

2nd UAG-C 45 END



HIGH LATITUDE GEOPHYSICAL DATA

- 30 Mc/s COSMIC NOISE RECORDS—July-Sept., 1966
- N-S TELLURIC CURRENT RECORDS—July-Sept., 1966
- N-S TELLURIC AMPLITUDE ACTIVITY—July-Sept., 1966
- TELLURIC FLUCTUATION ACTIVITY—July-Sept., 1966
- TELLURIC SONOGRAMS, Pc and Pi—July-Sept., 1966
- TELLURIC MICROPULSATION ACTIVITY, Pc 1—July-Sept., 1966
- GEOMAGNETIC ACTIVITY, K, Ak, C—July-Sept., 1966

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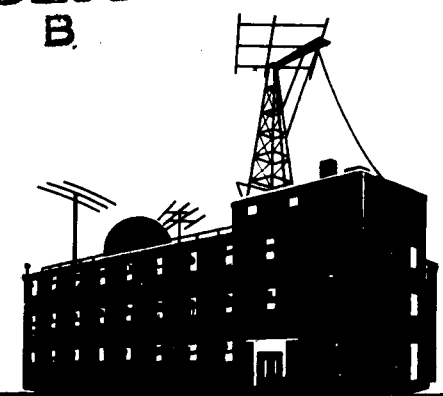
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2 GEOPHYSICAL INSTITUTE
UNIVERSITY OF ALASKA
COLLEGE, ALASKA



"High Latitude Geophysical Data" is published by the Institute with the objective of presenting current geophysical data related to polar ionospheric activity. Because of the research nature of the Institute's program, the type of material presented and the experimental and scaling methods may be novel and are subject to change. Thus the methods are described in sufficient detail to assure correct interpretation of data.

V. P. Hessler, Editor

30 MC/S COSMIC NOISE LEVEL

R. Parthasarathy
Assoc. Professor of Physics

and

J. L. Hook
Assistant Geophysicist

This section consists of reproductions of the cosmic radio noise level at 30 Mc/s, monitored at College, Alaska (64.65°N, 256.56°E, geomagnetic).

The zenith directed antenna is a pair of crossed, 3-element Yagis, responding to the noise in the right circular mode. The beam has approximate rotational symmetry, with about 60 degrees between half-power points. The power linear receiver system is calibrated at 1.0, 2.0, 3.0, 4.0 and 5.0 milliamp of the diode plate current.

The variation of the noise level at College is primarily due to the variation of the precipitating auroral particles. It is known that the energies of these primary particles (electrons and protons) that are of immediate relevance to the luminosity of the auroral displays are about a few kilovolts, and that the integral energy spectrum of the flux expressed as a power law of the energy is characterized by an exponent, minus γ , the γ varying from about two to five. It is also known from observations at 37 Mc/s with antenna beams comparable to the angular dimensions of the displays (i.e., a few degrees in the meridian plane) that, in general, the radiowave absorption in any direction is only poorly specified by the luminosity of the display. The radiowave absorption at a single frequency is not capable of specifying the height distribution of ionization responsible for the absorption, and hence the energies of the primary particles. Simultaneous absorption data in a number of frequencies in the HF and VHF band have, therefore, been utilized in the past for deriving the ionization profile as a function of height over College. The derived profiles suggest that the VHF absorption is dominantly controlled by the high energy tail ($20 \text{ kev} < E < 100 \text{ kev}$) of the precipitating electrons.

The recording and reproduction of these traces is financially supported by the National Aeronautics and Space Administration under Contract NAS5-3595.

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30 MC/S COSMIC NOISE

JUL 1966

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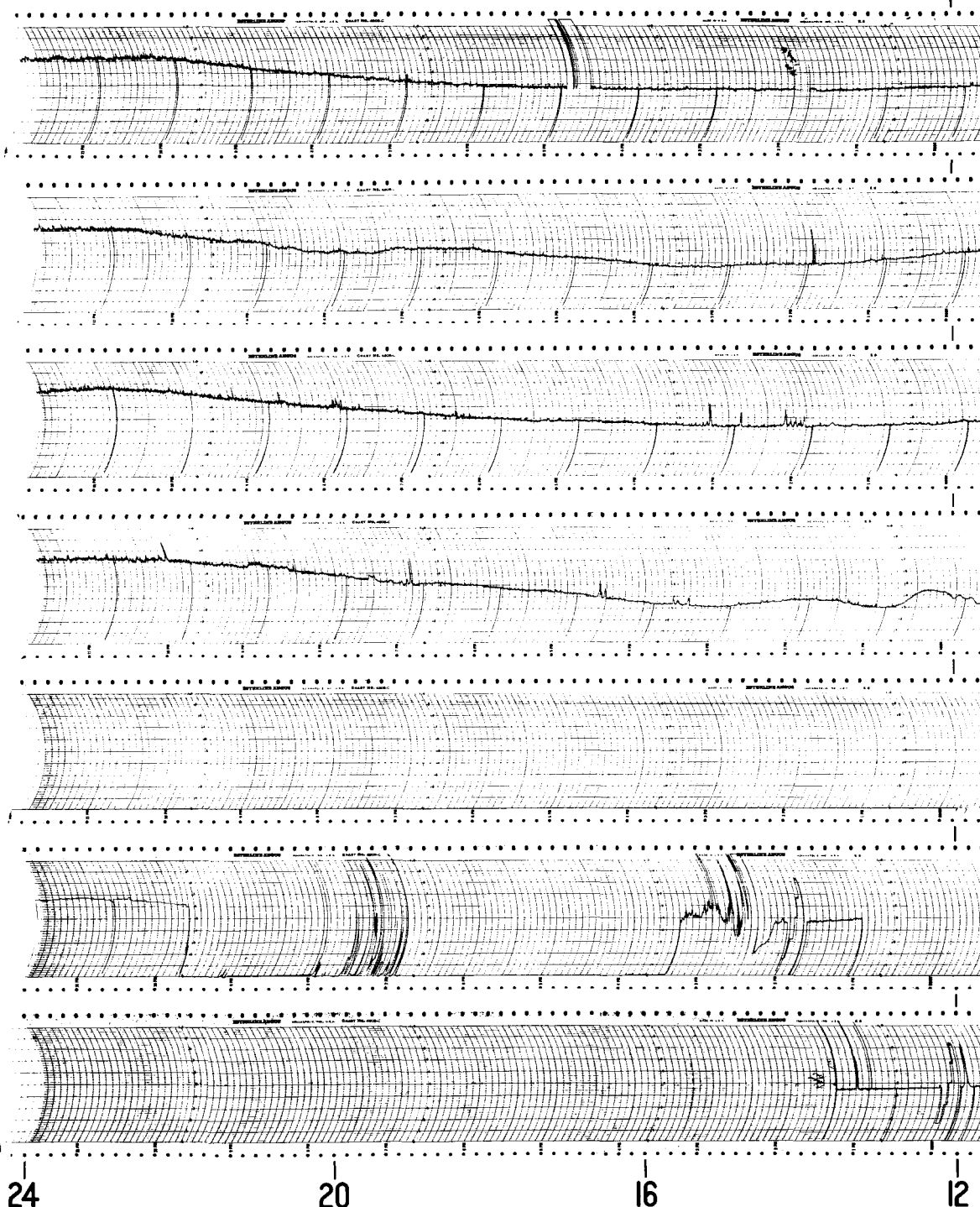
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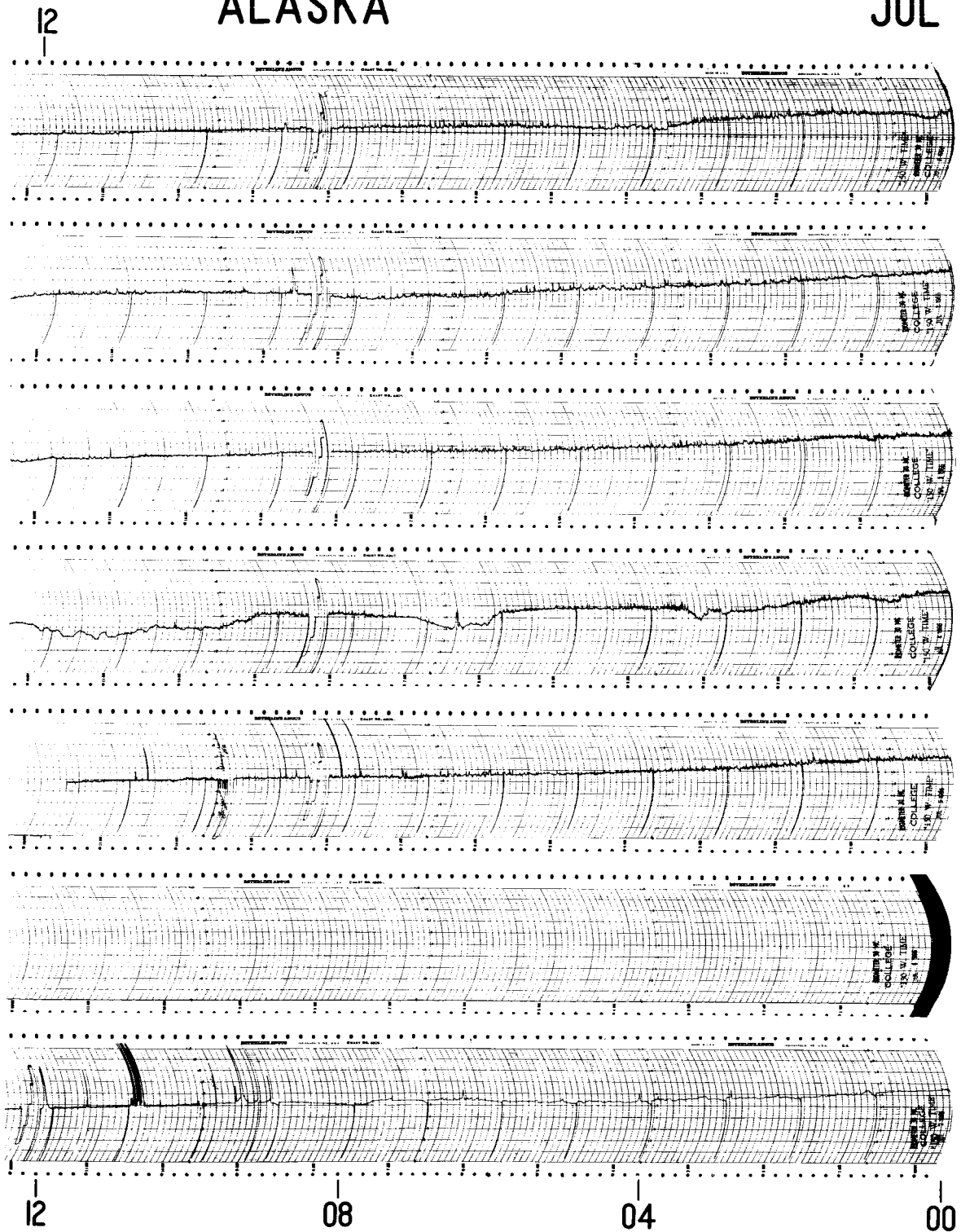
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150° WEST MERIDIAN TIME

ALASKA

JUL 1966



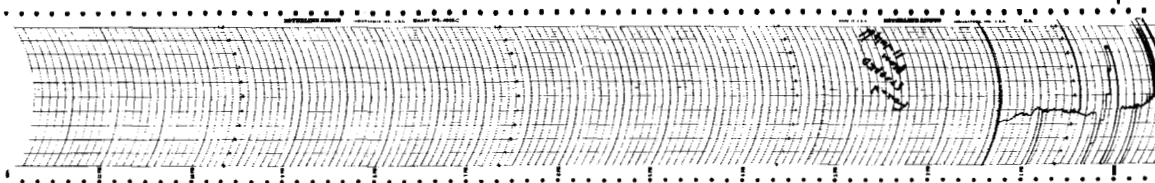
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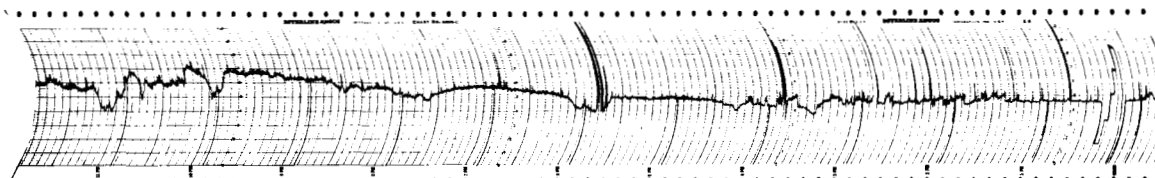
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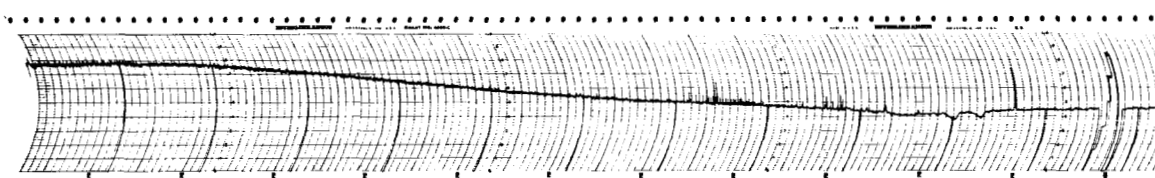
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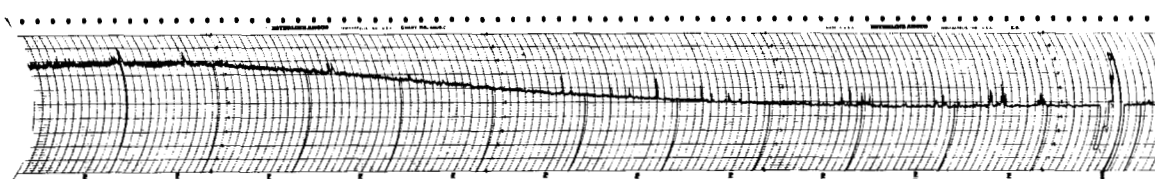
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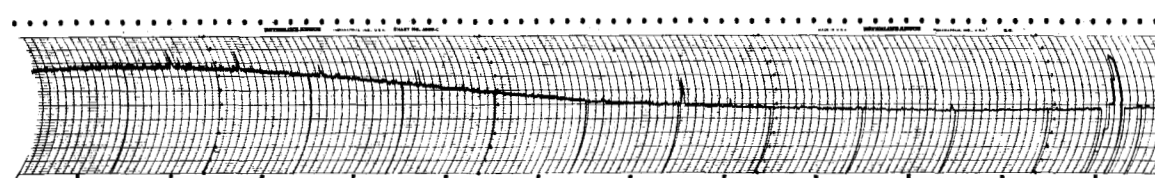
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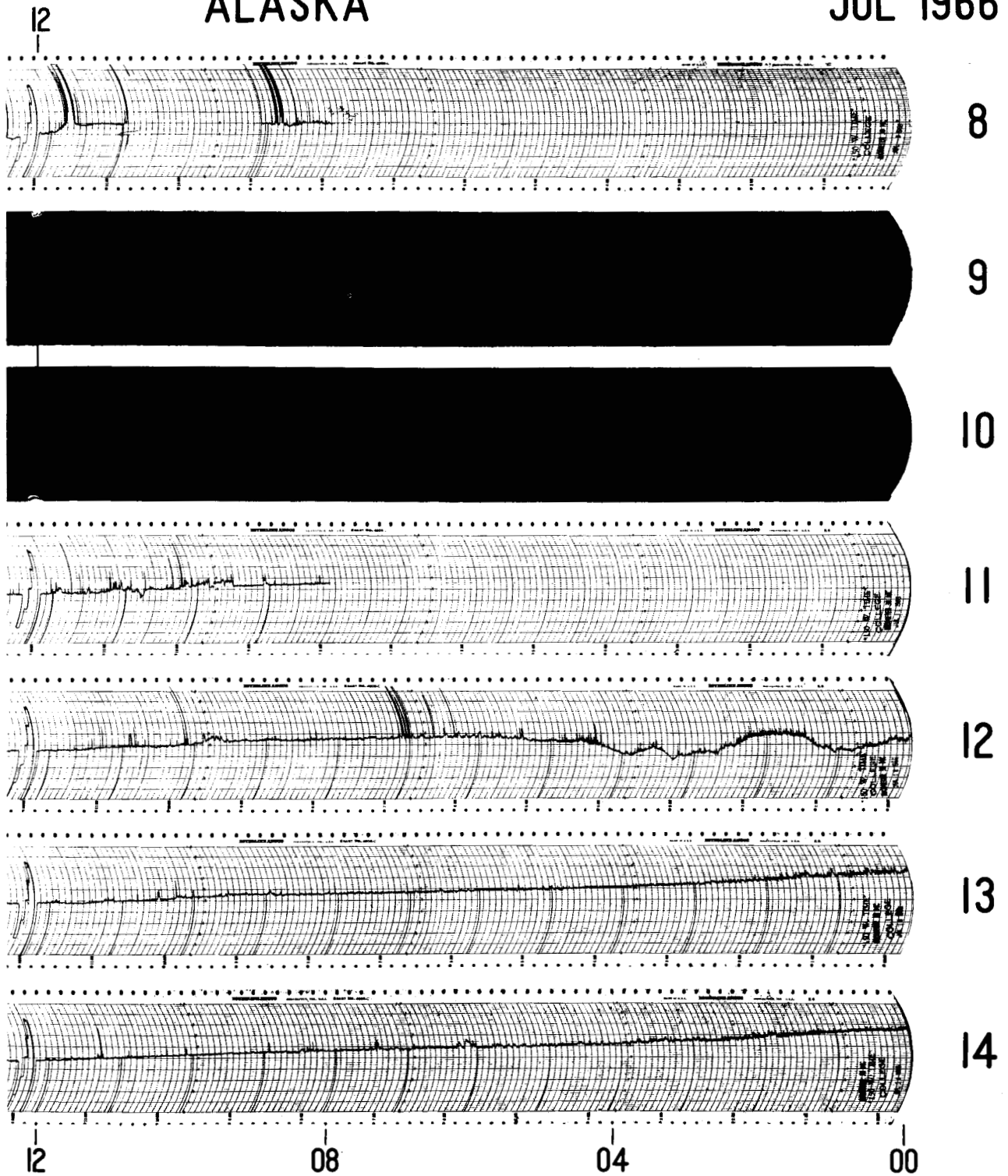
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150° WEST MERIDIAN TIME

ALASKA

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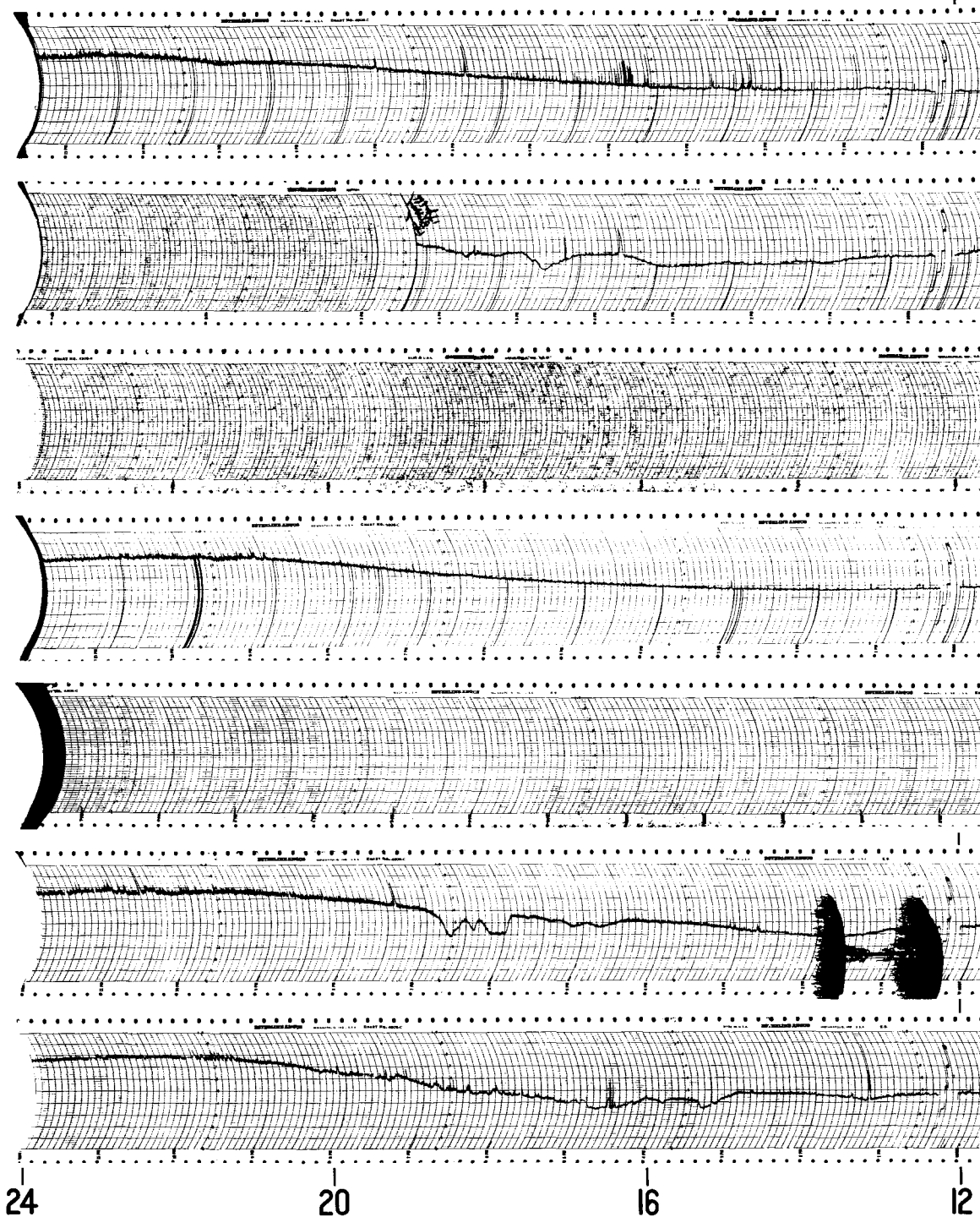
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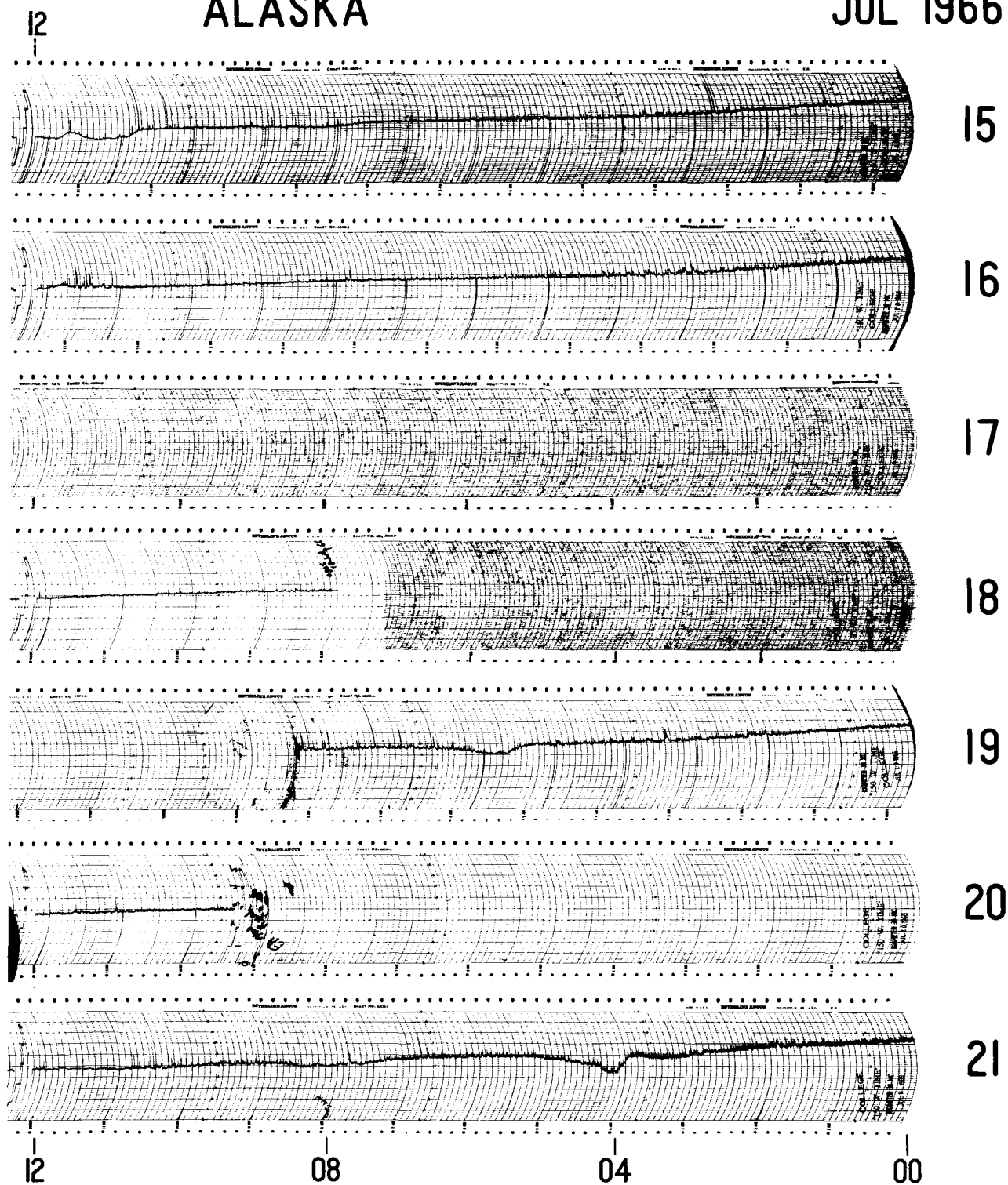
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150° WEST MERIDIAN TIME

