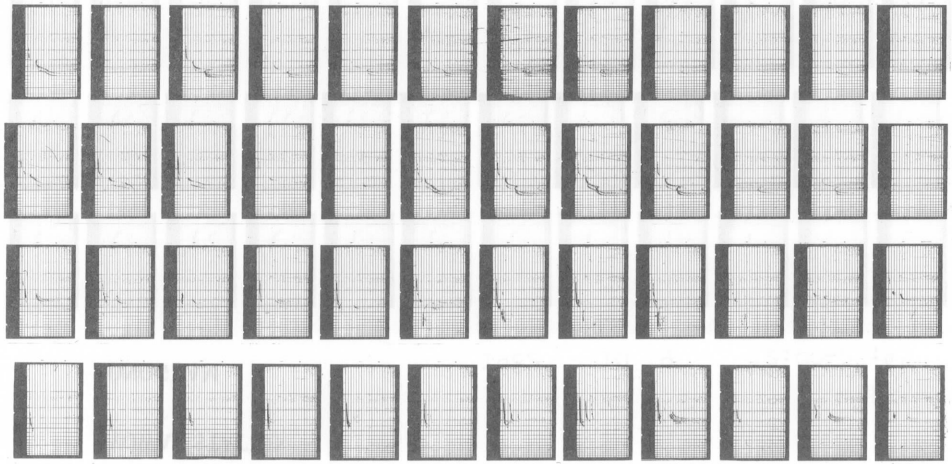
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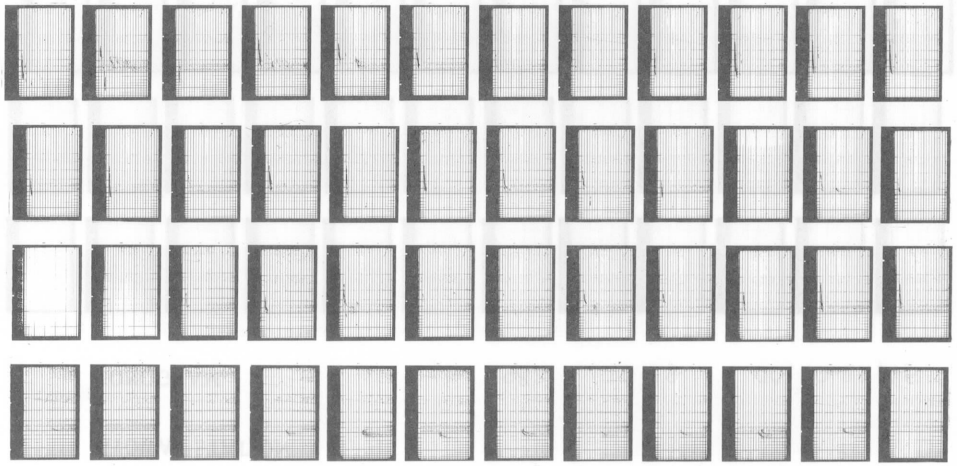
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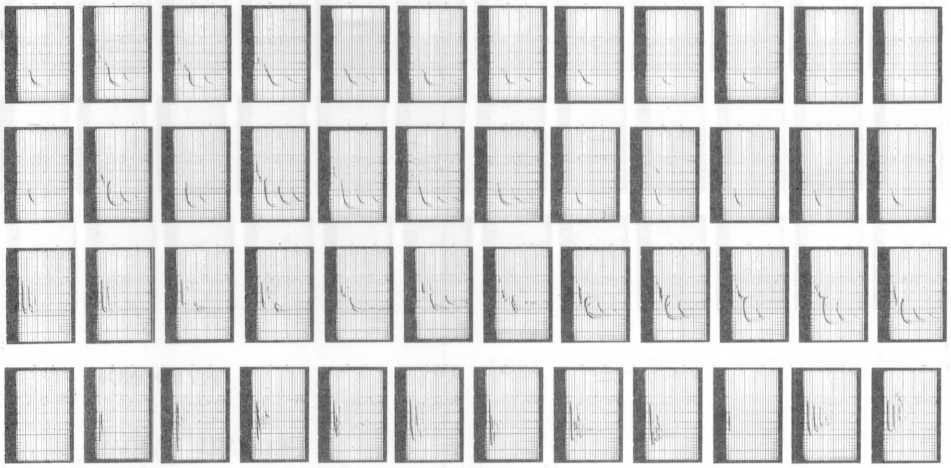
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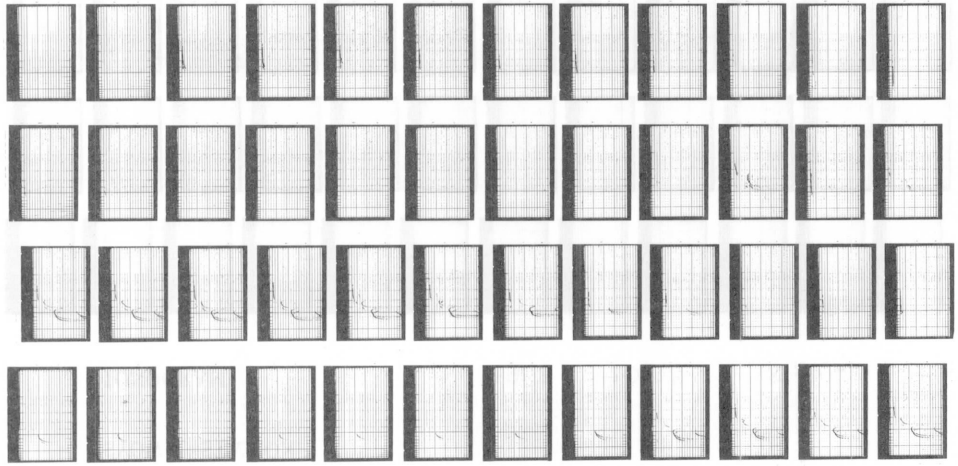
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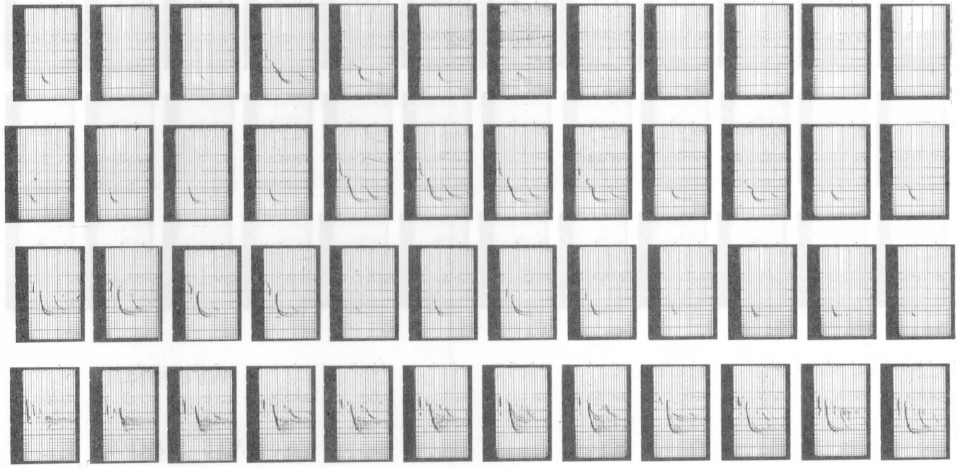
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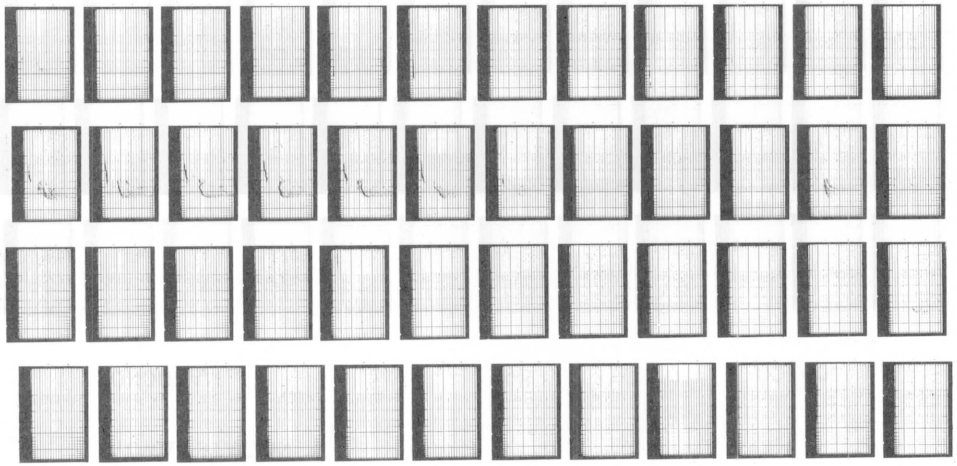
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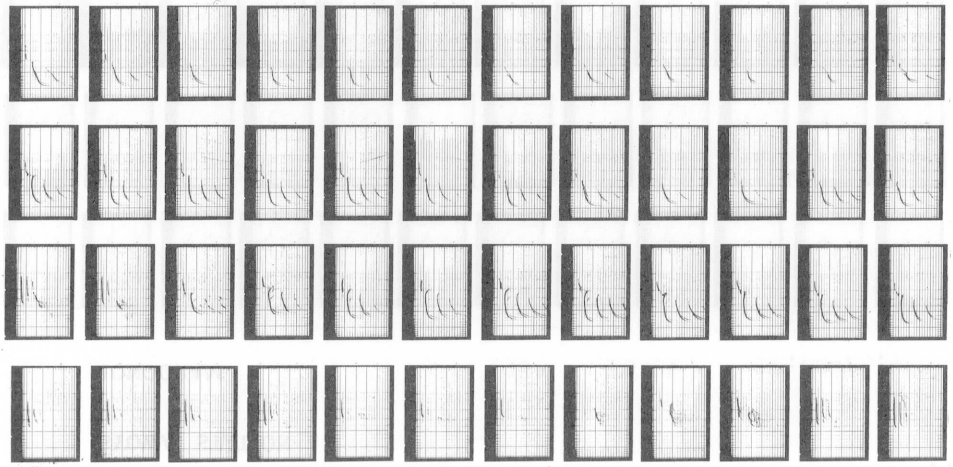
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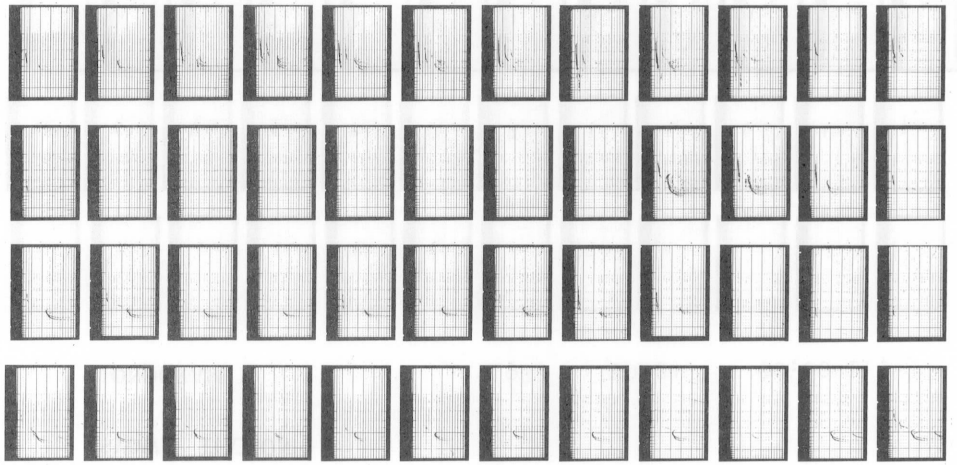
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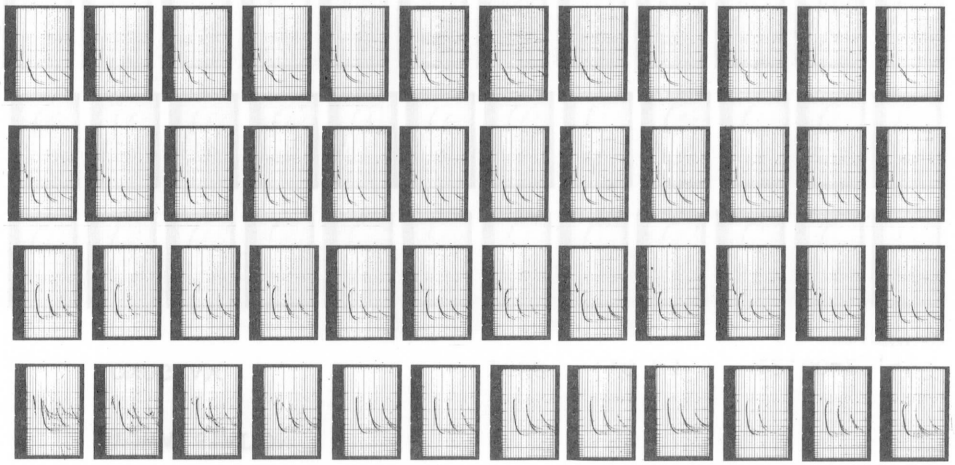
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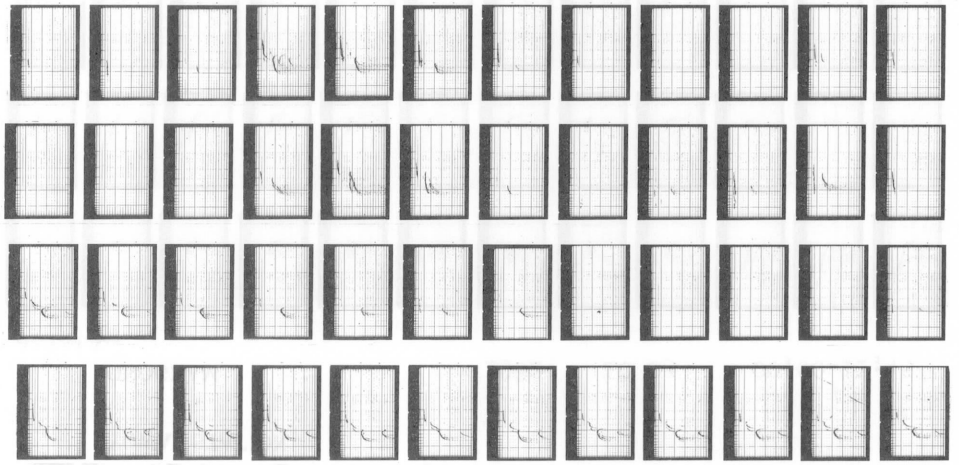
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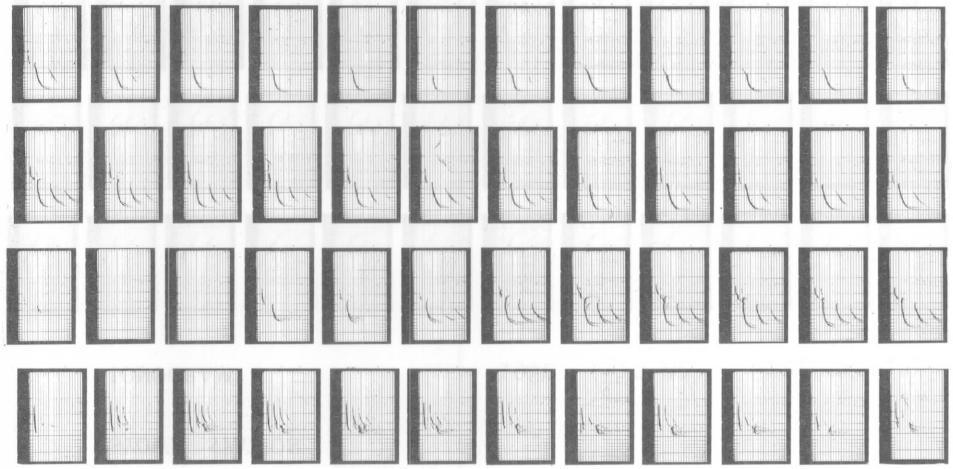
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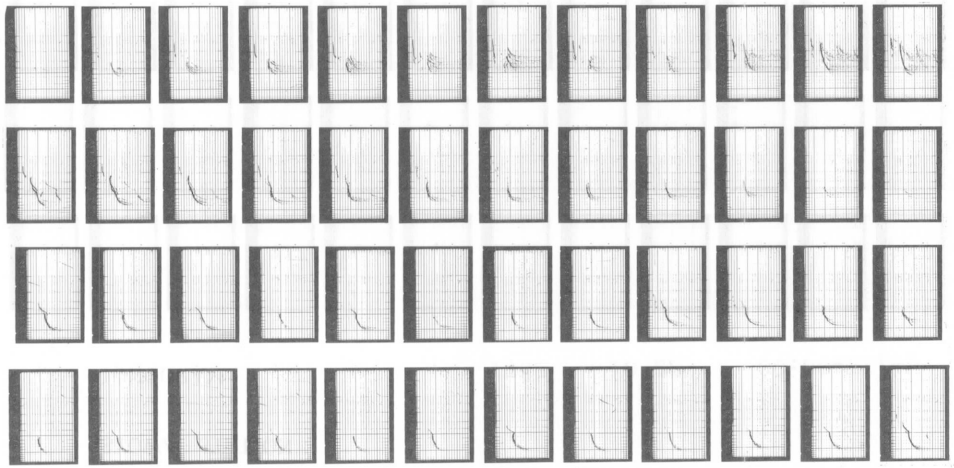
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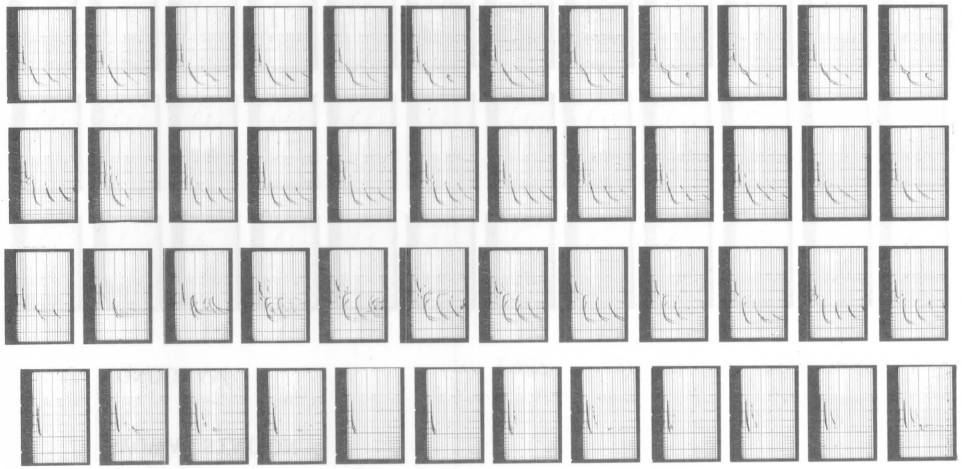
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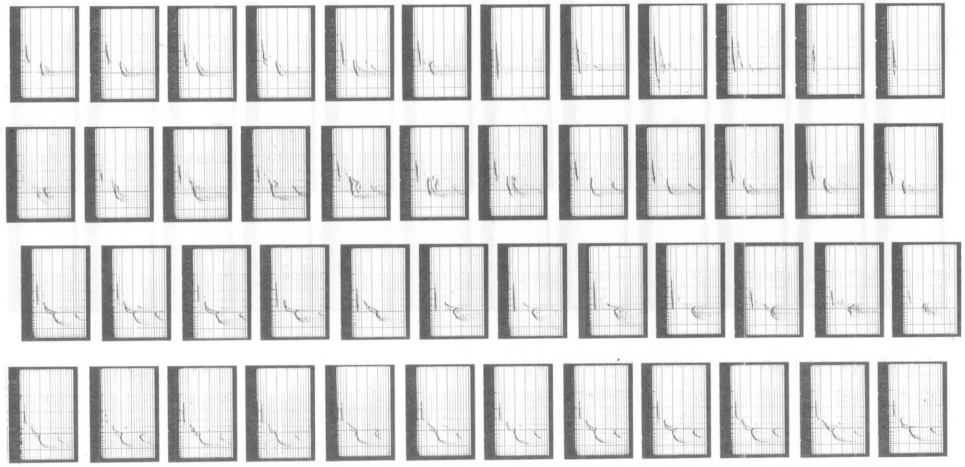
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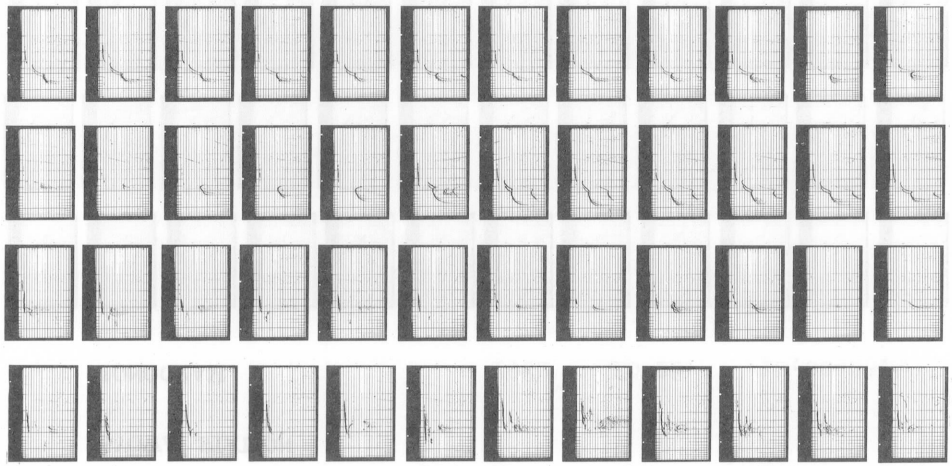
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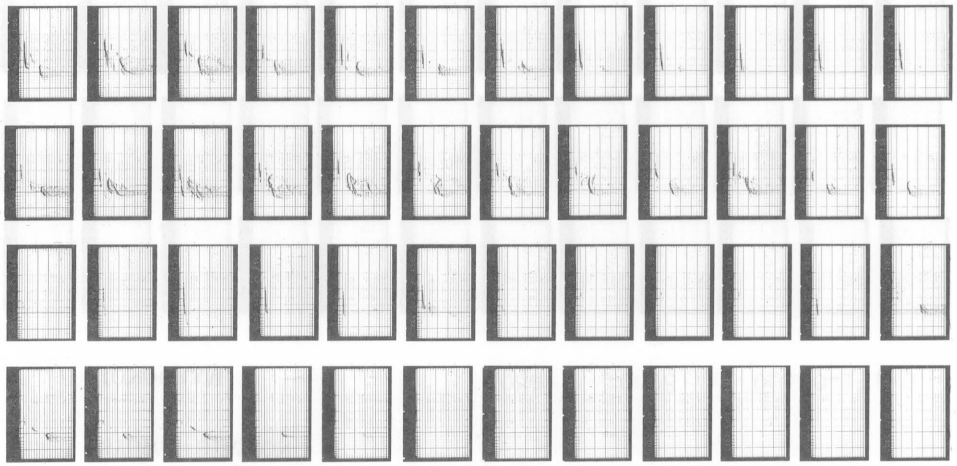
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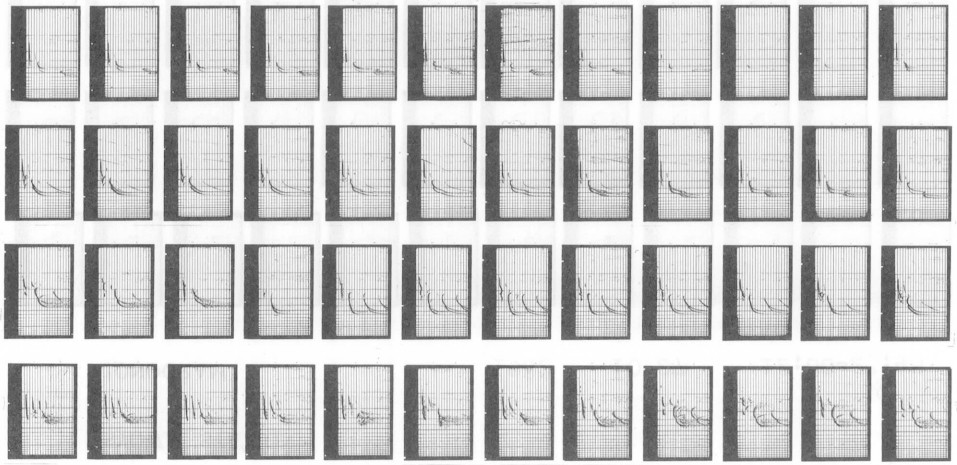
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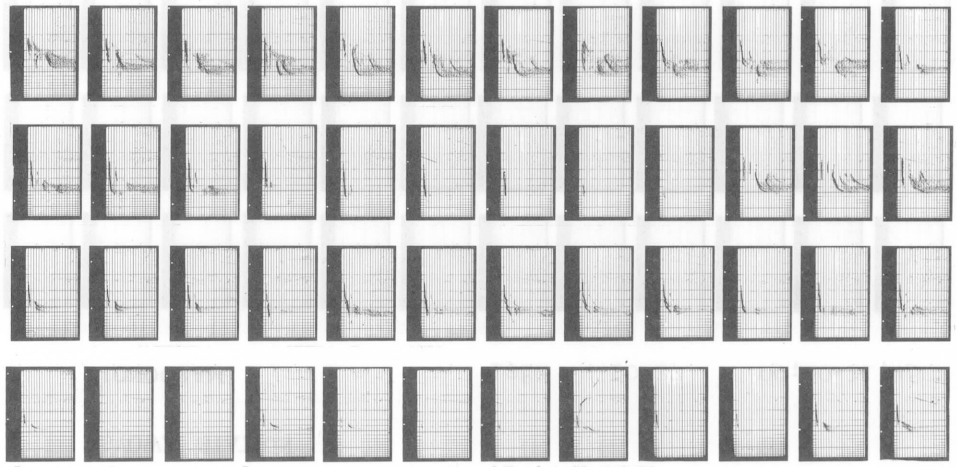
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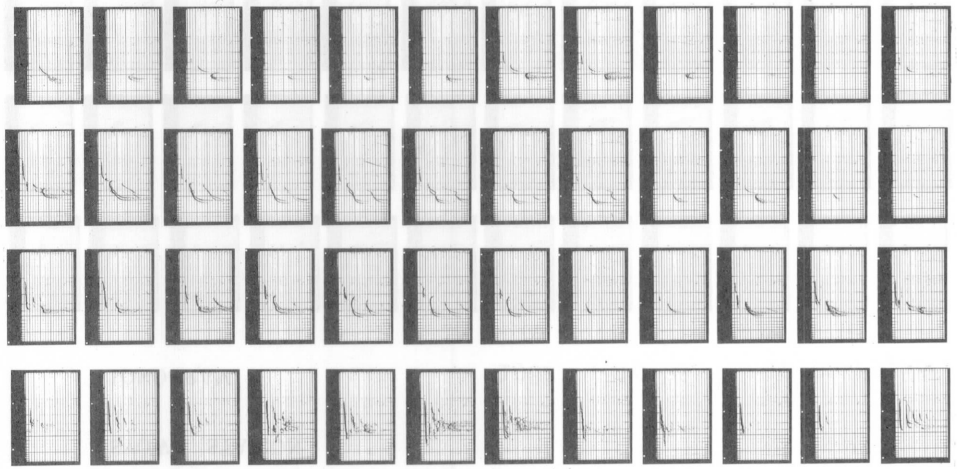
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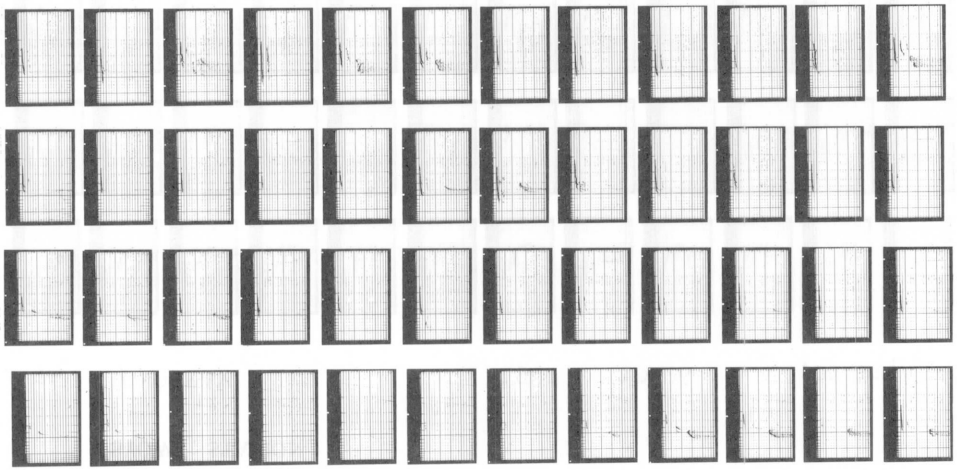
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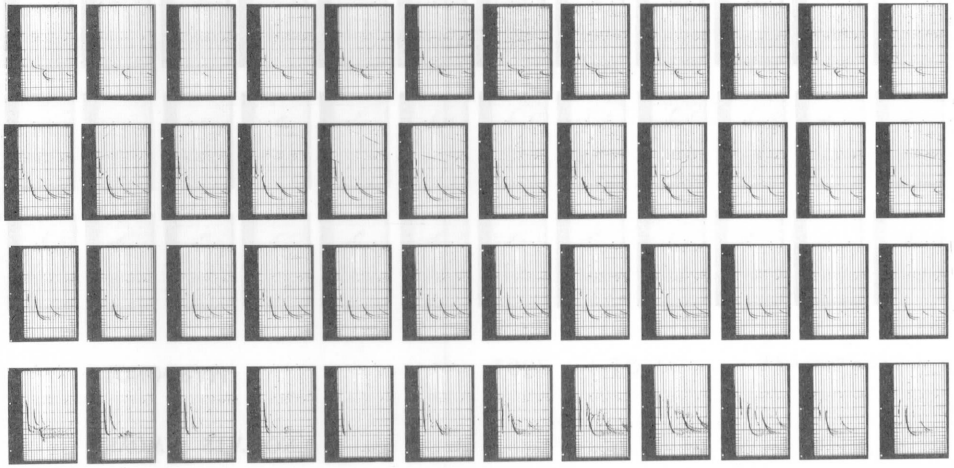
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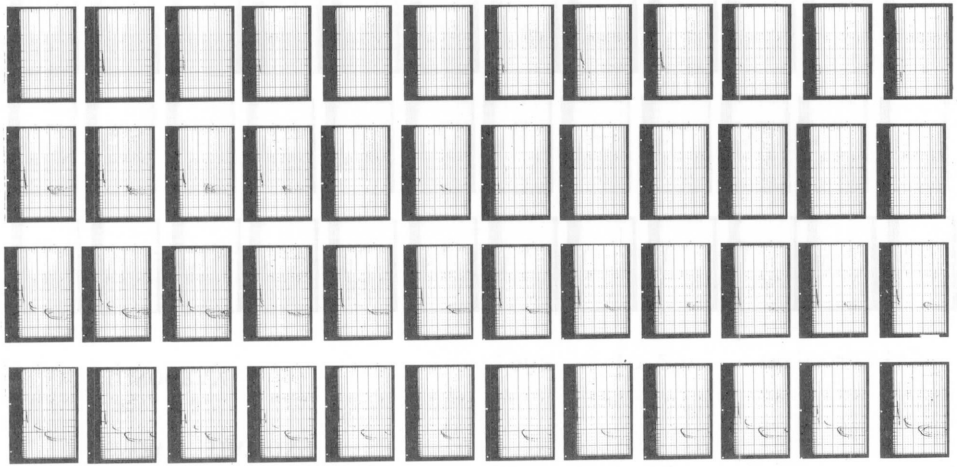
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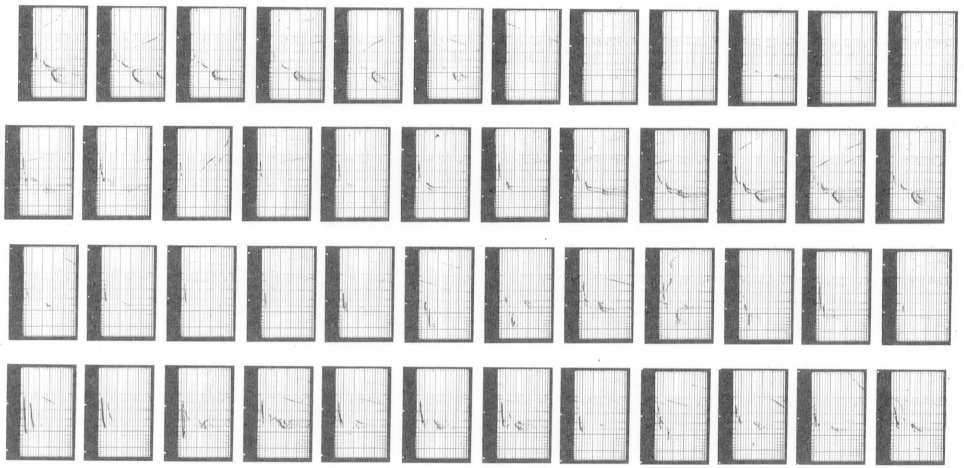
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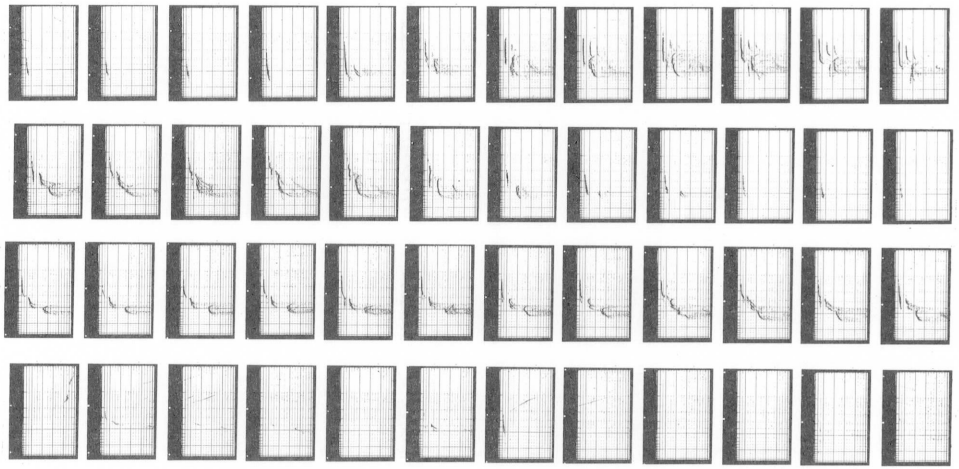
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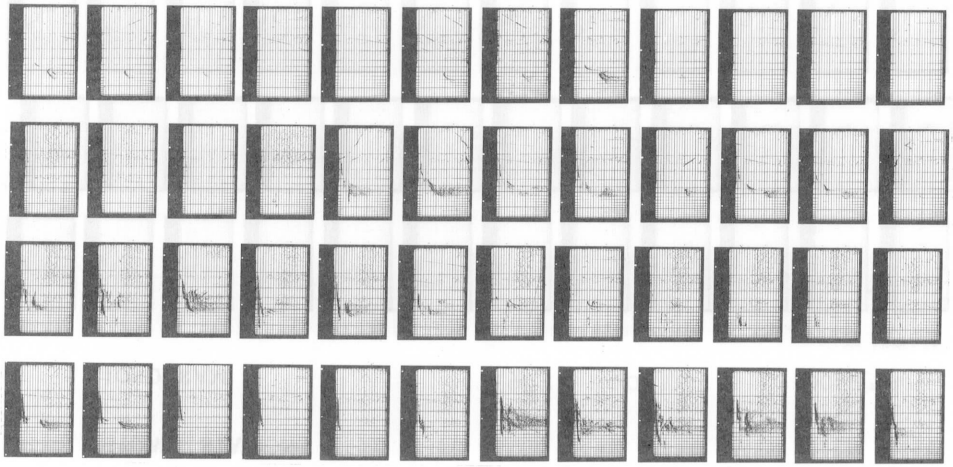
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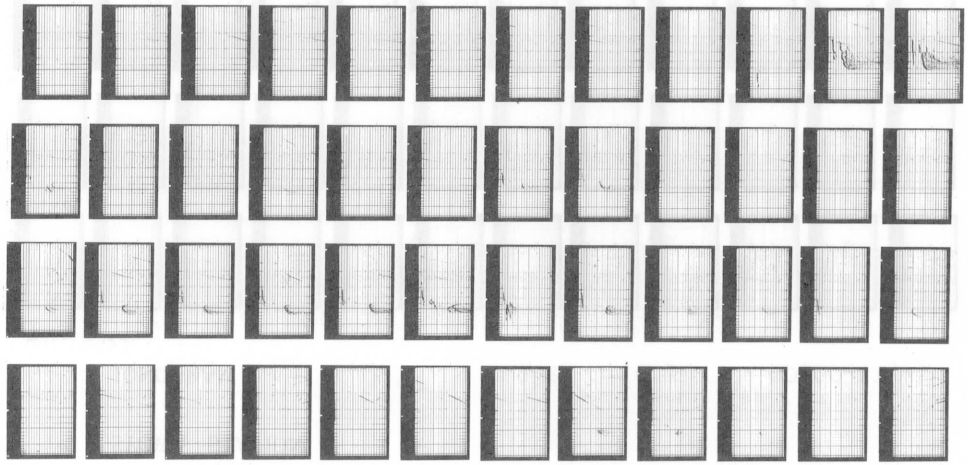
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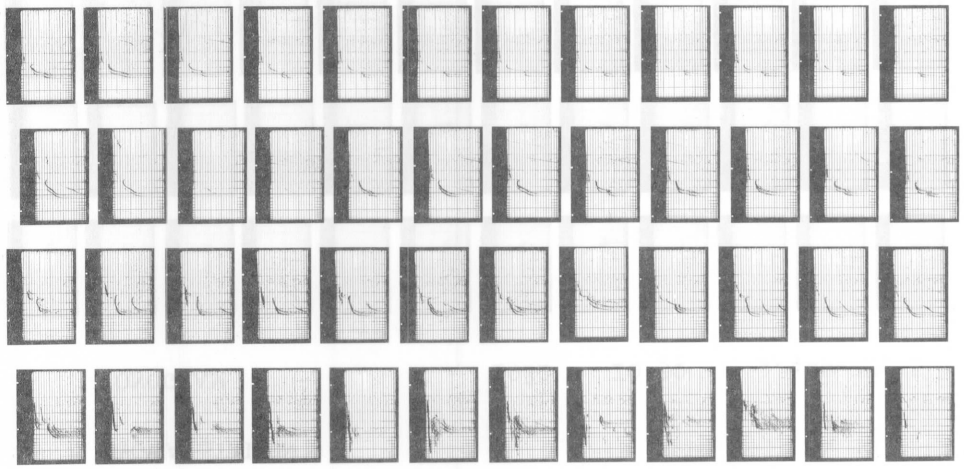
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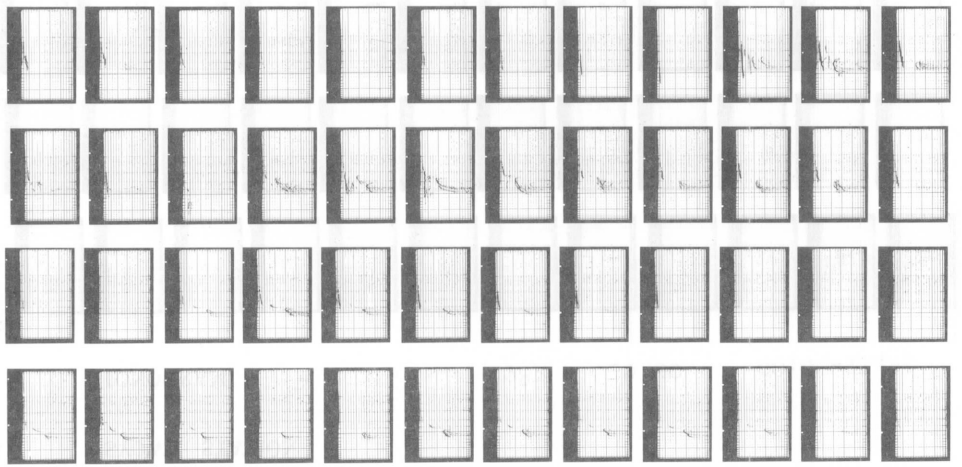
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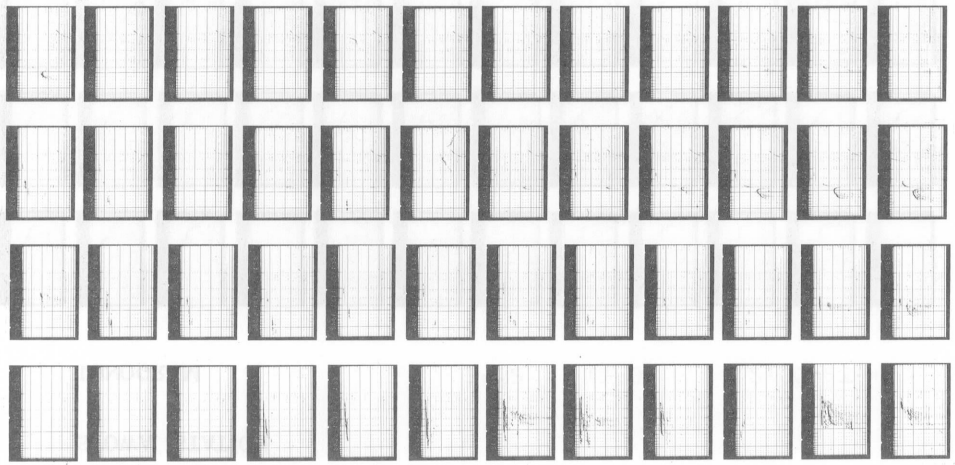
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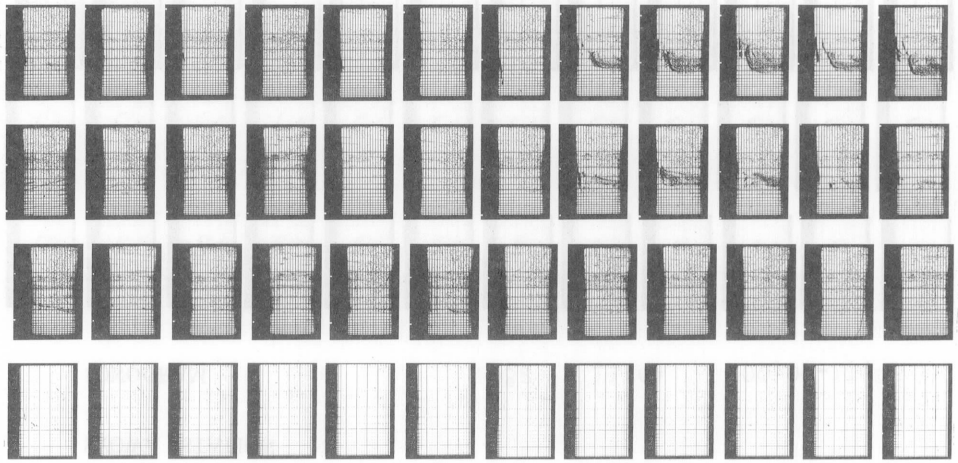
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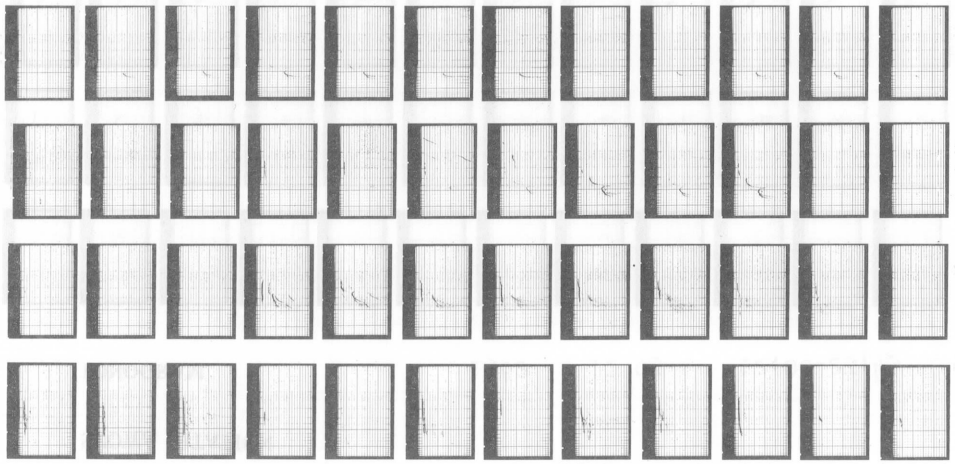
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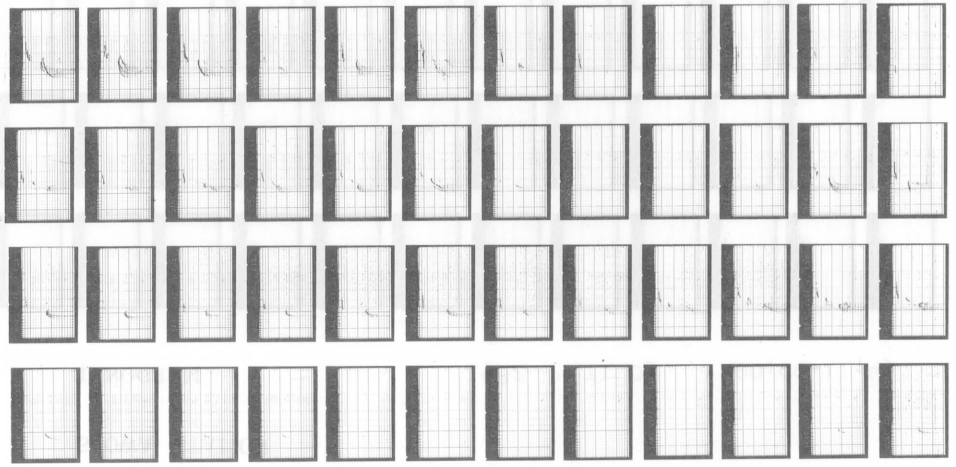
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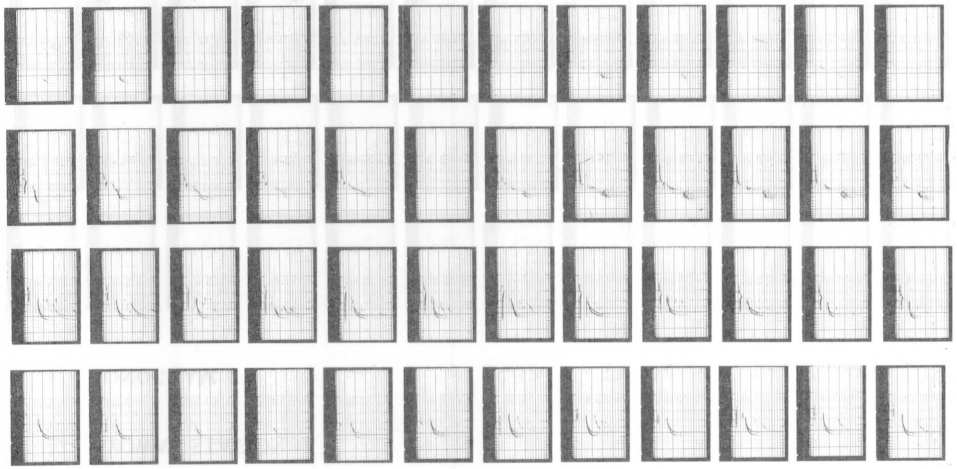
