

RIOMETER RECORDS OF 30 MHz COSMIC NOISE
AT SYOWA STATION, ANTARCTICA IN 1978

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1. Introduction

Observations of cosmic radio noise with a standard riometer (relative ionospheric opacity meter) at 30 MHz have been carried out at Syowa Station, Antarctica, since February of 1966 by members from the Radio Research Laboratories.

This report includes hourly values and chart records of cosmic noise absorption in the period from January 1 to December 31, 1978. Copies of the data are available to users on request. The request should be addressed to:

Radio Research Laboratories
Ministry of Posts and Telecommunications
2-1, Nukui-Kitamachi 4-chome, Koganei-shi
Tokyo 184, Japan.

2. Location

| Syowa Station | | | |
|---------------|-----------|-------------|-----------|
| Geographic | | Geomagnetic | |
| Latitude | Longitude | Latitude | Longitude |
| 69°00'S | 39°35'E | 69.6°S | 77.1°E |

3. Observers

Kiyoshi IGARASHI (Radio Research Laboratories)
Shigehiko TSUZURAHARA (Radio Research Laboratories)

4. Instrumentation

The receiver of the riometer which has a center-frequency of 30 MHz and a bandwidth of 3.5 kHz is connected to a vertically directed five-element Yagi antenna is designed to match the 50 ohm coaxial transmission line(8D-2V) of 80 meters in length. The elements of the antenna are oriented in the east-west direction.

The noise power output is recorded by a strip chart recorder with a 1 mm/min chart speed, and noise power levels of 1, 2, 3 and 4 dB from a reference noise diode are also recorded once a day for calibration.

5. Remarks

The cosmic noise power level shows a diurnal variation due to the passage of the radio source across the zenith. If the ionosphere is in a quiet state the diurnal variation of the cosmic noise power is easily extracted from the chart recordings. On account of the revolution of the earth, the time(local time) when the same radio source passes the zenith becomes earlier by about 4 minutes each day and returns to its initial state in a year.

The hourly values of ionospheric absorption given in the CNA tables are the deviation (in dB) of cosmic noise intensity from its monthly reference level. The reference level is calculated from selected quiet diurnal variations in the month.

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SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

January 1978

| Date | 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 | | | | | | | | | | 0.2 | | | | | | | | | | | | | | |
| 2 | | | | 0.1 | | | 0.5 | 0.1 | 0.2 | 0.1 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | 0.1 | 0.1 | |
| 4 | 0.3 | 0.2 | 0.1 | | 0.2 | 0.2 | 0.1 | 0.5 | 1.0 | 0.4 | 0.6 | 1.0 | 1.0 | 0.4 | | S | S | | | | 0.1 | 0.1 | | |
| 5 | | 0.6 | | 0.5 | 0.3 | 0.5 | 0.1 | 0.3 | 0.5 | 0.2 | | 0.5 | 0.5 | 0.5 | 0.6 | 0.5 | 0.1 | 0.1 | 0.2 | | 0.1 | 0.7 | 3.2 | 0.1 |
| 6 | | | | | | | 1.7 | 1.1 | 0.2 | 0.3 | 0.2 | | 0.5 | | | | | | | | | | 0.6 | 0.1 |
| 7 | | 0.5 | | 0.2 | | 0.1 | | | | | | | | | | | | | | | | | | |
| 8 | | 0.2 | | 0.3 | 0.2 | 0.5 | | S | S | S | | | | | S | S | | | | | 1.2 | 0.2 | | |
| 9 | | 0.1 | 0.4 | 1.6 | | 0.3 | 0.2 | | | | | | | | | | | | | 0.1 | | | | |
| 10 | | 0.5 | 0.5 | 0.6 | 0.4 | 0.1 | 1.0 | 0.6 | 0.5 | | | | 1.1 | 0.5 | | 0.1 | 0.2 | | | | 0.2 | 0.5 | | |
| 11 | | | | 0.3 | 0.2 | 0.1 | | | | | | | | | | | | | | 0.1 | | | | |
| * 12 | | | | | | 0.2 | | | | | | | | | | | | | | | | | | |
| 13 | 0.5 | 0.1 | 0.2 | 0.6 | | | | 0.3 | | | 0.1 | | | | | | | | | | | 0.1 | | |
| 14 | 0.2 | 0.3 | 0.2 | 0.6 | 0.1 | 0.2 | | | | | | 0.4 | 0.2 | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | 0.2 | | | | | | | | | | | |
| * 16 | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | 0.5 | | 0.1 | | 0.2 | 0.1 | | | | | | | | | | 0.2 | | | | | |
| 18 | | | | | | 0.1 | 0.6 | 0.1 | | | 0.1 | | | | | | | | | | | | | |
| 19 | | | | 0.1 | 0.1 | | 0.3 | | 0.1 | | | | | | | | | | | | | | | |
| * 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 21 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 22 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 23 | | | | | | | | | | | | | | | | | | | | | 0.2 | 0.4 | | |
| * 24 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 25 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 26 | | | | 0.2 | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | 0.1 | | | | 0.1 | | | | | | | | | | | | | | | |
| 28 | | | | | | | | | | | | | | | | | | | | | | | | |
| 29 | 0.5 | | | | 0.2 | 0.5 | | | | 0.2 | 1.2 | 0.1 | | 0.4 | 0.6 | | | | | | | 0.1 | 0.1 | 0.2 |
| 30 | | | | | 0.1 | | | | 0.1 | | 1.2 | 0.8 | 0.8 | 1.2 | 1.0 | 0.6 | 0.1 | | | | | | | |
| 31 | | | 0.1 | 2.2 | 0.5 | 0.5 | 0.2 | 0.6 | 0.1 | 0.1 | 0.5 | 0.3 | 0.4 | | | | 0.1 | 0.5 | 0.2 | | | | 0.1 | 0.1 |
| Mean | 0.04 | 0.08 | 0.05 | 0.25 | 0.07 | 0.10 | 0.15 | 0.12 | 0.09 | 0.08 | 0.12 | 0.10 | 0.15 | 0.10 | 0.07 | 0.06 | 0.02 | 0.01 | 0.01 | 0.01 | 0.07 | 0.06 | 0.13 | 0.01 |

Open spaces without figures correspond to quiet level

* : Quiet day
S : Interference

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

February 1978

| Date | 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 | 0.1 | | | 1.1 | 1.7 | 0.2 | | | 0.6 | 0.1 | 0.4 | 0.2 | | 0.1 | | | | 0.2 | 0.1 | | | | | |
| 2 | | 0.5 | 0.1 | 0.5 | 0.9 | 0.4 | 0.3 | 0.2 | 0.2 | 0.5 | | | | | | 0.6 | | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | | |
| 3 | 0.1 | 0.2 | 0.5 | 0.8 | 1.4 | 0.4 | | 0.3 | | | | | | | | | 0.4 | 0.5 | 0.4 | 0.1 | | | | |
| 4 | | 0.1 | 0.3 | 1.0 | 0.5 | | 1.0 | 0.6 | 0.3 | | | | | | 0.1 | 0.1 | | | | | | | 0.1 | 0.4 |
| 5 | | | 0.1 | 0.1 | | | 0.1 | 1.3 | 0.7 | 0.3 | 0.2 | | | | | 0.1 | | | | | | | | 0.4 |
| 6 | 0.3 | | | | 0.2 | | 0.1 | 0.1 | | | 0.6 | | | | | | | | 0.2 | | 0.1 | 0.1 | | 0.1 |
| 7 | 0.1 | | | | 0.1 | 0.1 | | | | | | | | | | | | | | | | | | |
| 8 | | | | | 0.3 | 0.3 | | 0.4 | | | | | | | | | | | 0.2 | | | | | |
| 9 | | | | 0.3 | | | | | | | | 0.2 | 0.3 | | | 0.4 | 0.4 | | | | | | | |
| 10 | | | | | 0.1 | | 0.2 | | | | | | | | | | | | | | | | | |
| 11 | | | | 0.2 | | | | | | | | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | 0.9 | 0.1 | | | | | | | | | 0.2 | | |
| 13 | | 0.2 | 0.1 | | | | 0.5 | 0.2 | | | S | S | S | S | S | 0.5 | 2.4 | 3.3 | 3.3 | 3.2 | 4.0 | 0.2 | 2.5 | 1.5 |
| 14 | 1.0 | 0.9 | 1.3 | 2.5 | 5.1 | 6.4 | >6.5 | >6.7 | >6.8 | 6.5 | 6.2 | 5.7 | 3.3 | 2.6 | 3.6 | 4.0 | >4.5 | >4.3 | >4.3 | >4.3 | >4.4 | >4.5 | 4.2 | 2.1 |
| 15 | 1.7 | 2.0 | C | C | C | C | C | C | C | C | C | C | C | C | S | 0.4 | 0.1 | | | | | C | C | C |
| 16 | C | C | C | C | C | C | C | C | C | C | | | | | | | | 0.1 | | | | | | |
| 17 | 0.1 | 0.3 | 0.5 | | | | 0.5 | 0.4 | | | | | | | | | 0.4 | | | | | | | |
| 18 | | 0.2 | | 0.2 | 0.5 | | 0.1 | 0.5 | | 0.1 | | 0.6 | | | | | | | 0.8 | 0.2 | | | | |
| 19 | | | | 0.2 | 0.2 | 0.7 | 0.5 | 0.5 | 1.0 | | | | | | | | 0.4 | | | | | | | |
| 20 | | | | 1.2 | 0.6 | | 0.1 | | | | 0.4 | | | | | | 0.5 | 0.8 | 0.7 | | | | | |
| 21 | | | 0.1 | | | | | 0.1 | 0.1 | | | | | | | | | | | | | | | |
| 22 | | | | | | | | 0.1 | 0.1 | 0.1 | | | | | | | | | | | | | | |
| 23 | | | 0.3 | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | 0.7 | 0.3 | | | | | | | |
| 25 | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | 0.1 | | | | 0.2 | | | | 0.2 | | | | | | | | 0.2 | | | | | | |
| 27 | 1.4 | 0.2 | 0.3 | | 0.5 | 3.5 | 0.5 | | 1.3 | 2.0 | 0.5 | 0.6 | | 1.3 | 2.6 | 0.7 | | 0.5 | 0.6 | | | 0.2 | 0.9 | |
| 28 | | 1.3 | 1.3 | 0.2 | | 0.2 | 0.2 | 3.2 | 0.6 | 1.8 | 0.5 | | 0.5 | 0.2 | 1.2 | 0.7 | | 0.6 | | | | | 0.6 | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean | 0.17 | 0.22 | 0.18 | 0.31 | 0.45 | 0.47 | 0.40 | 0.53 | 0.46 | 0.45 | 0.32 | 0.30 | 0.15 | 0.15 | 0.26 | 0.29 | 0.33 | 0.37 | 0.38 | 0.28 | 0.31 | 0.32 | 0.25 | 0.20 |

Open spaces without figures correspond to quiet level

* : Quiet day
 S : Interference
 C : Failure of equipment

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

March

1978

| Date | 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 | 0.5 | 0.3 | 0.2 | | 0.3 | 0.4 | 0.8 | 0.2 | 0.3 | 0.2 | 0.2 | 0.2 | 0.1 | 3.0 | 0.6 | 0.1 | 0.5 | | 0.2 | | | | 0.3 | 1.2 | |
| 2 | 0.4 | | | 0.4 | 0.9 | 0.2 | | 0.2 | 0.1 | 0.6 | | | 2.5 | 0.5 | 0.8 | 0.3 | 0.5 | 0.5 | 0.1 | 0.1 | | | | | |
| 3 | | | 0.6 | | 1.2 | | 0.1 | | 0.2 | 0.5 | 0.5 | 0.1 | | 0.3 | 0.5 | 0.2 | | | | | | 0.2 | | 0.3 | |
| 4 | 1.4 | 0.3 | 0.7 | 0.5 | | 0.1 | | | | | | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | | | | | | | | 0.4 | | | | |
| 6 | | | | | | | | | | | | | | | | | 0.2 | 0.2 | | 0.3 | | | | | |
| 7 | | | | | | | | | | 0.7 | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | C | C | C | C | C | | | | | | | | 0.1 | |
| 9 | | | | | | | 0.2 | | | | | | | | 0.4 | 0.2 | | | | | | | | | |
| 10 | | | | | | | | | | | | | 2.1 | 0.8 | 0.4 | | | | | | | | | | |
| 11 | | | | | | | | 0.2 | | | | 0.1 | | | | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | 0.2 | | | | 0.6 | 0.4 | 0.2 | 0.1 | 0.2 | 0.1 | 0.2 | | 0.2 | | 0.1 | 0.2 | 0.2 | 0.1 | 0.1 | | | |
| 14 | | 0.2 | 0.1 | 0.1 | | 0.6 | | 0.5 | 0.1 | 0.5 | 0.1 | | | | | | | S | 0.7 | 0.1 | 0.5 | 0.1 | | | |
| 15 | | | 0.1 | | | 0.5 | 0.1 | | 0.5 | 1.3 | 0.9 | | 0.2 | | | | | | 0.2 | 0.2 | | | | | |
| 16 | | | 0.2 | 0.7 | | 0.2 | 0.1 | 1.4 | 0.9 | 0.6 | 0.7 | | 0.6 | 0.5 | 0.1 | 0.1 | 0.2 | | | | | | | | |
| 17 | | | 0.4 | 0.4 | 0.5 | 0.1 | 0.1 | | 0.5 | 2.1 | 0.5 | 1.1 | 1.0 | 0.5 | 0.2 | | 0.3 | 0.3 | | 0.2 | | | | 0.1 | |
| 18 | | | 0.7 | 0.4 | 0.5 | 0.6 | 1.3 | 0.5 | 0.2 | 0.1 | 0.6 | 0.3 | 0.2 | 1.6 | 0.3 | 0.6 | 0.2 | 0.2 | 0.6 | 0.2 | | | | | |
| 19 | 0.5 | 0.1 | 0.5 | 0.7 | 0.8 | 0.5 | 0.1 | 2.0 | 0.5 | 0.4 | 0.1 | 0.4 | 0.2 | | | 0.4 | >2.7 | 1.3 | 0.1 | 0.3 | | | | | |
| 20 | | | | | 0.2 | 0.2 | | | | | | | | | | S | S | | 0.5 | 0.3 | | | | | |
| 21 | | 0.3 | | | 0.2 | 0.1 | 0.5 | | 0.2 | 0.2 | 0.2 | | | | | | | | 0.4 | 0.1 | | | | | |
| 22 | | 0.2 | | | | | 0.2 | | 0.3 | 1.0 | 0.2 | | | | | | S | | 0.2 | 0.2 | | | | | |
| 23 | | | 0.5 | | | 0.3 | | | | 0.7 | 0.5 | | | | | | | | 0.4 | | | | | | |
| 24 | | | | | | | 0.2 | | | | | | | | | | | | | | | | | | |
| 25 | | | 0.5 | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | 0.2 | 0.1 | | 0.2 | | | | | | | | | | | | | | | 0.2 | | 0.2 | |
| 27 | 0.2 | | 0.2 | 0.5 | 0.1 | | 1.7 | 2.3 | | 1.5 | >3.7 | 0.5 | | | 0.3 | | | 0.7 | | | | 0.2 | | 0.2 | |
| 28 | 0.2 | 1.0 | 1.2 | 0.2 | 0.2 | 0.2 | 0.5 | 0.8 | 0.1 | | | 0.2 | 2.2 | 0.5 | 0.5 | 0.4 | | 0.2 | | 1.0 | | | | | |
| 29 | | 0.1 | 0.1 | 0.2 | 0.1 | 0.6 | | | | | 1.9 | 0.2 | 0.4 | 0.5 | 0.3 | 1.6 | | 0.4 | 0.1 | | | | | | |
| 30 | | 0.1 | | 0.2 | 0.3 | 0.6 | 0.4 | 0.9 | 1.3 | 1.5 | 0.5 | 0.1 | 1.0 | 1.0 | 0.4 | >2.7 | 1.1 | | | 0.4 | | | | | |
| 31 | | | | | | | | | | | | | | | | | | 0.2 | 0.2 | | | | | | |
| Mean | 0.10 | 0.08 | 0.19 | 0.13 | 0.18 | 0.16 | 0.20 | 0.30 | 0.18 | 0.37 | 0.35 | 0.20 | 0.28 | 0.30 | 0.16 | 0.22 | 0.18 | 0.13 | 0.11 | 0.10 | 0.03 | 0.03 | 0.01 | 0.03 | |

Open spaces without figures correspond to quiet level

* : Quiet day
 S : Interference
 C : Failure of equipment

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

April

1978

| Date | 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 | | 0.2 | 0.4 | | | | 0.5 | 2.0 | 1.5 | 0.2 | 0.8 | 1.2 | 0.2 | | | | | | | | | | | |
| 2 | | 0.2 | 0.5 | 0.1 | 0.2 | 0.2 | 1.0 | 0.7 | | | | | | | | 0.2 | 0.1 | 0.5 | 0.2 | 0.3 | 0.1 | | | |
| 3 | 0.5 | 2.3 | 0.5 | 0.4 | 1.0 | 0.2 | | | 0.5 | 2.0 | 3.0 | 0.3 | 0.1 | 1.1 | 0.1 | | 0.6 | 1.8 | 0.7 | 0.1 | | | | |
| 4 | 1.0 | 0.2 | | 0.1 | 1.7 | 2.0 | 2.5 | 0.1 | 0.7 | 1.0 | | 1.9 | 1.8 | 1.4 | | | | | | | | | | |
| 5 | 0.4 | 0.4 | | 0.8 | 0.1 | | 0.2 | 0.2 | 0.1 | 0.9 | 0.5 | | | | 0.1 | | | | | | | | | |
| 6 | | | | 0.5 | | 0.1 | | 0.1 | 1.0 | 0.4 | 0.1 | | | 0.4 | 0.1 | 0.2 | 1.2 | 0.1 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | |
| 7 | | | | | | | | | | | | | | | | | | | | | | 0.3 | | |
| 8 | | 0.1 | | | | | | | | 0.5 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | 1.5 | | | | | | | | | | | | | | | |
| 10 | | | | | | | | | | | | | | | | S | S | S | | | | | | |
| 11 | | | | 0.1 | | 0.1 | 0.2 | | 0.3 | 0.6 | 0.6 | 0.4 | 0.1 | | | | 0.2 | 0.3 | | | | | | |
| 12 | | 0.6 | 0.2 | 0.2 | 0.1 | | | | | | | 0.6 | 0.4 | | 0.5 | 0.5 | | 0.5 | | | | | | |
| 13 | | 0.6 | | 0.5 | 0.1 | | 1.0 | 0.2 | | | | | | 0.4 | | | | | | 0.4 | | | | 0.2 |
| 14 | | 0.9 | 0.5 | 0.2 | | | | 0.1 | 0.6 | 0.1 | 1.2 | 1.3 | 0.1 | | 0.2 | 1.2 | | | | | | | | 0.5 |
| 15 | 0.3 | | | 0.1 | 2.1 | 0.2 | | 0.7 | 0.1 | 0.1 | | S | 2.1 | 0.5 | 0.1 | 0.6 | 0.8 | 0.5 | 0.9 | | | | | 0.2 |
| 16 | | 0.2 | | 0.2 | 0.7 | 0.5 | 0.2 | 0.1 | 0.5 | | | 0.2 | | | | | 1.5 | 0.9 | 0.5 | 0.4 | | | | |
| 17 | | 0.3 | 0.1 | 0.2 | 0.2 | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | | | 1.7 | 3.0 | | 0.8 | | | | | | | | | | | | | | |
| 19 | | | | | | | | | | 0.9 | | | | | | | | | | | | | | 0.3 |
| 20 | | | | 0.2 | 0.1 | 0.5 | 0.3 | | 0.6 | 0.2 | 0.2 | >2.7 | 1.7 | C | C | C | C | C | C | C | C | C | C | C |
| 21 | 0.4 | 0.1 | | 0.1 | 0.1 | | | | 0.2 | 0.5 | 1.0 | | 0.2 | | | | 0.2 | | 0.6 | 0.7 | | | | |
| 22 | | | | | | | | | 0.2 | | | | | | | | | | | | | | | |
| 23 | | | | | 0.1 | 3.1 | 0.7 | | | | | | | 1.2 | 0.6 | 0.6 | 0.7 | 1.0 | 1.5 | 1.2 | 1.0 | 0.2 | | 0.1 |
| 24 | 0.2 | 0.2 | 0.5 | 1.2 | 0.5 | 0.2 | | 1.7 | 0.5 | 1.0 | 2.0 | 1.6 | 0.1 | 1.5 | | 0.4 | 0.8 | 0.2 | | | | 0.2 | | |
| 25 | 0.1 | 0.5 | 0.5 | 1.0 | 0.4 | 2.2 | 1.5 | 0.5 | 0.6 | 0.7 | 0.1 | 0.2 | 1.7 | 1.3 | 1.0 | 2.2 | 1.1 | 1.0 | | | | | | |
| 26 | | | | | 0.2 | 0.2 | 1.7 | 1.0 | 0.7 | 1.6 | >3.0 | 1.5 | 2.0 | 1.5 | 0.8 | 0.6 | 1.0 | 1.4 | 0.5 | 0.3 | | | | |
| 27 | 0.2 | 0.3 | 0.2 | 0.5 | 0.5 | 0.1 | 0.9 | 0.5 | | 0.2 | 0.1 | 2.0 | | | 0.2 | 1.2 | S | | | | 0.2 | | | |
| 28 | | 0.6 | 0.4 | | | 0.3 | 0.5 | 0.2 | 0.2 | 0.4 | 0.1 | 0.6 | | 1.5 | 1.7 | 0.9 | 0.8 | | 0.2 | | | | | 0.2 |
| 29 | | | 0.2 | 0.4 | 0.5 | | | 0.2 | 0.2 | 1.0 | 1.7 | 2.8 | 2.7 | >2.7 | >2.6 | 2.8 | 2.2 | 0.7 | | 0.2 | | | | |
| 30 | | | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.2 | 1.0 | >3.1 | >3.0 | >2.5 | >2.5 | >2.5 | 2.0 | 2.5 | 1.2 | 0.5 | 1.0 | 1.7 | 0.7 | 0.4 | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean | 0.10 | 0.25 | 0.13 | 0.24 | 0.28 | 0.34 | 0.44 | 0.35 | 0.38 | 0.58 | 0.60 | 0.68 | 0.59 | 0.56 | 0.36 | 0.52 | 0.40 | 0.28 | 0.16 | 0.13 | 0.04 | 0.04 | 0.01 | 0.04 |

Open spaces without figures correspond to quiet level

* : Quiet day
 S : Interference
 C : Failure of equipment

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

May

1978

| Date | 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 | | 0.1 | 0.2 | | 0.2 | 0.2 | 0.4 | 0.6 | 2.5 | >2.7 | >2.5 | >2.5 | >2.5 | >2.5 | >2.5 | >2.5 | >2.5 | 1.1 | 0.2 | | | | 0.2 | 0.3 |
| 2 | 0.4 | 1.0 | 0.2 | 0.2 | 0.6 | 2.3 | 0.2 | 0.2 | 0.3 | 1.0 | >2.5 | 1.5 | 1.7 | 2.5 | 2.7 | 2.0 | 1.6 | 0.6 | 0.2 | 0.2 | | | | |
| 3 | | 1.3 | 1.1 | 1.3 | 0.5 | 0.1 | 0.5 | 2.5 | 0.9 | >2.9 | 1.6 | 2.0 | >2.5 | 1.5 | 1.0 | 0.7 | 0.5 | 0.3 | | | | 0.8 | 0.2 | 2.1 |
| 4 | 0.8 | 0.2 | 0.7 | 0.2 | | | 0.9 | | 1.5 | >3.1 | 2.8 | | 0.2 | 1.2 | 0.1 | 0.1 | 0.1 | 0.3 | | | | 0.2 | 0.2 | 0.2 |
| 5 | | 0.3 | 0.1 | | | | | | | | | | | | | 0.1 | 0.1 | 0.2 | | 0.2 | 0.2 | | | |
| * 6 | 0.3 | 0.1 | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | 0.5 | | | | | 2.0 | >2.5 | >2.5 | >2.5 | >2.5 | 2.5 | 1.5 | 0.6 | 0.2 | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | 0.5 | 0.5 | | 0.3 | 0.1 | >3.0 | >2.7 | 0.2 | 0.5 | 0.4 | 0.1 | | 0.1 | | | | | | |
| * 10 | | | 0.2 | | | | | | | | | | | | | | | | | | | | | |
| 11 | | 0.2 | | 0.7 | 0.5 | | 0.1 | 3.7 | >3.0 | 1.6 | >2.5 | 1.6 | 1.2 | 0.9 | 1.3 | S | 0.4 | 0.1 | | | | 0.2 | 0.1 | 0.1 |
| 12 | 0.5 | 0.5 | 0.6 | | | 0.2 | 0.9 | 1.0 | 1.2 | 2.5 | 2.2 | 2.0 | >2.7 | 1.7 | 2.4 | 1.5 | 0.3 | 1.2 | S | | | | 0.1 | 1.0 |
| 13 | 0.2 | 0.5 | | 0.2 | 2.5 | | | | | | | | | | | | | 0.2 | 0.5 | 0.4 | 0.2 | | | |
| 14 | | 0.3 | 0.1 | | 0.1 | | 0.4 | | | 0.1 | | 0.4 | 0.2 | 0.4 | 0.2 | | | | | | | | | |
| * 15 | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 17 | | | | | | | | | | 0.5 | 1.0 | | | | | | | | | | | | | |
| 18 | 0.2 | 0.1 | 0.2 | | | 0.1 | | 1.0 | 0.2 | | | | | | 0.1 | 0.1 | | | | | | | | |
| * 19 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 21 | | | | | | | | 0.5 | | | | | | | | | | | | | | | | |
| 22 | 0.2 | 0.3 | | 0.3 | | | 0.2 | | 0.5 | | 0.5 | | | 0.1 | 0.3 | 0.6 | 0.2 | | | | | 0.1 | | |
| 23 | | | 0.6 | | | | | 1.2 | 0.2 | 0.4 | 0.5 | 0.4 | 0.4 | | | 0.6 | 1.0 | | 0.2 | 0.2 | | | | |
| 24 | | 0.2 | | 0.3 | 1.0 | | | | | 0.5 | 0.4 | 0.5 | 3.0 | 2.0 | 2.0 | 0.5 | 0.4 | 0.1 | 0.1 | | | | | |
| 25 | | 0.5 | | 2.2 | 0.6 | 0.7 | 0.7 | 1.0 | 1.0 | 0.5 | 0.9 | 2.5 | 1.8 | 1.5 | 1.3 | 0.9 | 0.6 | 0.5 | 0.5 | | | | | |
| 26 | | 0.5 | 0.4 | 0.2 | | 0.7 | 0.7 | | | 0.5 | 1.5 | 1.0 | 0.2 | | 1.0 | 1.1 | 0.7 | 0.2 | 0.4 | 0.1 | | | | |
| 27 | | | | | | 0.5 | 0.2 | | 0.4 | | 0.9 | 0.9 | 0.5 | 0.2 | | | 0.4 | | | | | | | |
| 28 | | 0.1 | 0.2 | 0.2 | | | | | | | | | | | 1.7 | 1.3 | | | | | | | | |
| 29 | | | 0.1 | | 0.5 | | | | | | | | | | | | | | 0.3 | 0.1 | | | | |
| 30 | | | | | 0.6 | 3.5 | 0.5 | 1.0 | | 0.4 | | 0.6 | 1.0 | 0.3 | 0.2 | | 0.2 | 0.4 | | | | | | |
| 31 | | | 0.2 | 0.2 | | | | | 0.5 | 0.7 | 0.1 | | | | | 0.5 | | 0.5 | 0.3 | | | | | |
| Mean | 0.08 | 0.20 | 0.15 | 0.19 | 0.24 | 0.28 | 0.20 | 0.40 | 0.40 | 0.62 | 0.81 | 0.68 | 0.66 | 0.57 | 0.63 | 0.45 | 0.30 | 0.19 | 0.08 | 0.03 | 0.01 | 0.04 | 0.02 | 0.11 |

Open spaces without figures correspond to quiet level

* : Quiet day
S : Interference

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

June 1978

| Date | 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 | | | | | | | | | | | | | | 1.0 | 0.5 | | | | C | C | C | C | | |
| 2 | | | | | 1.2 | | | | | 0.5 | 0.4 | 0.8 | 0.6 | | 1.0 | 0.2 | | | 0.5 | 0.5 | | | | 0.2 |
| 3 | | | 0.2 | 0.2 | | | | | 0.5 | 0.7 | 0.2 | 0.5 | 1.0 | | | 0.5 | | 0.2 | 0.3 | 0.1 | | | | |
| 4 | | C | | | | 0.5 | 0.4 | 0.6 | 0.5 | 0.7 | | | 0.5 | 0.5 | 0.4 | 1.4 | | 0.8 | 1.5 | 0.3 | 0.1 | | | 0.3 |
| 5 | 0.2 | 0.2 | 0.4 | 0.5 | | >4.0 | 0.9 | >3.1 | >3.0 | 0.8 | 1.7 | 1.5 | 0.8 | >3.0 | >3.1 | 2.7 | 2.0 | 0.6 | 0.9 | 0.7 | | 0.1 | 0.2 | |
| 6 | 0.3 | | 0.2 | 0.3 | 0.1 | | | | | | | | | | | 1.5 | 0.7 | 0.5 | 0.3 | 0.2 | | | | |
| 7 | | 0.1 | 0.2 | 0.5 | 0.1 | 0.1 | | | 0.6 | 1.5 | 2.9 | 1.0 | | | 1.0 | 2.0 | 0.5 | 0.7 | 0.2 | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 |
| 8 | | 0.4 | 0.2 | 0.7 | 0.6 | | 1.7 | 0.7 | 0.7 | 1.1 | 1.9 | 1.0 | 0.2 | | | | | | | | | | | |
| 9 | | | | | | | | 0.1 | 0.5 | | | | | | | | | | | | | | | |
| 10 | | | | | 0.1 | 0.1 | 0.1 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.5 | 0.2 | 1.7 | 0.8 | 0.7 | 0.1 | 0.1 | | | | | |
| 11 | | 0.1 | 0.2 | 0.3 | | 0.2 | 0.2 | 1.1 | 0.2 | 1.0 | 0.5 | 2.2 | 1.8 | 0.6 | 0.7 | 0.7 | 0.7 | 0.4 | 0.5 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| 12 | | | | | | | | | | | | | 0.1 | 0.2 | 0.2 | 1.2 | 1.6 | 0.9 | 0.3 | | | | | |
| 13 | | | | 0.2 | 0.3 | 0.5 | | | | 0.3 | 0.4 | 0.4 | 0.4 | 1.5 | 1.7 | 1.3 | 0.3 | | 0.4 | 0.5 | | | | |
| 14 | | | | | | | | 0.2 | | | | | | | | | | | | | | | | 0.2 |
| 15 | | | 0.1 | | | 0.5 | | | 0.3 | 0.2 | | 0.4 | 2.4 | 1.0 | 0.8 | | 0.3 | | | | 0.1 | 0.3 | 0.1 | |
| 16 | | | | | | | | | 0.1 | 0.1 | | | | | | | | | | | 0.1 | | | |
| 17 | | | | | 0.1 | 0.2 | 0.2 | 0.2 | 0.2 | 0.6 | 0.4 | 0.4 | 0.4 | | 1.3 | 1.2 | 1.0 | 0.7 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | |
| 18 | | 0.2 | 0.1 | 0.4 | | | | | S | S | | 1.0 | 0.3 | | | | 0.7 | 0.7 | | | | | | |
| 19 | | | | | | 0.2 | 0.3 | | 0.3 | 1.0 | 2.2 | 1.9 | 0.7 | 0.5 | 0.7 | | 0.7 | 0.4 | 0.2 | | | | | |
| 20 | 0.2 | 0.4 | 0.7 | 0.1 | | 0.5 | | 0.2 | 0.6 | 1.2 | 0.2 | | | 0.5 | 0.7 | 0.2 | 0.6 | 0.5 | 0.3 | 0.3 | 0.2 | 0.2 | | |
| 21 | | | 0.3 | 0.1 | 0.5 | 0.3 | 0.6 | 0.5 | 1.5 | 0.7 | 1.2 | 1.2 | 0.5 | 0.3 | 0.2 | 0.1 | 0.5 | 0.5 | 0.2 | 0.2 | | 0.2 | 0.1 | 0.2 |
| 22 | | 0.3 | 0.2 | 3.1 | 1.6 | 0.6 | 1.9 | 1.0 | 1.0 | 1.0 | 1.4 | 0.5 | 1.0 | 0.5 | 0.2 | 2.0 | 1.2 | 0.3 | 0.5 | 0.3 | 0.2 | | | |
| 23 | | 0.1 | 0.2 | 0.3 | 0.7 | 0.8 | 0.4 | 0.6 | 0.2 | 0.2 | 0.1 | 0.1 | 1.2 | 2.5 | 1.4 | 1.4 | 1.0 | 0.7 | 0.2 | 0.2 | | | 0.2 | |
| 24 | | 1.3 | 0.8 | 0.3 | 0.2 | 0.4 | 0.5 | 1.0 | | 0.4 | 0.9 | 2.9 | 0.3 | 0.4 | 0.9 | 1.0 | 0.5 | 1.5 | 1.4 | 0.3 | | | | |
| 25 | 0.2 | 0.2 | 0.6 | 0.4 | | 0.2 | 1.0 | 0.8 | | | | 0.7 | 3.5 | 2.0 | | 0.1 | 0.1 | 0.2 | 0.1 | 0.4 | 0.2 | 0.2 | 0.2 | |
| 26 | 0.3 | 0.3 | 0.2 | 0.5 | 0.5 | 0.1 | 0.4 | | 0.7 | 3.0 | 1.5 | 0.9 | 0.9 | 0.2 | 0.4 | | 0.4 | 0.1 | | | 0.1 | 0.3 | 0.3 | |
| 27 | | | 0.4 | | | | | 0.6 | 0.2 | 0.2 | 0.2 | 0.8 | 0.7 | 0.7 | 0.1 | | | 1.0 | 0.5 | | | | | |
| 28 | | | | 0.1 | 0.2 | | | | 0.4 | 0.5 | 0.5 | | 0.1 | 2.2 | 1.7 | 1.2 | 1.0 | 0.7 | 0.1 | | | | | |
| 29 | | | | | | | | | | 0.1 | | 0.2 | | 0.5 | | 0.2 | 0.3 | 0.3 | | | | | | |
| 30 | 0.4 | 1.0 | 0.5 | | | | | | | | 1.7 | 0.7 | 0.1 | 0.5 | 1.6 | 0.2 | 0.1 | 0.2 | | | | | 0.4 | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean | 0.05 | 0.15 | 0.18 | 0.26 | 0.20 | 0.30 | 0.28 | 0.37 | 0.38 | 0.52 | 0.62 | 0.65 | 0.60 | 0.62 | 0.67 | 0.66 | 0.49 | 0.35 | 0.30 | 0.20 | 0.05 | 0.06 | 0.05 | 0.05 |

Open spaces without figures correspond to quiet level

* : Quiet day
 S : Interference
 C : Failure of equipment

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

July

1978

| Date | 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 | | | | | | 0.1 | | | | | | | | | | | | | | | | | | |
| * 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 3 | | | 0.1 | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | 0.1 | 1.0 | 0.9 | 0.5 | | | | | | 0.4 | | 0.2 | | | | | | | 0.2 | | | |
| 5 | | | 0.9 | 0.8 | 0.2 | 0.5 | 0.1 | 0.3 | >3.0 | 3.0 | 0.4 | >3.0 | 1.0 | 0.8 | 0.8 | 0.5 | 1.2 | | 0.2 | 0.2 | 0.2 | | 0.1 | |
| 6 | | | | | | | | | | 0.2 | | | | | | | 0.5 | 0.4 | 0.4 | | | | 0.1 | |
| 7 | | | | | 0.5 | 1.0 | 0.4 | | | | | | | | | 0.5 | 0.9 | 0.2 | | 0.5 | 0.2 | | | |
| 8 | | | | | 0.4 | 0.4 | 1.3 | 1.2 | | 0.1 | 1.8 | 2.5 | 1.4 | | 0.1 | 0.1 | | 0.1 | | | | | | |
| 9 | 0.1 | 0.1 | 0.2 | | | | | | | | | | | | | | | | | | | | | |
| 10 | | | | | | | | 0.3 | | | | | 0.6 | 0.5 | 0.5 | 0.9 | 1.0 | 0.9 | | 0.2 | | | | 0.1 |
| * 11 | | | 0.1 | | | | | | | | | | | | | | | | | | | | | |
| * 12 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 13 | | | | | | | | | | 0.2 | | 1.2 | 1.0 | | | | | | | | | | | |
| 14 | | | | 0.5 | 0.1 | 0.2 | | 0.6 | 0.1 | 1.0 | 1.0 | 0.4 | 0.2 | 0.9 | >2.8 | 3.1 | | | | | | | | |
| * 15 | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | 0.6 | 0.2 | | | | | | | | | | | | | | | | | 0.2 | |
| 17 | | | | | | 0.5 | | | | | | | | | 0.5 | 0.3 | | | | | | | | |
| 18 | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | | 0.2 | | | 0.4 | | | | 0.3 | | | | | | 0.5 | 0.3 | 0.2 | | | | | | | |
| 20 | | | | | | | | 0.2 | | | 0.2 | | 0.4 | 0.6 | 0.1 | 0.1 | | | | | | | | |
| 21 | | | | 0.2 | 0.5 | | | | | | | | | 0.6 | 0.1 | 1.1 | 0.6 | | | | | | | |
| 22 | | | | | | | | | 0.2 | 0.4 | | 0.2 | 0.5 | 0.1 | 0.2 | 0.6 | 0.4 | | | 0.1 | | | | 0.1 |
| 23 | 0.2 | | | | | | | 0.6 | 0.1 | 1.0 | | 0.9 | 0.5 | | | | | | | | | | | |
| 24 | | 0.2 | 0.2 | | | | | | | | | | | | | | | C | C | C | C | C | C | C |
| 25 | | 0.1 | 0.5 | | | 0.2 | | | 0.5 | 0.2 | | | | | | | | | | | | | | |
| 26 | | 0.2 | 0.1 | 0.3 | | 0.2 | | | | | | | | | | | | | | | | | | |
| * 27 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 28 | | | | | | | | | 0.7 | | 0.1 | | | | | | | | | | | | | |
| * 29 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 30 | | | | | | | | | | | | | | | | | | | | | | | | |
| * 31 | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean | 0.01 | 0.02 | 0.07 | 0.09 | 0.11 | 0.12 | 0.05 | 0.10 | 0.15 | 0.19 | 0.11 | 0.27 | 0.18 | 0.11 | 0.19 | 0.24 | 0.15 | 0.05 | 0.02 | 0.03 | 0.01 | 0.01 | 0.01 | 0.01 |