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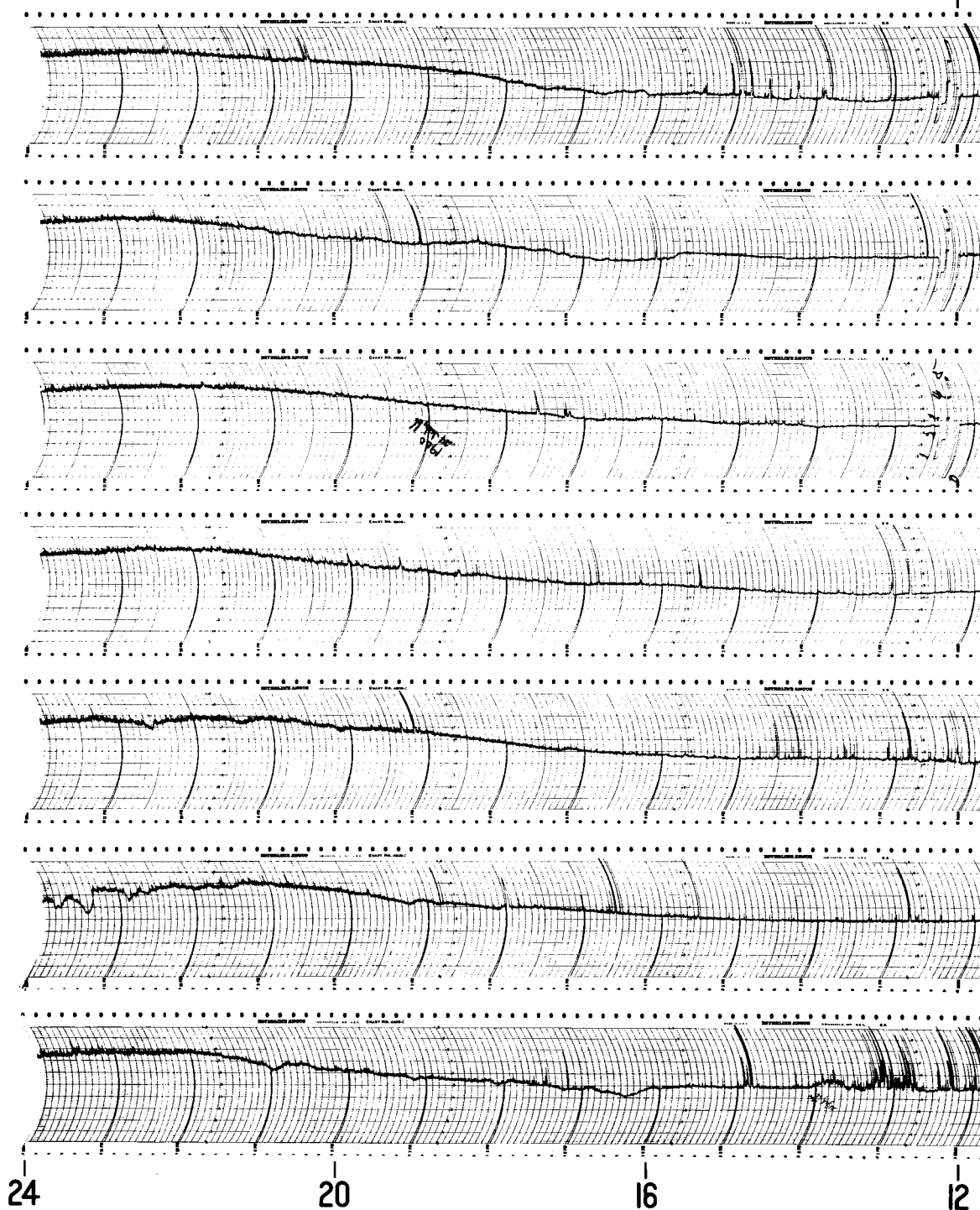
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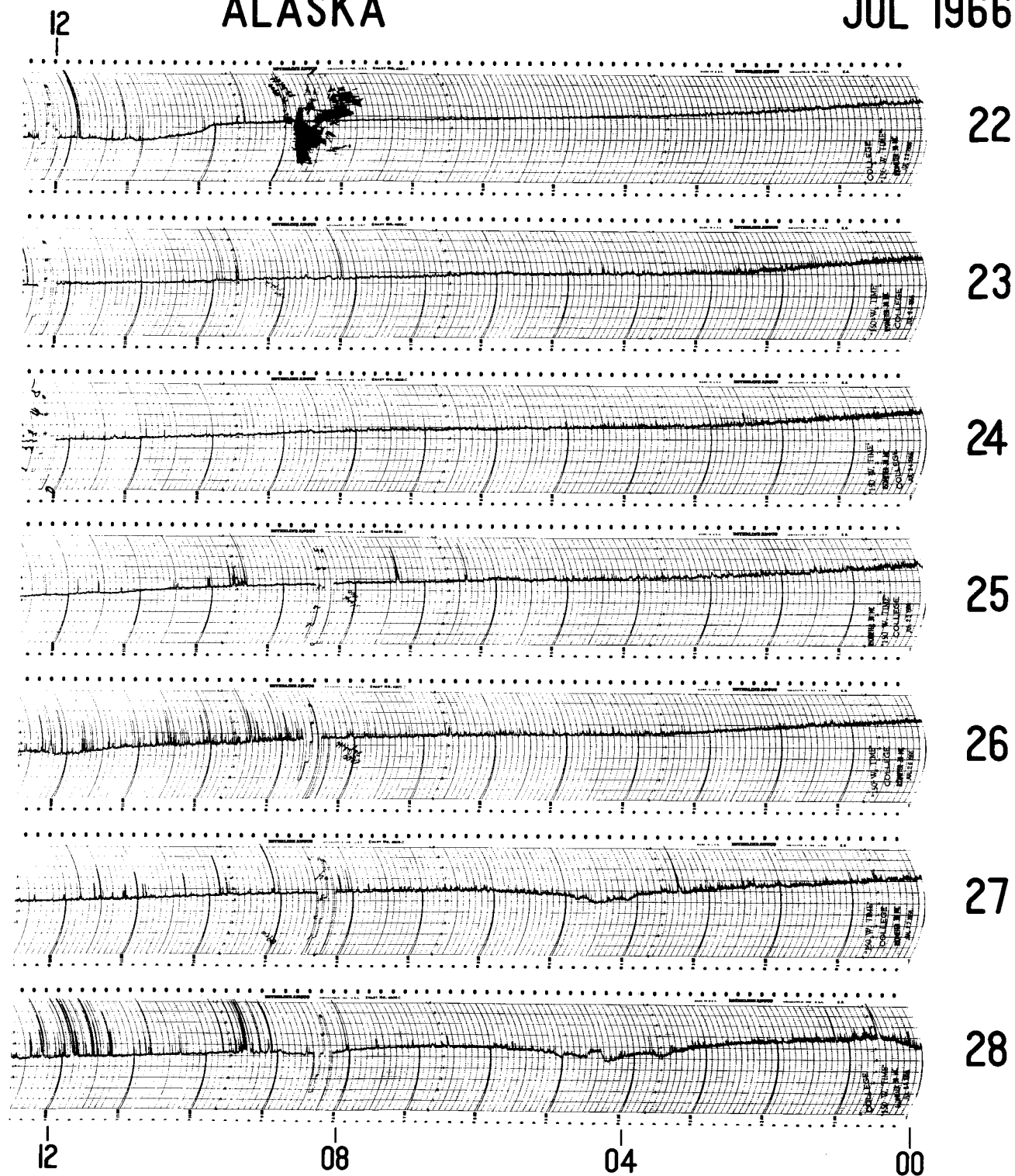
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150° WEST MERIDIAN TIME

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JUL 1966



30 MC/S COSMIC NOISE

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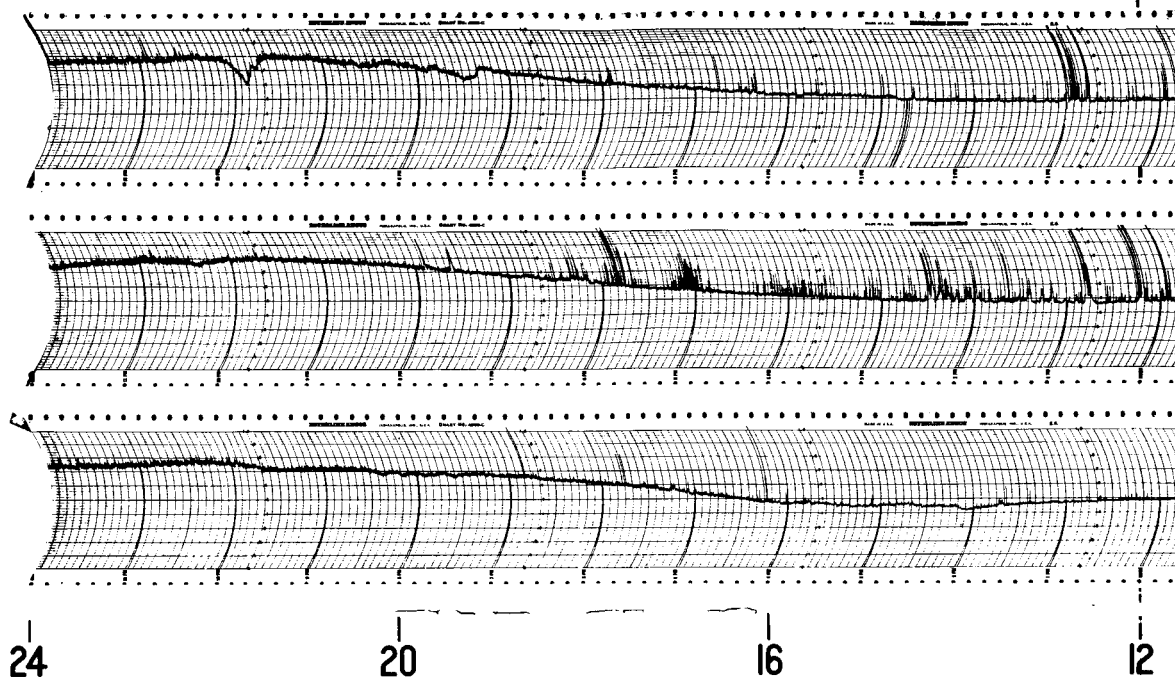
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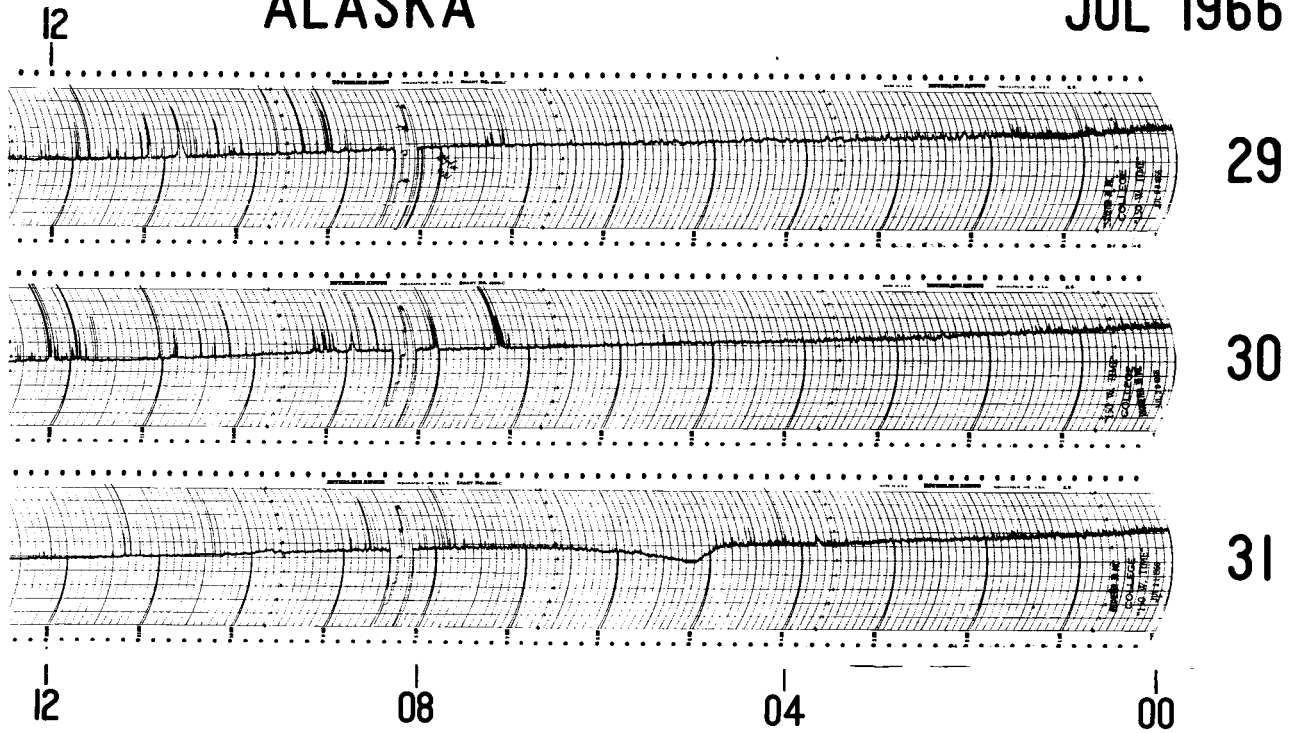
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150° WEST MERIDIAN TIME



ALASKA

JUL 1966

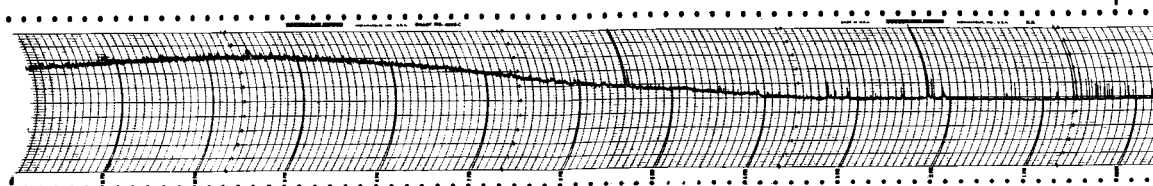


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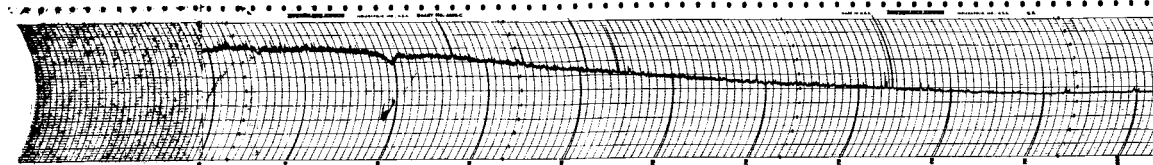
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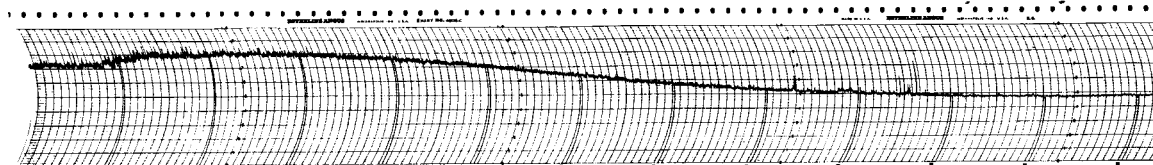
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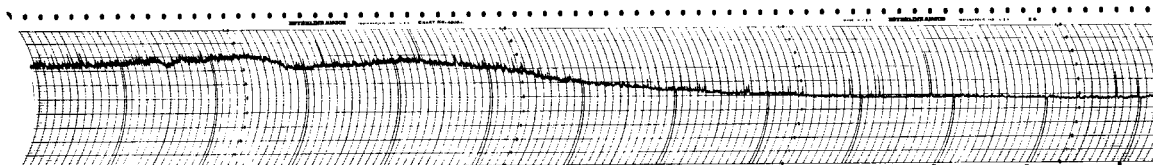
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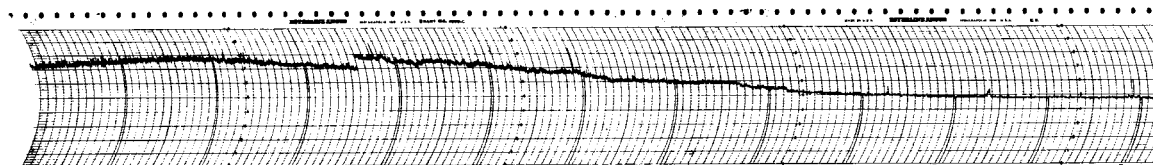
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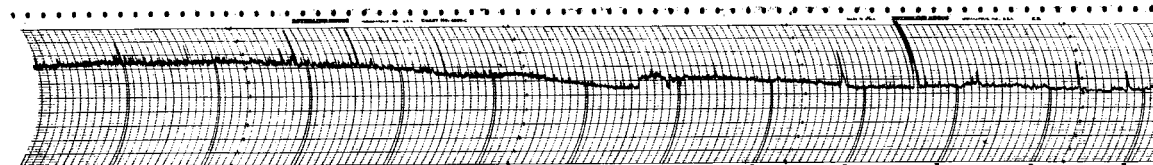
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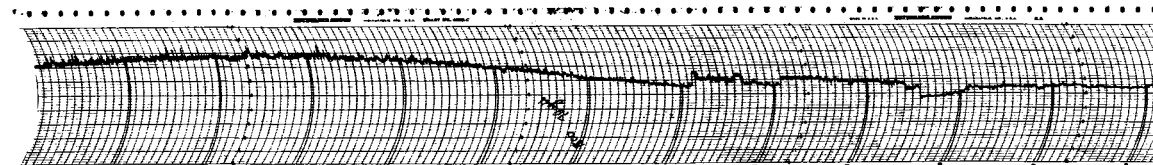
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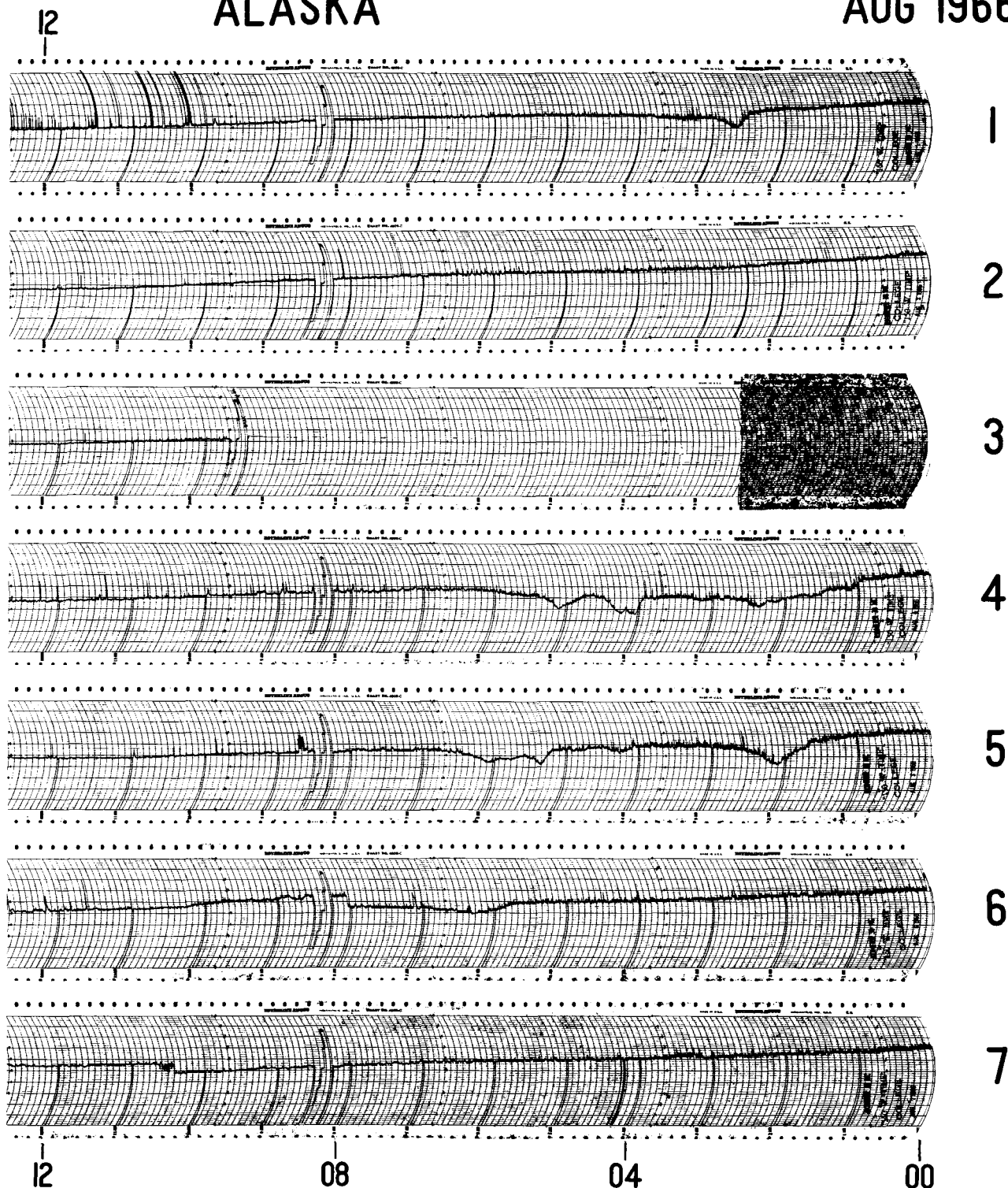
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30 MC/S COSMIC NOISE