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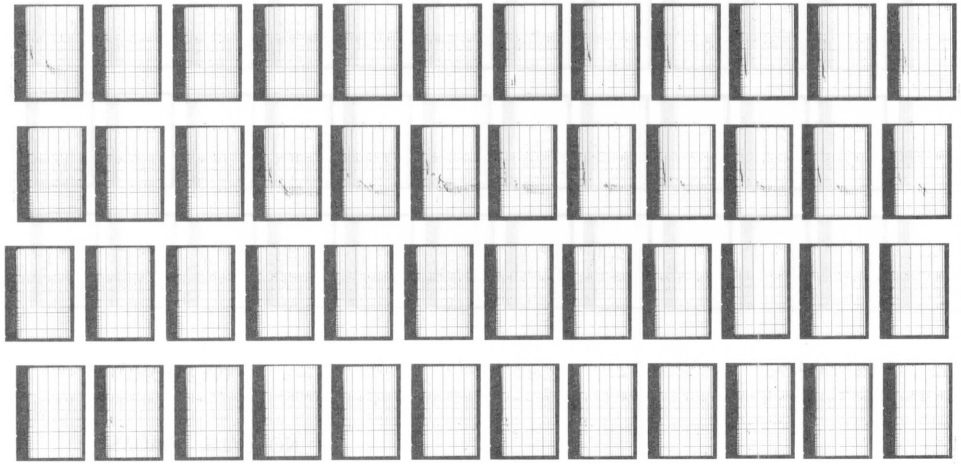
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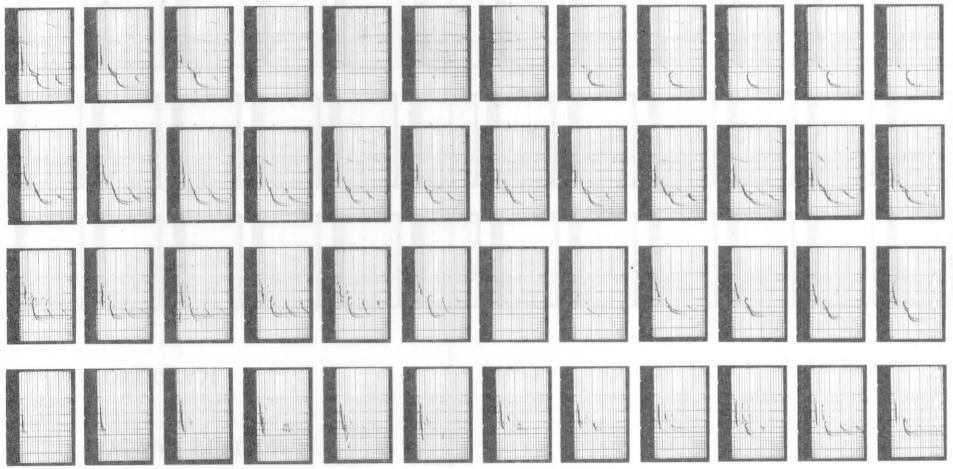
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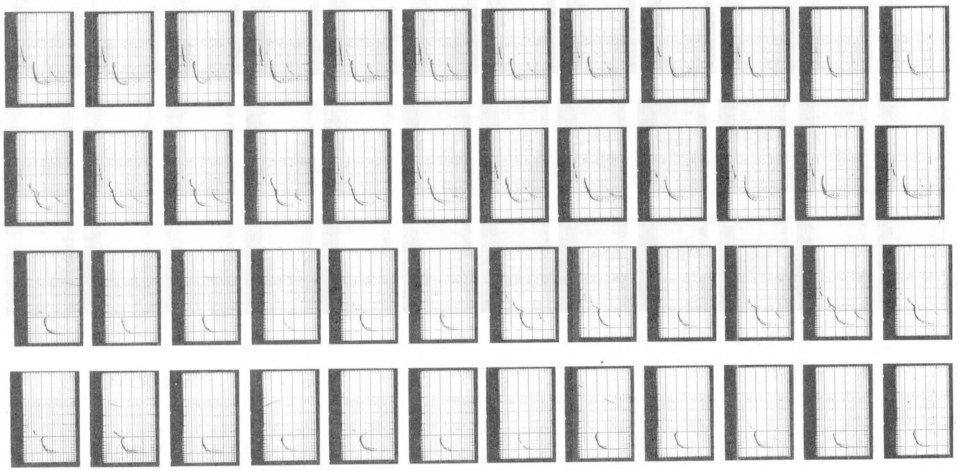
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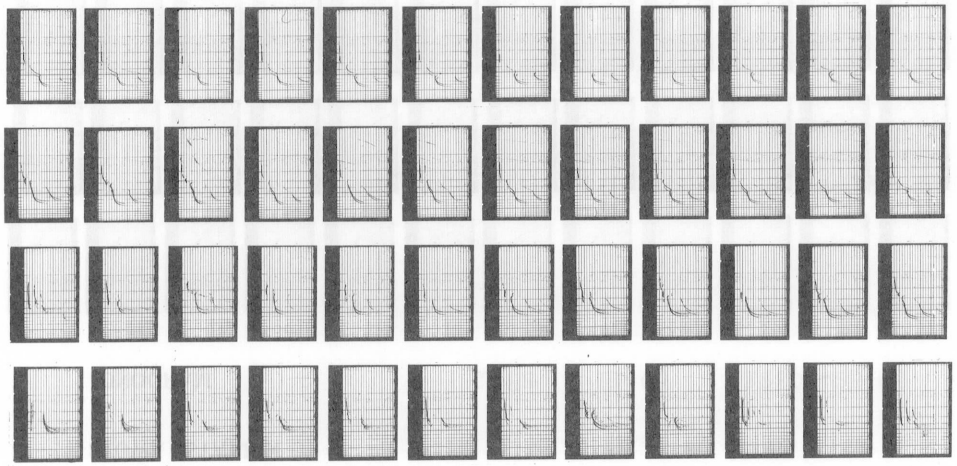
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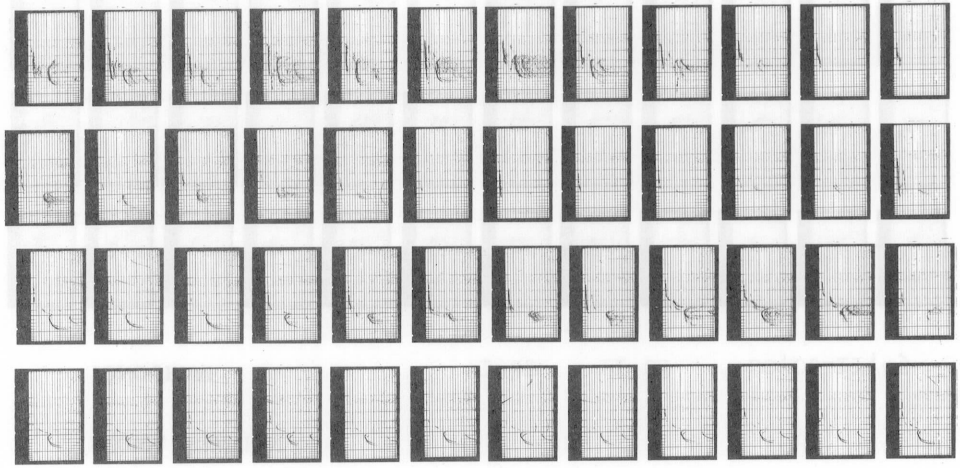
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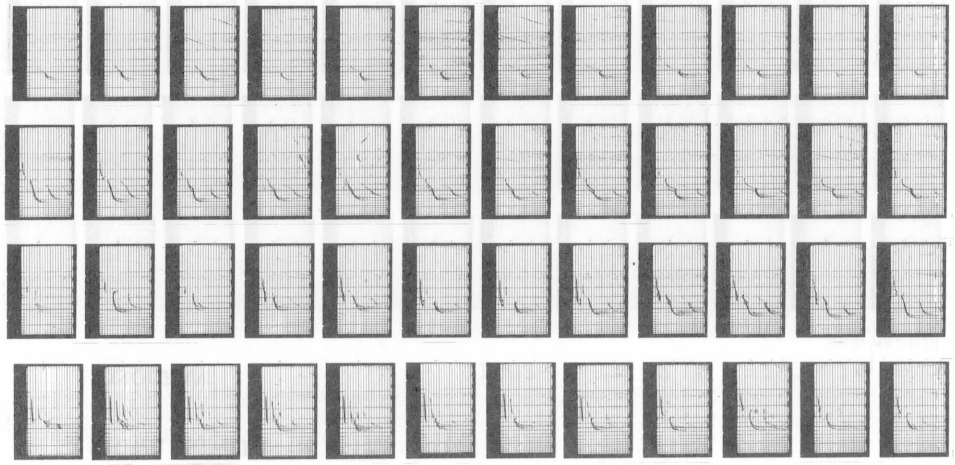
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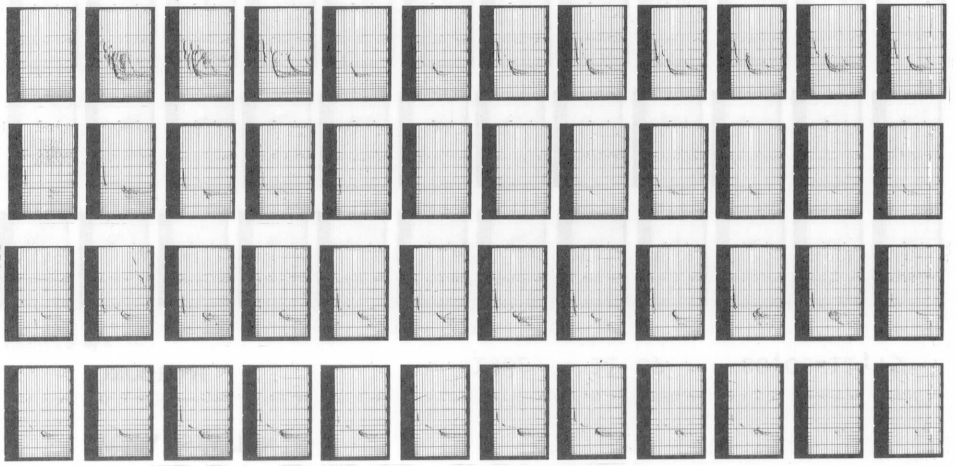
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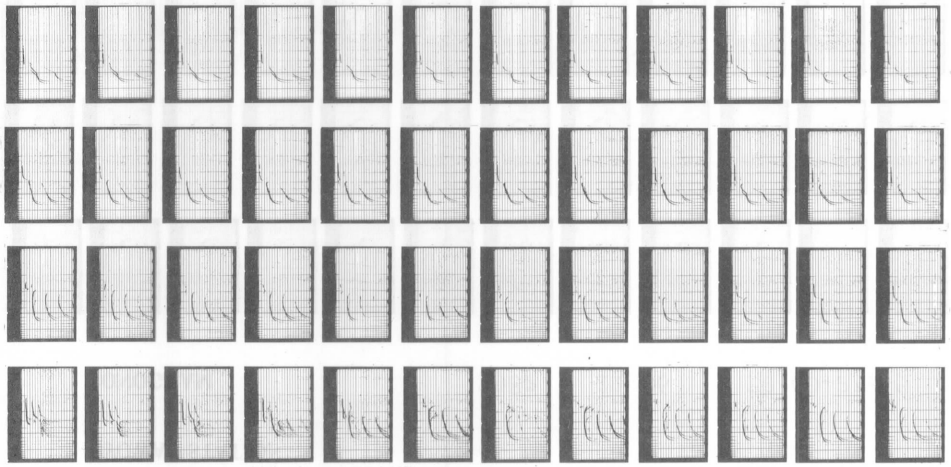
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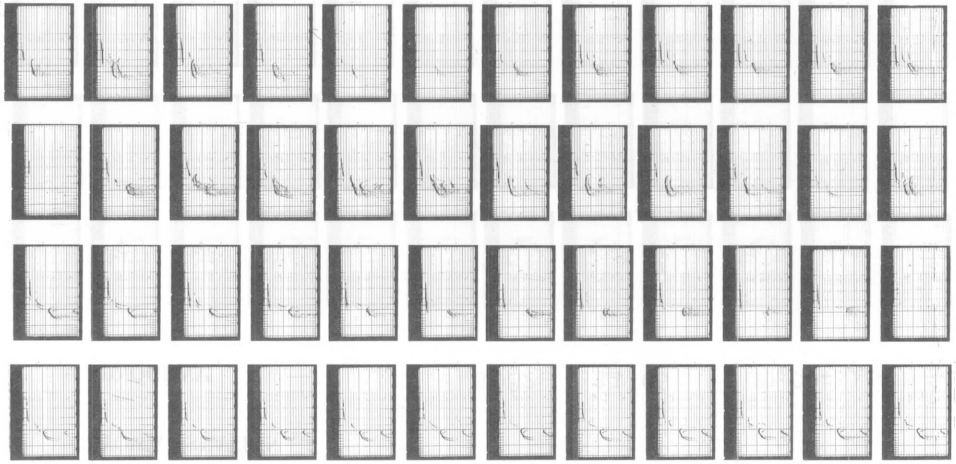
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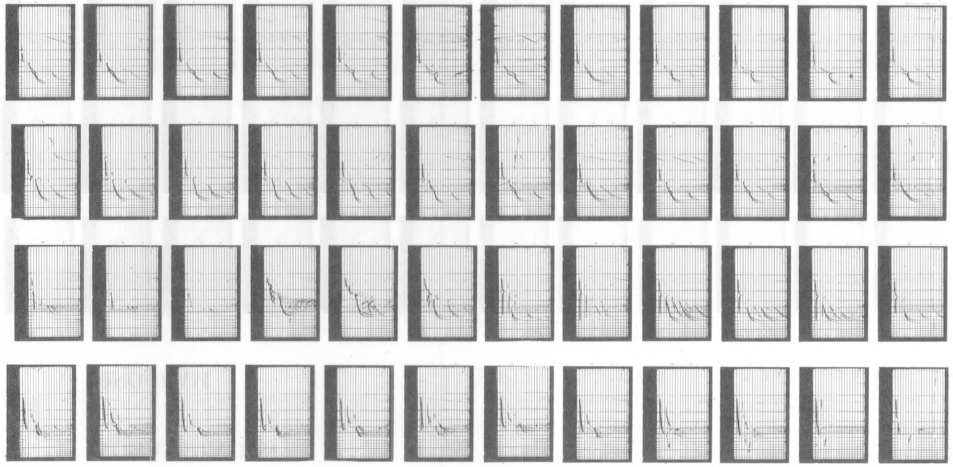
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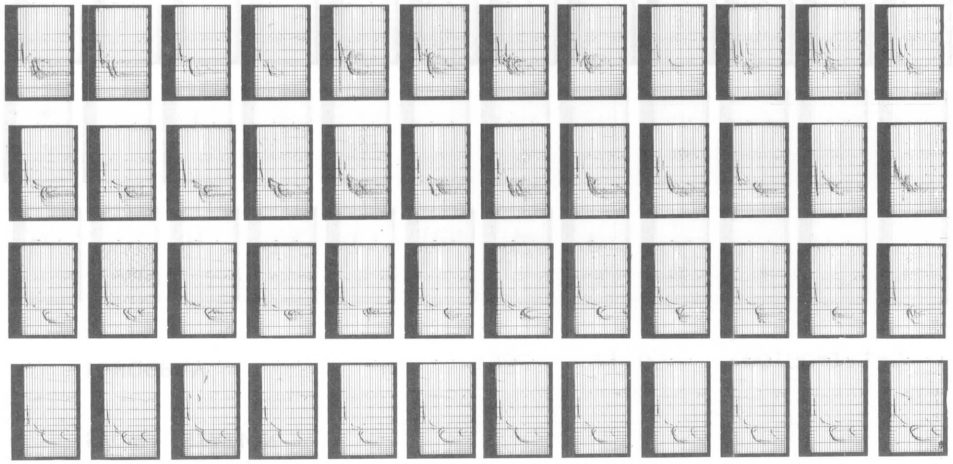
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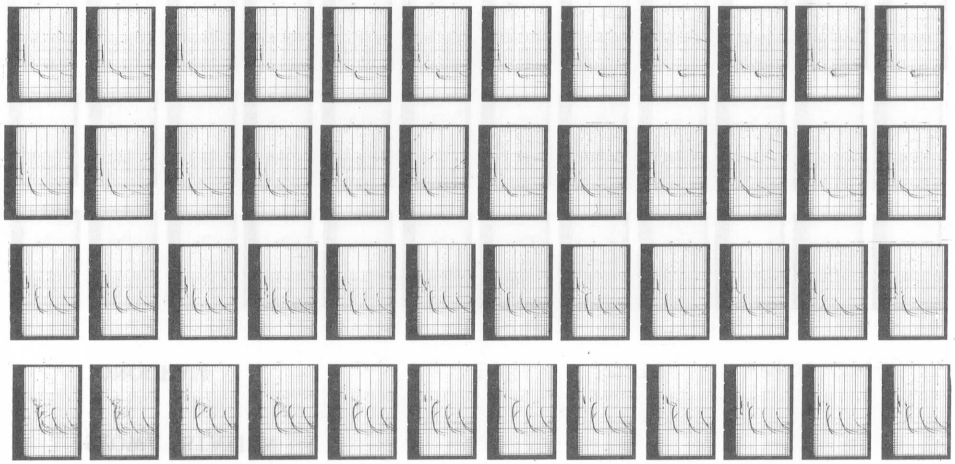
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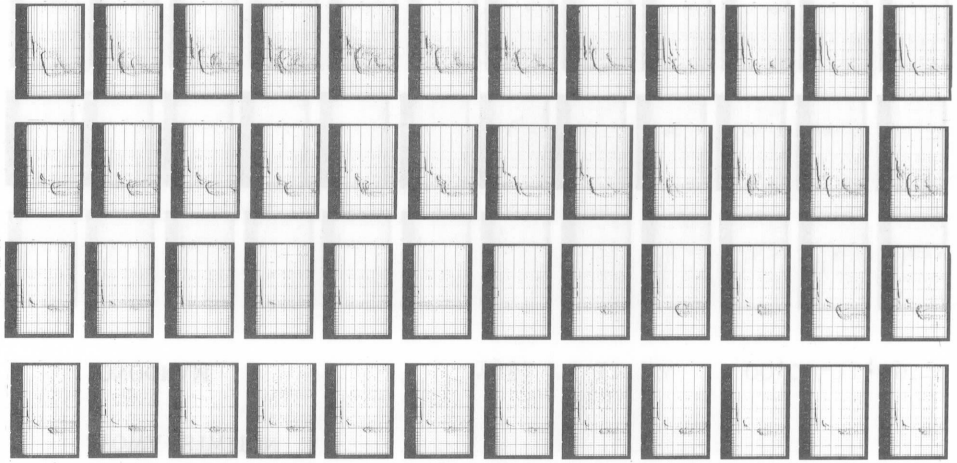
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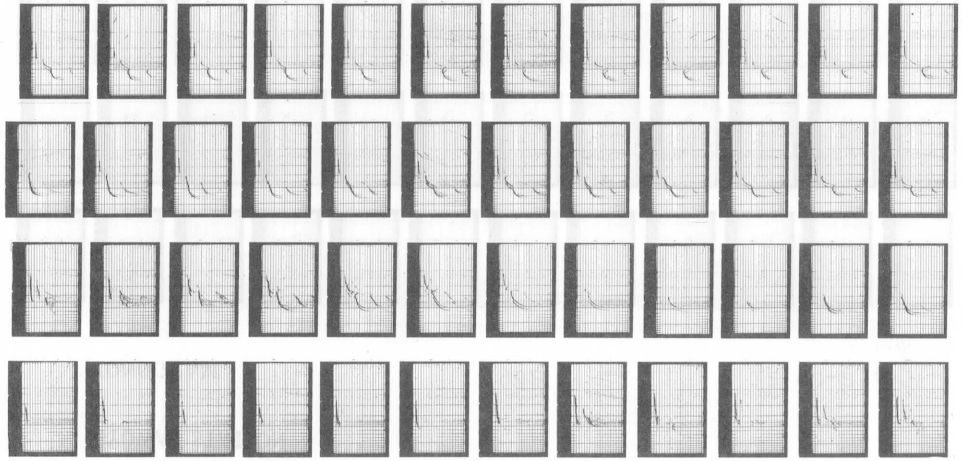
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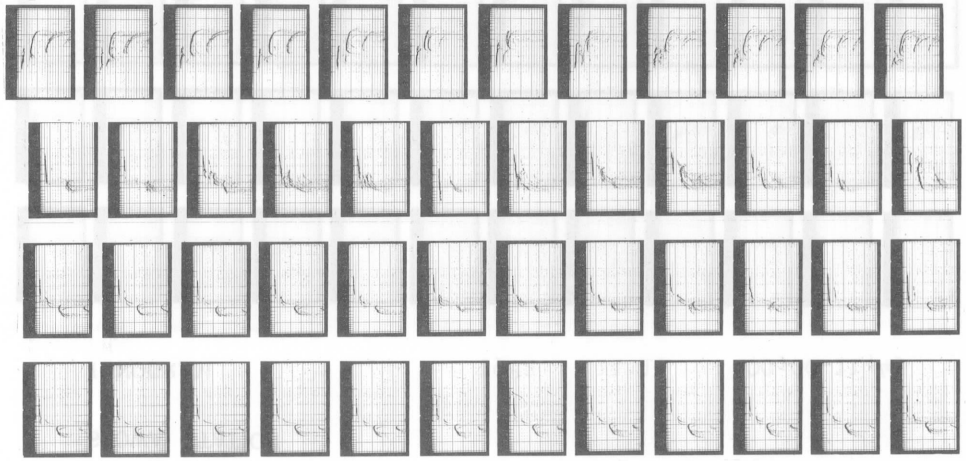
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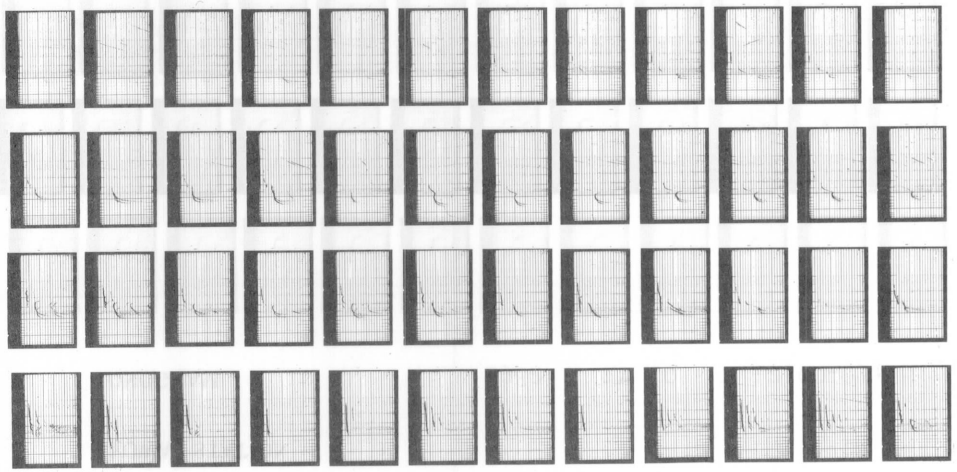
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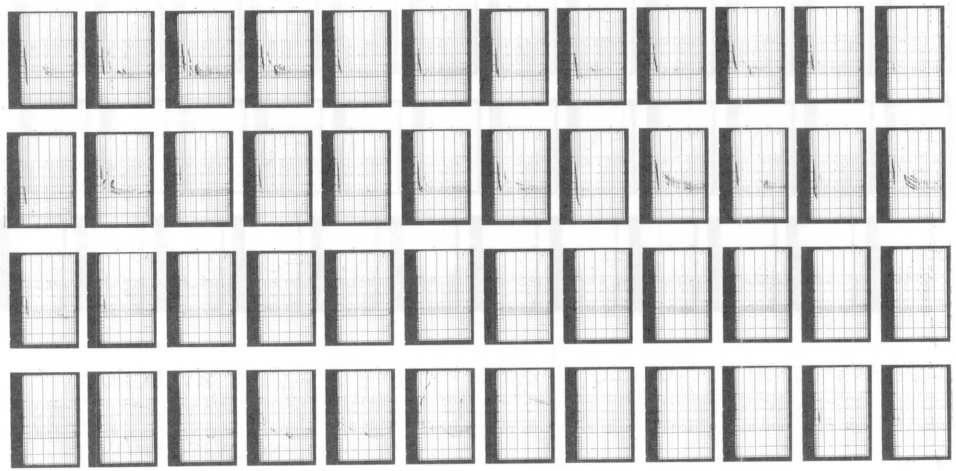
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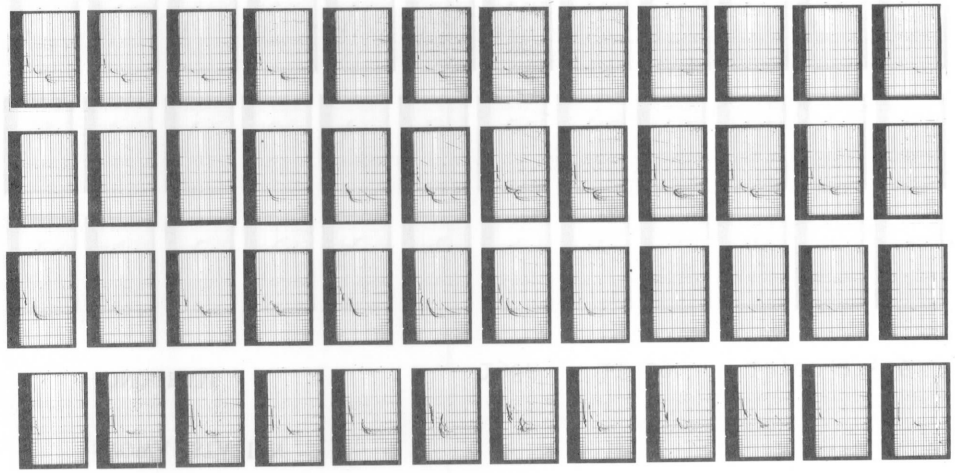
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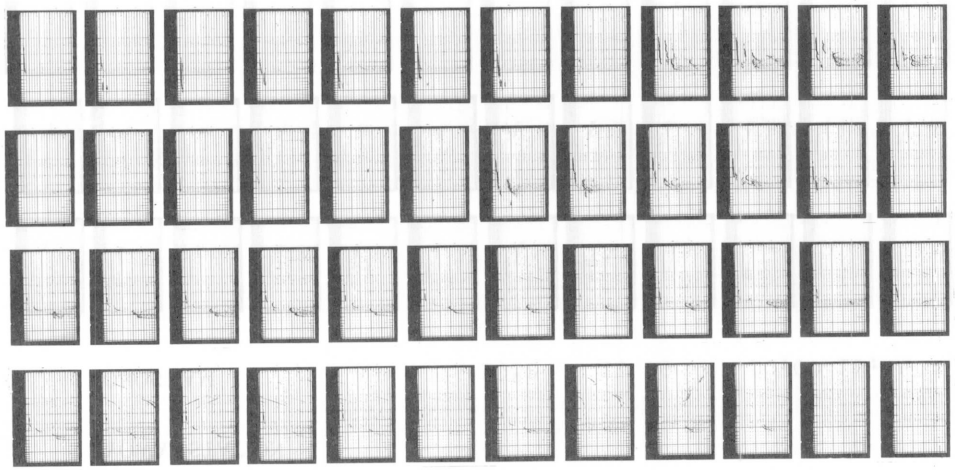
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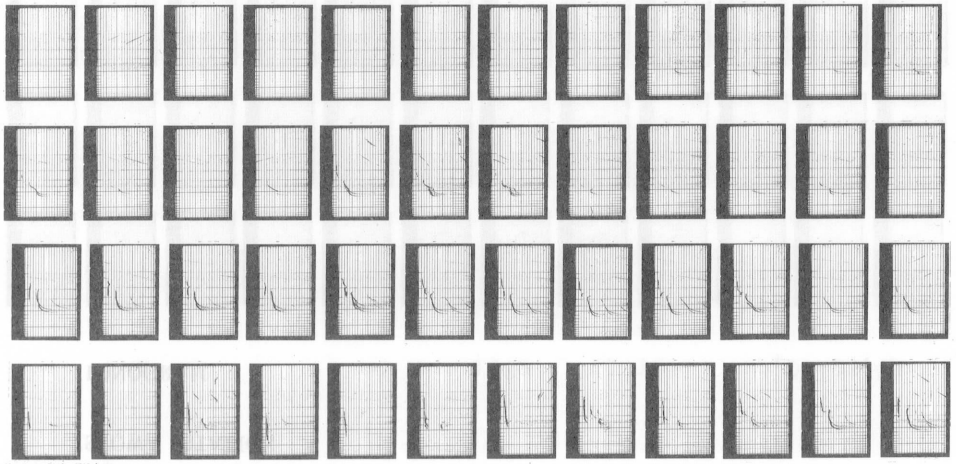
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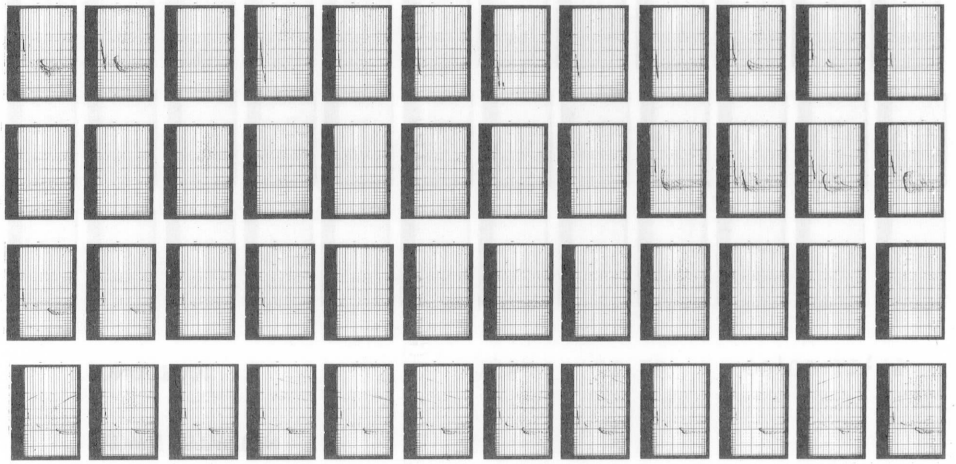
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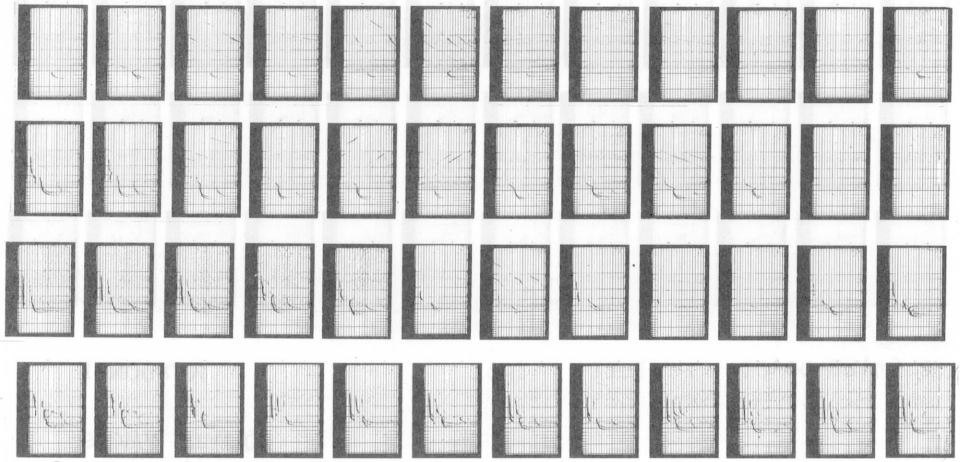
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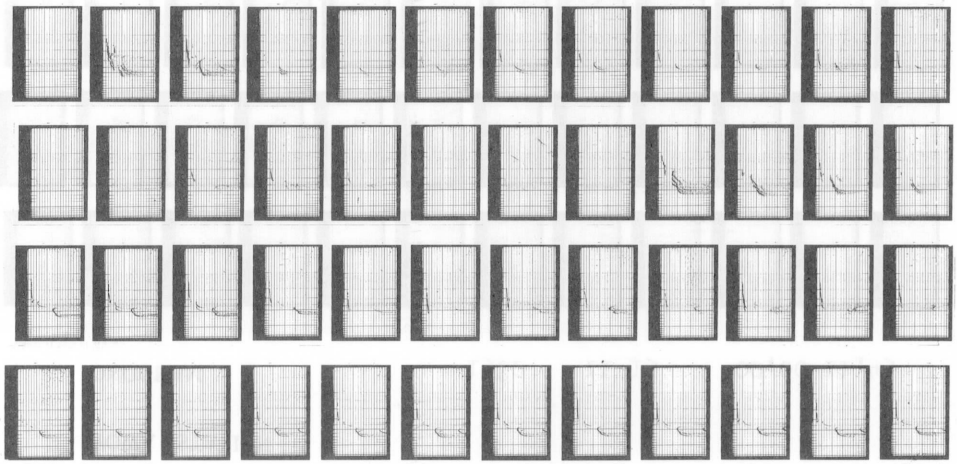
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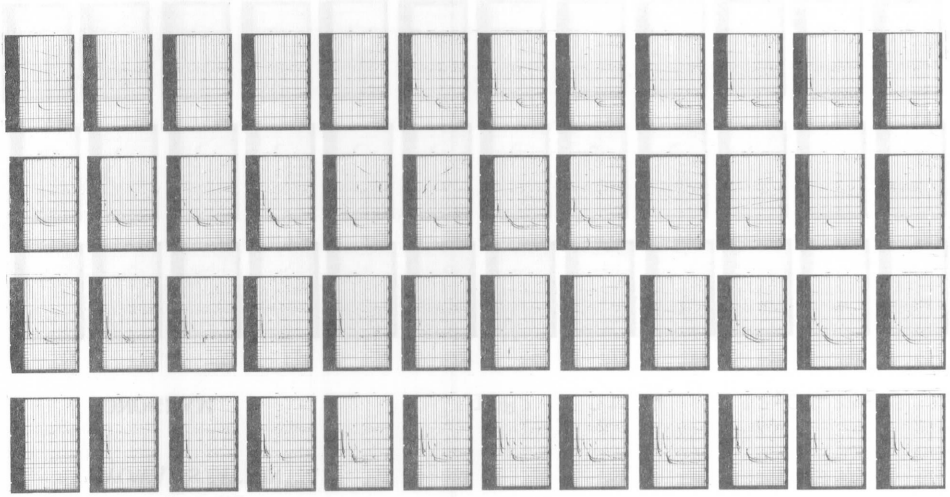
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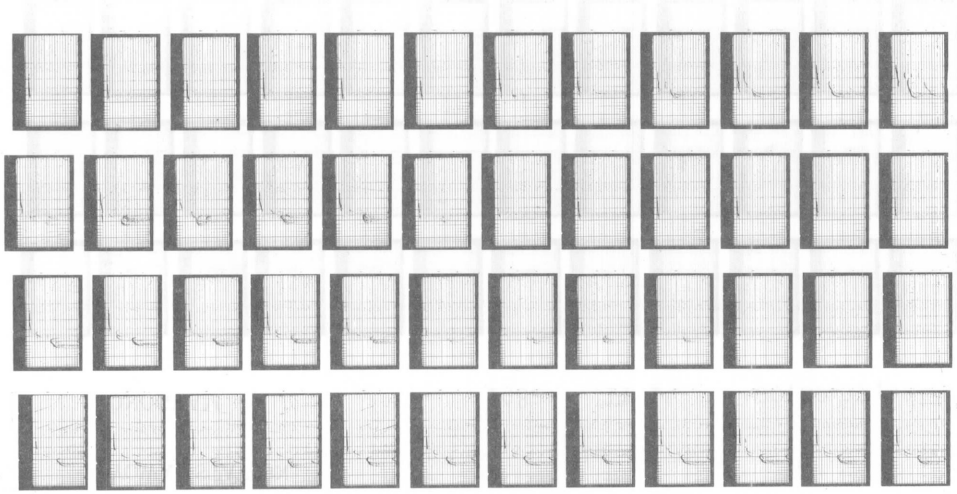
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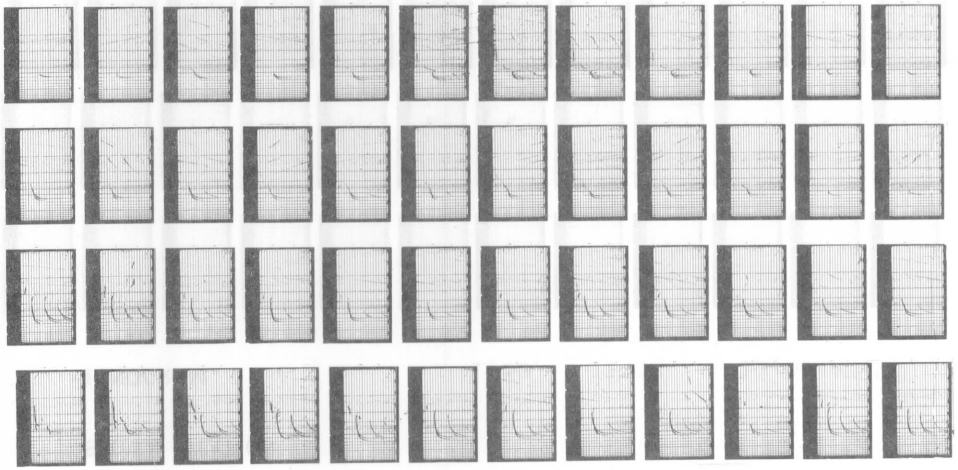
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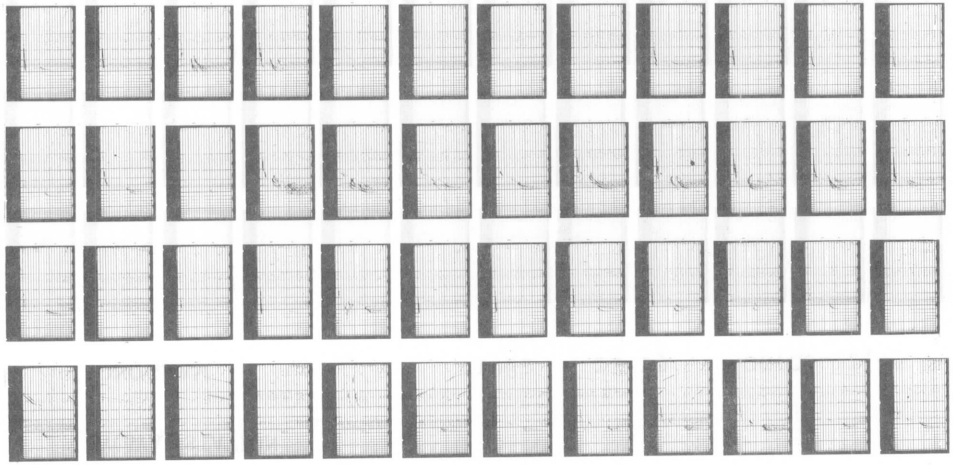
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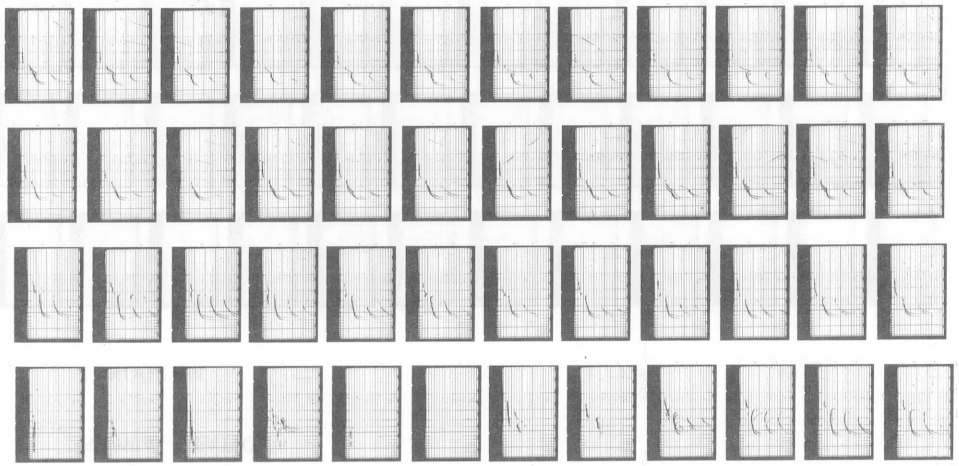
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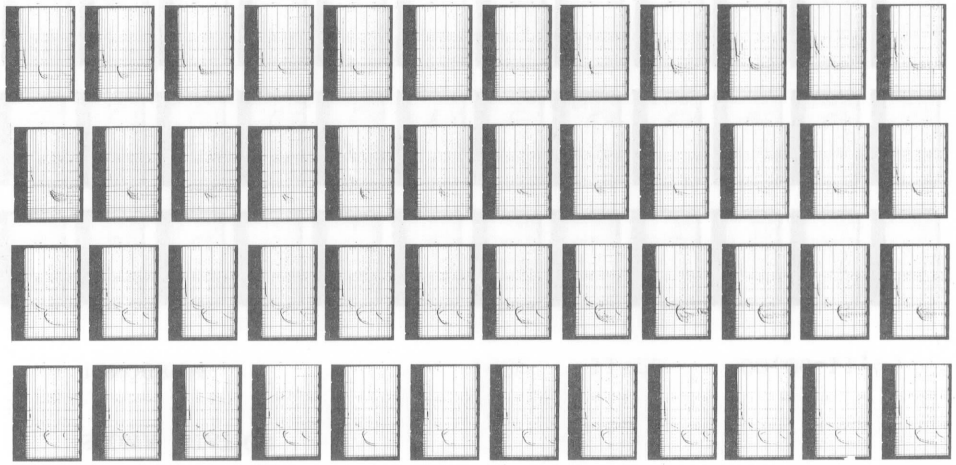
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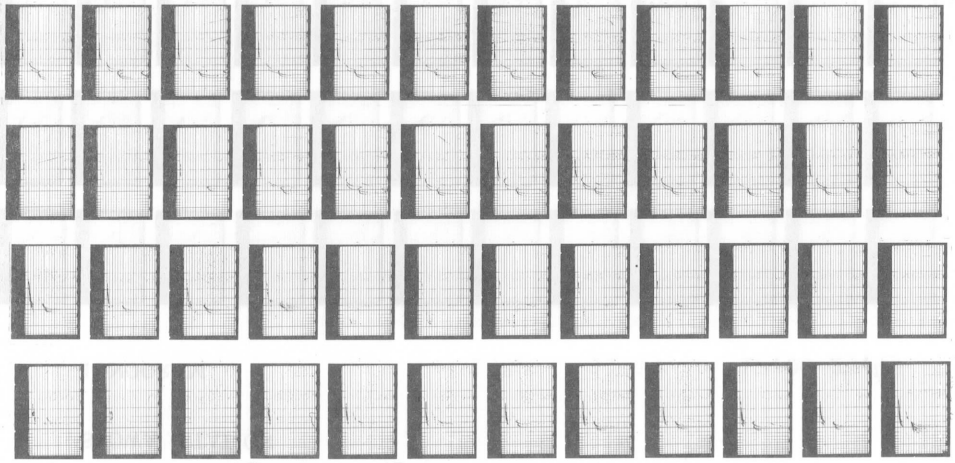
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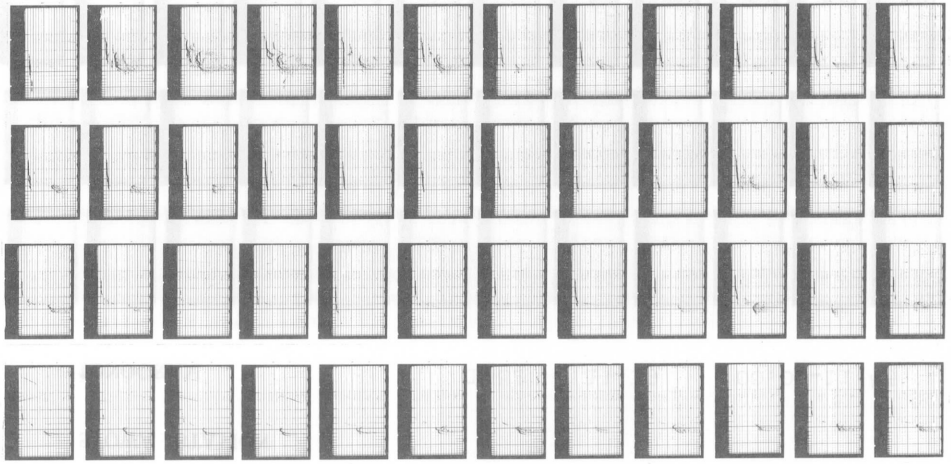
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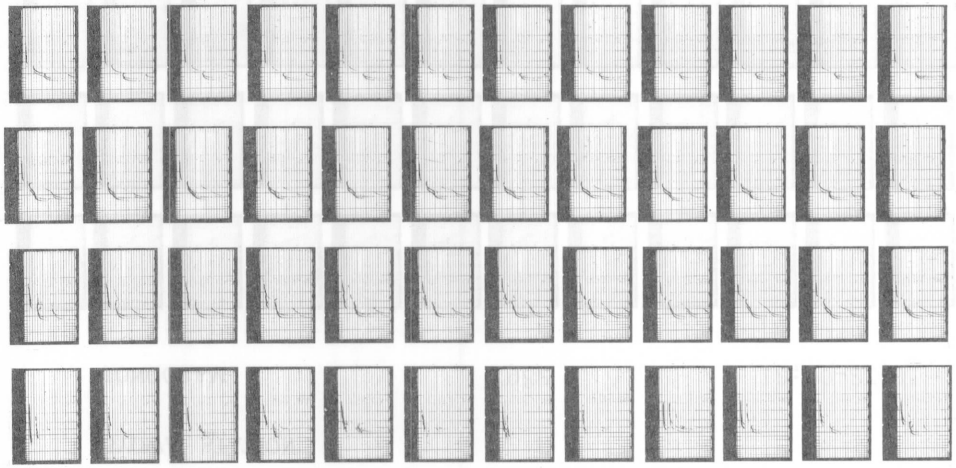