Open spaces without figures correspond to quiet level

* : Quiet day

C : Failure of equipment

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

August 1978

| Date | 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 | | | | | | | 0.1 | | | | | | | | | C | C | C | C | C | C | C | C | C |
| 2 | C | C | C | C | C | C | C | C | C | C | C | C | C | C | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | | | | 0.5 | 0.5 | 0.1 | | 0.1 | 0.5 | 0.2 | 1.0 | 0.9 | 0.1 | | 2.5 | 1.5 | 0.4 | | | 0.1 | | | | |
| 5 | | | | | | | 0.1 | 0.5 | 0.5 | | | >2.1 | >2.1 | 2.0 | 1.0 | 0.5 | 1.7 | 0.5 | 0.2 | | | | | 0.3 |
| 6 | | | | 0.1 | 0.5 | 0.2 | | 0.5 | 0.4 | | 1.4 | 1.9 | 2.1 | 1.5 | 0.5 | 0.1 | 0.5 | 0.7 | | | | 0.1 | | |
| 7 | | | | 0.7 | 0.4 | | | | | | | 0.2 | 0.2 | | | | | | | | | | | |
| 8 | | 0.2 | 0.2 | | | | | | | | | | 0.5 | 0.5 | | | 0.4 | 0.2 | | 0.4 | 0.2 | | 0.3 | 0.1 |
| 9 | | | | | | | | | 0.2 | 0.3 | | 0.2 | | 1.0 | 0.2 | 0.1 | | | | | | | | |
| 10 | | | | | | | | | | | | | 0.5 | 1.5 | 0.9 | 0.1 | 0.1 | | | | | | | |
| 11 | | | | | 0.1 | 0.5 | 0.2 | | | 0.5 | 1.0 | 0.1 | | | | | | | 0.1 | | | 0.1 | | |
| 12 | | | | | | 0.5 | 0.1 | 0.7 | 0.6 | 0.2 | | 3.0 | 1.7 | 0.1 | | 1.7 | 1.7 | 1.0 | 0.2 | 0.1 | 0.1 | | 0.1 | |
| 13 | | | | | | | 0.3 | 0.2 | | | | 1.0 | 0.5 | 0.4 | 1.5 | 2.2 | 0.5 | 1.0 | 0.2 | | | 0.1 | 0.1 | |
| 14 | 0.4 | | | 0.8 | 0.4 | | | | | 1.2 | 0.5 | | | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | 0.2 | 0.1 | 0.1 | 0.1 | | | | | |
| 18 | | | | | 0.5 | 0.5 | | 0.1 | 0.2 | | | | | | | | | | | | 0.1 | 0.2 | | 0.2 |
| 19 | | | 0.5 | | 0.3 | | | | | | | 0.6 | 0.5 | 0.3 | 0.3 | 0.3 | | 0.2 | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | | | 0.2 | 0.3 | 0.2 | 0.1 | | | | | | | | | | | | | | | | | | |
| 23 | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | | | | | | | | | | | | | | | 0.1 | | 0.1 | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | | | | | | | 0.2 | 1.9 | | | | | 0.3 | | 0.2 | | | | | | | | | |
| 28 | | 0.1 | 0.1 | 0.6 | 0.5 | 0.6 | 0.5 | 1.0 | 0.6 | 2.1 | | | | 0.5 | 0.2 | 0.6 | 0.1 | | | | | | | |
| 29 | 0.1 | 0.5 | 0.6 | 0.3 | | >3.0 | 0.5 | 0.2 | 0.9 | 1.1 | 0.7 | 1.6 | 3.8 | 1.1 | 0.5 | 1.9 | 0.2 | | 1.3 | 0.2 | | | | 0.2 |
| 30 | | 0.1 | 0.5 | | 0.1 | 0.5 | 0.4 | 0.7 | 0.4 | 0.7 | 0.6 | 2.0 | 1.2 | 0.5 | 0.8 | 3.0 | 1.6 | 0.4 | 0.1 | | | | | |
| 31 | 2.0 | 0.5 | 0.1 | | 3.2 | | 0.5 | 0.5 | 0.1 | 0.1 | 0.7 | 0.7 | 2.3 | 3.0 | 2.1 | 1.2 | 1.0 | 0.7 | | | | | | 0.1 |
| Mean | 0.08 | 0.04 | 0.07 | 0.11 | 0.22 | 0.20 | 0.09 | 0.21 | 0.14 | 0.21 | 0.19 | 0.45 | 0.53 | 0.42 | 0.34 | 0.46 | 0.34 | 0.18 | 0.09 | 0.02 | 0.01 | 0.02 | 0.01 | 0.02 |

Open spaces without figures correspond to quiet level

* : Quiet day
C : Failure of equipment

SYOWA STATION

45° EAST MERIDIAN TIME (U.T.+3 hours)

September 1978

| Date | 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 | 0.2 | | | 0.5 | 0.4 | 0.9 | 0.7 | 1.0 | 1.0 | 0.5 | 0.7 | >3.4 | 2.4 | 0.6 | 0.4 | | 1.2 | 0.8 | 0.5 | | 0.1 | | | |
| 2 | 0.5 | | 0.6 | 0.5 | 0.2 | 0.2 | 0.4 | 0.4 | | 0.2 | 0.5 | >3.5 | 1.6 | 1.0 | 0.5 | | 2.3 | 1.0 | 0.7 | 0.4 | 0.1 | | 0.1 | |
| 3 | 0.1 | 0.6 | 0.5 | 0.1 | 0.2 | 0.1 | | 0.2 | 1.2 | 1.7 | 2.0 | 1.1 | 0.9 | | | 0.5 | 0.4 | 0.5 | 0.1 | 0.5 | 0.5 | 0.2 | | |
| 4 | | | 0.2 | 0.5 | | | | | 0.7 | | | 0.5 | 2.0 | 0.6 | | | 0.3 | 0.1 | 0.2 | | 0.1 | | | |
| 5 | | 0.2 | | | | | | | | 0.2 | 0.6 | | | | | | | | | | | | | |
| 6 | | | | | 0.7 | 0.5 | | | | 0.5 | 1.1 | 0.3 | | 1.0 | 0.8 | 0.2 | 0.3 | 0.2 | 0.1 | | | | | |
| 7 | | | | | | | | 0.5 | 1.0 | 0.6 | 0.1 | | | | | 0.5 | | | | | | | | |
| 8 | | | | 0.1 | | | 0.2 | | 0.5 | 0.4 | 0.5 | 0.1 | 0.6 | 0.3 | 0.2 | | | | | | | | | |
| 9 | | | | | | | | | 0.1 | | | | 1.3 | 2.8 | 1.2 | | 0.5 | | 0.1 | | | | | |
| 10 | | | | 0.5 | | | | | | | | | | | | | | 0.4 | 0.2 | | 0.1 | 0.1 | | |
| 11 | | | | 0.1 | | | | | | | | | | | | | | | 0.3 | | | | | |
| 12 | | | | | | | 0.5 | 0.5 | | 0.4 | | | 0.9 | 1.1 | 1.6 | 0.4 | 0.7 | 0.2 | | 0.4 | | | | |
| 13 | | | | 0.5 | | | | | | | 0.5 | | | 1.0 | 0.5 | 0.5 | | | | | | | | |
| 14 | | | | | | | | | | | | | 0.2 | | | | | | | | | | | |
| 15 | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | | | | 0.2 | | | | | 0.6 | 0.1 | | | | | | | | | | | | | | |
| 17 | | | | | | | | | 1.1 | 0.3 | | | 0.2 | | 0.1 | 0.5 | 0.1 | 0.2 | | | | | | |
| 18 | | | 0.1 | | | | | | | | | | | | | | | S | | | | | | |
| 19 | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | 0.1 | | | | | | | 0.1 | 0.5 | 0.8 | | | | | | | | | | | | | | |
| 22 | | | | | | | 0.5 | | | | | | 0.6 | 0.2 | 0.5 | | | | | | | | | |
| 23 | | | | 0.1 | | | | | | | | | | | | | 2.0 | >4.4 | 4.3 | 1.6 | | | | |
| 24 | | 0.5 | | C | C | C | C | C | C | C | C | C | >3.7 | >4.0 | >4.2 | >4.6 | >5.0 | >5.3 | >5.3 | >6.1 | 2.4 | 1.7 | 1.6 | 1.5 |
| 25 | 1.7 | 1.6 | 1.5 | 1.4 | 1.2 | 1.4 | >3.0 | >3.0 | >3.2 | >3.3 | >3.3 | 3.5 | 2.9 | 3.0 | 3.2 | >4.6 | 5.3 | 5.3 | 4.8 | 4.0 | 2.2 | 1.5 | 1.4 | 1.2 |
| 26 | 0.9 | 0.9 | 0.9 | 1.0 | 0.7 | 0.8 | 1.9 | 2.5 | 2.6 | 3.1 | >3.5 | 1.6 | 3.3 | 1.0 | 0.8 | 0.6 | 0.5 | 1.0 | 1.7 | 1.5 | 0.5 | 0.4 | 0.3 | 0.2 |
| 27 | 0.5 | 0.2 | | 0.2 | 0.2 | 0.5 | 0.6 | 2.0 | 0.5 | 1.5 | 1.0 | 1.0 | 0.1 | 1.0 | 0.2 | 0.5 | 0.5 | 0.7 | | | | | | |
| 28 | 0.5 | 0.1 | 2.7 | 0.5 | 0.4 | 0.1 | | | 1.2 | 0.8 | 1.0 | 3.2 | 0.5 | 1.0 | 0.5 | 1.0 | 0.4 | 0.7 | S | S | S | S | S | C |
| 29 | C | S | S | S | 0.2 | | | 1.0 | 1.0 | 0.6 | 0.5 | | | 0.1 | | | | | | | | | | |
| 30 | | | | | | | | | | 0.5 | 3.4 | 1.6 | 1.5 | 1.6 | 0.8 | | | | | | 0.1 | | | |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean | 0.15 | 0.13 | 0.21 | 0.21 | 0.14 | 0.15 | 0.26 | 0.38 | 0.52 | 0.53 | 0.64 | 0.68 | 0.75 | 0.64 | 0.51 | 0.48 | 0.65 | 0.69 | 0.61 | 0.48 | 0.20 | 0.13 | 0.11 | 0.10 |

Open spaces without figures correspond to quiet level

* : Quiet day
 S : Interference
 C : Failure of equipment

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

October 1978

| Date | 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 | | | 0.2 | 1.0 | 0.7 | 1.0 | 1.0 | 0.1 | 0.7 | | 0.6 | 1.5 | | | 0.8 | 0.3 | 0.2 | | 1.0 | 0.1 | | | | |
| 2 | | 1.5 | 0.7 | 0.7 | 0.2 | 0.2 | 0.5 | 1.0 | 0.5 | 0.1 | | | 0.3 | | 0.1 | 0.1 | | | 0.4 | 0.1 | | | | |
| 3 | | | | 0.4 | | 0.5 | | | | 0.1 | 1.0 | 0.2 | | | 0.4 | | | 0.3 | | | | | | |
| 4 | 0.2 | 0.2 | 1.2 | 0.7 | 0.8 | 0.9 | 0.3 | | 0.5 | 0.4 | 1.0 | 0.2 | | 1.2 | | 0.5 | 0.5 | | 0.9 | C | C | | | |
| 5 | | | | 0.2 | | 0.3 | 0.3 | 0.3 | | | | | | | C | | 0.2 | | | | | | | |
| 6 | | | | | | | 0.1 | | | 0.1 | | | | | S | S | S | S | S | S | S | S | S | S |
| 7 | S | S | S | S | S | S | S | S | S | S | S | S | S | | S | S | S | S | S | S | S | S | S | S |
| 8 | | | | | | | | | | 0.2 | S | S | S | | S | S | S | S | S | S | S | S | S | S |
| 9 | | | | | | | | | | | | | | 0.2 | S | S | S | S | S | S | S | S | S | S |
| 10 | | 0.2 | 0.1 | 0.2 | S | S | S | S | S | S | S | S | S | S | S | S | 0.6 | | 0.2 | S | S | S | | 0.1 |
| 11 | 0.2 | S | | | | 1.0 | S | S | S | | | S | S | S | S | S | S | S | S | S | S | S | 0.2 | |
| 12 | | S | S | | | | | | | | | | | 0.2 | 0.2 | | 0.2 | 0.2 | 0.3 | 0.5 | 0.1 | | | |
| 13 | | 0.3 | 0.2 | 0.5 | 0.5 | 0.2 | 0.1 | | | | S | S | S | S | S | S | S | | | | | | | |
| 14 | | | | | | | | S | S | | | | S | S | S | | | | | | | | | |
| 15 | | | | | | | | | | | | | S | 0.5 | | | 0.1 | | | 0.4 | | | | |
| 16 | | | | | 0.2 | 0.3 | | | | | | | | | | | | | | | | | | |
| 17 | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | | | | | 1.4 | 0.2 | 0.4 | 0.2 | 0.2 | 2.5 | 0.7 | 0.5 | | | 0.1 | 0.1 | 0.2 | | | 0.1 | | | | |
| 19 | | | | | | | | | | | 1.0 | 1.0 | 0.7 | 0.5 | 0.7 | 0.4 | 0.2 | | 0.5 | | | | | 0.1 |
| 20 | 1.0 | | 0.6 | 0.7 | 0.8 | 0.1 | 0.3 | 0.8 | | | | | | C | C | 0.7 | | | | | | | | |
| 21 | | | | C | | | 0.1 | | | 0.5 | | | 0.1 | 1.3 | 1.8 | 0.8 | | | | 0.1 | | | | 0.1 |
| 22 | | 0.3 | 0.3 | 0.8 | 0.9 | 0.5 | 0.3 | 0.7 | 0.5 | | 1.0 | 0.5 | 0.2 | 1.0 | 0.5 | 0.2 | 0.7 | | | 0.1 | 1.0 | | | |
| 23 | | 0.1 | 0.2 | 0.3 | 0.2 | | | 0.5 | | | | | 0.9 | C | S | S | S | S | S | S | S | S | | |
| 24 | | | | | | 0.1 | 0.2 | | | | | | | | | | | S | S | S | S | S | | |
| 25 | | 0.1 | 0.2 | 0.1 | | | | | | | | | C | C | C | C | C | C | C | | | 0.1 | | |
| 26 | | | | | | | | | | | | | C | C | | | | | | | | | | |
| 27 | 0.5 | | 0.5 | 0.1 | 0.6 | 0.2 | 0.5 | 0.2 | | 0.5 | 0.2 | 0.2 | 0.2 | C | S | 0.1 | | | | | | | | |
| 28 | S | | 0.2 | | | | | 0.1 | 0.1 | | 0.6 | 0.4 | 1.0 | 0.3 | | | | | | | | 0.5 | | |
| 29 | | | | 1.5 | 0.1 | | | | | | | 0.2 | 0.2 | | 0.1 | | | | | | | | | |
| 30 | | | | | | | | | 0.2 | 0.1 | 0.2 | 0.1 | 0.8 | 1.1 | 0.2 | 0.1 | 0.3 | | 0.2 | | | | | 0.2 |
| 31 | | | | | | | 0.1 | | | | | | | | 0.2 | 0.2 | | | | | | | | |
| Mean | 0.06 | 0.08 | 0.14 | 0.24 | 0.20 | 0.17 | 0.13 | 0.12 | 0.08 | 0.14 | 0.20 | 0.15 | 0.15 | 0.18 | 0.16 | 0.12 | 0.15 | 0.01 | 0.11 | 0.04 | 0.05 | 0.01 | | 0.01 |

Open spaces without figures correspond to quiet level

* : Quiet day
 S : Interference
 C : Failure of equipment

SYOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

November 1978

| Date | 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 | | | | 0.7 | | | | | | 0.2 | 0.1 | 0.3 | 0.2 | 0.1 | 0.7 | 0.8 | | | 0.1 | | | 0.1 | | |
| 2 | | 0.1 | | | | | | | | | | | | S | | 0.2 | 0.2 | | | | | | | |
| 3 | | | | | | | | | | | | | 0.1 | 0.3 | | | | | | | | | | |
| 4 | | | | 0.5 | 0.1 | | | | | | 0.3 | | | | | | | | 0.2 | | | | | |
| 5 | C | C | C | 0.1 | 0.2 | 0.3 | 0.5 | 0.8 | | 0.1 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | | | | | | | C | C | C | C | C |
| 8 | C | C | C | C | C | 0.2 | | | | | | | C | C | C | C | C | C | C | C | C | C | C | C |
| 9 | | 0.1 | 0.1 | | | 0.2 | | | | | | | | | | | | | | | | | | |
| 10 | | | 0.2 | | | | | | | | | | | | | | | | | | 0.2 | | | |
| 11 | | | 0.1 | | | | | | | | | | | | | | | | | | | 0.2 | | |
| 12 | | | | 0.2 | 0.2 | 0.2 | 0.7 | 0.4 | | | 1.0 | | | | 0.1 | 0.1 | | | | | | | | |
| 13 | 0.5 | 0.5 | | 0.2 | 0.2 | 0.5 | | | 0.3 | 0.9 | 0.5 | 0.2 | 0.1 | 0.2 | 0.3 | | 0.5 | | | | 0.1 | 0.2 | 0.2 | |
| 14 | 0.5 | | 1.2 | 0.1 | | | | | | | | | | | | | | | | | | | | |
| 15 | | | | | | 0.2 | 0.1 | 0.2 | | | | | | | | | | 0.1 | 0.1 | | | | | |
| 16 | | 0.2 | | | 0.2 | 0.2 | | | | | | | | | | | | | | | 1.0 | 0.5 | | 0.5 |
| 17 | 0.5 | | | 0.4 | 1.0 | 0.1 | | | | | | | 0.3 | 0.9 | | | | | 0.5 | 0.2 | | | | |
| 18 | 0.6 | 0.6 | 0.1 | | 0.2 | | | | | | | | | | | | | | | | | | | |
| 19 | | 0.2 | | | | | | | | | | | | | | | | 0.2 | 0.3 | | | | | |
| 20 | | 0.1 | | | | | | | 0.2 | 0.1 | | | | 0.2 | | | 0.2 | 0.3 | | | 0.1 | | | |
| 21 | | | | | 1.2 | 0.2 | | | | 1.0 | 0.4 | | 0.5 | 0.8 | 0.1 | | | | | | | | | |
| 22 | | 0.7 | 0.7 | 0.2 | | | | 0.1 | 0.5 | 0.5 | 0.3 | 0.1 | 0.2 | 0.8 | 0.1 | | 0.1 | 0.2 | | 0.1 | | | | |
| 23 | | | | 0.6 | | 0.1 | | | | | | | | | | | | | | | | | | |
| 24 | 0.6 | 0.5 | | 0.9 | 1.1 | 0.9 | 0.2 | | | | | | | | | | | | | 0.2 | | | 1.6 | 0.3 |
| 25 | | | | | | | 0.2 | 0.4 | 0.6 | 1.0 | 0.5 | | 0.2 | 0.4 | | 0.5 | 0.1 | | | | | | | |
| 26 | | | | | | 0.1 | | | 0.2 | 0.3 | 1.0 | 0.2 | 0.5 | C | C | | 0.5 | | | | | | | 0.4 |
| 27 | | 3.5 | 0.7 | | 0.2 | | | 0.1 | 0.1 | 0.9 | 0.5 | 0.1 | 0.1 | 0.7 | 0.2 | | | | | | | | | 0.2 |
| 28 | 0.7 | 0.5 | | 0.7 | 0.8 | 0.4 | 0.5 | 0.5 | 0.2 | | | | | | | | | | | | | | | |
| 29 | 0.1 | | | | | | | | | | | | | | | | | | | | 0.1 | | | |
| 30 | | | | | | 0.1 | | | | | | | | | | | | | | | | | 0.2 | 1.2 |
| 31 | | | | | | | | | | | | | | | | | | | | | | | | |
| Mean | 0.12 | 0.25 | 0.11 | 0.15 | 0.18 | 0.12 | 0.07 | 0.08 | 0.07 | 0.16 | 0.15 | 0.03 | 0.07 | 0.15 | 0.05 | 0.05 | 0.05 | 0.04 | 0.03 | 0.04 | 0.03 | 0.01 | 0.07 | 0.08 |

Open spaces without figures correspond to quiet level

* : Quiet day
 S : Interference
 C : Failure of equipment

SVOWA STATION

45° EAST MERIDIAN TIME (U.T. + 3 hours)

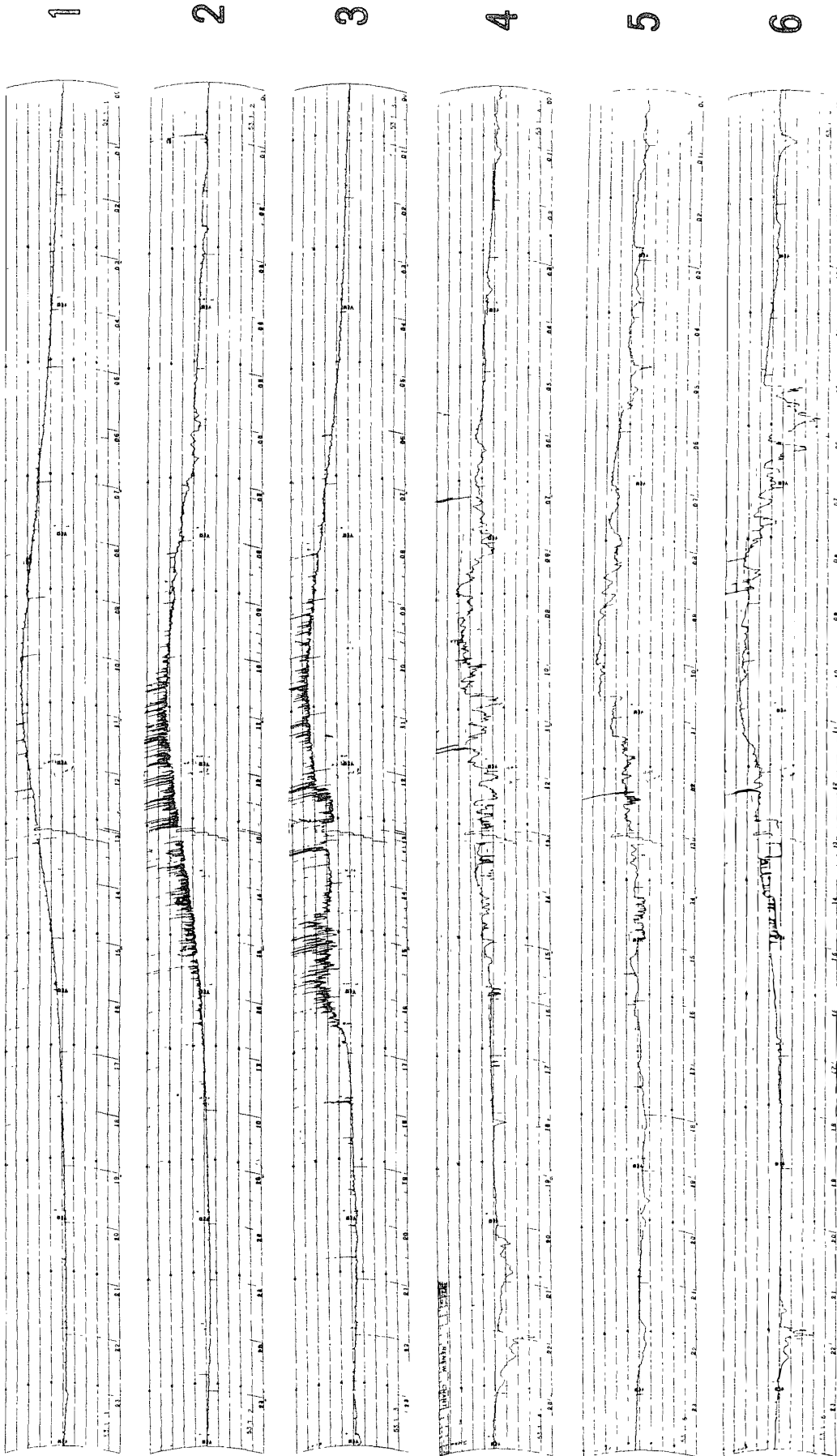
December 1978

| Date | 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 | 0.6 | 0.2 | | 0.3 | | | 0.4 | 0.6 | 0.1 | | | | 0.3 | 0.2 | | 2.3 | 1.3 | | | | | | | |
| 2 | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | | | 0.7 | 0.1 | | | | | | 0.2 | | | | | | | | | | | | 0.5 | 0.1 | |
| 4 | | 0.3 | 0.1 | | | | | | | | | | | | | | | | | | 0.1 | | | |
| 5 | 0.2 | 0.5 | | | 0.2 | | 0.2 | 0.1 | | | | | | | | | | | | | | | | |
| 6 | | 0.5 | | | | | | | | | | | | | | | | | | | | | C | C |
| 7 | C | 0.5 | | | | | | | | | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | | | | C | | | | | | | |
| 10 | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | | | | | | | | | | | S | S | S | S | | | | | | | | | | |
| 12 | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | | | | | | 0.9 | | 0.2 | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | 0.5 | 0.1 | | | 0.9 | 0.1 | | | 0.3 | 0.3 | | | | | | |
| 15 | | | | | | | | | | 1.2 | | | | | | | 0.3 | 0.3 | | | | | | |
| 16 | | 0.4 | 0.6 | 0.5 | 0.4 | | | 0.2 | 0.1 | | | | | | | | 0.4 | 0.2 | | | | 0.1 | | |
| 17 | | | | 0.1 | 0.2 | | | | | | | 0.4 | 0.4 | 0.3 | | | | | | | | | | |
| 18 | | | | 0.1 | | | | | | | | 0.2 | 0.4 | 0.4 | 0.6 | 0.2 | | | | | | | | |
| 19 | 0.5 | | | 0.5 | 0.6 | 0.4 | 0.1 | 0.2 | 0.4 | 0.8 | 0.1 | 0.2 | 0.4 | 0.4 | 0.6 | 0.2 | | | | | | | | |
| 20 | 0.4 | 0.1 | 0.2 | 1.4 | 0.5 | 1.5 | 0.6 | | 0.4 | 0.7 | 0.1 | 0.2 | 1.3 | 0.7 | 0.5 | 0.2 | | | | | | | | |
| 21 | 0.2 | | | 1.5 | 1.3 | 0.1 | | 0.5 | 0.1 | | | 0.2 | | | | | 0.1 | | | 0.1 | 0.3 | | 0.5 | |
| 22 | | | 0.1 | 2.0 | | | 1.0 | 1.2 | 1.5 | | | | | | | 0.2 | 0.2 | 0.7 | 0.1 | 0.1 | 0.2 | | | |
| 23 | | | 0.3 | 0.5 | | 0.4 | 0.5 | 0.5 | 0.1 | | 0.1 | 0.3 | | | | S | S | S | | | | | | |
| 24 | | | | | | | | | 0.3 | | 0.4 | | | | | S | S | S | 0.7 | 0.5 | | | | |
| 25 | | | | | | 0.6 | 0.2 | 0.2 | | | | | | 0.3 | 0.1 | 0.1 | 0.2 | | | | | | | |
| 26 | | | | | | | | | | | | | 0.2 | 0.1 | 0.1 | | | | | | | | | |
| 27 | | 0.1 | 0.2 | 0.1 | 0.2 | 0.2 | 0.5 | | 0.2 | 0.2 | 0.2 | | | | | | | | | | | | | |
| 28 | | | | | | 0.2 | 0.2 | 0.4 | | | | | | | | | | | | | | 0.1 | | |
| 29 | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | 0.5 | | 0.2 | 1.0 | 0.1 | | 0.2 | 0.2 | 1.6 | 0.2 | | | | | 0.2 | 0.5 | 0.1 | | 0.6 | 0.1 | | | | 0.2 |
| 31 | 0.2 | 0.1 | | 0.1 | 0.5 | | | | | 0.1 | 0.5 | 0.5 | | | | | | | | | | | | 0.1 |
| Mean | 0.08 | 0.08 | 0.07 | 0.26 | 0.11 | 0.15 | 0.12 | 0.13 | 0.17 | 0.11 | 0.04 | 0.06 | 0.05 | 0.08 | 0.05 | 0.13 | 0.11 | 0.06 | 0.03 | 0.01 | 0.01 | 0.01 | 0.03 | 0.01 |

Open spaces without figures correspond to quiet level

* : Quiet day
 S : Interference
 C : Failure of equipment

JAN 1978



24 20 16 12 08 04 00

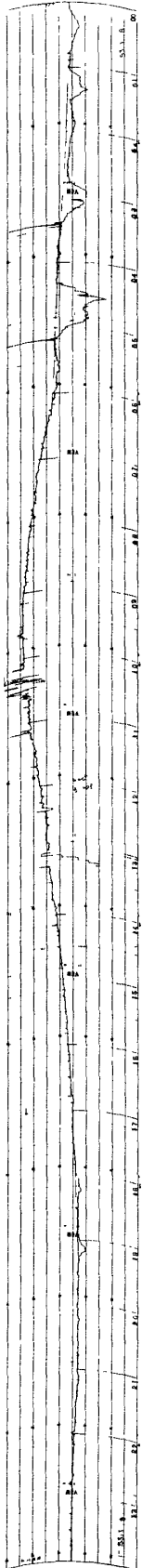
45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

JAN 1978

7



8



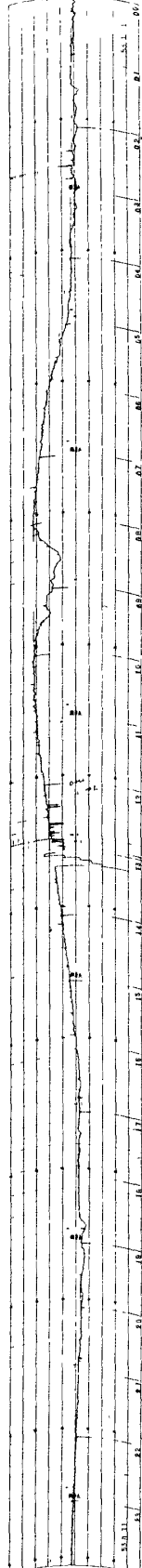
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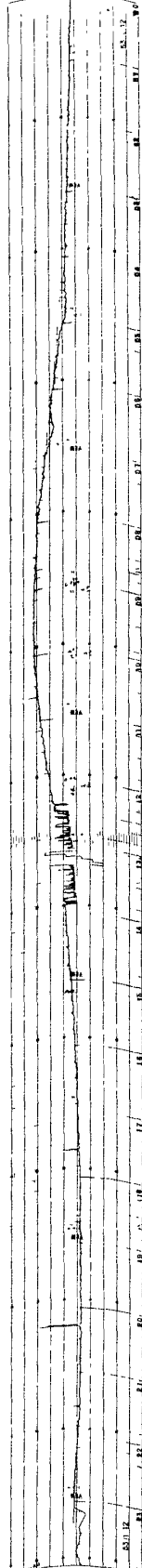
10



11



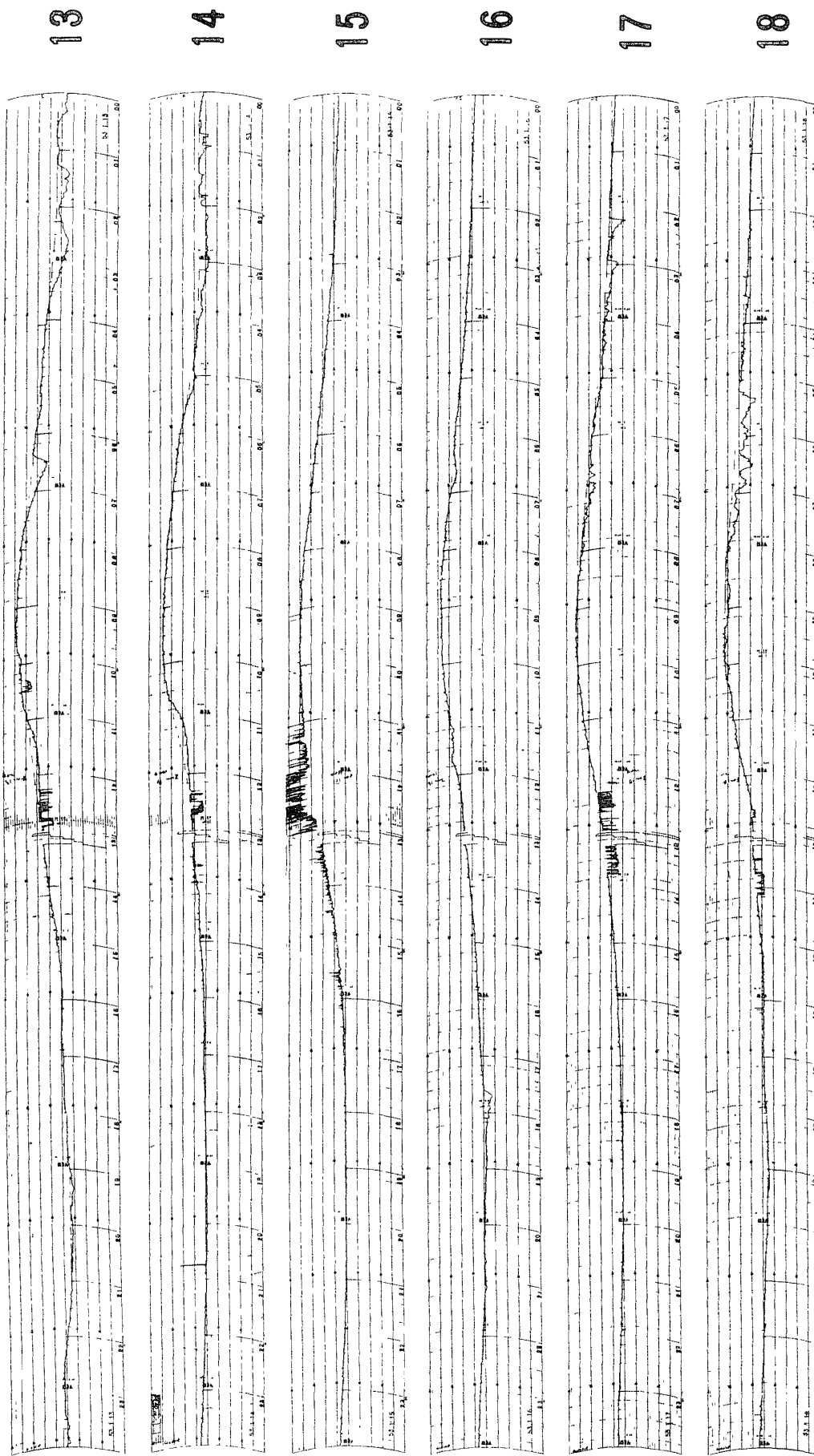
12



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

JAN 1978

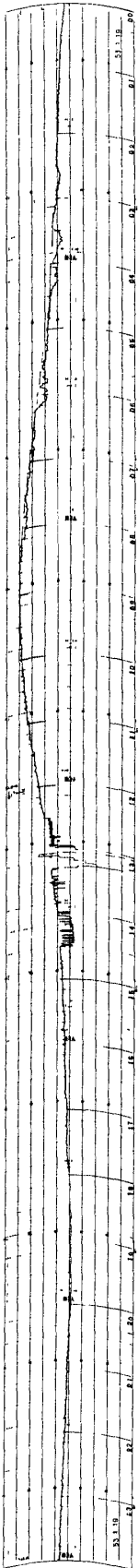


24 20 16 12 08 04 00

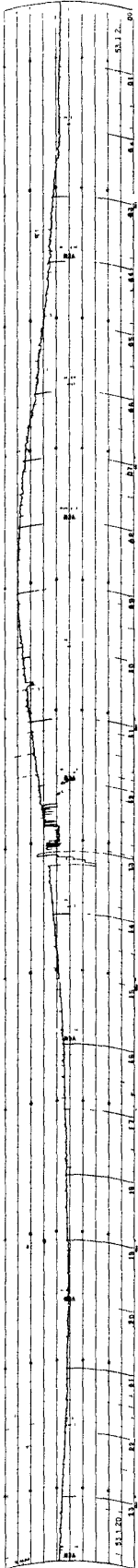
45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