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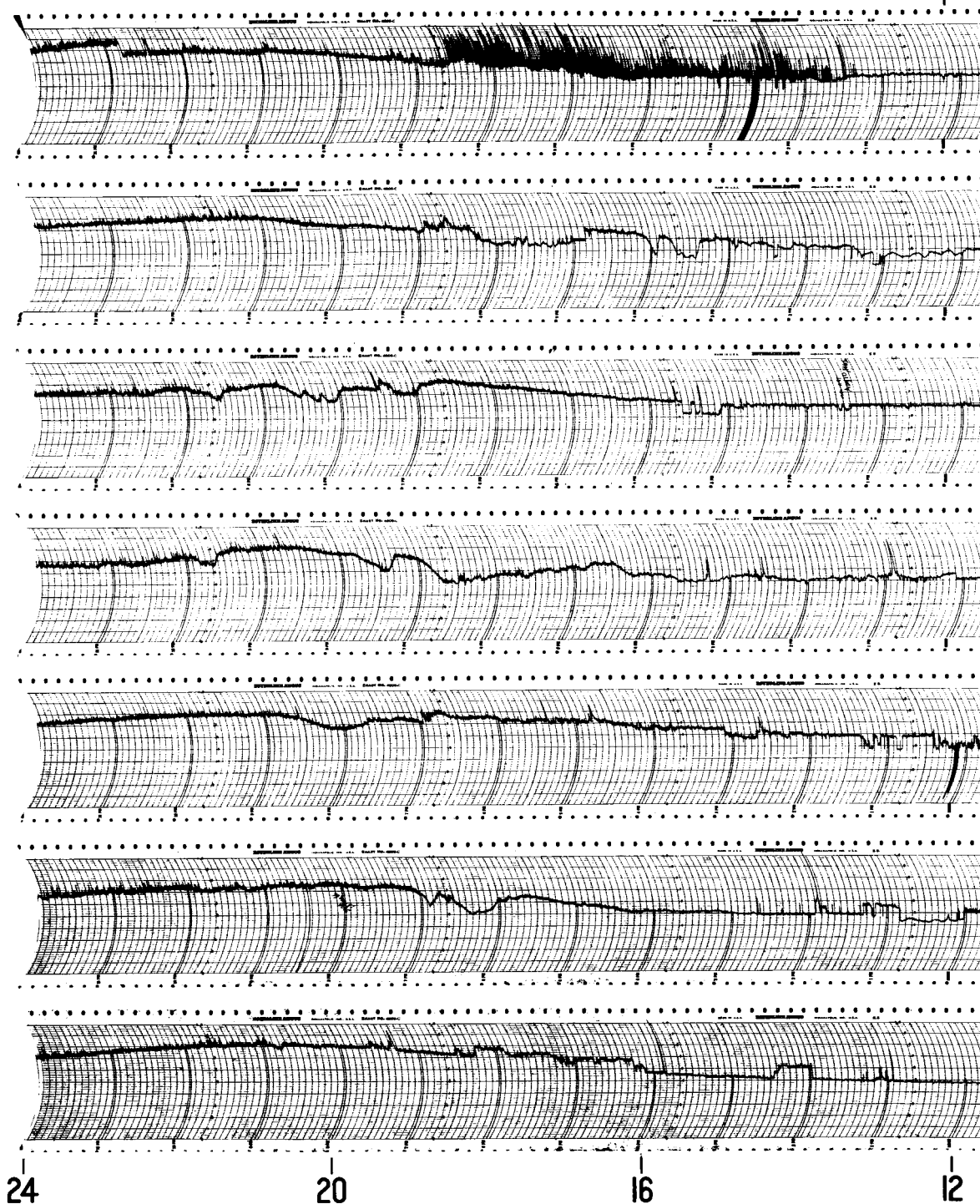
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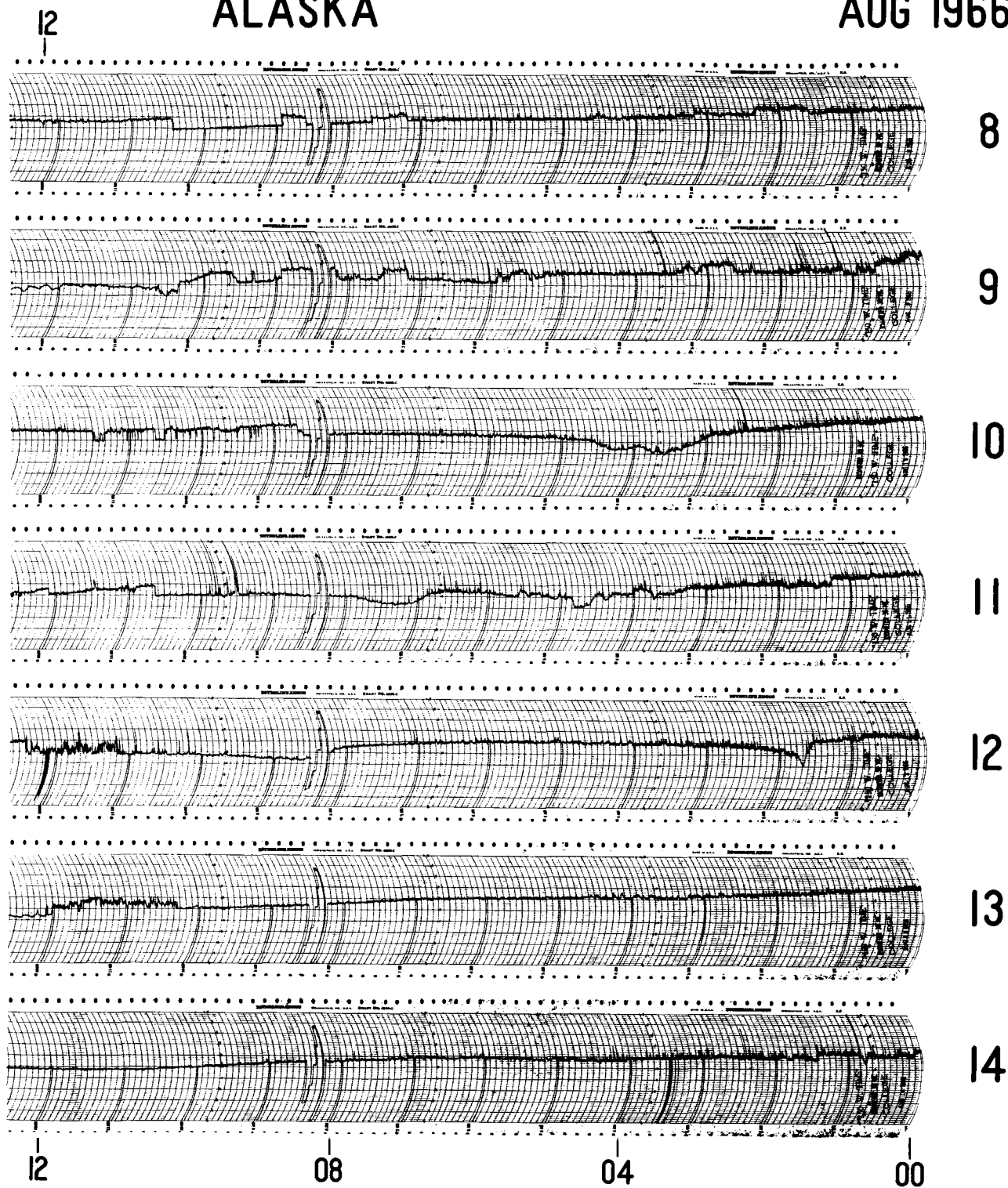
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150° WEST MERIDIAN TIME

ALASKA

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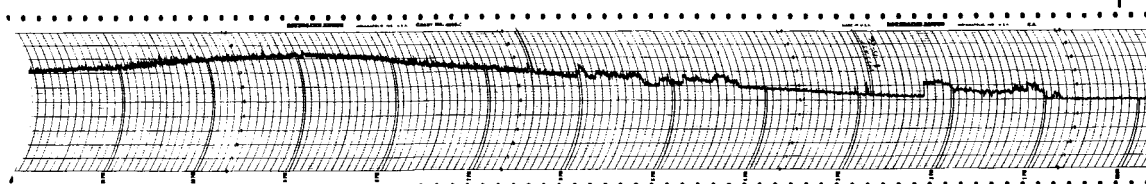
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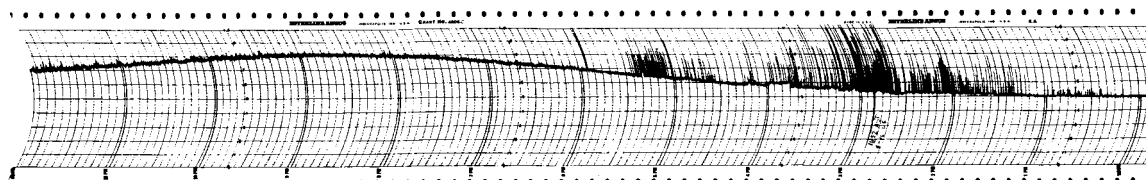
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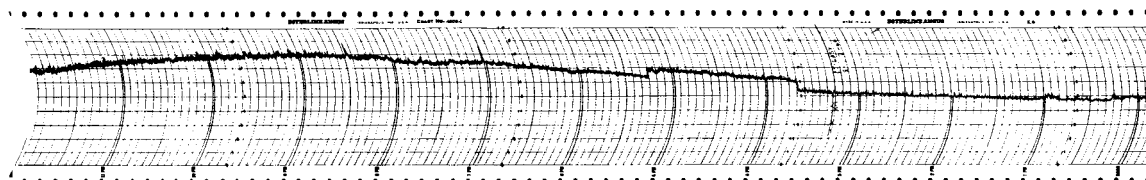
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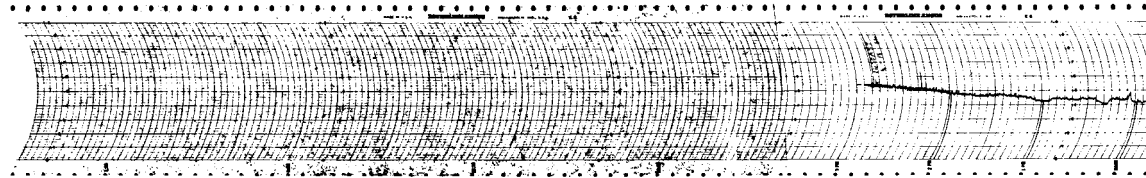
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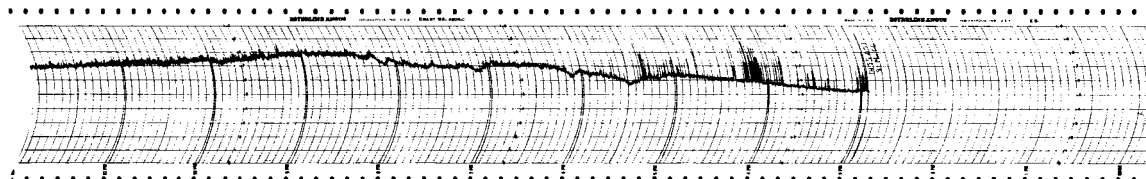
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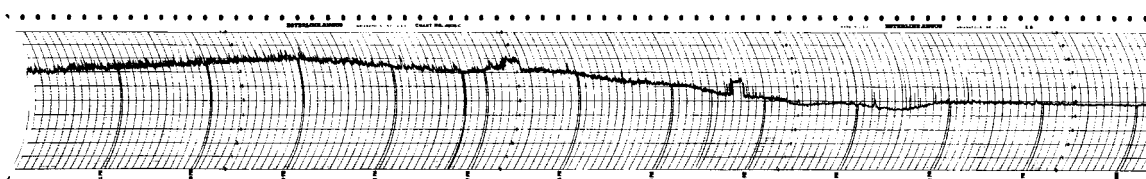
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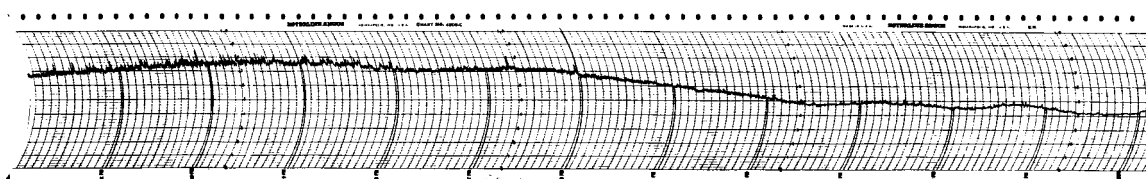
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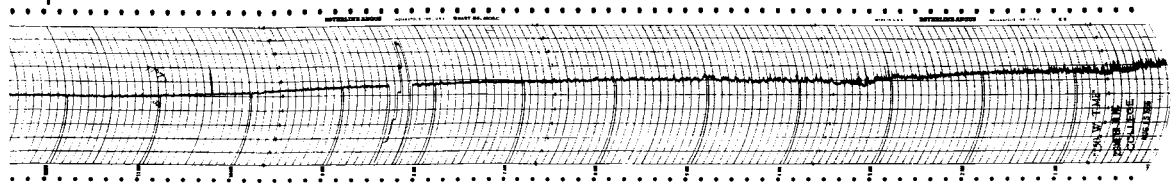
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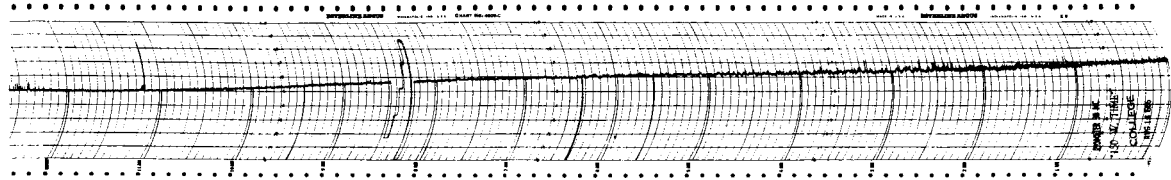
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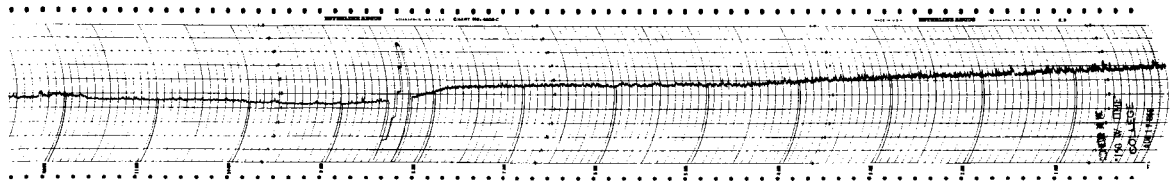
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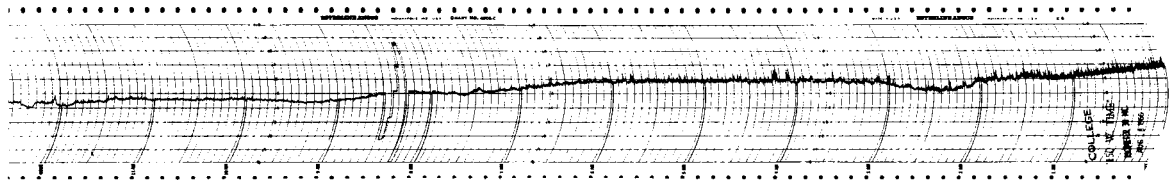
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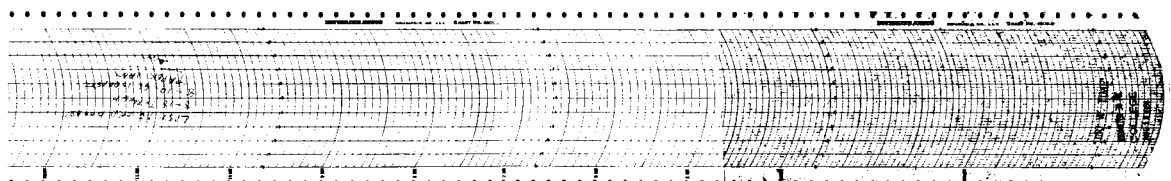
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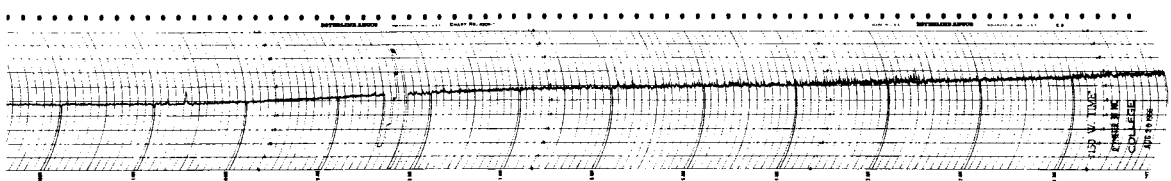
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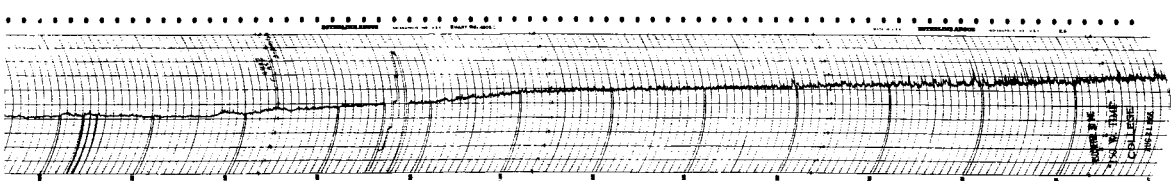
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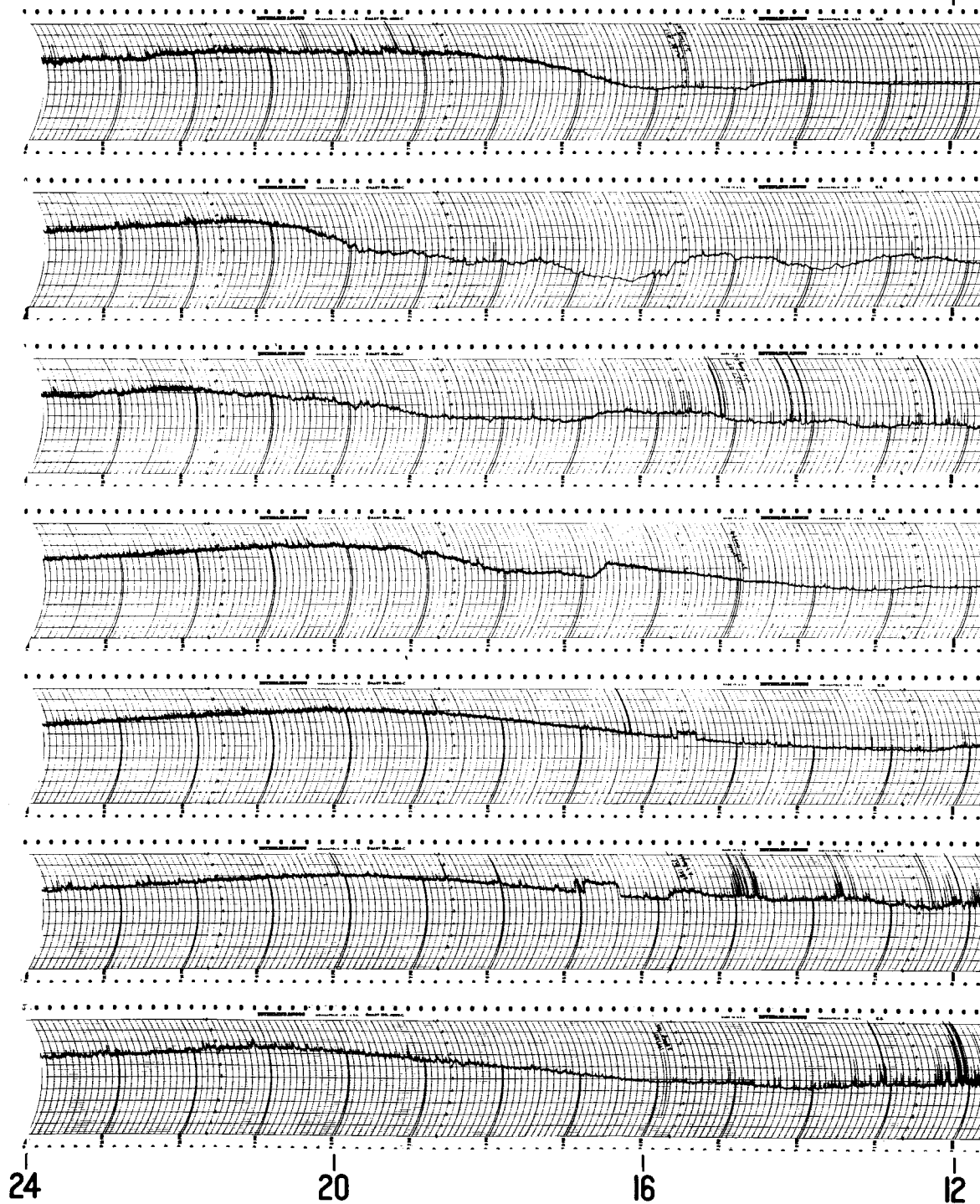
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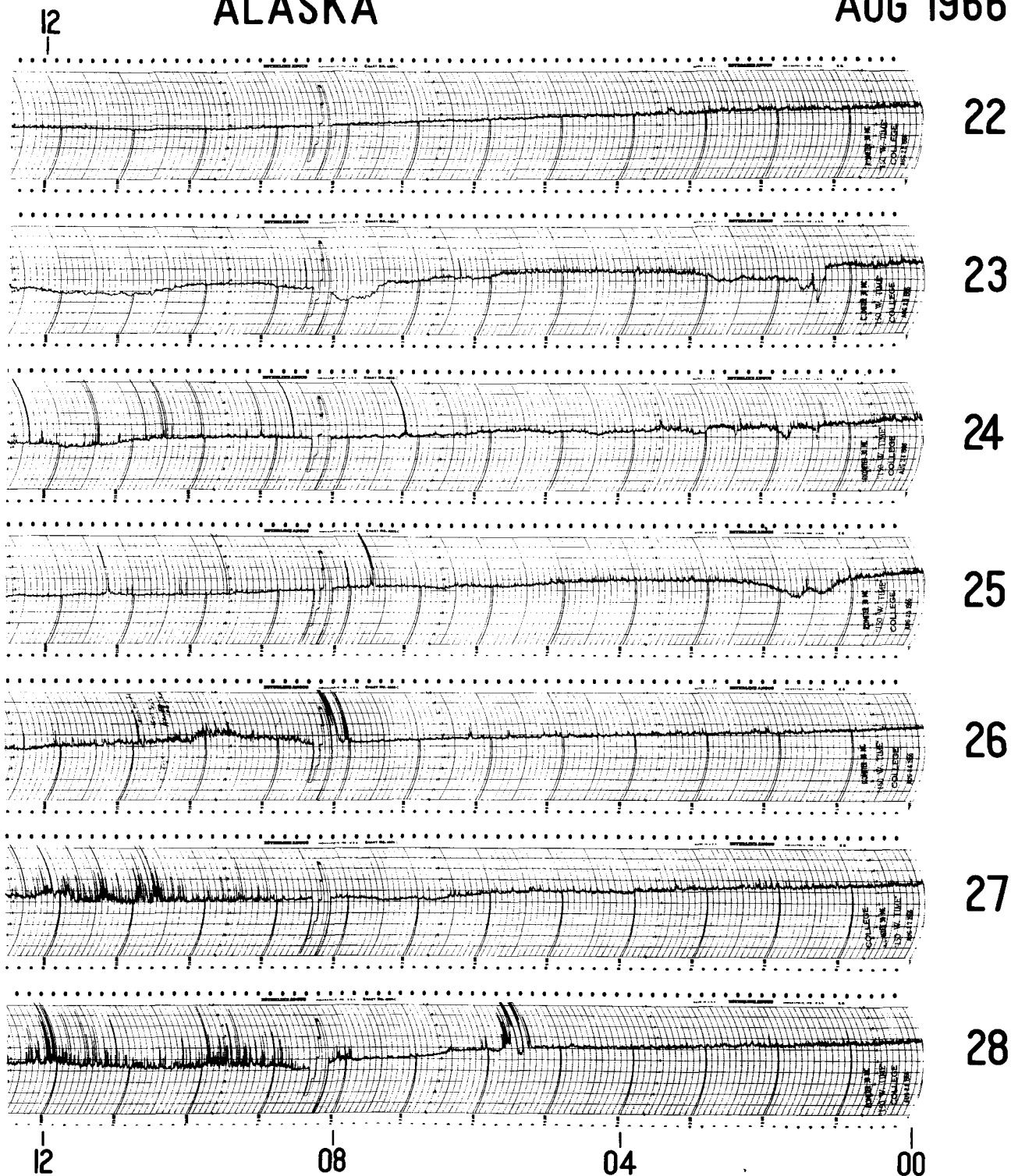
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150° WEST MERIDIAN TIME