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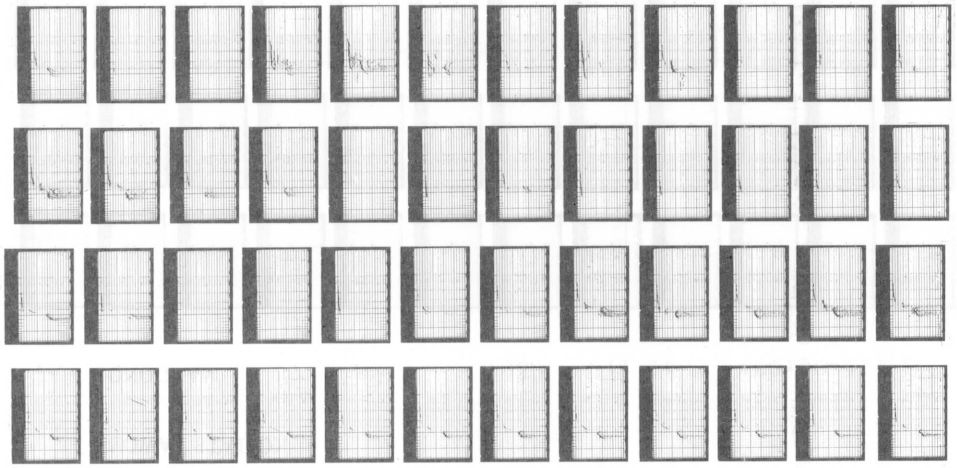
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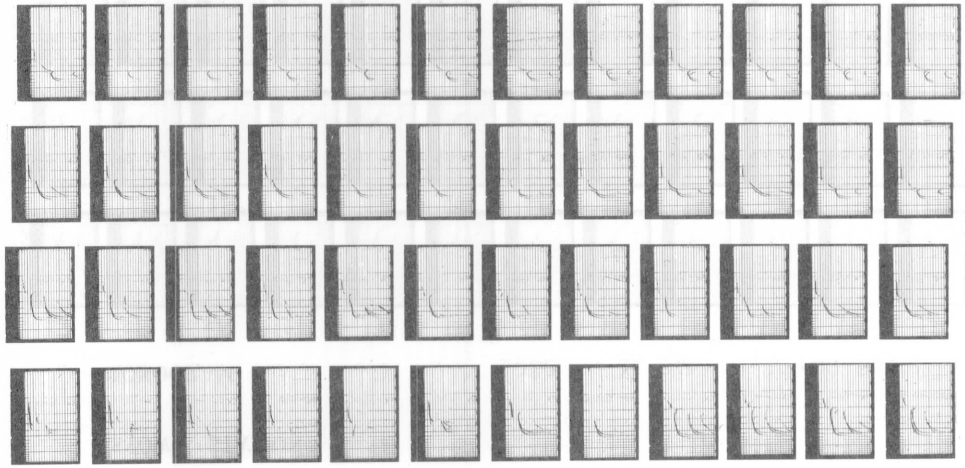
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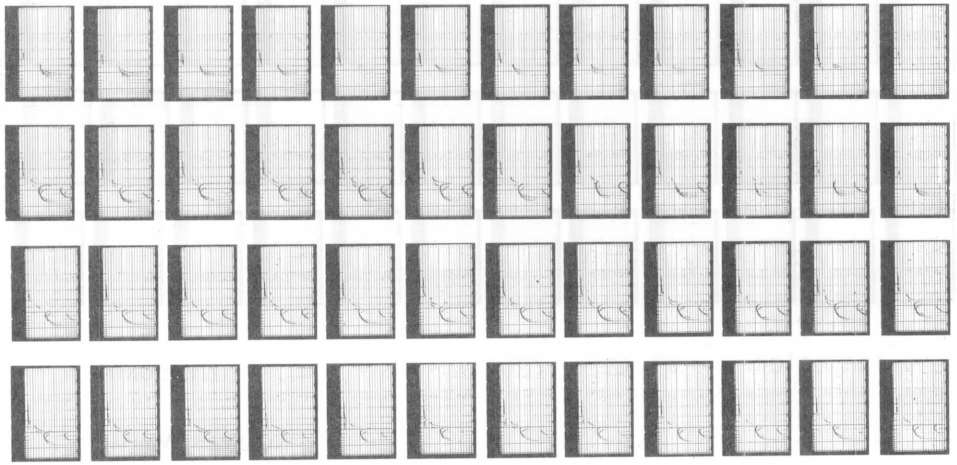
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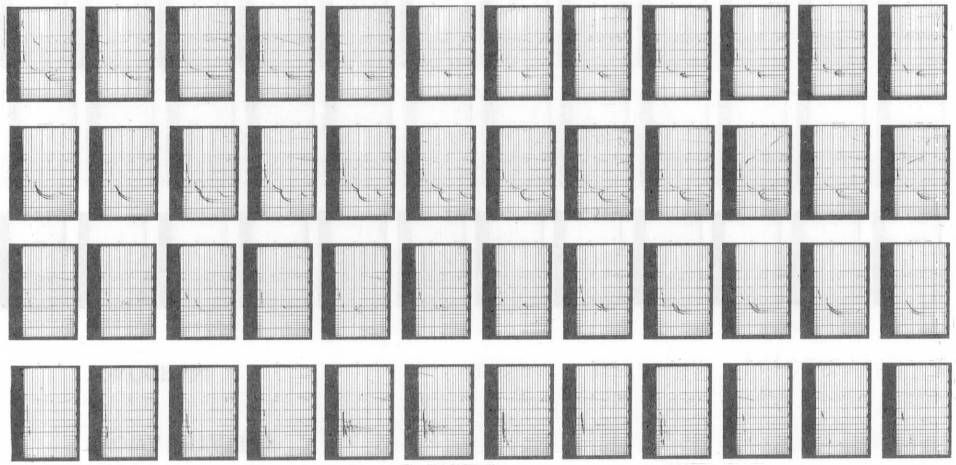
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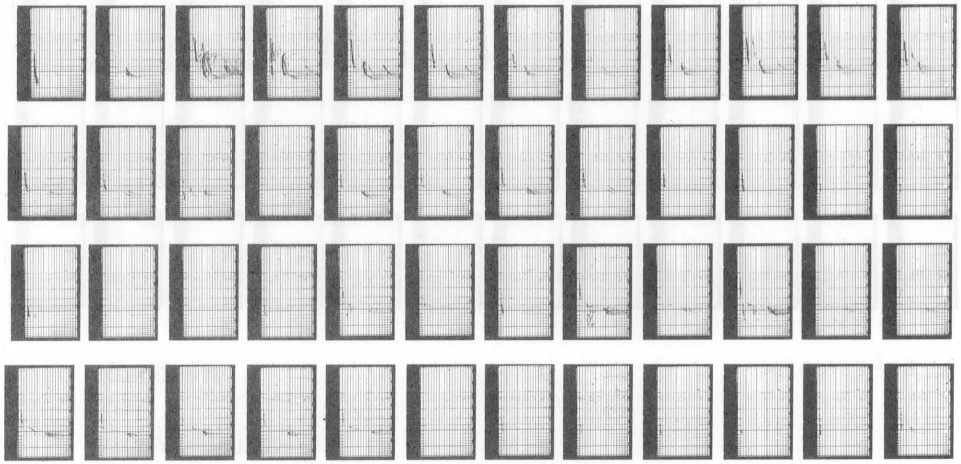
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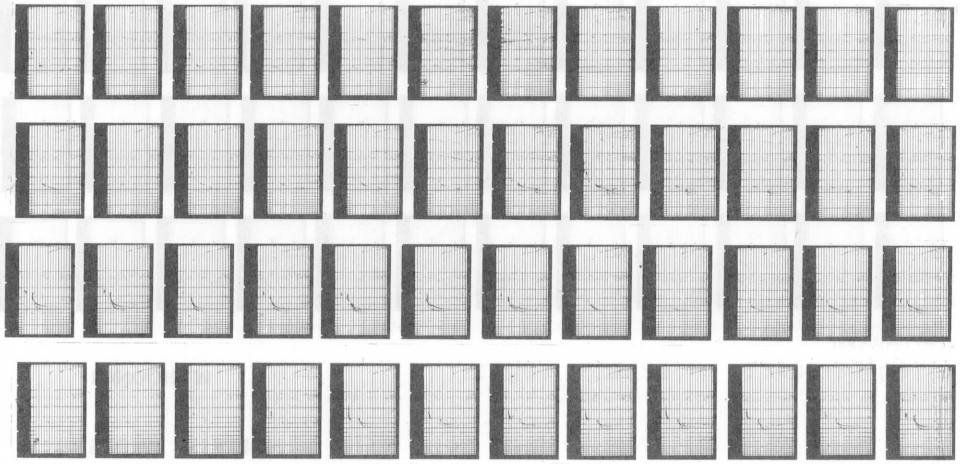
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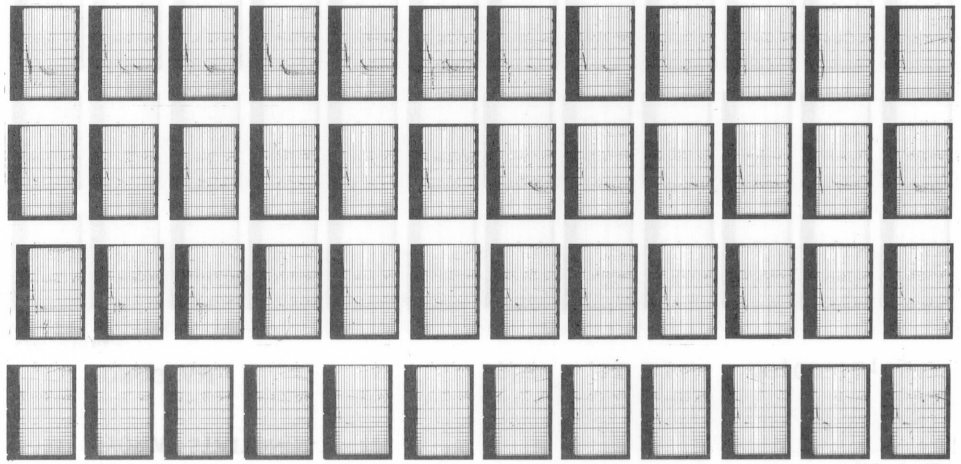
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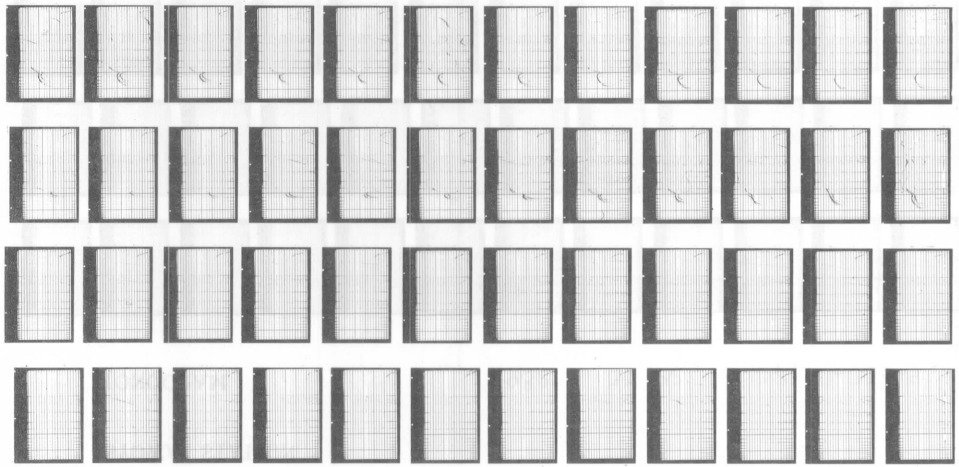
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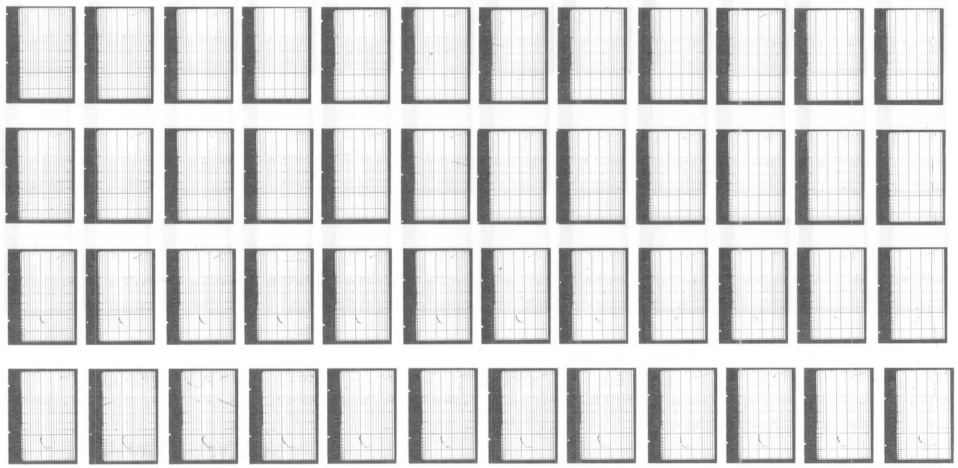
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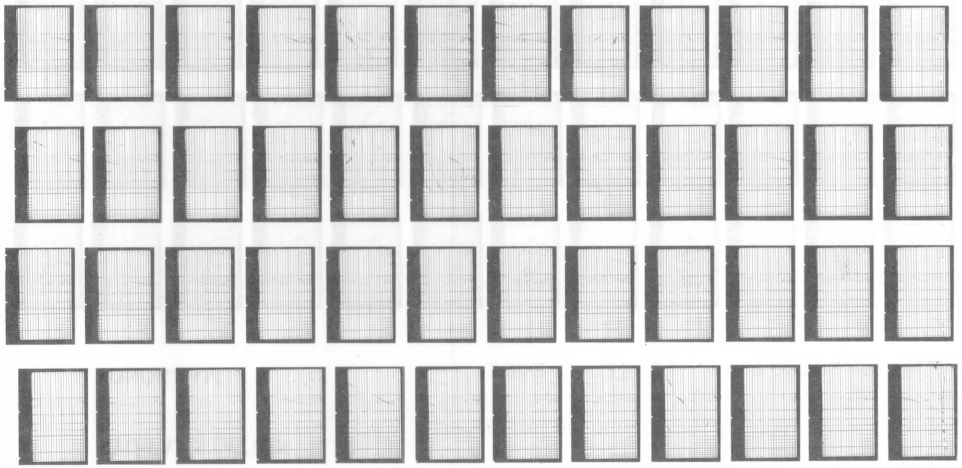
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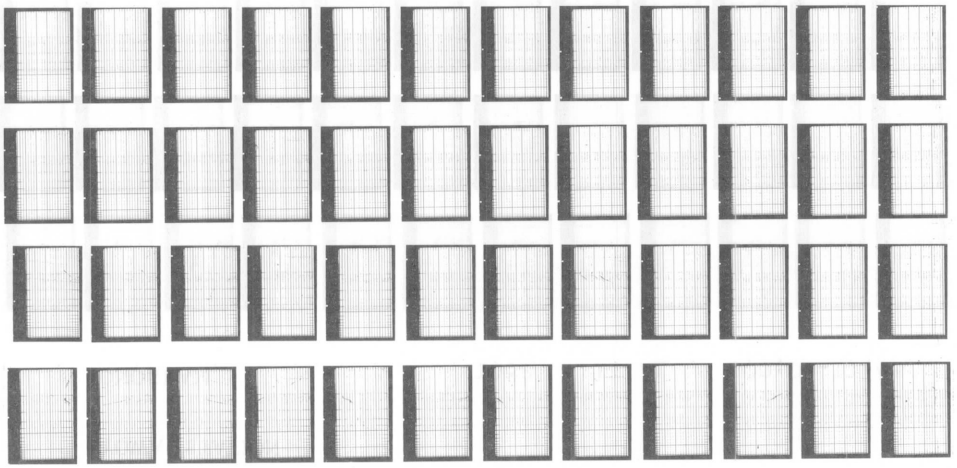
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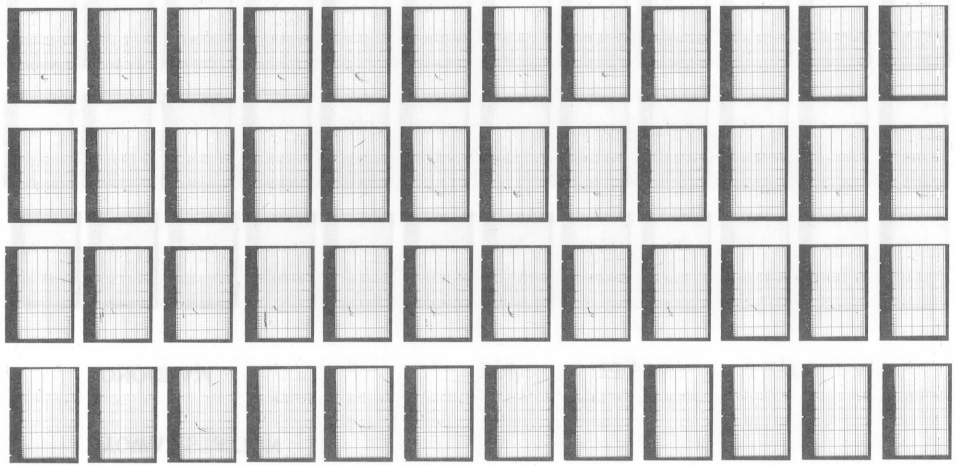
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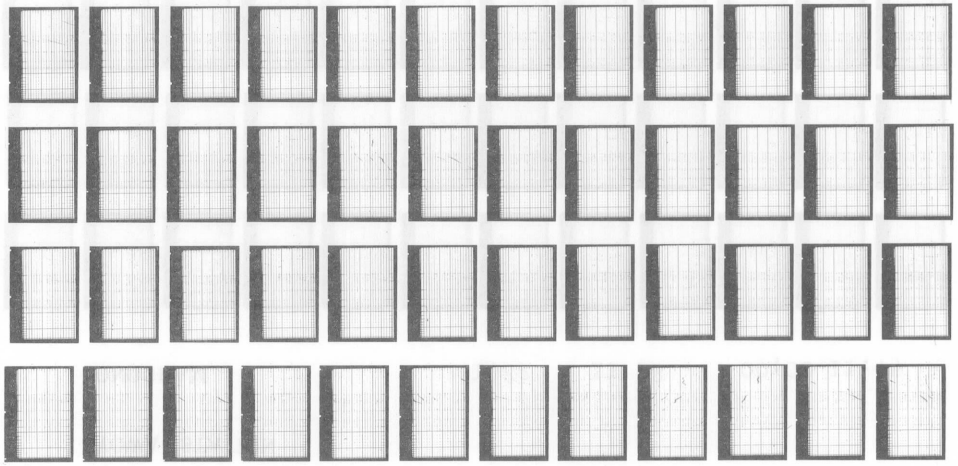
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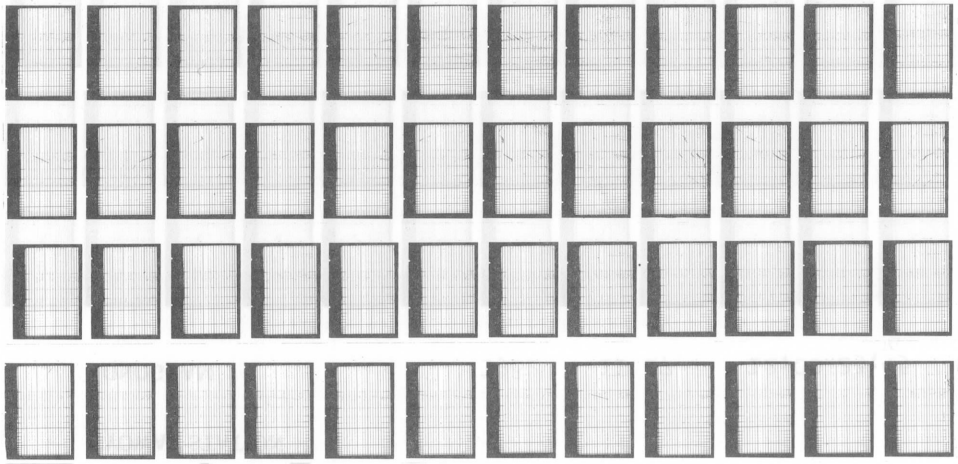
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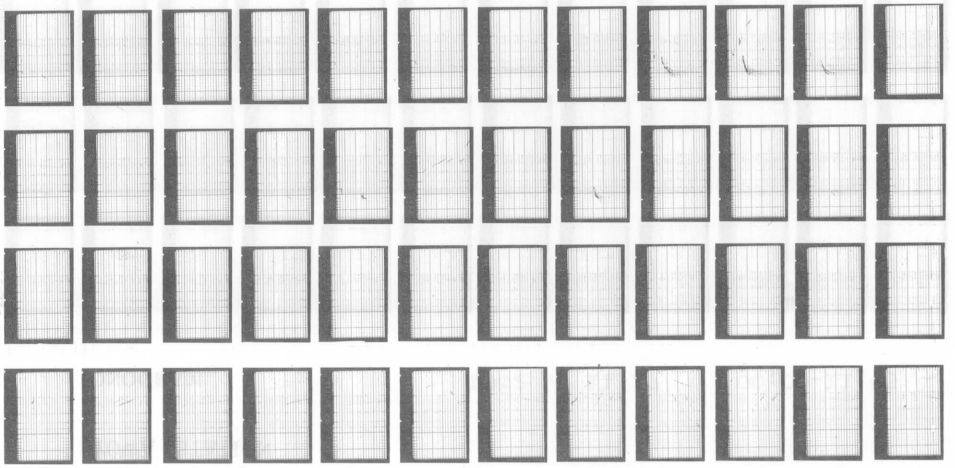
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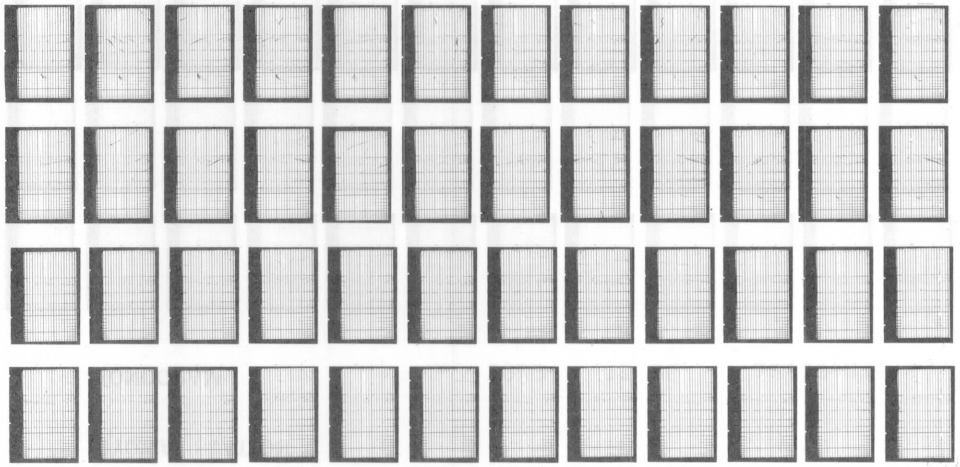
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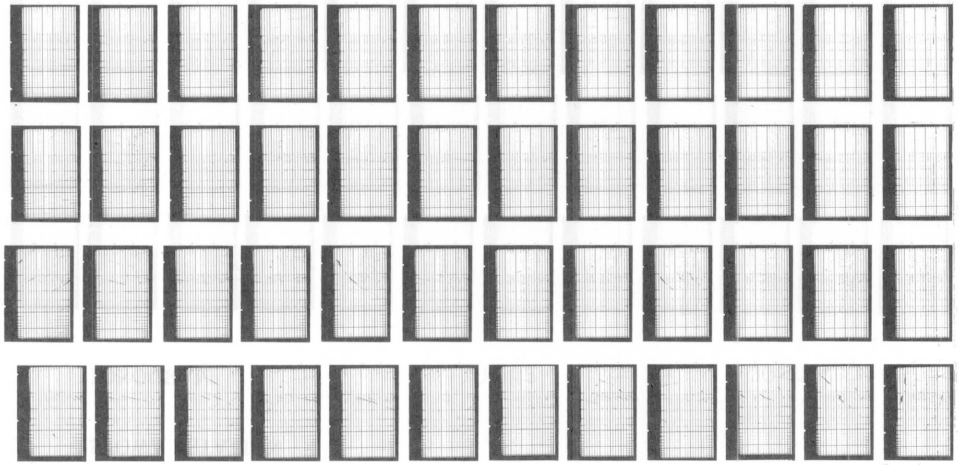
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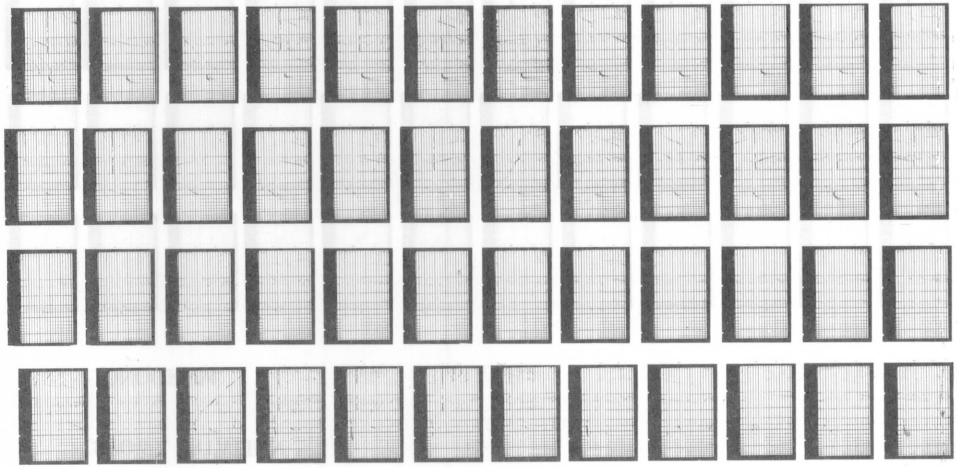
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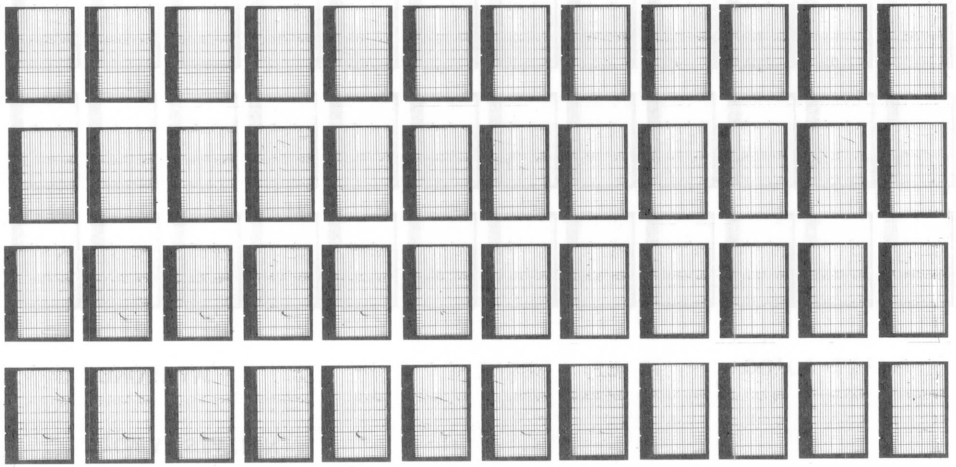
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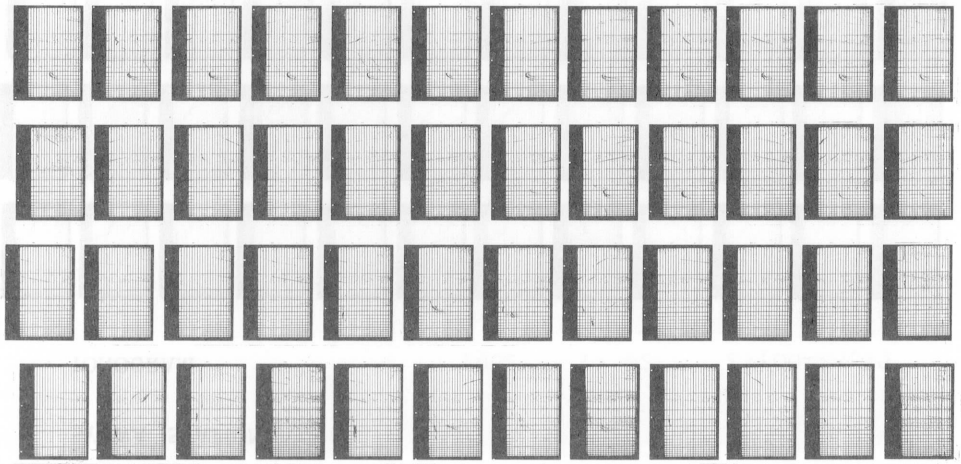
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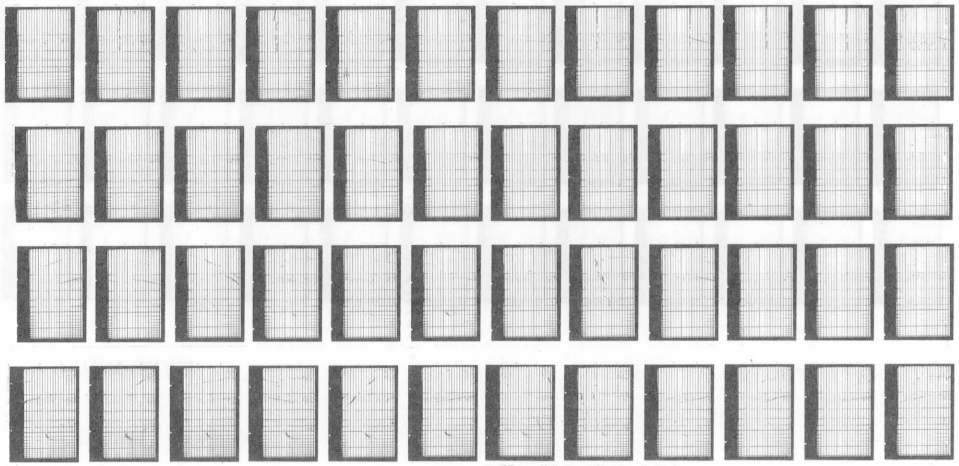
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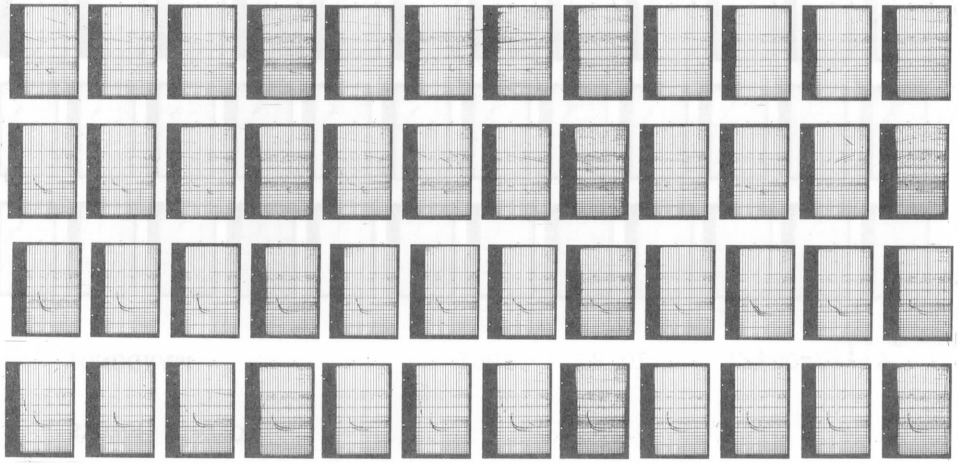
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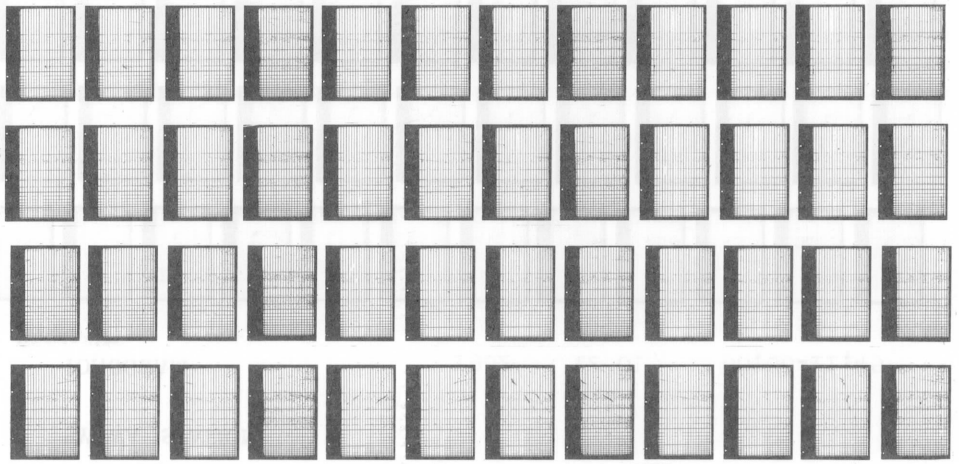
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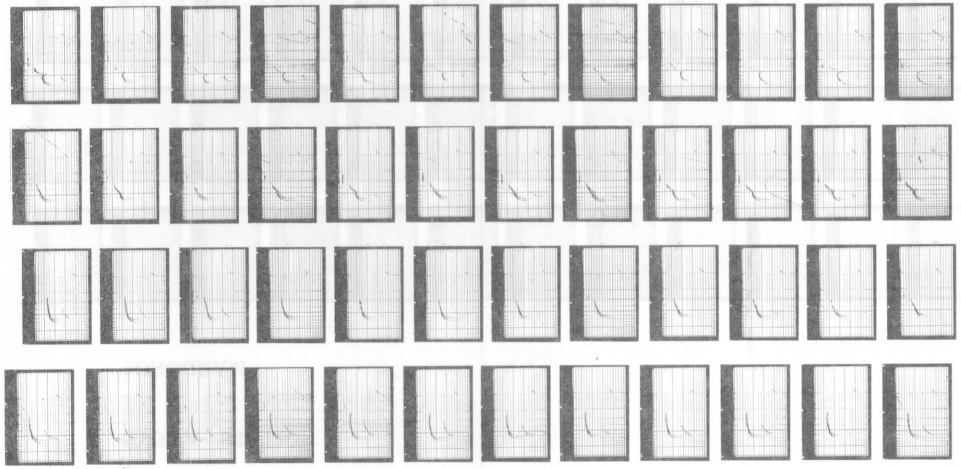
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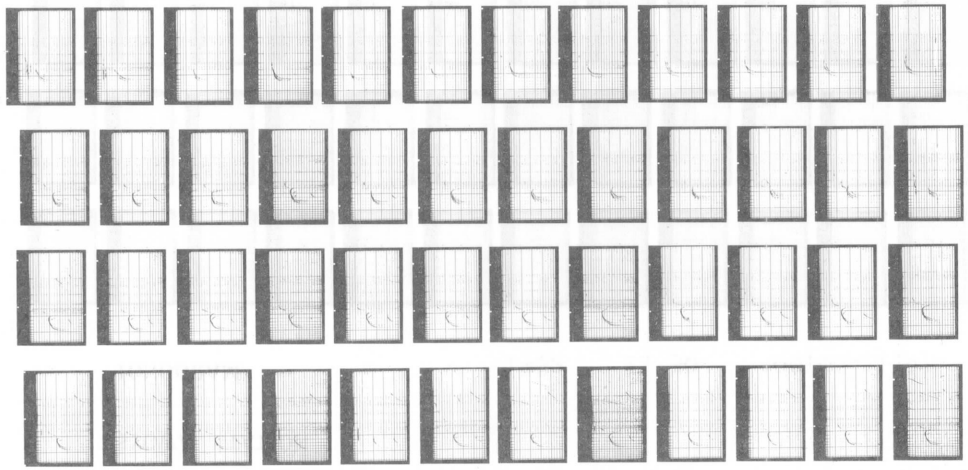
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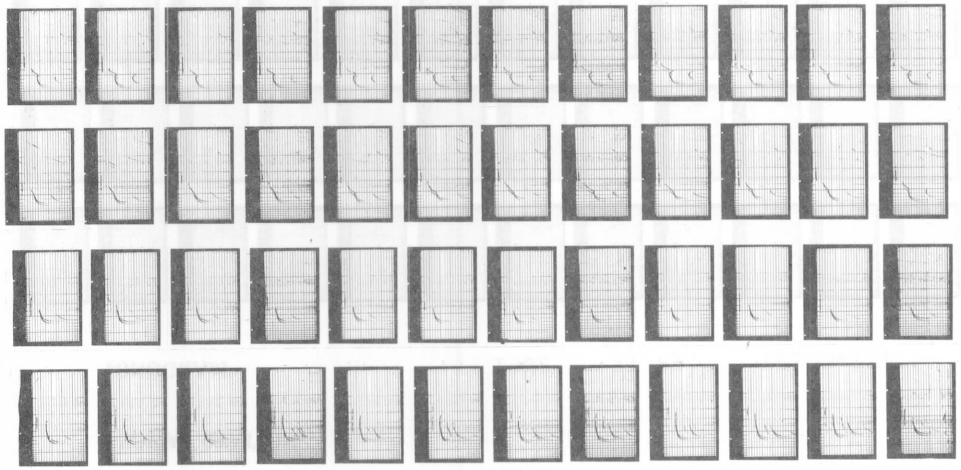
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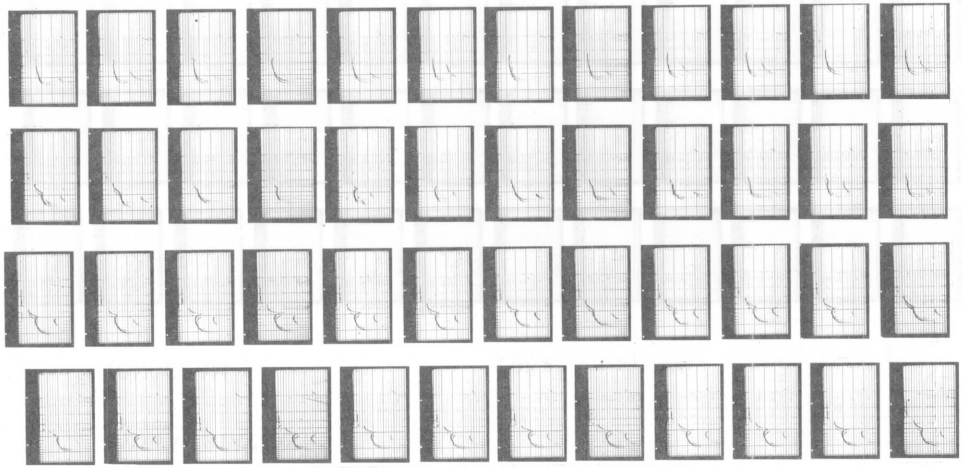
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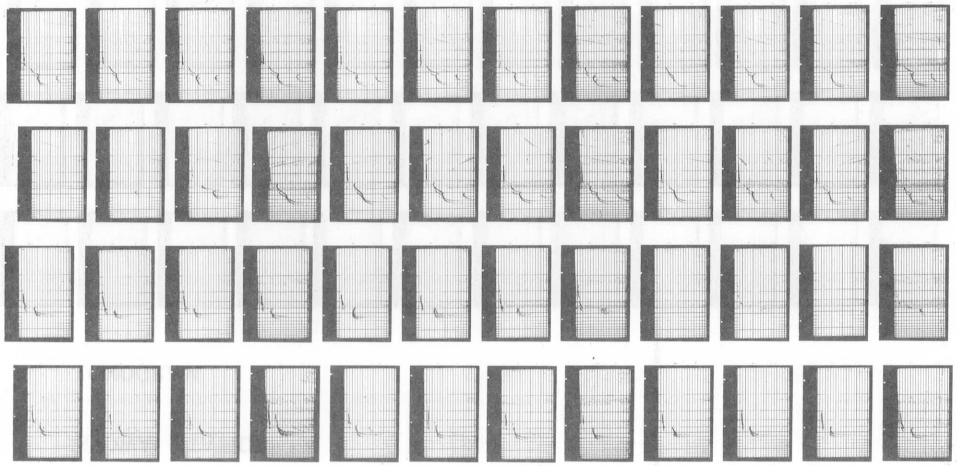
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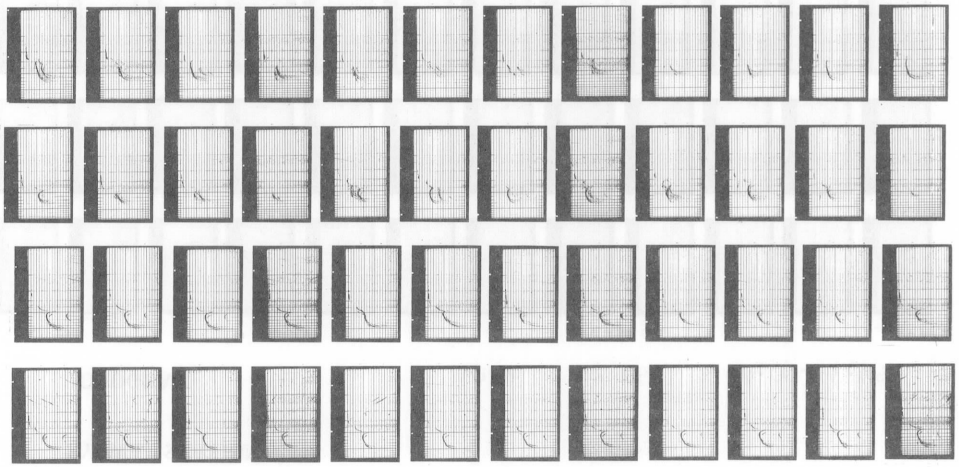
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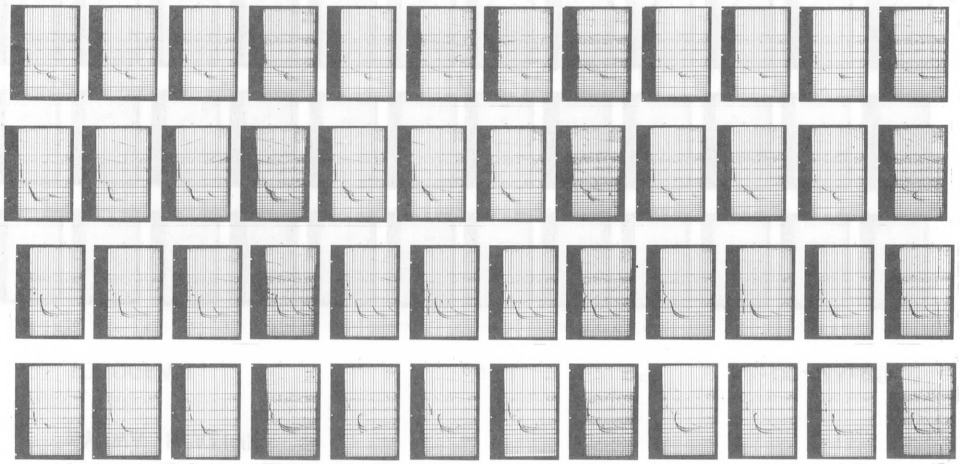
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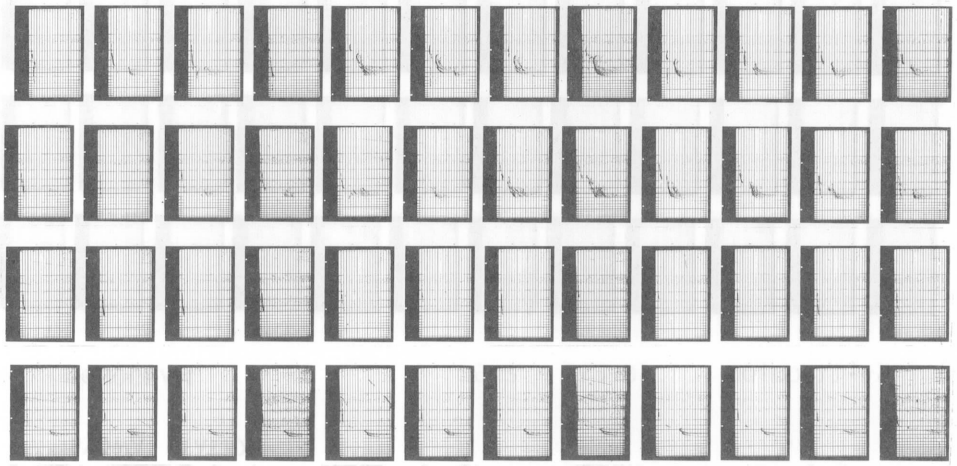
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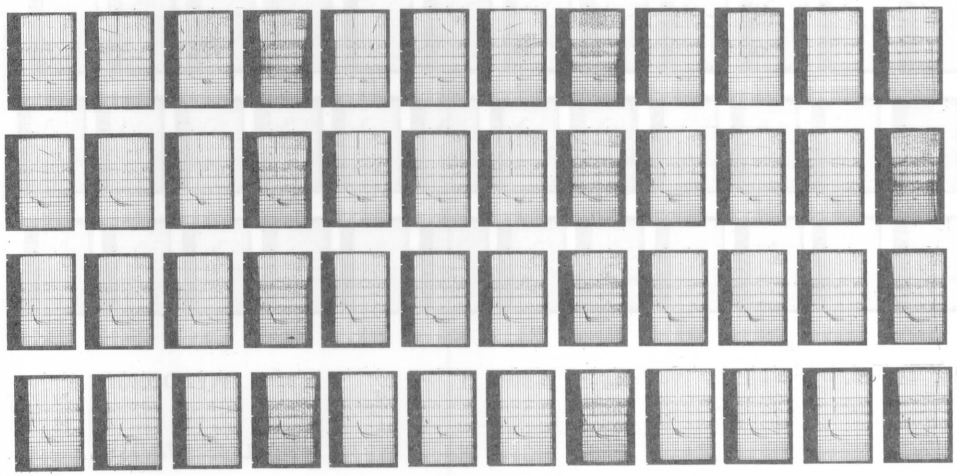
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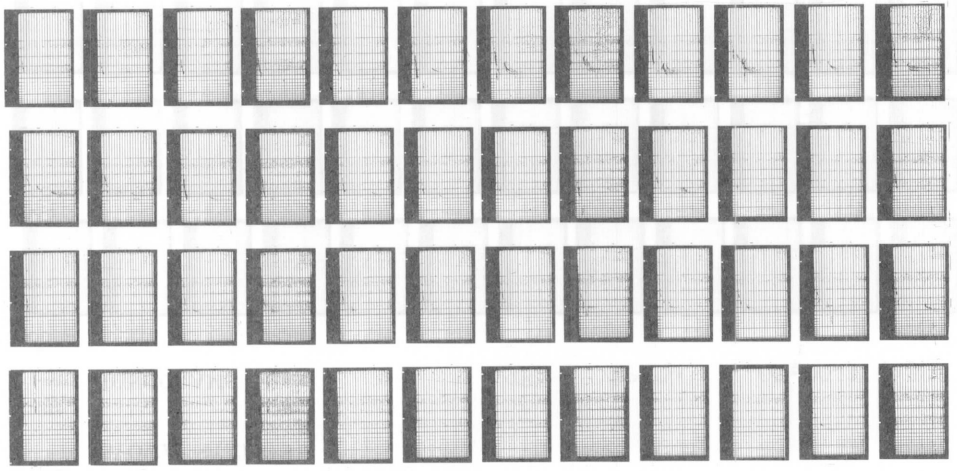