JAN 1978

19



20



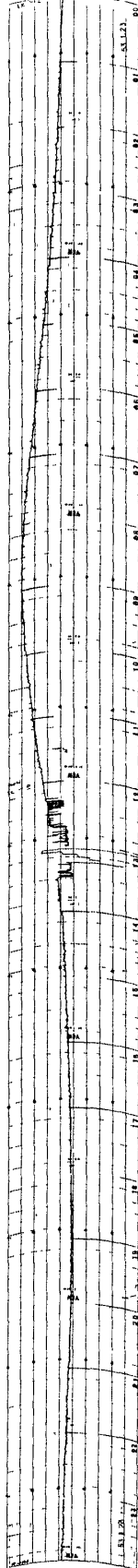
21



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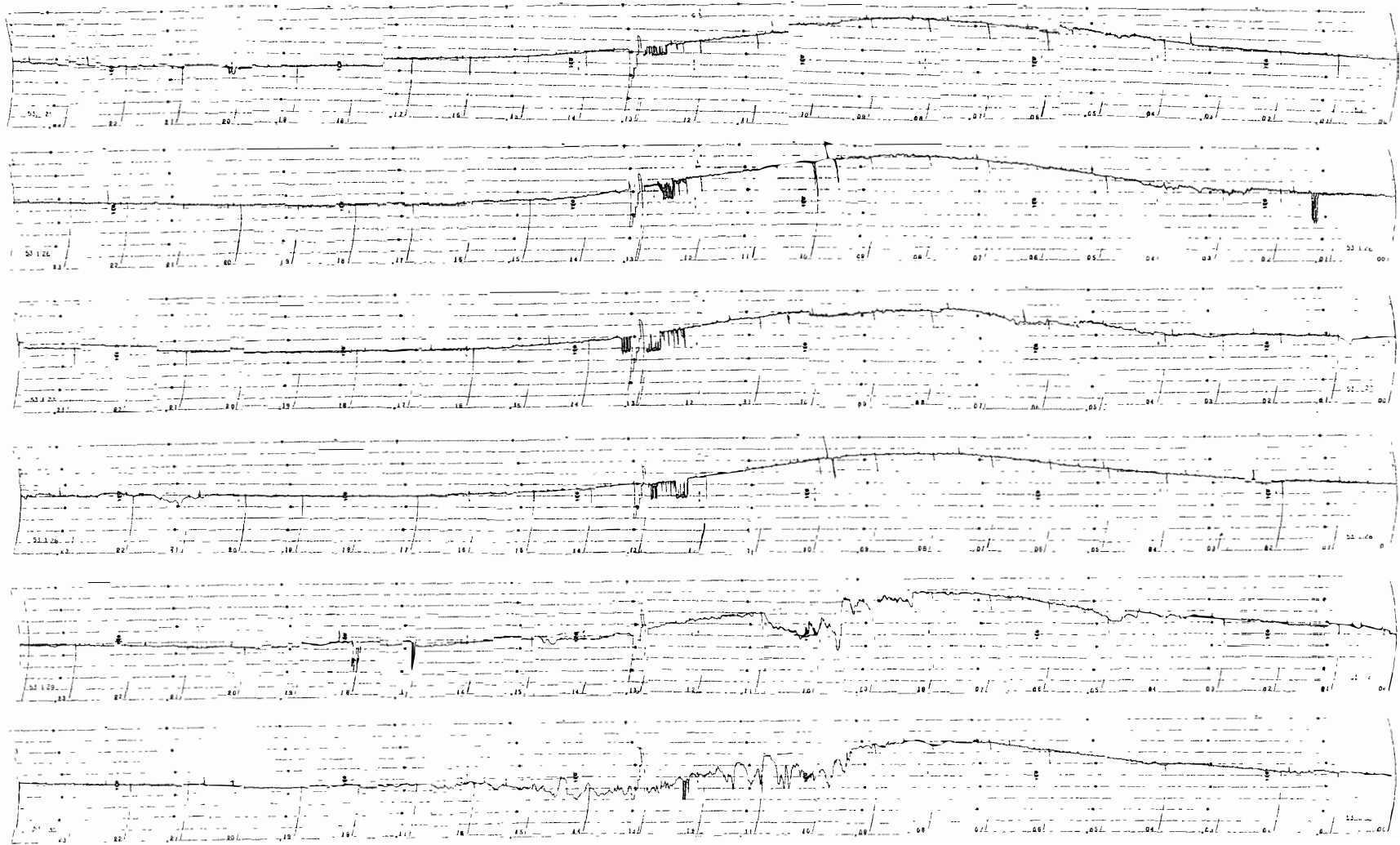
24



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

JAN 1978



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24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

JAN 1978

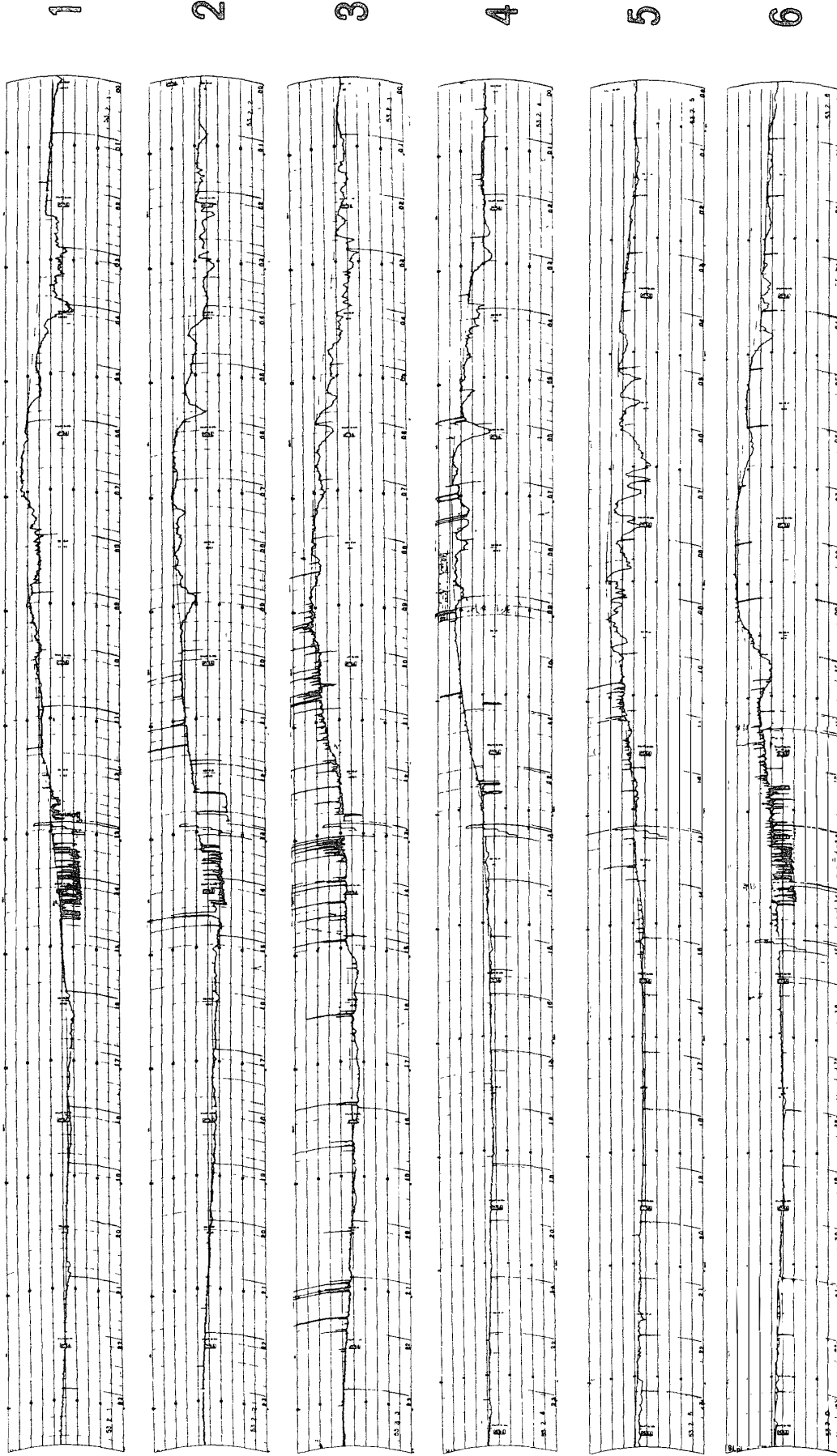
31



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

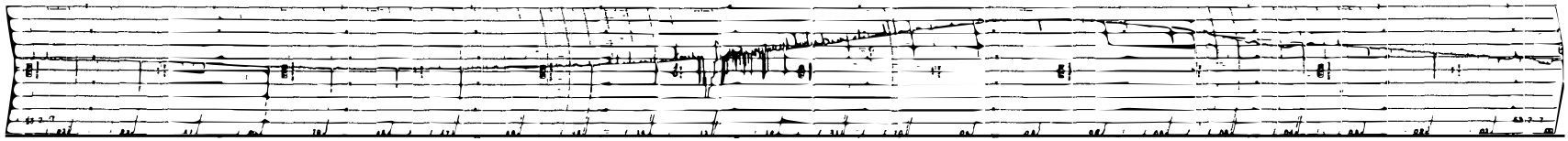
FEB 1978



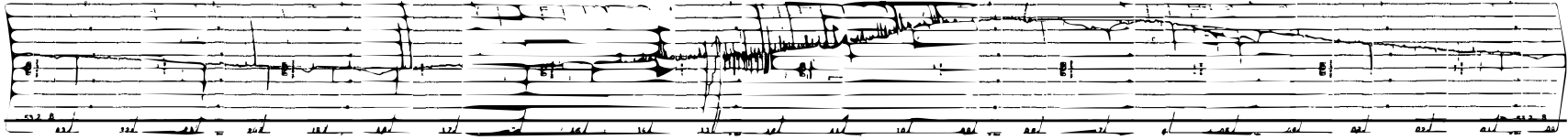
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

FEB 1978



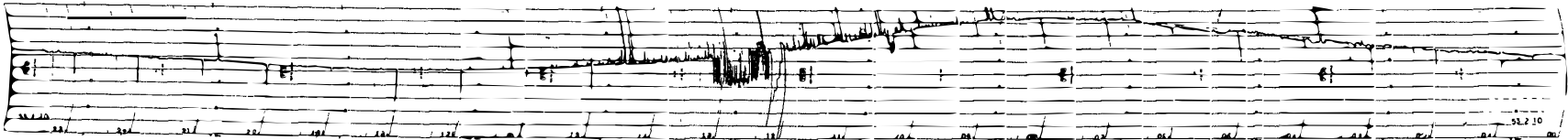
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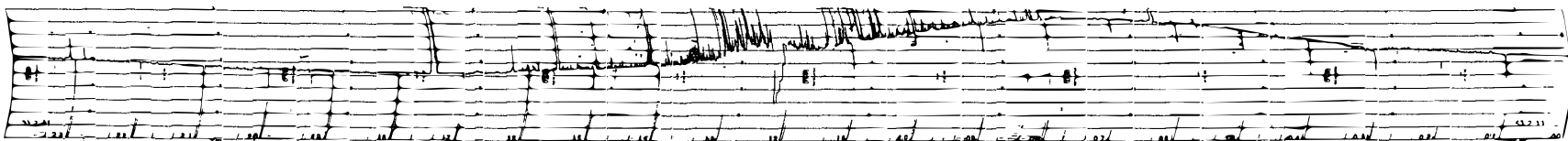
8



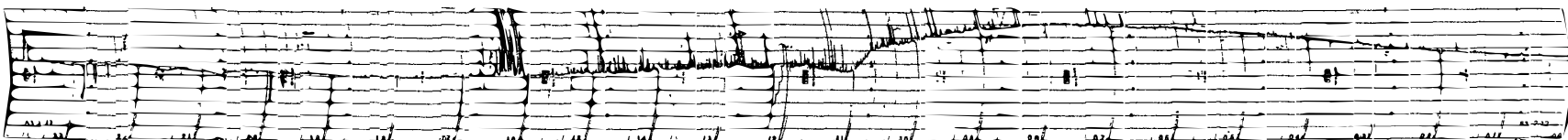
9



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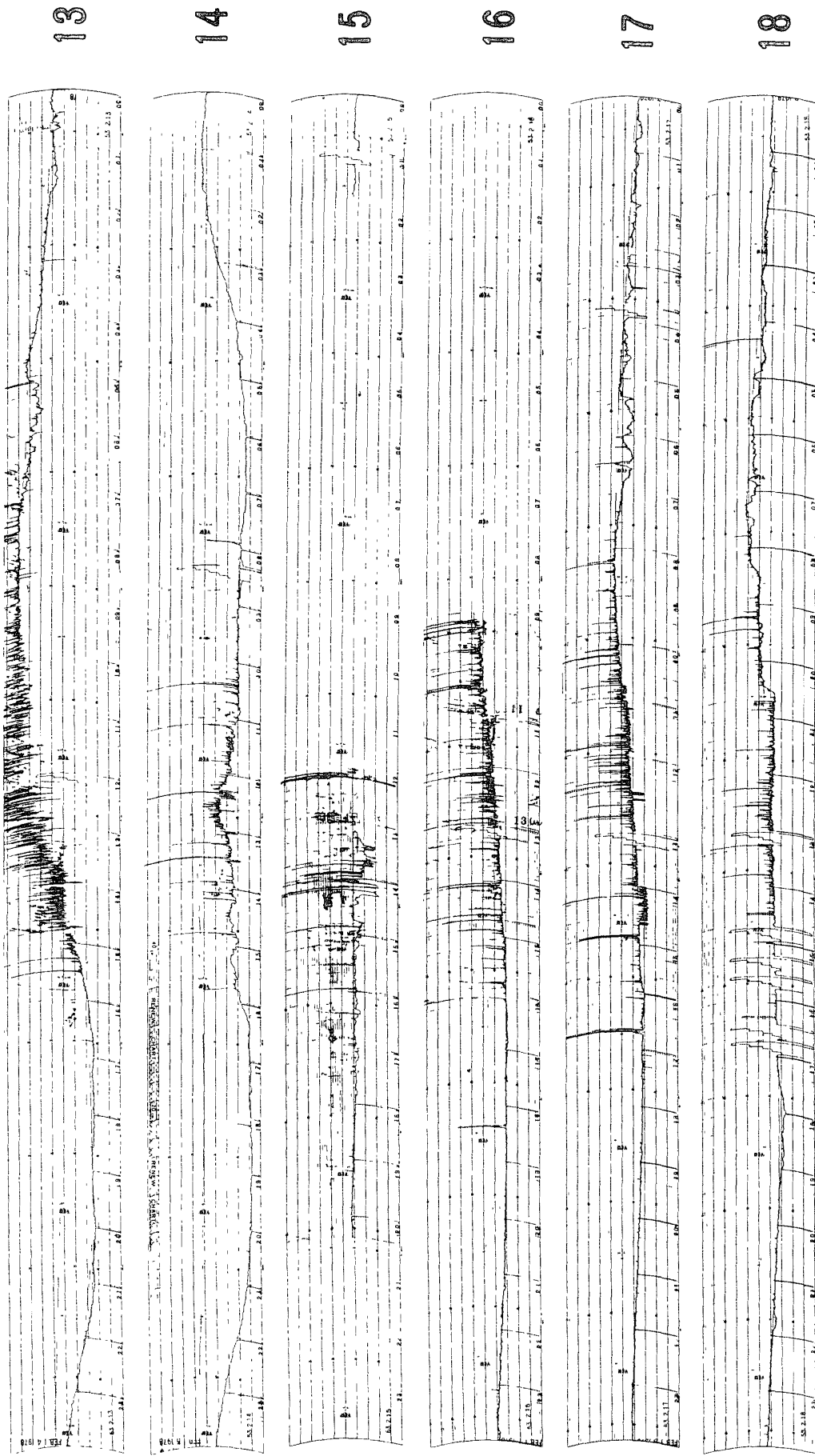
12

24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

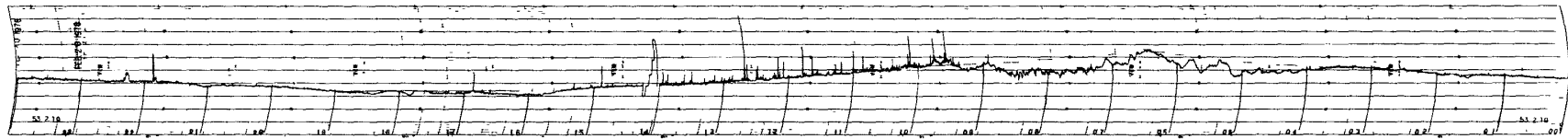
FEB 1978



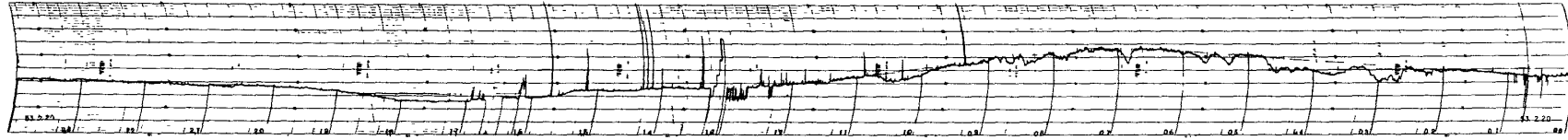
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

FEB 1978



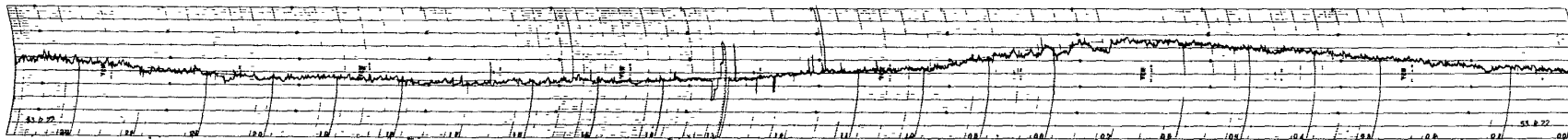
19



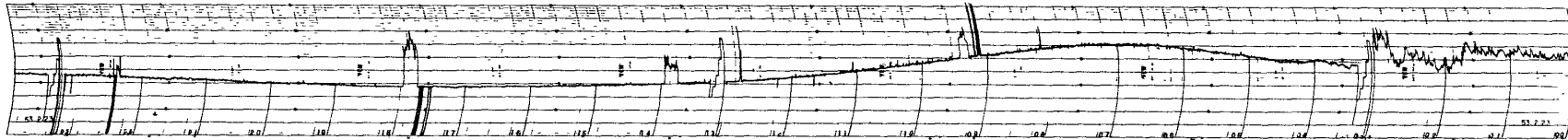
20



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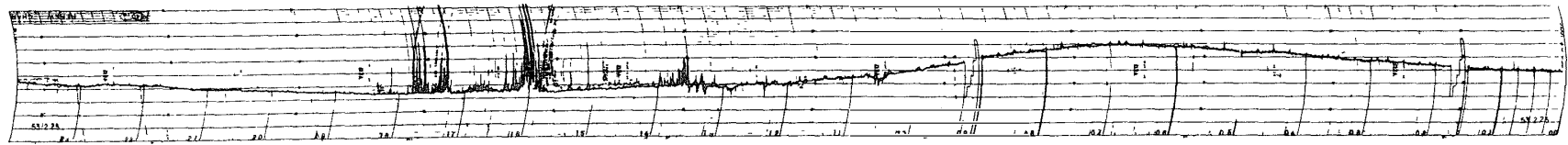
- 25 -

24 20 16 12 08 04 00

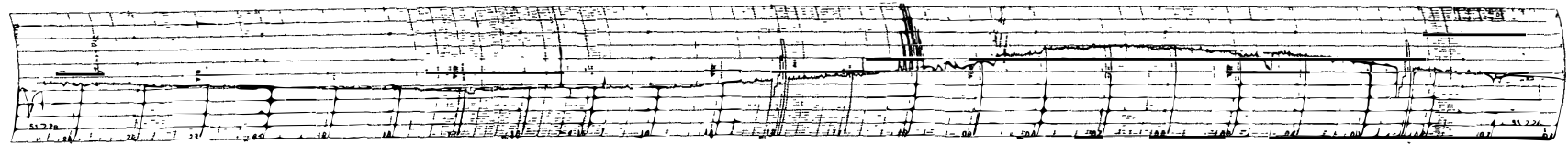
45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

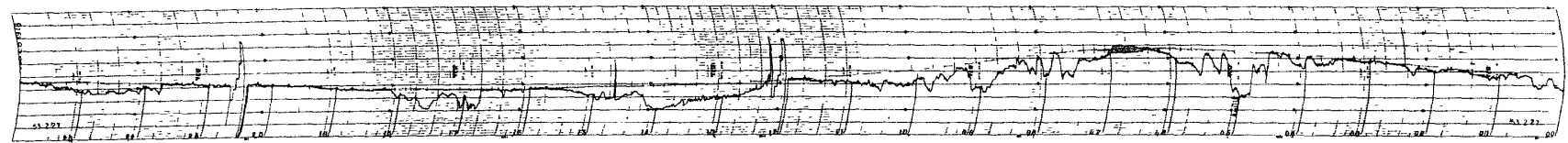
FEB 1978



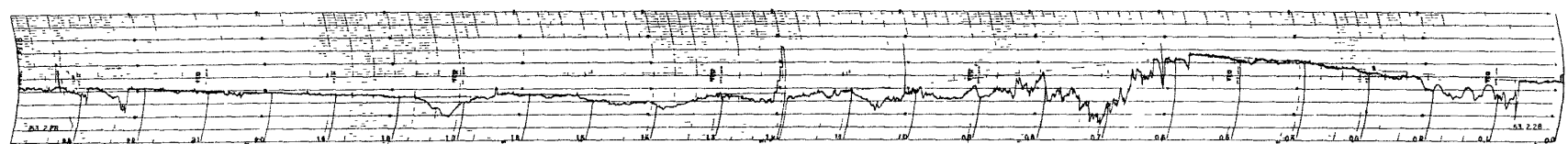
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- 26 -

24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

Cosmic noise level obscured or equipment malfunction.

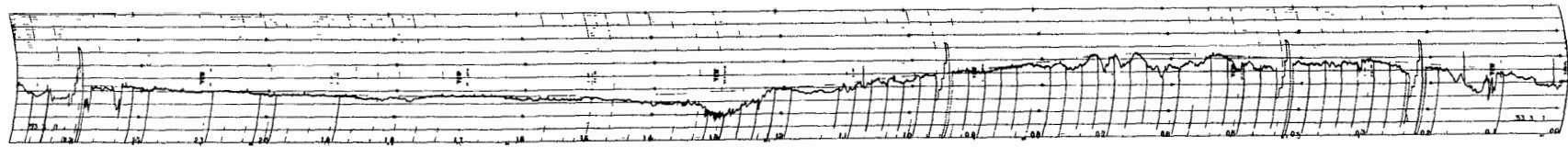
February 15 0200 - 1200 failure of equipment

15 2021 -

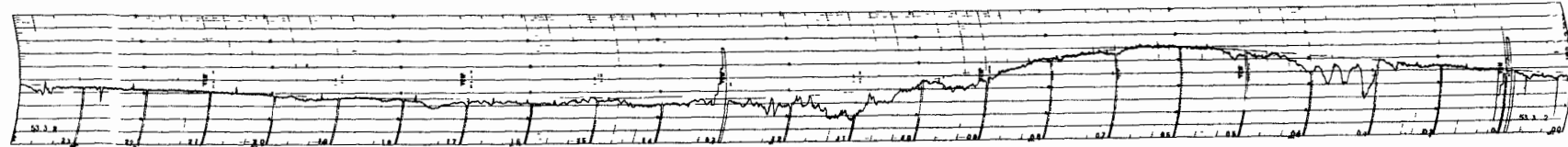
16 0820

"

MAR 1978



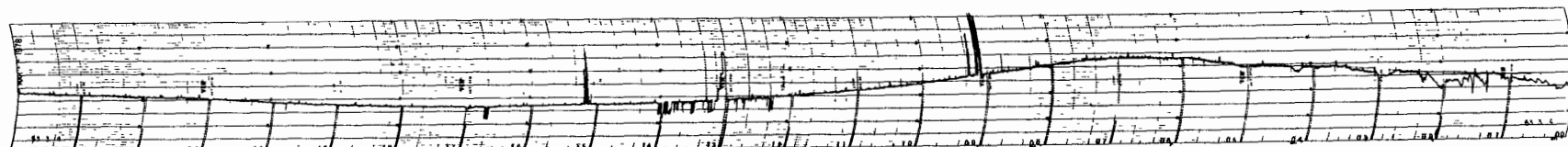
1



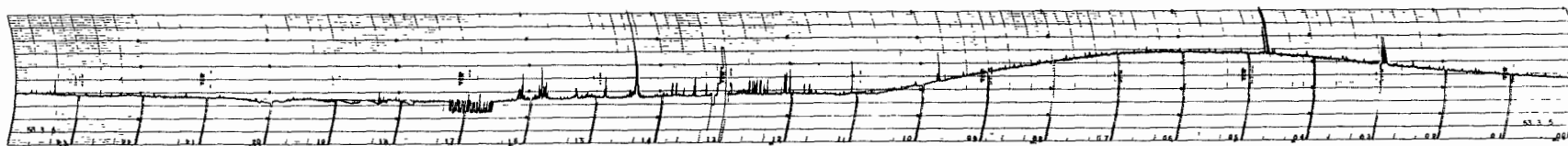
2



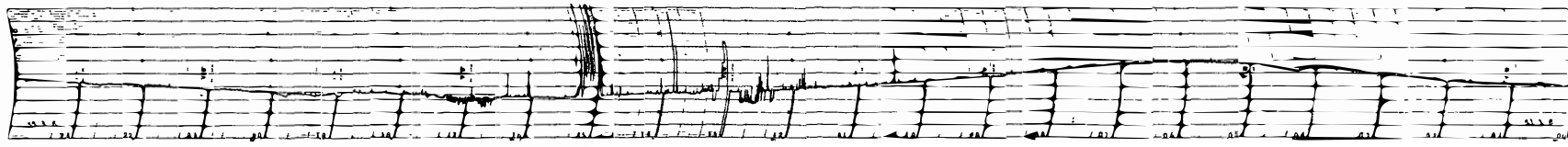
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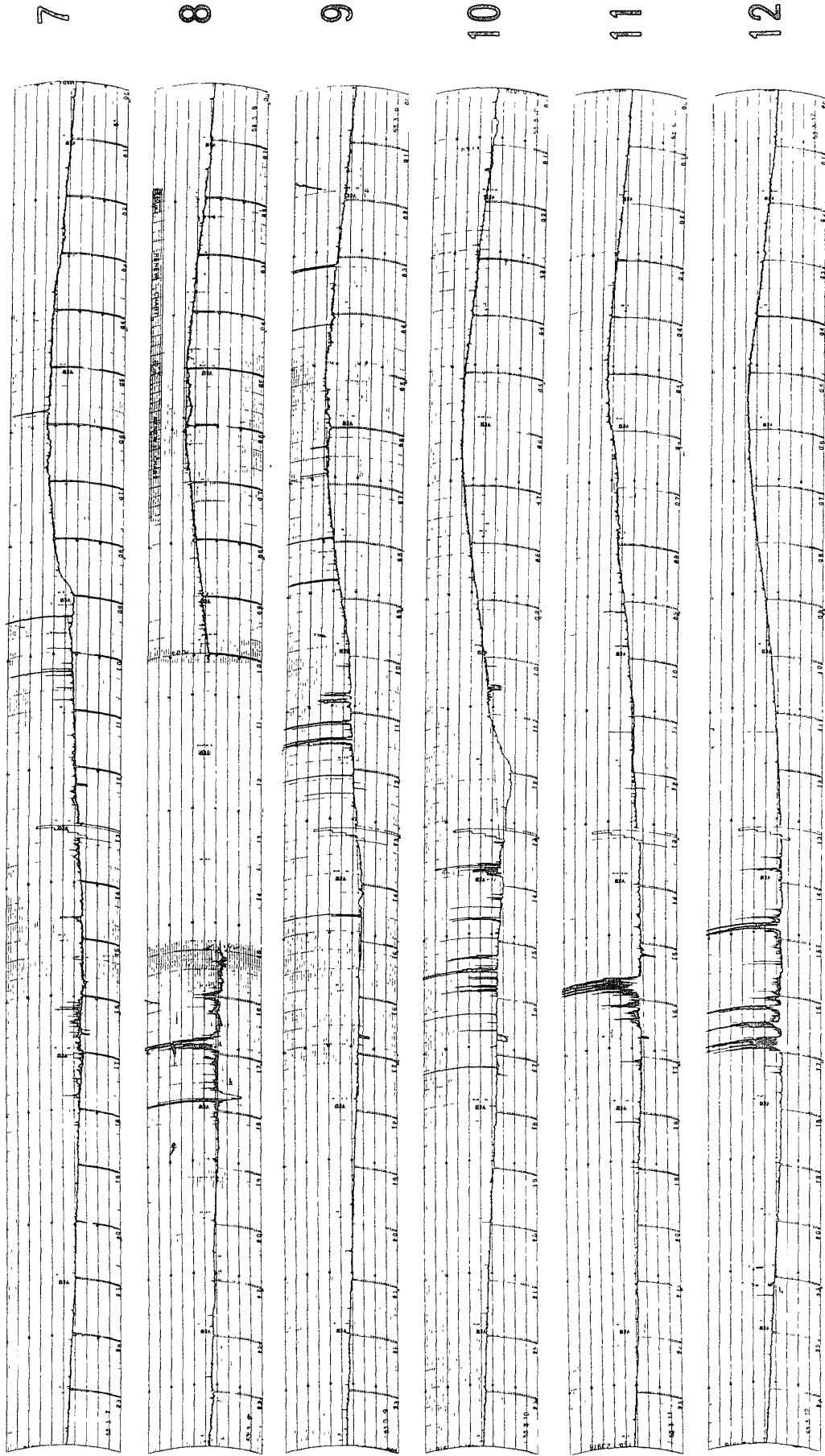
6

24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

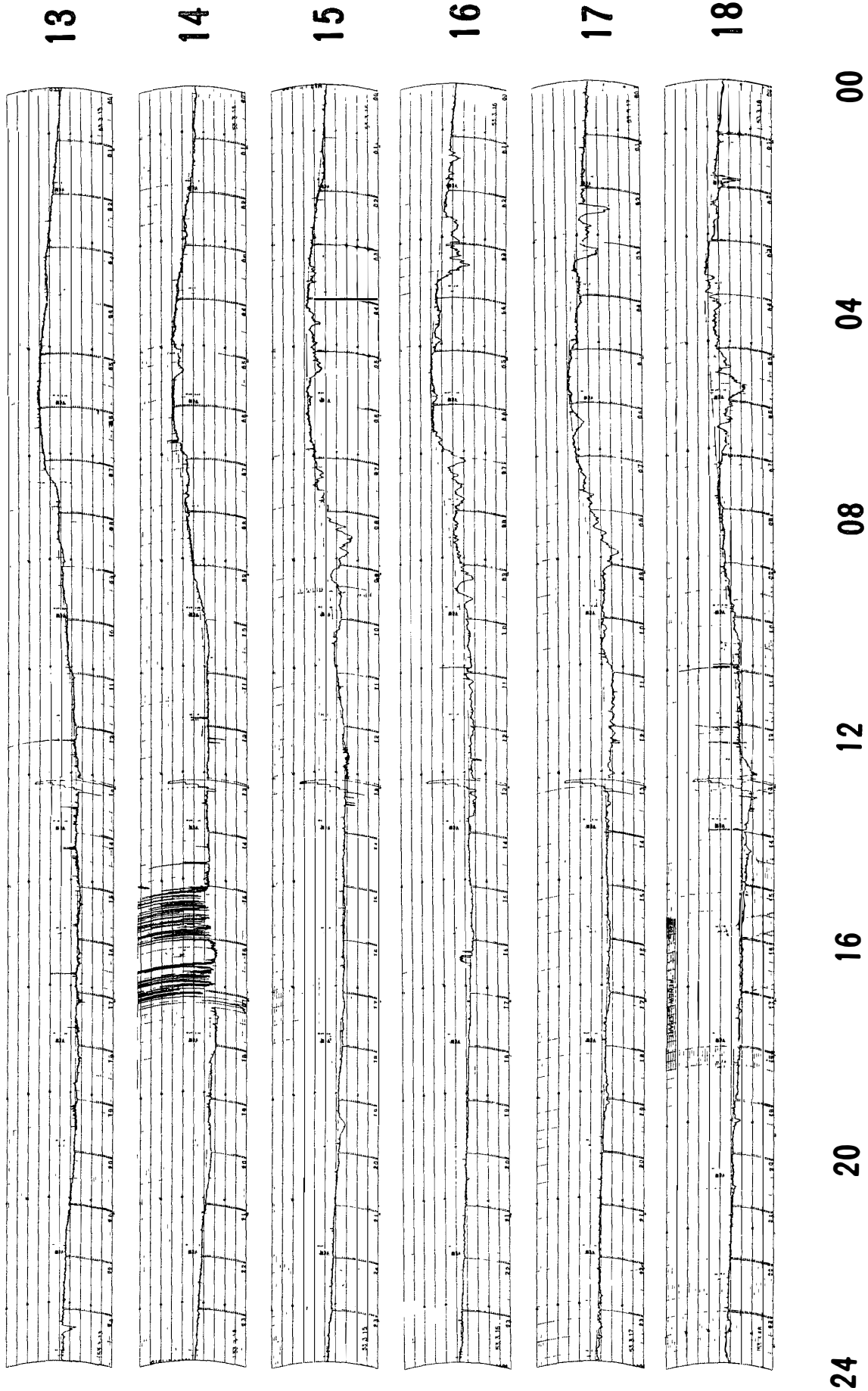
MAR 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