ALASKA

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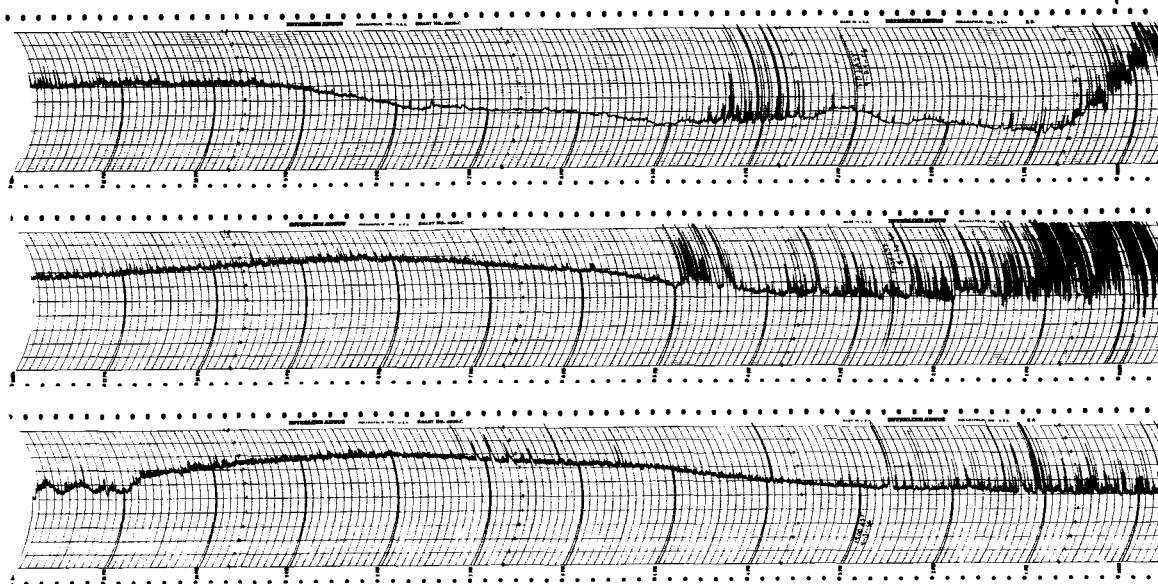
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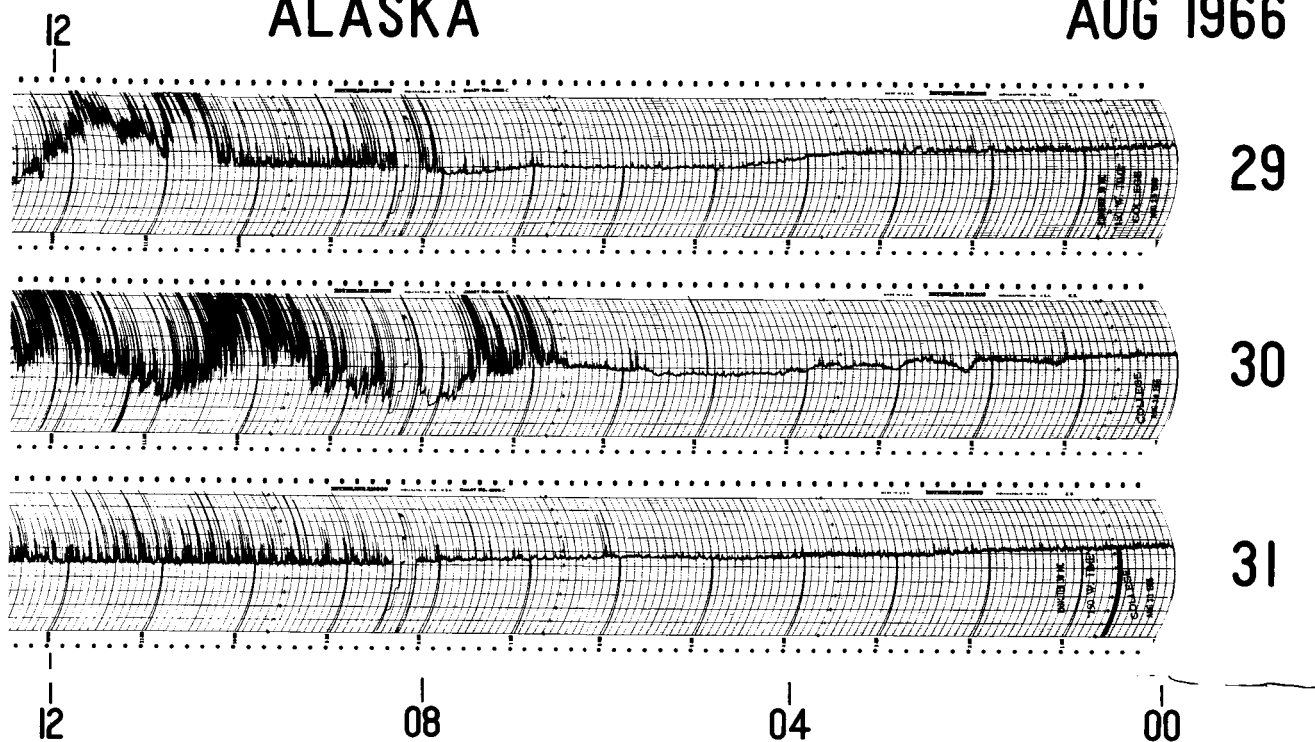
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150° WEST MERIDIAN TIME



ALASKA

AUG 1966



30 MC/S COSMIC NOISE

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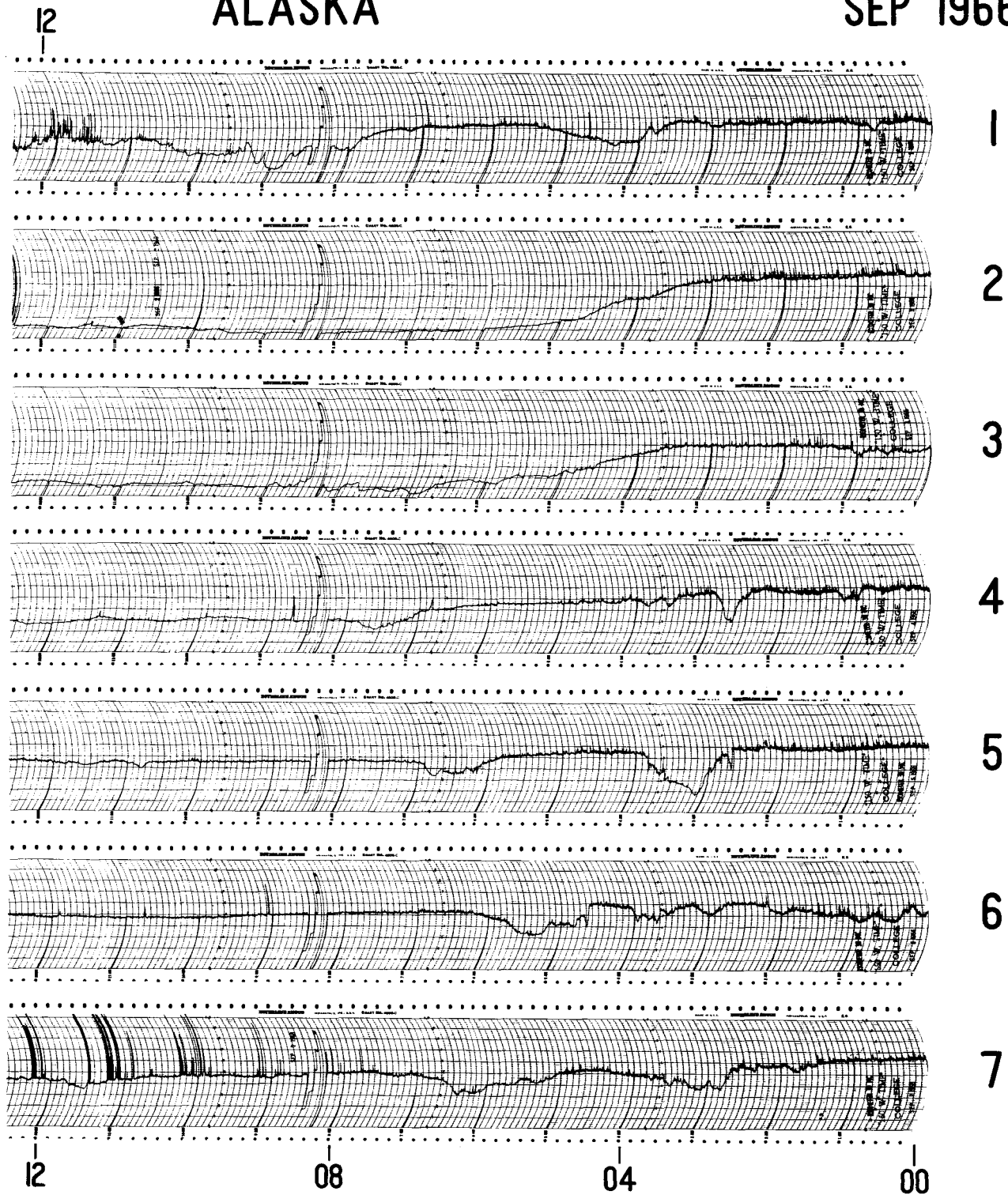
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150° WEST MERIDIAN TIME

ALASKA

SEP 1966



30 MC/S COSMIC NOISE

SEP 1966

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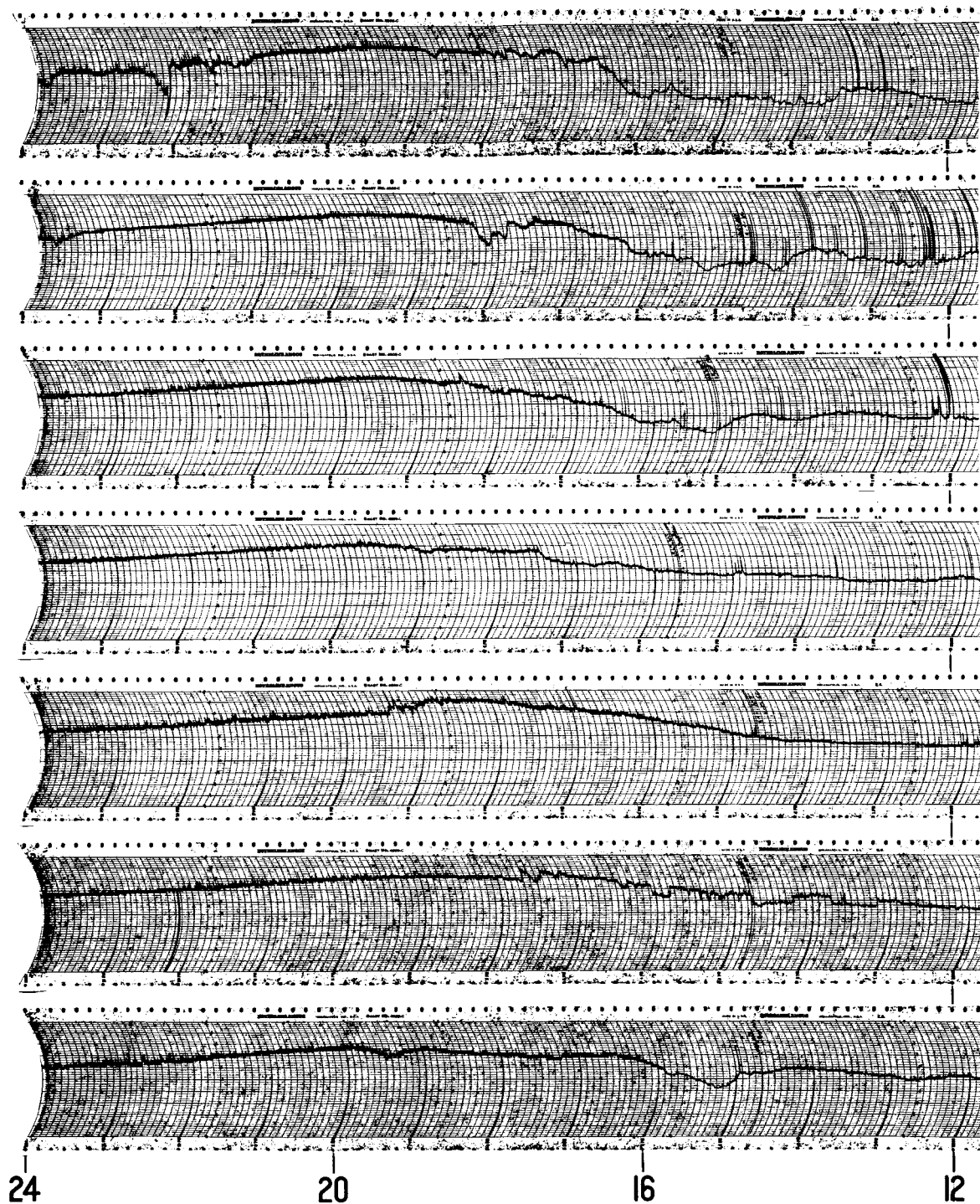
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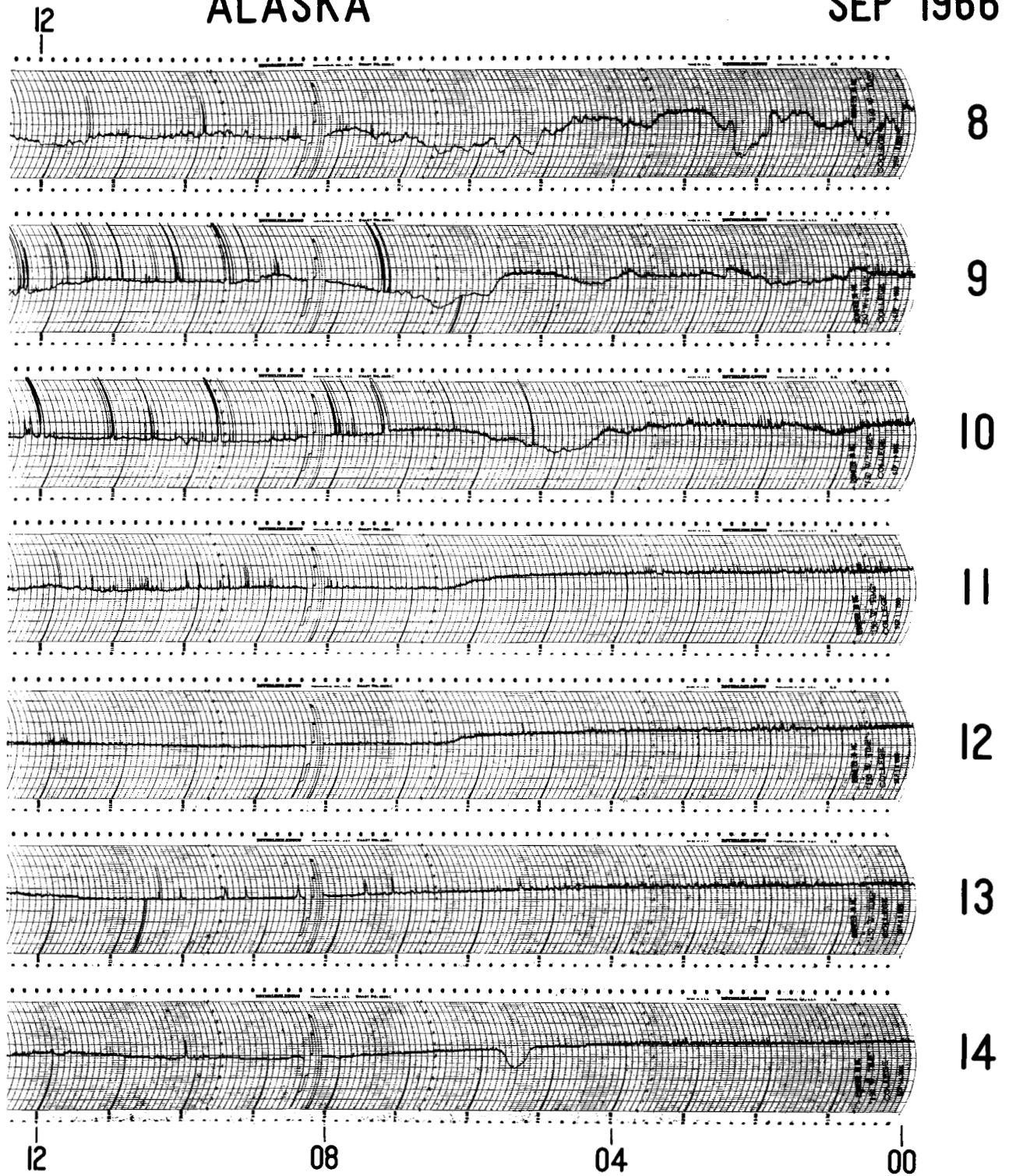
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150° WEST MERIDIAN TIME

ALASKA

SEP 1966



30 MC/S COSMIC NOISE

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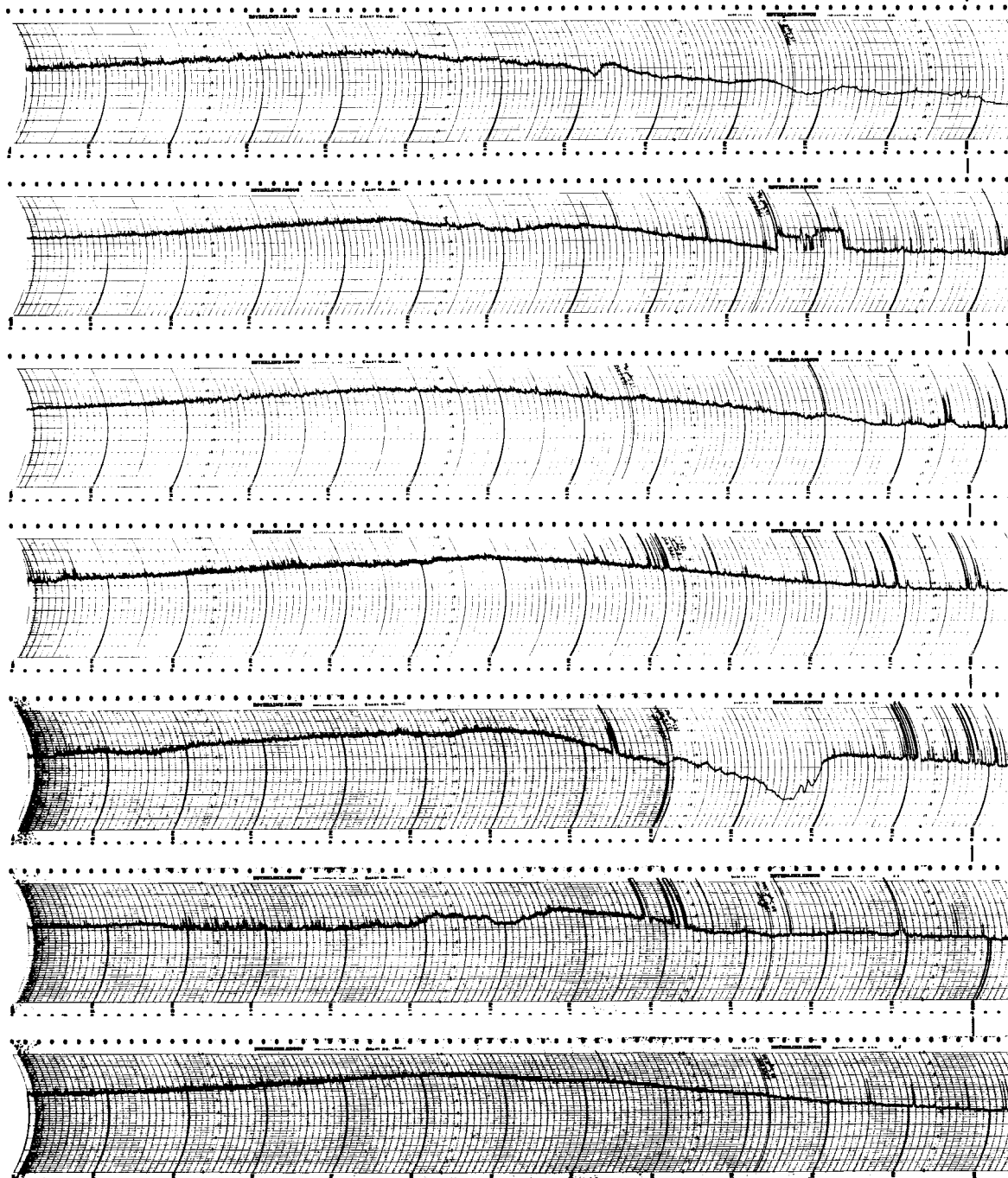
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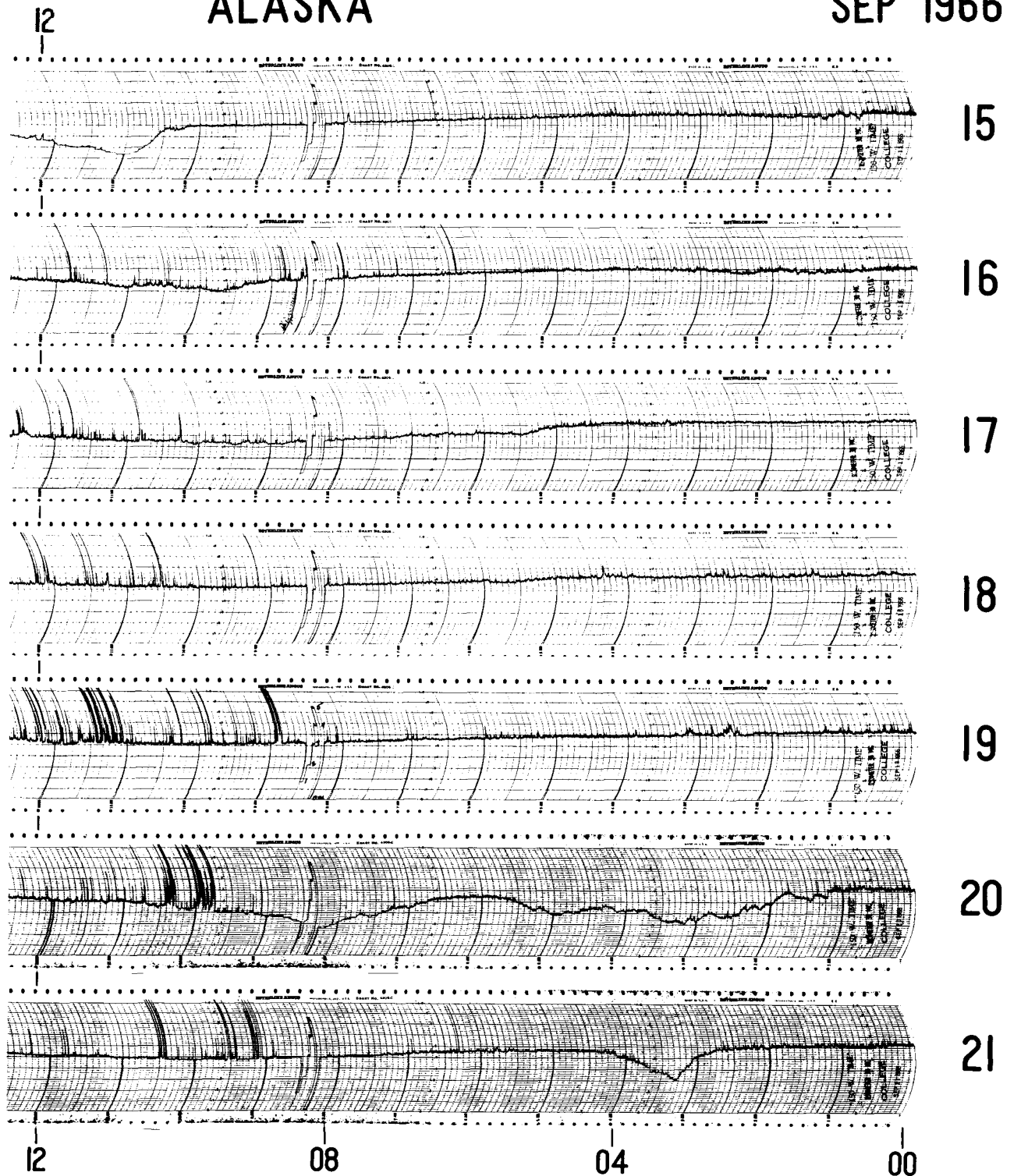
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150° WEST MERIDIAN TIME