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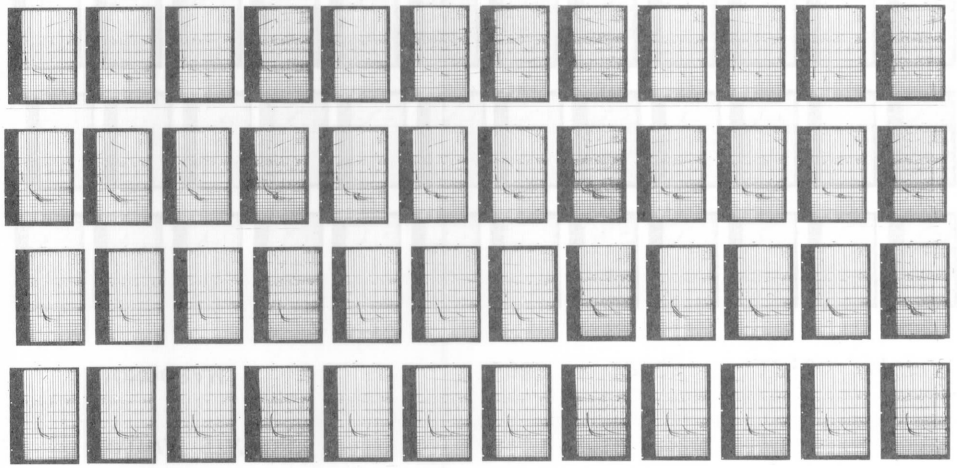
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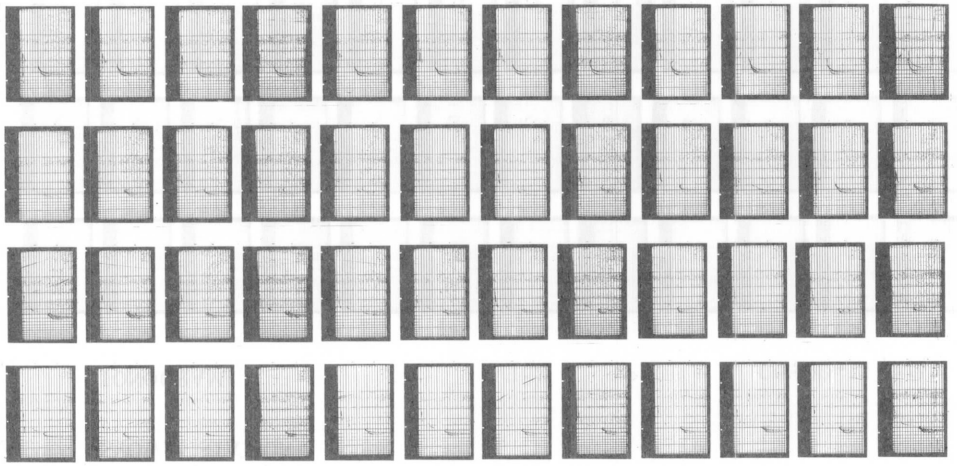
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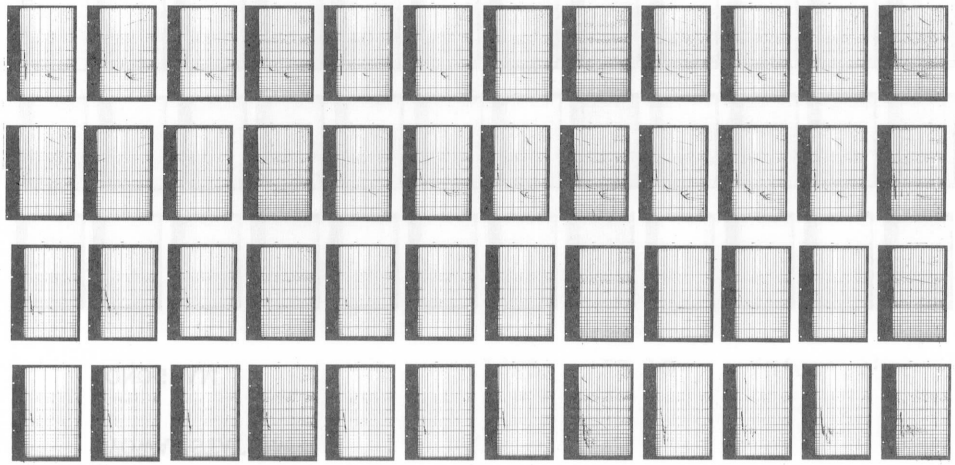
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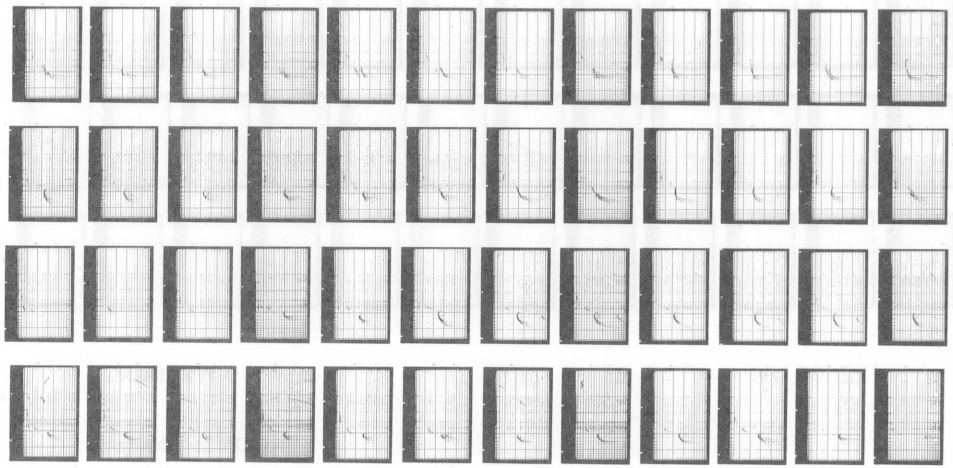
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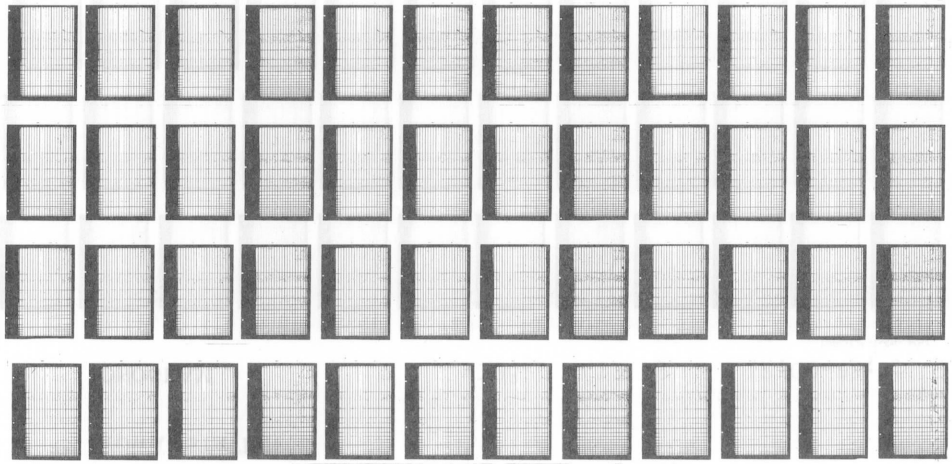
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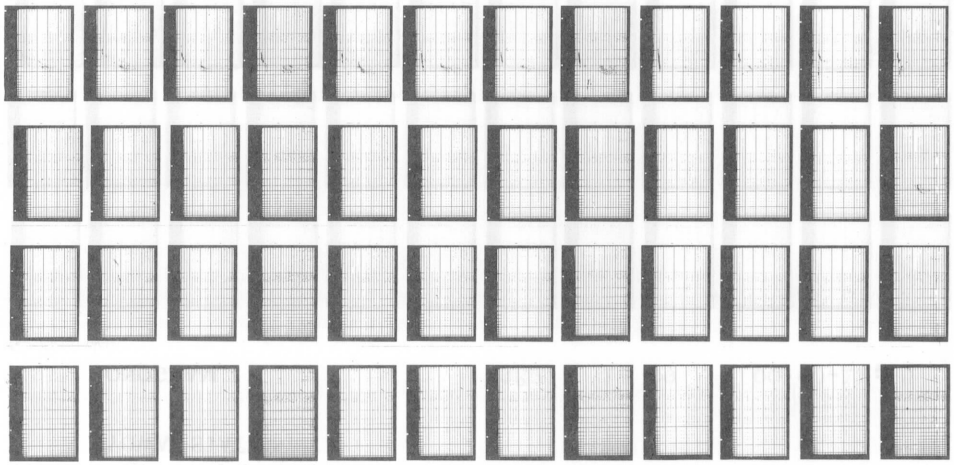
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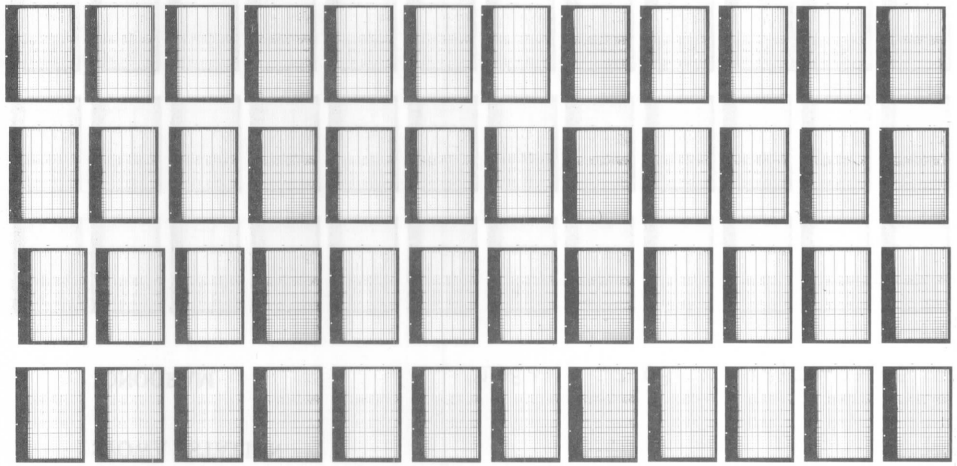
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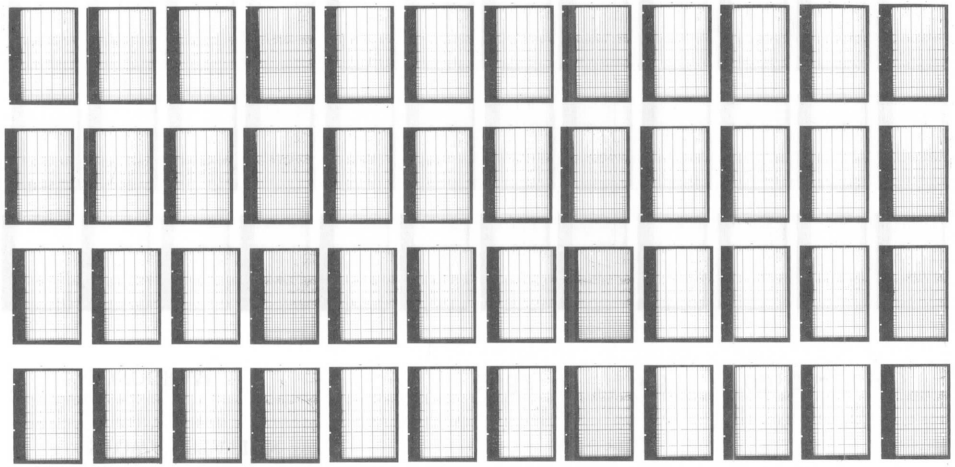
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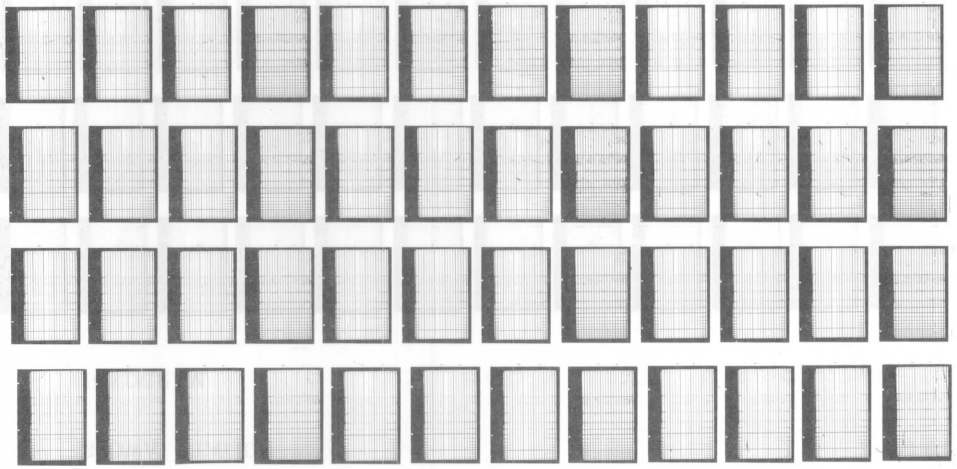
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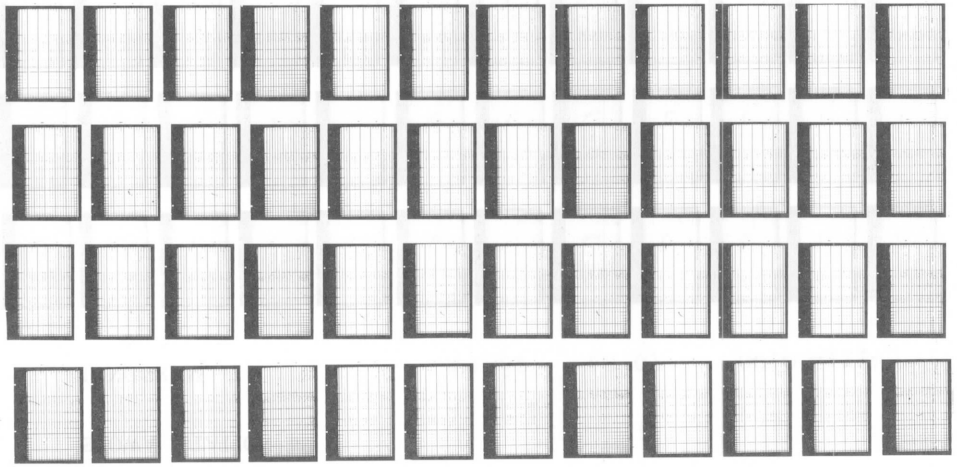
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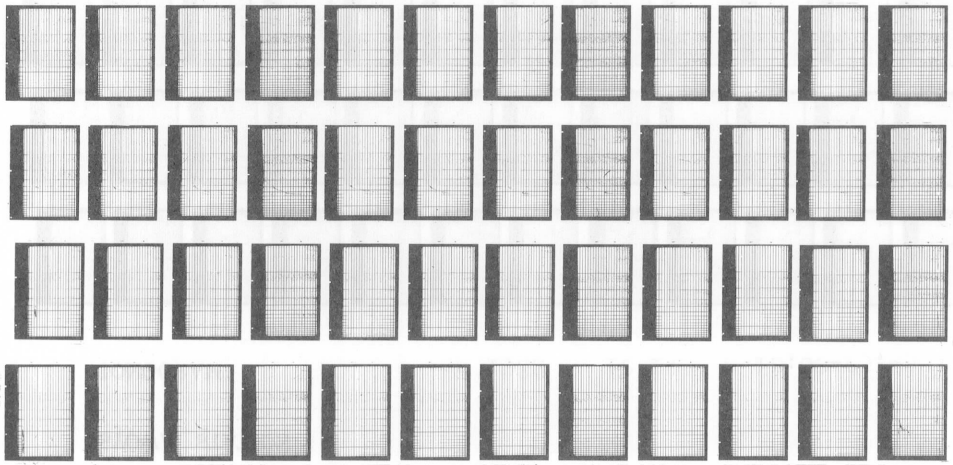
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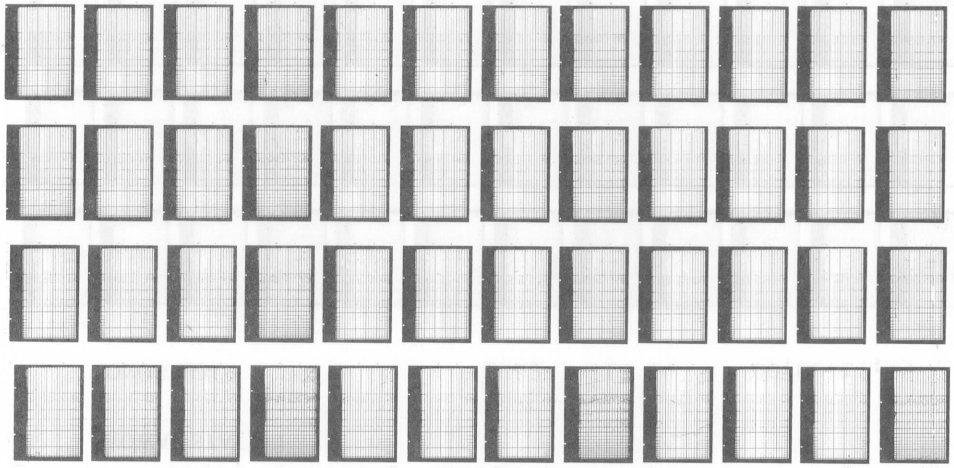
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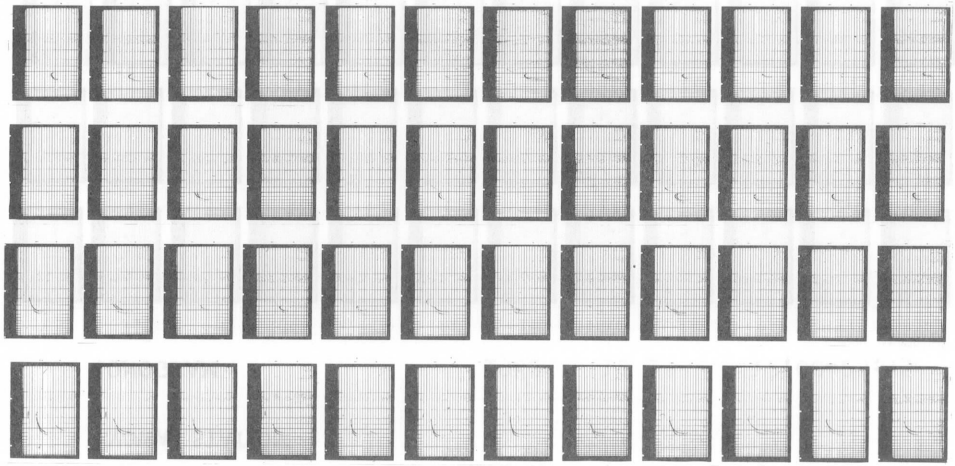
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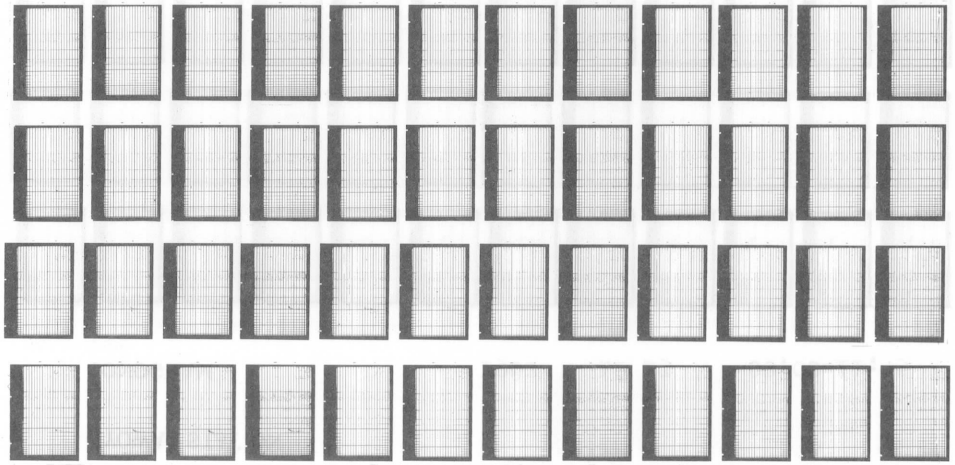
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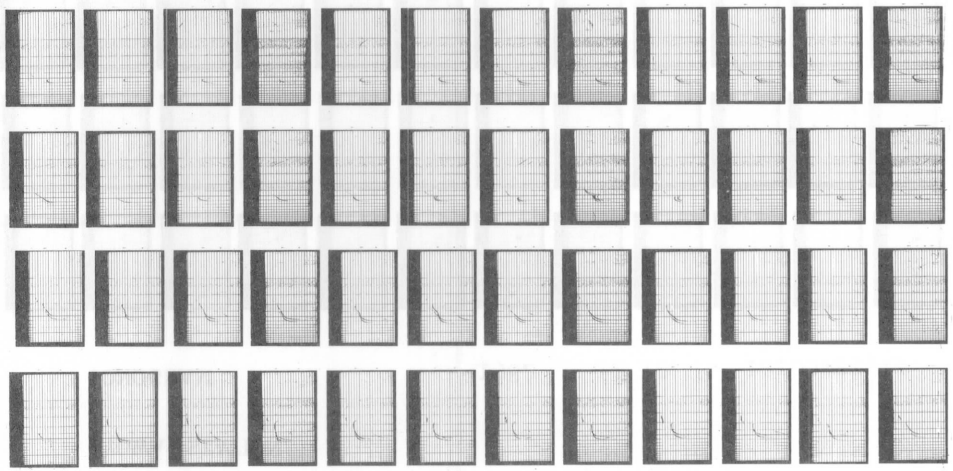
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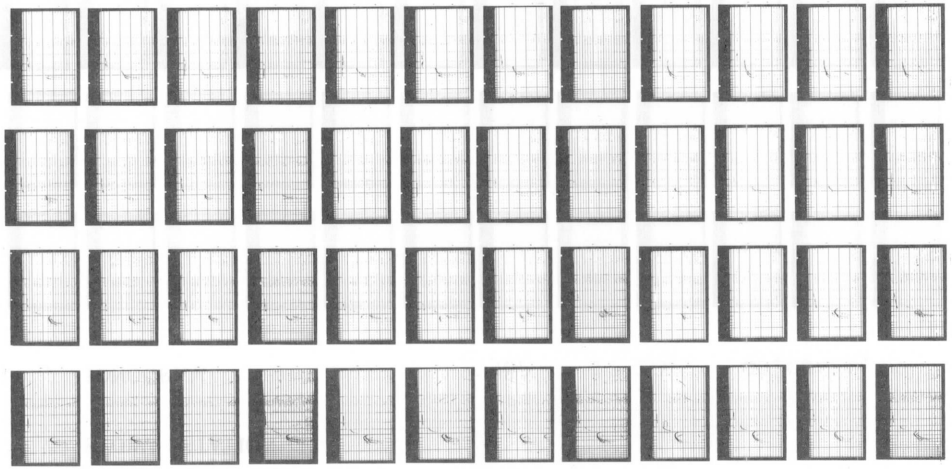
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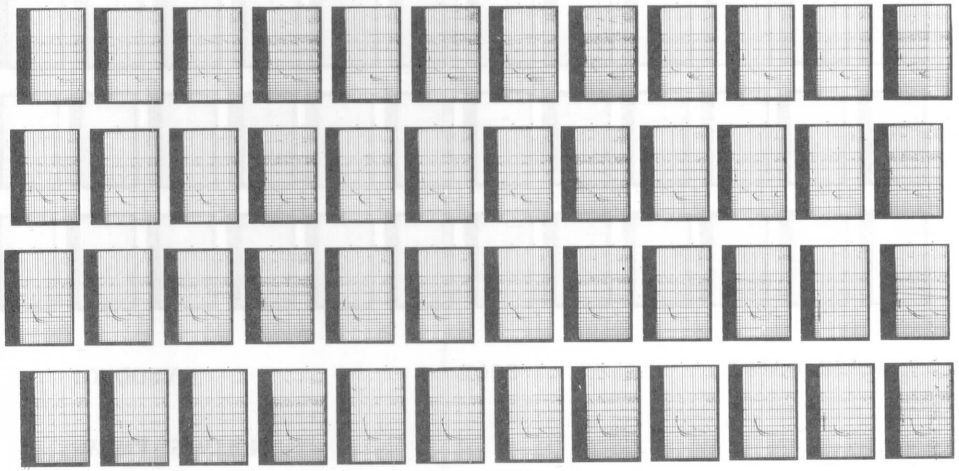
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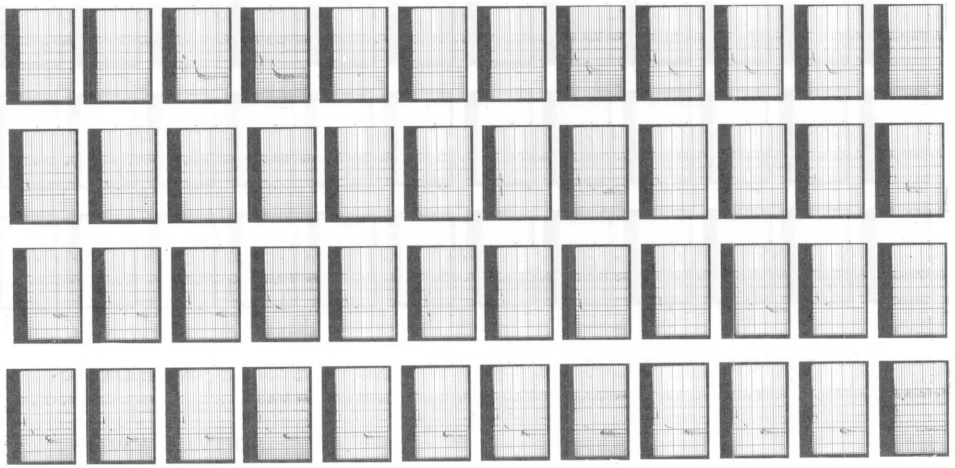
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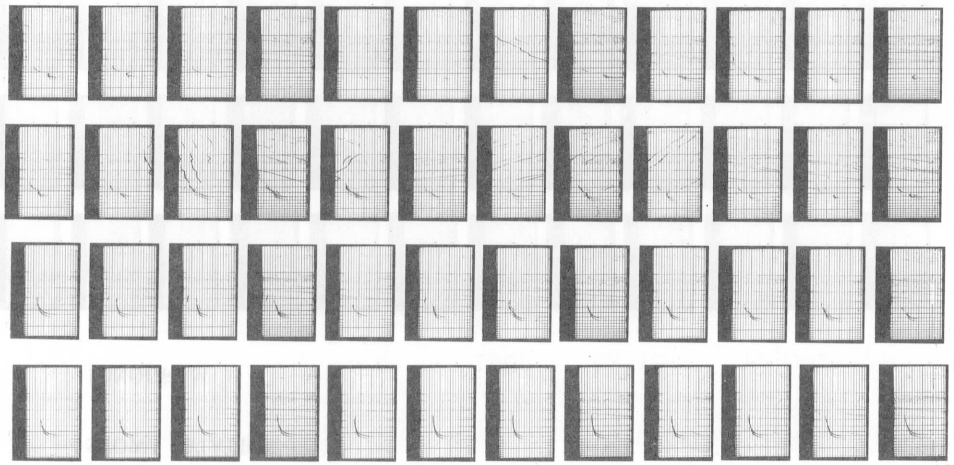
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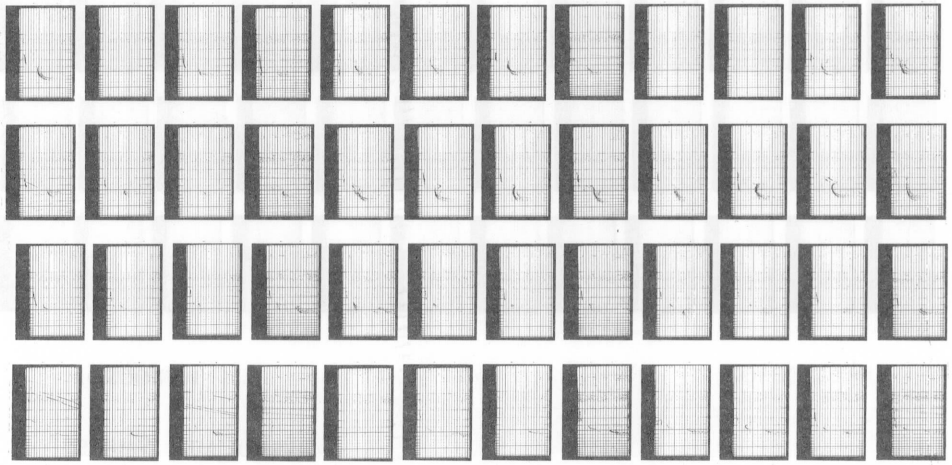
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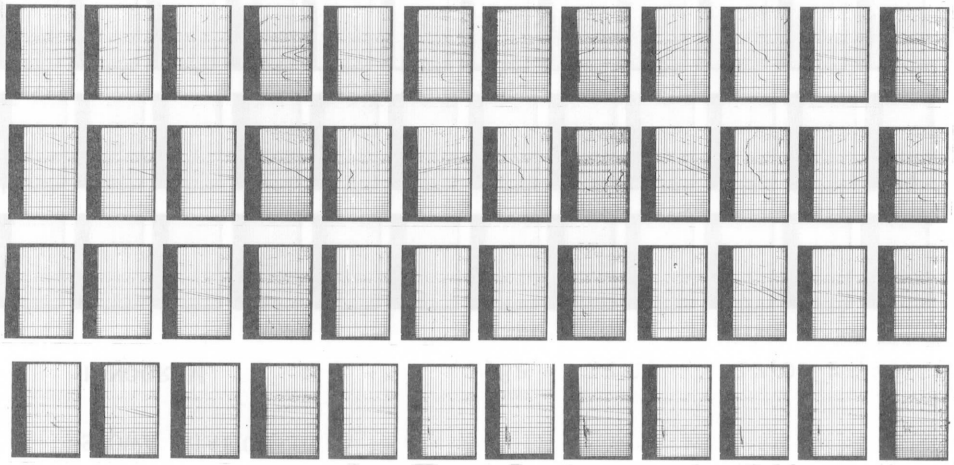
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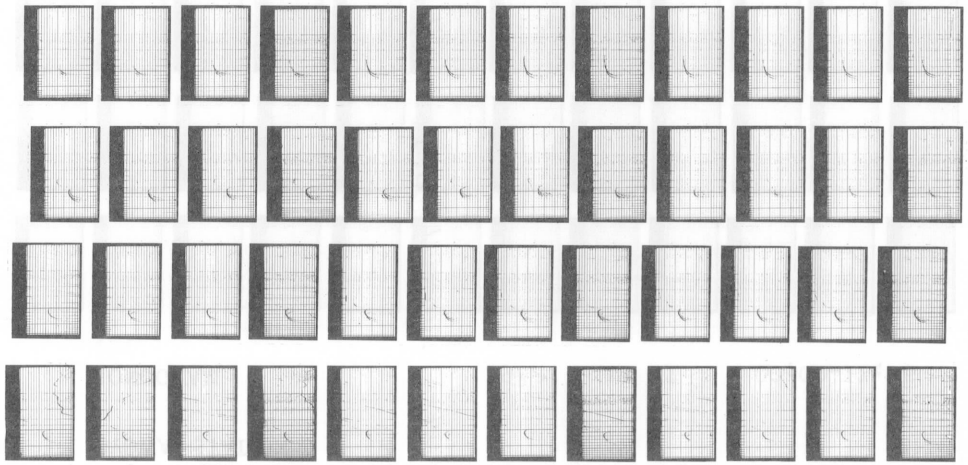
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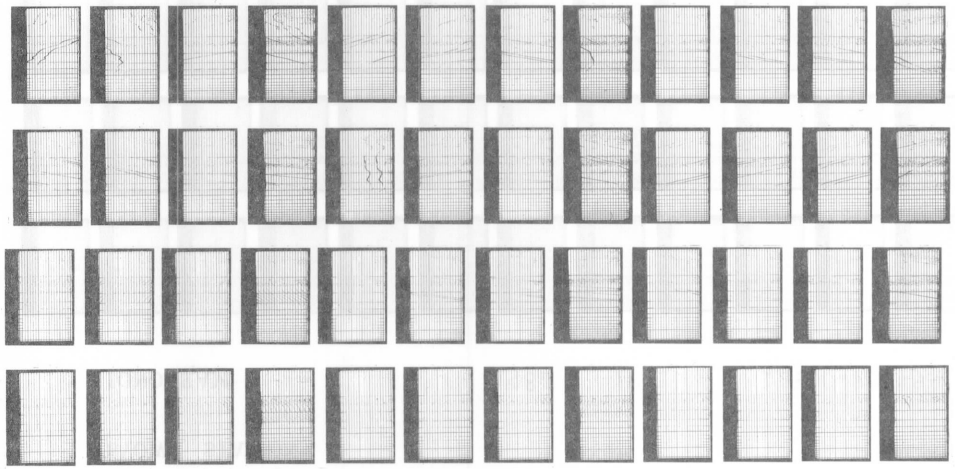
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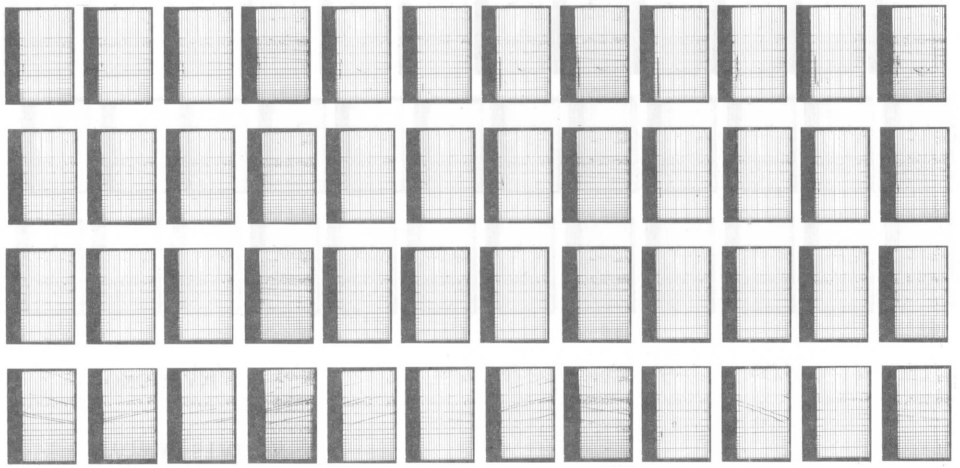
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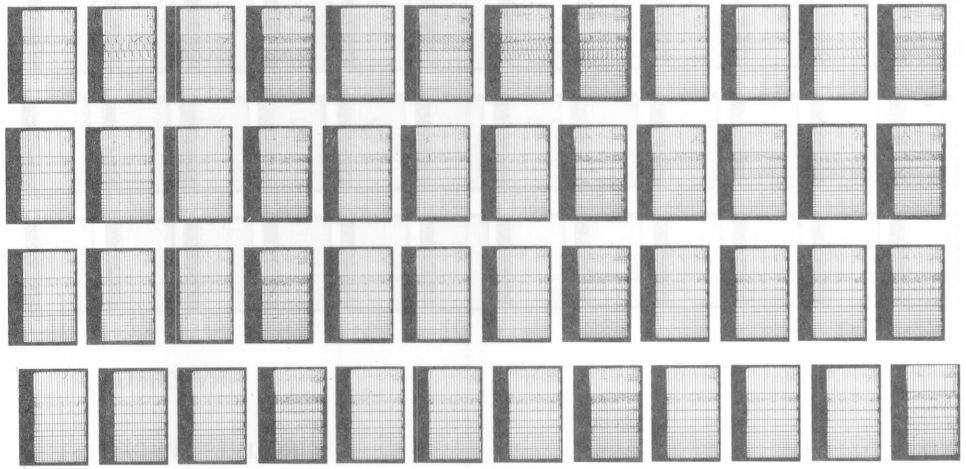
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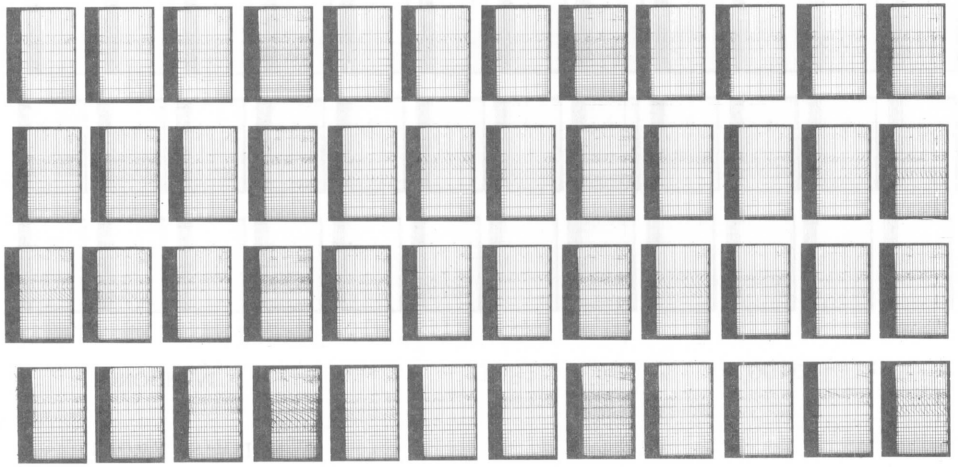
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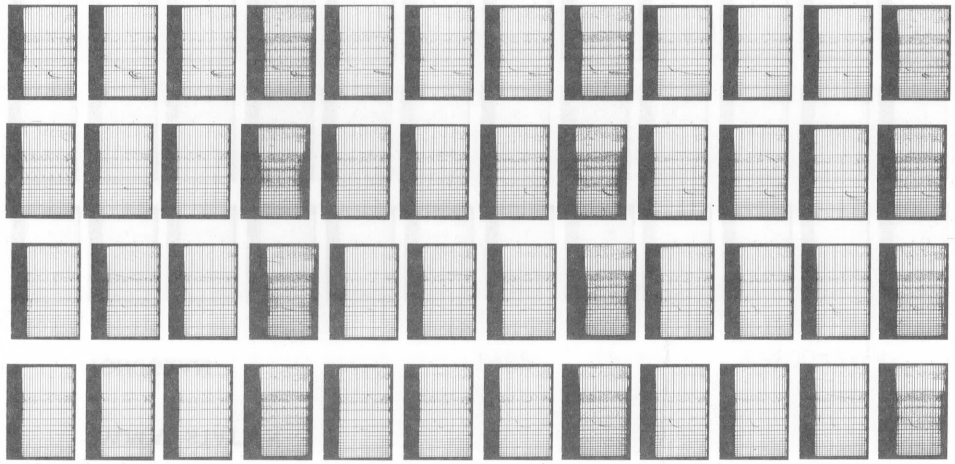
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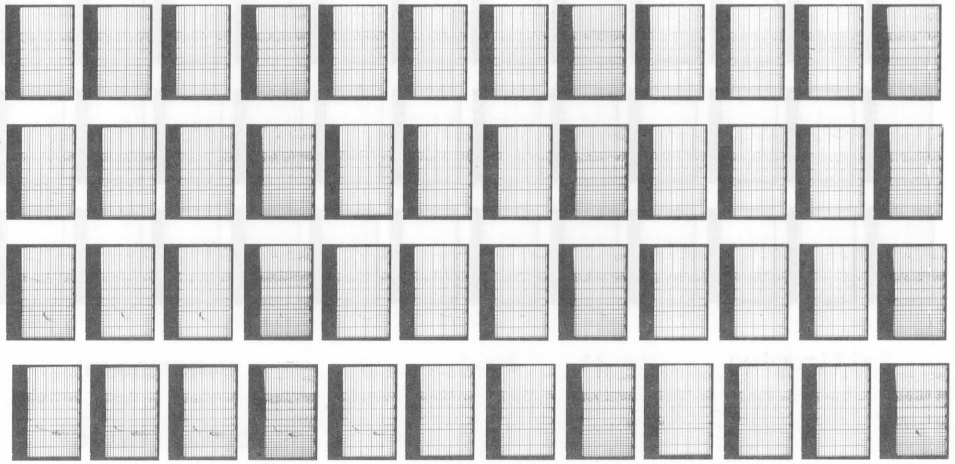
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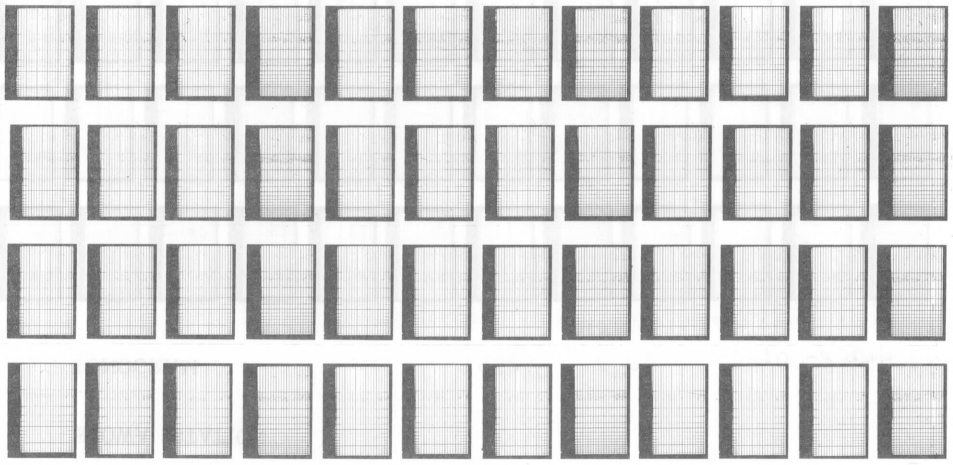
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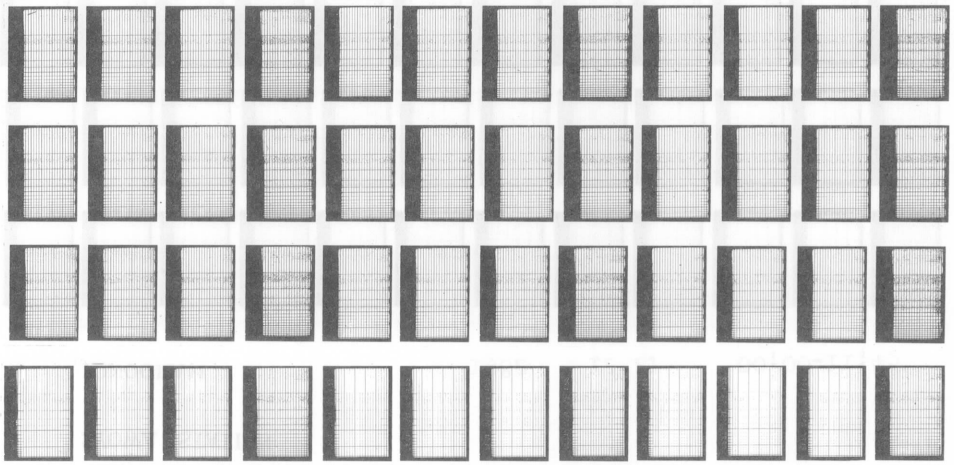
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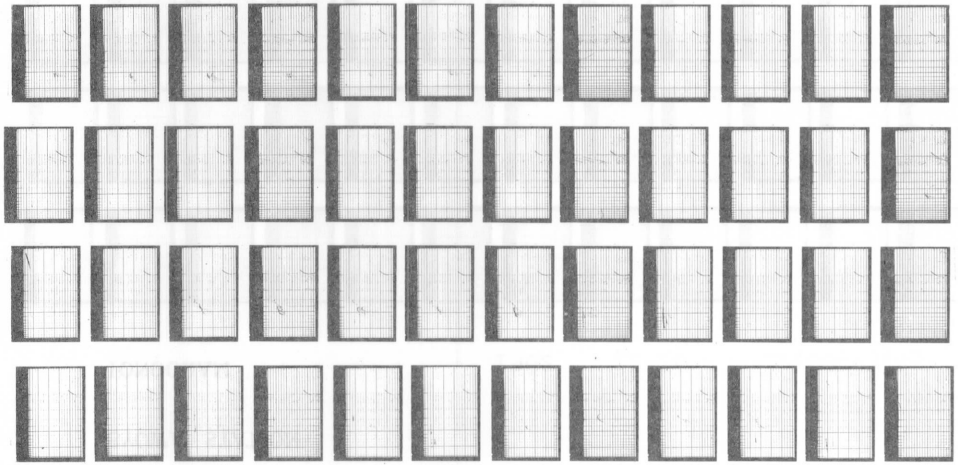
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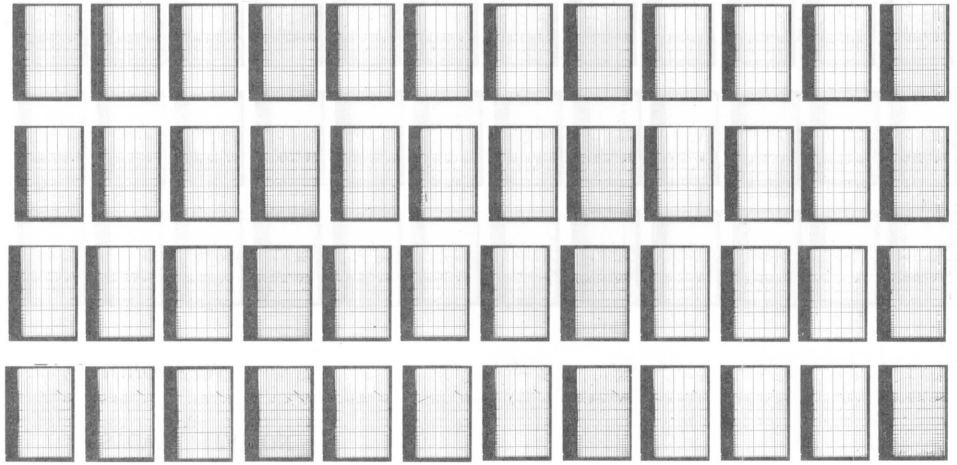
SYOWA STATION