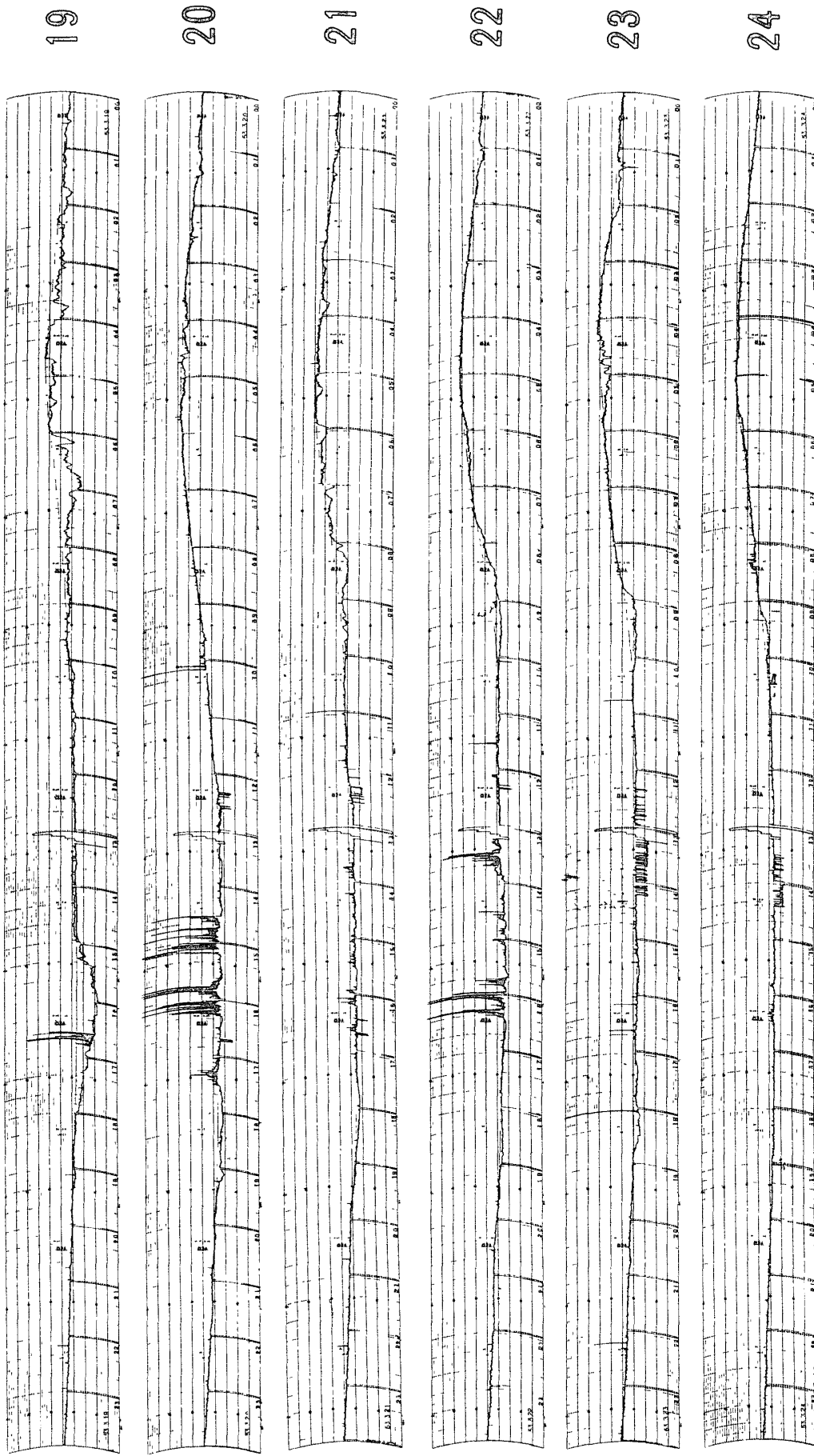
MAR 1978



30 MHz COSMIC NOISE

45° EAST MERIDIAN TIME IN HOURS

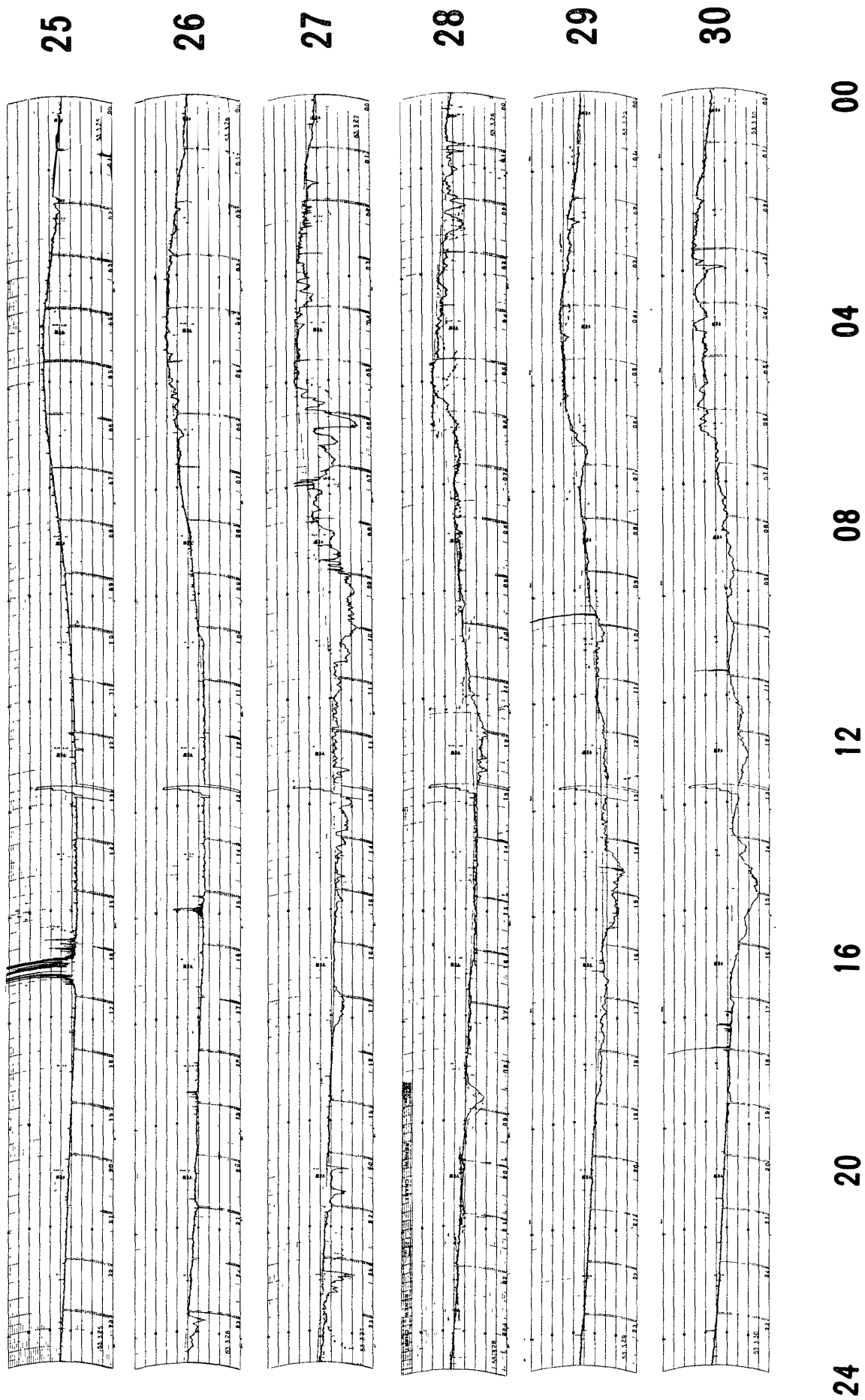
MAR 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHZ COSMIC NOISE

MAR 1978

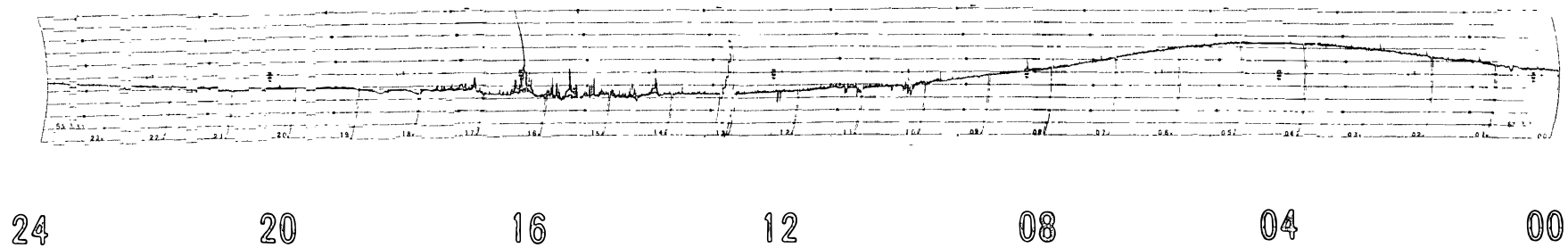


30 MHz COSMIC NOISE

45° EAST MERIDIAN TIME IN HOURS

MAR 1978

31

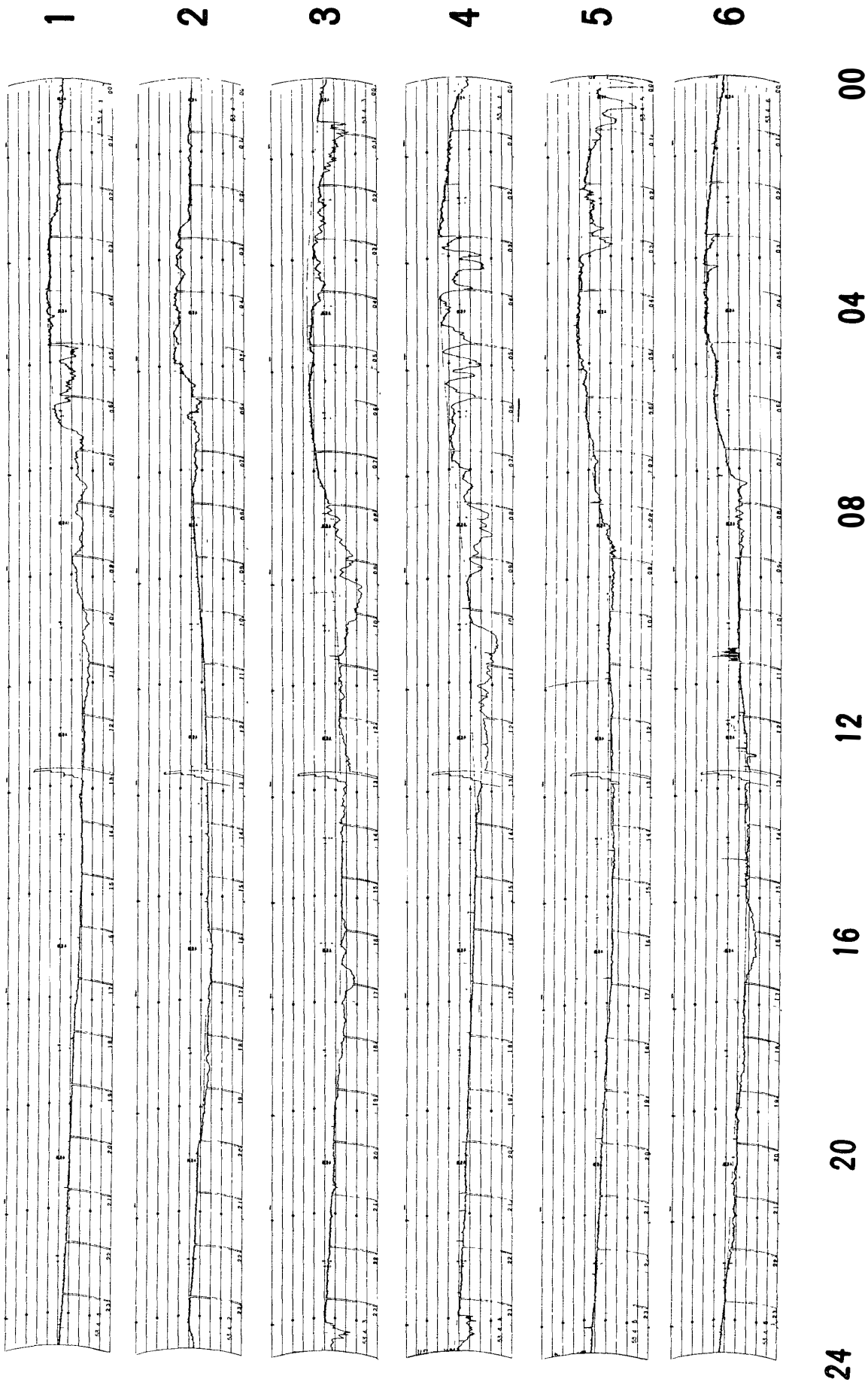


45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

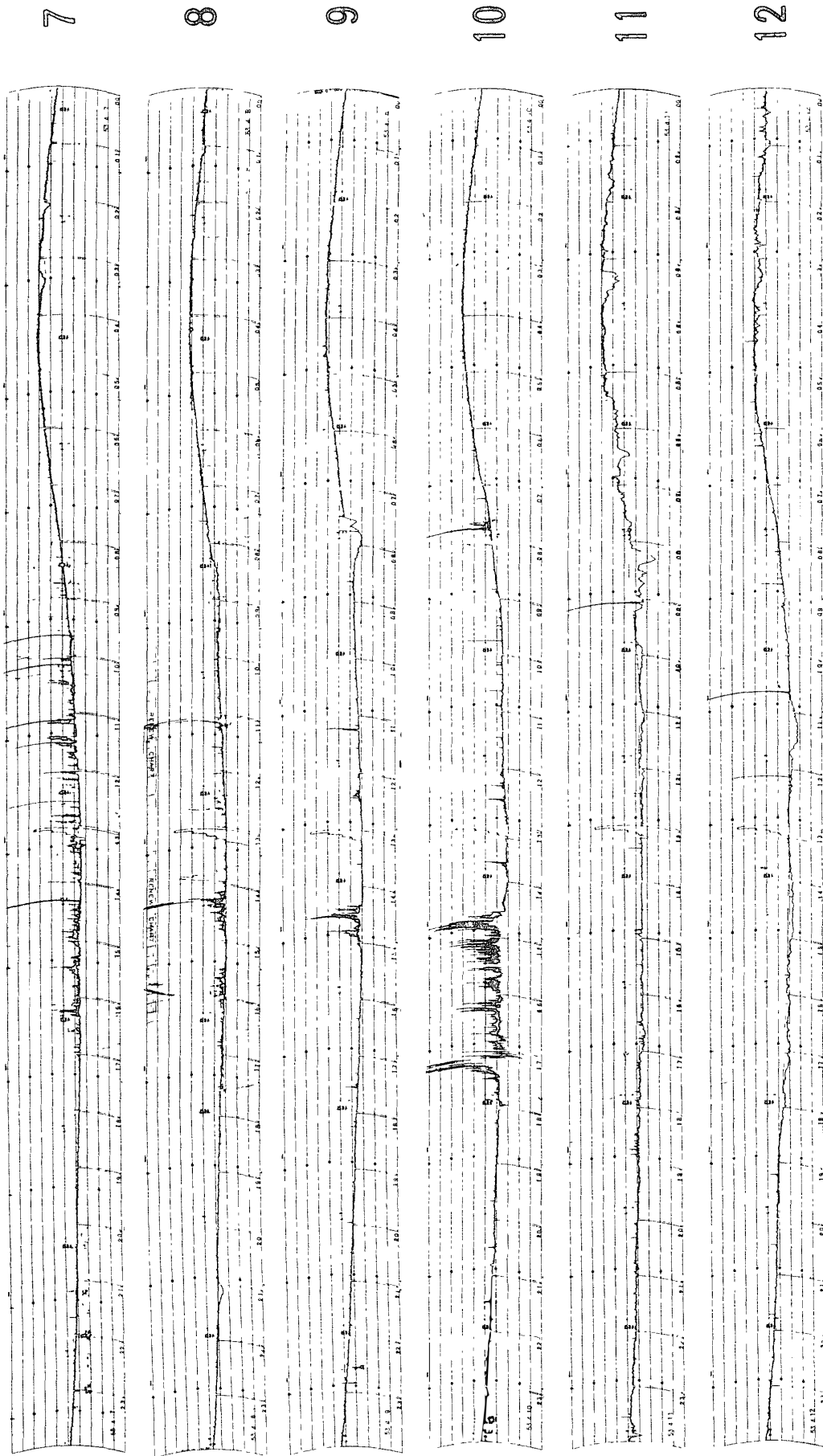
Cosmic noise level obscured or equipment malfunction.

March 8 1010 - 1500 failure of equipment



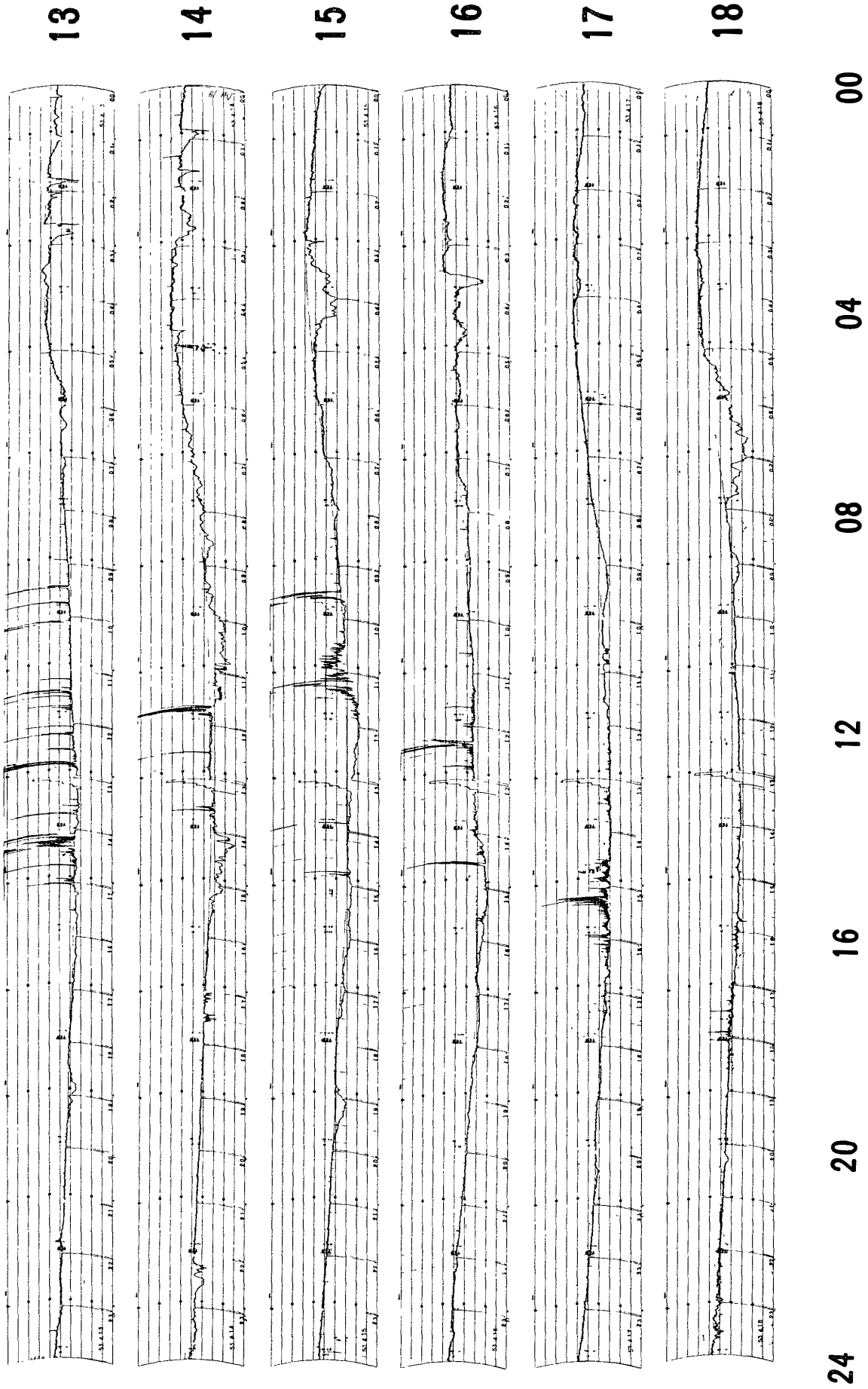
30 MHz COSMIC NOISE

45° EAST MERIDIAN TIME IN HOURS



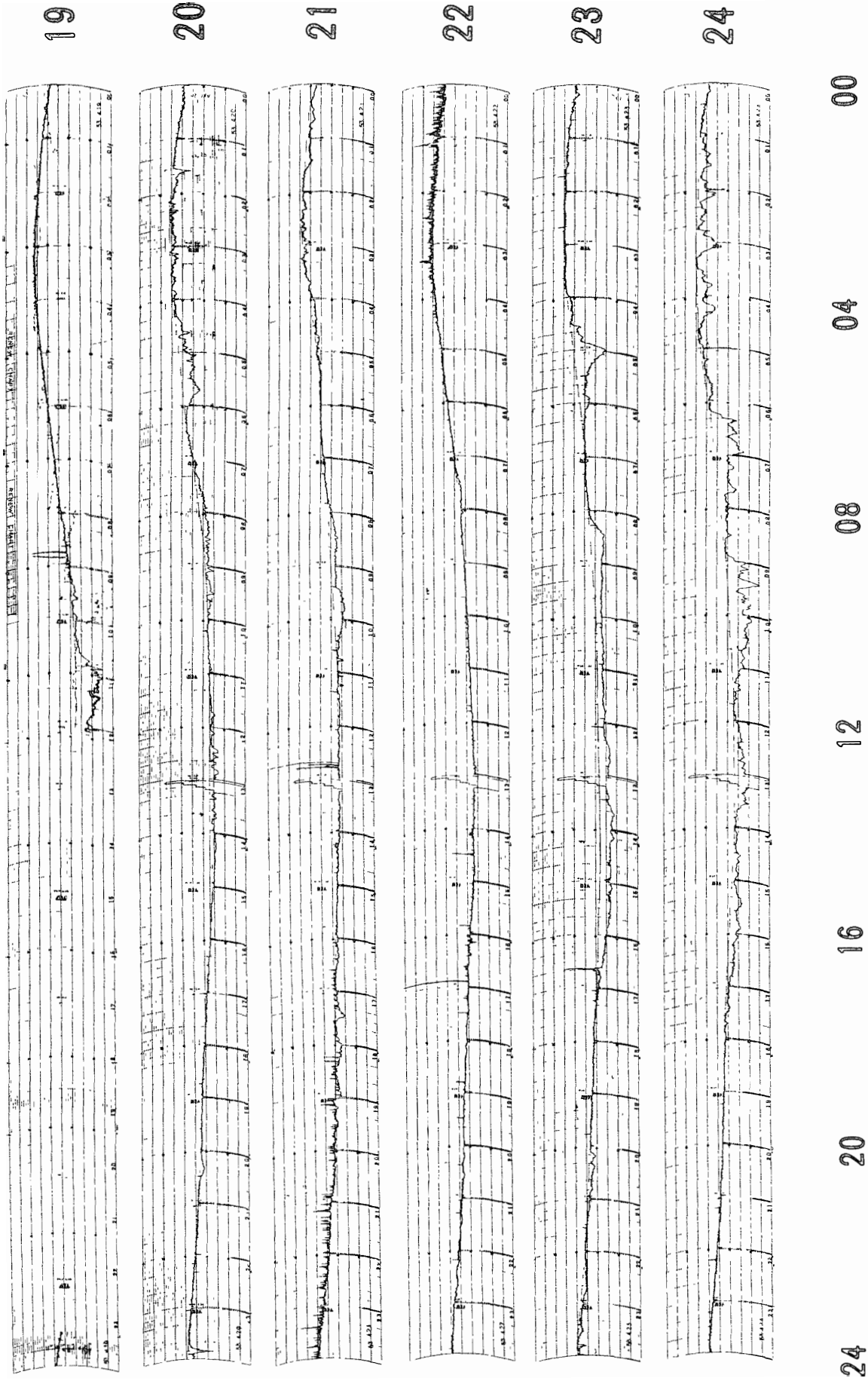
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

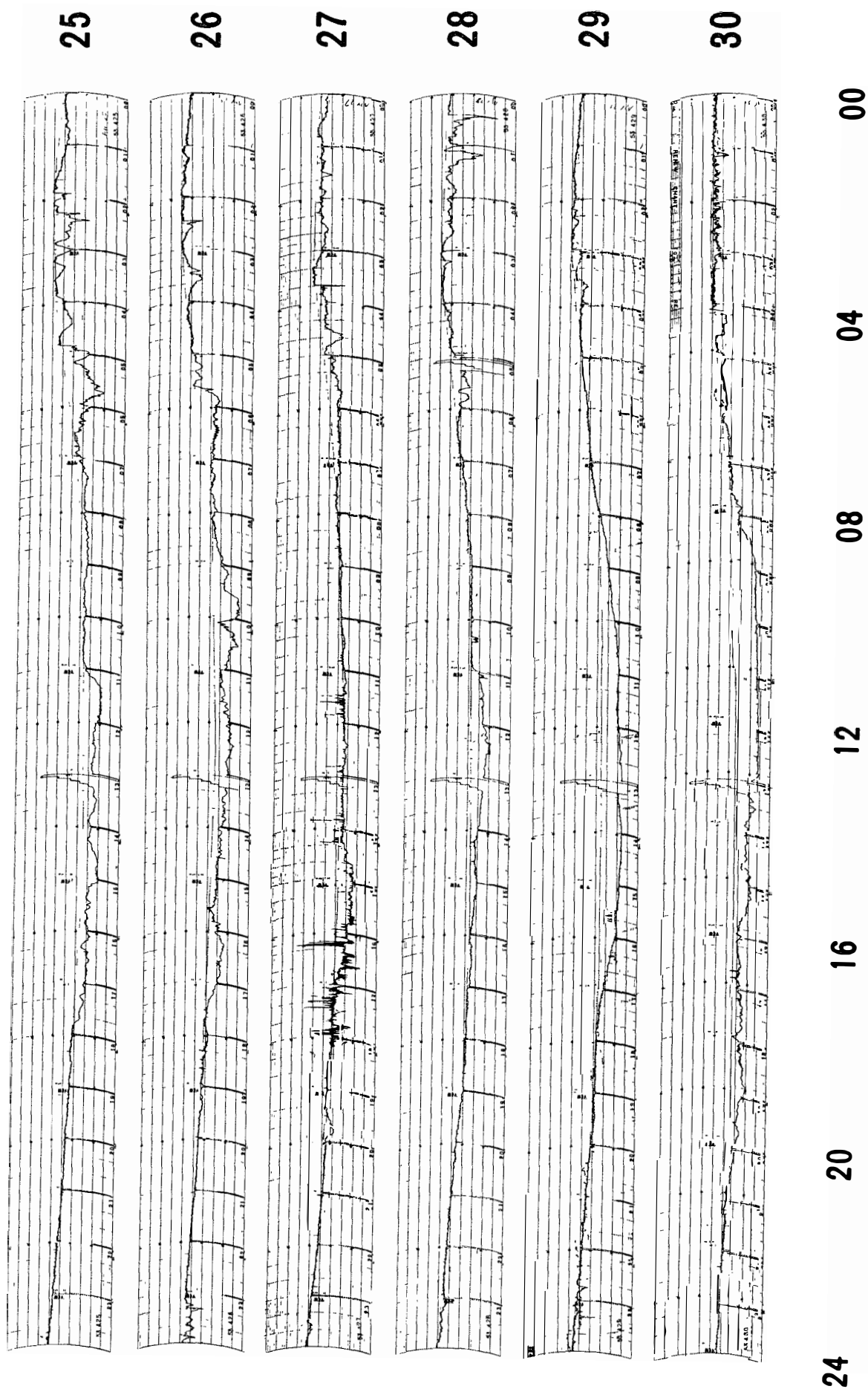


30 MHz COSMIC NOISE

45° EAST MERIDIAN TIME IN HOURS



45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE



30 MHz COSMIC NOISE

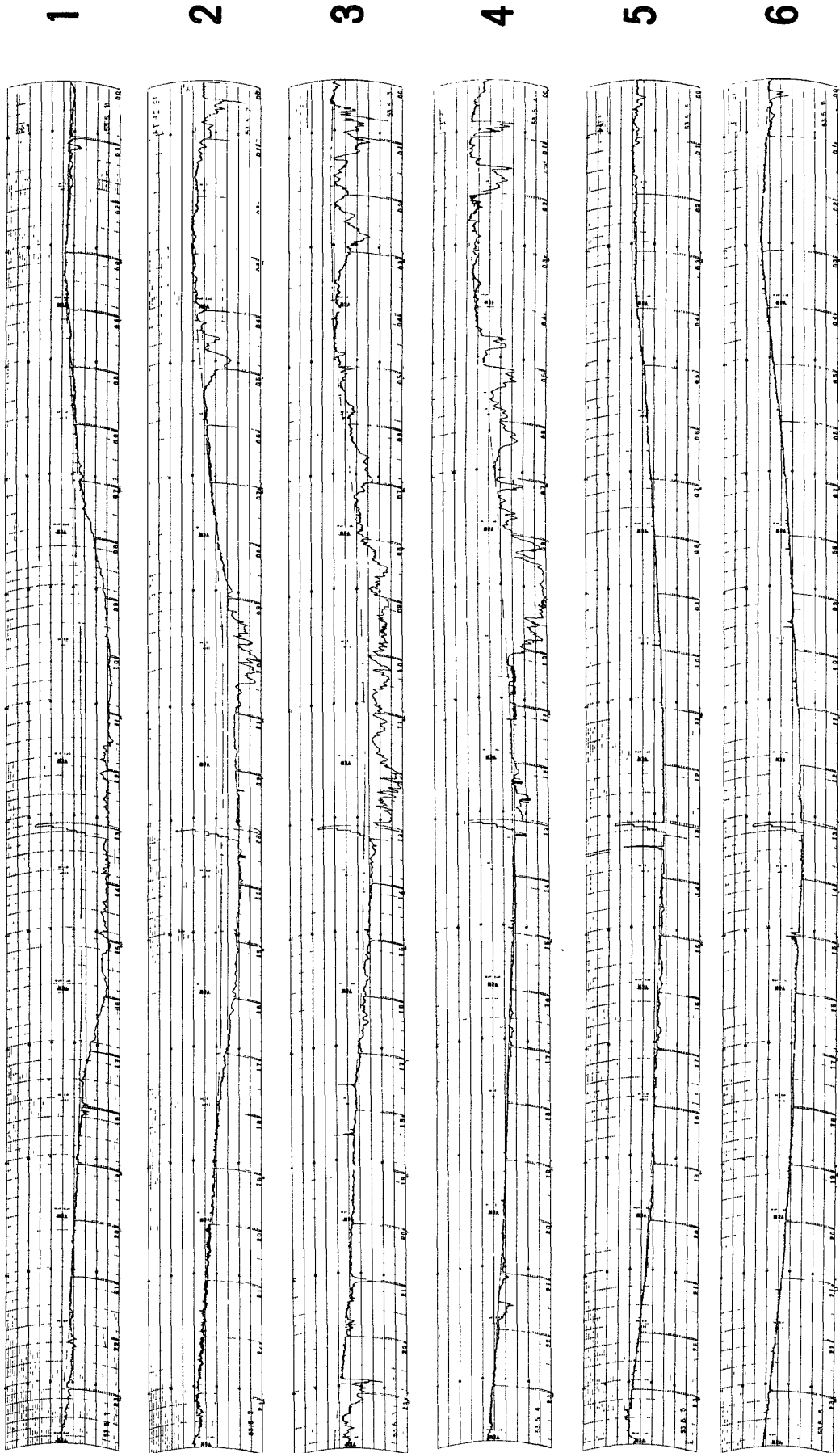
45° EAST MERIDIAN TIME IN HOURS

Cosmic noise level obscured or equipment malfunction.

April 19 1205 - 2323 failure of equipment

APL 1978

MAY 1978



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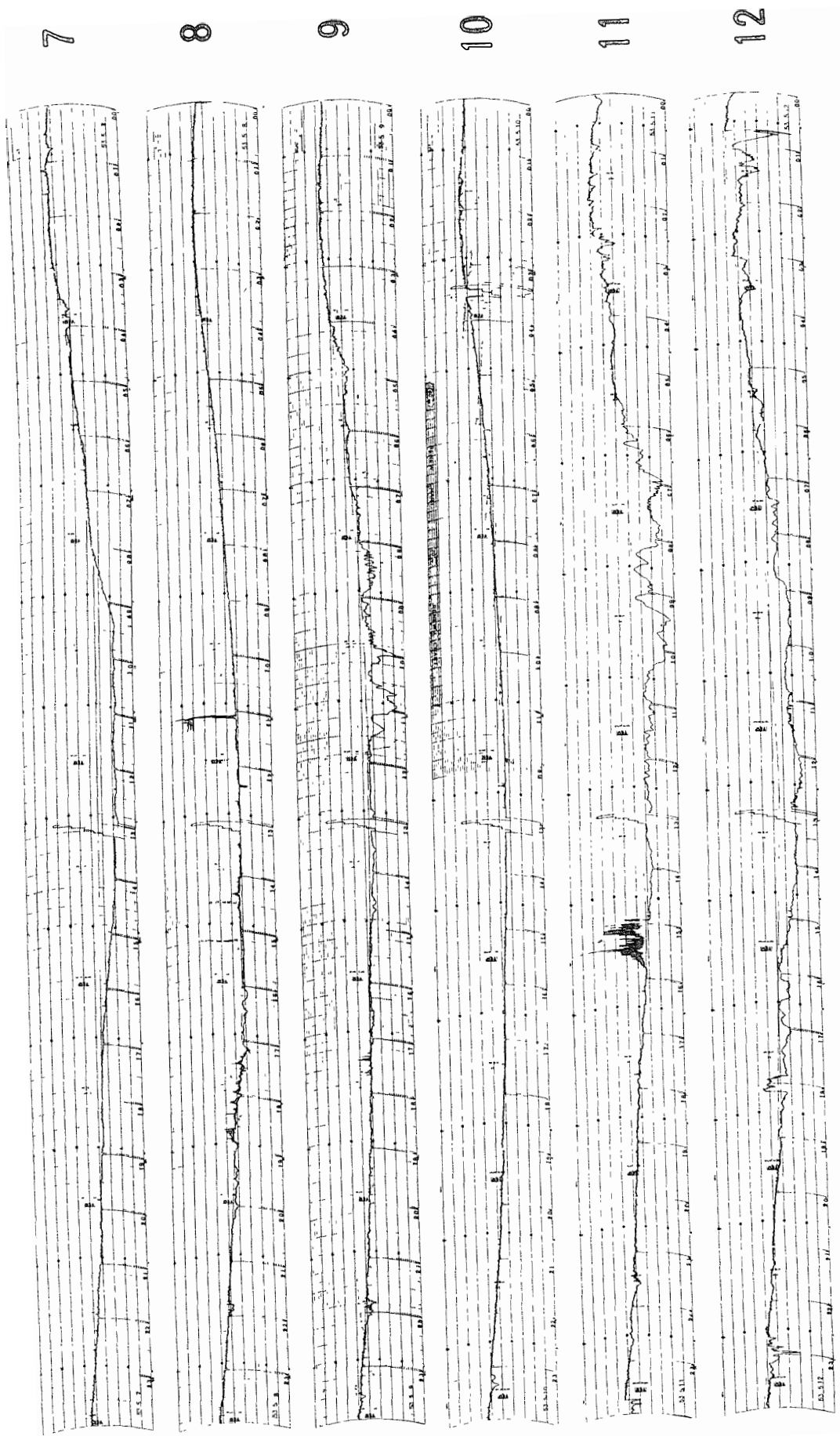
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24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

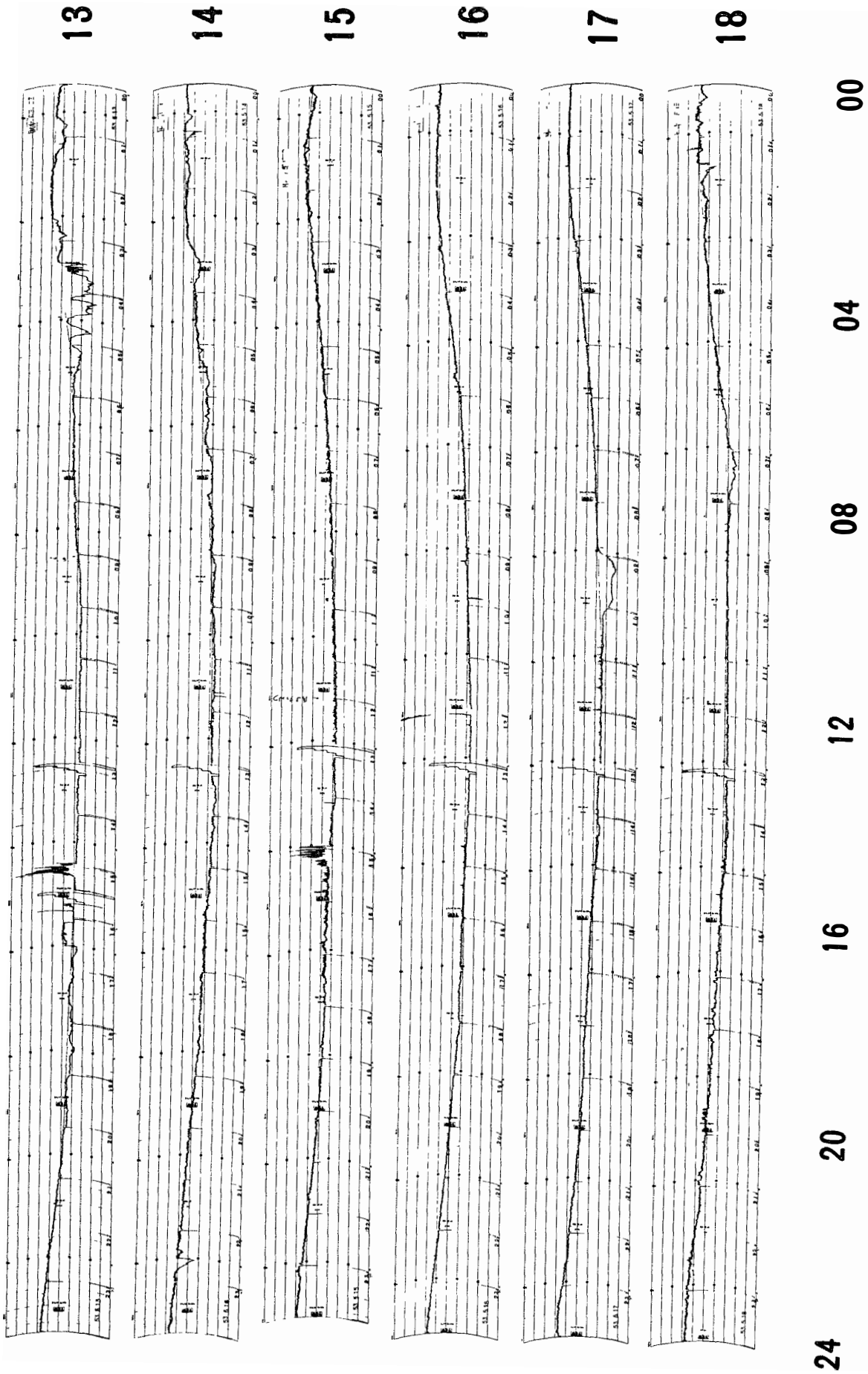
MAY 1978



24 20 16 12 08 04 00

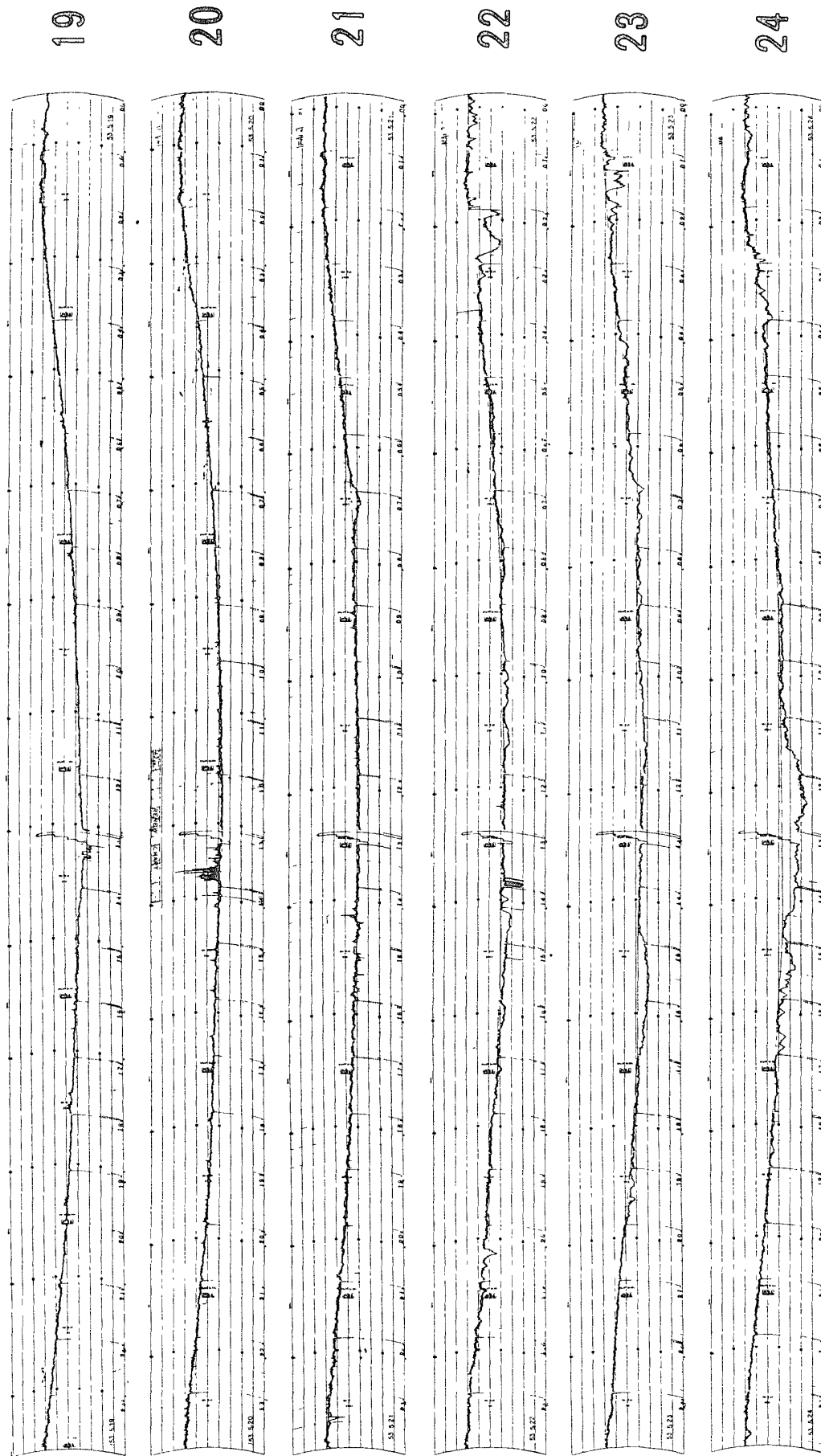
45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