ALASKA

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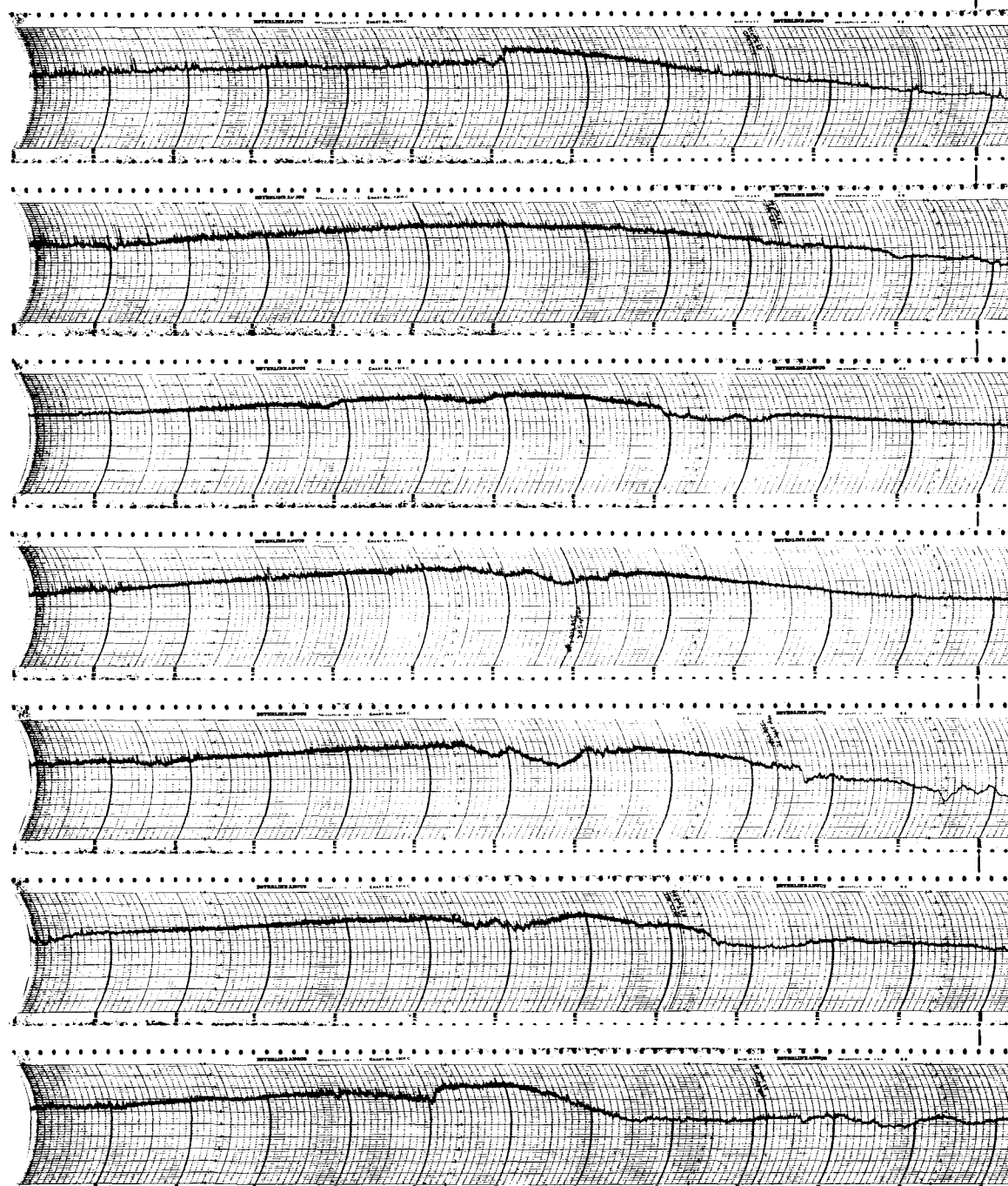
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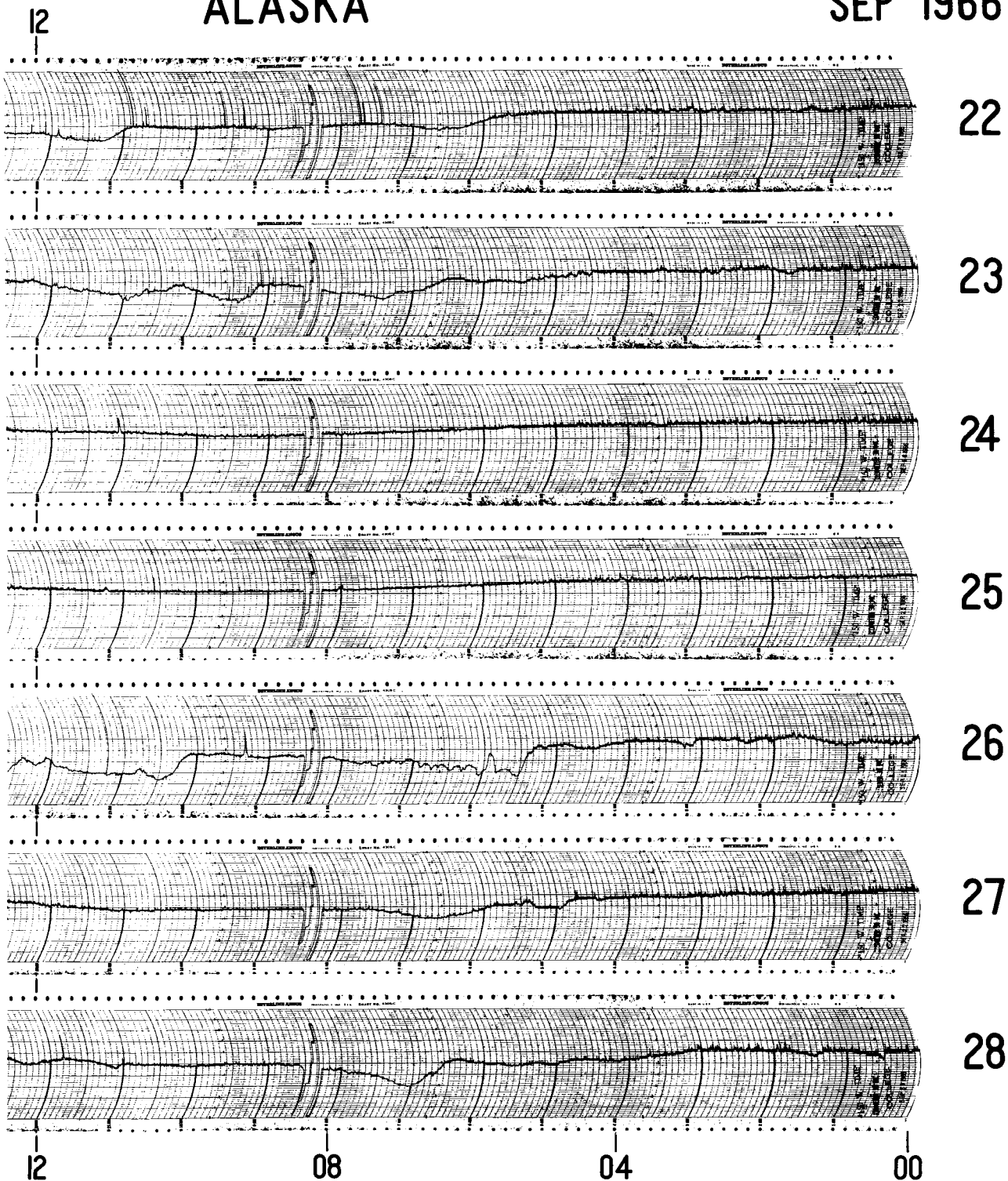
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150° WEST MERIDIAN TIME



ALASKA

SEP 1966



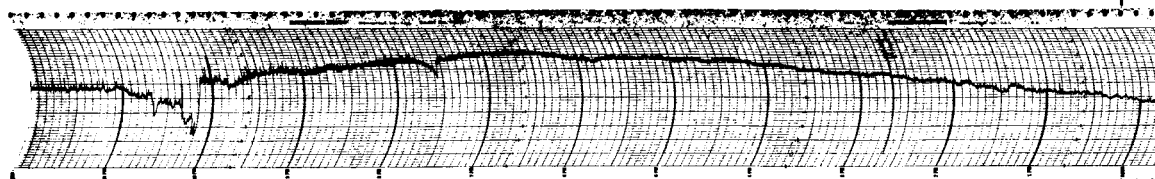
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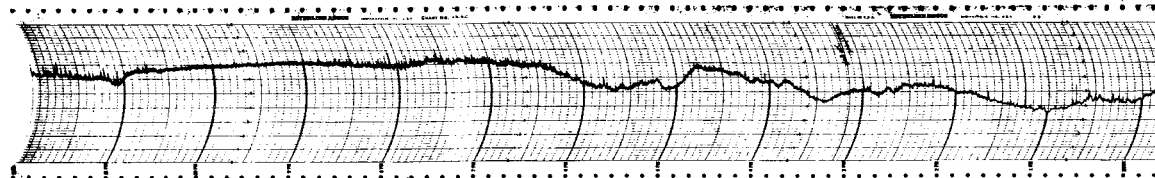
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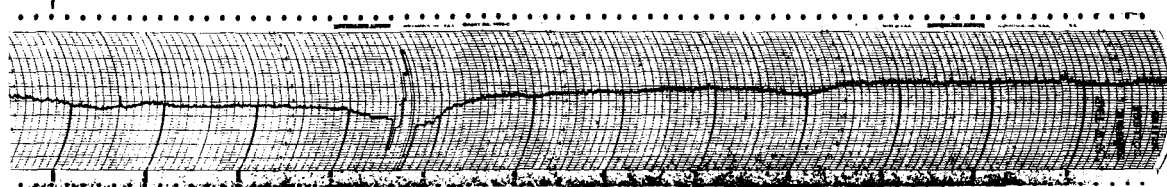
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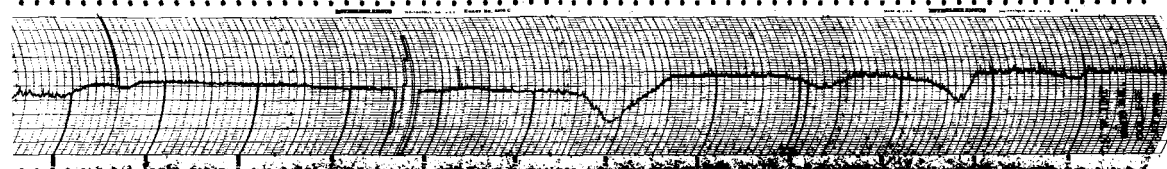
ALASKA

SEP 1966

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30 MC/S COSMIC NOISE

TELLURIC CURRENT ACTIVITY

V. P. Hessler
Professor of Geophysics

The electrode field is located south of the Geophysical Institute Ballaine Lake Field site ($64^{\circ}51'N$ and $147^{\circ}50'W$ geographic and $64^{\circ}37'N$ and $256^{\circ}30'E$ geomagnetic). The 200 meter spaced electrodes are aligned in the N-S geographic meridian.

N-S telluric current records. These records are made on an L&N Speedomax recorder, with a 5 second full scale response rate, at 3 in/hr and at 1000 mv/km full scale range. Since the telluric perturbation vector tends to be linearly polarized ($N\ 35^{\circ}W$ geographic at this site) the N-S trace alone gives a good indication of the total activity. These telluric records always carry much more fine structure than the corresponding magnetograms and thus are a more sensitive indicator of ionospheric activity.

N-S telluric amplitude activity. The N-S telluric trace is scaled for hourly values of arithmetic range in a manner similar to that used in scaling magnetic K-indices. By range is meant the difference between the greatest positive and negative departure from an arbitrarily assigned zero trace (the diurnal variation at College is negligible in comparison with the disturbance phenomena). Monthly correlation coefficients between magnetic A figures and telluric amplitude scalings are always close to 0.95. Thus the telluric amplitude activity scalings presented herein are an index of ionospheric activity similar to the K-indices, but in more detail since the scalings are arithmetic and hourly in contrast to the 3-hourly quasi-logarithmic K-indices.

Telluric fluctuation activity. The fluctuation count is made on the same recorder as the N-S trace. The equipment consists of a 10-point stepping relay, a clutch driven microswitch, and an operations pen attached to the recorder. The switch is closed as the pen starts upscale and opens as it starts downscale. Thus within the sensitivity of the equipment the stepping relay advances one step for each cycle of fluctuations regardless of amplitude or pen position. At a recorder full scale range of 1000 mv/km the equipment will record fluctuations down to 5 mv/km. The data serve as an index of micropulsations activity showing diurnal, seasonal and sunspot cycle variations. The nighttime fluctuations are closely correlated with aurorally associated cosmic noise absorption. An indication of the micropulsation period in seconds can be obtained by dividing 3600 by the cycle per hour value.

The collection, analysis, and publication of these telluric current records and scalings is supported in part by the Air Force Cambridge Research Laboratories, Office of Aerospace Research under Contract No. AF 19(628)-1695, monitored by Mr. Elwood Maple.

N-S TELLURIC CURRENT

JUL 1966

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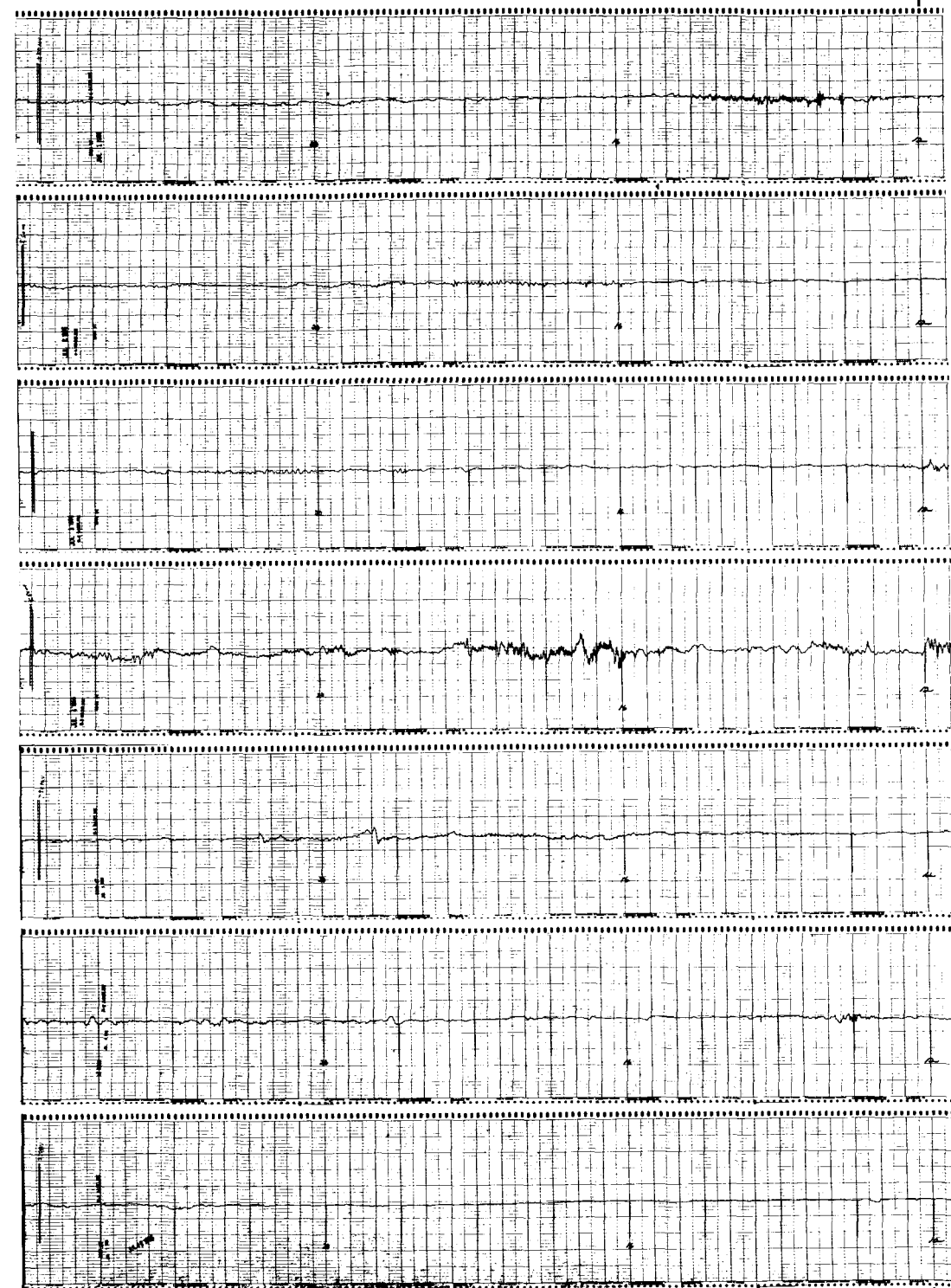
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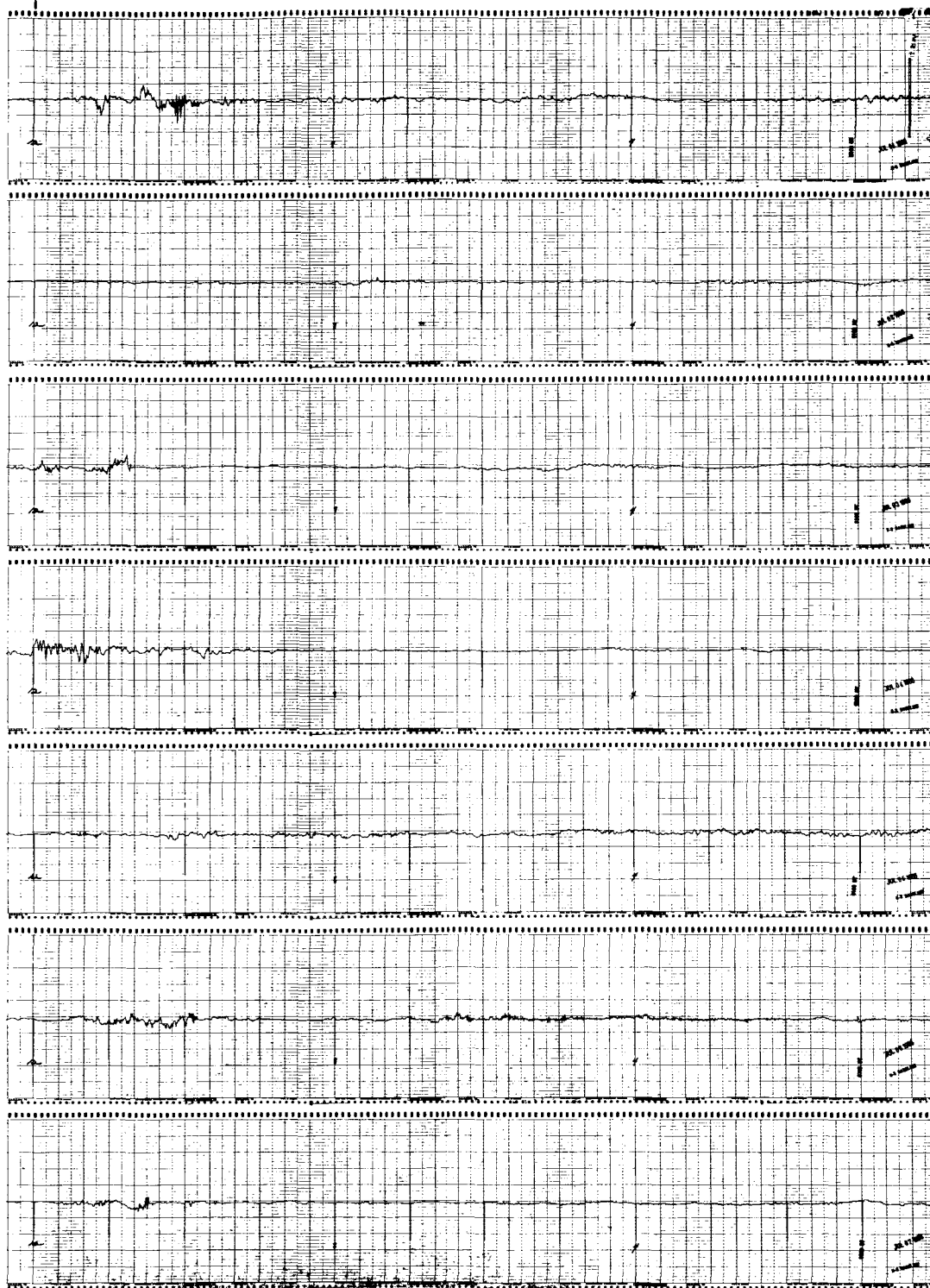
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UNIVERSAL TIME