IONOGRAM 1982 12 21 12;00-23;45



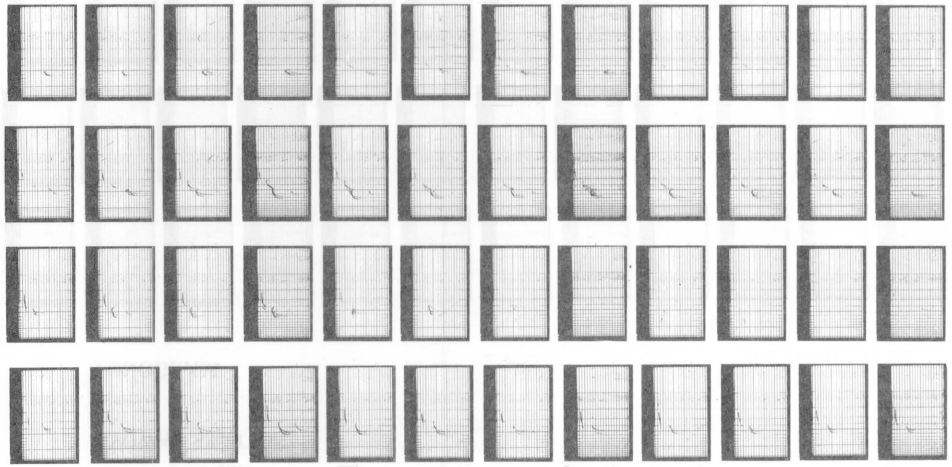
SYOWA STATION

IONOGRAM 1982 12 21 00;00-11;45



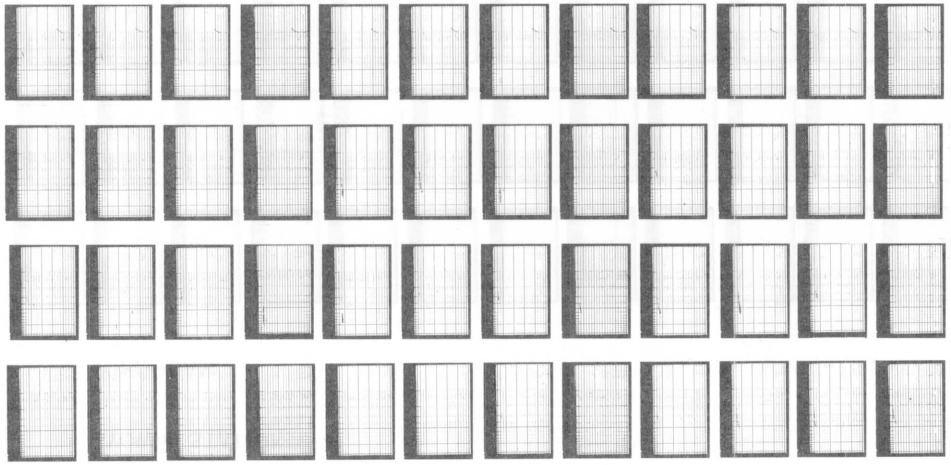
SYOWA STATION

IONOGRAM 1982 12 22 12;00-23;45



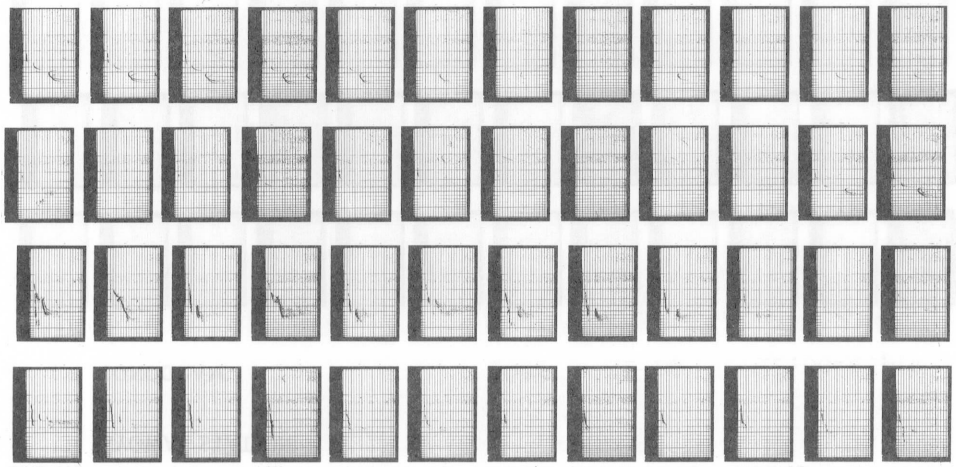
SYOWA STATION

IONOGRAM 1982 12 22 00;00-11;45



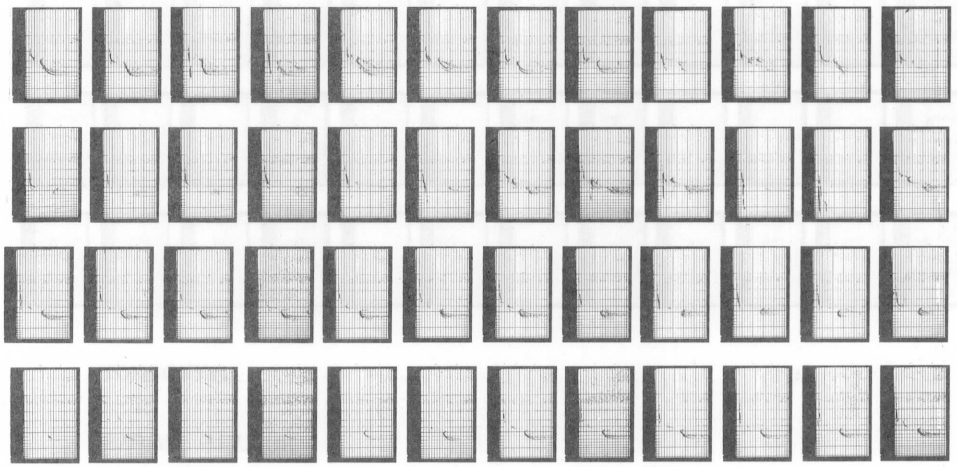
SYOWA STATION

IONOGRAM 1982 12 23 12;00-23;45



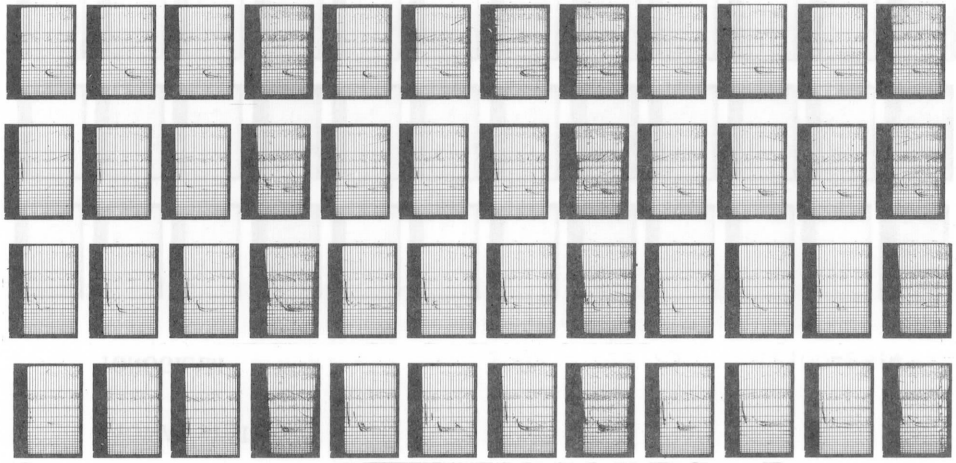
SYOWA STATION

IONOGRAM 1982 12 23 00;00-11;45



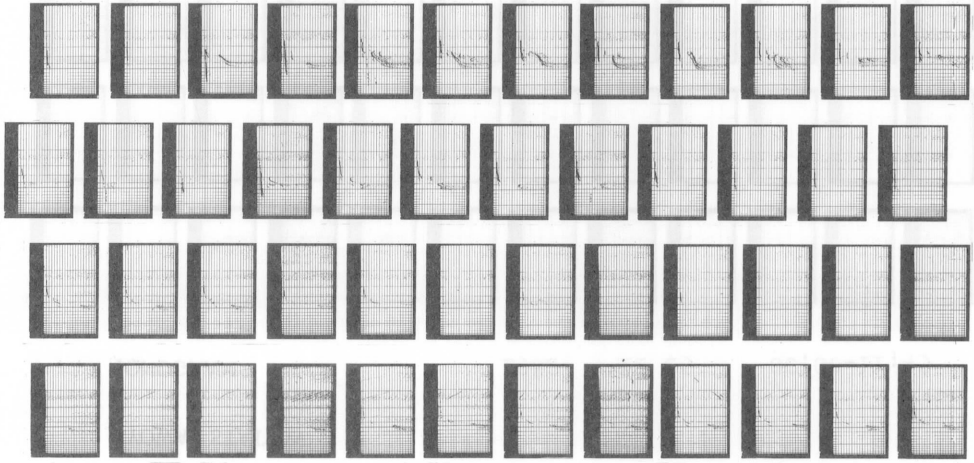
SYOWA STATION

IONOGRAM 1982 12 24 12;00-23;45



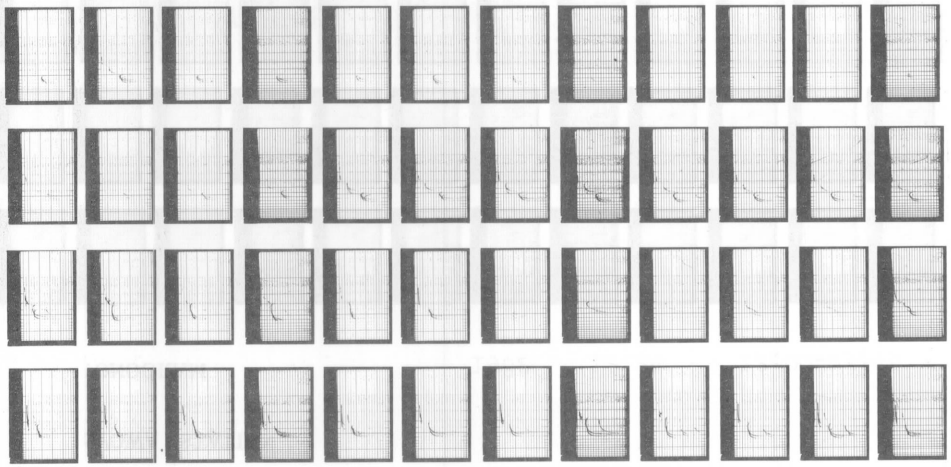
SYOWA STATION

IONOGRAM 1982 12 24 00;00-11;45



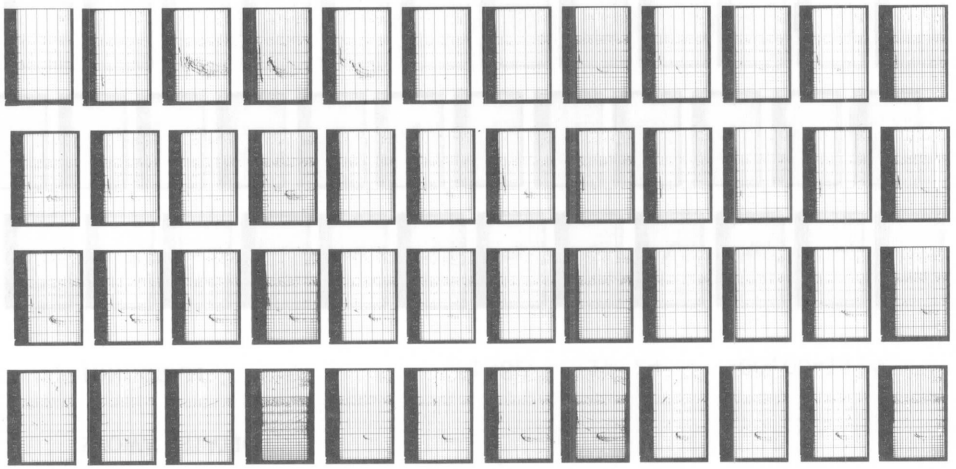
SYOWA STATION

IONOGRAM 1982 12 25 12;00-23;45



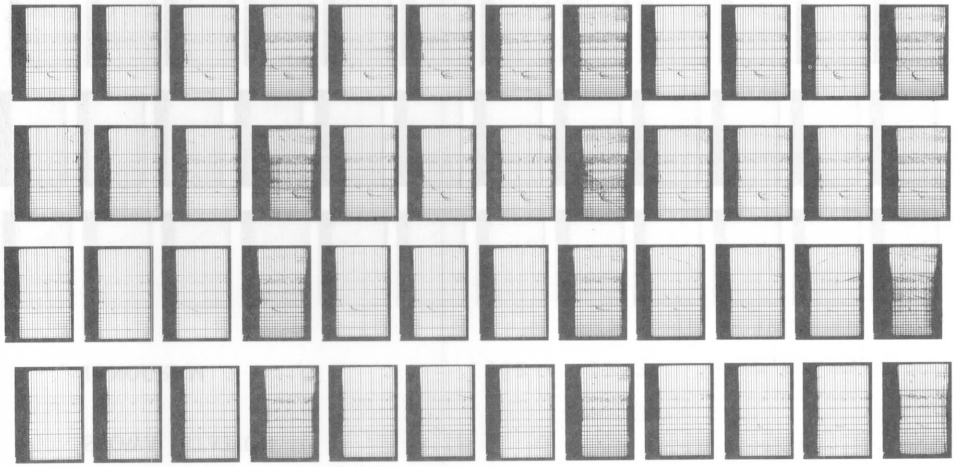
SYOWA STATION

IONOGRAM 1982 12 25 00;00-11;45



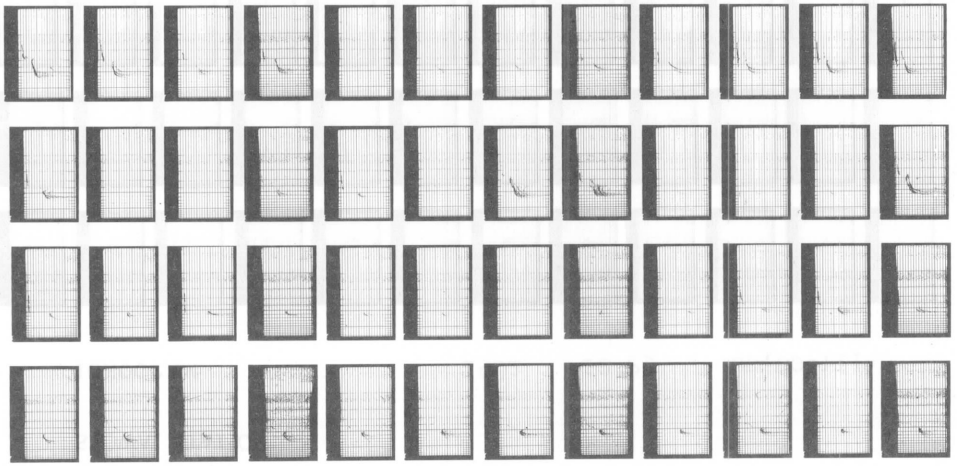
SYOWA STATION

IONOGRAM 1982 12 26 12;00-23;45



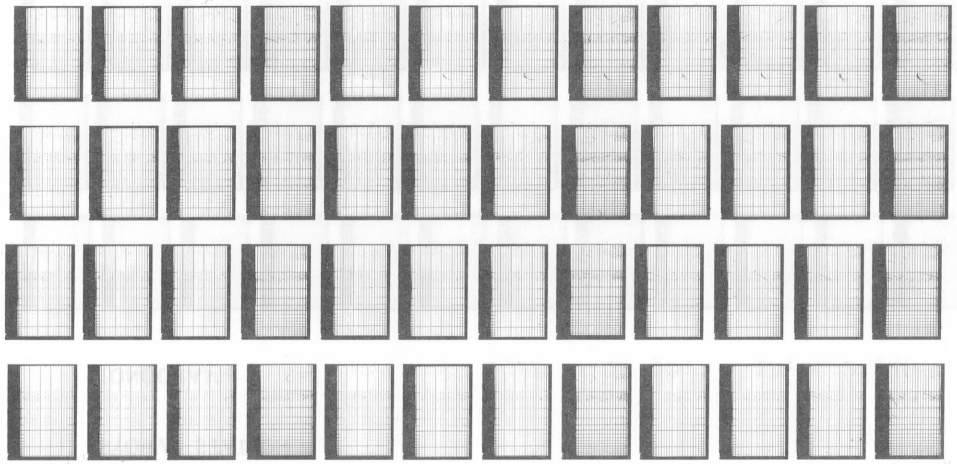
SYOWA STATION

IONOGRAM 1982 12 26 00;00-11;45



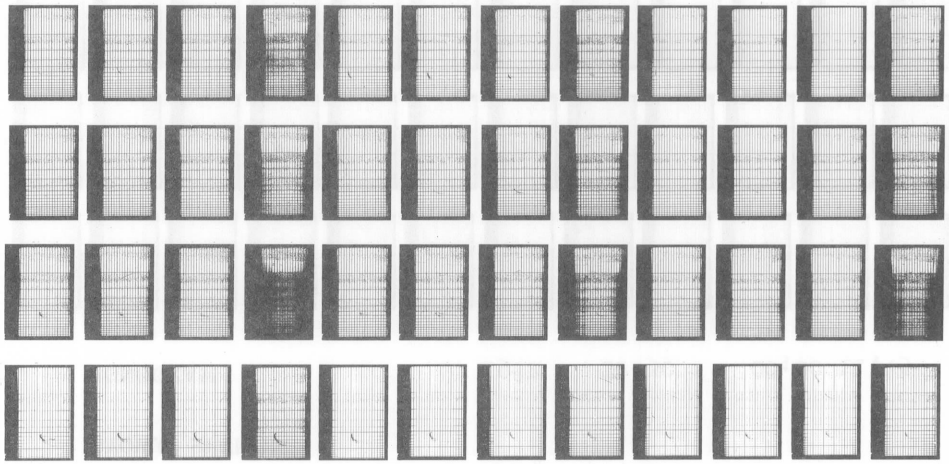
SYOWA STATION

IONOGRAM 1982 12 27 12;00-23;45



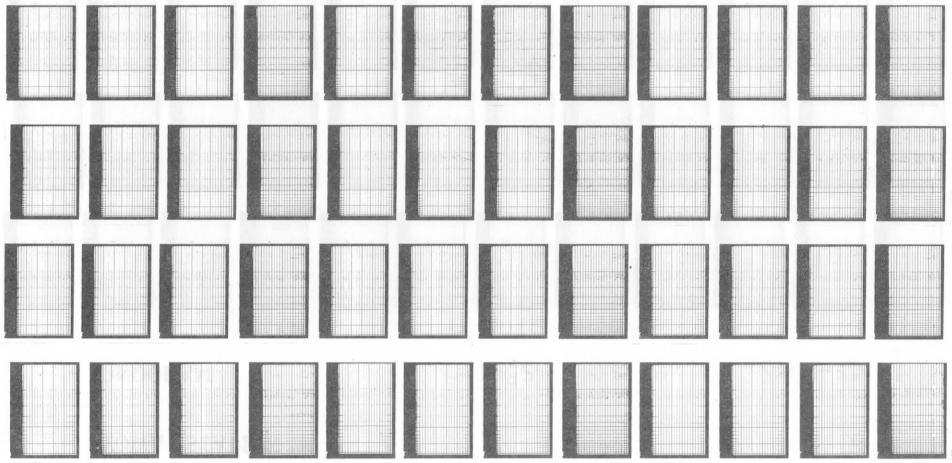
SYOWA STATION

IONOGRAM 1982 12 27 00;00-11;45



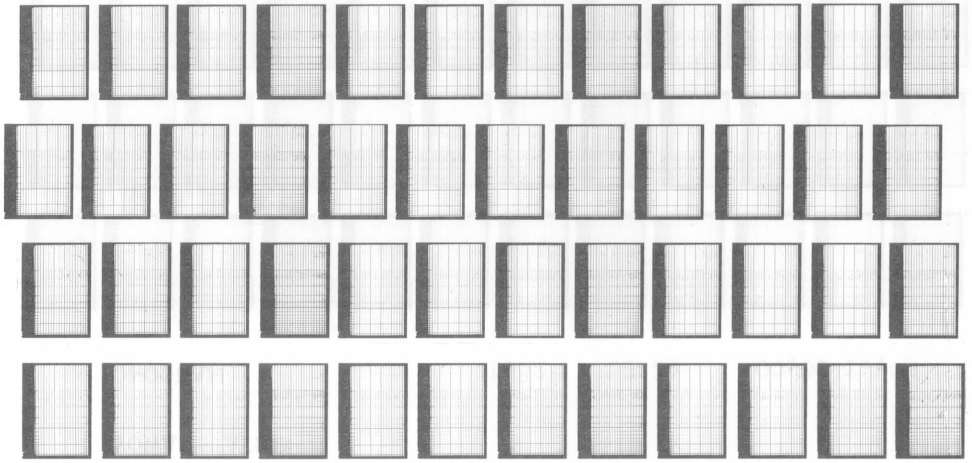
SYOWA STATION

IONOGRAM 1982 12 28 12;00-23;45



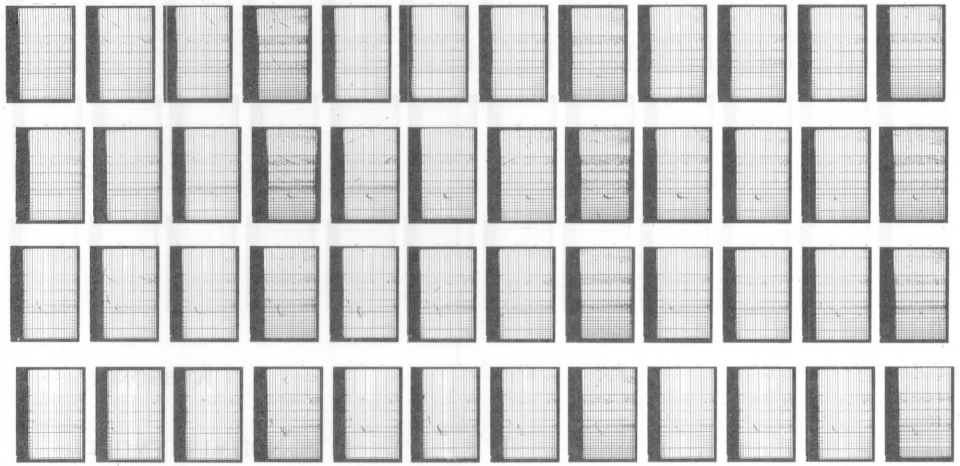
SYOWA STATION

IONOGRAM 1982 12 28 00;00-11;45



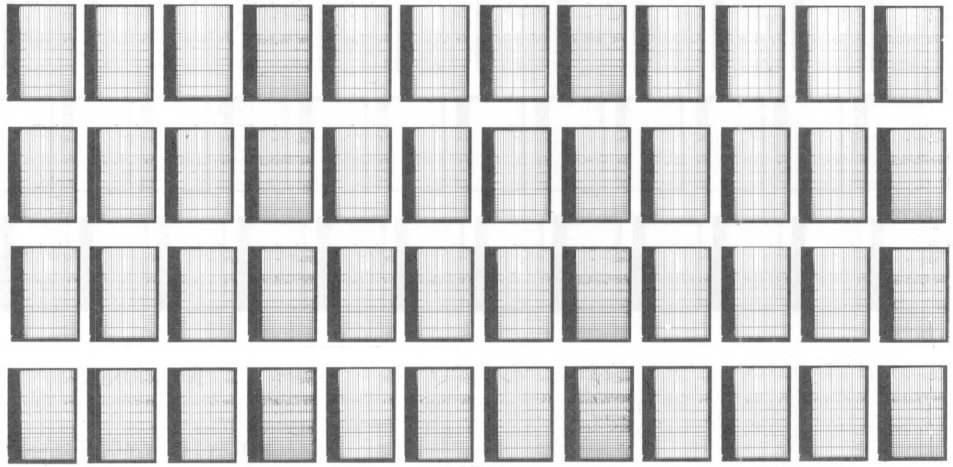
SYOWA STATION

IONOGRAM 1982 12 29 12;00-23;45



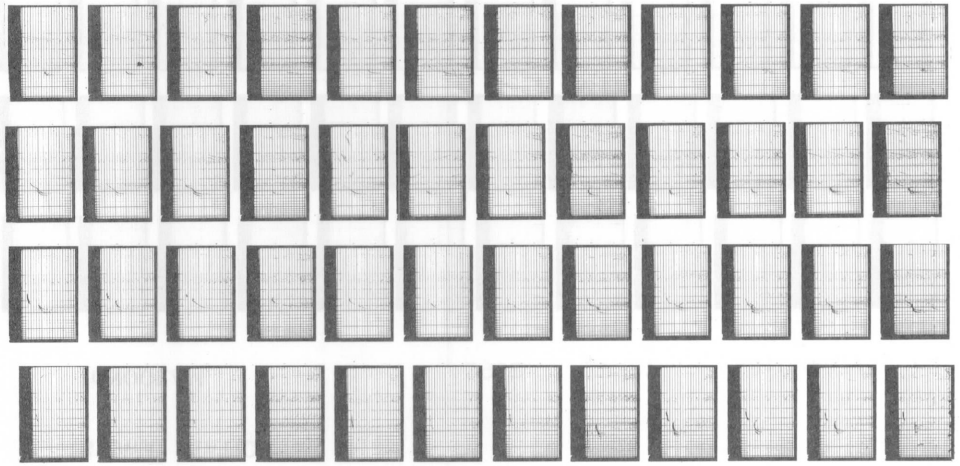
SYOWA STATION

IONOGRAM 1982 12 29 00;00-11;45



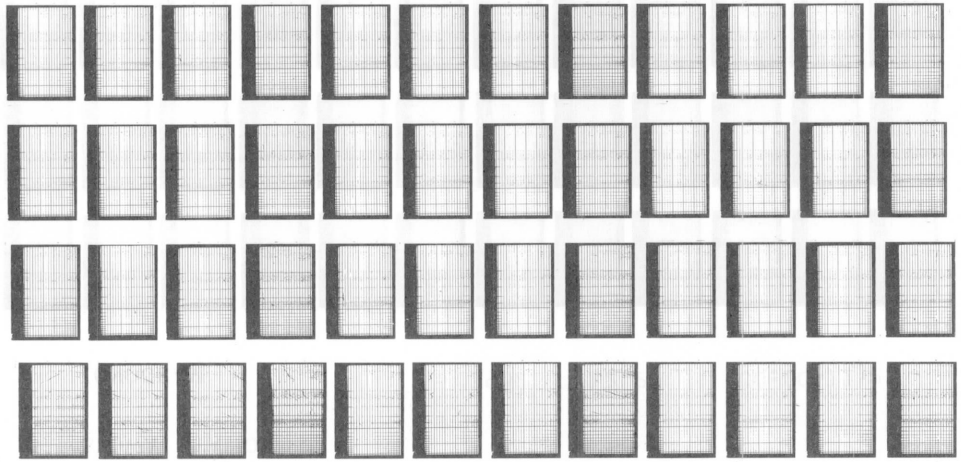
SYOWA STATION

IONOGRAM 1982 12 30 12;00-23;45



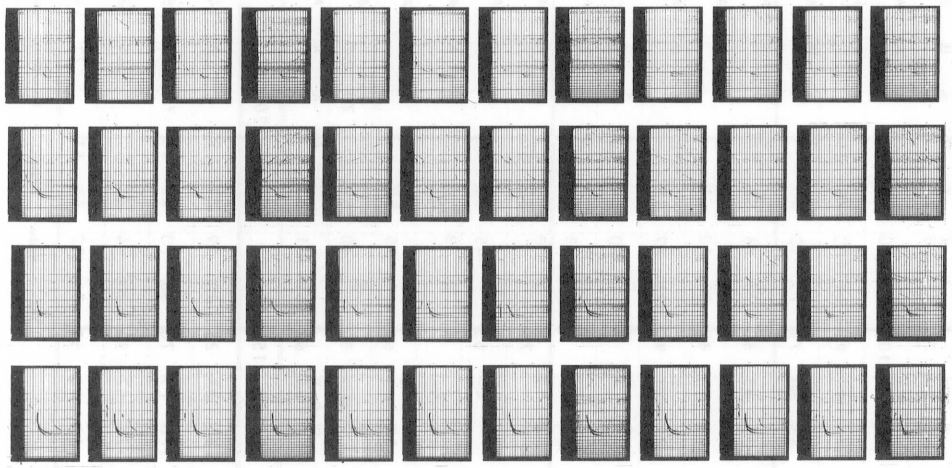
SYOWA STATION

IONOGRAM 1982 12 30 00;00-11;45



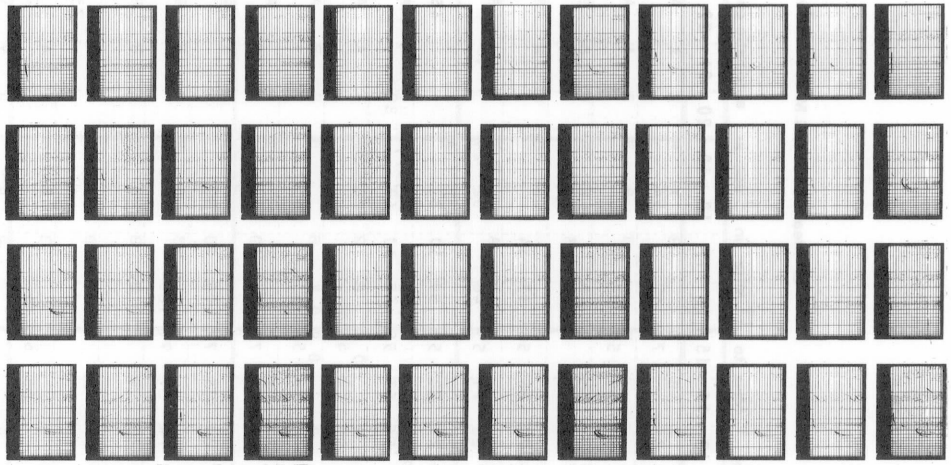
SYOWA STATION

IONOGRAM 1982 12 31 12;00-23;45



SYOWA STATION

IONOGRAM 1982 12 31 00;00-11;45



IONOSPHERIC DATA

JUL. 1982 | FXI (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 20 sec in automatic operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	B	B	B	A	B	A	B	B	B	B	0 R 49	64	75	B	X 72	60	B	0 X 54	B	B	A	A	A
2	A	A	B	B	B	B	A	B	B	B	B	B	B	71	69	X 59	50	B	B	B	B	A	A	A
3	A	A	A	A	A	A	A	A	A	A	B	B	76	76	B	B	B	33	B	B	B	B	B	A
4	A	A	A	A	A	A	A	A	48	45	50	62	70	70	75	58	33	34	B	B	B	B	B	B
5	A	A	52	30	41	32	A	59	50	43	49	56	70	68	71	53	46	A	32	0 X 29	A	17	A	A
6	A	28	40	43	45	50	50	45	25	30	43	51	53	71	80	59	59	51	0 R 32	A	A	A	45	A
7	A	50	90	120	A	A	80	A	B	B	B	B	B	0 X 56	53	55	X 58	41	43	A	80	A	A	A
8	A	A	A	A	A	A	A	A	B	B	B	60	B	0 X 60	80	0 X 61	B	B	B	B	A	A	A	A
9	A	A	A	A	A	A	A	B	B	A	48	54	67	B	76	0 R 56	0 X 53	B	45	B	B	B	A	A
10	A	A	A	40	B	A	0 X 36	A	A	B	37	58	63	71	X 84	70	45	60	43	B	A	25	A	A
11	A	A	43	A	A	A	43	43	55	60	49	B	64	69	75	77	90	90	80	A	B	B	B	A
12	66	B	A	A	145	A	A	B	B	B	B	65	74	74	81	91	100	3	B	B	B	B	B	A
13	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	73	A
15	A	A	B	B	B	B	B	B	B	A	A	B	B	B	66	62	62	3	A	B	A	A	42	23
16	B	A	B	A	A	A	A	B	B	B	B	B	64	B	70	62	75	B	B	45	B	Y	Y	A
17	A	A	81	A	B	A	A	A	A	B	B	X 57	64	X 67	X 70	77	31	X 90	X 78	B	B	B	B	A
18	A	A	A	B	B	B	A	26	A	B	B	63	64	64	B	100	70	110	90	57	B	A	A	A
19	A	50	A	45	99	A	60	A	A	50	B	B	72	X 78	93	X 91	91	100	78	25	A	A	A	A
20	59	A	A	B	B	B	B	B	Y	B	A	B	B	58	60	75	73	50	46	B	B	B	A	A
21	A	43	A	A	A	A	30	40	45	43	57	71	80	100	93	80	78	78	58	0 R 33	B	B	A	A
22	47	70	B	A	A	B	A	55	56	55	68	65	X 77	90	100	85	80	70	0 R 61	B	A	A	A	A
23	B	B	B	B	B	B	B	B	B	B	B	B	76	X 77	X 83	90	91	89	59	B	B	B	A	A
24	A	B	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	70	54	70	A	B	50	58
25	60	A	A	B	B	Y	93	B	B	B	B	B	B	B	59	B	B	58	B	A	A	A	A	A
26	A	43	A	A	A	A	B	B	B	A	22	B	B	B	B	76	B	B	50	34	A	A	A	A
27	69	A	A	63	B	A	A	A	73	B	B	B	B	B	0 X 49	63	B	45	50	42	B	A	A	64
28	46	A	A	A	A	B	B	B	B	A	B	B	B	0 X 56	56	B	B	B	43	B	A	A	A	A
29	B	A	A	A	B	Y	A	A	28	Y	B	B	B	59	B	68	B	75	50	B	B	A	A	A
30	55	A	A	A	A	A	A	72	60	55	B	69	B	B	100	80	B	60	50	B	70	62	A	54
31	A	69	A	A	A	B	54	B	B	A	B	B	B	B	0 X 66	62	61	71	63	A	A	A	A	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	7	7	5	6	4	2	8	7	9	8	9	13	16	20	23	25	20	19	21	8	2	3	4	4
MED	59	50	52	44	72	41	52	45	50	48	49	60	63	70	75	70	66	70	50	38	75	25	48	56
UQ	63	60	81	63	122		70	57	56	55	50	65	75	76	82	80	80	84	61	51		44	62	61
LQ	51	43	43	40	43		40	42	45	43	43	56	64	62	66	61	56	50	45	31		21	44	38