MAY 1978



24 20 16 12 08 04 00
45° EAST MERIDIAN TIME IN HOURS
30 MHz COSMIC NOISE

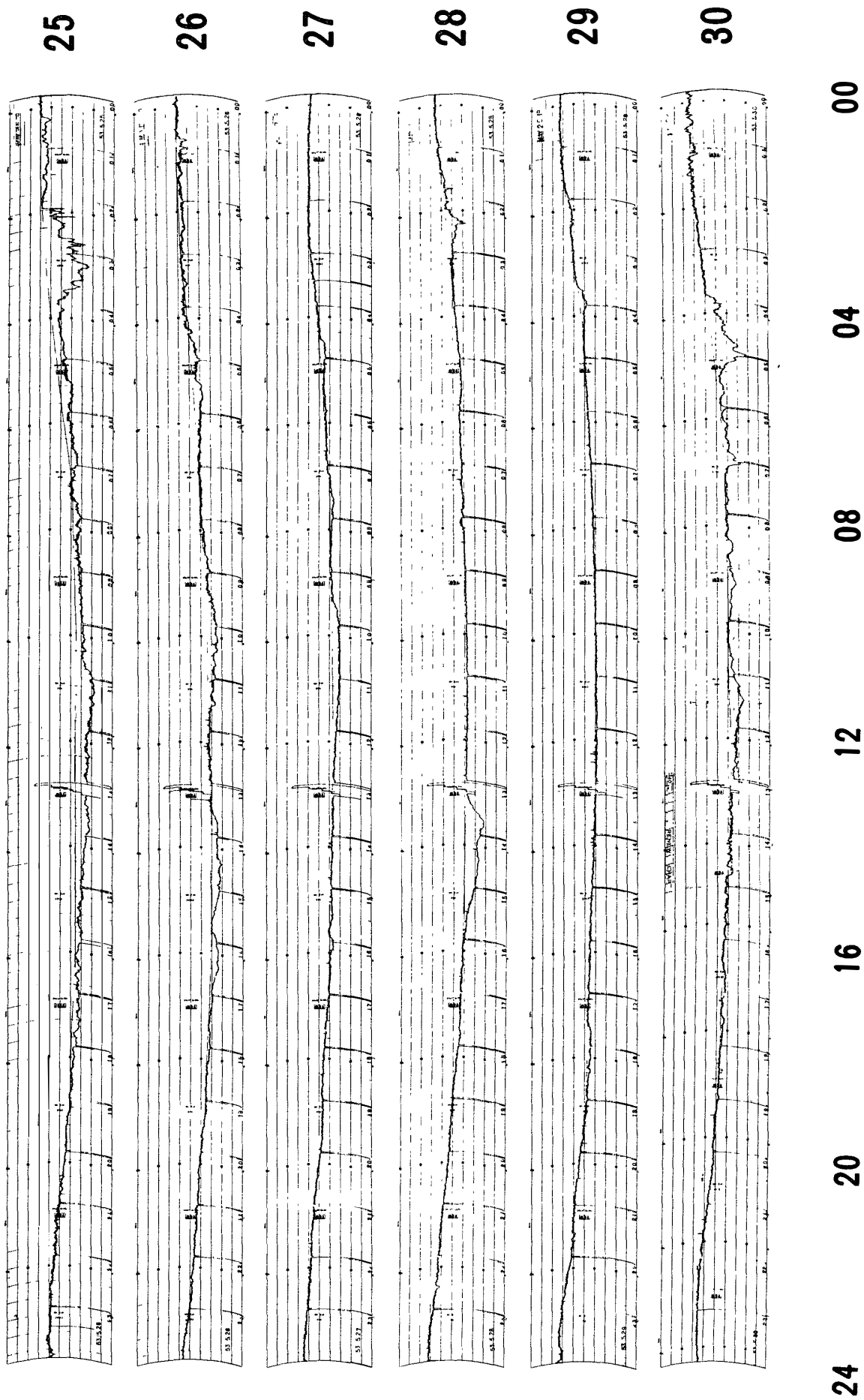
MAY 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

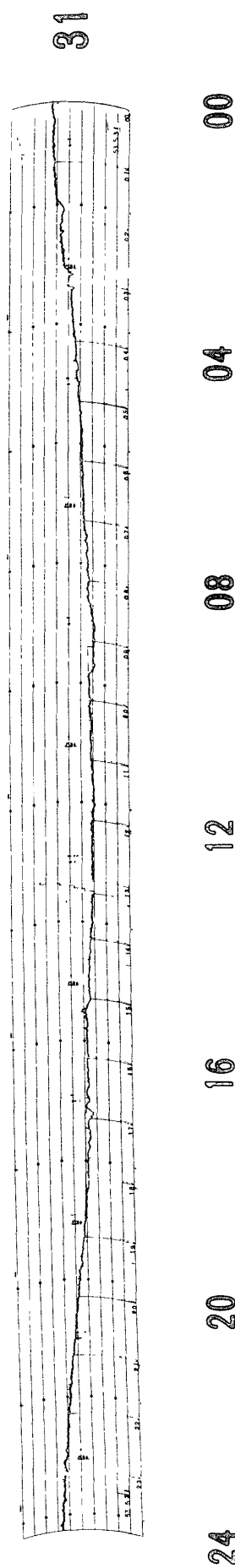
MAY 1978



30 MHz COSMIC NOISE

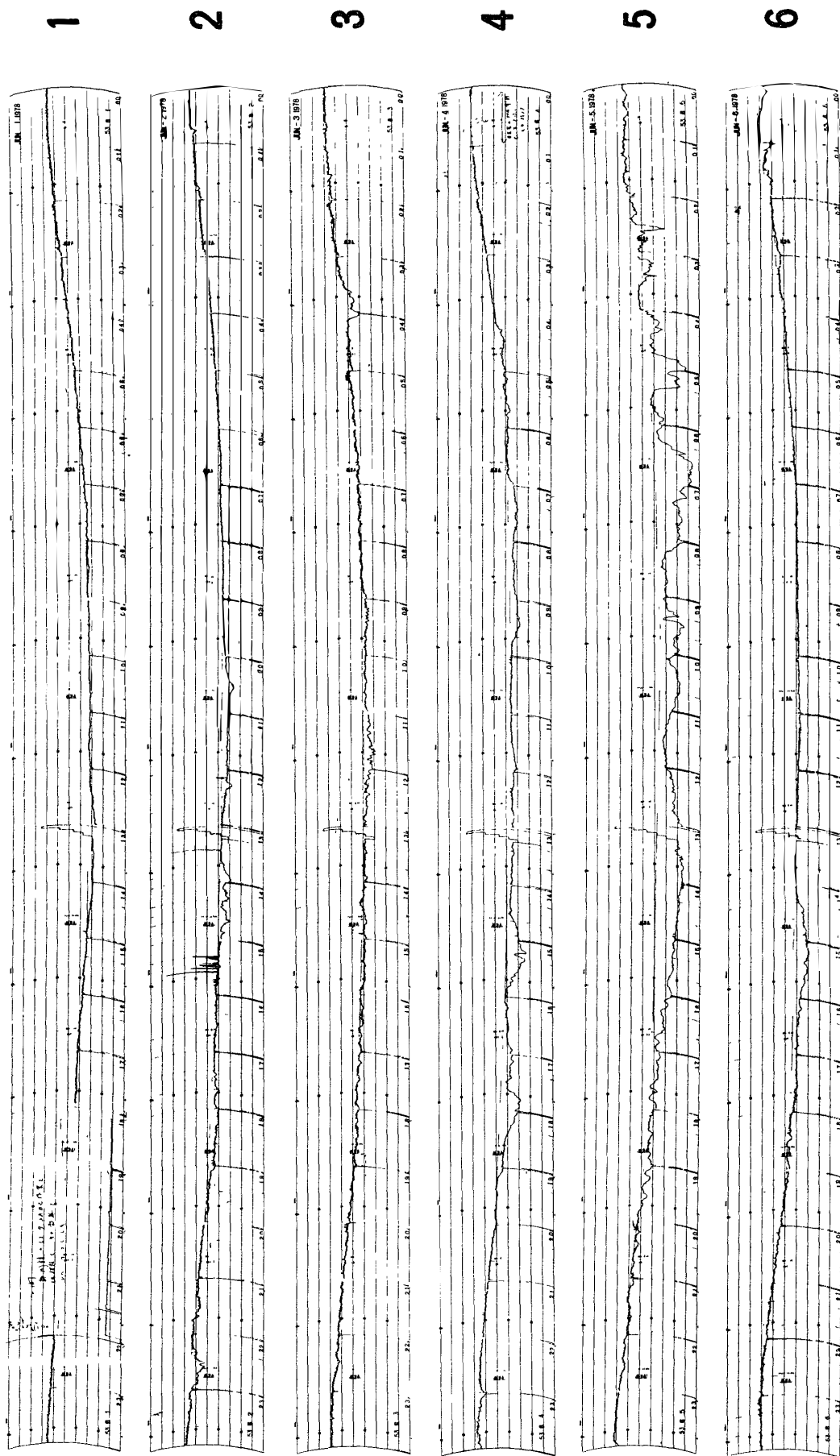
45° EAST MERIDIAN TIME IN HOURS

MAY 1978



45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

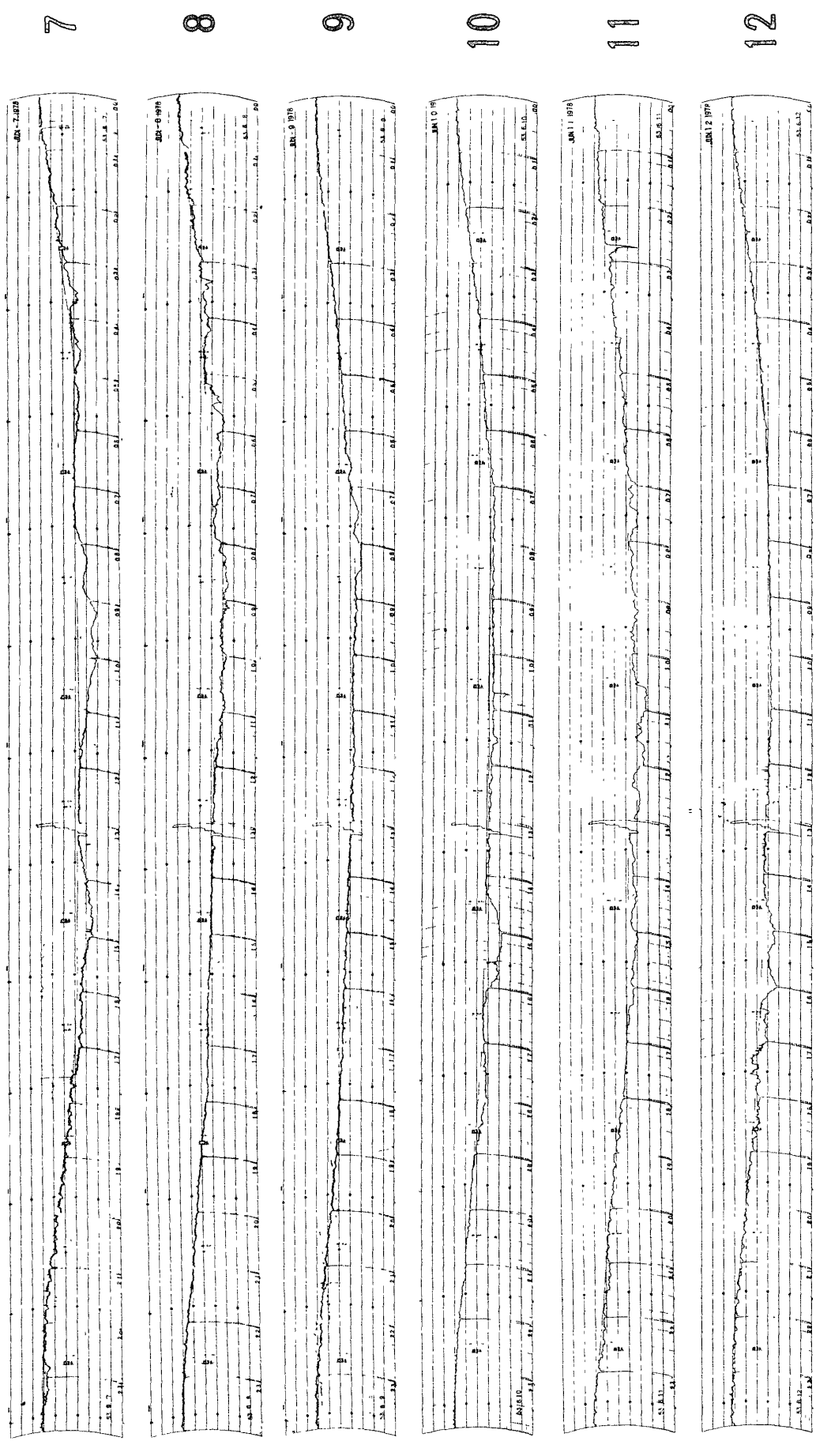
JUN 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

JUN 1978



24 20 16 12 08 04 00

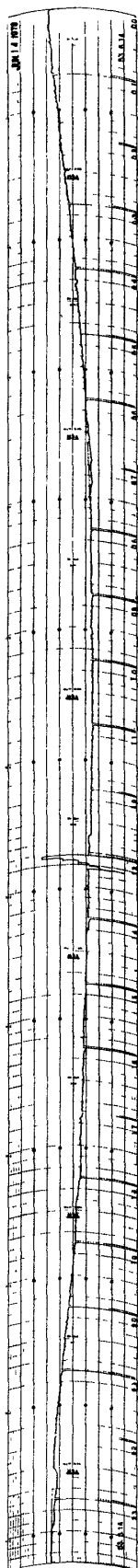
45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

JUN 1978

13



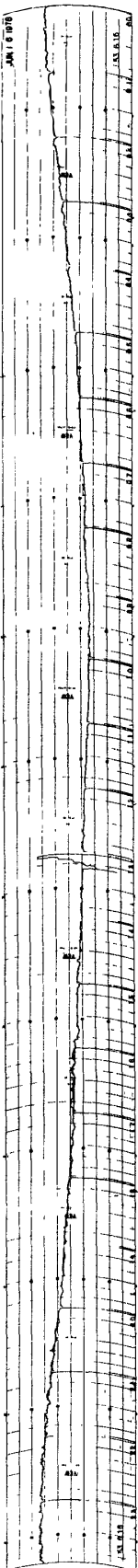
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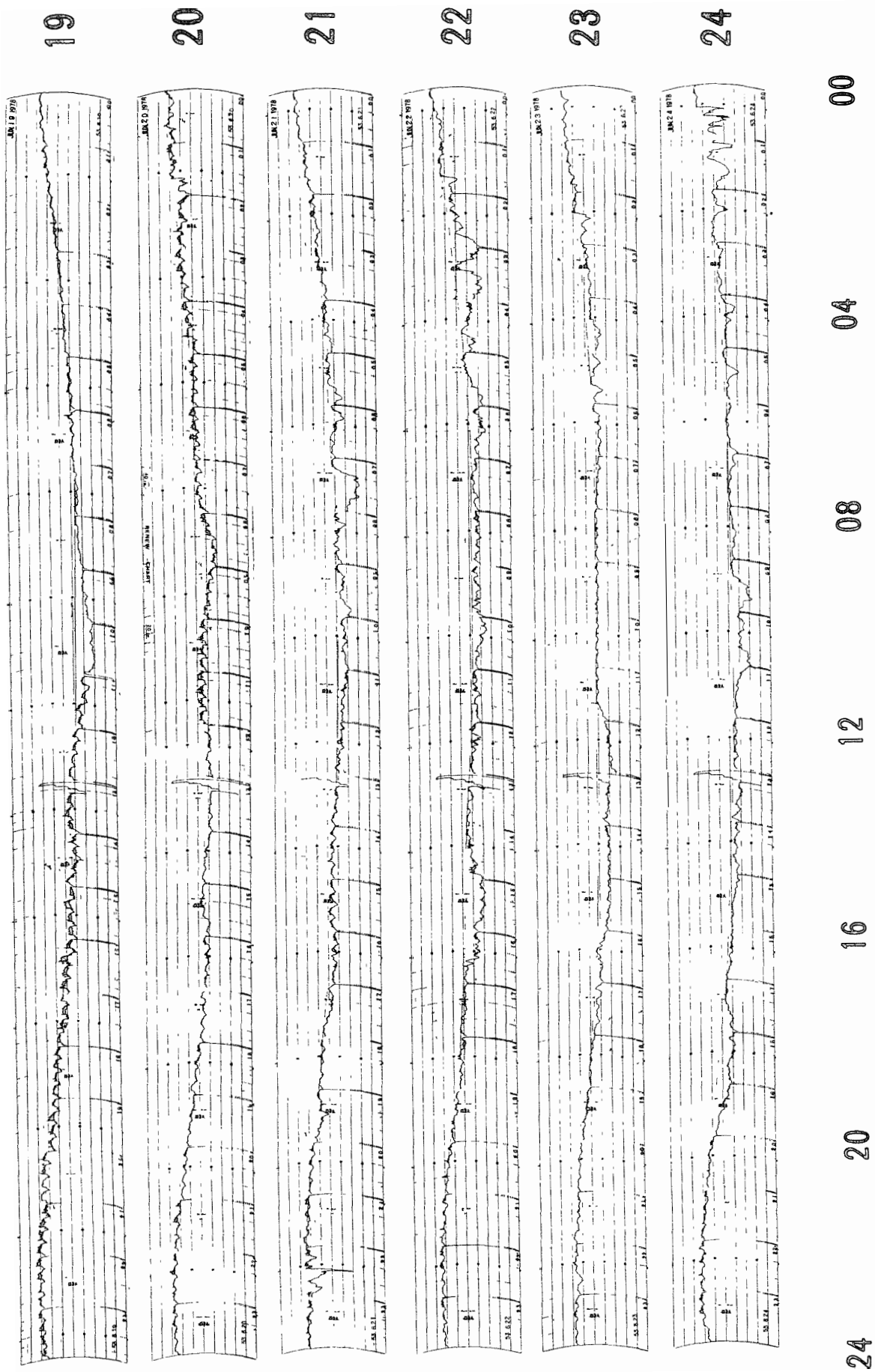
18



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

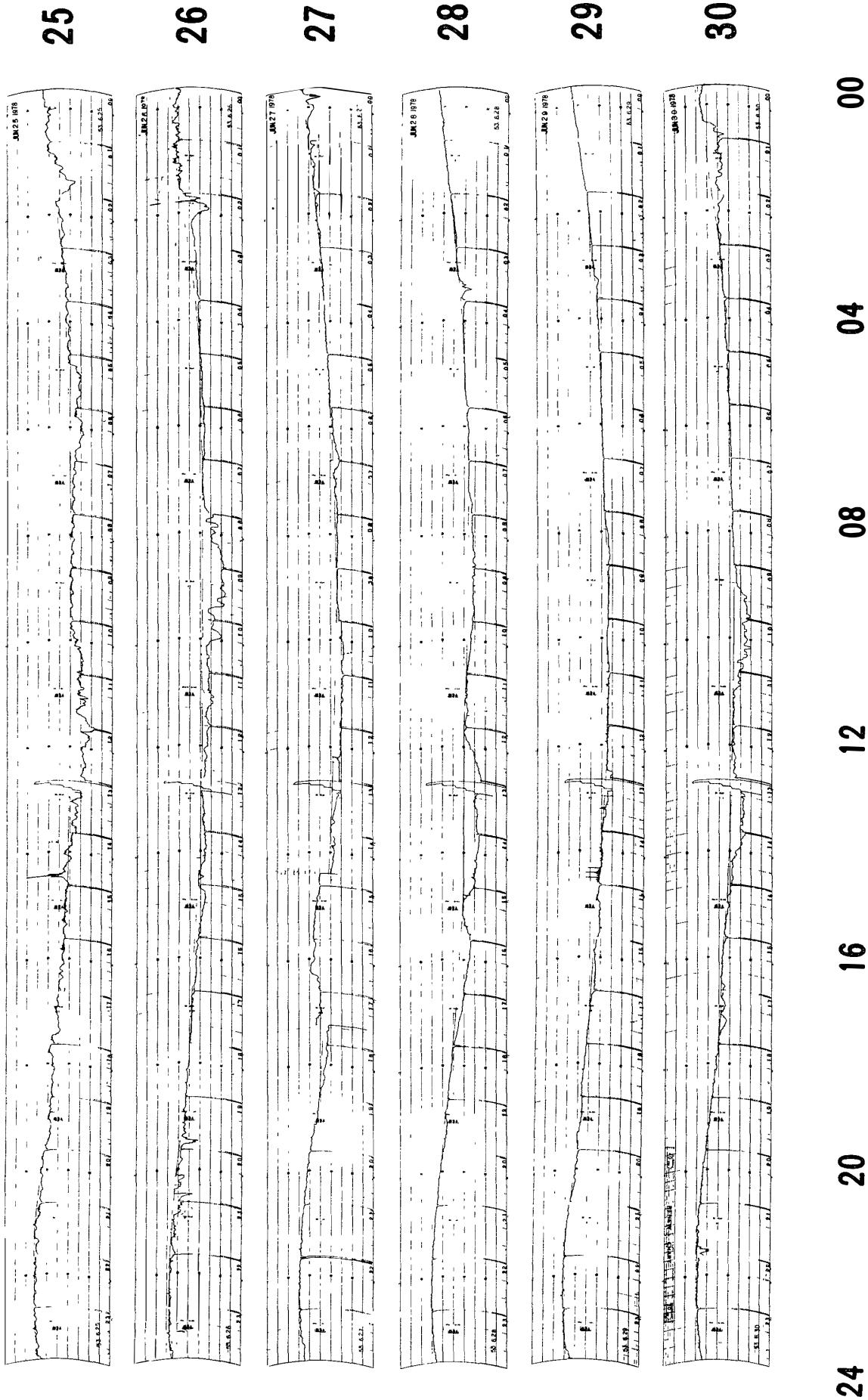
JUN 1978



30 MHz COSMIC NOISE

45° EAST MERIDIAN TIME IN HOURS

JUN 1978



30 MHz COSMIC NOISE

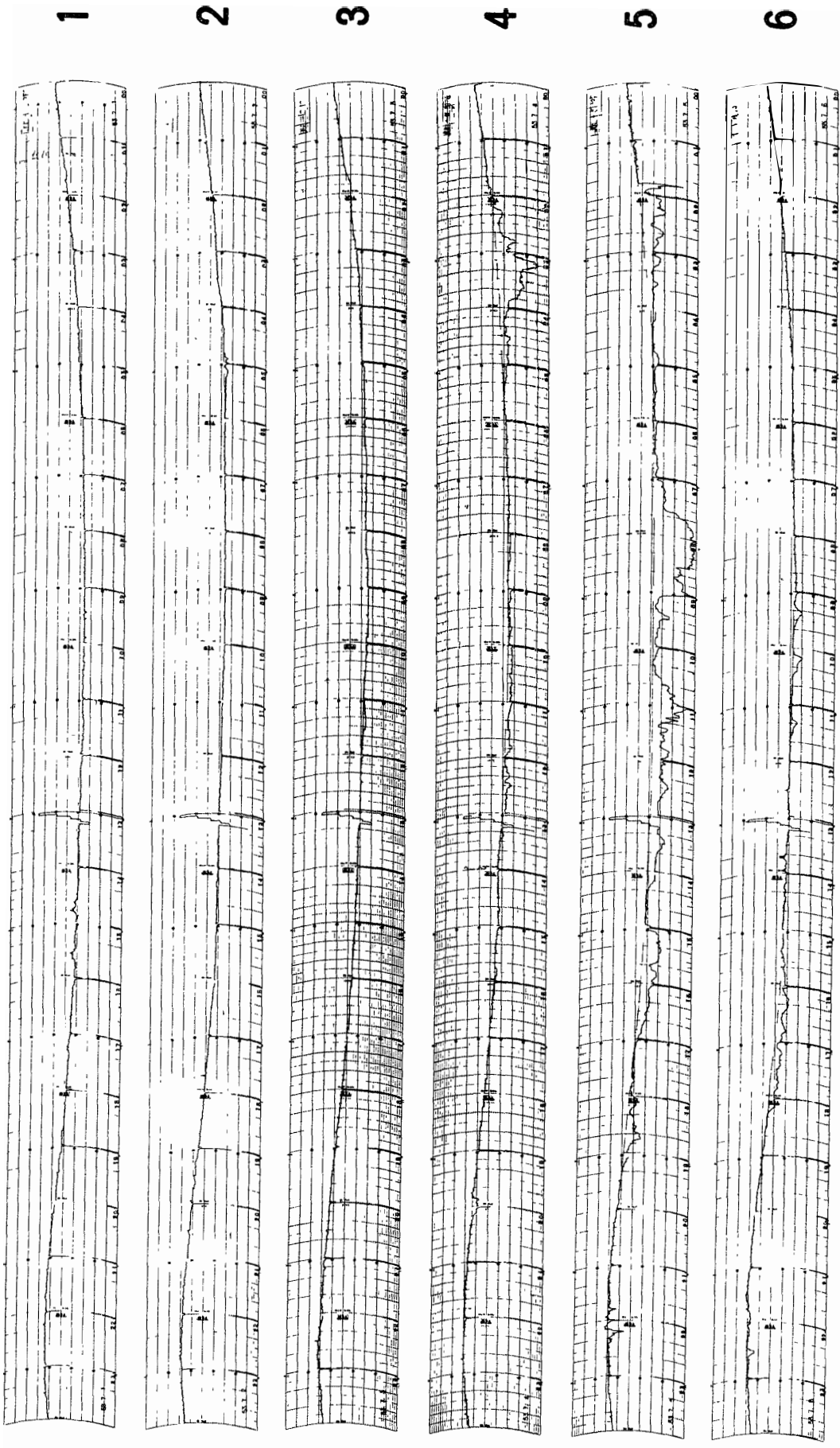
45° EAST MERIDIAN TIME IN HOURS

Cosmic noise level obscured or equipment malfunction.

| | | | |
|------|---|-------------|----------------------|
| June | 1 | 1800 - 2100 | failure of equipment |
| | 4 | 0009 - 0110 | " |

JUN 1978

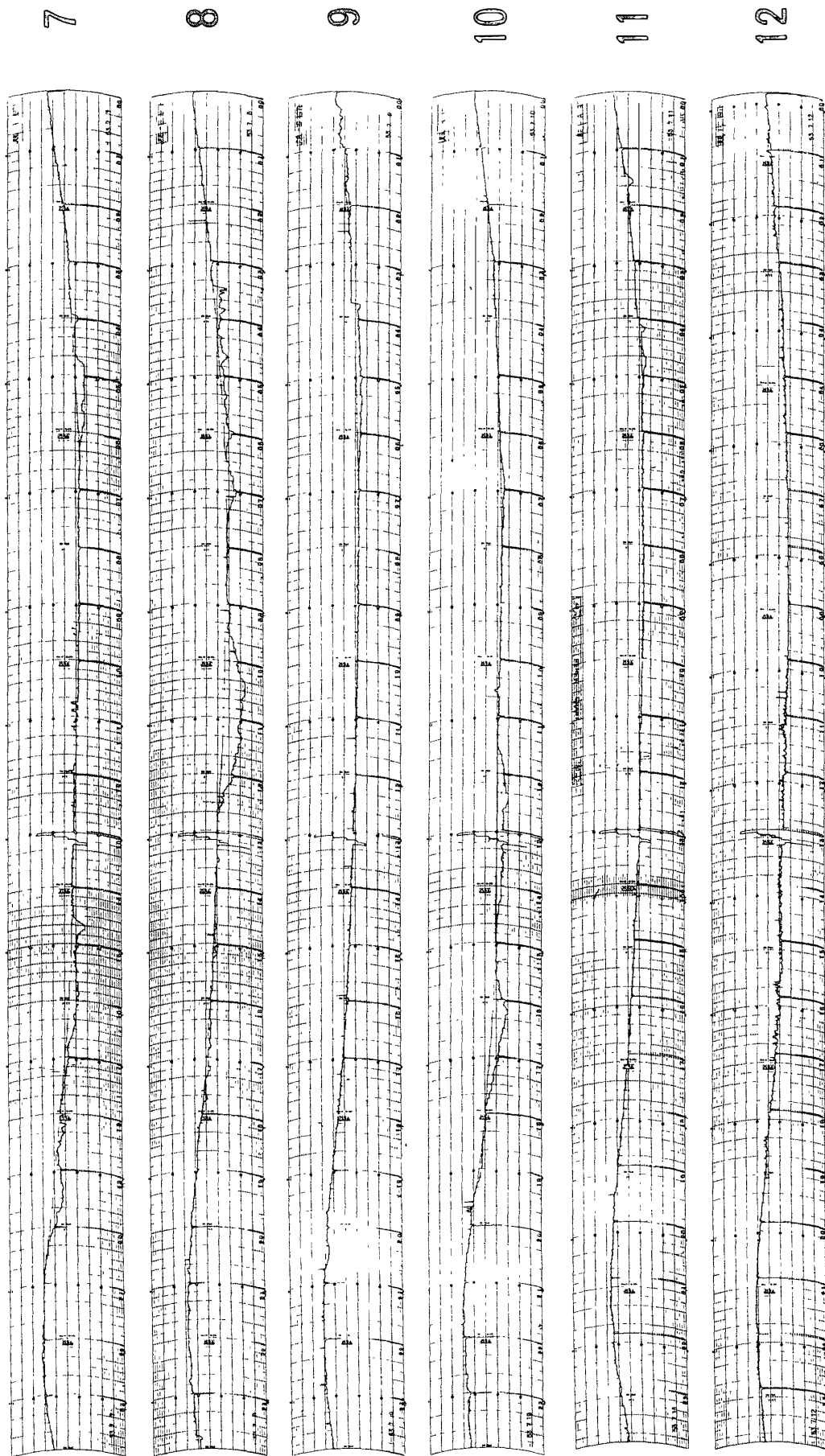
JUL 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

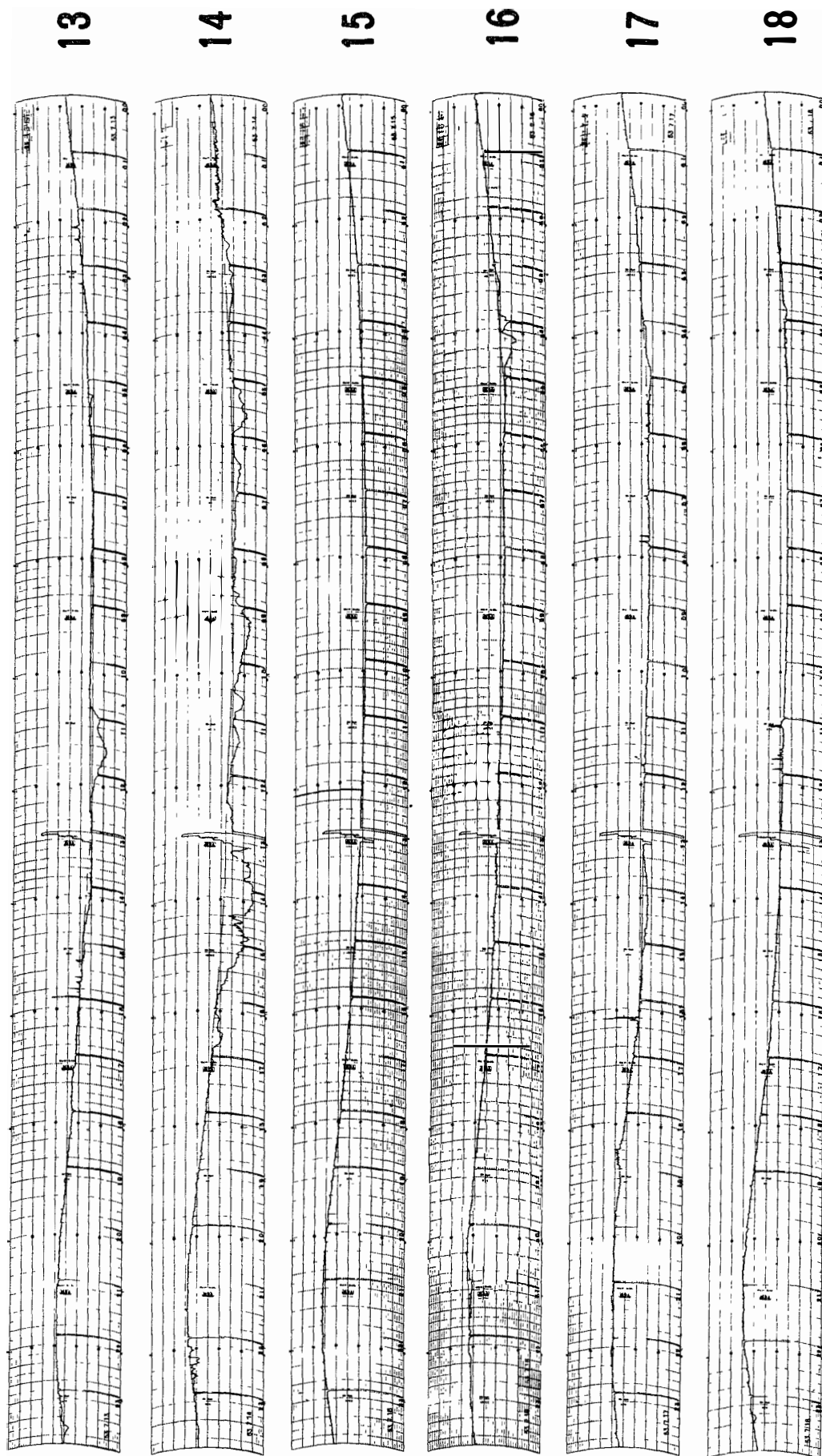
JUL 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