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ALASKA

JUL 1966



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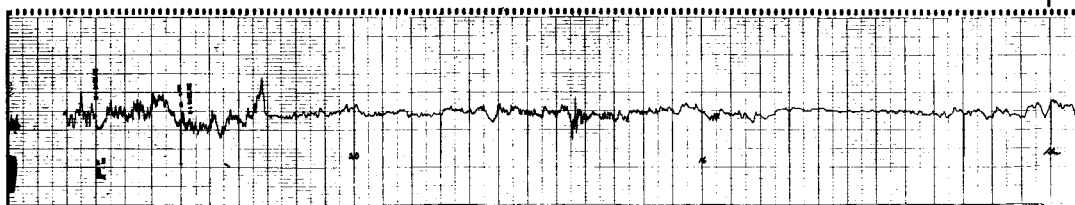
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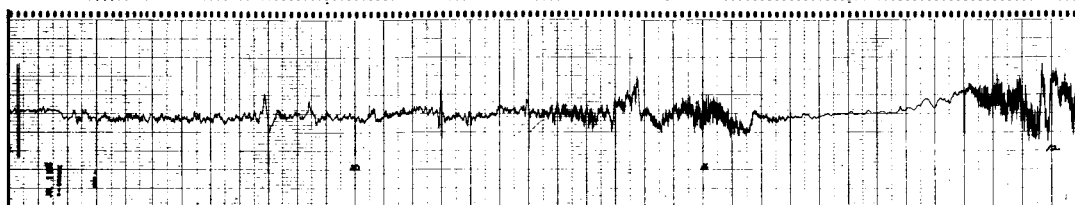
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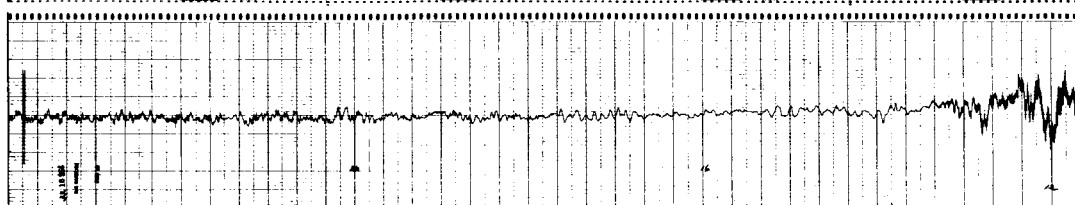
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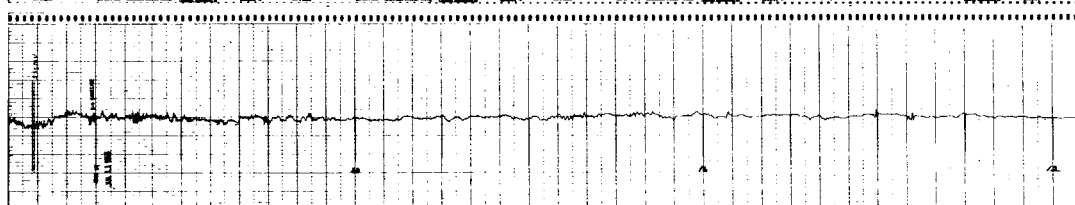
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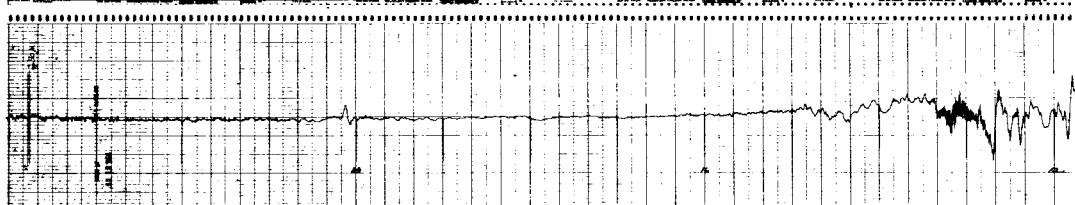
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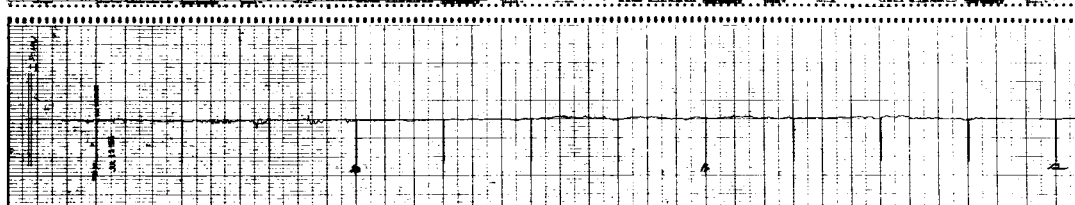
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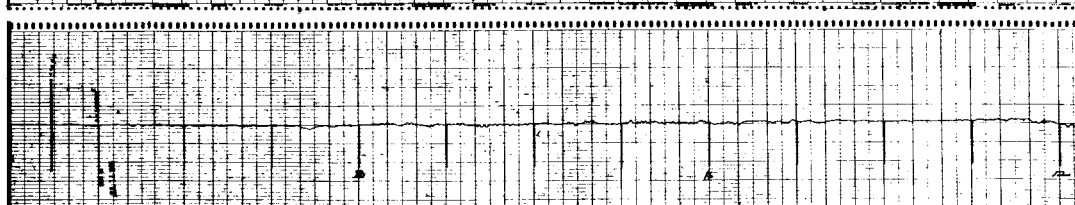
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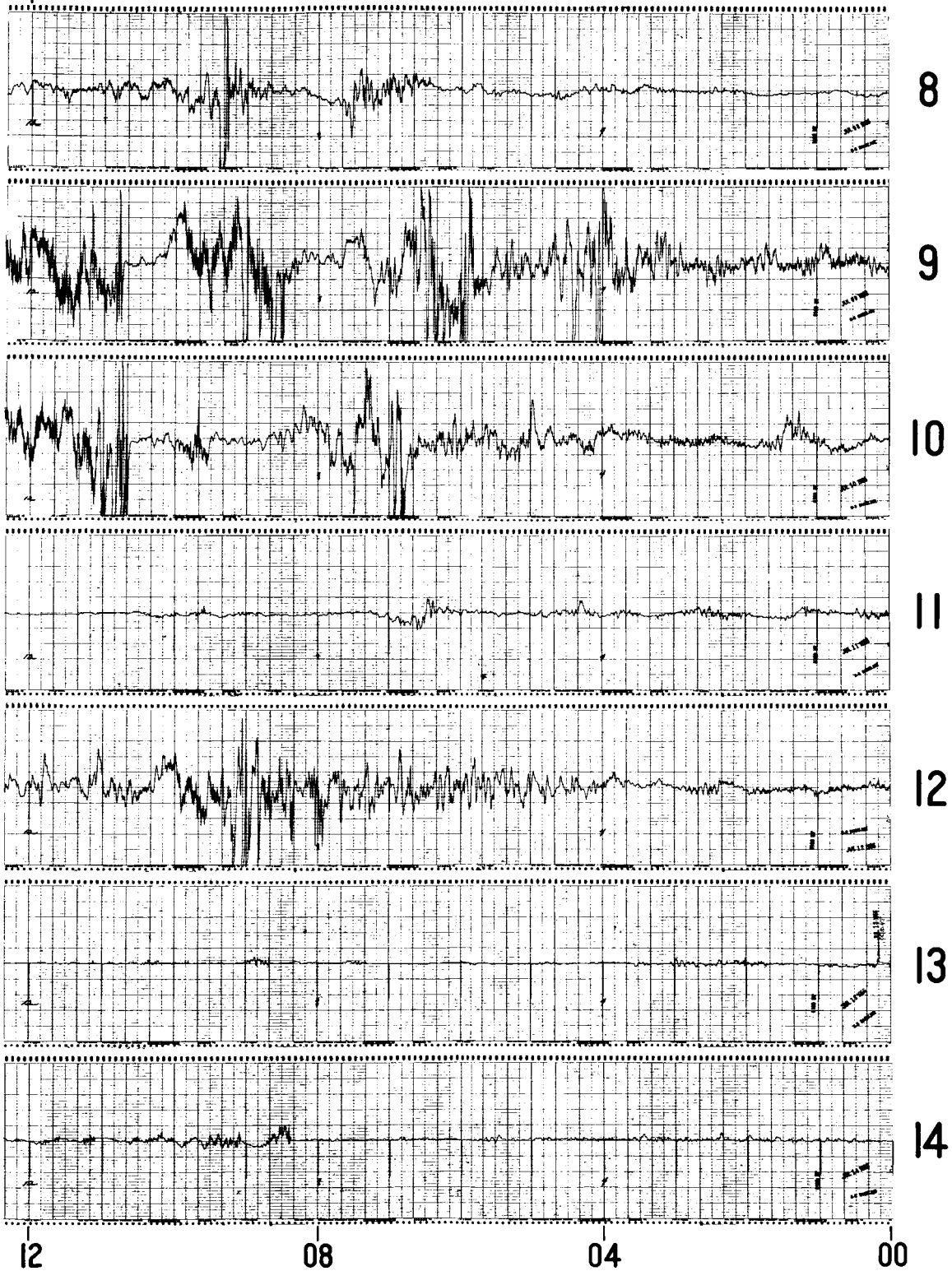
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UNIVERSAL TIME

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N-S TELLURIC CURRENT

JUL 1966

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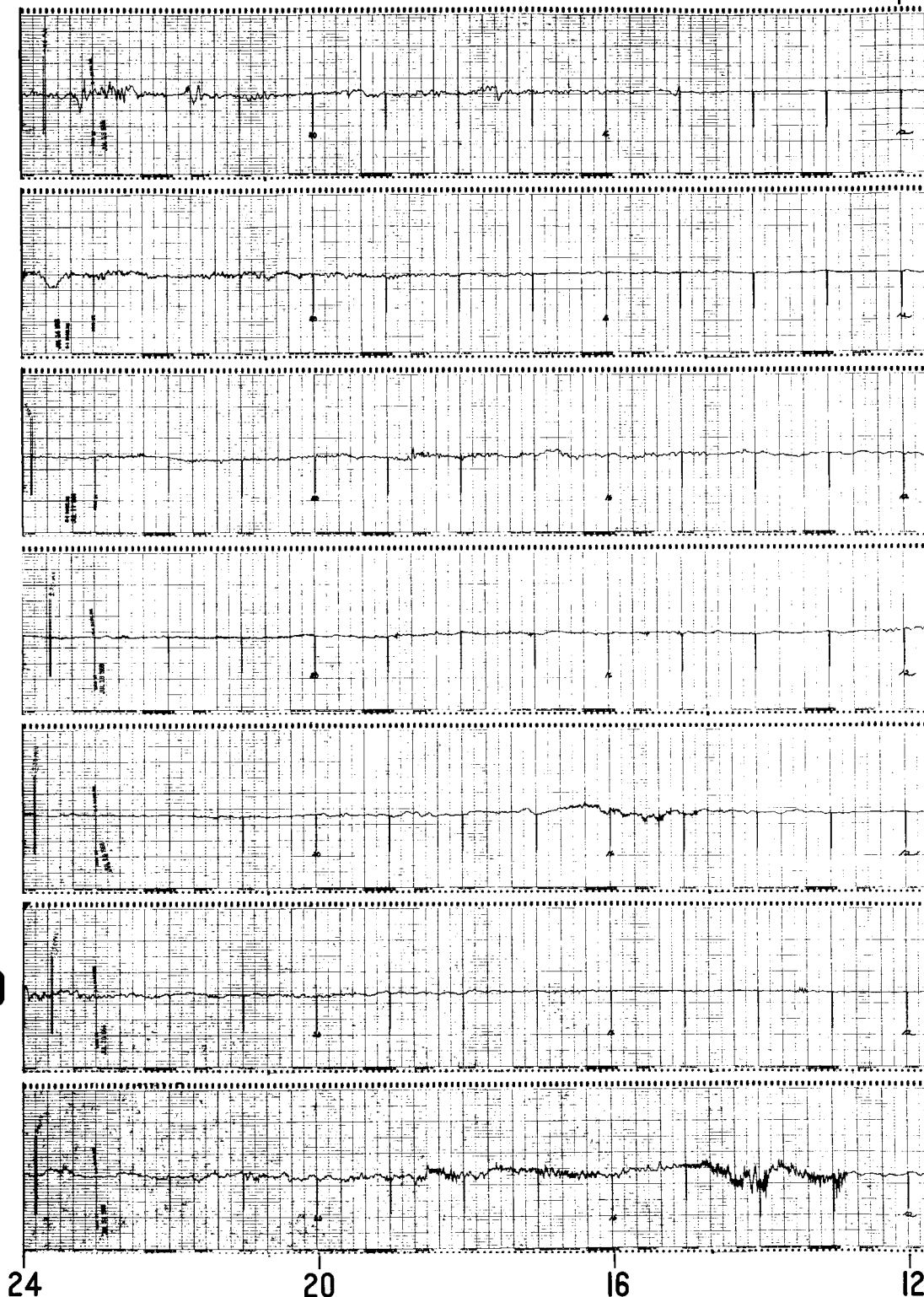
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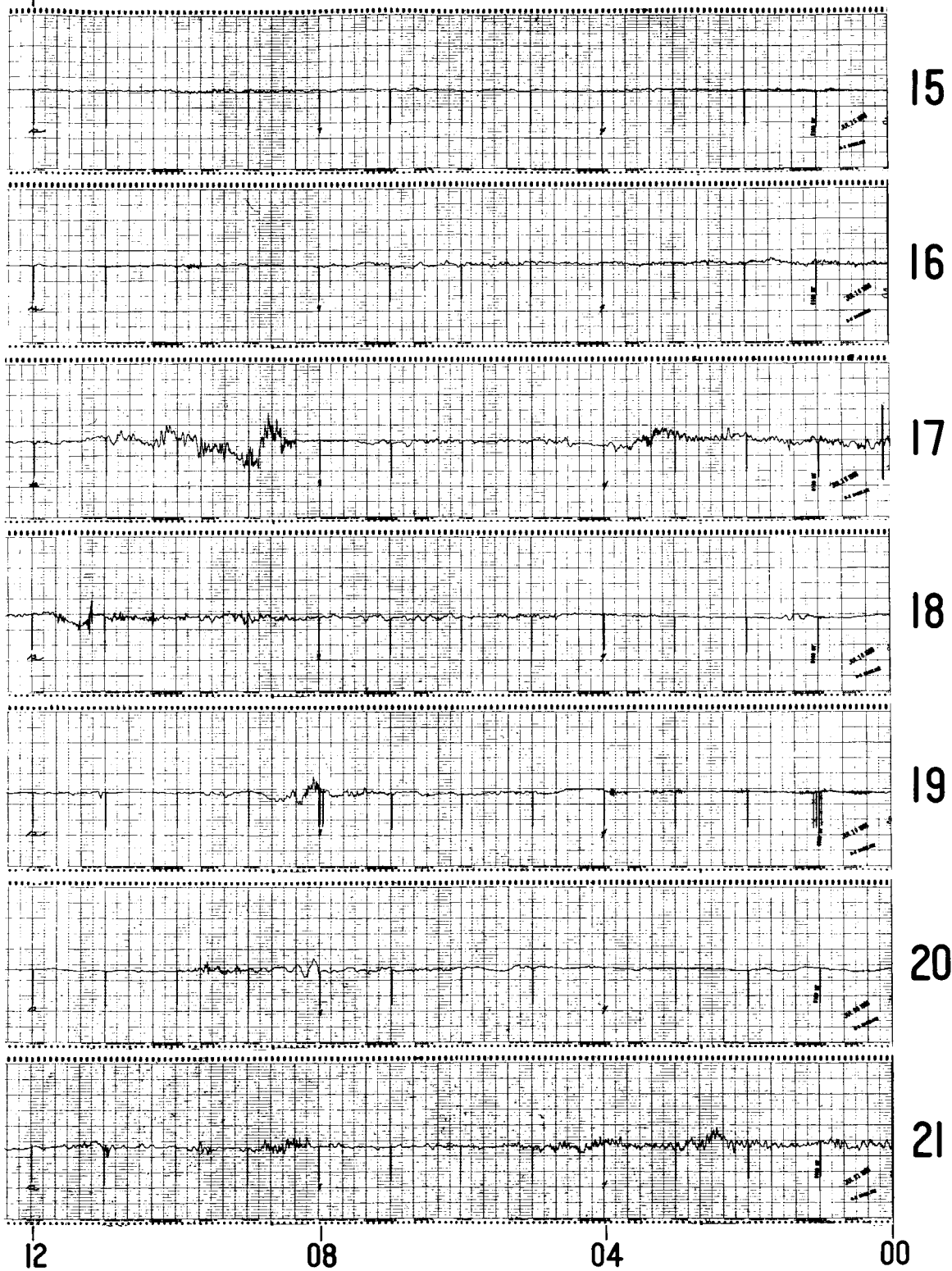


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ALASKA

JUL 1966



N-S TELLURIC CURRENT

JUL 1966

COLLEGE

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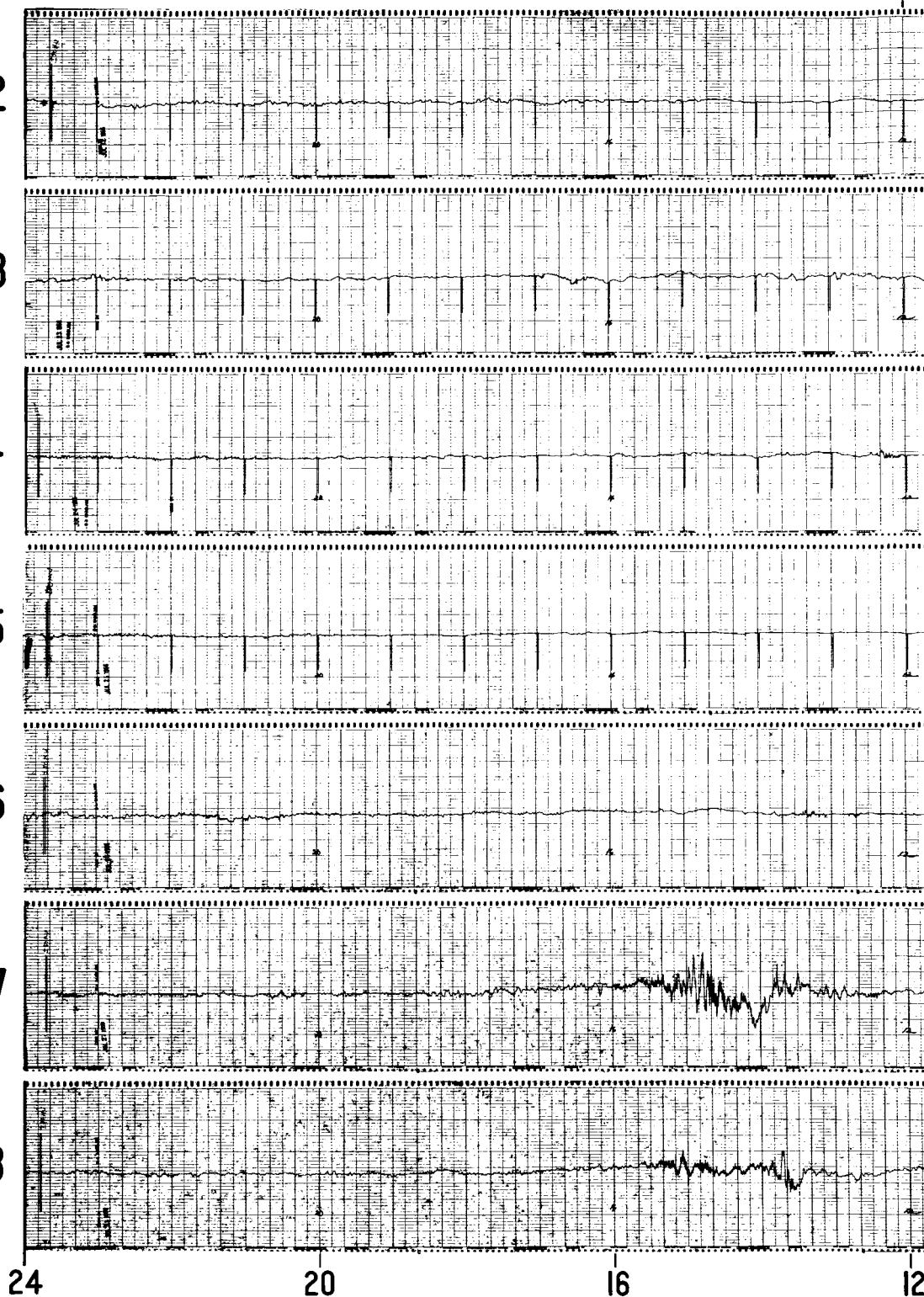
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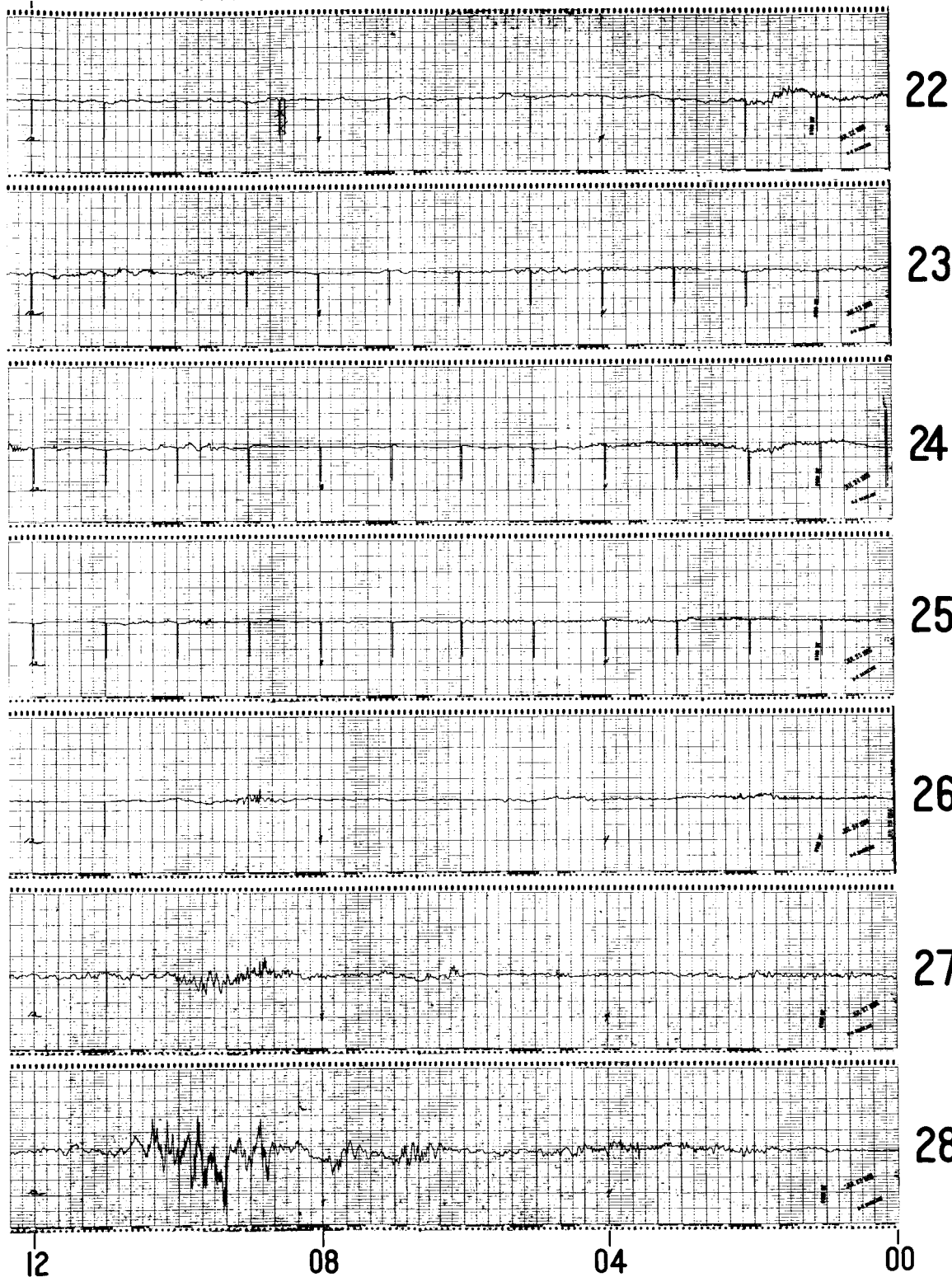