JUL. 1982 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 1982 | 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	B	B	B	A	B	A	B	B	B	B	F 41	F	F	B	65	F	B	48	B	B	A	A	A
2	A	A	B	B	B	B	A	B	B	B	B	B	B	F	F	53	F	B	B	B	B	A	A	A
3	A	A	A	A	A	A	A	A	A	A	B	B	F	J F 70	B	B	B	F	B	B	B	B	B	A
4	A	A	A	A	A	A	A	A	F 24	F 26	F	J F 56	J F 63	J F 63	J F 69	F 40	F	F	B	B	B	B	B	B
5	A	A	F	F	F	F	A	F	F	F	F	J F 50	F	F	J F 65	F	J F 40	A	F 26	23	A	F	A	A
6	A	F	F	F	F	F	F	F	F	F	F	F 40	45	J F 65	F	F	F 42	J F 46	F 24	A	A	A	F	A
7	A	F	F	F	A	A	F	A	B	B	B	B	B	50	F 45	F 47	52	F	F 25	A	A	A	A	A
8	A	A	A	A	A	A	A	A	B	B	B	F	B	54	F 70	55	B	B	B	B	A	A	A	A
9	A	A	A	A	A	A	A	B	B	A	F 40	F 45	F 60	B	F	F 48	47	B	F	B	B	B	A	A
10	A	A	A	F	B	A	30	A	A	B	F	F 43	J F 54	62	73	62	F	F 48	F	B	A	F	A	A
11	A	A	F	A	A	A	F	F	F	F	F 40	B	F 55	F 61	F	F	F	F	F	A	B	B	B	A
12	F	B	A	A	A	A	A	B	B	B	B	F 57	65	66	F	J F 85	F	B	B	B	B	B	B	A
13	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	F	A
15	A	A	B	B	B	B	B	B	B	A	A	B	B	B	F	F	F 47	B	A	B	A	A	A	F
16	B	A	B	A	A	A	A	B	B	B	B	B	F 54	B	F	F	F	B	B	F	B	Y	Y	A
17	A	A	A	A	B	A	A	A	A	B	B	50	F 55	61	63	J F 71	71	J R 84	72	B	B	B	B	A
18	A	A	A	B	B	B	A	F	A	B	B	F 52	F	F	B	F	F	F	F	F	B	A	A	A
19	A	F	A	F	A	A	F	A	A	F	B	B	J F 66	72	J F 87	84	85	F	F	F	A	A	A	A
20	F	A	A	B	B	B	B	B	Y	B	A	B	B	F 48	F 51	F	F	F	F	B	B	B	A	A
21	A	F	A	A	A	A	F	F 30	F	F	F 41	J F 65	J F 73	90	F 85	72	F	F 61	48	F 25	B	B	A	A
22	F	F	B	A	A	B	A	F	F	F	F 55	F 50	71	F 76	F 90	F	F	F 61	F 53	B	A	A	A	A
23	B	B	B	B	B	B	B	B	B	B	B	B	F 69	71	77	F	82	F	F	B	B	B	A	A
24	A	B	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	F 50	47	F	A	B	F	F
25	F	A	A	B	B	Y	Y	B	B	B	B	B	B	B	F	B	B	F	B	A	A	A	A	A
26	A	F	A	A	A	A	B	B	B	A	F	B	B	B	3	68	B	B	F 40	F	A	A	A	A
27	F	A	A	A	B	A	A	A	A	B	B	B	B	B	43	F	B	F	F	F	B	A	A	A
28	F	A	A	A	A	B	B	B	B	A	B	B	B	50	F	B	B	B	F	B	A	A	A	A
29	B	A	A	A	B	Y	A	A	F	Y	B	B	B	F	B	60	B	F	F	B	B	A	A	A
30	F	A	A	A	A	A	A	F	F	F	B	F	B	B	F	F	B	F	F	B	A	F	A	F
31	A	A	A	A	A	B	F	B	B	A	B	B	B	B	60	F	F	F	F	A	A	A	A	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT							1	1	1	1	4	11	12	15	13	13	8	6	9	2				
MED							30	F 30	F 24	F 26	F 40	F 50	F 62	63	F 69	62	50	F 56	F 47	24				
UQ											F 48	F 54	F 68	70	F 78	71	76	F 61	48					
LQ											F 40	F 44	F 54	58	F 60	53	F 44	F 48	F 26					

JUL. 1982 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 1982 | 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 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	80	B	B	B	41	B	58	B	B	B	B	E B 31	E B 40	E B 57	B	E B 40	E B 39	B	E B 36	B	B	35	42	50
2	59	60	B	B	B	B	56	B	B	B	B	B	B	E B 34	E B 39	E B 32	E B 24	B	B	B	B	25	40	41
3	76	52	70	53	49	50	64	64	55	39	B	B	E B 28	30	B	B	B	E B 23	B	B	B	B	B	29
4	35	30	43	49	43	50	50	40	25	19	26	40	28	50	27	E B 15	E B 21	E B 20	B	B	B	B	B	B
5	23	30	37	42	39	32	42	43	25	41	E B 20	E B 20	E B 20	17	34	45	43	60	48	80	90	60	28	32
6	60	48	56	54	40	95	76	68	24	40	16	16	25	E B 17	E B 19	29	E B 16	16	E B 15	60	130	48	41	55
7	59	60	53	56	55	51	38	55	B	B	B	B	B	E B 39	E B 33	E B 16	E B 18	E B 23	E B 15	45	49	45	39	41
8	55	40	52	60	48	90	53	59	B	B	B	E B 21	B	E B 40	E B 32	E B 48	B	B	B	B	50	27	23	26
9	42	52	48	70	58	80	68	B	B	42	29	27	E B 39	B	E B 51	E B 40	E B 41	B	E B 35	B	B	B	30	34
10	27	35	40	40	B	40	38	48	45	B	50	30	29	E G 25	35	E B 43	E B 32	E B 33	E B 23	B	26	22	19	28
11	37	36	39	41	43	42	38	29	27	18	E B 22	B	E B 40	E B 33	E B 39	E B 32	E B 32	28	35	45	B	B	B	80
12	80	B	50	33	80	105	46	B	B	B	B	E B 40	E B 41	E B 52	62	E B 30	E B 40	B	B	B	B	B	B	55
13	30	69	63	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	50	25	72
15	89	43	B	B	B	B	B	B	B	60	41	B	B	B	E B 41	E B 50	E B 32	B	27	B	27	42	30	43
16	B	78	B	32	35	43	91	B	B	B	B	B	E B 40	B	E B 42	E B 53	E B 48	B	B	E B 21	B	17	25	43
17	43	63	125	42	B	27	45	42	36	B	B	E B 35	E B 24	E B 40	E B 33	17	E B 20	25	E B 40	B	B	B	B	23
18	32	70	52	B	B	B	42	27	64	B	B	E B 35	E B 53	E B 42	B	E B 30	E B 48	E B 40	18	50	B	25	34	45
19	40	42	50	93	60	54	50	90	41	36	B	B	E B 23	E B 22	23	E B 15	E B 21	26	19	19	20	24	23	30
20	48	49	65	B	B	B	B	B	26	B	35	B	B	25	E B 24	E B 40	E B 23	E B 40	E B 25	B	B	B	23	25
21	26	39	41	42	50	50	40	24	23	13	19	E B 20	25	E B 21	18	15	19	E B 23	E B 21	E B 13	B	B	23	57
22	78	41	B	33	40	B	48	27	19	14	19	19	E B 34	E B 40	E B 33	E B 22	E B 14	E B 12	E B 40	B	27	60	31	25
23	B	B	B	B	B	B	B	B	B	B	B	B	E B 40	E B 52	E B 33	E B 26	E B 38	E B 35	E B 39	B	B	B	41	38
24	42	B	60	58	54	27	B	B	B	B	B	B	B	B	B	B	B	E B 22	E B 20	80	108	B	53	65
25	40	59	80	B	B	30	26	B	B	B	B	B	B	B	E B 39	B	B	E B 41	B	24	35	39	41	45
26	48	86	44	47	39	65	B	B	B	28	26	B	B	B	B	E B 40	B	B	E B 21	25	31	40	45	52
27	89	53	50	43	B	53	58	40	42	B	B	B	B	B	E B 32	E B 25	B	E B 40	E B 21	24	B	24	34	36
28	31	71	90	60	31	B	B	B	B	75	B	B	B	E B 40	E B 40	B	B	B	50	B	25	45	50	49
29	B	90	54	64	B	23	50	46	26	23	B	B	B	E B 25	B	E B 34	B	E B 38	50	B	B	17	30	60
30	93	90	42	59	42	49	50	45	46	50	B	E B 53	B	B	E B 30	E B 40	B	E B 40	E B 39	B	37	41	45	59
31	45	33	50	43	42	B	29	B	B	69	B	B	B	B	E B 52	E B 50	E B 55	E B 22	25	35	28	45	49	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	27	26	24	22	19	20	23	16	15	15	11	13	16	20	23	25	20	20	22	13	14	20	25	28
MED	45	52	51	48	43	50	50	44	27	39	26	E B 30	E B 32	E B 36	E B 34	E B 32	E B 32	E B 27	E B 26	35	33	40	34	43
UQ	68	69	62	59	52	60	57	57	44	46	32	E B 35	E B 40	E B 41	E B 40	E B 40	E B 40	E B 40	E B 39	50	50	45	41	55
LQ	36	40	44	42	40	36	41	34	25	21	19	18	25	E B 25	E B 31	E B 25	E B 20	E B 22	E B 21	24	27	24	25	31

JUL. 1982 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 1982 | 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 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	B	B	B	18	B	23	B	B	B	B	31	40	57	B	40	39	B	36	B	B	11	11	12
2	12	39	B	B	B	B	40	B	B	B	B	B	B	34	39	32	24	B	B	B	B	11	10	13
3	27	22	23	17	16	14	22	15	20	22	B	B	28	22	B	B	B	23	B	B	B	B	B	11
4	9	14	31	39	23	13	11	11	11	13	12	12	12	11	11	15	21	20	B	B	B	B	B	B
5	11	11	11	11	11	13	15	16	12	21	20	20	20	16	22	18	11	21	11	12	11	11	12	14
6	9	12	11	11	9	9	11	11	11	11	11	11	13	17	19	15	16	15	15	11	11	10	11	11
7	11	11	12	11	13	12	11	18	B	B	B	B	B	39	33	16	18	23	15	12	11	12	11	11
8	17	20	14	15	11	31	20	13	B	B	B	21	B	40	32	48	B	B	B	B	12	15	11	11
9	11	11	17	11	40	35	17	B	B	22	17	17	39	B	51	40	41	B	35	B	B	B	12	8
10	8	11	11	12	B	12	11	12	38	B	17	15	16	13	13	43	32	33	23	B	23	12	14	12
11	11	11	13	16	22	15	15	15	13	13	22	B	40	33	39	32	32	13	22	15	B	B	B	39
12	31	B	32	23	40	40	40	B	B	B	B	40	41	52	40	30	40	B	B	B	B	B	B	31
13	23	61	52	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	21	22	22
15	31	23	B	B	B	B	B	B	B	40	23	B	B	B	41	50	32	B	17	B	13	16	15	13
16	B	22	B	20	21	16	15	B	B	B	B	B	40	B	42	53	48	B	B	21	B	15	23	15
17	14	33	39	15	B	14	21	15	22	B	B	35	24	40	33	16	20	16	40	B	B	B	B	12
18	17	15	19	B	B	B	21	15	28	B	B	35	53	42	B	30	48	40	14	15	B	13	14	21
19	32	13	15	15	30	12	20	15	31	15	B	B	23	22	13	15	21	22	15	13	16	13	13	12
20	15	15	20	B	B	B	B	B	22	B	24	B	B	21	24	40	23	40	25	B	B	B	13	12
21	11	11	13	20	15	13	12	12	13	12	13	20	17	21	14	13	11	23	21	13	B	B	12	13
22	13	15	B	22	16	B	14	13	12	11	15	13	34	40	33	22	14	12	40	B	13	11	11	12
23	B	B	B	B	B	B	B	B	B	B	B	B	40	52	38	26	38	35	39	B	B	B	21	21
24	16	B	21	40	22	16	B	B	B	B	B	B	B	B	B	B	B	22	20	23	40	B	13	15
25	15	21	21	B	B	24	20	B	B	B	B	B	B	B	39	B	B	41	B	21	14	12	21	21
26	21	12	13	22	25	20	B	B	B	15	16	B	B	B	B	40	B	B	21	12	15	12	13	17
27	12	22	21	16	B	21	17	20	23	B	B	B	B	B	32	25	B	40	21	13	B	17	13	12
28	12	12	14	15	12	B	B	B	B	40	B	B	B	40	40	B	B	B	21	B	14	11	13	15
29	B	21	39	13	B	21	13	14	12	20	B	B	B	25	B	34	B	38	40	B	B	12	11	30
30	11	13	15	15	39	19	22	13	11	15	B	53	B	B	30	40	B	40	39	B	12	11	13	12
31	17	11	20	21	11	B	12	B	B	40	B	B	B	B	52	50	55	22	13	11	11	11	11	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	15	15	21	20	30	21	20	20	B	B	B	B	53	40	39	40	40	40	35	B	B	15	13	13
UQ	25	28	46	B	B	B	D B 40	B	B	B	B	B	B	B	D B 52	50	B	B	B	B	B	B	22	21
LQ	11	12	14	15	16	14	14	14	16	18	21	26	31	24	31	24	22	22	20	14	14	12	12	12

JUL. 1982 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

JUL. 1982 | 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 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	B	B	B	A	B	A	B	B	B	B	B	B	E B 250	B	E B 250	B	B	260	B	B	A	A	A
2	A	A	B	B	B	B	A	B	B	B	B	B	B	240	240	E B 275	230	B	B	B	B	A	A	A
3	A	A	A	A	A	A	A	A	A	A	B	B	240	210	B	B	B	230	B	B	B	B	B	A
4	A	A	A	A	A	A	A	A	A	A	250	220	220	210	205	225	240	225	B	B	B	B	B	B
5	A	A	A	A	A	A	A	A	290	A	250	210	225	205	210	200	255	A	A	260	A	A	A	A
6	A	A	A	A	A	A	A	A	A	A	275	265	255	210	205	210	245	210	255	A	A	A	A	A
7	A	A	A	A	A	A	A	A	B	B	B	B	B	B	270	255	240	285	E B 320	A	A	A	A	A
8	A	A	A	A	A	A	A	A	B	B	B	255	B	275	260	E B 260	B	B	B	B	A	A	A	A
9	A	A	A	A	A	A	A	B	B	A	E B 290	270	260	B	E B 250	B	B	B	250	B	B	B	A	A
10	A	A	A	A	B	A	A	A	A	B	A	260	240	240	240	E B 260	B	290	250	B	A	A	A	A
11	A	A	A	A	A	A	A	A	A	260	290	B	260	275	250	B	B	310	A	A	B	B	B	A
12	A	B	A	A	A	A	A	B	B	B	B	E B 250	E B 250	E B 290	280	290	E B 250	B	B	B	B	B	B	A
13	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
14	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	Y	A
15	A	A	B	B	B	B	B	B	B	A	A	B	B	B	B	B	B	B	A	B	A	A	A	A
16	B	A	B	A	A	A	A	B	B	B	B	B	E B 300	B	E B 300	E B 250	E B 250	B	B	E B 325	B	Y	Y	A
17	A	A	A	A	B	A	A	A	A	B	B	E B 280	240	250	230	230	220	205	230	B	B	B	B	A
18	A	A	A	B	B	B	A	A	A	B	B	E B 300	B	B	B	280	B	270	205	205	B	A	A	A
19	A	A	A	A	A	A	A	A	A	A	B	B	240	240	220	255	215	230	260	E B 300	A	A	A	A
20	A	A	A	B	B	B	B	B	A	B	A	B	B	290	260	250	210	255	230	B	B	B	A	A
21	A	A	A	A	A	A	A	A	A	310	250	250	200	220	210	200	250	250	230	255	B	B	A	A
22	A	A	B	A	A	B	A	A	A	280	260	240	E B 260	E B 250	240	200	250	270	E B 320	B	A	A	A	A
23	B	B	B	B	B	B	B	B	B	B	B	B	240	260	250	210	250	270	255	B	B	B	A	A
24	A	B	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	300	295	A	A	B	A	A
25	A	A	A	B	B	Y	Y	B	B	B	B	B	B	B	E B 270	B	B	B	B	A	A	A	A	A
26	A	A	A	A	A	A	B	B	B	A	A	B	B	B	B	E B 260	B	B	260	E A 290	A	A	A	A
27	A	A	A	A	B	A	A	A	A	B	B	B	B	B	E B 270	240	B	B	270	320	B	A	A	A
28	A	A	A	A	A	B	B	B	B	A	B	B	B	B	B	B	B	B	A	B	A	A	A	A
29	B	A	A	A	B	A	A	A	A	A	B	B	B	E B 240	B	225	B	310	250	B	B	A	A	A
30	A	A	A	A	A	A	A	A	A	A	B	E B 280	B	B	210	200	B	300	260	B	A	A	A	A
31	A	A	A	A	A	B	A	B	B	A	B	B	B	B	B	B	B	280	260	A	A	A	A	B
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT									1	3	7	12	14	17	20	21	13	17	18	7				
MED									290	280	255	U 244	240	230	235	U 230	242	270	255	U 248				
UQ										295	275	268	250	255	253	E B 260	250	290	260	E E 310				
LQ										270	250	238	240	215	215	210	230	230	250	U 244				

JUL. 1982 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

AUG. 1982 | FXI (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 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	B	A	A	A	B	B	0 X 58	0 X 55	B	B	B	X 62	B	B	B	B	A	A	A
2	A	A	A	A	B	B	A	A	A	B	B	0 X 49	54	B	B	B	65	X 66	A	A	70	A	A	30
3	B	A	A	A	42	B	B	A	A	B	B	B	B	B	B	70	0 X 77	72	63	A	B	A	A	A
4	A	A	B	B	A	56	B	B	A	B	B	69	B	80	X 96	88	90	88	65	41	B	A	A	A
5	Y	B	59	A	A	49	49	A	A	A	60	B	B	B	B	B	U R 89	80	60	28	70	A	A	A
6	A	B	A	A	A	A	B	A	A	B	B	X 76	X 86	X 84	B	80	94	103	R	58	A	Y	A	60
7	49	27	A	A	76	A	60	A	B	A	B	A	B	B	B	66	50	45	A	A	A	A	A	A
8	40	36	27	33	43	42	70	60	57	60	78	99	93	X 98	118	109	X 89	X 82	62	54	37	23	27	30
9	42	47	44	64	55	59	69	63	63	53	B	61	78	69	120	115	80	78	70	45	A	63	A	55
10	42	B	B	70	55	58	A	B	45	B	65	B	B	B	110	110	98	R 102	83	A	A	A	A	A
11	A	A	A	A	A	B	43	B	48	55	B	X 76	X 76	R	117	X 116	X 112	100	100	66	A	70	75	A
12	A	90	90	A	A	A	B	A	A	A	B	66	78	110	99	113	100	92	B	B	66	69	55	34
13	A	A	A	Y	50	50	60	B	B	B	58	63	B	R	89	95	R	123	99	B	0 R 28	B	A	A
14	A	A	0 R 30	70	A	70	53	Y	59	63	X 77	X 88	X 89	X 113	X 115	R 107	0 X 96	100	91	57	25	0 X 22	A	A
15	A	A	A	A	A	A	A	48	58	X 66	X 80	X 101	X 106	X 106	X 101	0 X 105	X 100	X 90	79	57	50	21	0 X 22	A
16	65	A	A	50	A	50	49	42	A	60	76	95	95	95	103	98	80	78	X 70	X 57	42	A	25	A
17	65	60	A	A	A	50	59	X 59	A	A	A	55	64	55	X 91	89	86	90	68	48	35	23	17	54
18	70	45	80	A	A	A	A	A	B	A	51	62	78	X 74	89	85	X 81	X 76	70	50	A	A	A	A
19	55	52	A	50	A	A	A	A	B	A	55	71	X 73	U R 81	100	100	100	63	68	59	B	Y	A	59
20	A	A	A	A	B	A	A	40	45	49	X 59	X 71	X 79	X 90	X 89	X 86	90	105	100	49	23	A	A	A
21	A	A	A	A	42	55	A	B	A	B	B	51	60	X 61	64	71	70	64	66	A	B	B	A	A
22	A	B	A	A	B	B	B	42	43	43	X 51	X 60	58	X 60	70	76	X 87	X 90	55	A	B	A	A	A
23	A	A	A	54	A	A	A	A	48	45	53	0 R 54	65	0 R 63	71	70	X 80	75	X 75	0 X 28	A	A	A	A
24	A	B	B	B	B	B	A	A	B	B	B	B	0 R 53	B	0 X 66	70	80	79	73	A	A	A	A	A
25	A	A	A	A	29	B	A	B	B	B	B	B	B	64	B	B	100	75	80	70	A	A	A	A
26	A	59	A	B	A	A	B	B	A	B	B	B	B	B	69	X 75	100	95	90	92	23	0 X 22	A	60
27	A	59	A	A	A	A	A	A	A	R 43	50	59	64	71	71	72	73	X 73	68	50	23	A	A	A
28	A	A	A	B	A	Y	A	A	50	59	68	X 72	0 X 81	88	90	90	101	90	74	60	24	A	A	A
29	A	A	A	43	A	A	A	41	B	B	B	56	B	68	120	124	113	108	70	A	A	A	A	A
30	A	A	75	B	A	A	A	B	Y	B	B	B	72	0 X 76	90	90	100	105	69	B	B	A	A	A
31	A	A	B	B	B	A	B	B	B	0 X 51	B	B	B	70	X 71	80	92	108	83	70	A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	8	9	7	8	8	10	9	8	10	12	14	22	21	21	24	27	30	30	26	19	13	8	6	8
MED	52	52	59	52	46	52	59	45	49	54	60	64	76	76	90	89	90	89	70	57	35	23	26	54
UQ	65	59	78	67	55	58	60	60	58	60	76	X 76	X 81	X 90	109	106	100	100	83	60	50	66	55	60
LQ	42	45	37	46	42	50	49	42	45	47	53	53	64	68	71	76	80	75	68	48	24	22	22	32

AUG. 1982 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

AUG. 1982 | FOF2 (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 20 sec in automatic operation

Hour / Day	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	B	A	A	A	B	B	R 52	49	B	B	B	56	B	B	B	B	A	A	A
2	A	A	A	A	B	B	A	A	A	B	B	43	F 46	B	B	B	F	60	A	A	F	A	A	F
3	B	A	A	A	F	B	B	A	A	B	B	B	B	B	B	61	71	F 64	F	A	B	A	A	A
4	A	A	B	B	A	F	B	B	A	B	B	60	B	F	90	80	F 80	F	F	F	B	A	A	A
5	Y	B	50	A	A	F	F	A	A	A	F 50	B	B	B	B	B	U R 82	70	F	F	A	A	A	A
6	A	B	A	A	A	A	B	A	A	B	B	70	80	78	B	70	J F 88	F	R 73	F	A	Y	A	F
7	F	F	A	A	F	A	F	A	B	A	B	A	B	B	B	48	F 39	F	A	A	A	A	A	A
8	F	F	F	F	F	F	F	F	F	J F 54	70	J F 93	F	92	J F 112	98	83	75	F 50	F	F	F	17	17
9	18	F	F	F	F	F	F	F	F	F 39	B	F	J F 72	F 61	F	F 105	J F 74	J F 72	J F 64	F 24	A	A	A	F
10	F	B	B	F	F	F	A	B	F	B	F	B	B	B	F	F	F	R 95	J F 77	A	A	A	A	A
11	A	A	A	A	A	B	F	B	F	F 47	B	70	70	R 73	F	110	105	F	F	F	A	F	A	A
12	A	F	A	A	A	A	B	A	A	A	B	F 56	70	F	J F 93	F 103	F	F	B	B	F	F	F	F
13	A	A	A	Y	F	F	F	B	B	B	F	F	B	R 78	F	F 82	R 77	F	93	B	22	B	A	A
14	A	A	F 22	F	A	F	F	Y	F	F 52	70	J R 32	J R 83	106	109	R 101	90	F	J F 85	F	17	16	A	A
15	A	A	A	A	A	A	A	F	F	60	74	95	100	100	95	99	94	J R 84	R 68	49	F	F	16	A
16	A	A	A	F	A	F	F	F	A	F 52	F 69	F	F	F	J F 102	F	F	J F 72	J R 64	J R 52	F	A	F 17	A
17	F	F	A	A	A	F	F	J R 53	A	A	A	F 48	F 55	F 67	J R 85	J F 83	J F 80	82	F	F	F	F	F	F
18	F	F	F	A	A	A	A	A	B	A	F	J F 56	F	67	75	J F 79	75	69	J F 64	F	A	A	A	A
19	F	F	A	A	A	A	A	A	B	A	F 47	63	66	75	J F 94	93	91	J F 57	J F 62	F	B	Y	A	F
20	A	A	A	A	B	A	A	F	F	F 42	52	65	73	J R 84	U R 83	80	U R 82	R 97	J F 94	F	F	A	A	A
21	A	A	A	A	F	F	A	B	A	B	B	F 42	F 52	54	F 57	J F 64	F 62	F 56	F	A	B	B	A	A
22	A	B	A	A	B	B	B	F	F 34	F 36	45	54	50	54	F 62	F 67	80	J R 84	F	A	B	A	A	A
23	A	A	A	A	A	A	A	A	F	F	F 43	F 46	58	F 56	F 62	62	74	F 68	69	R 22	A	A	A	A
24	A	B	B	B	B	B	A	A	B	B	B	B	F 45	B	R 60	F	73	68	F	A	A	A	A	A
25	A	A	A	A	F	B	A	B	B	B	B	B	B	F	B	B	F	F	F	F	A	A	A	A
26	A	F	A	B	A	A	B	B	A	B	B	B	B	B	F 59	69	F	F	F	J F 86	F	16	A	52
27	A	F	A	A	A	A	A	A	A	R 37	42	F 50	F 56	F	64	65	F 64	67	F 57	F	F	A	A	A
28	A	A	A	B	A	Y	A	A	42	50	59	66	R 75	78	J F 84	F	90	F	F	F	F	A	A	A
29	A	A	A	F	A	A	A	F	B	B	B	F 49	B	F	F 100	F	F	F	F	A	A	A	A	A
30	A	A	A	B	A	A	A	B	Y	B	B	B	63	70	F	F	F	J F 99	F	B	B	A	A	A
31	A	A	B	B	B	A	B	B	B	45	B	B	B	F	65	72	85	100	J F 77	F	A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	1		2					1	2	11	11	19	18	16	19	21	23	19	14	5	2	2	3	2
MED	18		36					J R 53	38	F 47	52	56	64	74	F 84	80	80	72	J F 68	49	20	16	17	34
UQ										F 52	70	68	73	81	J F 94	98	86	84	J F 77	J 52			17	
LQ										F 40	46	F 50	F 52	64	63	67	74	68	J F 64	24			16	

AUG. 1982 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

AUG. 1982 | 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 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	50	62	56	59	60	B	28	55	24	B	B	E B 39	E B 40	B	B	B	E B 38	B	B	B	B	43	49	50
2	45	66	50	49	B	B	50	43	60	B	B	E B 39	E B 22	B	B	B	E B 54	E B 35	44	49	70	60	60	74
3	B	50	39	40	31	B	B	58	51	B	B	B	B	B	B	E B 50	E B 45	E B 40	E B 46	25	B	50	35	32
4	51	66	B	B	30	51	B	B	61	B	B	E B 47	B	E B 60	E B 35	E B 22	E B 53	E B 38	E B 23	32	B	50	38	31
5	26	B	45	90	49	39	56	45	68	63	35	B	B	B	B	B	E B 47	E B 23	E B 32	18	35	42	37	49
6	65	62	52	49	51	68	B	50	49	B	B	E B 47	24	E B 32	B	E B 52	E B 35	E B 25	E B 55	E B 39	26	26	51	54
7	73	30	80	51	50	58	50	55	B	79	B	66	B	B	B	E B 40	24	50	33	90	50	43	43	31
8	37	36	26	23	29	29	43	31	23	20	25	E B 49	E B 39	E B 40	E B 23	E B 40	E B 22	E B 20	E B 16	50	E B 23	E B 12	E B 12	15
9	28	26	31	36	36	41	40	17	15	17	B	E B 50	E B 35	E B 46	E B 33	E B 24	E B 25	25	E B 17	20	38	90	71	105
10	80	B	B	40	35	79	51	B	31	B	E B 40	B	B	B	E B 50	E B 37	E B 40	E B 40	E B 15	43	37	25	27	43
11	43	37	30	40	30	B	18	B	53	42	B	E B 53	E B 40	E B 61	E B 40	E B 47	E B 40	25	25	51	108	43	43	27
12	45	60	41	90	41	42	B	48	52	50	B	E B 40	E B 53	24	E B 22	E B 41	E B 53	E B 22	B	B	17	115	90	59
13	27	86	41	43	43	41	E B 40	B	B	B	E B 45	E B 43	B	E B 61	E B 40	E B 32	E B 55	E B 40	E B 40	B	23	B	26	24
14	47	41	33	41	49	43	50	43	23	43	E B 40	E B 35	E B 32	E B 30	E B 38	E B 85	E B 55	E B 53	E B 22	E B 13	E B 13	16	35	33
15	42	52	32	83	37	41	42	27	17	E B 20	E B 23	E B 27	E B 27	E B 32	E B 23	E B 21	E B 18	35	E B 32	E B 23	16	25	13	26
16	35	55	55	70	40	43	48	46	50	42	E B 45	76	26	50	26	E B 21	14	16	25	E B 13	23	23	14	30
17	58	85	51	50	54	46	42	30	59	50	54	E B 35	E B 39	E B 40	E B 39	E B 25	E B 23	23	20	E B 17	E B 13	16	23	43
18	31	55	76	50	50	45	49	50	B	55	42	E B 30	25	E B 23	E B 30	E B 22	E G 18	16	E B 12	30	35	43	40	43
19	61	60	59	49	57	43	49	48	B	42	28	E G 23	26	E B 50	E B 40	E B 30	E B 30	E B 20	E B 17	13	B	16	38	39
20	38	43	40	68	B	42	50	50	12	E G 21	E G 23	22	23	25	24	20	19	E B 46	E B 22	E B 22	17	42	43	88
21	58	48	42	56	25	26	58	B	61	B	B	24	25	27	24	E B 38	E B 37	E B 30	E B 40	23	B	B	24	38
22	41	B	68	42	B	B	B	26	16	E G 19	E B 22	E B 29	E B 23	E B 23	E B 33	E B 34	E B 37	E B 35	E B 24	27	B	20	38	90
23	75	50	50	29	43	56	55	46	26	E G 22	25	E B 40	E B 37	E B 43	E B 33	E B 40	E B 21	15	E B 15	25	33	45	39	43
24	58	B	B	B	B	B	50	25	B	B	B	B	E B 40	B	E B 50	E B 51	E B 32	19	16	41	15	28	35	45
25	43	39	75	51	27	B	47	B	B	B	B	B	B	E B 40	B	B	E B 50	E B 40	E B 32	E B 40	37	42	43	51
26	35	78	60	B	27	49	B	B	60	B	B	B	B	B	E B 33	E B 25	E B 31	E B 53	E B 47	39	19	19	30	58
27	53	65	50	63	60	50	43	43	49	25	E B 33	E B 31	E B 33	E B 45	E B 38	E B 43	E B 23	E B 16	25	17	E B 14	27	42	42
28	37	48	58	B	50	42	50	40	21	E G 19	E B 24	23	26	26	28	23	21	17	E B 13	E B 14	21	38	47	64
29	56	103	42	43	30	60	62	30	B	B	B	E B 40	B	E B 52	E B 40	E B 32	30	E B 32	E B 22	39	48	102	48	67
30	52	50	43	B	42	43	48	B	46	B	B	B	E B 41	E B 52	E B 47	E B 60	E B 40	E B 42	29	B	B	30	42	49
31	50	54	B	B	B	44	B	B	B	E B 41	B	B	B	E B 48	E B 40	E B 38	E B 40	E B 45	E B 15	E B 23	34	21	40	43
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	27	27	25	26	24	24	22	23	18	15	23	21	23	24	27	31	30	29	27	24	29	31	31
MED	46	54	50	49	42	43	49	44	49	42	E B 33	E B 39	E B 32	E B 40	E B 34	E B 37	E B 35	E B 31	E B 24	24	24	38	39	43
UQ	58	64	57	59	50	50	50	50	56	50	E B 41	E B 47	E B 39	E B 50	E B 40	E B 42	E B 42	E B 40	E B 32	40	37	43	43	56
LQ	37	46	40	41	30	42	42	30	23	E E 20	E E 24	E B 30	24	E B 28	E B 27	E B 24	E B 23	18	E B 17	16	16	23	32	32

AUG. 1982 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

AUG. 1982 | 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 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	14	22	20	37	13	B	21	14	12	B	B	39	40	B	B	B	38	B	B	B	B	11	12	13
2	11	13	20	11	B	B	17	13	21	B	B	39	22	B	B	B	54	35	12	12	15	15	12	12
3	B	40	16	16	11	49	B	40	16	B	B	B	B	B	B	50	45	40	46	14	B	12	12	15
4	20	12	B	B	13	21	B	B	20	B	B	47	B	60	35	22	53	38	23	12	B	12	11	11
5	22	B	15	23	23	12	37	37	32	24	22	B	B	B	B	B	47	23	32	13	11	20	13	13
6	13	39	16	16	11	40	B	31	22	B	B	47	22	32	B	52	35	25	55	39	20	22	21	17
7	20	12	16	26	14	13	12	15	B	50	B	21	B	B	B	40	12	12	22	13	11	16	12	15
8	12	11	8	11	14	14	11	12	12	12	16	49	39	40	23	40	22	20	16	13	23	12	12	9
9	9	11	11	11	11	9	11	9	11	13	B	50	35	46	33	24	25	13	17	13	12	13	11	11
10	9	B	B	11	11	18	30	B	17	B	40	B	B	B	50	37	40	40	15	11	12	15	15	19
11	15	11	12	22	22	B	11	B	16	15	B	53	40	61	40	47	40	13	13	12	15	15	13	15
12	12	11	21	15	22	13	B	15	13	20	B	40	53	22	22	41	53	22	B	B	13	11	11	20
13	12	12	21	40	14	21	40	B	B	B	45	43	B	61	40	32	55	40	40	B	14	B	13	11
14	21	14	12	13	17	15	12	34	17	17	40	35	32	30	38	85	55	53	22	13	13	12	11	13
15	15	13	11	11	17	18	17	11	12	20	23	27	27	32	23	21	18	13	32	23	13	13	11	11
16	11	12	12	12	16	12	11	12	13	15	45	21	21	21	21	21	13	12	12	13	11	12	12	11
17	11	17	18	16	13	13	12	12	17	23	21	35	39	40	39	25	23	14	14	17	13	15	12	11
18	11	11	13	23	21	15	13	16	B	15	18	30	23	23	30	22	16	12	12	8	8	9	11	23
19	11	14	20	22	21	14	15	14	B	23	22	16	22	50	40	30	30	20	17	11	B	13	11	11
20	12	12	21	15	B	30	16	11	13	15	23	20	21	22	21	17	15	46	22	22	13	11	9	16
21	16	15	13	23	15	23	22	B	16	B	B	20	23	23	22	38	37	30	40	13	B	B	15	11
22	11	B	19	13	B	B	B	13	14	15	22	29	23	23	33	34	37	35	24	12	B	13	12	13
23	11	13	23	16	35	23	12	13	16	17	20	40	37	43	33	40	21	13	15	13	11	9	11	11
24	12	B	B	B	B	B	16	15	B	B	B	B	40	B	50	51	32	13	13	12	12	19	11	12
25	21	11	22	17	13	B	21	B	B	B	B	B	B	40	B	B	50	40	32	40	12	12	13	11
26	23	13	22	B	21	33	B	B	40	B	B	B	B	B	33	25	31	53	47	14	13	13	13	13
27	13	12	33	20	21	21	14	14	23	20	33	31	33	45	38	43	23	16	12	13	14	12	11	11
28	12	15	16	B	23	39	16	13	13	17	24	16	23	16	16	20	19	13	13	14	15	12	12	11
29	12	23	23	12	11	38	15	15	B	B	B	40	B	52	40	32	21	32	22	22	11	12	13	11
30	33	15	11	B	21	14	14	B	40	B	B	B	41	52	47	60	40	42	15	B	B	13	12	40
31	41	20	B	B	B	22	B	B	B	41	B	B	B	48	40	38	40	45	15	23	11	14	11	11
	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	12	13	19	17	17	21	16	15	17	24	B	40	39	46	39	38	35	25	22	13	13	13	12	12
UQ	20	21	22	32	22	40	38	B	D B 40	B	B	D B 53	B	D B 61	50	50	42	40	32	22	22	15	13	15
LQ	11	12	13	13	13	14	12	13	14	17	23	30	23	31	32	25	22	13	14	12	12	12	11	11

The Radio Research Laboratory, Japan

AUG. 1982 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

AUG. 1982 | 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 20 sec in automatic operation

Day \ Hour	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
1	A	A	A	A	A	B	A	A	A	B	B	B	B	B	B	B	E B 260	B	B	B	B	A	A	A
2	A	A	A	A	B	B	A	A	A	B	B	B	290	B	B	B	B	B	A	A	A	A	A	A
3	B	A	A	A	A	B	B	A	A	B	B	B	B	B	B	B	E B 260	B	B	A	B	A	A	A
4	A	A	B	B	A	A	B	B	A	B	B	B	B	E B 265	230	210	250	240	250	A	B	A	A	A
5	Y	B	275	A	A	A	A	A	A	A	A	B	B	B	B	B	240	210	250	300	A	A	A	A
6	A	B	A	A	A	A	B	A	A	B	B	250	250	250	B	E B 275	250	260	E B 250	E B 260	A	A	A	A
7	A	A	A	A	A	A	A	A	B	B	B	A	B	B	B	B	310	A	A	A	A	A	A	A
8	A	A	A	A	A	A	A	A	A	240	250	240	240	240	235	225	235	240	210	235	240	260	B	A
9	A	A	A	A	A	A	A	A	300	290	B	B	305	280	260	205	220	230	280	A	A	A	A	A
10	A	B	B	A	A	A	A	B	A	B	B	B	B	B	250	240	275	250	250	A	A	A	A	A
11	A	A	A	A	A	B	200	B	A	310	B	E B 270	B	B	E B 260	240	240	250	300	A	A	A	A	A
12	A	A	A	A	A	A	B	A	A	A	B	B	270	250	Y 260	210	260	290	B	B	A	A	A	A
13	A	A	A	A	A	A	B	B	B	B	B	B	B	B	E B 240	240	E B 270	260	250	B	A	B	A	A
14	A	A	A	A	A	A	A	A	A	A	250	240	220	245	225	E B 280	260	275	235	225	310	A	A	A
15	A	A	A	A	A	A	A	A	270	240	240	235	230	220	210	240	230	210	250	210	230	A	A	A
16	A	A	A	A	A	A	A	A	A	A	260	225	220	205	230	220	205	220	205	220	240	A	270	A
17	A	A	A	A	A	A	A	A	A	A	A	B	B	250	250	230	255	240	220	230	215	240	A	A
18	A	280	A	A	A	A	A	A	B	A	A	260	240	230	230	225	225	210	225	250	A	A	A	A
19	A	A	A	A	A	A	A	A	B	A	E A 280	265	240	275	250	230	210	H 210	225	210	B	Y	A	A
20	A	A	A	A	B	A	A	A	300	275	H 250	240	230	240	220	220	240	240	230	230	A	A	A	A
21	A	A	A	A	A	Y	A	B	A	B	B	270	250	250	250	270	250	250	260	A	B	B	A	A
22	A	B	A	A	B	B	B	A	295	300	260	270	230	240	250	290	240	255	255	A	B	A	A	A
23	A	A	A	A	A	A	A	A	A	310	275	B	295	B	240	E B 250	225	220	230	A	A	A	A	A
24	A	B	B	B	B	B	A	A	B	B	B	B	B	B	B	B	240	260	240	A	A	A	A	A
25	A	A	A	A	A	B	A	B	B	B	B	B	B	E B 260	B	B	250	250	245	E B 250	A	A	A	A
26	A	A	A	B	A	A	B	B	A	B	B	B	B	B	250	270	300	275	270	230	A	A	A	A
27	A	A	A	A	A	A	A	A	A	A	B	B	E B 275	E B 290	260	E B 250	240	230	260	220	B	A	A	A
28	A	A	A	B	A	A	A	A	290	250	240	230	240	220	240	205	240	205	200	225	A	A	A	A
29	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	280	260	260	280	A	A	A	A	A
30	A	A	A	B	A	A	A	B	A	B	B	B	270	E B 300	295	290	250	250	295	B	B	A	A	A
31	A	A	B	B	B	A	B	B	B	B	B	B	B	270	250	250	260	240	230	270	A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT		1	1				1		5	8	9	12	17	19	22	24	30	27	26	15	5	2	1	
MED		280	275				200		295	282	250	242	240	245	243	234	245	240	250	228	240	250	270	
UQ									300	305	260	265	270	259	250	258	258	258	260	241	240			
LQ									290	245	250	238	230	240	230	222	240	225	223	222	230			