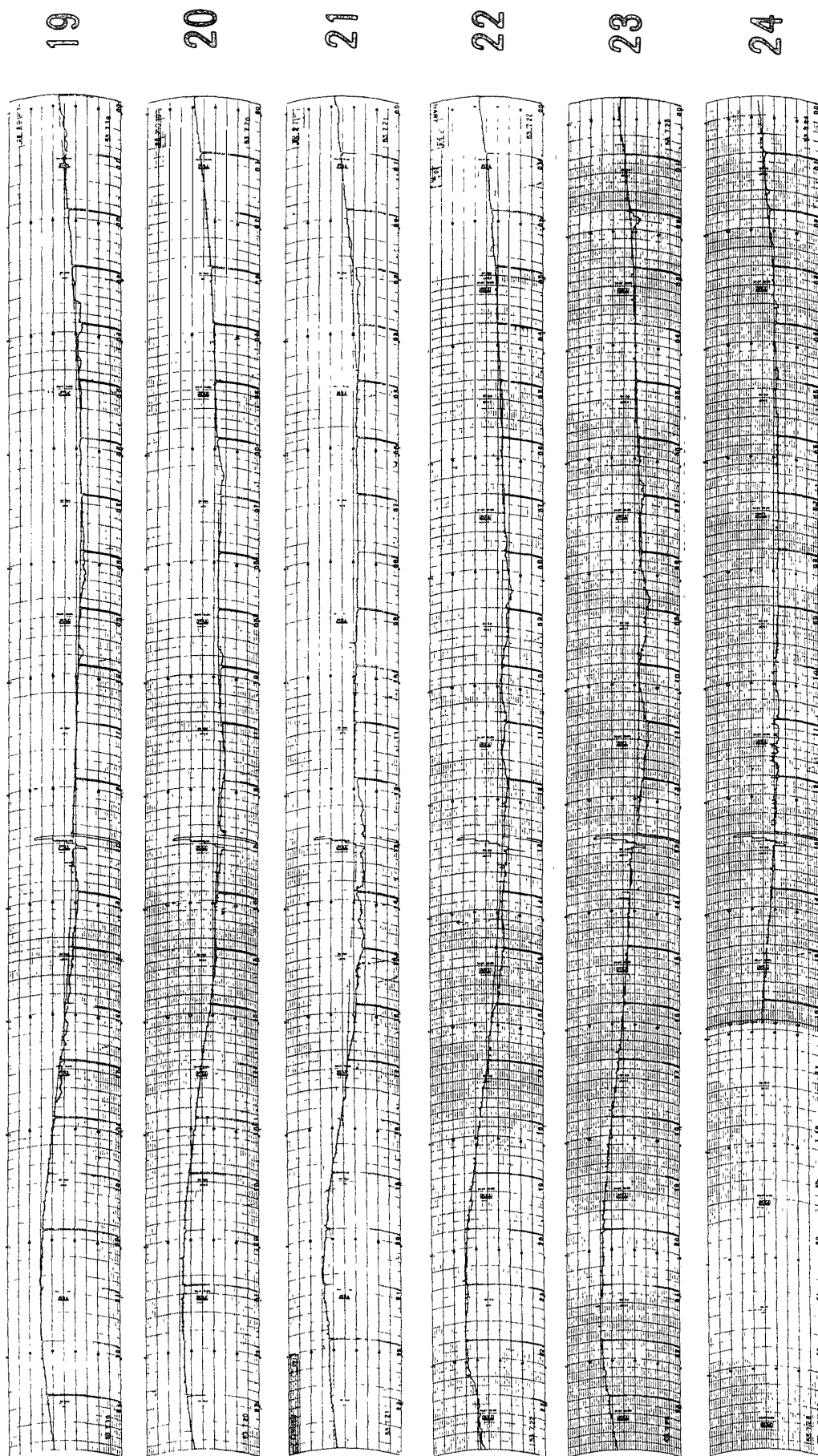
JUL 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

JUL 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

JUL 1978

25

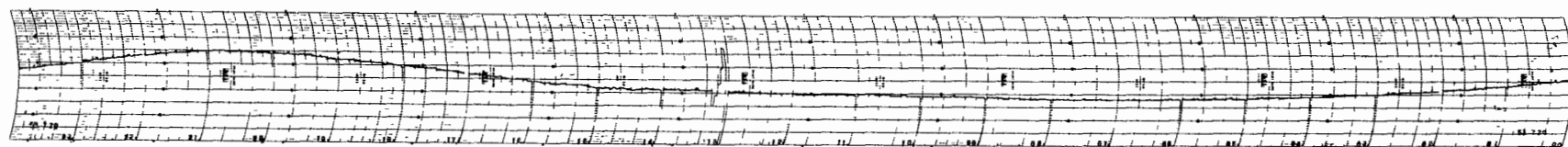
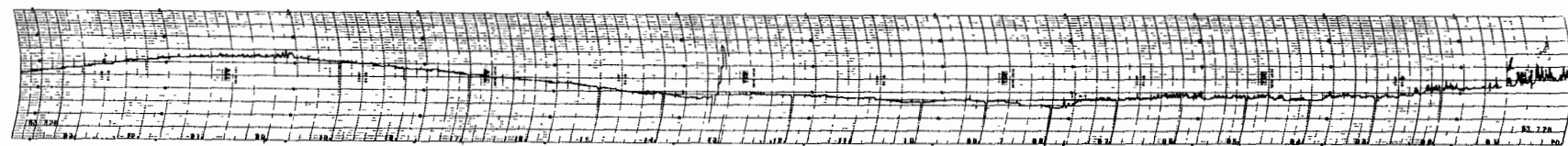
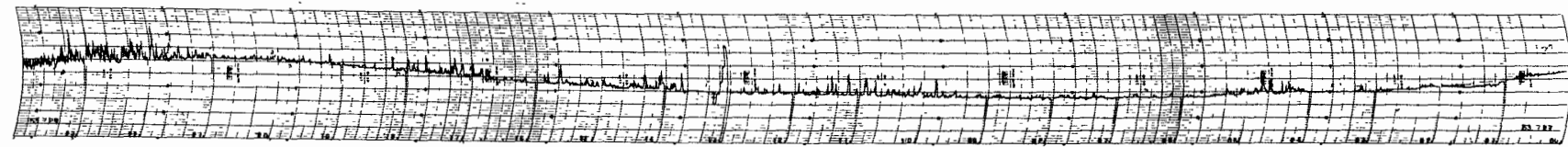
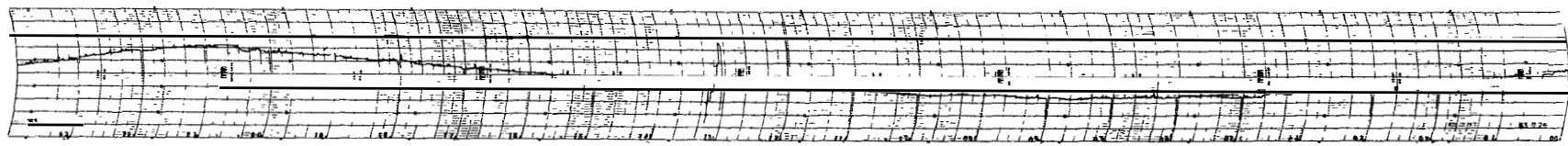
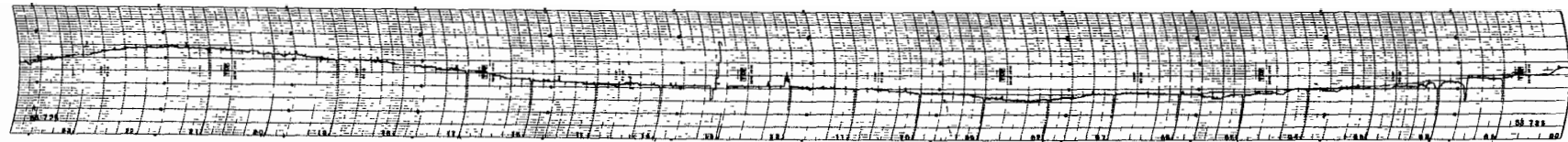
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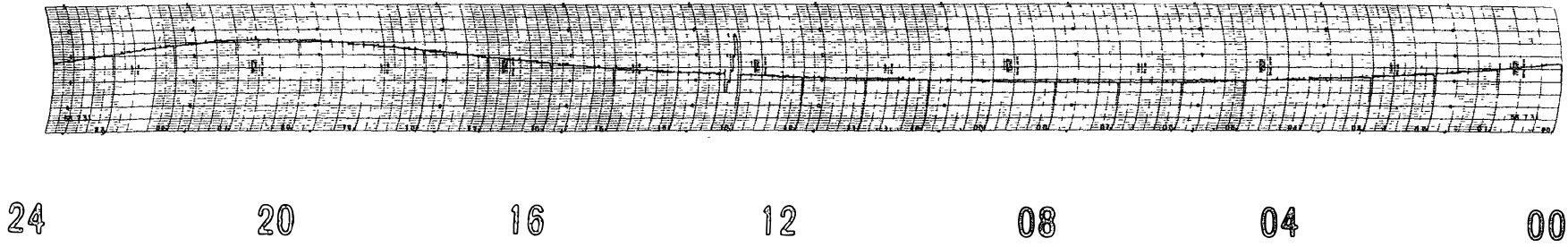
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

JUL 1978

31



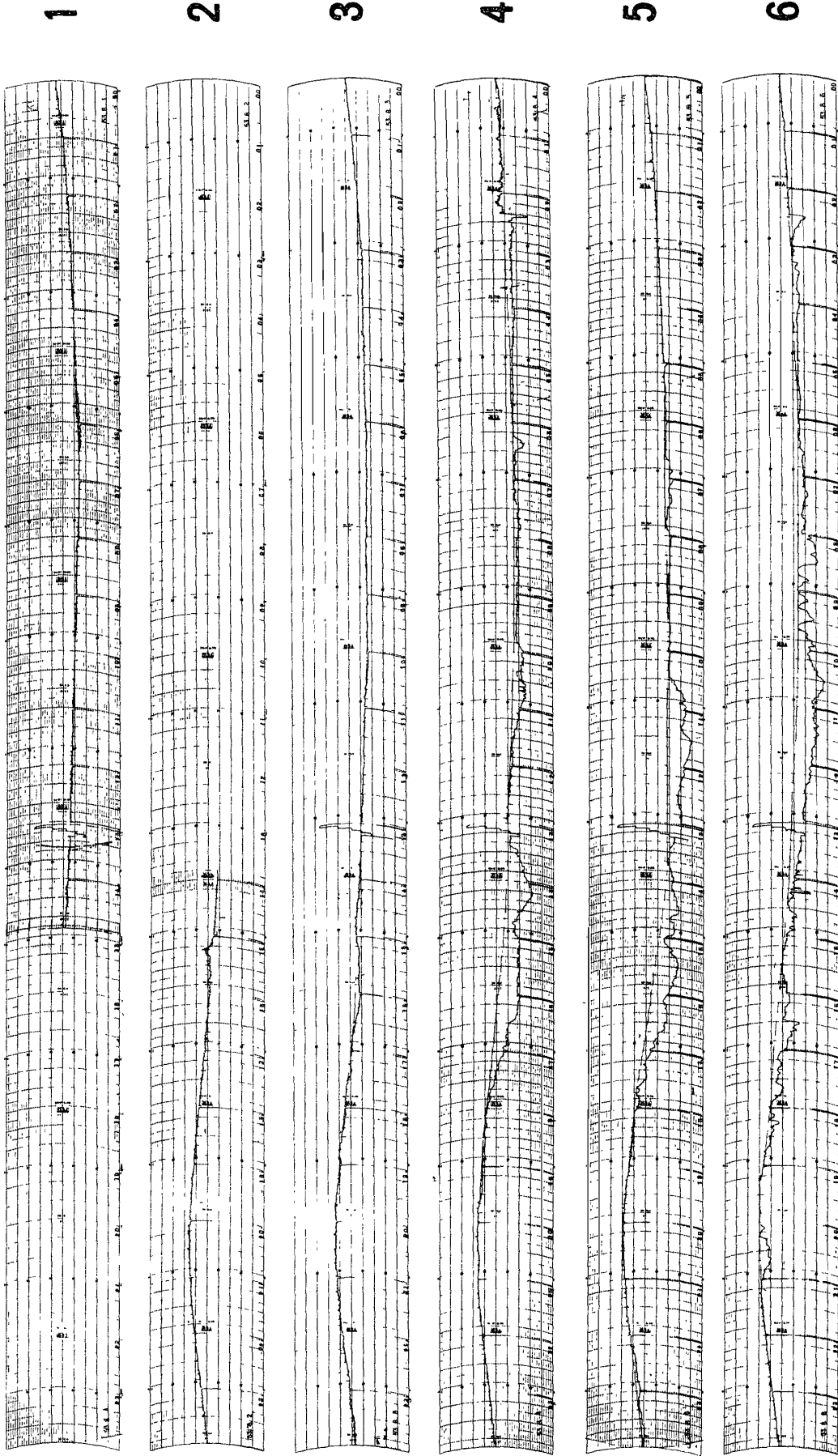
45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

Cosmic noise level obscured or equipment malfunction.

July 24 1622 - 2300 failure of equipment

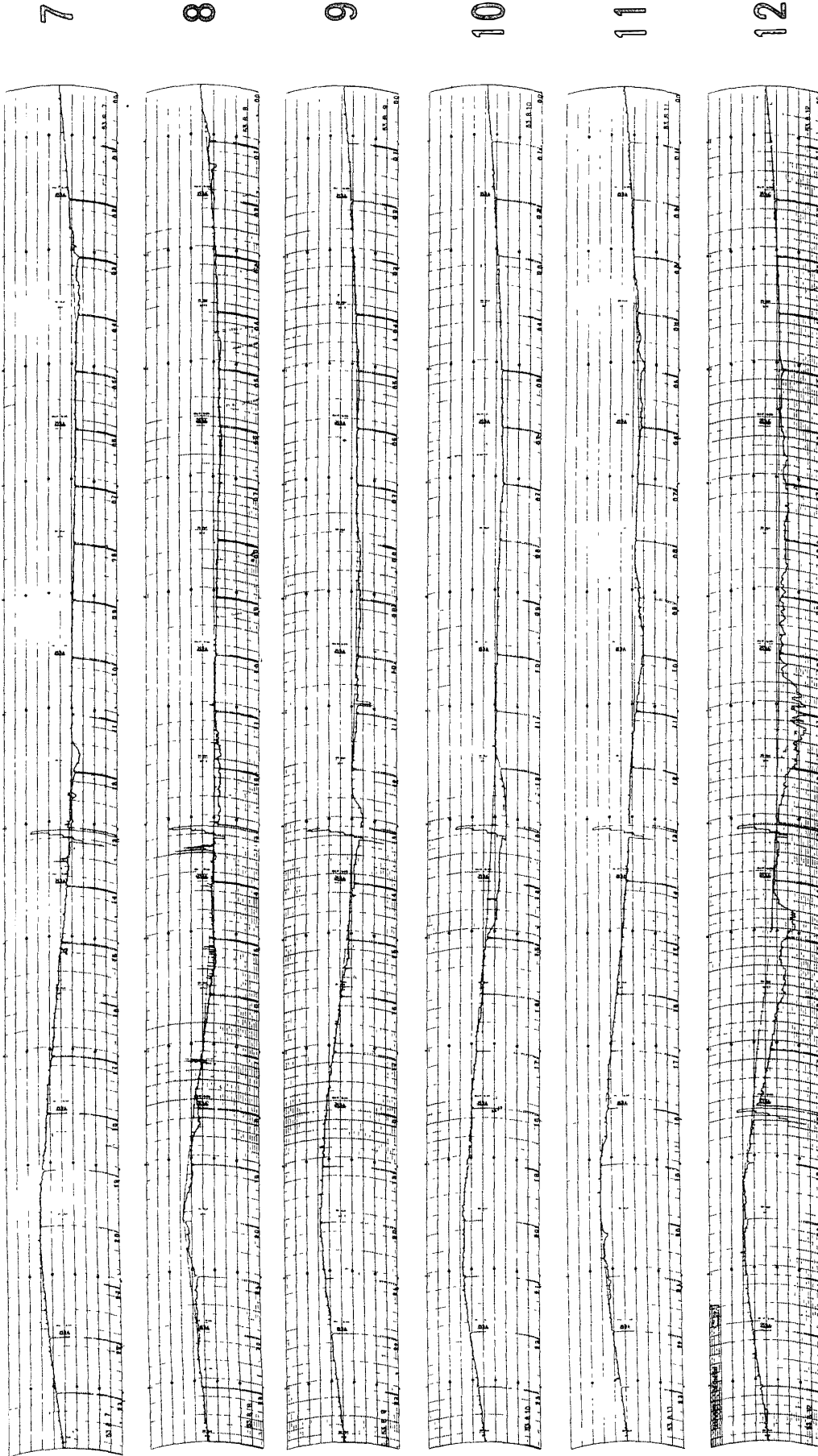
AUG 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

AUG 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

AUG 1978

13

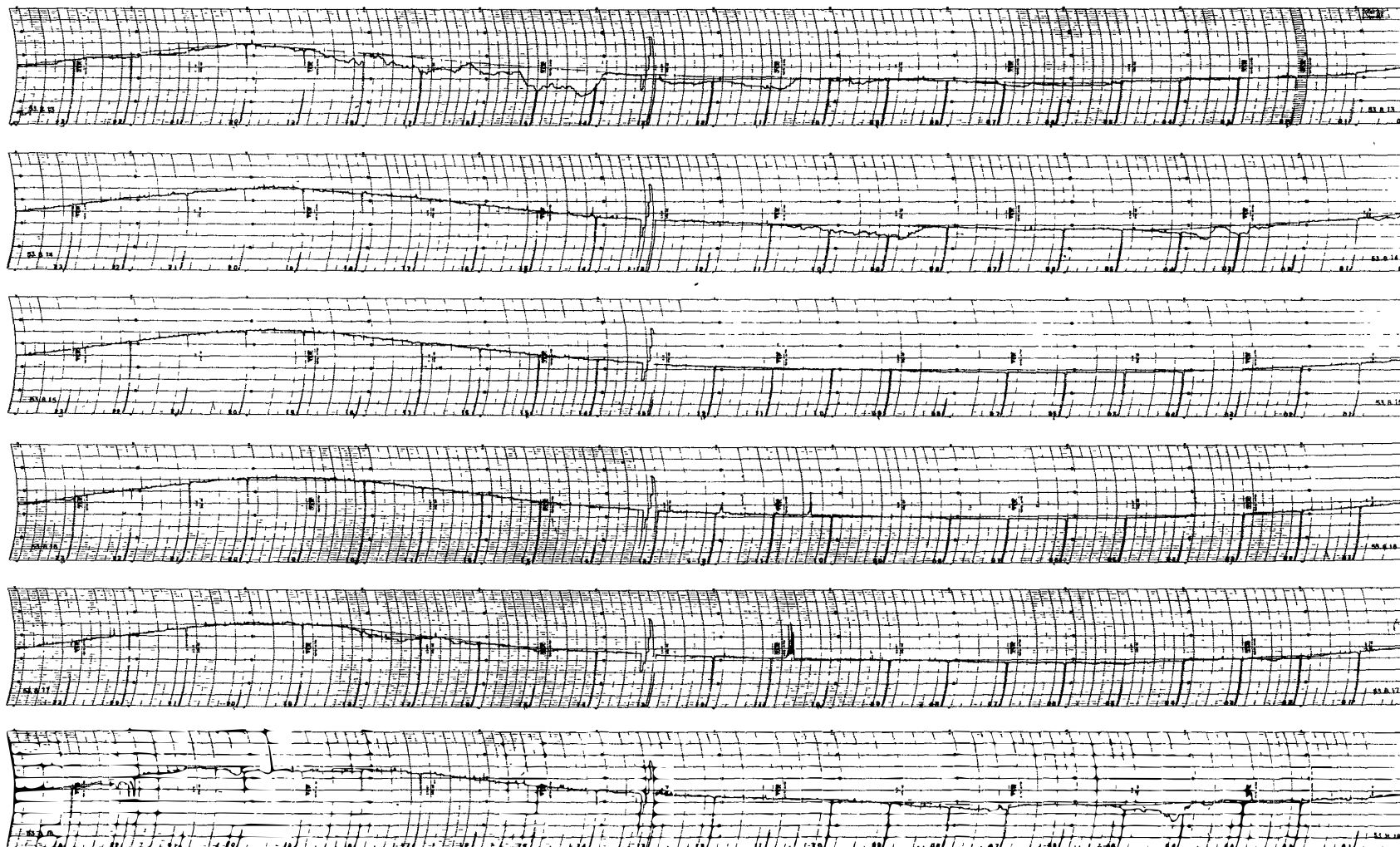
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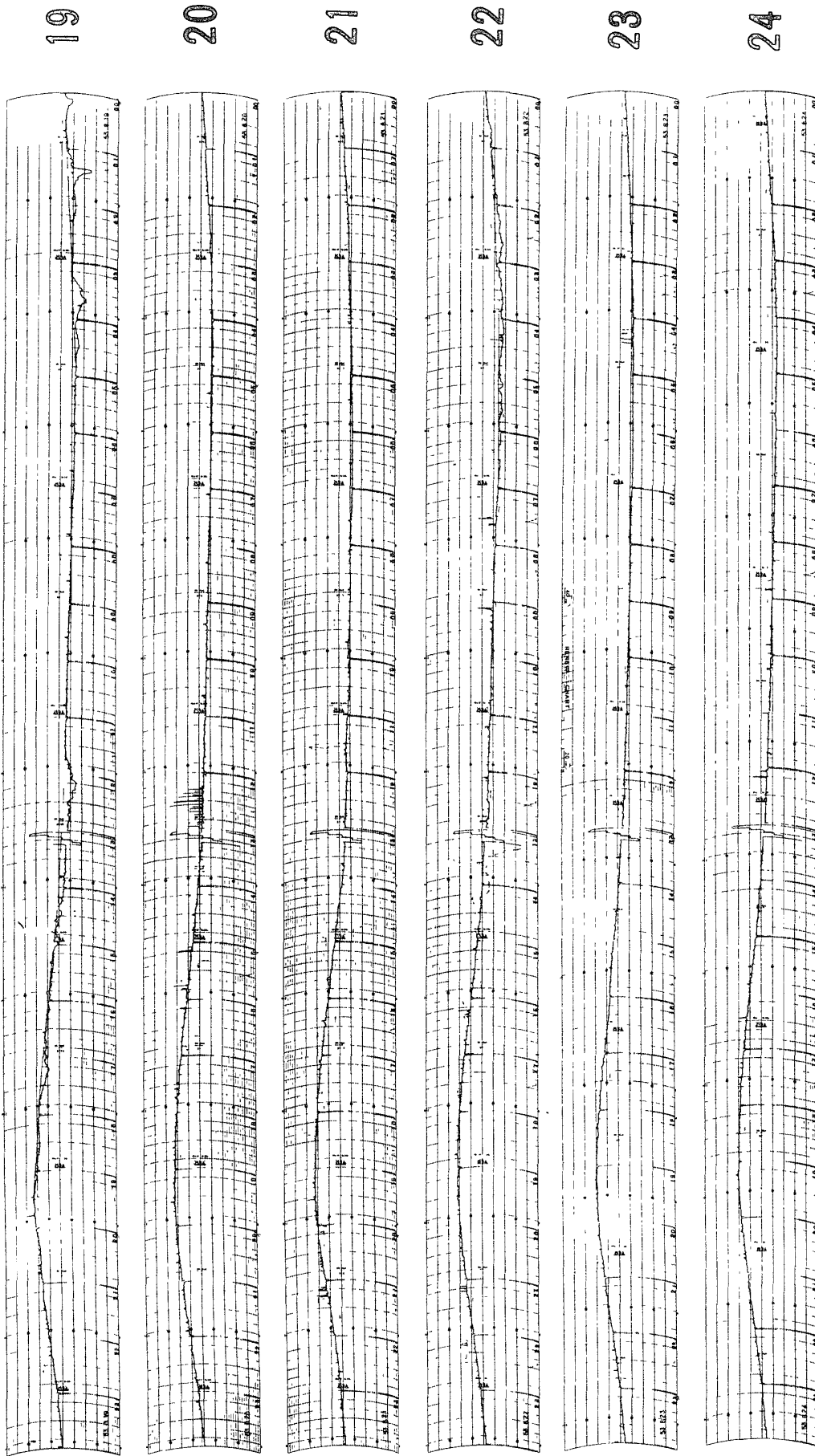
- 59 -

24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

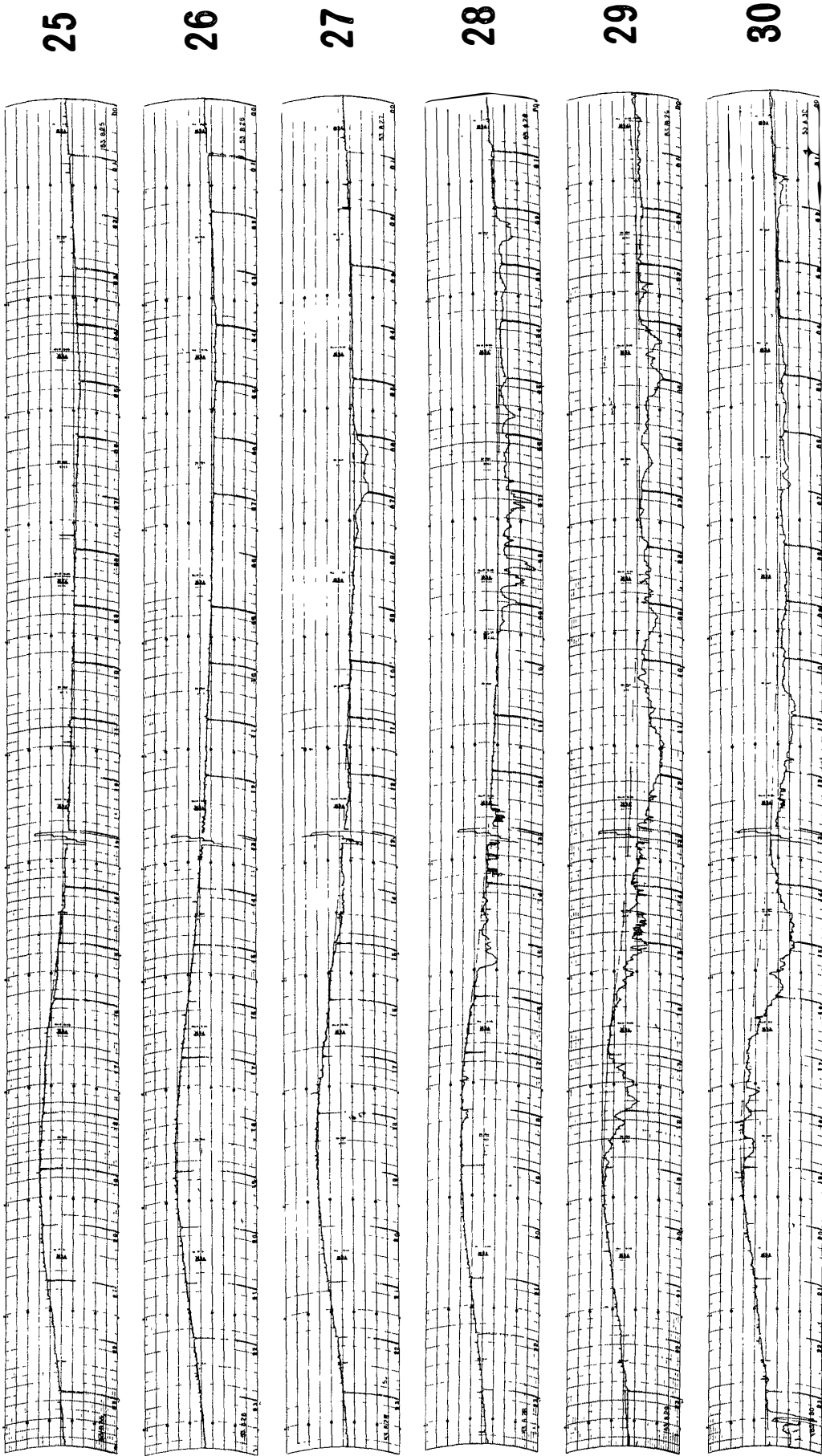
AUG 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

AUG 1978

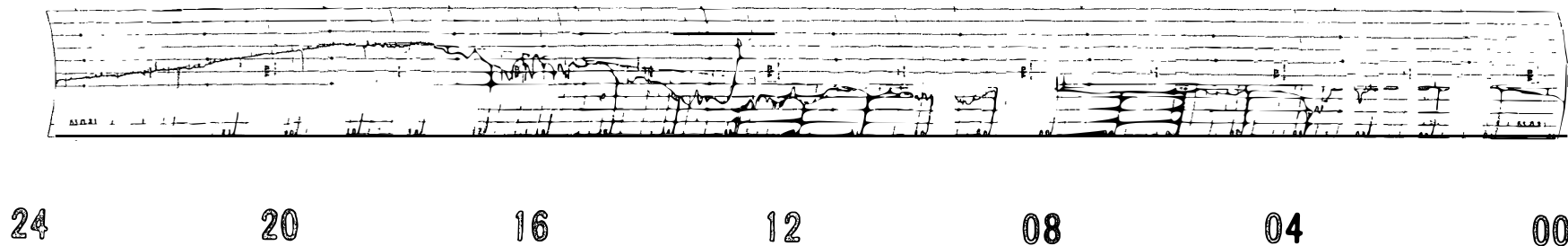


24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

AUG 1978

31



45° EAST MERIDIAN TIME IN HOURS

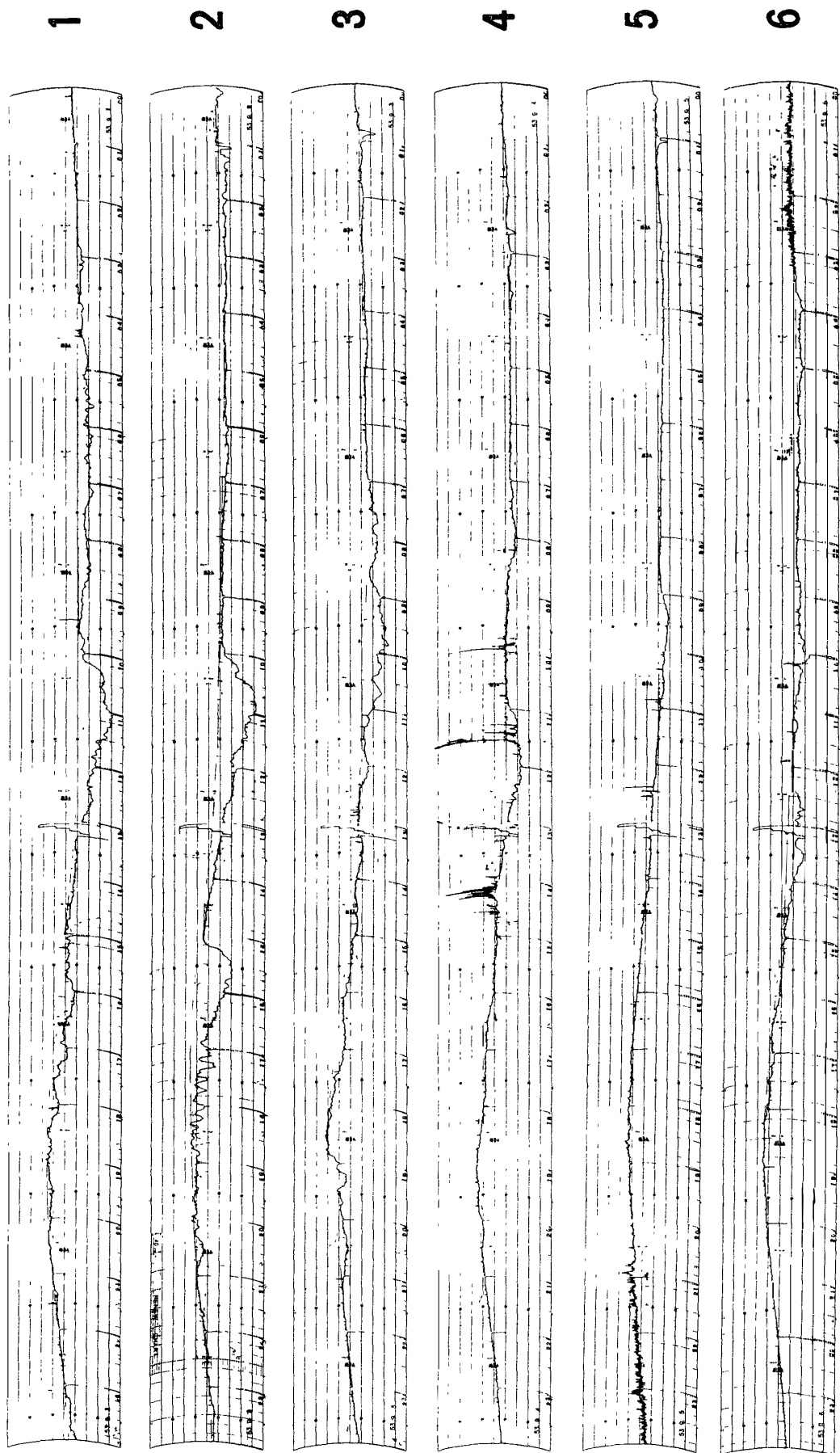
30 MHz COSMIC NOISE

Cosmic noise level obscured or equipment malfunction.