UNIVERSAL TIME

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ALASKA

JUL 1966



N-S TELLURIC CURRENT

JUL 1966

COLLEGE

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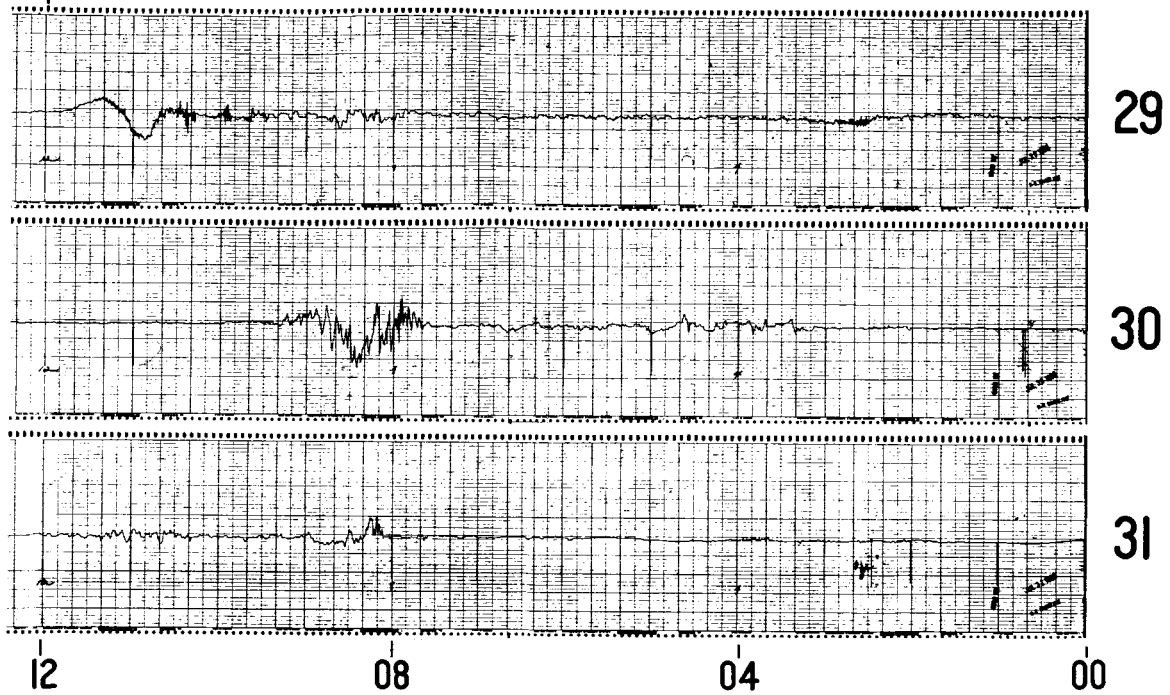
UNIVERSAL TIME



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ALASKA

JUL 1966



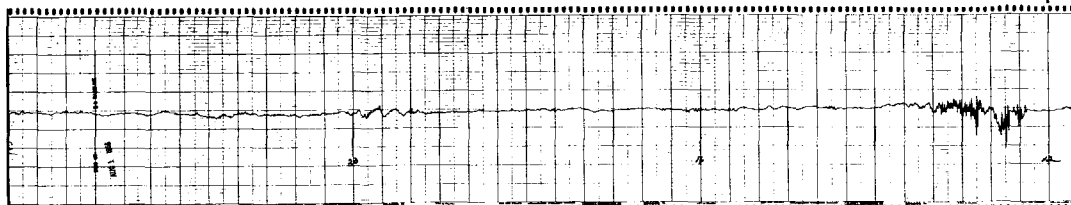
N-S TELLURIC CURRENT

AUG 1966

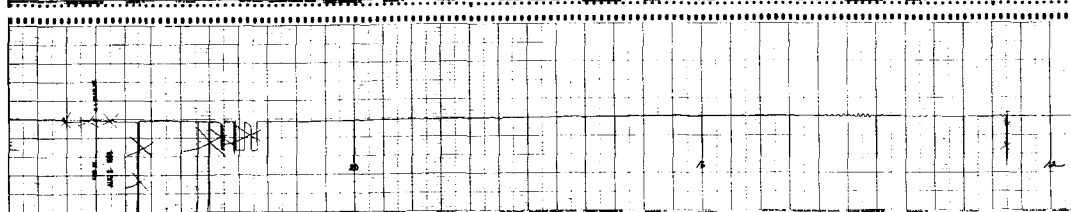
COLLEGE

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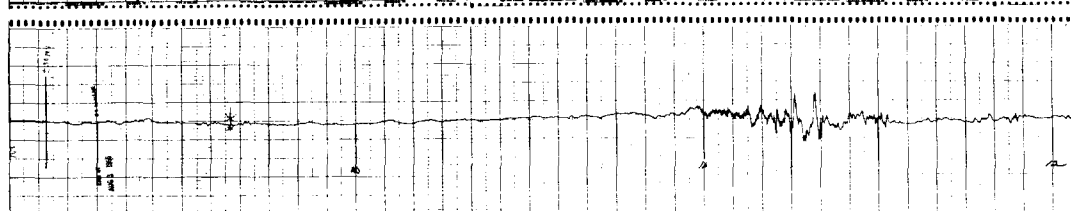
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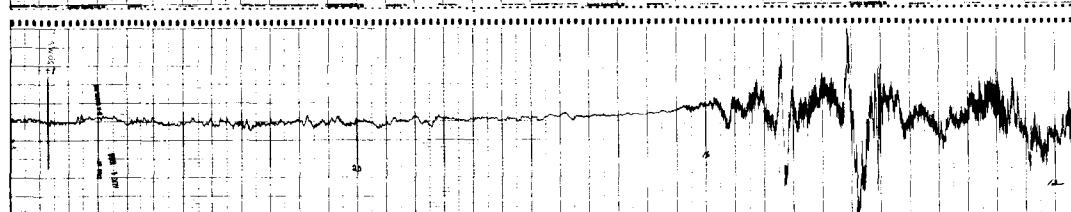
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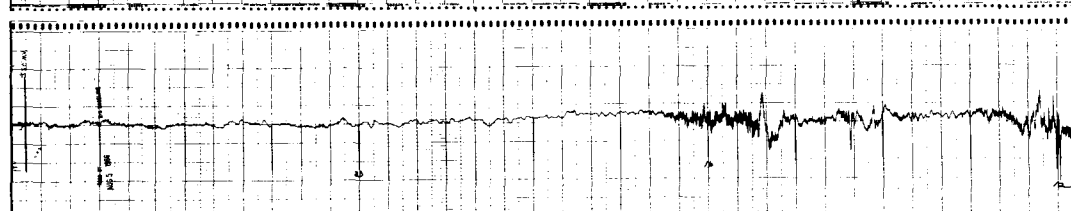
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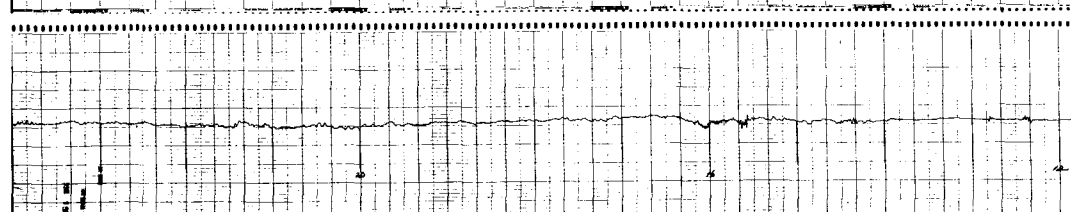
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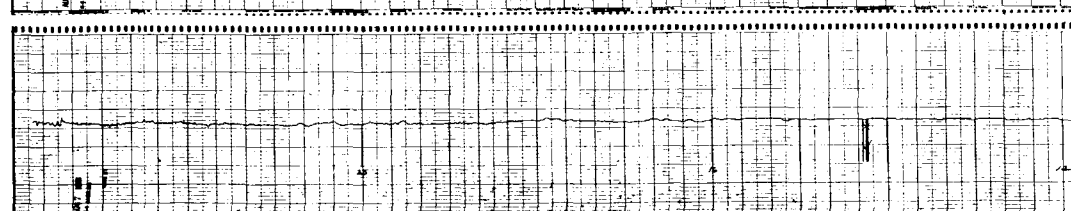
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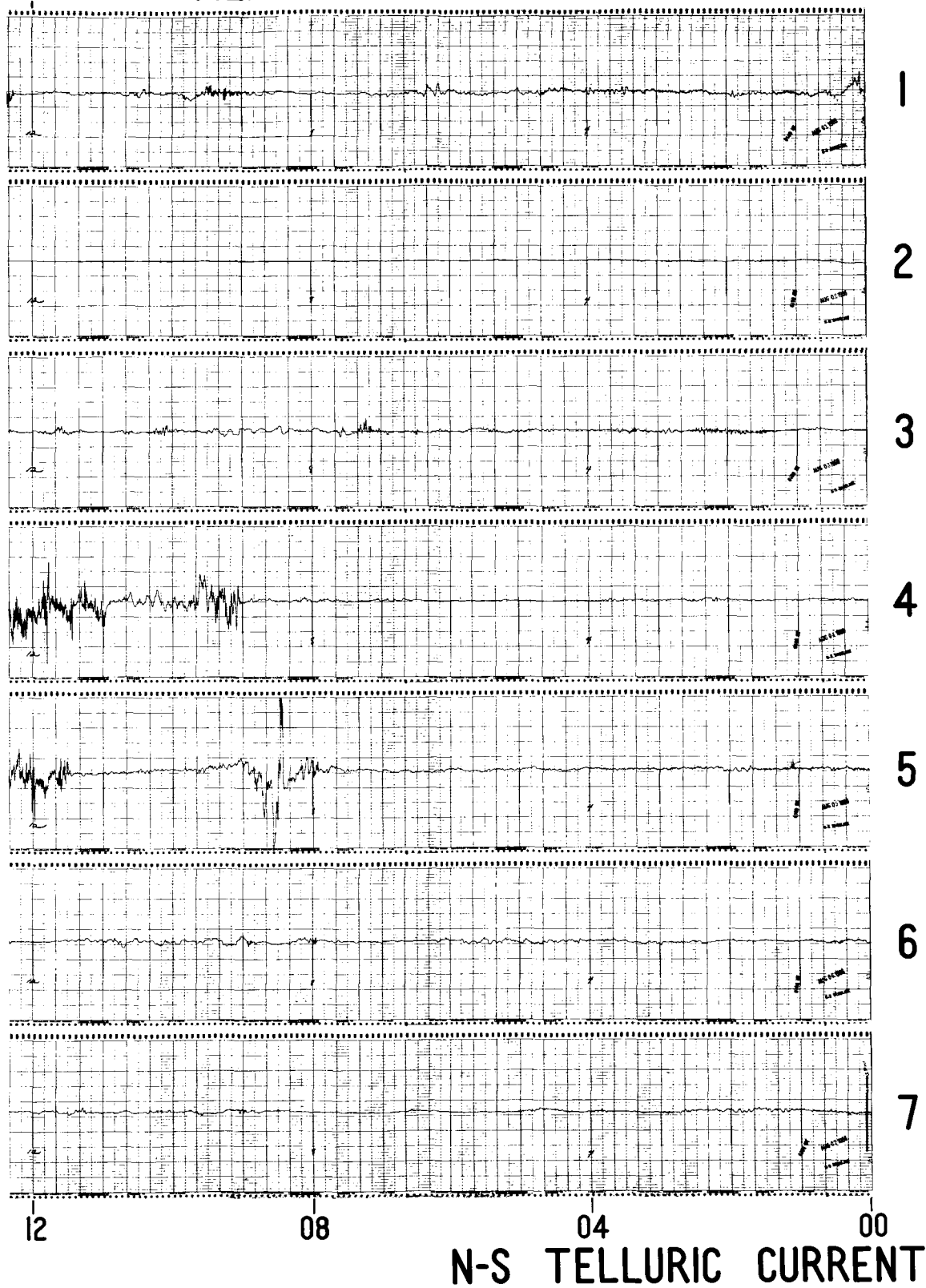
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UNIVERSAL TIME

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ALASKA

AUG 1966

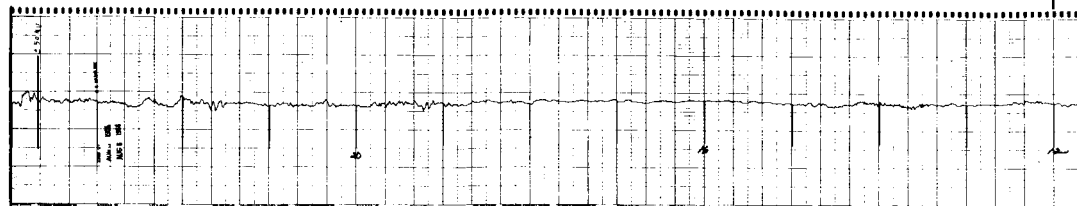


AUG 1966

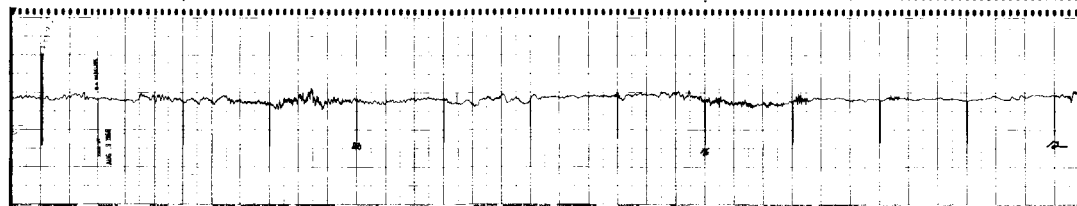
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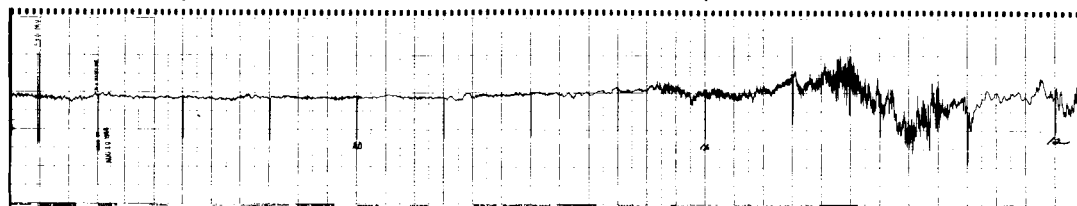
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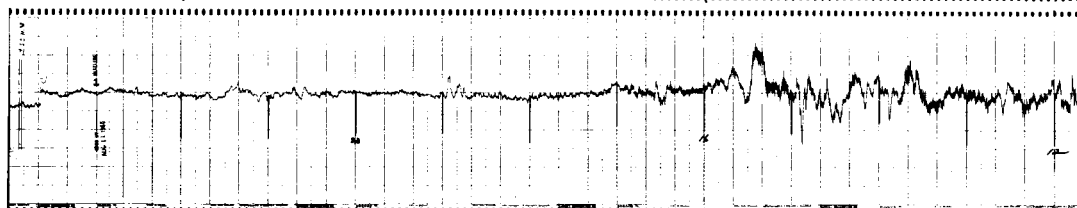
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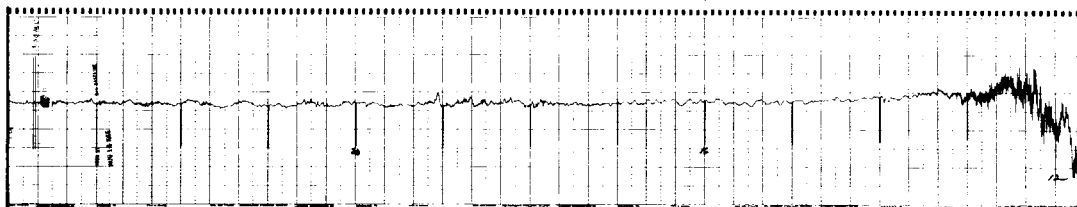
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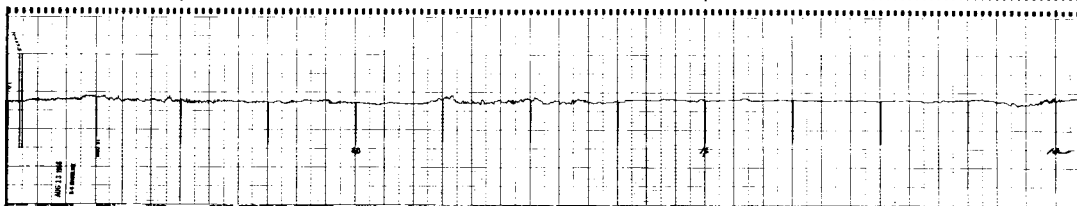
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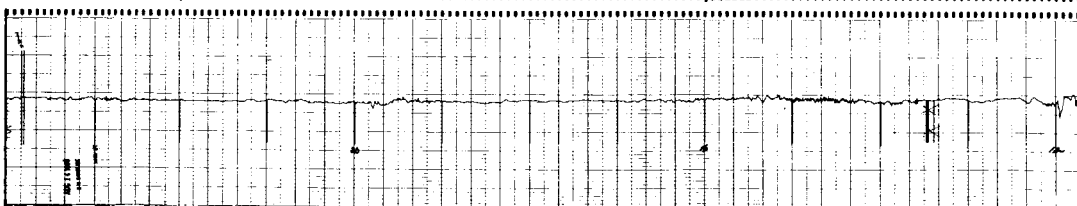
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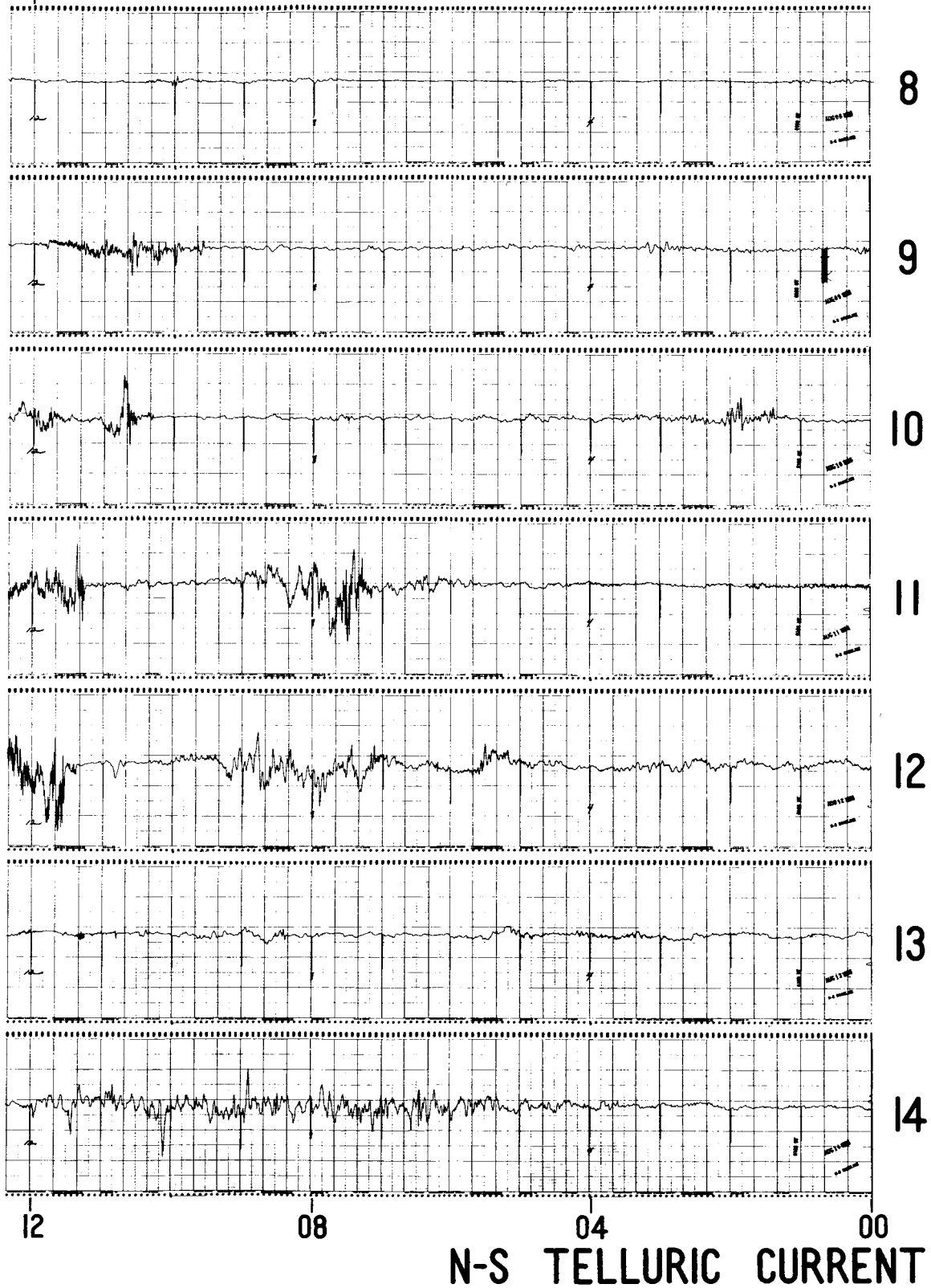
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UNIVERSAL TIME

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ALASKA

AUG 1966



AUG 1966

COLLEGE

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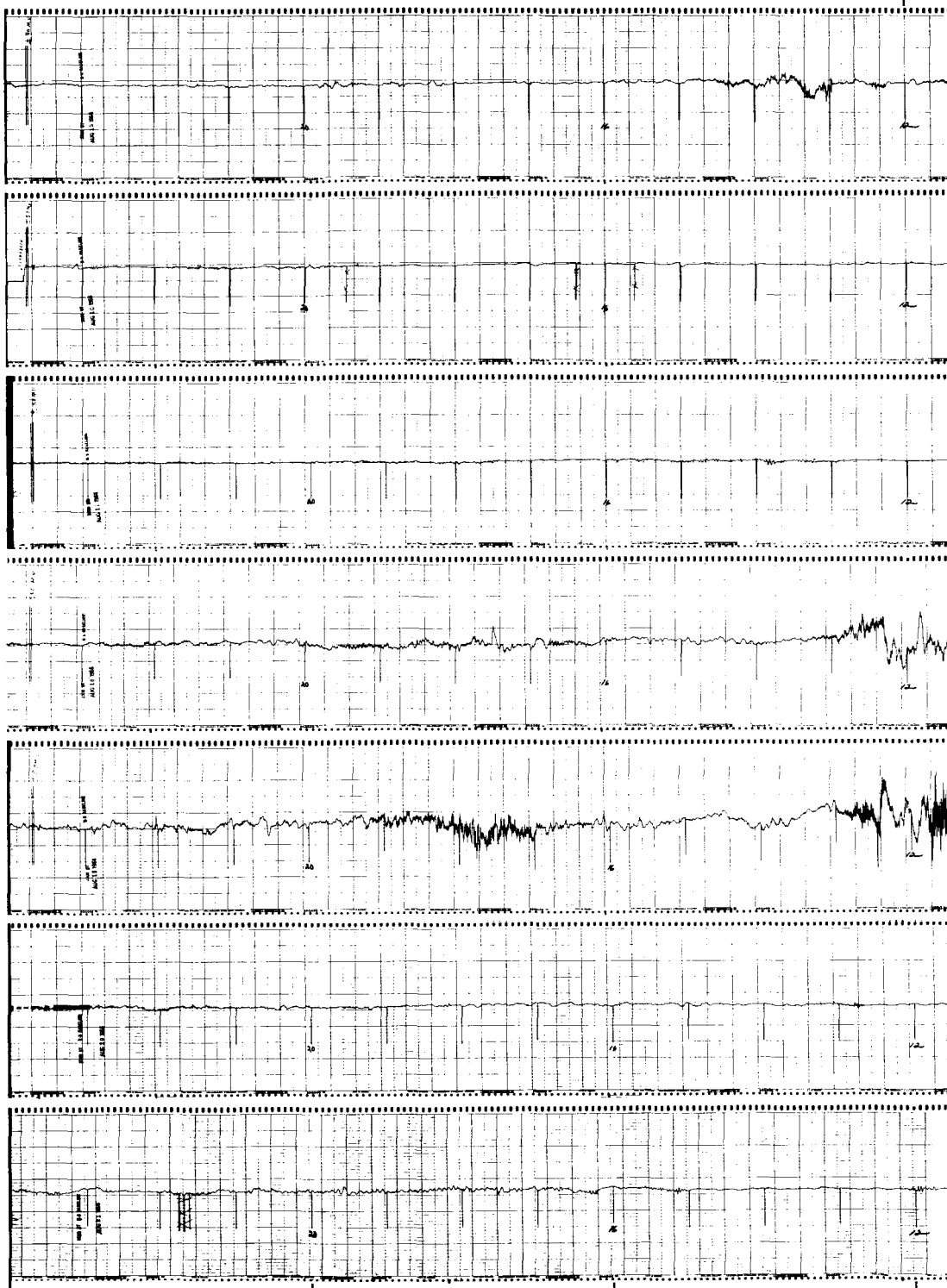
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UNIVERSAL TIME