AUG. 1982 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1982 | FXI (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 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	55	53	0 X 55	66	X 73	X 82	X 95	99	107	X 102	0 X 111	X 90	104	90	B	A	A	A
2	A	A	A	A	A	A	B	A	0 X 61	X 68	0 X 69	B	0 X 80	104	100	103	100	109	108	70	44	A	A	A
3	A	47	A	A	58	60	52	58	B	A	B	B	0 R 71	73	0 X 69	77	102	110	90	61	55	A	A	A
4	A	A	A	A	42	A	A	A	A	B	B	0 R 64	X 76	X 81	R	101	107	59	A	80	A	A	A	A
5	A	A	B	A	B	A	48	B	B	B	B	B	B	B	B	100	63	B	B	B	Y	A	Y	Y
6	49	A	B	B	B	B	B	B	B	B	5	B	B	B	B	B	B	B	B	A	A	A	90	B
7	B	B	B	B	Y	B	A	B	B	B	B	B	B	B	B	50	43	47	X 49	73	34	30	B	A
8	69	33	B	B	A	A	A	32	B	0 X 47	0 R 52	X 55	R	X 57	X 57	0 X 55	66	70	59	60	43	36	34	49
9	48	43	35	A	43	40	49	50	A	B	47	0 R 56	58	X 61	70	75	92	80	80	61	23	70	81	54
10	A	B	A	A	B	A	43	B	50	62	X 76	X 75	X 78	X 81	X 77	X 79	X 84	X 88	X 85	X 64	44	38	24	A
11	A	45	56	A	30	A	A	B	B	43	50	66	81	92	X 96	97	105	104	105	80	53	A	A	A
12	A	81	A	A	B	A	A	A	B	B	52	56	65	X 73	X 73	X 70	31	X 86	X 79	65	49	37	23	75
13	57	A	55	A	A	A	A	A	A	58	B	57	59	X 61	X 71	76	75	70	70	58	33	A	A	A
14	A	A	A	A	A	39	42	A	B	B	53	60	X 60	X 70	X 76	75	77	72	72	70	70	59	80	A
15	A	A	A	A	33	43	A	B	B	A	61	59	63	63	73	X 76	X 75	X 74	79	70	50	42	A	A
16	49	48	A	43	82	45	A	A	52	53	58	66	X 77	X 77	X 75	X 76	X 75	80	X 76	X 64	48	41	46	56
17	A	A	A	A	A	A	A	50	57	57	X 57	X 56	54	3	120	R	R 66	53	80	78	44	30	48	A
18	A	A	A	45	A	9	B	B	A	A	56	B	0 R 61	X 71	69	X 67	75	70	65	69	A	A	62	33
19	A	59	67	30	60	43	45	A	A	A	A	B	0 X 55	55	64	61	57	X 50	52	39	A	A	A	50
20	A	A	B	A	A	A	A	B	B	B	B	B	B	B	3	0 X 59	B	X 65	59	34	43	27	A	46
21	50	A	A	A	A	42	B	B	B	B	B	B	B	B	B	48	51	56	47	A	33	110	A	48
22	35	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	65	50	B	43	A	A	A	29
23	33	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	X 61	59	B	A	A	36
24	A	47	A	A	A	A	A	A	B	A	B	B	B	64	0 X 53	0 X 61	B	60	A	B	41	33	21	A
25	33	51	A	A	A	50	57	63	68	72	X 74	X 77	X 86	96	X 95	X 87	90	90	80	76	70	75	89	53
26	58	41	75	58	60	56	59	A	B	55	62	56	60	58	76	0 X 74	55	56	50	43	A	A	A	A
27	A	50	A	B	45	B	B	41	50	B	B	X 54	B	B	3	B	X 58	55	55	43	A	70	53	A
28	A	A	B	B	65	0 R 64	69	75	63	0 X 69	85	83	76	73	80	X 77	78	X 77	79	70	66	53	43	43
29	40	51	42	64	54	70	51	B	64	75	X 76	X 78	91	97	99	108	110	116	112	X 90	X 73	57	A	39
30	A	43	71	55	63	70	76	75	88	93	101	X 102	X 111	118	112	120	116	X 116	X 110	80	43	A	60	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	11	13	7	6	12	12	12	9	10	13	17	18	20	21	21	25	26	27	25	26	20	16	14	13
MED	49	47	56	50	56	48	52	53	59	62	61	62	74	73	76	76	76	72	79	67	44	42	50	48
UQ	54	51	69	58	62	62	53	63	64	69	X 74	X 77	X 80	92	96	97	100	89	85	76	54	64	80	53
LQ	38	43	48	43	42	42	46	50	52	57	53	56	60	X 64	X 70	X 67	65	58	59	59	42	34	34	39

SEP. 1982 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1982 | FOF2 (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 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	F	F 46	R 49	F 58	67	76	89	91	100	95	105	J R 84	F	F	B	A	A	A
2	A	A	A	A	A	A	3	A	55	62	63	B	R 74	F	F	F	F	F	F	F	F	A	A	A
3	A	F	A	A	F	F	F	F	B	A	B	B	F 61	65	63	F	F	J F 104	J F 84	F	F	A	A	A
4	A	A	A	A	F	A	A	A	A	B	B	F 55	70	74	R 79	F	F 100	F	A	A	A	A	A	A
5	A	A	B	A	B	A	F	B	B	B	B	B	B	B	B	F	F	B	B	B	Y	A	Y	Y
6	F	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	B
7	B	B	B	B	Y	B	A	B	B	B	B	B	B	B	B	F	F	F	43	Y	F	F	B	A
8	F	F	B	B	A	A	A	F	B	41	46	R 49	R	51	50	49	F	F	F	J F 54	F	F	F	F
9	F	F	F	A	F	F	F	F	A	B	F	F 48	51	55	J F 64	F	F	J F 74	J F 74	F	F	41	F	F
10	A	B	A	A	B	A	F	B	F	F	70	69	72	75	71	73	78	82	79	58	33	F 24	F	A
11	A	F	F	A	F	A	A	B	B	F	F	F 57	73	U R 81	90	89	U R 97	F	F	F	F	A	A	A
12	A	A	A	A	B	A	A	A	B	B	F 45	49	58	67	67	63	73	80	73	F	F 40	F	F	F
13	A	A	F	A	A	A	A	A	A	F 49	B	49	F 51	55	65	69	F 66	F 60	J F 64	F	F	A	A	A
14	A	A	A	A	A	32	33	A	B	B	45	F 51	53	63	70	F 66	70	F 63	J F 66	F 60	F	A	F	A
15	A	A	A	A	F	F	A	B	B	A	A	51	F 55	F 60	F 70	70	69	67	70	J F 64	J F 41	F	A	A
16	F	F	A	F	A	F	A	A	F	49	49	59	71	71	69	70	69	F 70	69	57	F 39	F	A	F
17	A	A	A	A	A	A	A	F	F	F 49	51	50	F 47	B	F	D R 70	60	F	F	F 68	F	F	A	A
18	A	A	A	F	A	B	B	B	A	A	F 48	B	R 55	65	60	60	F 66	63	F	F	A	A	F	F
19	A	F	F	F	A	F	F	A	A	A	A	B	49	F	J F 58	F	50	44	46	F	A	A	A	F
20	A	A	B	A	A	A	A	B	B	B	B	B	B	B	B	53	B	58	F	F	F 26	F	A	F
21	F	A	A	A	A	F	B	B	B	B	B	B	B	B	B	F	F	47	40	A	F	A	A	F
22	F	B	A	A	A	B	B	B	B	B	B	B	B	B	B	B	F	F	B	F	A	A	A	F
23	F	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	55	F	B	A	A	F
24	A	F	A	A	A	A	A	A	B	A	B	B	B	F	52	55	B	F 51	A	B	F	F 24	F	A
25	A	A	A	A	A	F	F 44	F 50	60	61	68	71	80	88	89	80	J F 84	J F 84	J F 74	J F 70	J F 64	A	A	F
26	F	F	F	F	F	F	F	A	B	F	F	F	F	F	F	68	F	F	F	F	A	A	A	A
27	A	F	A	B	F	B	B	F	F	B	B	R 48	B	B	B	B	51	49	F 46	F 36	A	A	F	A
28	A	A	B	B	F	F 55	F	F	F	U R 63	F 76	F	F	F	F	71	70	70	70	J F 64	58	F	F	F
29	F	F	F	A	F	F	F	B	F	F	70	72	F	F 88	U R 91	F	F 101	F	F	J R 84	67	F	A	F 25
30	A	F	F	F	F	F	F	F	F	J F 87	J F 95	95	J F 105	F	F	F 110	F	110	J R 104	F	F	A	F	A
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT						2	2	2	3	9	13	16	17	15	17	17	16	18	16	10	3	3		1
MED						44	38	F 48	55	58	63	53	61	67	69	70	70	68	70	F 62	F 40	F 24		F 25
UQ									58	62	70	70	73	78	79	76	90	82	74	J F 68	61	32		
LQ									52	F 49	48	49	53	62	63	63	66	58	50	F 57	F 36	F 24		

SEP. 1982 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1982 | 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 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	67	63	41	44	B	29	30	E B 30	E B 44	E B 41	26	E B 30	E G 31	31	29	25	20	E B 22	E B 17	18	B	36	27	29
2	34	38	78	55	42	60	B	62	61	45	E B 50	B	E B 60	E B 40	23	E B 45	E B 53	E B 32	E B 30	E B 30	E B 17	34	46	43
3	91	45	59	59	70	70	26	45	B	57	B	B	E B 49	E B 33	E B 53	E B 50	E B 60	E B 33	25	39	18	35	26	41
4	70	50	58	46	50	45	42	59	41	B	B	E B 45	E B 49	E B 52	E B 52	E B 42	E B 39	27	35	41	43	45	33	55
5	60	40	B	32	B	40	40	B	B	B	B	B	B	B	B	E B 50	E B 42	B	B	B	33	33	25	33
6	E B 22	86	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	30	45	90	58	B
7	B	B	B	B	19	B	47	B	B	B	B	B	B	B	B	E B 40	33	28	27	25	48	100	B	43
8	34	34	78	B	43	35	43	26	B	E B 30	E B 28	E B 30	E B 47	E B 32	E B 32	E B 39	E B 23	E B 21	E B 15	E B 12	E B 13	E B 15	E B 16	25
9	36	24	50	50	33	58	39	25	35	B	E B 40	E B 35	E B 32	E B 33	E B 30	E B 26	E B 31	26	21	19	31	47	43	70
10	59	B	60	73	B	31	35	B	33	E B 33	E B 40	E B 38	E B 30	E B 39	E B 30	E B 31	E B 23	E B 22	18	E B 13	E B 12	17	30	33
11	40	50	100	61	68	42	57	B	B	E B 40	E B 40	E B 30	E B 33	E B 37	27	E B 30	E B 61	E B 52	E B 54	E B 23	34	31	43	45
12	75	42	69	59	B	63	41	49	B	B	E B 32	31	E B 30	E B 40	E B 38	E B 40	E B 50	E B 21	E B 16	E B 21	E B 13	E B 15	E B 14	51
13	43	61	51	65	51	49	61	50	45	E B 39	B	E B 30	31	33	E B 29	E B 33	E B 36	E B 33	E B 16	29	E B 16	29	18	30
14	51	59	45	59	43	37	24	50	B	B	E G 26	29	29	29	26	25	E B 23	E G 20	E B 20	E B 14	E B 12	40	58	40
15	50	57	33	30	27	40	42	B	B	56	50	28	E B 40	E B 33	24	E B 40	E B 35	E B 23	16	19	E B 11	18	39	40
16	85	109	70	31	33	24	50	45	30	33	25	E G 25	E B 39	26	E B 32	E B 30	E G 22	E G 19	19	E G 14	E G 14	15	41	34
17	39	60	59	47	39	36	43	28	21	E G 23	24	29	31	B	E B 50	E B 53	E B 40	23	E B 24	E B 28	27	33	40	49
18	39	40	38	37	45	B	B	B	42	49	43	B	E B 49	E B 40	E B 30	E G 27	E B 30	27	17	30	23	39	46	95
19	58	33	35	31	41	29	33	42	34	62	42	B	E B 40	E G 27	E B 30	E B 30	E G 21	27	33	33	41	42	43	44
20	80	45	B	50	50	41	40	B	B	B	B	B	B	B	B	E B 40	B	E B 23	E B 27	E B 23	E B 17	E B 23	22	32
21	19	58	60	59	33	27	B	B	B	B	B	B	B	B	B	35	28	23	29	25	E B 14	33	32	85
22	18	B	69	56	75	B	B	B	B	B	B	B	B	B	B	B	35	33	B	43	60	80	100	42
23	31	70	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 22	E G 19	B	39	32	95
24	42	93	60	71	62	41	33	48	B	51	B	B	B	E B 40	E B 45	E B 46	B	E B 25	25	B	17	17	17	26
25	32	60	50	50	49	41	24	21	23	E G 27	E G 29	29	29	E G 29	E B 40	E B 32	E G 26	25	E G 20	E B 18	E B 22	50	56	26
26	43	43	45	40	41	50	35	33	B	27	E B 32	E B 50	27	E G 30	E G 28	E B 42	E G 24	E G 16	E G 18	25	52	51	43	67
27	62	42	43	B	41	B	B	33	28	B	B	E B 40	B	B	B	B	E B 30	25	22	E B 18	53	43	82	40
28	70	83	B	B	32	33	32	33	E B 49	E B 53	E B 32	E B 55	E B 48	E B 38	26	E G 29	27	E G 23	E B 21	16	E B 13	E B 12	32	23
29	32	51	50	54	40	23	41	B	31	E G 27	29	E G 30	E B 41	E B 39	E B 46	25	E B 40	E B 50	E B 47	E B 39	E B 36	38	40	28
30	40	40	E B 56	E G 29	32	25	21	22	25	27	E G 30	E G 31	E B 33	31	E G 31	E B 30	E B 32	27	26	33	23	28	70	41
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	27	24	24	24	24	23	18	15	18	18	18	21	21	22	26	26	27	27	28	28	30	29	29
MED	43	50	57	50	42	40	40	38	32	34	E E 32	E B 30	E B 33	E B 33	E B 30	E B 34	E B 32	E E 25	E E 22	20	20	34	40	41
UQ	62	60	64	59	50	47	42	49	40	50	E B 40	E B 38	E B 47	E B 39	E B 40	E B 42	E B 40	27	26	30	33	43	46	49
LQ	34	41	44	38	33	30	32	27	29	E E 27	E E 28	E E 29	E E 31	E E 31	26	E B 30	E E 24	E E 22	E E 18	E B 18	E B 14	23	27	32

SEP. 1982 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

SEP. 1982 | 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 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	12	11	28	B	16	22	30	44	41	23	30	25	21	23	20	17	22	17	13	B	12	22	13
2	11	11	21	16	30	26	B	31	25	40	50	B	60	40	21	45	53	32	30	30	17	13	13	13
3	12	11	22	22	13	12	11	22	B	39	B	B	49	33	53	50	60	33	13	12	15	12	11	20
4	13	12	15	13	13	21	23	28	25	B	B	45	49	52	52	42	39	23	13	12	14	15	23	13
5	13	20	B	21	B	15	16	B	B	B	B	B	B	B	B	50	42	B	B	B	28	21	23	27
6	22	30	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	22	15	39	20	B
7	B	B	B	B	15	B	35	B	B	B	B	B	B	B	B	40	29	23	18	15	13	13	B	15
8	12	13	48	B	17	17	21	22	B	30	28	30	47	32	32	39	23	21	15	12	13	15	16	15
9	14	12	12	13	12	13	13	18	22	B	40	35	32	33	30	26	31	23	13	15	13	13	13	12
10	E S 38	B	E S 40	E S 50	B	23	21	B	23	33	40	38	30	39	30	31	23	22	15	13	12	12	11	11
11	12	20	12	17	14	30	17	B	B	40	40	30	33	37	22	30	61	52	54	23	12	16	12	12
12	15	12	22	21	B	25	16	29	B	B	32	22	30	40	38	40	50	21	16	21	13	15	14	14
13	17	33	12	22	22	14	40	24	23	39	B	30	24	23	29	33	36	33	16	11	16	11	11	13
14	24	35	30	15	13	13	15	17	B	B	22	22	21	22	21	19	23	16	20	14	12	12	12	11
15	32	22	22	23	20	13	21	B	B	23	40	20	40	38	22	40	35	23	14	12	11	12	11	11
16	11	11	20	11	13	15	16	16	13	14	15	20	39	21	32	30	12	14	15	14	14	11	11	11
17	9	13	13	14	13	12	17	13	13	12	15	19	23	B	50	53	40	20	24	28	12	9	10	11
18	9	13	12	11	31	B	B	B	22	24	15	B	49	40	30	21	30	20	12	12	17	12	11	11
19	22	15	12	11	14	12	12	15	20	21	21	B	40	22	30	30	15	16	14	12	14	11	12	12
20	13	12	B	17	14	15	15	B	B	B	B	B	B	B	B	40	B	23	27	23	17	23	17	15
21	14	41	42	30	30	22	B	B	B	B	B	B	B	B	B	23	21	20	19	23	14	14	15	12
22	13	B	14	23	14	B	B	B	B	B	B	B	B	B	B	B	22	20	B	13	13	14	23	12
23	12	15	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	22	15	B	13	17	14
24	16	13	20	23	40	13	22	23	B	30	B	B	B	40	45	46	B	25	23	B	16	11	12	12
25	23	13	31	23	16	23	16	16	16	24	23	23	23	23	40	32	23	15	14	18	22	12	15	12
26	13	15	12	12	12	14	15	23	B	23	32	50	24	25	23	42	19	15	14	12	23	12	15	16
27	11	13	14	B	15	B	B	22	23	B	B	40	B	B	B	B	30	23	15	18	12	12	14	24
28	19	22	B	B	28	23	23	22	49	53	32	55	48	38	23	19	19	20	21	12	13	12	11	9
29	11	11	12	12	14	12	15	B	15	23	20	22	41	39	46	22	40	50	47	39	36	13	11	11
30	12	15	56	22	15	15	16	15	14	16	16	21	33	26	24	30	32	15	16	13	14	16	12	15
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	30	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	21	22	16	16	21	28	D B 49	40	40	42	44	39	35	40	32	22	16	14	14	12	13	12
UQ	18	22	48	29	31	26	40	B	B	B	B	B	B	B	B	46	50	32	24	23	17	15	17	15
LQ	12	12	12	14	14	13	16	22	22	24	23	23	30	26	24	30	23	20	14	12	13	12	11	11

SEP. 1982 | F-MIN (0.1 MHZ)

IONOSPHERIC DATA

SEP. 1982 | 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 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	Y	B	B	E B 300	250	240	255	240	220	220	240	210	220	210	B	A	A	A
2	A	A	A	A	A	A	B	A	A	310	B	B	B	255	240	250	255	250	240	230	255	A	A	A
3	A	A	A	A	A	A	A	A	B	A	B	B	B	270	B	B	B	255	255	A	A	A	A	A
4	A	A	A	A	A	A	A	A	A	B	B	B	B	B	B	B	E B 300	A	A	A	A	A	A	A
5	A	A	B	A	B	A	A	B	B	B	B	B	B	B	B	270	B	B	B	B	A	A	A	A
6	B	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	A	A	A	B
7	B	B	B	B	A	B	A	B	B	B	B	B	B	B	B	B	A	270	235	Y	A	A	B	A
8	A	A	B	B	A	A	A	A	B	E B 300	260	250	B	E B 270	E B 260	260	240	240	210	215	230	255	280	A
9	A	A	A	A	A	A	A	A	A	B	B	270	E B 250	250	250	250	240	230	230	A	A	A	A	A
10	A	B	A	A	B	A	A	B	A	B	B	B	240	255	240	240	230	230	215	210	240	A	A	A
11	A	A	A	A	A	A	A	B	B	B	B	E B 240	250	250	250	240	280	260	240	240	290	A	A	A
12	A	A	A	A	B	A	A	A	B	B	E B 280	260	255	B	250	260	275	230	230	210	E B 200	250	290	A
13	A	A	A	A	A	A	A	A	A	B	B	280	E A 260	260	260	250	240	240	240	275	260	A	A	A
14	A	A	A	A	A	A	A	A	B	B	240	H 220	H 230	280	240	230	230	225	240	210	205	A	A	A
15	A	A	A	A	250	A	A	B	B	A	A	240	280	E B 280	Y 250	250	255	225	230	230	220	250	A	A
16	A	A	A	A	A	A	A		290	275	230	235	290	250	255	245	230	230	215	230	235	270	A	A
17	A	A	A	A	A	A	A	A	295	250	245	250	260	B	260	E B 255	275	Y 260	270	240	260	A	A	A
18	A	A	A	A	A	B	B	B	A	A	A	B	B	B	260	240	255	270	230	300	A	A	A	A
19	A	A	A	A	A	A	A	A	A	A	A	B	B	240	260	240	260	305	310	A	A	A	A	A
20	A	A	B	A	A	A	A	B	B	B	B	B	B	B	B	B	270	280	290	300		B	A	A
21	220		A	A	A	A	B	B	B	B	B	B	B	B	B	E A 275	285	290	290	A	B	A	A	A
22	275		B	A	A	A	B	B	B	B	B	B	B	B	B	B	A	A	B	A	A	A	A	A
23	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	255	255	B	A	A	A
24	A	A	A	A	A	A	A	A	B	A	B	B	B	B	B	B	B	290	A	B	260	280	A	A
25	A	A	A	A	A	A	A	270	260	255	235	230	240	235	260	240	245	230	220	210	225	A	A	300
26	A	A	A	A	A	A	A	A	B	E A 250	B	B	250	280	275	B	280	Y 290	300	290	A	A	A	A
27	A	A	A	B	A	B	B	A	A	B	B	B	B	B	B	B	260	270	295	310	A	A	A	A
28	A	A	B	B	A	Y	A	A	B	B	250	B	B	E B 255	250	250	245	245	240	235	220	230	A	A
29	A	A	A	A	A	A	A	B	290	230	250	240	260	E B 250	B	240	E B 250	E B 270	240	260	260	A	A	A
30	A	A	B	A	A	A	280	250	240	240	230	230	240	240	245	250	240	240	240	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	2				1		1	2	5	9	10	13	14	17	18	20	23	25	25	19	14	6	2	1
MED	248				250		280	260	290	248	245	240	251	252	250	246	250	248	240	235	238	252	285	300
UQ									290	300	250	250	260	262	260	251	268	270	270	268	260	270		
LQ									260	250	235	232	240	245	245	240	240	230	230	212	220	250		

SEP. 1982 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 1982 | 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	48	A	70	59	63	62	60	B	A	68	B	O R 79	98	102	106	120	122	118	100	100	A	64	59	51
2	56	56	B	80	B	B	B	B	B	B	A	64	75	90	107	115	80	80	66	66	43	A	A	59
3	A	A	70	58	60	B	57	65	B	70	O X 73	75	79	O X 80	97	100	105	100	105	93	80	70	35	42
4	59	43	49	79	70	66	59	70	88	90	88	88	102	115	120	120	118	111	93	75	63	57	43	A
5	47	50	49	43	58	65	61	B	B	64	70	79	84	94	91	90	89	90	90	88	68	43	33	43
6	43	58	90	110	70	58	60	60	63	B	61	68	71	78	80	84	89	80	67	63	63	A	49	A
7	60	70	92	115	78	B	B	B	B	45	B	B	A	60	66	63	62	63	46	60	45	A	A	O R 34
8	A	A	29	62	B	A	A	58	A	B	O R 66	67	X 76	X 80	80	X 85	80	80	70	B	A	33	A	A
9	64	A	A	54	A	A	60	65	71	78	X 77	X 71	X 67	X 68	X 66	X 66	64	62	60	59	59	57	54	53
10	46	46	60	A	55	60	56	60	71	79	81	X 84	97	98	96	105	O R 113	102	100	83	65	55	81	43
11	57	46	B	A	A	41	A	43	X 51	X 52	B	60	52	X 62	64	70	71	X 69	X 68	68	X 61	53	A	90
12	A	A	58	57	59	46	58	62	71	73	73	78	X 86	89	X 90	X 100	100	X 95	90	X 76	X 59	43	A	B
13	B	A	50	49	A	50	B	B	A	A	B	B	59	B	B	57	X 64	54	59	60	50	43	50	A
14	A	B	B	53	A	A	B	B	B	B	B	B	B	B	B	59	48	B	49	A	A	A	A	42
15	43	43	A	41	A	A	42	A	43	55	59	X 62	X 66	X 65	B	O X 65	X 66	O X 68	X 65	X 63	59	O X 51	46	A
16	40	43	45	46	53	56	43	59	67	72	82	O R 99	98	X 97	X 100	93	92	X 87	X 80	46	90	58	A	A
17	43	90	42	55	45	50	42	53	A	A	57	58	60	62	60	X 62	X 63	X 62	X 59	X 56	X 55	A	90	52
18	A	A	43	A	83	A	A	43	A	B	60	O R 61	58	X 60	60	B	61	Y	70	A	42	32	A	A
19	A	A	A	51	B	B	A	61	X 70	73	76	O X 75	O X 77	X 79	X 82	X 85	X 86	89	79	58	49	A	60	40
20	B	B	B	56	B	63	67	B	B	B	B	B	B	B	82	80	X 77	X 77	O X 71	59	59	55	53	50
21	32	O R 41	46	50	B	B	A	60	O R 69	X 73	X 73	R 73	X 81	X 88	X 91	X 91	X 90	X 90	83	80	62	A	37	A
22	A	A	59	A	B	63	O X 56	O X 61	70	73	80	80	86	86	X 35	X 86	X 84	X 84	X 81	X 77	X 71	65	60	57
23	57	48	52	58	68	X 76	90	95	100	106	105	104	X 105	108	X 105	98	95	90	X 85	80	65	50	49	47
24	A	X 52	62	62	66	70	70	90	80	90	91	X 92	X 92	X 92	X 90	X 85	X 86	X 86	X 85	X 74	68	49	46	43
25	43	55	59	64	64	70	62	A	A	B	B	65	72	71	75	90	93	68	48	O X 52	42	49	50	70
26	52	60	59	50	A	A	59	59	54	50	51	E G 51	E G 52	57	59	61	60	53	58	59	59	43	42	39
27	42	A	A	A	42	A	49	A	52	60	60	B	56	68	O X 68	O X 71	76	X 70	52	53	49	43	65	43
28	A	42	A	B	B	58	56	60	67	75	O X 75	X 74	X 74	X 76	X 75	X 80	X 84	X 80	X 77	X 74	X 74	70	60	54
29	80	70	A	A	70	70	70	69	65	B	B	59	B	58	75	84	58	41	58	65	A	44	O X 41	43
30	43	B	B	B	50	O R 61	O X 65	60	68	B	57	B	B	80	B	O X 67	60	B	B	90	62	91	59	A
31	45	A	A	43	48	50	B	A	59	O X 61	63	67	X 61	X 60	X 61	60	59	O X 56	X 61	47	53	A	79	90
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	20	17	19	23	18	19	21	20	19	20	22	25	26	23	27	30	31	28	30	28	27	23	23	21
MED	46	50	58	56	62	61	59	60	68	72	73	73	76	80	82	84	80	80	70	66	59	51	50	47
UQ	57	58	61	62	70	66	62	65	71	76	80	79	86	91	94	93	91	90	85	78	65	58	60	54
LQ	43	43	48	50	53	53	56	59	61	60	60	64	61	64	67	66	64	66	59	59	52	43	44	43

OCT. 1982 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 1982 | 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	A	F	F	F	F	F	B	A	F 57	B	F 72	F 90	F 95	F	F	F	F	J F 94	F	A	F	F	F
2	F	F	B	F	B	B	B	B	B	B	A	F	F	F	F	F 98	J F 74	F	F 57	J F 54	F	A	A	F
3	A	A	F	F	F	B	F	F	B	F	67	F	F 70	74	90	F	J F 99	93	F	F	F	J F 64	F	F
4	F	F	F	F	F	F	F	F 62	F	F	F	F	F	106	F	F	F	F	F	J F 69	F	F	F	A
5	F	F	F	F	F	J F 59	F	B	B	F 55	F	F	F 71	F 86	F	80	F 80	80	81	80	60	F	F 23	F
6	F	F	F	F	F	F	F	F	F	B	F	F	62	F	J F 74	F 76	F	J F 74	F	F	F	A	F	A
7	F	F	J F 86	F	F	B	B	B	B	F	B	B	A	F	F	F	F	F	F	F	F	A	A	F 26
8	A	A	F	F	B	A	A	F	A	B	F 56	F 60	70	74	73	79	72	72	J F 64	B	A	F	A	A
9	F	A	A	F	A	A	F	F	F	F 71	71	65	60	61	60	60	57	55	F 53	F 51	J F 53	F 48	J F 45	J F 42
10	F	F	F	A	F	F	F	F	F	F 70	73	78	F 89	F 90	F 88	F 98	F 106	F 90	F 90	J F 77	J F 59	F	F	F
11	F	F	B	A	A	F	A	F	45	46	B	F	F	55	F 56	F 63	F 61	63	61	J F 62	55	J F 45	A	F
12	A	A	F	F	F	F	F	F	F 60	F 66	F 65	F 70	79	80	84	94	F 93	88	81	70	52	26	A	B
13	B	A	F	F	A	F	B	B	A	A	B	B	F	B	B	F	53	F	F	F	F	F	F	A
14	A	B	B	F	A	A	B	B	B	B	B	B	B	B	B	F	F	B	F 40	A	A	A	A	A
15	F	F	A	F	A	A	F	A	F	F 43	F 50	56	60	59	B	R 59	60	62	59	57	F 52	R 45	F 25	A
16	F	F	F	F	F	F	F	51	F	F	F 71	F 91	F 89	90	93	F	F	81	74	F	F	F	A	A
17	F	F	F	F	F	F	F	F	A	A	F 48	R 51	F	F	F 53	55	57	56	53	50	48	A	A	F
18	A	A	F	A	A	A	A	F	A	B	F	F 53	F	54	F	B	54	Y	F 31	A	F	F	A	A
19	A	A	A	F	B	B	A	F	63	65	68	69	71	73	76	79	79	81	F 70	F	F	A	F	F
20	B	B	B	F	B	F	F	B	B	B	B	B	B	B	F	F	71	71	65	F	F	F	F	F
21	F	F 32	F 35	F	B	B	A	F	F 60	66	67	67	75	81	85	85	84	84	J F 77	J F 74	F	A	F	A
22	A	A	F	A	B	F	50	55	F	F	F	F	F	F 78	73	80	78	78	75	J R 71	65	J H 59	J H 54	J F 51
23	J F 51	F	F	R 51	F 58	70	F 70	R 89	F	F	F	F	99	F	98	90	88	F	78	70	J F 59	F	F	F
24	A	R 45	F	F	J F 60	F	F	F	F 66	F	F	85	86	86	84	79	80	80	78	68	59	F	F	F
25	F	F	F	F	F	F	F	A	A	B	B	F	F 61	F	F	F	F	F	F	F 45	F	F	F	F
26	F	F	F	F	A	A	F	F	F	F	F	E G 44	E G 45	F	F	53	52	50	50	51	50	F	F	F
27	F	A	A	A	F	A	F	A	F	F	F	B	F	F	R 62	65	F	64	F 45	F 46	F	F	F	F
28	A	F	A	B	B	F	F	F	F	67	69	68	68	70	69	74	78	74	71	67	68	F	J F 54	F
29	F	F	A	A	F	F	F	F	F	B	B	52	B	F	F	F	F	F	F	F	A	F	35	F
30	J F 37	B	B	B	F	F 53	59	F	F	B	F	B	B	F	B	61	F	B	B	40	F	F	F	A
31	F	A	A	F	F	F	B	A	F	55	F 55	60	55	54	55	53	51	R 50	55	F 40	F 45	A	F	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	2	1	2	3	3	4	5	11	12	16	18	13	17	20	21	20	23	19	13	6	6	3
MED	J F 44	38	F 60	R 51	F 59	F 59	59	58	F 60	F 65	67	66	70	76	76	78	74	74	65	62	55	46	F 40	J F 42
UQ						64	64	76	F 63	66	70	71	86	86	85	82	80	81	78	70	59	J F 59	J F 54	J F 46
LQ						F 56	54	53	F 60	55	F 56	54	61	61	62	60	58	62	54	F 50	52	45	F 25	F 34

The Radio Research Laboratory, Japan

OCT. 1982 | FOF2 (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1982 | 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	78	41	34	56	32	33	B	59	45	B	E B 42	E B 39	E B 49	E B 60	E B 51	E B 63	E B 30	E B 46	36	43	43	59	42
2	52	32	B	32	B	B	B	B	B	B	63	E B 40	E B 42	E B 60	E B 72	E G 30	E G 28	29	29	33	34	35	24	46
3	93	43	39	85	35	B	42	45	B	E B 53	E B 50	E B 50	E B 40	E B 51	E B 48	E B 30	E G 25	E B 41	26	25	22	E B 27	34	80
4	93	65	59	33	59	43	43	43	43	42	E B 54	E B 39	31	E B 35	E B 53	E G 28	31	E B 49	33	25	26	20	31	48
5	33	33	24	30	19	27	E B 50	B	B	E B 40	E B 48	32	E B 40	28	E G 32	30	E G 30	E G 23	E G 22	G 16	E B 23	28	29	37
6	41	32	50	29	50	45	46	S 30	56	B	E B 53	E B 41	34	28	E G 28	E G 30	E G 28	E G 25	28	43	35	38	34	54
7	70	56	32	32	37	B	B	B	B	29	B	B	33	E B 45	E B 41	E B 43	33	35	38	50	87	41	36	50
8	37	35	93	33	B	56	50	31	43	B	E B 52	31	E B 42	E B 50	E B 39	E B 30	26	23	22	B	75	59	70	64
9	60	75	34	23	56	110	49	42	31	E G 28	E G 30	E G 30	31	E G 30	E G 29	32	33	23	23	19	19	26	27	27
10	32	31	59	64	31	42	41	49	E G 29	26	E G 30	E G 31	33	36	37	27	35	27	24	26	28	28	34	36
11	35	30	B	58	24	25	42	42	41	35	B	E B 39	E B 40	E B 31	E G 30	E G 29	E G 25	27	23	26	26	35	41	91
12	51	43	35	27	35	50	42	50	34	E B 47	E B 40	E B 39	E G 31	E G 30	E G 30	E B 40	E B 38	E B 26	E B 40	E G 18	K 15	15	42	B
13	B	49	28	24	33	19	B	B	43	57	B	B	E B 32	B	B	E B 47	E B 40	43	50	34	66	89	77	78
14	45	B	B	32	43	33	B	B	B	B	B	B	B	B	B	E B 32	29	B	32	30	61	57	63	41
15	55	26	36	55	35	42	39	39	43	E G 31	25	30	E G 31	32	B	E B 42	E B 39	E B 50	E B 30	21	E B 30	E B 40	41	37
16	39	33	42	42	35	40	34	43	E G 27	E G 29	E G 30	E B 38	42	31	50	60	51	49	25	28	50	48	51	56
17	70	52	43	51	33	43	25	35	61	40	E G 30	E B 44	E B 38	E G 32	E G 26	29	E B 30	29	27	E B 23	24	43	43	59
18	54	50	39	45	41	43	43	33	50	B	E B 49	E B 48	E B 45	E B 40	E G 28	B	E G 26	19	E G 20	40	32	26	41	50
19	105	51	45	43	B	B	58	43	E G 28	E G 30	E B 50	E B 52	E B 58	E B 40	30	E B 39	E B 49	30	34	31	40	42	65	65
20	B	B	B	41	B	31	E B 50	B	B	B	B	9	B	B	E G 30	E B 40	E G 26	E B 40	E B 52	31	23	25	23	24
21	32	60	33	33	B	B	60	42	E B 50	E G 31	E B 40	E B 52	32	E B 38	E B 38	E G 30	26	E G 28	26	23	E G 19	41	23	37
22	41	39	39	58	B	39	53	E B 50	43	E G 30	E G 32	E G 33	E G 32	35	E G 32	30	E G 29	E G 28	26	E G 21	18	E B 14	E B 11	E B 13
23	26	28	24	E B 40	E B 31	25	E B 40	E B 40	E B 50	E G 31	E B 50	E B 42	E B 45	33	E B 37	32	E G 30	45	31	24	32	39	39	43
24	64	59	38	40	34	32	41	50	42	E G 32	32	40	E G 33	33	39	32	35	37	33	27	26	43	50	48
25	48	48	34	40	27	33	32	27	56	B	B	E B 41	33	E G 35	E G 35	33	37	33	E B 30	41	50	43	43	52
26	43	47	60	40	60	42	48	51	61	37	40	41	38	32	38	37	33	39	33	31	29	25	28	31
27	34	54	65	49	46	38	48	51	54	46	42	B	E G 35	E G 33	E B 49	E B 53	30	32	35	E B 31	31	45	60	50
28	79	47	53	B	B	41	43	49	43	43	E B 50	33	E G 35	33	33	E G 30	33	33	E B 30	26	32	41	50	51
29	42	36	90	60	56	32	41	34	33	B	B	E B 40	B	E B 50	30	E G 31	E G 31	27	43	36	42	38	45	33
30	35	B	B	B	32	E B 46	E B 40	43	46	B	E B 50	B	B	E B 35	B	E B 48	E G 30	B	B	E B 30	110	90	80	42
31	40	58	39	40	25	25	B	41	36	48	E G 32	E B 50	E B 49	E G 33	E G 32	28	32	E B 40	24	K 25	39	43	85	80
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	29	28	26	29	24	26	26	24	25	22	23	25	27	28	27	30	31	29	30	30	31	31	31	30
MED	45	47	39	40	35	39	42	42	43	31	E B 42	E B 40	E E 35	E E 34	E E 35	E E 32	E E 31	28	28	27	32	40	41	48
UQ	60	55	53	49	48	43	48	48	50	44	E B 50	E B 42	E B 41	E B 40	E B 40	E B 40	34	36	34	33	42	43	55	56
LQ	37	33	34	32	32	32	40	36	36	E G 30	E E 32	E E 33	32	30	E G 30	E E 30	E G 28	25	24	24	24	27	32	37

OCT. 1982 | FES (0.1 MHZ)

IONOSPHERIC DATA

OCT. 1982 | 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	30	13	12	14	16	17	B	23	23	B	42	39	49	60	51	63	30	46	25	16	8	12	9
2	13	11	B	15	B	B	B	B	B	B	30	40	42	60	72	24	16	16	23	13	11	11	14	23
3	12	16	15	12	12	B	25	22	B	53	50	50	40	51	48	30	22	41	18	23	12	27	11	12
4	12	12	12	11	12	22	16	22	19	23	54	39	16	35	53	20	16	49	15	22	14	11	11	11
5	10	12	13	19	17	16	50	B	B	40	48	22	40	23	17	22	23	16	17	14	23	8	11	11
6	12	11	12	11	23	20	18	22	23	B	53	41	22	18	16	16	14	14	20	19	16	11	11	23
7	15	18	13	13	12	B	B	B	B	14	B	B	22	45	41	43	21	17	12	15	14	15	16	12
8	14	13	12	13	B	20	25	18	20	B	52	22	42	50	39	30	19	16	16	B	23	23	12	11
9	16	22	16	15	25	23	23	15	13	18	16	15	15	17	16	15	14	15	15	14	11	11	11	9
10	9	11	13	22	12	16	23	16	17	16	15	16	14	13	14	14	11	16	12	11	11	11	8	11
11	12	11	B	20	11	11	18	15	16	25	B	39	40	31	22	15	12	22	24	12	12	9	12	15
12	13	17	11	15	11	20	15	15	19	47	40	39	20	23	16	40	38	26	40	16	11	14	12	B
13	B	21	14	16	26	13	B	B	23	20	B	B	32	B	B	47	40	13	15	13	11	14	10	13
14	23	B	B	17	15	23	B	B	B	B	B	B	B	B	B	32	26	B	16	23	27	13	14	11
15	11	11	12	14	32	20	15	14	16	17	22	20	17	23	B	42	39	50	30	16	30	40	12	11
16	8	11	11	12	12	12	13	15	13	14	15	38	30	16	11	16	15	17	12	23	11	13	14	11
17	11	13	12	11	12	12	21	12	30	31	19	44	38	25	23	20	30	13	13	23	11	11	12	11
18	13	32	13	25	15	15	15	19	23	B	49	48	45	40	23	B	14	15	13	14	13	22	11	15
19	31	16	16	19	B	B	20	23	14	17	50	52	58	40	23	39	49	15	16	15	13	11	12	13
20	B	B	B	31	B	13	50	B	B	B	B	B	B	B	20	40	19	40	52	22	14	12	11	11
21	11	15	13	23	B	B	30	16	50	19	40	52	25	38	33	20	23	14	15	13	12	10	19	12
22	21	24	13	22	B	23	30	50	30	22	23	13	19	17	19	20	17	15	14	14	13	14	11	13
23	11	12	14	40	31	15	40	40	50	23	50	42	45	29	37	22	23	15	16	13	16	12	15	11
24	13	12	12	15	13	16	23	14	14	16	15	14	16	15	16	14	14	12	12	12	11	13	12	12
25	14	14	16	15	18	15	17	23	19	B	B	41	23	22	22	15	15	15	30	29	25	15	13	13
26	15	13	11	11	38	13	15	14	16	15	23	22	15	20	14	14	13	12	12	11	21	13	7	11
27	11	12	11	15	11	20	14	15	21	16	30	B	23	21	49	53	23	11	11	31	14	11	11	11
28	31	22	31	B	B	22	16	19	16	16	50	23	25	23	25	20	15	13	30	22	19	15	11	13
29	13	11	20	30	18	12	11	13	14	B	B	40	B	50	20	23	16	14	32	14	22	15	15	13
30	11	B	B	B	24	46	40	16	20	B	50	B	B	35	B	48	17	B	B	30	11	14	12	13
31	12	23	19	14	14	21	B	16	16	37	29	50	49	20	20	24	23	40	15	15	16	22	17	13
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31	31
MED	13	14	13	15	18	20	23	19	20	23	50	41	32	29	23	23	19	16	16	15	14	13	12	12
UQ	15	22	18	22	35	23	40	45	40	B	D B 54	51	44	47	48	40	23	23	27	23	18	15	14	13
LQ	11	12	12	13	12	15	16	15	16	17	26	22	21	20	18	18	15	14	14	14	11	11	11	11

OCT. 1982 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

OCT. 1982 | 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	A	A	A	A	B	A	A	B	B	B	E B 270	B	E B 270	E B 280	250	260	230	A	A	A	A
2	A	280	B	A	B	B	B	B	B	B	A	B	B	B	B	275	265	280	305	255	A	A	A	A
3	A	A	A	310	A	B	A	A	B	B	B	B	290	B	310	250	230	250	255	250	275	275	A	255
4	A	A	A	A	A	A	A	A	A	A	B	260	240	260	B	255	275	280	300	275	260	260	A	A
5	A	A	A	A	A	260	B	B	B	310	B	250	E B 300	Y 250	240	240	240	235	240	235	230	305	A	A
6	A	A	A	A	A	A	A	S	A	B	B	290	245	250	250	255	255	270	320	A 300	A	A	A	A
7	A	A	250	275	270	B	B	B	B	245	B	B	A	B	B	B	E B 290	290	A	A	A	A	A	A
8	A	A	A	A	B	A	A	A	A	B	B	250	E B 290	E B 360	E B 250	240	240	260	285	B	A	A	A	A
9	A	A	A	A	A	A	A	A	300	245	230	230	240	245	230	245	250	240	255	245	250	245	275	245
10	A	A	A	A	A	A	A	A	270	220	250	240	230	210	210	240	245	240	240	225	240	A	A	A
11	A	A	B	A	A	A	A	A	A	A	B	B	B	250	230	245	250	245	275	255	245	320	A	A
12	A	A	A	A	A	A	A	A	275	B	E B 330	E B 270	250	245	235	265	240	245	250	235	235	300	A	B
13	B	A	A	A	A	A	B	B	A	A	B	B	230	B	B	B	B	A	A	A	A	A	A	A
14	A	B	B	A	A	A	B	B	B	B	B	B	B	B	B	250	270	B	E A 320	A	A	A	A	A
15	A	A	A	A	A	A	A	A	A	250	S	H 210	255	245	B	B	B	B	260	255	260	B	A	A
16	A	A	A	A	A	A	A	A	270	220	225	E B 250	E A 250	230	225	E A 250	E A 255	250	255	S	A	A	A	A
17	A	A	A	A	A	A	A	A	A	A	220	B	B	240	245	250	250	E B 250	260	255	250	A	A	A
18	A	A	A	A	A	A	A	A	A	B	B	B	B	E B 270	250	B	250	Y 320	310	A	A	A	A	A
19	A	A	A	A	B	B	A	A	255	230	B	B	B	E B 260	230	E B 255	290	250	245	255	A	A	A	A
20	B	B	B	A	B	A	B	B	B	B	B	B	B	B	240	E B 270	250	B	B	250	270	260	300	310
21	A	A	A	A	B	B	A	A	B	220	B	B	250	E B 240	E B 250	230	230	240	240	240	255	A	A	A
22	A	A	310	A	B	A 340	A	B	A	230	250	240	245	210	225	230	230	240	250	240	240	240	250	255
23	320	A	A	B	B	290	B	B	B	225	B	E B 250	E B 275	220	240	220	240	250	245	250	A	A	A	A
24	A	A	A	A	A	A	A	A	255	230	220	240	230	210	220	240	230	240	250	255	260	A	A	A
25	A	A	A	A	A	A	A	A	A	B	B	B	255	250	245	240	240	A	B	A	A	A	A	A
26	A	A	A	A	A	A	A	A	A	A	A	240	240	240	250	255	250	255	275	275	280	A	A	A
27	A	A	A	A	A	A	A	A	A	A	A	B	255	245	B	B	240	260	310	B 300	A	A	A	A
28	A	A	A	B	B	A	A	A	A	225	B	275	260	250	240	230	230	230	260	250	260	260	300	A
29	A	A	A	A	A	A	A	255	240	B	B	E B 270	B	B	260	250	260	A	A	A	A	A	A	A
30	310	B	B	B	A	B	B	A	A	B	B	B	B	260	B	B	A	B	B	B	A	A	A	A
31	A	A	A	A	A	A	B	A	300	A	260	B	B	245	250	250	250	B	250	300	A	A	A	A
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	1	2	2	1	3		1	8	12	8	15	19	24	22	25	28	23	25	20	17	9	4	4
MED	315	280	280	292	270	290		255	270	230	234	245	245	244	240	245	246	250	258	250	260	260	288	255
UQ						315			288	245	252	258	255	252	250	252	254	260	280	255	270	300	300	282
LQ						275			255	222	222	238	240	240	230	240	240	240	250	240	245	260	262	250