August 1 1452 -

2 1349 failure of equipment

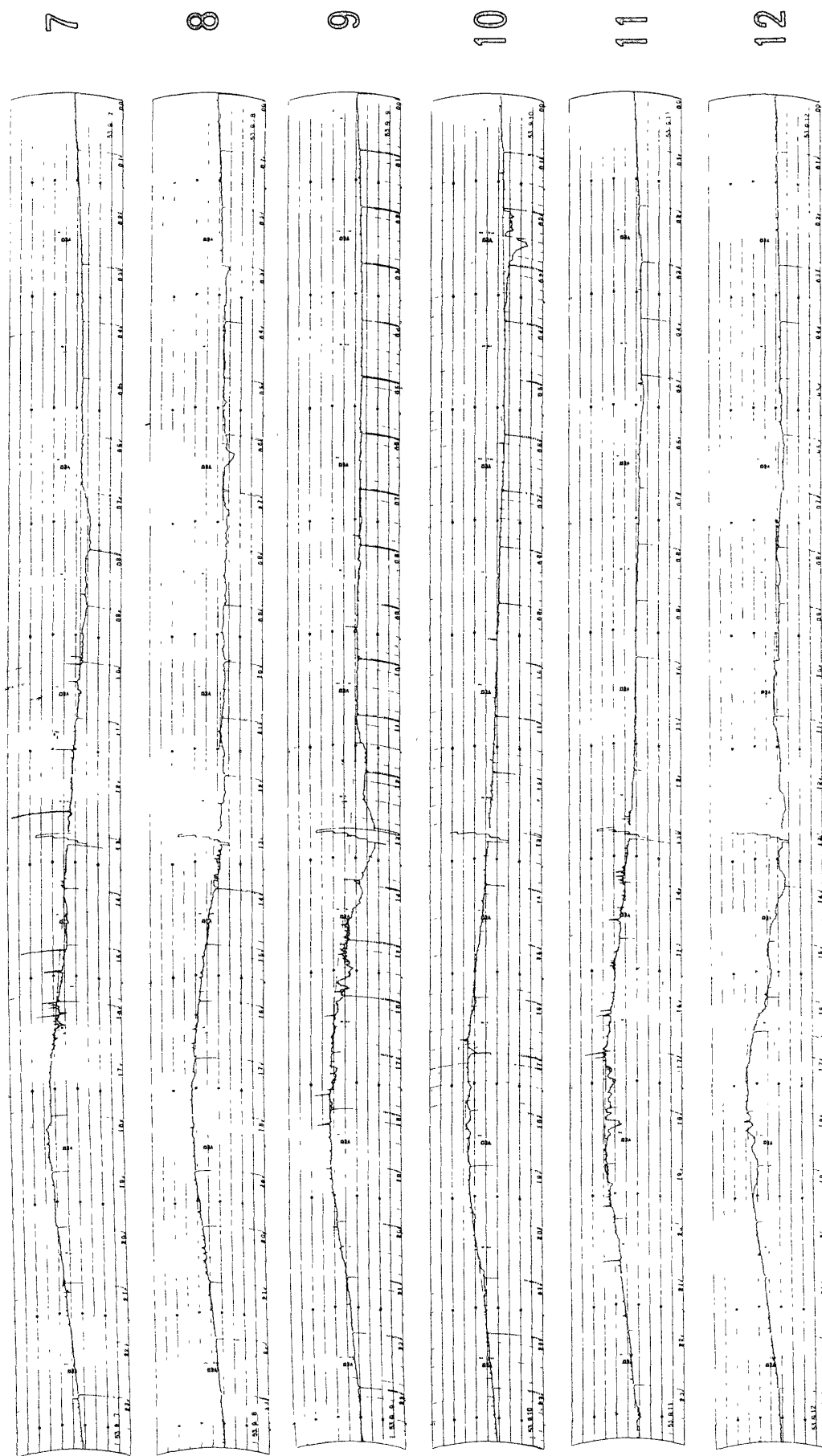
SEP 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

SEP 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

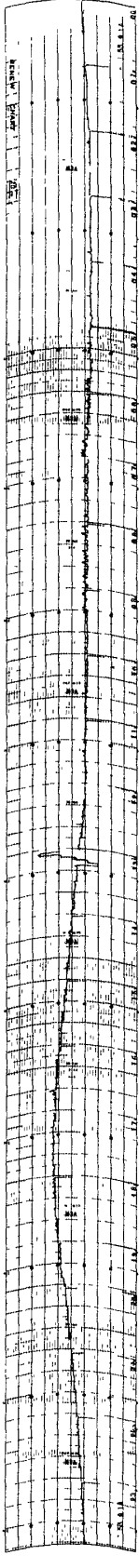
30 MHz COSMIC NOISE

SEP 1978

13



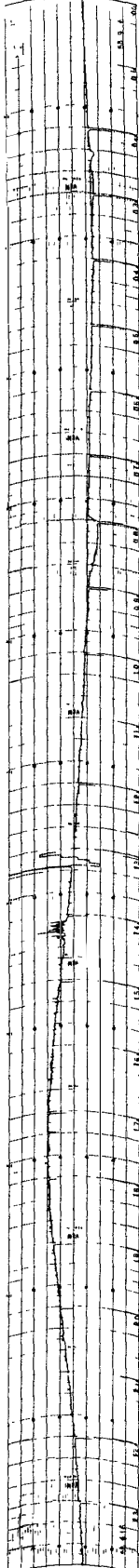
14



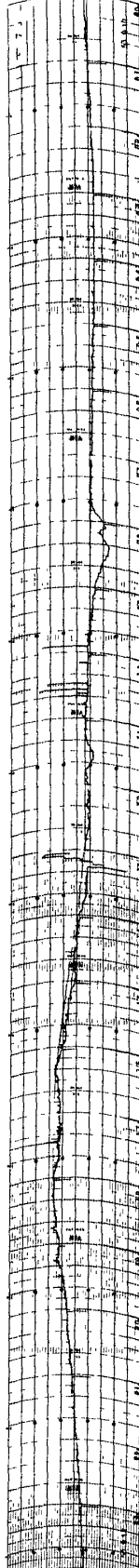
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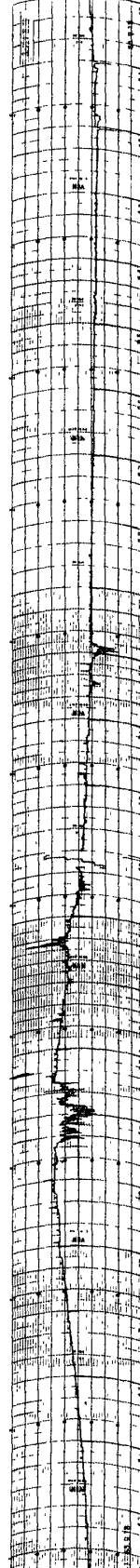
16



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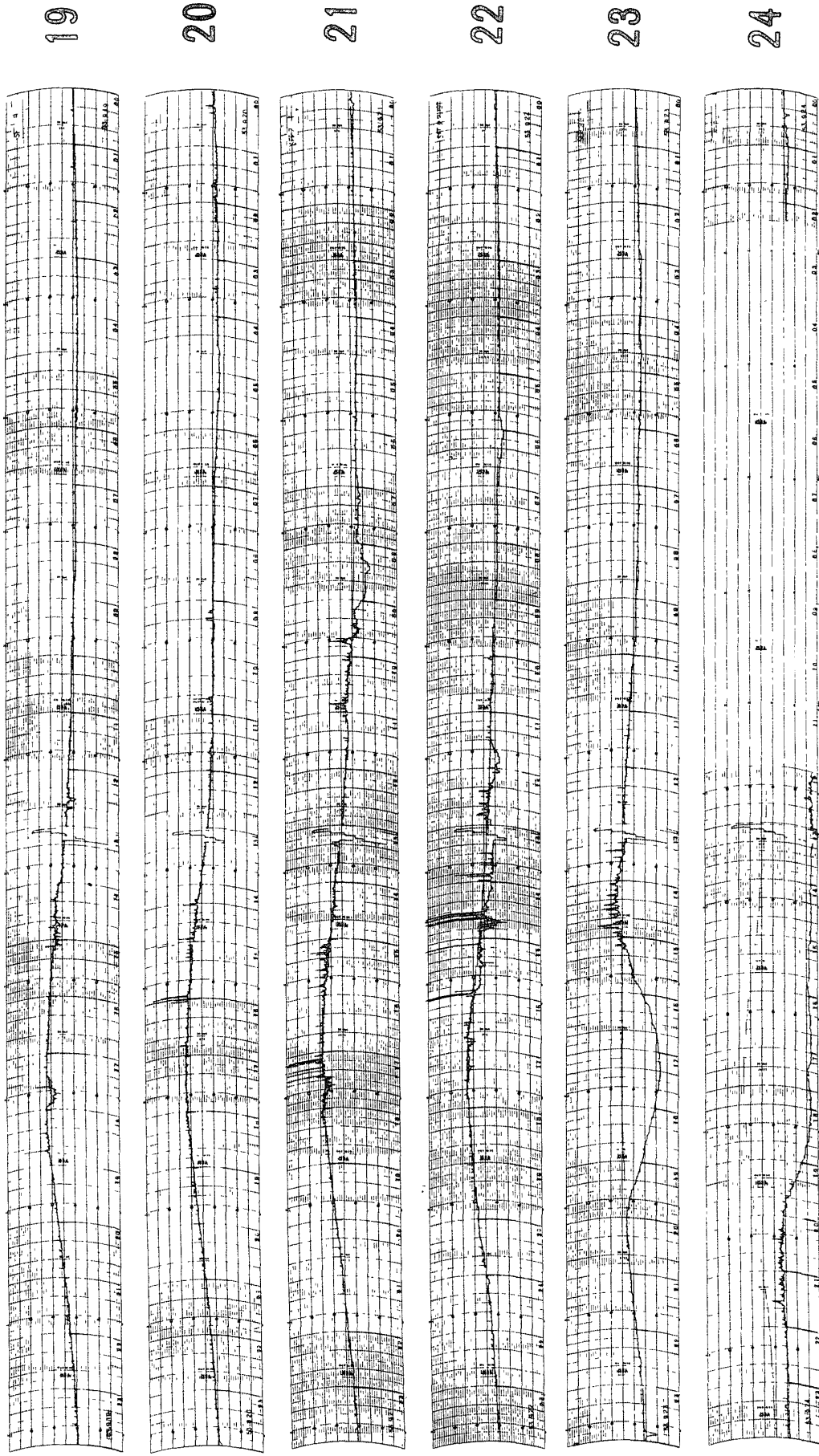
18



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

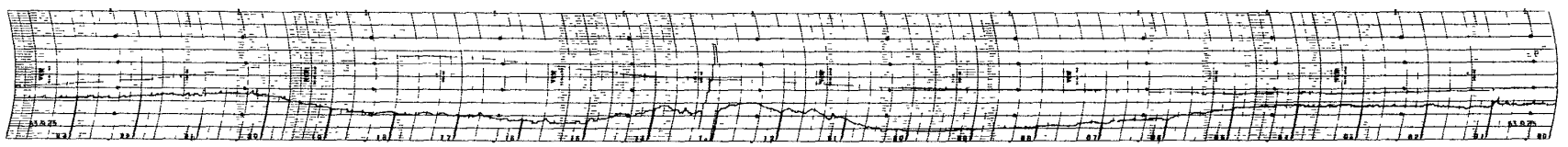
SEP 1978



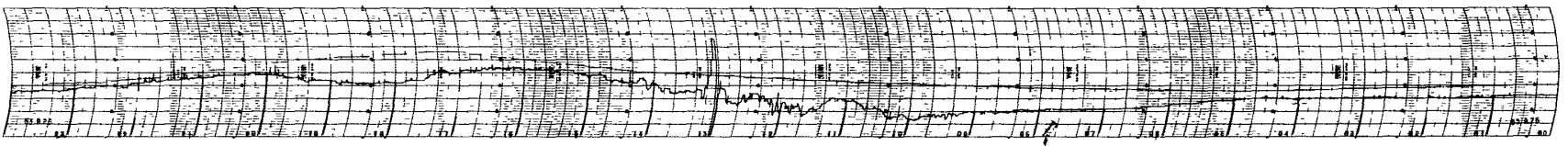
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

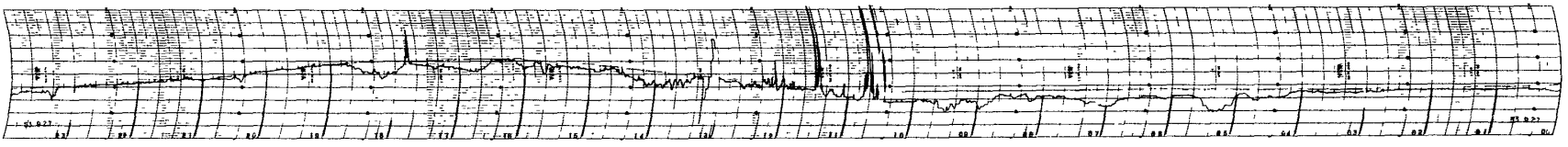
SEP 1978



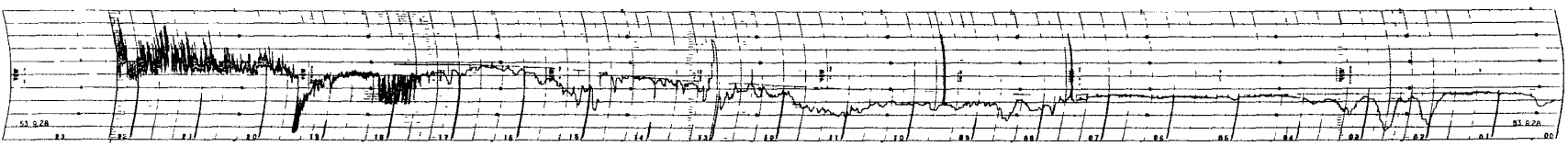
25



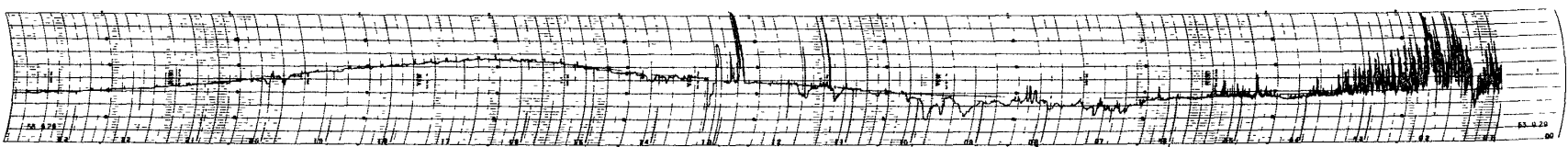
26



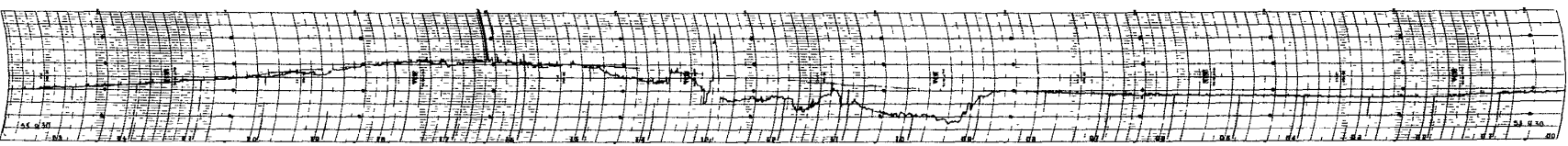
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24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

- 67 -

Cosmic noise level obscured or equipment malfunction.

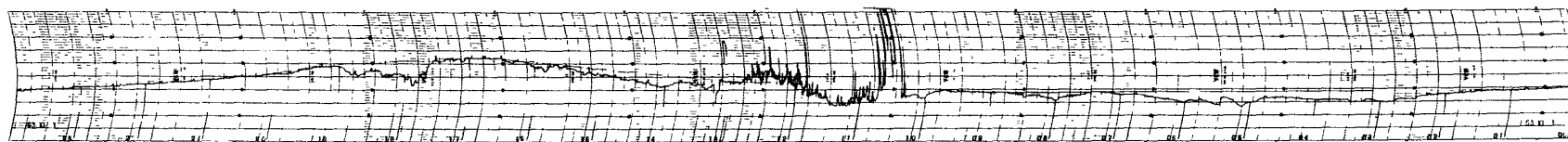
September 24 0220 - 1204 failure of equipment

28 2220 -

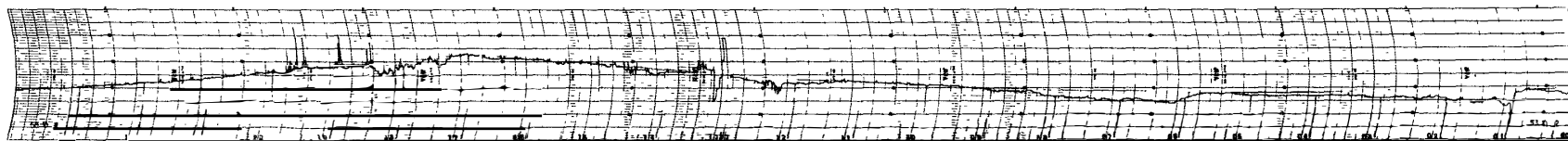
29 0100 "

SEP 1978

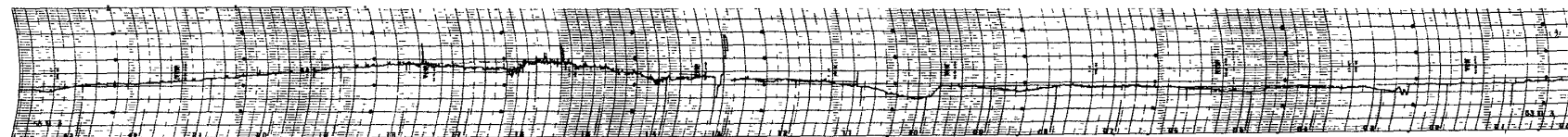
OCT 1978



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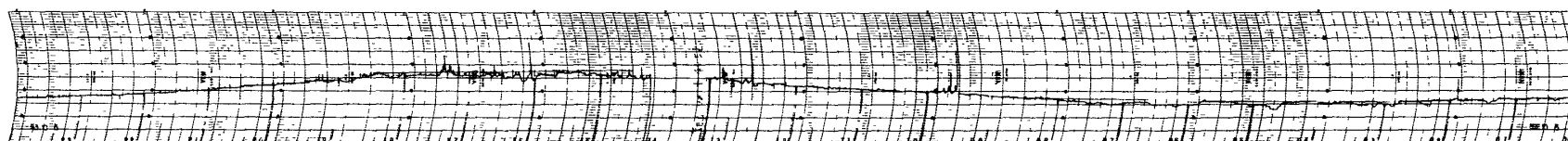
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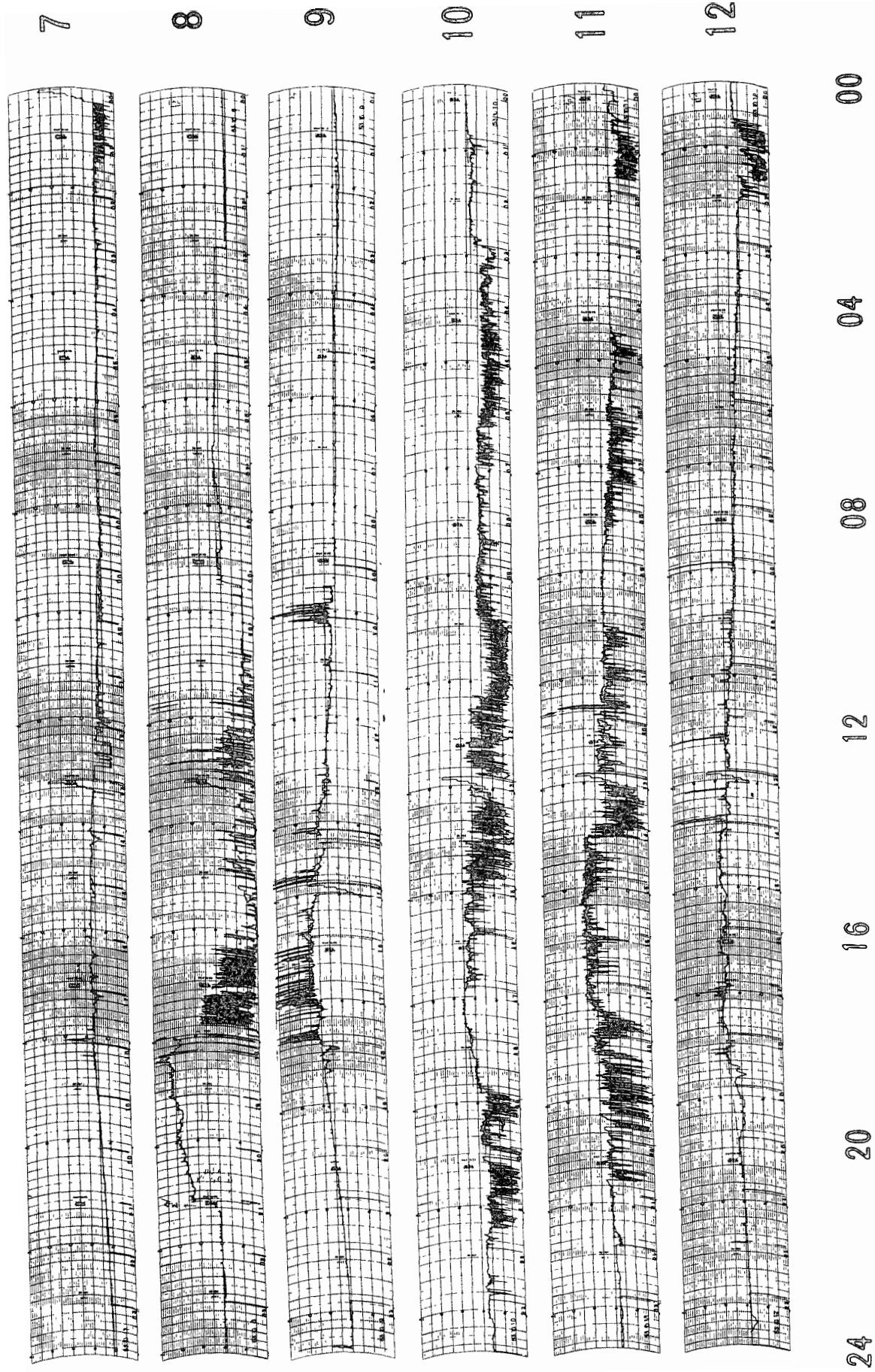
— 69 —

24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

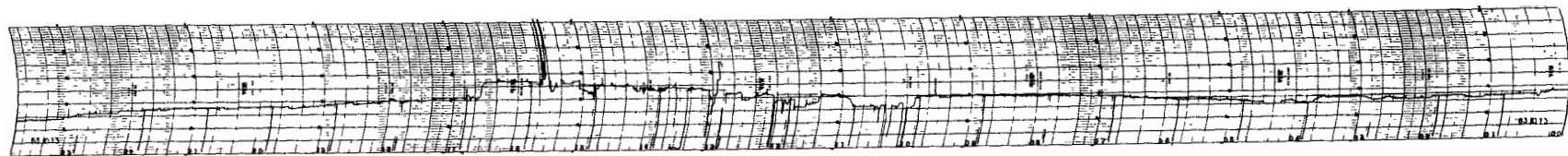
OCT 1978



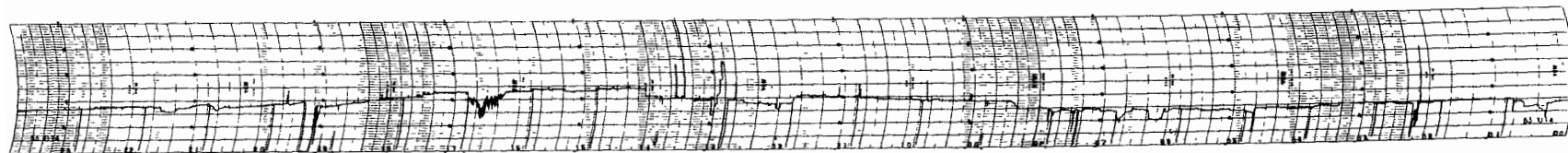
30 MHz COSMIC NOISE

45° EAST MERIDIAN TIME IN HOURS

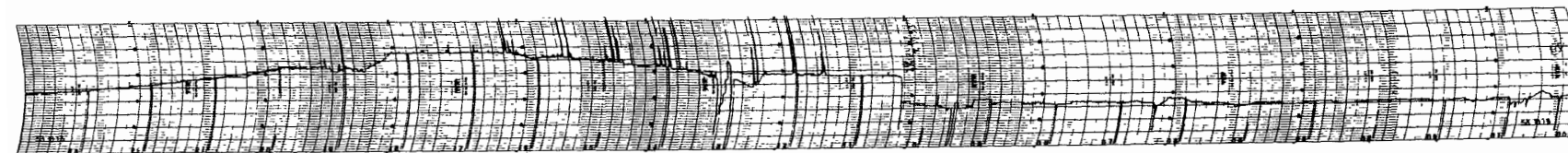
OCT 1978



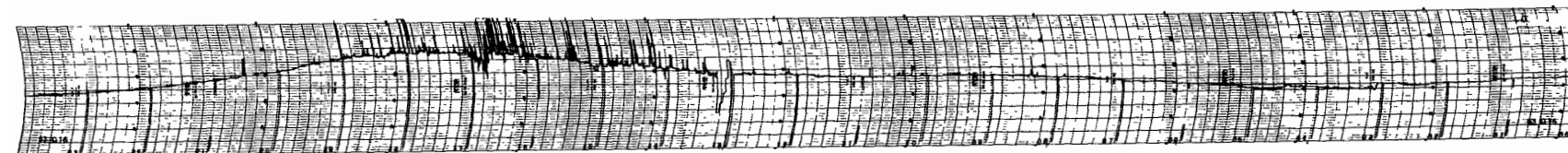
13



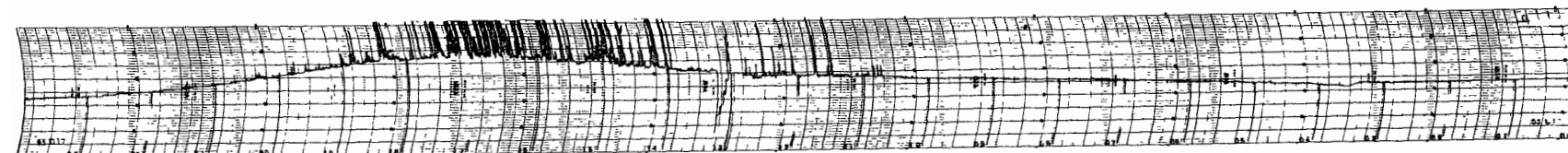
14



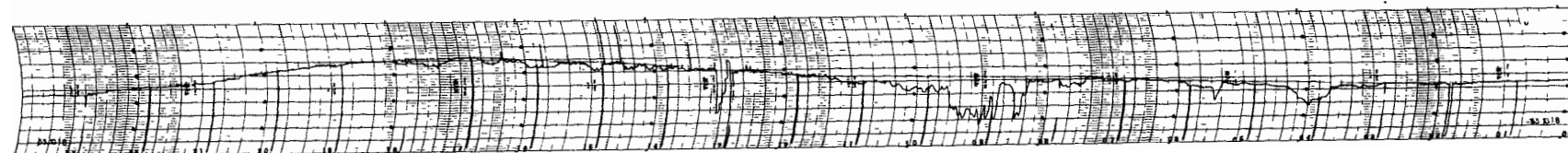
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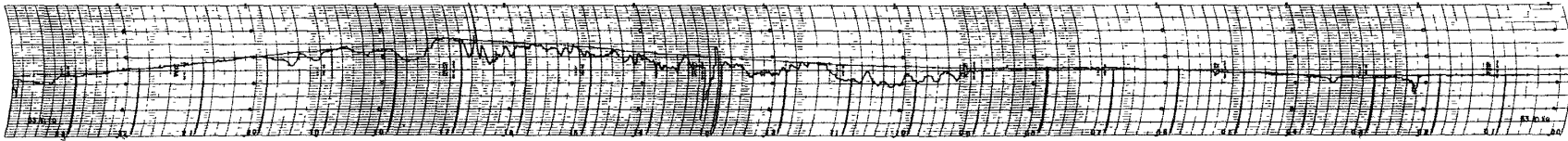
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

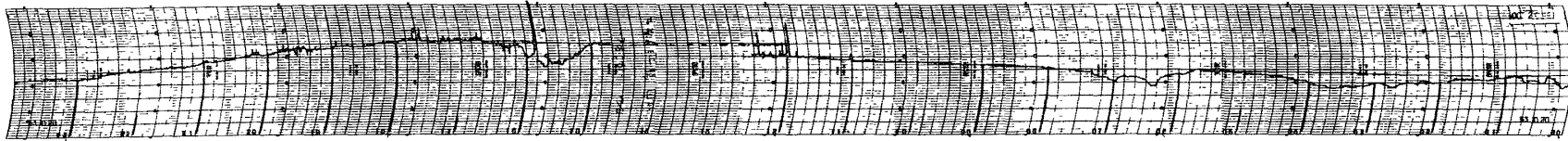
30 MHz COSMIC NOISE

- 7 1 -

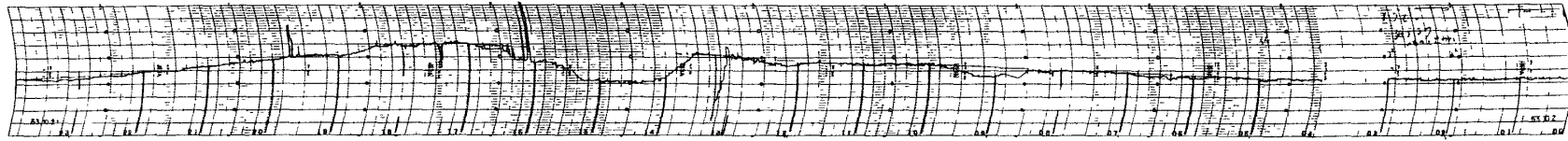
OCT 1978



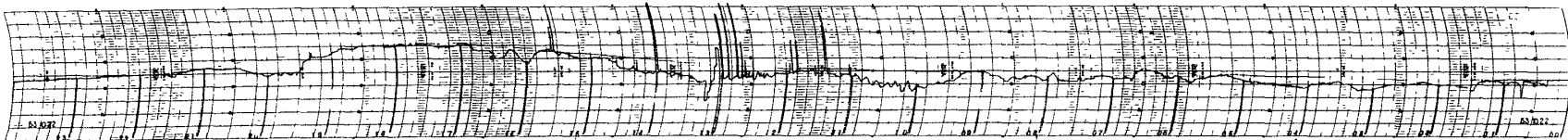
19



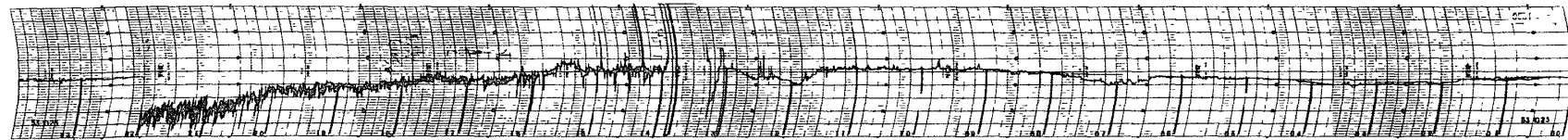
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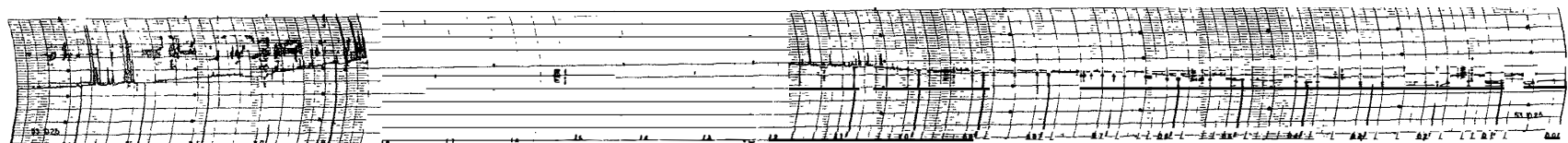
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

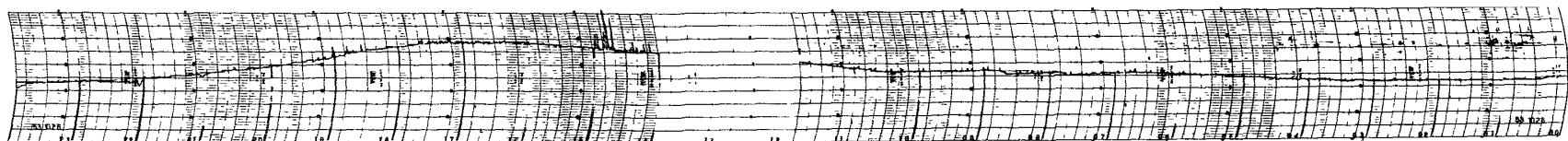
30 MHz COSMIC NOISE

- 72 -

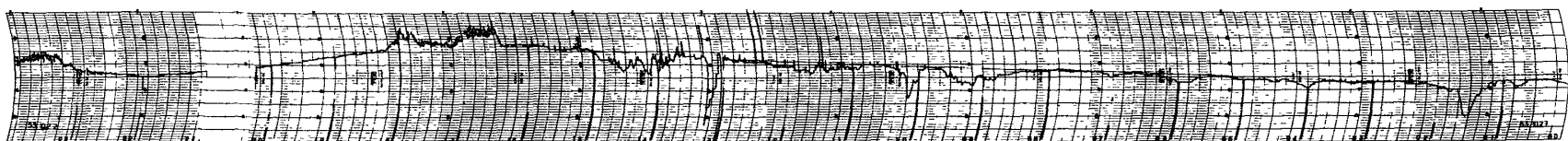
OCT 1978



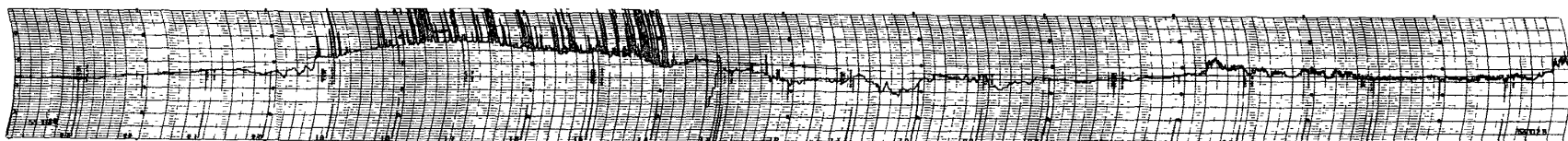
25



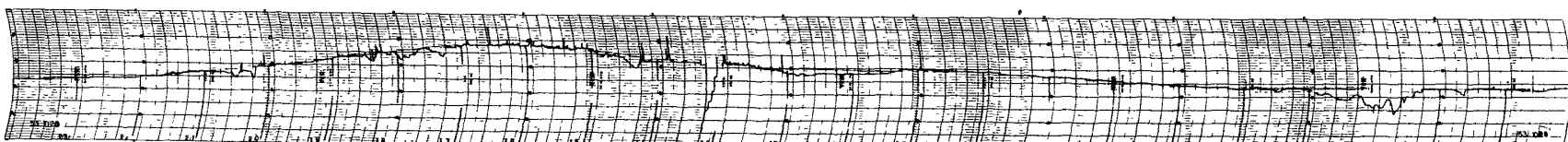
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-- 73 --

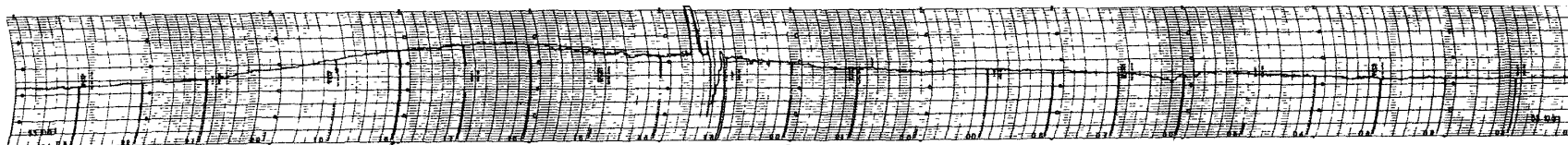
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

OCT 1978

31



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

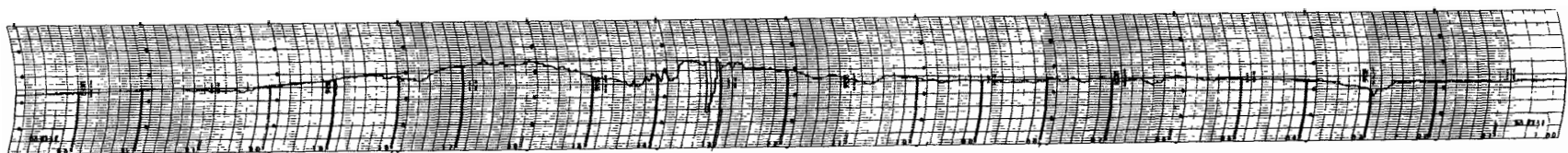
30 MHz COSMIC NOISE

Cosmic noise level obscured or equipment malfunction.