OCT. 1982 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1982 | 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	60	45	B	50	45	B	A	A	A	B	B	B	B	B	B	78	0 X 53	43	64	B	A	42	41	A
2	A	A	53	58	B	52	53	59	0 X 67	0 X 65	B	0 X 75	0 X 71	0 X 66	X 68	B	70	A	B	45	44	A	A	A
3	A	40	B	55	50	65	B	B	B	B	B	B	B	63	R	71	63	58	X 65	57	X 59	X 59	58	R 58
4	58	59	69	69	75	80	90	95	102	104	103	100	100	99	B	89	89	X 80	70	X 57	X 59	59	45	43
5	A	69	80	62	A	63	75	90	89	91	X 86	X 86	X 86	X 87	X 86	X 86	X 83	X 83	74	58	X 55	70	X 49	48
6	51	59	62	62	0 X 67	76	69	90	77	0 X 81	70	75	0 X 69	72	0 X 76	75	79	79	78	65	X 51	57	56	57
7	53	58	78	60	66	70	51	65	69	73	X 80	81	X 81	X 80	X 76	X 77	79	79	X 80	X 75	X 75	X 74	X 68	66
8	58	55	60	59	75	69	91	80	80	96	99	95	88	X 83	X 82	X 81	X 80	X 81	X 77	0 X 71	78	50	59	63
9	62	56	59	77	70	70	74	60	0 X 49	63	62	60	66	69	70	70	X 68	X 67	X 66	X 66	X 63	X 63	X 63	X 63
10	60	60	63	63	59	65	68	66	73	79	88	85	83	88	88	77	79	X 80	66	X 56	57	69	50	A
11	A	44	45	43	A	A	B	B	B	Y	B	62	X 62	0 X 51	X 65	72	X 76	70	50	54	52	50	A	A
12	43	43	A	A	68	42	50	54	60	B	60	57	X 59	R 62	X 65	X 65	70	X 64	0 X 56	56	49	0 X 49	48	46
13	A	A	A	62	B	B	B	B	57	62	64	62	62	B	B	B	0 X 66	X 58	X 63	X 65	54	X 55	59	45
14	50	51	57	59	B	50	50	59	62	59	69	X 71	X 68	B	0 X 70	0 X 77	X 77	80	65	50	59	64	X 54	X 47
15	48	0 X 46	A	A	A	59	A	60	61	68	X 69	71	X 69	X 69	B	0 X 76	X 71	69	X 59	B	43	52	53	48
16	A	B	52	63	53	58	56	60	0 X 62	63	58	61	0 X 69	74	70	0 X 67	X 68	X 67	X 66	X 67	70	X 67	X 64	64
17	58	60	58	69	70	75	80	89	X 91	X 95	X 96	X 98	X 95	X 91	X 86	X 80	X 75	X 71	X 68	X 68	X 70	X 64	64	50
18	56	51	112	55	A	51	57	E G 50	0 X 47	59	53	X 66	X 67	X 71	X 63	X 73	X 66	X 58	B	44	52	62	54	A
19	52	48	55	50	A	59	63	62	A	55	66	66	69	X 70	X 71	X 69	X 68	X 66	X 64	X 62	X 60	X 57	X 49	59
20	0 X 51	59	59	60	78	X 83	88	90	X 92	X 91	X 90	X 90	X 87	X 81	X 79	X 76	X 71	X 69	68	X 68	68	X 67	64	51
21	56	59	69	A	58	67	57	60	A	57	A	62	63	69	63	75	X 78	80	X 66	53	55	40	44	A
22	A	53	60	57	52	41	41	A	42	30	A	B	B	B	0 X 51	57	58	52	57	56	X 55	X 51	52	45
23	B	B	B	B	B	B	65	76	88	92	X 97	X 94	X 95	X 90	81	90	72	X 67	0 X 59	B	B	B	B	B
24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	64	68	66	61	0 X 54	B	X 60	54	B	B	49
26	B	B	B	60	76	0 X 65	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	0 X 77	B	0 X 74	0 X 74	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	72	0 X 64	61	74	0 X 67	70	0 X 69	0 X 76	0 X 66	59	B	44	46	A	55	46
29	B	B	B	B	B	B	B	B	61	B	0 X 69	0 X 75	72	73	0 X 70	70	B	B	46	A	B	B	51	A
30	A	B	B	B	B	B	B	B	B	B	B	B	B	53	56	X 62	51	X 57	X 59	X 56	X 60	X 59	X 57	55
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	15	19	17	20	15	20	18	18	20	20	19	22	23	23	23	26	26	25	23	23	24	22	23	19
MED	56	55	60	60	67	65	64	64	68	73	69	74	X 69	71	X 70	X 75	X 70	X 67	X 65	X 57	56	59	54	50
UQ	58	59	69	62	72	70	75	89	84	91	89	X 86	X 84	X 82	X 78	X 77	X 78	X 79	X 68	X 66	X 62	X 64	59	58
LQ	51	47	57	56	56	55	53	60	60	62	63	62	X 68	68	X 68	70	X 66	X 53	X 59	55	52	51	50	46

NOV. 1982 | FXI (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1982 | 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	F	B	F	F	B	A	A	A	B	B	B	B	B	B	F	47	F	F	B	A	F	F	A
2	A	A	F	F	B	F	F	F	61	60	B	69	65	60	62	B	F	A	B	F	F	A	A	A
3	A	F	B	F	F	F	B	B	B	B	B	B	B	F	R 61	F	F	F	59	50	52	53	F 50	R 51
4	F	J F 53	F	F	J F 69	J F 74	80	J F 89	F	F 95	F 95	F	F	91	B	80	F	73	J F 64	50	53	51	F	F
5	A	F	F	F	A	F	F	F	F	81	U R 80	80	80	81	80	80	77	77	66	49	49	F	43	F
6	F	F 49	F 51	F	R 61	F	F	F	F	R 75	F	F	R 63	F	70	F	F 70	F	70	J F 59	45	50	F 48	F
7	F	F	F	F	F	F	F	F	J F 63	F	74	F 74	75	74	70	71	70	71	74	69	69	68	62	F
8	F	F	F	F	F	F	F	F	F	F 85	F	87	80	77	76	75	74	75	71	R 65	52	F	F	F
9	F	F	F	F	F	F	F	F	E G 43	F	F	F	J F 60	J F 63	62	63	61	61	60	60	57	56	57	57
10	F	F	F	F	F	F	F 60	F	F	F 71	J F 82	F	F	F	J F 82	F 71	F	74	58	49	F	F	F	A
11	A	F	F	F	A	A	B	B	B	Y	B	F 55	58	E G 46	59	F	70	F 62	F	F	F 44	43	A	A
12	F	F	A	A	F	F	F	F	F 52	B	F 53	50	52	R 55	58	59	F	57	R 50	49	F	43	F	F
13	A	A	A	F	B	B	B	B	F	F	F	F 53	F 55	B	B	B	60	52	57	59	46	48	F	F
14	F 43	F	F	F	B	F	F	F	F 54	F	61	65	62	B	64	71	71	F 71	F	F	F 52	F 56	47	40
15	J F 42	R 40	A	A	A	F	A	F	F	F	63	F 61	63	63	B	R 70	65	61	52	B	F	F	F 46	41
16	A	B	F	F 45	F	F	F	52	R 56	F	F	F	63	F 63	F 63	61	62	61	60	60	F 63	61	58	J F 58
17	F	F	F 51	F 57	F 59	F 65	J F 74	J F 83	85	87	90	92	89	85	80	74	69	65	62	62	64	58	F	F
18	F	F	F	F	A	F 42	F	E G 42	E G 41	F	F 44	60	61	65	62	67	60	52	B	F	F	F	F 47	A
19	F	F	F	F	A	F	F	F	A	F 53	F 58	F	F 61	63	65	62	61	60	58	56	53	51	R 43	F
20	45	F 49	F	F 59	70	77	F 78	81	86	85	84	84	81	75	72	70	65	62	60	61	F 61	60	F 56	F
21	F	F	F	A	F 50	F	F	F	A	F	A	F	F	F	60	68	72	72	60	F	F	F	F	A
22	A	F	F	F	F	F	F	A	F	F	A	B	B	B	E G 45	F	F	F	F	49	49	45	F 42	F
23	B	B	B	B	B	B	F	68	F	U R 85	91	88	89	J R 84	F 74	75	F 65	61	R 53	B	B	B	B	B
24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	F	F	59	F	48	B	53	F	B	B	F
26	B	B	B	F	F	59	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	71	B	68	68	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	F 65	53	F	66	61	F 63	63	70	60	F	B	F	F	A	F	F
29	B	B	B	B	B	B	B	B	F	B	63	69	65	F 62	64	63	B	B	F	A	B	B	F	A
30	A	B	B	B	B	B	B	B	B	B	B	B	B	F	F	56	F	51	52	50	54	53	50	48
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	3	4	2	3	5	5	4	6	10	11	13	15	20	17	22	21	18	20	18	17	16	15	13	6
MED	F 43	F 49	F 51	F 57	F 61	F 65	F 76	74	58	81	74	69	63	63	64	70	65	62	60	56	52	53	48	50
UQ	44	F 51		F 58	69	F 74	79	J F 83	65	85	84	82	78	77	72	71	70	72	64	60	59	57	56	57
LQ	F 42	44		F 51	F 59	F 59	F 67	52	52	66	61	60	61	63	62	63	61	58	57	50	49	49	F 46	41

NOV. 1982 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1982 | 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	33	42	B	40	49	B	47	45	60	B	B	B	B	B	B	E B 32	28	24	39	B	33	24	39	91
2	55	45	31	33	B	32	31	41	43	E B 47	B	E B 58	E B 59	E B 53	E B 40	B	E G 30	40	B	42	35	43	57	42
3	56	32	B	40	39	41	B	B	B	B	B	B	B	E B 39	E B 52	E G 32	36	33	42	65	49	26	30	E B 31
4	E B 23	25	31	26	31	23	25	26	E B 56	E B 49	E B 41	E B 50	E B 40	E B 40	B	46	38	36	35	K 28	32	34	40	46
5	41	41	49	65	50	26	36	51	40	E G 21	E B 41	E G 33	33	E B 52	E G 30	E G 31	28	E G 23	28	34	30	43	30	28
6	30	35	32	E B 40	E B 51	45	42	58	41	E B 53	E G 35	E G 33	E B 50	E B 40	E B 52	32	E G 28	E B 31	29	40	35	31	34	38
7	38	39	39	34	27	27	24	59	50	32	33	E G 32	E G 36	E G 34	33	35	31	E G 29	28	26	22	17	16	31
8	36	33	31	34	30	34	41	34	43	E G 36	34	34	38	35	34	E G 32	34	33	51	70	33	50	48	47
9	43	31	36	29	34	27	35	29	42	40	35	35	32	E G 33	E G 33	35	32	33	E G 24	E G 21	29	24	17	E B 16
10	27	34	28	30	36	45	50	33	34	36	E G 32	35	E G 34	36	30	33	33	28	E B 27	K 25	31	42	45	49
11	42	59	36	34	80	33	B	B	B	32	B	32	E B 40	33	E B 50	E B 45	E B 40	33	34	42	32	36	43	48
12	49	56	60	47	42	32	41	32	20	B	E B 48	E G 32	E G 33	30	32	E G 33	E G 28	E B 36	E B 43	E B 31	26	33	38	37
13	40	62	89	31	B	B	B	B	42	39	40	E G 33	30	B	B	B	E B 40	E B 31	E G 29	27	26	32	40	91
14	41	32	32	26	B	23	43	42	42	33	33	33	34	B	E B 53	E B 54	E B 36	E B 33	36	33	33	35	35	32
15	29	45	49	47	49	33	49	39	41	E G 32	35	33	E G 33	E G 32	B	E B 40	33	E G 28	E G 25	B	42	39	41	35
16	45	B	42	42	26	28	E B 50	50	60	33	33	E B 53	E B 52	33	E B 52	E B 39	E B 49	E B 41	E B 31	28	26	22	E B 20	26
17	34	41	42	41	E B 40	E B 52	30	28	E G 31	32	E G 31	E G 31	28	32	33	E G 30	E G 30	28	28	25	34	K 20	32	42
18	50	42	33	58	58	51	33	45	42	20	E B 49	35	32	30	E G 33	E G 32	34	E G 28	B	26	41	49	46	42
19	41	68	43	43	59	41	32	E G 31	33	34	E G 34	E G 35	E G 34	E G 36	E G 33	E G 32	32	E G 30	E G 26	E G 23	39	38	50	33
20	41	39	41	31	27	E G 30	27	E G 30	E G 32	E G 33	40	46	35	33	32	33	29	E G 30	29	26	33	K 20	E B 24	39
21	39	31	59	55	41	E B 60	42	32	60	56	56	40	E G 34	33	32	E G 32	E G 33	35	E B 36	41	40	33	57	50
22	42	50	42	41	30	32	32	41	32	E G 33	33	B	B	B	E B 40	E G 32	33	E B 40	34	E B 36	27	28	K 31	28
23	B	B	B	B	B	B	E B 53	E B 56	E B 51	E B 54	E B 52	E B 40	E B 43	28	E B 40	E B 40	E B 40	E B 48	E B 48	B	B	B	B	B
24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 50	E B 50	E B 49	E B 40	E B 39	B	E B 31	103	B	B	31
26	B	B	B	E B 49	E B 40	E B 50	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	E B 55	B	E B 53	E B 60	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	E B 50	E B 52	E B 53	E B 50	E B 50	E B 40	E B 52	E B 52	E B 50	E B 40	B	E B 40	E B 40	62	60	52
29	B	B	B	B	B	B	B	B	E B 55	B	E B 52	E B 51	E B 52	E B 51	E B 59	E B 40	B	B	E B 40	48	B	B	33	60
30	50	B	B	B	B	B	B	B	B	B	B	B	B	E B 40	E B 50	E B 40	E B 40	E B 40	E B 30	E B 31	26	E B 24	22	E G 22
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	23	21	20	23	20	21	20	20	23	21	21	22	23	23	24	26	26	26	23	24	25	24	25	26
MED	41	41	40	37	38	32	36	38	42	27	E E 35	E E 35	E E 35	E E 35	E B 40	E E 34	30	E E 33	30	28	33	33	38	38
UQ	44	45	46	44	50	40	44	46	46	E E 47	E B 48	E B 46	E B 46	E B 40	E B 52	E B 40	E B 40	E B 39	36	40	37	40	46	48
LQ	35	33	32	32	30	28	32	32	37	32	33	E G 33	31	32	32	E G 32	29	E E 29	E E 28	26	29	24	30	31

NOV. 1982 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1982 | 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	11	11	B	12	18	B	23	30	23	B	B	B	B	B	B	32	16	16	30	B	31	13	12	13
2	41	23	24	16	B	21	15	31	31	47	B	58	59	53	40	B	23	14	B	13	14	29	16	22
3	15	15	B	23	15	15	B	B	B	B	B	B	B	39	52	25	15	19	15	14	15	15	17	31
4	23	15	12	15	13	15	16	23	56	49	41	50	40	40	B	15	16	13	14	22	13	13	14	11
5	16	17	13	13	23	20	23	15	22	16	41	23	32	52	14	13	18	15	13	15	16	13	14	13
6	15	12	12	40	51	24	25	22	31	53	20	22	50	40	52	22	20	31	16	13	14	14	13	11
7	15	16	16	15	14	15	15	13	16	15	14	15	19	21	15	16	14	14	15	22	16	12	13	11
8	11	14	20	15	11	13	16	16	16	15	15	19	16	17	16	15	17	14	13	11	11	11	11	12
9	11	11	11	11	13	13	13	13	13	14	15	16	16	18	16	15	15	12	11	11	11	11	12	16
10	11	11	12	12	11	11	13	13	12	14	15	15	16	15	15	17	16	16	27	23	12	13	12	18
11	30	19	12	11	12	12	B	B	B	28	B	23	40	23	50	45	40	17	15	12	15	13	14	15
12	13	30	28	15	12	24	20	23	15	B	48	15	23	23	20	19	15	36	43	31	22	15	11	14
13	22	23	14	12	B	B	B	B	24	20	22	23	23	B	B	B	40	31	20	14	15	15	13	25
14	20	20	23	23	B	21	15	16	15	14	13	17	31	B	53	54	36	33	14	14	11	12	13	11
15	11	15	15	20	19	14	23	23	15	15	15	19	16	14	B	40	19	14	16	B	15	15	11	14
16	24	B	15	13	15	13	50	23	21	23	23	53	52	17	52	39	49	41	31	15	23	16	20	13
17	12	17	22	17	40	52	18	13	15	14	23	23	22	23	30	15	15	14	13	14	16	13	15	18
18	13	15	14	17	22	13	13	14	19	15	49	23	23	15	15	16	15	16	B	16	15	14	15	17
19	15	13	13	23	21	16	15	14	23	17	17	22	19	17	17	17	14	13	12	14	14	13	15	14
20	23	19	21	22	15	13	13	13	14	16	15	15	14	15	24	17	15	17	14	15	15	13	24	16
21	13	26	11	40	16	60	39	16	40	22	40	23	20	15	16	16	19	16	36	17	22	23	23	19
22	13	14	16	15	16	22	16	20	19	21	23	B	B	B	40	23	23	40	23	36	23	22	21	23
23	B	B	B	B	B	B	53	56	51	54	52	40	43	26	40	40	40	48	48	B	B	B	B	B
24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	50	50	49	40	39	B	31	40	B	B	24
26	B	B	B	49	40	50	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	55	B	53	60	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	50	52	53	50	50	40	52	52	50	40	B	40	40	31	30	23
29	B	B	B	B	B	B	B	B	55	B	52	51	52	51	59	40	B	B	40	41	B	B	23	40
30	40	B	B	B	B	B	B	B	B	B	B	B	B	40	50	40	40	40	30	31	23	24	17	17
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	18	19	20	18	22	22	23	23	24	26	41	23	40	40	50	28	20	18	25	20	16	15	15	17
UQ	41	B	B	49	B	B	B	B	56	B	B	B	59	53	53	49	40	40	48	40	31	29	23	24
LQ	13	15	13	15	15	14	15	15	16	15	17	19	20	17	17	16	15	14	14	14	14	13	13	13

NOV. 1982 | F-MIN (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

NOV. 1982 | 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	B	A	A	B	A	A	A	B	B	B	B	B	B	255	Y	Y	A	B	A	A	A	A
2	A	A	A	A	B	A	290	A	A	B	B	B	B	B	250	B	255	A	B	A	A	A	A	A
3	A	A	B	A	A	A	B	B	B	B	B	B	B	275	B	250	A	A	275	275	E A 300	290	285	B
4	315	320	310	325	305	285	260	250	B	B	E B 260	B	E B 250	E B 260	B	E A 250	235	240	E A 300	300	300	280	A	A
5	A	310	300	A	A	Y	Y	A	A	245	E B 270	235	260	B	225	220	225	240	240	H 290	275	A	275	A
6	A	A	305	B	B	A	A	A	A	B	230	240	B	E B 250	B	235	240	245	255	A	320	295	305	305
7	A	A	A	A	300	270	A	A	E A 300	210	225	245	245	240	E A 250	230	220	230	245	245	250	250	250	275
8	A	A	A	A	280	A	A	A	270	220	240	215	E A 220	245	235	240	240	240	A 290	A	A	A	A	A
9	A	275	A	A	280	280	270	Y	A	230	230	230	210	240	240	225	225	240	245	260	255	260	260	275
10	280	A	A	270	A	A	A	240	205	210	210	225	210	250	H 230	230	240	230	225	250	310	A	A	A
11	A	A	A	A	A	A	B	B	B	A	B	245	E B 280	240	B	B	B	255	A	A	A	A	A	A
12	A	A	A	A	A	A	A	A	230	B	B	230	240	Y	235	250	250	E B 250	B	255	A	A	A	A
13	A	A	A	A	B	B	B	B	A	260	245	210	Y 240	B	B	B	E B 260	250	250	260	260	290	A	A
14	A	A	A	A	B	A	A	A	270	210	230	210	250	B	B	B	240	B	E A 290	E A 330	300	275	300	A
15	A	A	A	A	A	A	A	A	260	240	250	245	230	210	B	E B 260	225	H 200	240	B	A	A	E A 300	A
16	A	B	305	A	H 170	290	B	A	A	E Y 290	260	B	B	240	B	245	B	270	240	240	260	250	260	275
17	A	A	A	A	B	B	280	220	220	240	230	H 220	Y 250	S 250	250	240	225	230	240	240	250	270	325	A
18	A	A	A	A	A	A	A	A	A	200	B	A	250	Y 210	250	240	220	E Y 270	B	B	A	A	A	A
19	A	A	A	A	A	A	A	235	A	250	H 200	230	230	260	220	230	230	240	250	250	310	280	A	240
20	A	A	A	A	A	290	260	240	210	230	220	220	220	220	250	240	230	225	240	240	255	250	250	A
21	A	A	A	A	A	B	A	A	A	A	A	A	270	255	255	250	250	260	E B 270	A	A	A	A	A
22	A	A	A	A	A	A	A	A	A	A	A	B	B	B	240	240	250	E B 240	255	E B 270	280	310	350	Y
23	B	B	B	B	B	B	B	B	B	B	B	240	E B 250	Y 230	250	250	250	B	B	B	B	B	B	B
24	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
25	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	270	E B 280	B	280	A	B	B	A
26	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	250	B	B	B	E B 280	B	B	B	A	A	A
29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	B	B	A	A
30	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 240	B	260	E B 270	E B 280	250	250	260	260	290	280
31																								
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	2	3	4	2	5	5	5	5	8	13	14	15	17	18	14	20	21	21	18	16	15	13	12	6
MED	298	310	305	298	280	285	270	240	235	230	230	230	238	241	242	240	238	235	246	254	268	275	284	275
UQ		315	308		300	290	280	240	268	242	245	240	250	250	250	250	250	250	260	273	300	290	302	280
LQ		292	302		280	280	260	235	215	210	225	220	230	240	235	232	225	240	240	248	258	260	260	275

NOV. 1982 | H'F (KM)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 1982 | 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	56	59	66	66	70	80	90	90	X 94	X 95	X 91	X 90	X 89	X 85	X 83	X 77	X 75	X 70	X 70	X 69	X 69	X 70	X 68	X 68
2	68	X 71	72	76	77	80	90	99	105	108	106	X 103	X 96	X 93	X 90	X 85	X 79	X 79	X 79	X 79	X 73	X 70	X 77	X 71
3	70	59	70	O X 66	81	74	85	91	101	108	100	99	X 95	X 90	X 86	X 83	X 77	X 74	X 56	53	64	X 64	62	59
4	57	57	A	60	60	60	A	57	A	58	X 65	X 65	66	68	X 72	74	74	75	X 71	X 69	X 66	X 62	X 57	57
5	50	46	A	A	A	A	54	A	43	A	B	B	B	O R 63	O R 66	O R 66	X 64	64	63	X 60	X 63	X 60	X 55	53
6	59	X 59	61	59	57	54	58	60	64	64	65	65	X 67	X 64	X 64	X 66	66	65	66	68	X 68	X 66	X 64	X 64
7	64	60	65	70	77	78	89	89	73	63	78	73	X 71	X 71	X 70	X 71	X 73	B	B	B	43	60	A	A
8	A	59	55	58	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10	B	B	B	B	B	B	B	O X 34	O X 82	B	B	B	B	B	B	X 62	A	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 61	O X 62	B	B	B	F	B	B
12	B	B	B	B	B	B	B	B	O X 56	B	B	O R 64	X 66	71	X 77	O X 79	B	B	B	X 58	X 56	X 56	X 65	X 66
13	67	B	59	59	X 60	62	75	63	64	80	80	74	72	75	O X 71	X 67	67	O X 68	69	X 66	X 63	X 56	X 58	66
14	O X 57	60	62	62	58	56	B	61	55	61	66	69	75	69	X 72	X 72	X 73	X 76	X 71	X 66	X 66	X 64	X 62	X 64
15	62	58	60	80	83	67	66	51	60	O X 61	63	B	O X 69	67	B	59	73	X 67	X 68	X 70	68	X 65	X 66	X 64
16	X 65	69	65	64	79	70	80	78	89	X 89	X 85	X 90	X 89	X 85	X 85	X 76	59	B	B	63	O X 65	54	A	B
17	57	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
19	B	B	B	B	B	B	B	O R 71	O R 79	71	B	65	66	63	69	O X 70	O R 70	B	X 59	B	O X 55	O X 53	O X 49	B
20	O X 55	O X 57	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	75	X 64	B	B	B	60	58	B	O X 46	B
22	B	B	B	B	B	B	B	A	A	A	B	B	B	63	64	71	71	X 74	O X 54	B	68	58	X 56	X 55
23	R 49	49	79	50	55	51	62	65	73	60	70	O X 71	O X 77	R	X 82	X 70	B	O X 47	48	78	69	51	A	A
24	47	50	51	A	39	50	3	B	50	55	56	R 65	65	66	O X 73	X 70	61	56	50	57	54	E G 49	58	60
25	A	50	58	56	A	60	60	61	68	74	74	B	O R 73	O X 75	X 72	X 74	72	X 66	X 59	X 54	R 66	64	62	59
26	60	54	58	62	64	O R 66	O R 67	R	66	76	75	78	X 77	X 71	X 73	X 72	X 76	X 65	R	O X 53	O X 55	45	B	O X 50
27	B	O X 65	B	B	B	B	B	B	B	71	78	91	89	O X 76	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	B	B	B	B	B	B	B	B	B	B	B	B	O X 65	B	O X 72	O R 68	65	50	B	X 62	X 59	X 57	60
30	B	B	B	B	B	B	B	B	O X 49	B	B	B	59	B	O R 65	68	X 72	O X 66	X 63	57	O X 48	56	65	B
31	A	59	B	57	B	B	A	B	O X 67	X 66	X 70	68	X 60	B	X 64	X 66	O X 69	X 68	66	X 62	X 59	60	58	62
	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	16	18	14	15	13	14	12	14	19	17	16	16	19	19	20	23	20	18	17	18	22	21	18	16
MED	58	59	62	62	70	64	71	68	67	71	74	72	X 72	X 71	X 72	X 71	72	X 66	X 63	X 62	X 64	X 60	X 60	61
UQ	64	60	66	66	79	74	87	89	80	80	82	90	X 83	X 76	X 80	X 74	X 74	X 74	X 69	X 69	X 68	X 64	X 65	X 65
LQ	56	54	58	58	60	56	61	61	58	61	66	65	66	66	X 68	X 66	66	X 65	X 56	X 57	X 56	56	X 57	58

IONOSPHERIC DATA

DEC. 1982 | 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

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	50	50	F 59	F 57	F	F	F	J F 84	88	89	85	84	83	79	77	71	69	63	63	62	62	64	62	62
2	60	65	64	F 65	F 68	F	F	F 89	F 95	F 96	96	96	90	86	84	79	72	72	72	72	67	63	70	64
3	F 62	F	F	60	F	F	F	J F 85	F	F	92	91	89	J R 84	80	76	71	63	50	F	55	58	F	F 48
4	F	J F 51	A	F	F	F	A	F	A	F	59	59	59	61	66	66	J F 68	F 68	65	63	60	56	50	F 45
5	F 42	F	A	A	A	A	F	A	F	A	B	B	B	57	60	60	58	F	55	54	57	54	49	F 43
6	F	52	F 54	F	F	F	F	F	F	F	F 56	F 58	61	58	53	60	F 59	F 53	F 59	F 60	62	60	58	58
7	F 55	F	F	F	F	F	F 76	F 80	F	F 56	F 70	F	65	65	64	65	67	B	B	B	F	F	A	A
8	A	F	F	F	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10	B	B	B	B	5	B	B	78	U R 76	B	B	B	B	B	B	56	A	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	55	56	B	B	B	F	B	B
12	B	B	B	B	B	B	B	B	50	B	B	F 55	59	F 63	71	73	B	B	B	52	50	50	58	60
13	61	B	F	51	53	F	F	F	F	F 70	F 72	F 64	65	66	65	61	F	62	F 60	60	57	50	52	57
14	R 51	49	F	F	F	F	B	A	F	F	F	61	67	F 62	66	66	67	70	65	60	60	58	56	58
15	F	F	F	F	F	F	F	F	F	55	F 55	B	63	F 60	B	F 61	F	61	62	63	F 60	59	60	F 58
16	59	62	F 55	60	F	F	F	F	80	83	79	84	83	79	78	70	F	B	B	F	59	F	A	B
17	50	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
19	B	B	B	B	B	B	B	65	73	F 64	B	F	F 58	F	F 61	64	F 60	B	R 51	B	49	47	43	B
20	49	51	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	F 68	58	B	B	B	F	F	B	R 40	B
22	B	B	B	B	B	B	B	A	A	A	B	B	B	F 55	F 56	F 61	F	68	48	B	F 56	51	49	48
23	41	F	F	F	F	F	F	F	F 59	F 59	61	65	71	R 64	76	64	B	E G 41	F	F	F	F	A	A
24	F	F	F	A	F	F	B	B	F	F	F 49	F 54	F 57	F 59	67	64	F	F	F	R 50	F	E G 42	F 48	F
25	A	F	F	F	A	F	F	F	F	F 61	F	B	F 65	R 69	66	68	F 65	60	52	48	F 59	F 57	54	F
26	50	F 46	F	F	F	F 58	F 59	D R 61	F	F	F 61	F	71	65	67	66	70	59	D R 49	47	49	F	B	R 44
27	B	59	B	B	B	B	B	B	B	F	F	77	F	R 70	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	B	B	B	B	B	B	B	B	B	B	B	B	R 59	B	66	F 59	F 58	F	B	56	53	51	48
30	B	B	B	B	B	B	B	B	43	B	B	B	F	B	F 58	F	66	60	57	50	42	F	J F 59	B
31	A	51	B	F	B	B	A	B	R 61	60	63	F	R 53	B	58	60	63	62	F 58	56	52	F 53	50	55
	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	12	10	4	5	2	1	2	7	9	10	13	12	17	19	20	22	15	16	15	14	18	16	17	14
MED	50	51	F 57	60	60	F 58	F 68	F 82	73	F 62	63	64	65	64	66	64	66	62	58	58	57	55	52	56
UQ	60	59	62	60				F 84	80	F 83	79	84	71	70	74	68	68	68	62	62	60	58	58	58
LQ	50	50	F 54	57				76	59	F 59	F 59	F 58	59	60	60	61	60	58	53	50	52	50	49	48

DEC. 1982 | FOF2 (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 1982 | 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	23	K 24	E B 24	58	E B 40	E B 30	E B 30	25	E G 32	E B 40	43	61	43	E B 42	33	34	33	30	28	28	26	E B 24	E B 22	18
2	E B 22	E B 22	E B 24	E B 24	E B 30	E B 38	E G 28	28	E G 31	E G 33	38	45	46	41	41	41	32	30	50	50	40	43	26	34
3	27	30	30	E G 50	29	E B 49	E G 39	E G 34	28	31	32	30	33	38	32	30	E G 31	E G 30	34	43	44	45	42	41
4	33	24	62	60	27	44	45	26	50	E G 40	E G 34	E G 34	41	E G 34	E G 36	E G 35	31	E G 30	32	50	26	E G 23	27	28
5	41	E B 23	52	42	59	52	40	51	32	42	B	B	B	E B 50	E B 40	E B 53	E B 40	E B 39	E B 32	30	E B 31	24	26	E B 23
6	29	E B 31	32	80	33	33	28	32	28	E B 38	32	35	60	38	35	30	30	32	E G 29	26	E B 30	E B 26	E B 23	E B 23
7	E B 26	K 28	E B 40	42	27	32	33	34	43	43	E B 40	29	41	45	37	70	E G 32	B	B	B	33	65	77	50
8	58	40	35	E B 40	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10	B	B	B	B	B	B	B	E B 58	E B 60	B	B	B	B	B	B	E B 50	51	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 40	E B 40	B	B	B	57	B	B
12	B	B	B	B	B	B	B	B	E B 40	B	B	E B 50	E B 40	E B 43	E B 51	E B 42	B	B	B	E B 40	E B 40	E B 30	E B 31	27
13	33	B	59	64	32	41	43	27	42	34	33	E G 35	E G 33	E B 41	E B 51	E B 41	E B 40	E B 50	E B 40	24	E B 31	K 25	K 28	26
14	E B 42	32	49	32	37	33	B	46	32	40	E B 40	E G 33	31	E G 34	33	32	E B 40	27	44	E B 30	35	36	E B 23	E B 23
15	52	32	108	28	41	E B 52	43	33	40	45	E G 34	B	E B 53	32	B	29	27	29	E G 40	E G 39	32	E G 29	E G 25	E G 25
16	26	E G 23	E B 30	E G 40	E B 30	E B 30	E B 32	28	E B 40	E B 50	40	40	40	79	48	E B 52	E B 38	B	B	E G 33	E G 40	E B 49	70	B
17	60	100	40	49	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
19	B	B	B	B	B	B	B	E B 55	E B 55	E B 53	B	E B 40	E B 40	E B 40	31	E B 41	E B 45	B	E B 40	B	60	31	E B 32	B
20	E B 41	E B 48	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 50	E B 48	B	B	B	93	28	B	E B 23	B
22	B	B	B	B	B	B	B	61	108	43	B	B	B	E B 40	E B 49	E B 51	E G 33	E G 32	26	B	46	41	43	E G 31
23	33	32	52	25	27	42	48	37	E G 30	32	32	E B 54	E B 53	E B 57	E B 36	E G 31	B	E G 30	25	63	30	78	45	69
24	37	34	65	49	34	70	B	B	29	32	E B 40	E B 50	E B 50	E B 50	E B 40	E G 31	30	E G 32	27	38	41	43	42	51
25	35	32	69	42	45	26	E B 33	E B 51	34	E B 50	E G 34	B	E B 54	E B 56	E B 53	E G 34	E G 31	E B 40	33	E B 30	E B 26	37	30	39
26	45	33	33	27	33	35	45	E B 53	E B 51	49	E B 40	E B 40	E B 45	E B 40	33	50	31	E B 40	E B 41	32	32	32	B	E B 40
27	B	E B 53	B	B	B	B	B	B	B	E B 52	E B 52	E B 50	E B 51	E B 52	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 53	B	E B 50	E B 40	E B 48	E B 47	B	34	E B 38	31	35
30	B	B	B	B	B	B	B	B	35	B	B	B	E B 40	B	E B 53	E G 32	E B 52	E B 50	E B 30	E B 30	E B 28	E G 33	91	B
31	59	32	B	E G 29	B	B	50	B	35	40	33	E G 36	34	B	26	E B 39	E B 40	E B 39	E B 41	30	E B 31	28	33	E B 22
	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
CNT	19	19	17	18	15	15	14	17	21	19	16	16	19	20	20	23	21	18	18	18	22	22	21	18
MED	34	31	40	40	32	36	40	31	32	36	34	E E 40	E E 41	E B 42	32	E E 41	E E 33	E E 32	30	30	30	32	30	28
UQ	44	33	59	50	37	44	45	42	39	44	E B 40	E B 50	E B 50	E B 51	E B 50	E B 50	E B 40	E B 40	E B 41	43	40	43	42	40
LQ	28	25	31	27	30	30	E E 32	28	32	34	32	E E 34	40	E E 39	32	E E 32	30	E G 30	28	30	E B 30	E E 28	E E 26	E E 23

DEC. 1982 | FES (0.1 MHZ)

The Radio Research Laboratory, Japan

IONOSPHERIC DATA

DEC. 1982 | 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	21	22	24	22	40	30	30	23	23	40	38	37	37	42	23	20	23	23	26	25	23	24	22	15
2	22	22	24	24	30	38	15	15	15	15	23	23	22	19	23	19	23	19	13	30	23	22	18	16
3	16	23	20	50	23	49	20	21	19	20	23	24	15	23	16	15	15	15	21	15	21	20	23	15
4	22	17	26	23	16	22	22	16	23	23	15	15	23	23	22	22	15	14	14	15	15	15	16	15
5	15	23	23	23	32	24	23	23	24	23	B	B	B	50	40	53	40	39	32	27	31	23	19	23
6	19	31	23	22	22	31	24	23	22	38	25	25	23	23	19	22	17	19	16	19	30	26	23	23
7	26	22	40	23	24	24	31	22	32	31	40	23	19	23	25	19	17	B	B	B	28	23	30	23
8	22	22	22	40	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10	B	B	B	B	B	B	B	58	60	B	B	B	B	B	B	50	40	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	40	40	B	B	B	26	B	B
12	B	B	B	B	B	B	B	B	40	B	B	50	40	43	51	42	B	B	B	40	40	30	31	23
13	23	B	31	23	31	31	23	23	25	23	23	23	23	41	51	41	40	50	40	22	31	22	19	23
14	42	23	22	23	23	31	B	22	23	23	40	22	24	24	27	21	40	24	31	30	25	25	23	23
15	22	30	23	21	22	52	24	22	23	23	23	B	53	25	B	28	26	23	40	39	27	29	25	25
16	22	23	30	40	30	30	32	23	40	50	39	30	26	35	30	52	38	B	B	33	40	19	25	B
17	22	22	15	23	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
19	B	B	B	B	B	B	B	55	55	53	B	40	40	40	23	41	45	B	40	B	34	27	32	B
20	41	48	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	50	48	B	B	B	32	25	B	23	B
22	B	B	B	B	B	B	B	40	48	23	B	B	B	40	49	51	23	23	23	B	22	20	22	17
23	22	16	16	17	16	16	18	23	16	16	17	54	53	57	36	22	B	23	23	17	15	23	17	15
24	15	15	15	22	15	16	B	B	23	16	40	50	50	50	40	22	16	23	16	17	14	16	16	17
25	22	19	13	23	20	24	33	51	23	50	24	B	54	56	53	25	23	40	16	30	16	17	20	16
26	15	25	20	17	23	24	23	53	51	23	40	40	45	40	22	26	23	40	41	31	31	31	B	40
27	B	53	B	B	B	B	B	B	B	52	52	50	51	52	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	B	B	B	B	B	B	B	B	B	B	B	B	53	B	50	40	48	47	B	28	38	26	27
30	B	B	B	B	B	B	B	B	25	B	B	B	40	B	53	27	52	50	30	30	28	22	40	B
31	24	23	B	25	B	B	30	B	22	23	23	23	28	B	23	39	40	39	41	27	31	23	23	22
	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	24	30	31	40	B	B	B	55	40	50	52	54	51	50	50	41	40	48	41	33	31	26	25	25
UQ	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	D B 53	B	B	B	B	B	B	B	B
LQ	22	22	22	23	23	30	24	23	23	23	24	28	27	38	24	22	23	23	24	27	24	22	22	20

DEC. 1982 | F-MIN (0.1 MHZ)

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IONOSPHERIC DATA

DEC. 1982 | 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	310	310	305	A	B	270	240	S	225	E B 260	E A 240	A	A	270	230	220	225	210	225	245	250	255	265	260
2	255	260	260	300	290	300	225	225	240	240	225	230	240	210	240	240	220	220	E A 290	275	260	280	260	270
3	290	A	A	B	A	B	320	255	S 245	S 245	S 220	S 240	240	240	215	S 255	255	240	A	A	A	A	A	290
4	A	280	A	A	250	A	A	Y	A	305	240	240	280	220	250	240	250	240	245	250	255	255	A	A
5	A	B	A	A	A	A	A	A	A	A	B	B	B	B	245	B	270	250	250	255	E B 275	270	310	325
6	A	315	A	A	A	A	Y	A	Y 260	230	220	E A 220	270	220	230	E S 250	230	240	240	240	260	260	270	270
7	305	B	B	A	275	S	S	270	E A 250	E A 280	E B 250	S 240	240	250	250	A	E S 290	B	B	B	A	A	A	A
8	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
9	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
10	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
11	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	E B 250	270	B	B	B	200	B	B
12	B	B	B	B	B	B	B	B	B	B	B	B	240	250	B	250	B	B	B	B	B	280	E B 300	Y 270
13	300	B	A	A	A	A	A	Y	A	250	225	220	230	240	B	250	240	B	E B 260	250	E B 280	290	320	275
14	B	A	A	A	A	A	B	A	250	A	B	225	240	230	260	240	B	250	270	250	250	260	260	290
15	320	A	A	A	A	B	A	A	A	E A 280	260	B	B	250	B	240	Y 240	Y 240	270	290	265	260	280	280
16	310	310	310	B	E B 310	260	255	E B 255	E B 260	B	A	250	E A 250	A	E A 300	B	240	B	B	240	E B 300	A	A	B
17	A	A	A	A	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
18	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
19	B	B	B	B	B	B	B	B	B	B	B	240	220	240	Y 250	E B 280	B	B	B	B	A	280	B	B
20	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
21	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	A	255	B	310	B
22	B	B	B	B	B	B	B	A	A	A	B	B	B	E B 270	B	B	250	240	Y	B	310	310	340	330
23	A	A	280	310	270	A	A	A	210	220	225	B	B	B	240	250	B	225	Y 300		A	A	A	A
24	A	A	A	A	A	290	B	B	A	210	E B 260	B	B	B	E B 240	240	225	235	A	270	250	A	A	A
25	A	A	A	A	A	260	B	B	260	B	Y	B	B	B	B	235	230	E B 280	270	255	210	A	255	A
26	300	A	A	280	A	Y	A	B	B	A	B	B	B	250	220	A	240	B	B	A	A	A	B	B
27	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
28	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B
29	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	B	260	B	B	B	A	290	300	A
30	B	B	B	B	B	B	B	B	260	B	B	B	E B 240	B	B	240	B	B	250	B	260	350	260	B
31	A	A	B	325	B	B	A	B	Y	260	E A 260	240	230	B	Y 230	240	265	250	E B 310	240	270	255	270	275
	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	5	4	4	5	5	4	4	10	11	11	10	12	13	14	15	17	14	11	13	15	15	14	11
MED	302	310	292	305	272	270	248	255	246	240	230	240	240	240	238	240	240	240	252	250	258	270	272	275
UQ	310	310	306	318	282	290	288	262	260	260	E E 255	240	242	250	250	248	252	250	270	270	266	285	310	290
LQ	295	280	270	290	270	260	232	232	232	235	224	225	232	230	230	240	230	235	245	245	252	258	260	270

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IONOSPHERIC DATA AT SYOWA STATION (ANTARCTICA)
ION. ANT. — 39 July 1982—December 1982 (Not for Sale)

昭和基地電離層資料（南極）

（1982年7月—1982年12月）

1987年11月25日 印刷
1987年11月30日 発行
（非売品）

編集兼発行所 郵政省電波研究所
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