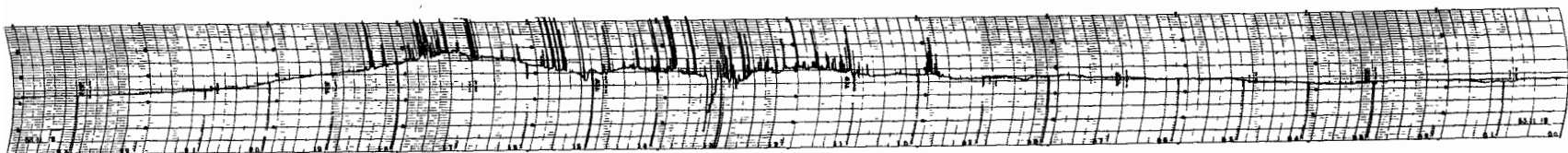
| | | |
|-----------|-------------|----------------------|
| October 4 | 1840 - 2000 | failure of equipment |
| 5 | 1318 - 1415 | " |
| 20 | 1230 - 1442 | " |
| 21 | 0300 - 0400 | " |
| 23 | 1300 - 1400 | " |
| 25 | 1200 - 1830 | " |
| 26 | 1150 - 1400 | " |
| 27 | 2013 - 2100 | " |

-74-

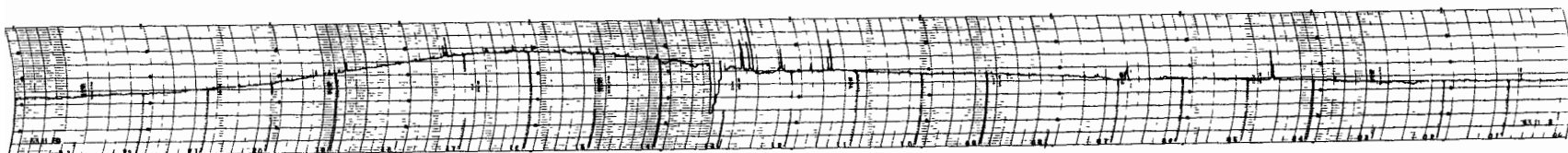
NOV 1978



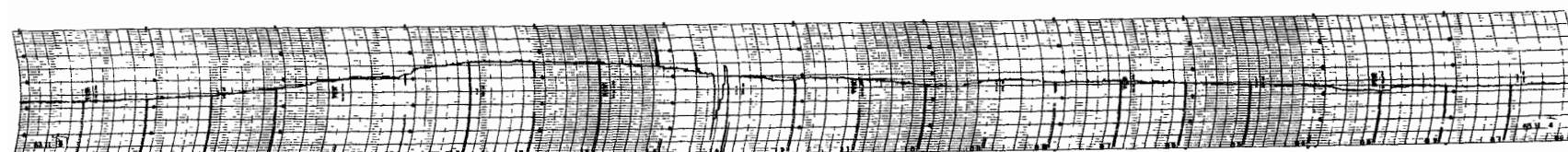
1



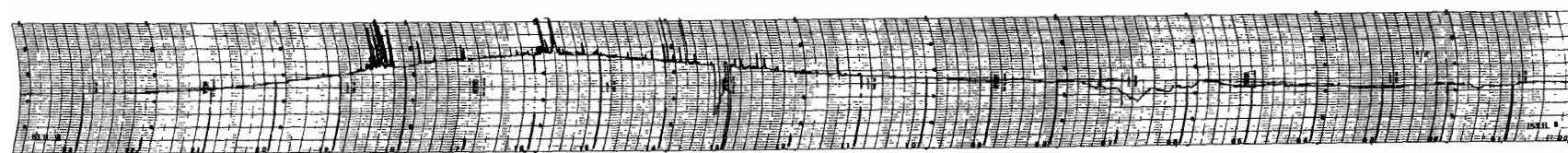
2



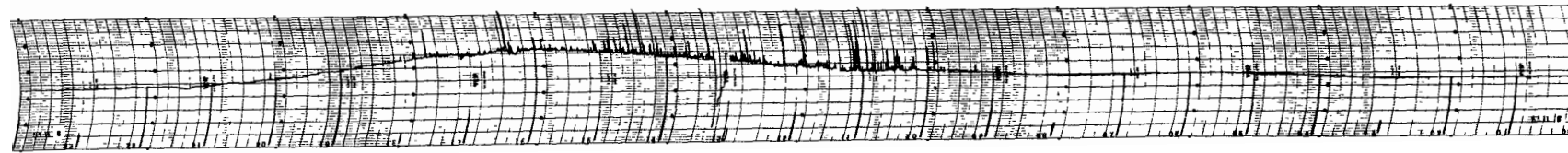
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— 75 —

24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

NOV 1978

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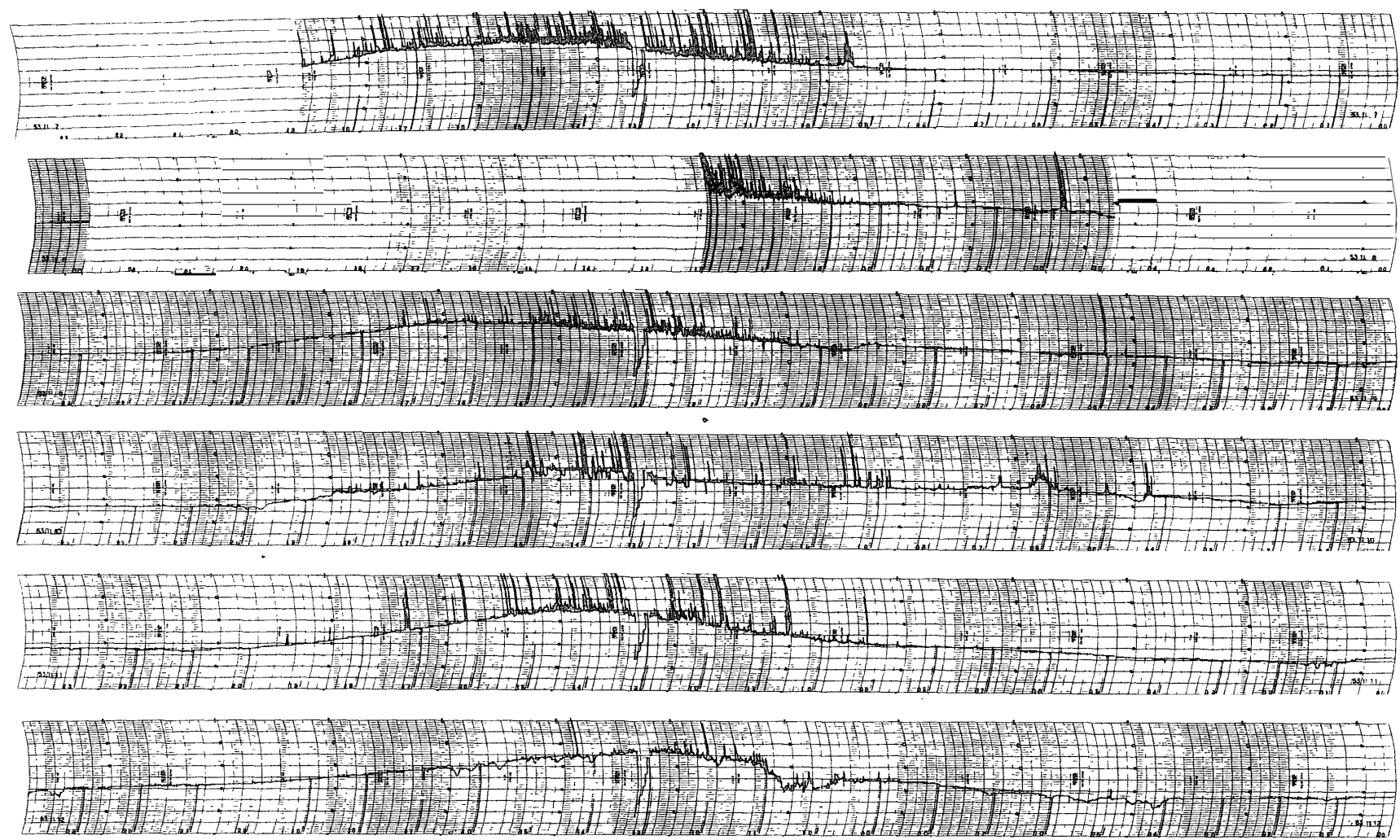
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-76-

24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

NOV 1978

13

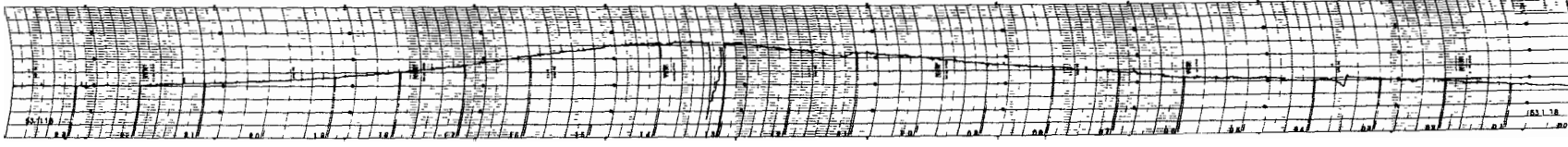
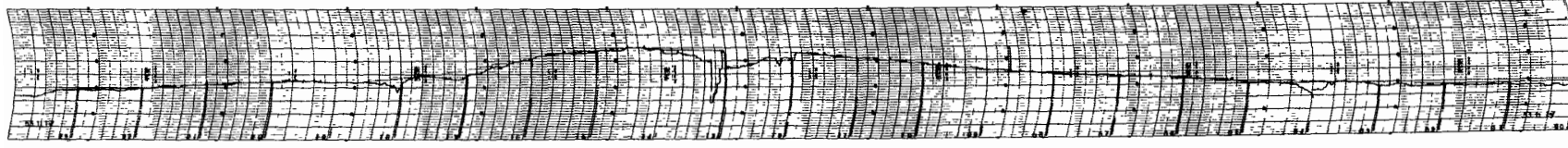
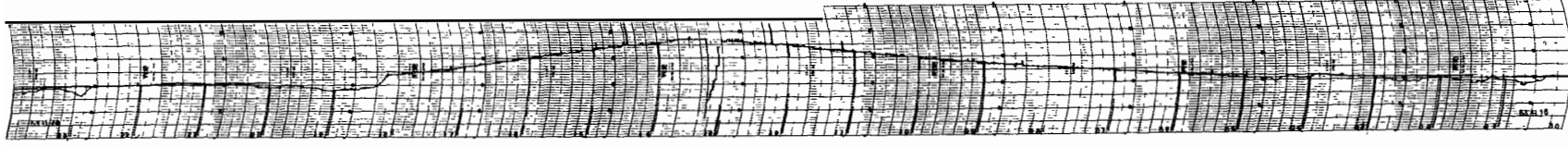
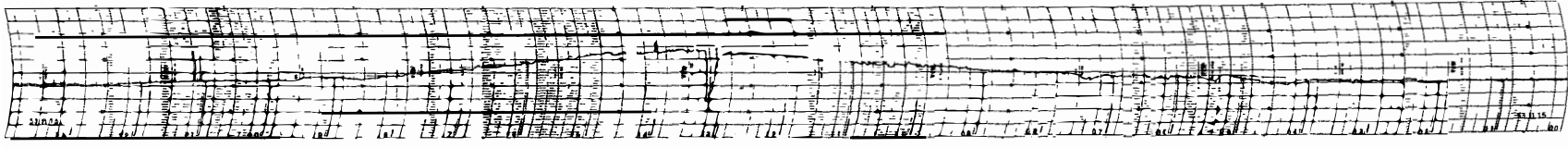
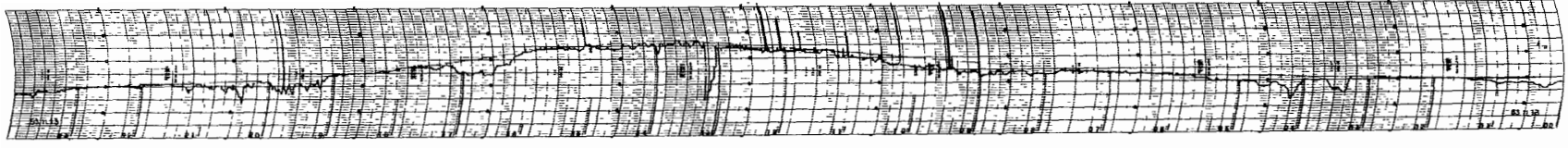
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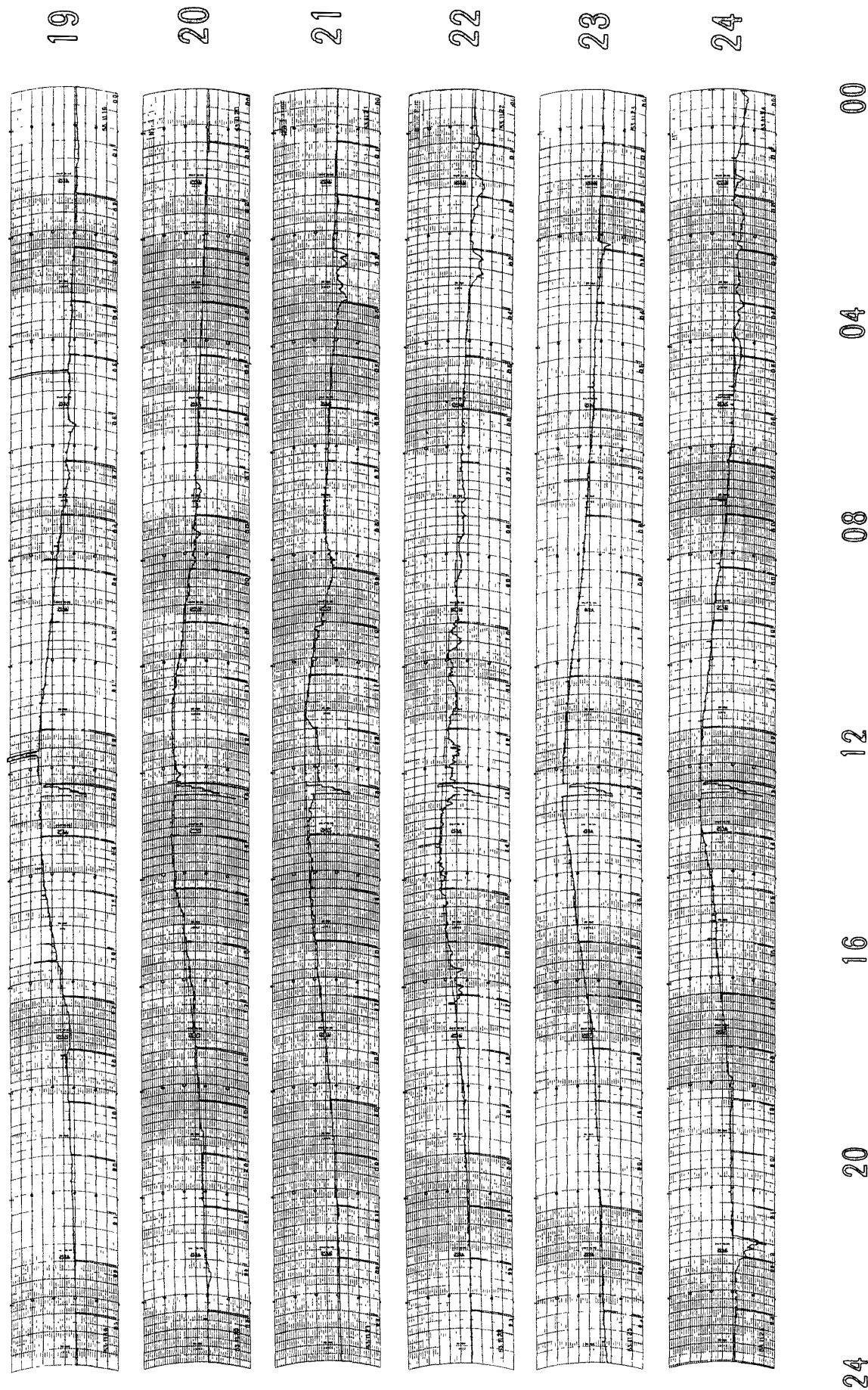
— 77 —

24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

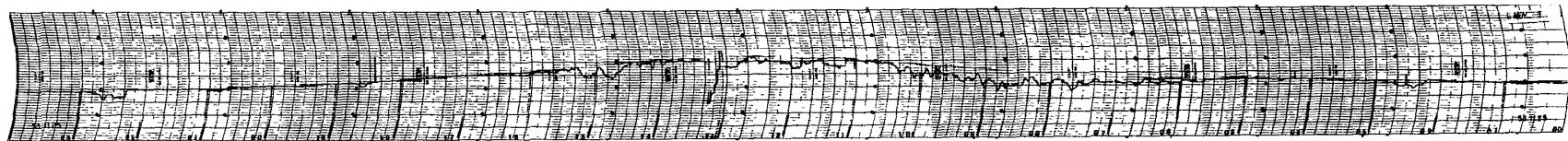
NOV 1978



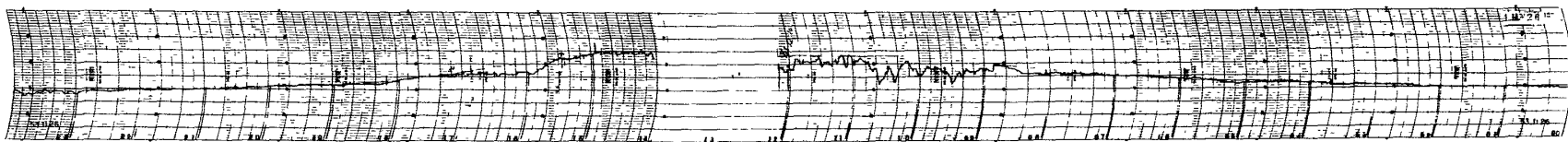
30 MHz COSMIC NOISE

45° EAST MERIDIAN TIME IN HOURS

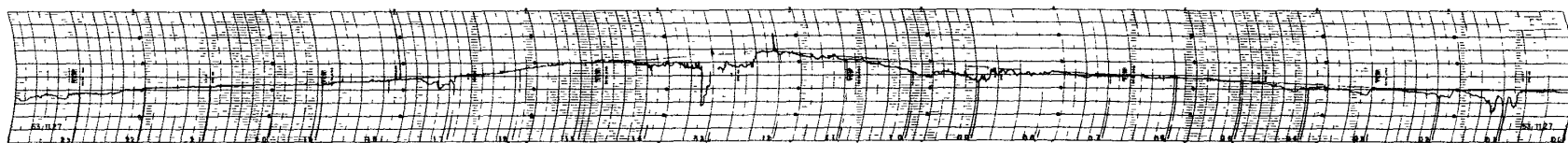
NOV 1978



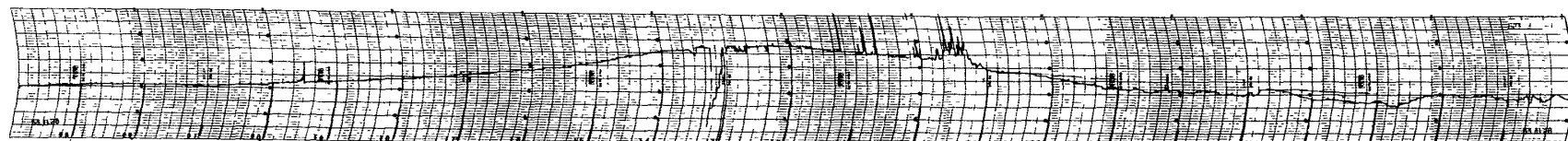
25



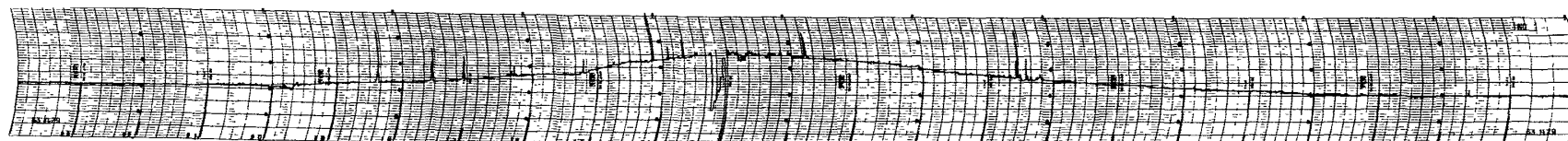
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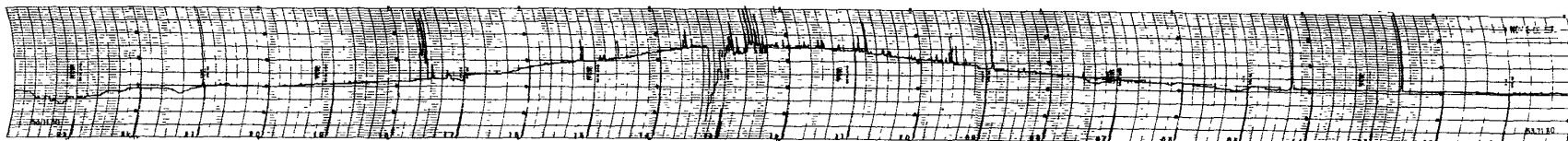
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24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

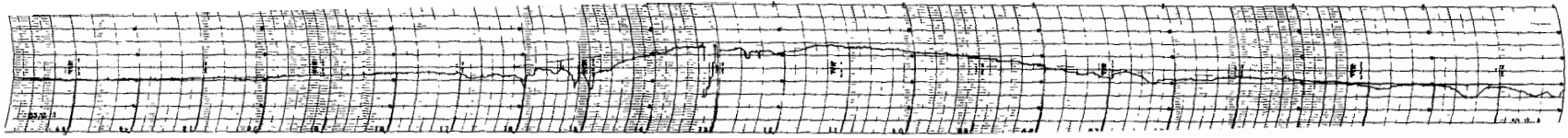
-79-

Cosmic noise level obscured or equipment malfunction.

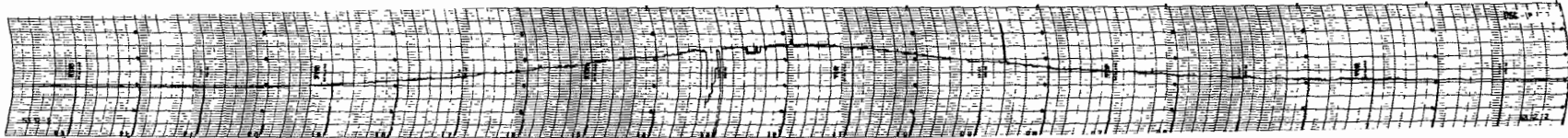
| | | | | |
|----------|----|------|--------|----------------------|
| November | 7 | 1900 | - | |
| | 8 | | 0458 | failure of equipment |
| | 8 | 1200 | - 2307 | " |
| | 26 | 1210 | - 1403 | " |

NOV 1978

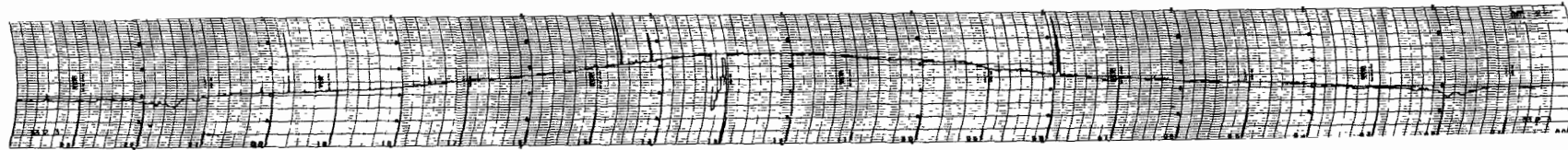
DEC 1978



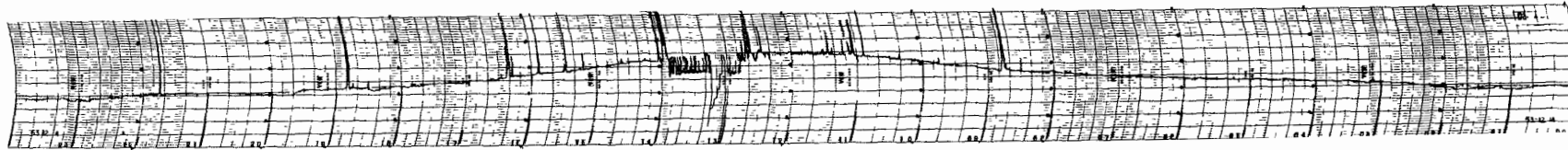
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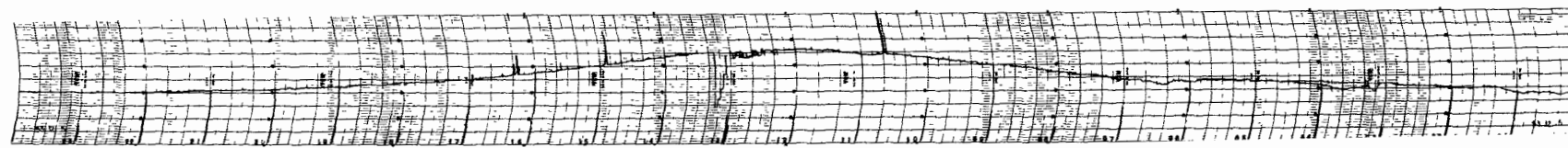
2



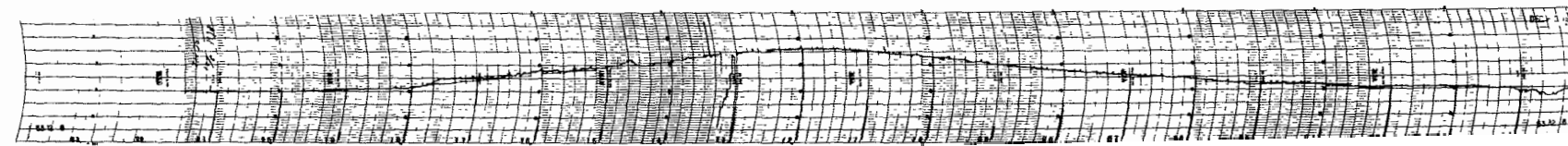
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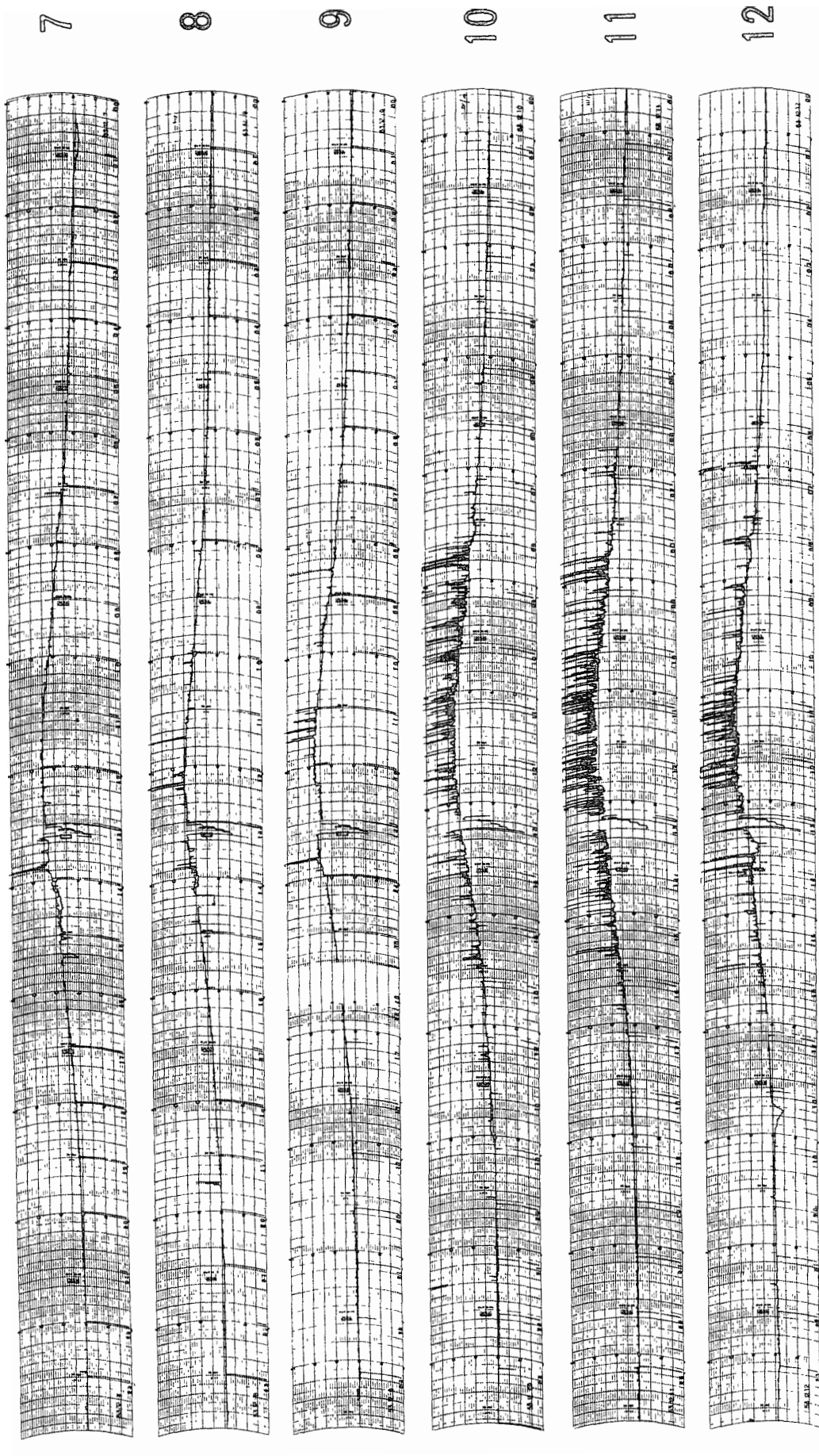
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

- 8 1 -

DEC 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

DEC 1978

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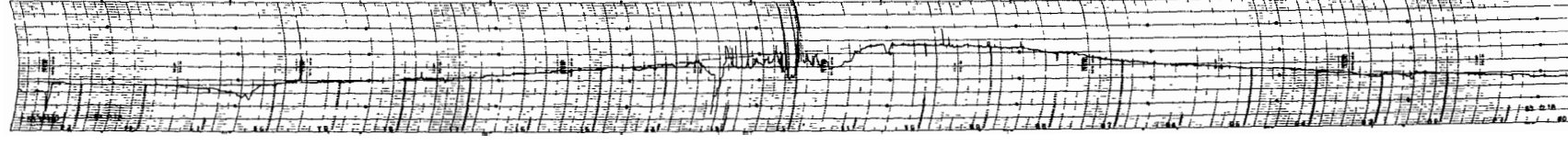
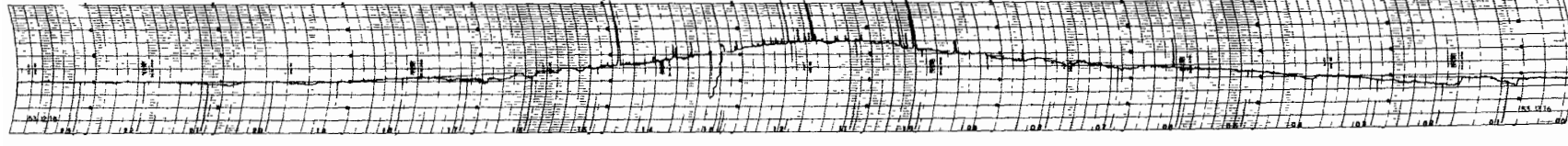
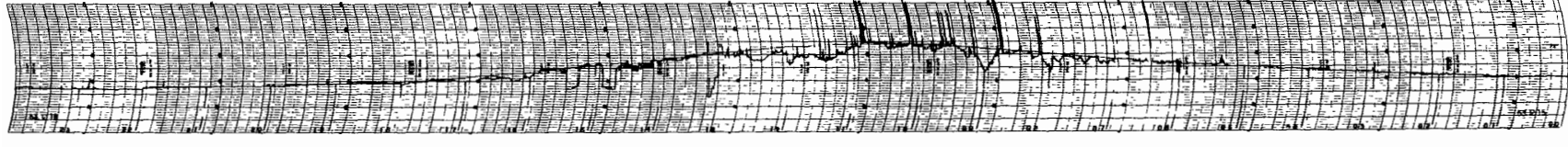
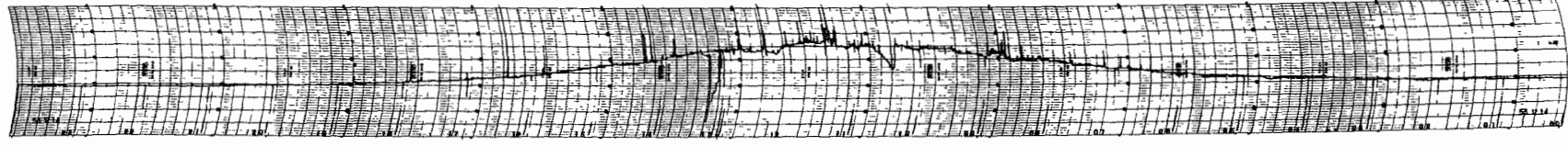
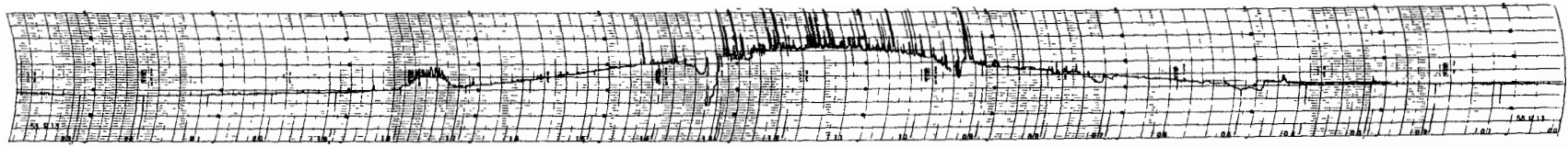
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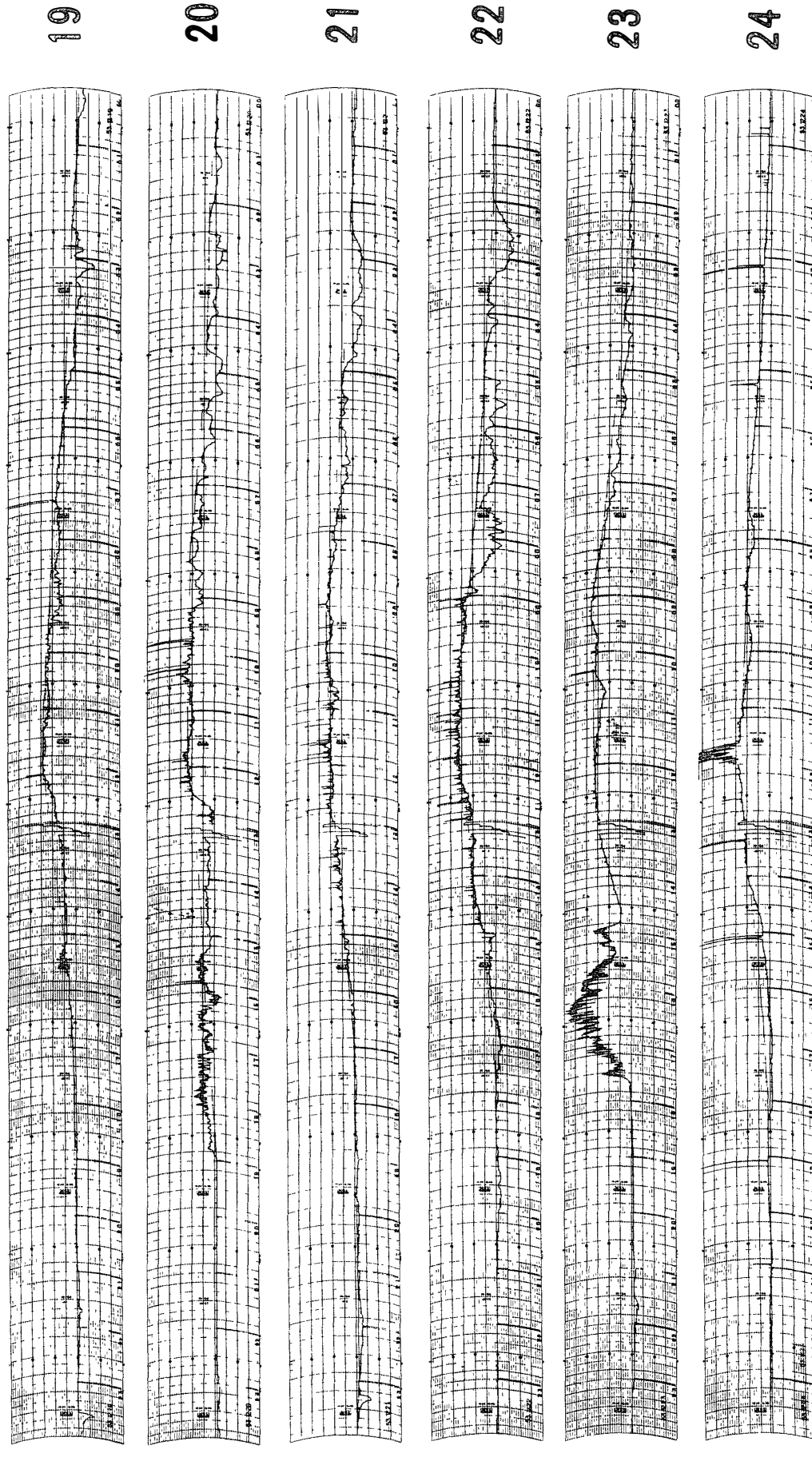
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

— 83 —

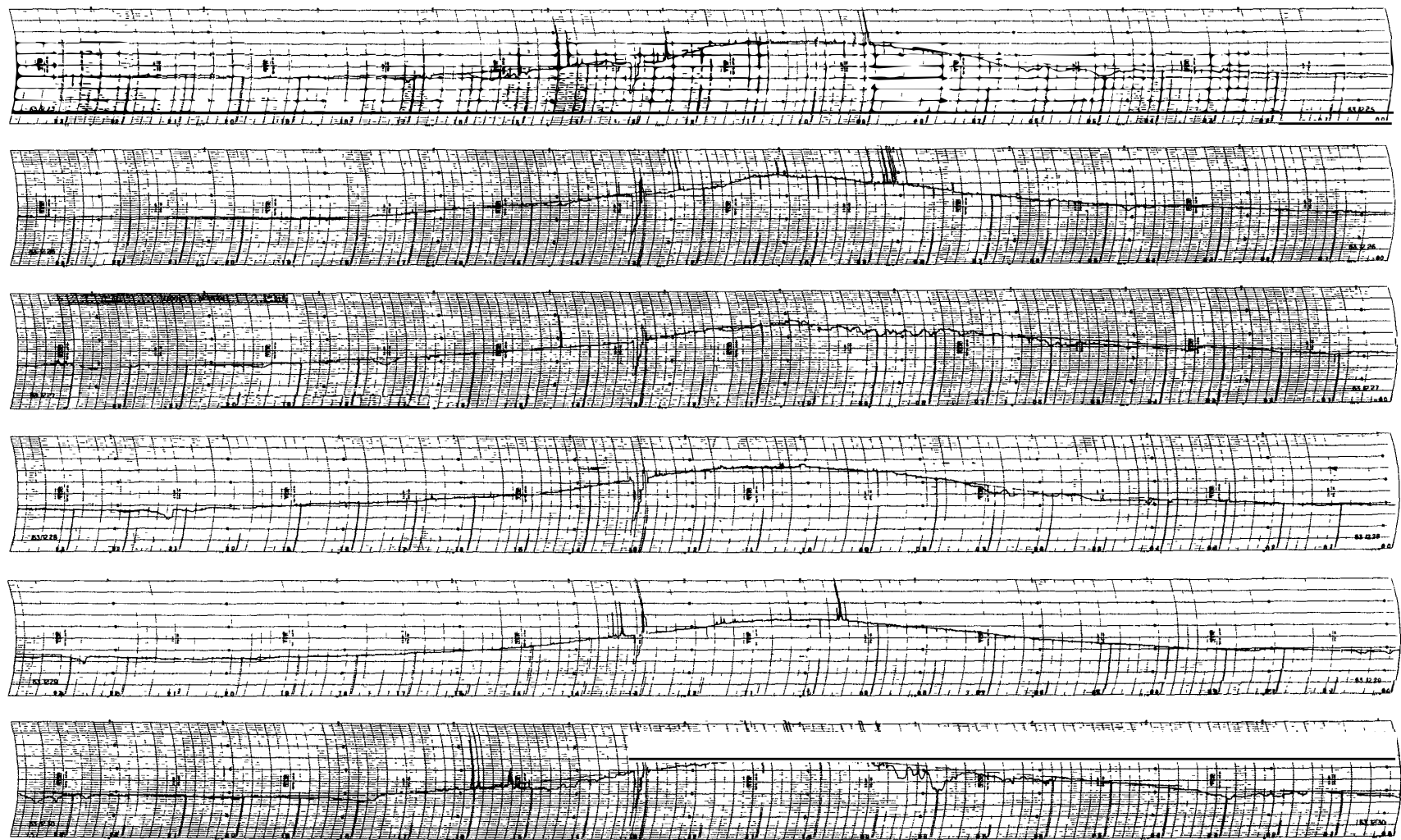
DEC 1978



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS 30 MHz COSMIC NOISE

DEC 1978



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- 85 -

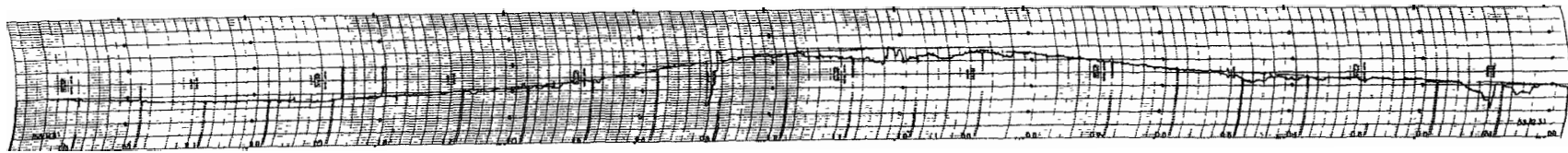
24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

DEC 1 978

31



24 20 16 12 08 04 00

45° EAST MERIDIAN TIME IN HOURS

30 MHz COSMIC NOISE

Cosmic noise level obscured or equipment malfunction.

| | | | |
|----------|---|-------------|----------------------|
| December | 6 | 2130 - | |
| | 7 | 0019 | failure of equipment |
| | 9 | 1530 - 1615 | " |

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