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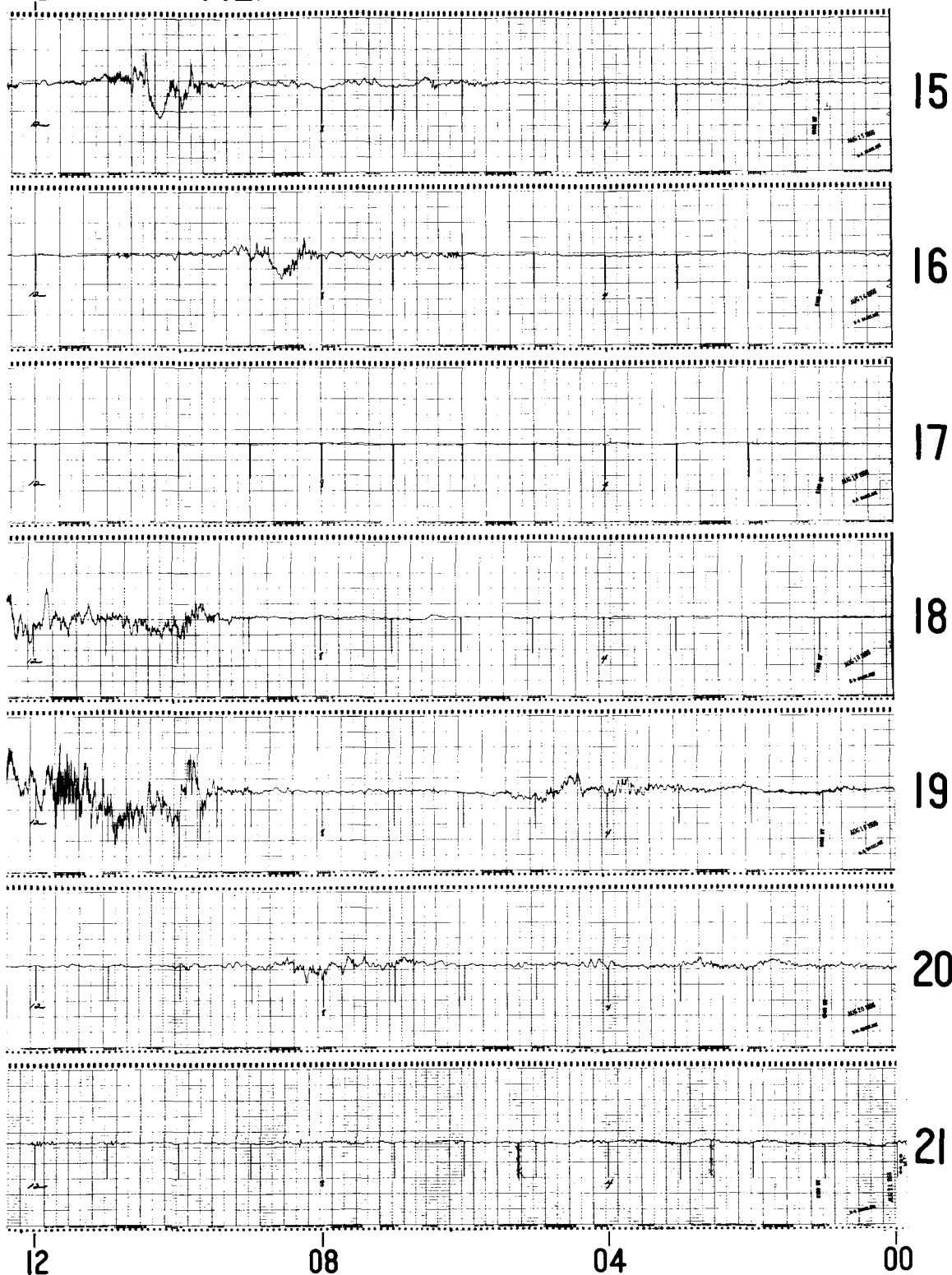
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ALASKA

AUG 1966



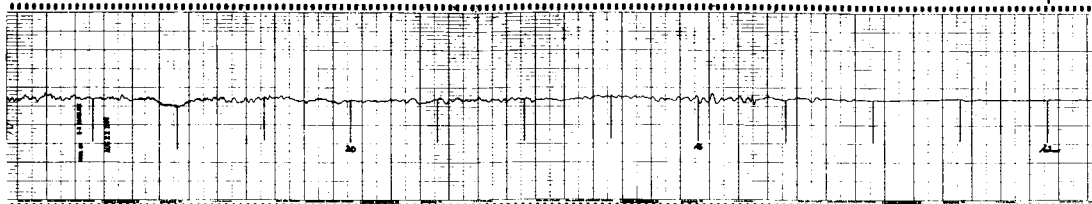
N-S TELLURIC CURRENT

AUG 1966

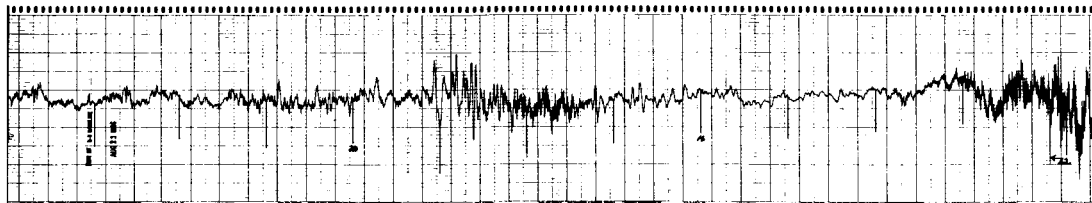
COLLEGE

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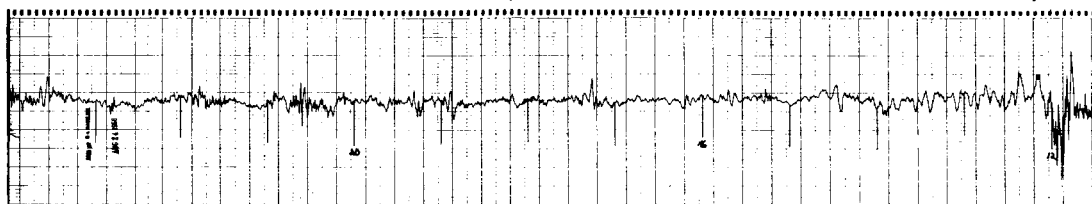
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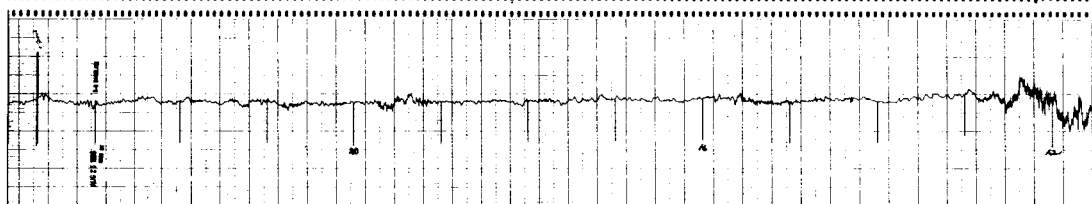
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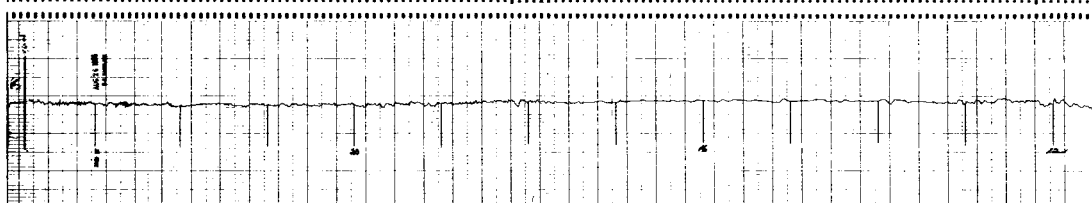
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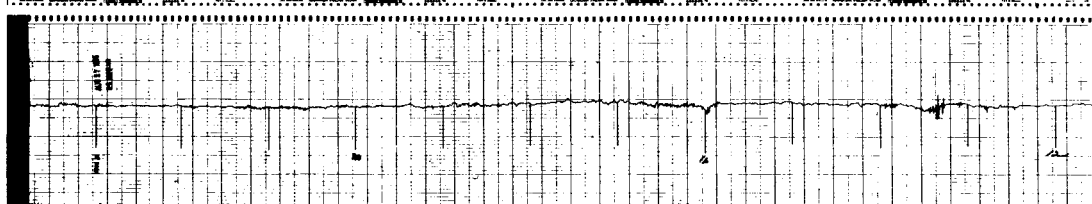
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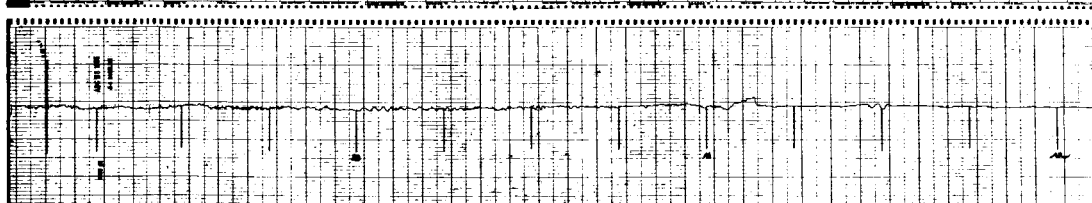
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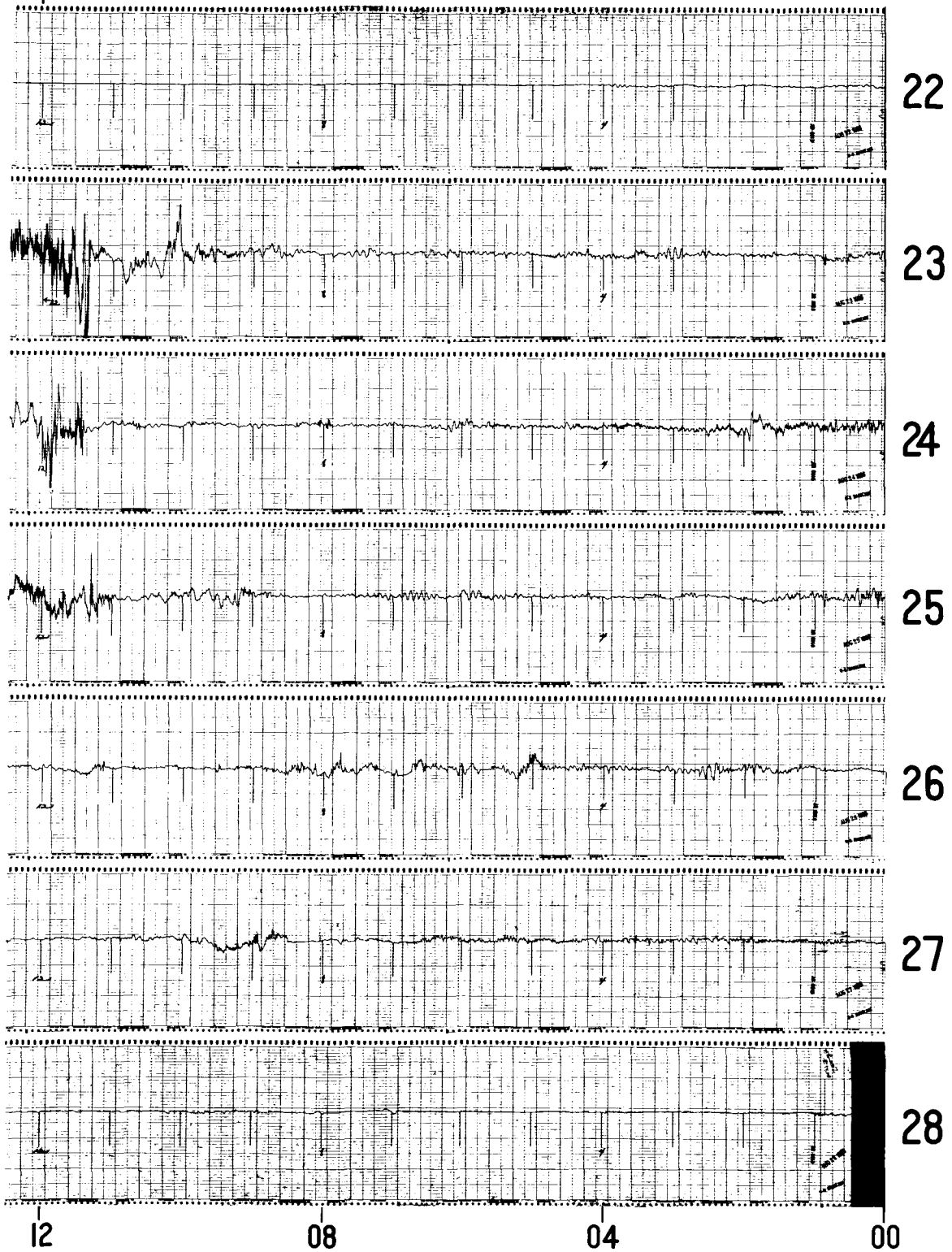
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UNIVERSAL TIME

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ALASKA

AUG 1966



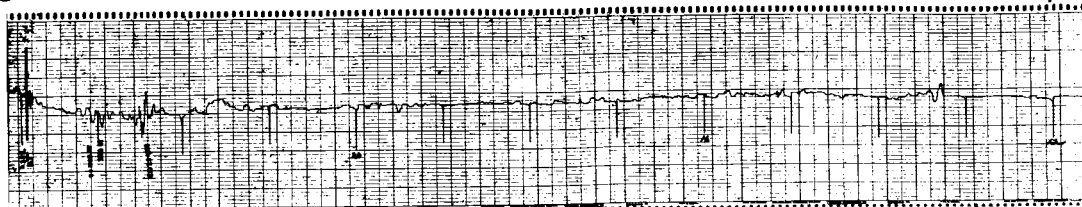
N-S TELLURIC CURRENT

AUG 1966

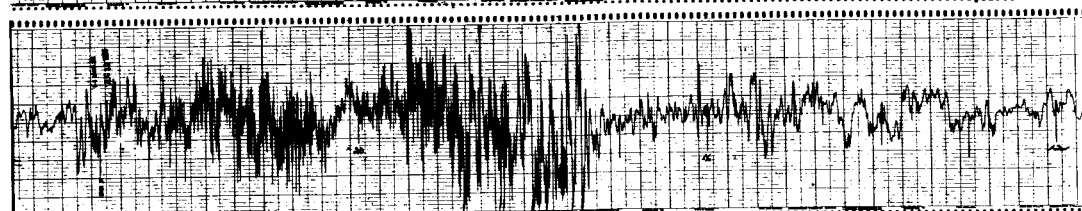
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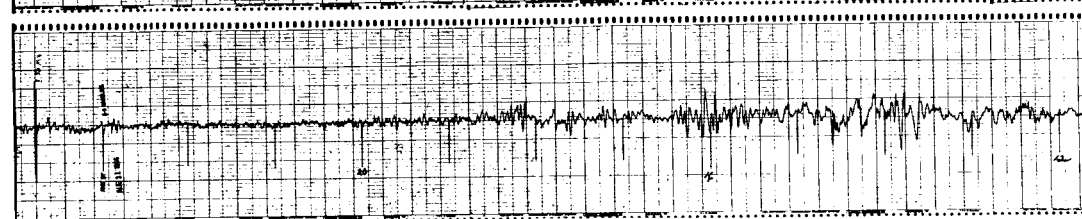
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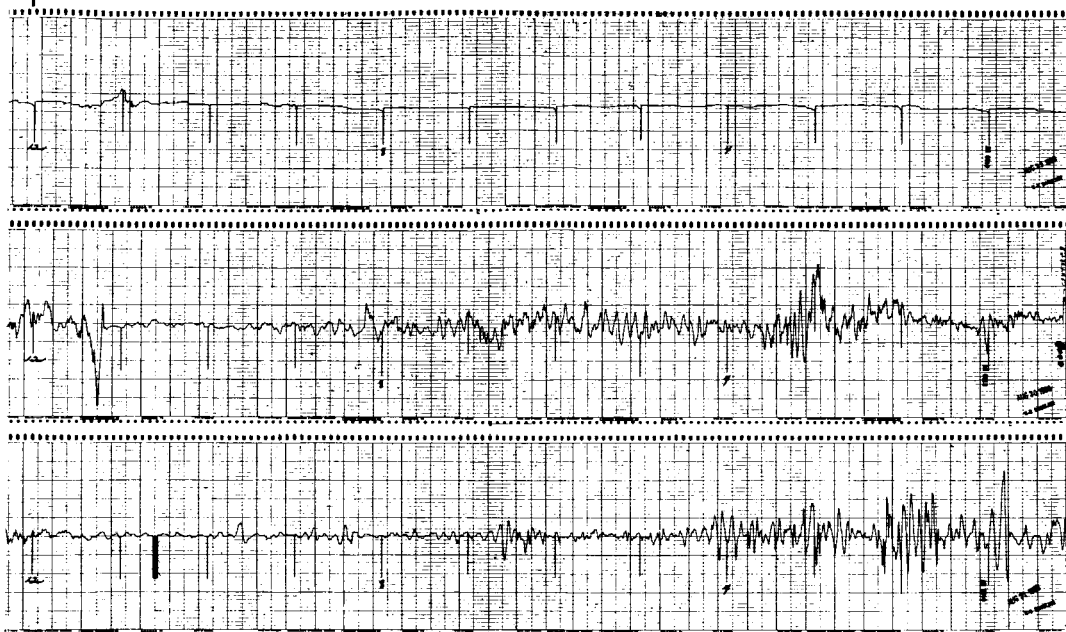
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UNIVERSAL TIME

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ALASKA

AUG 1966



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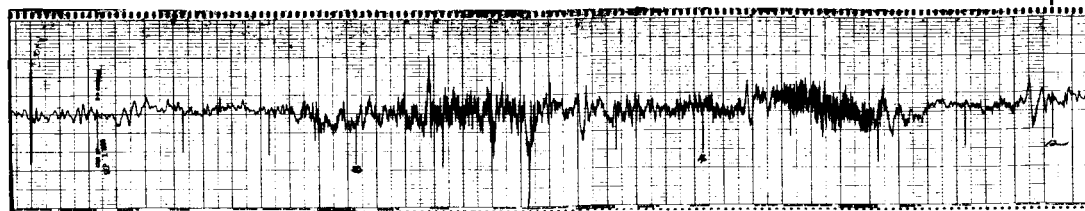
N-S TELLURIC CURRENT

SEP 1966

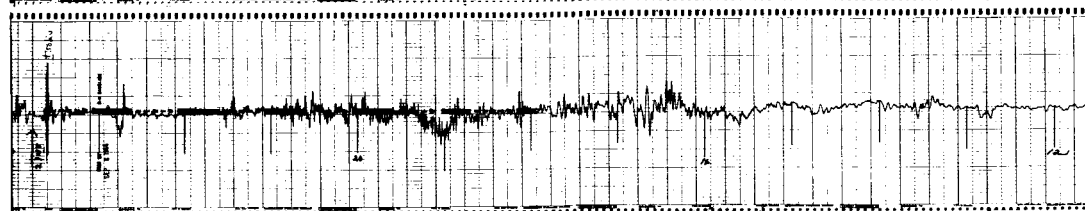
COLLEGE

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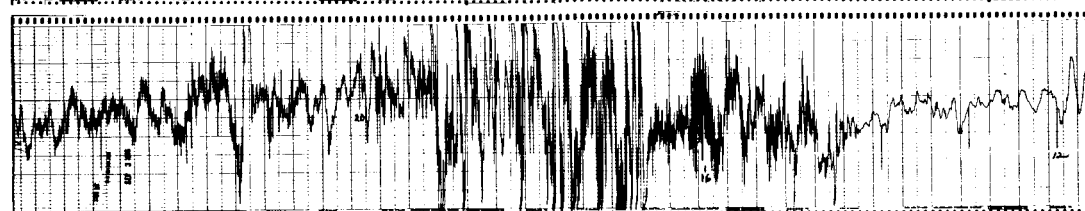
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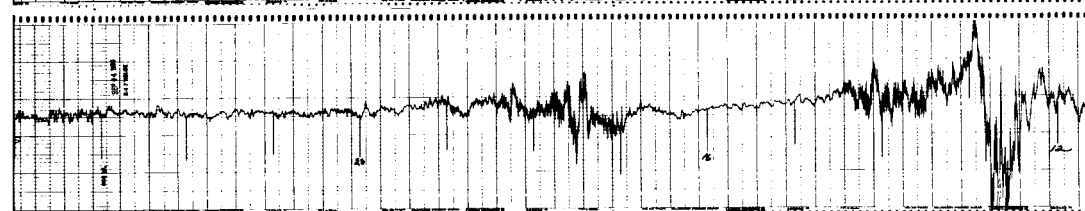
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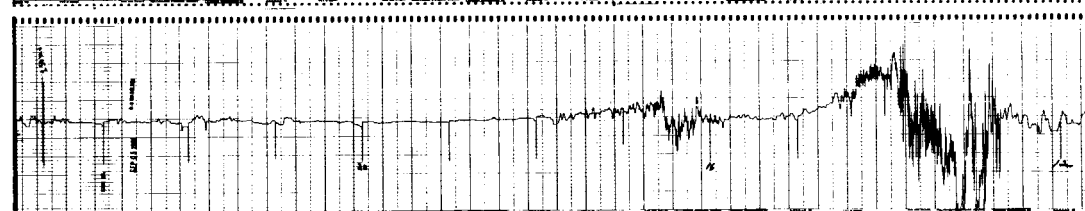
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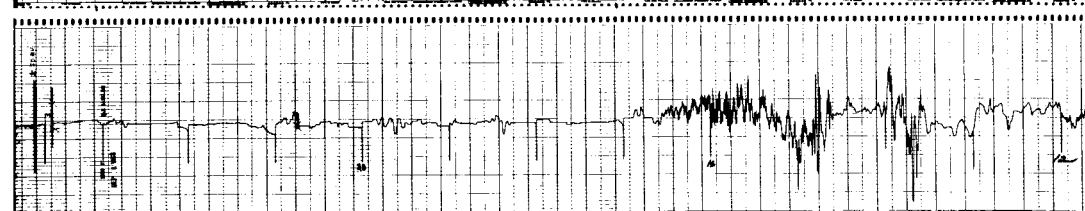
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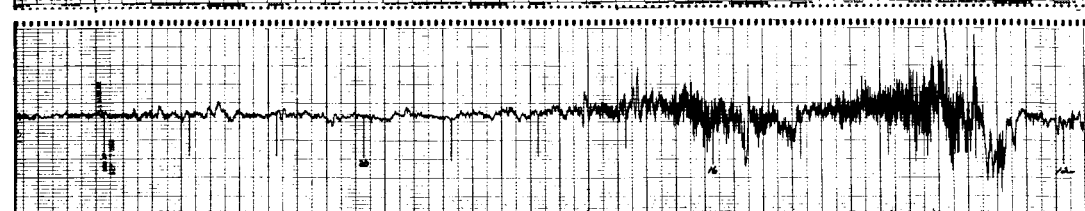
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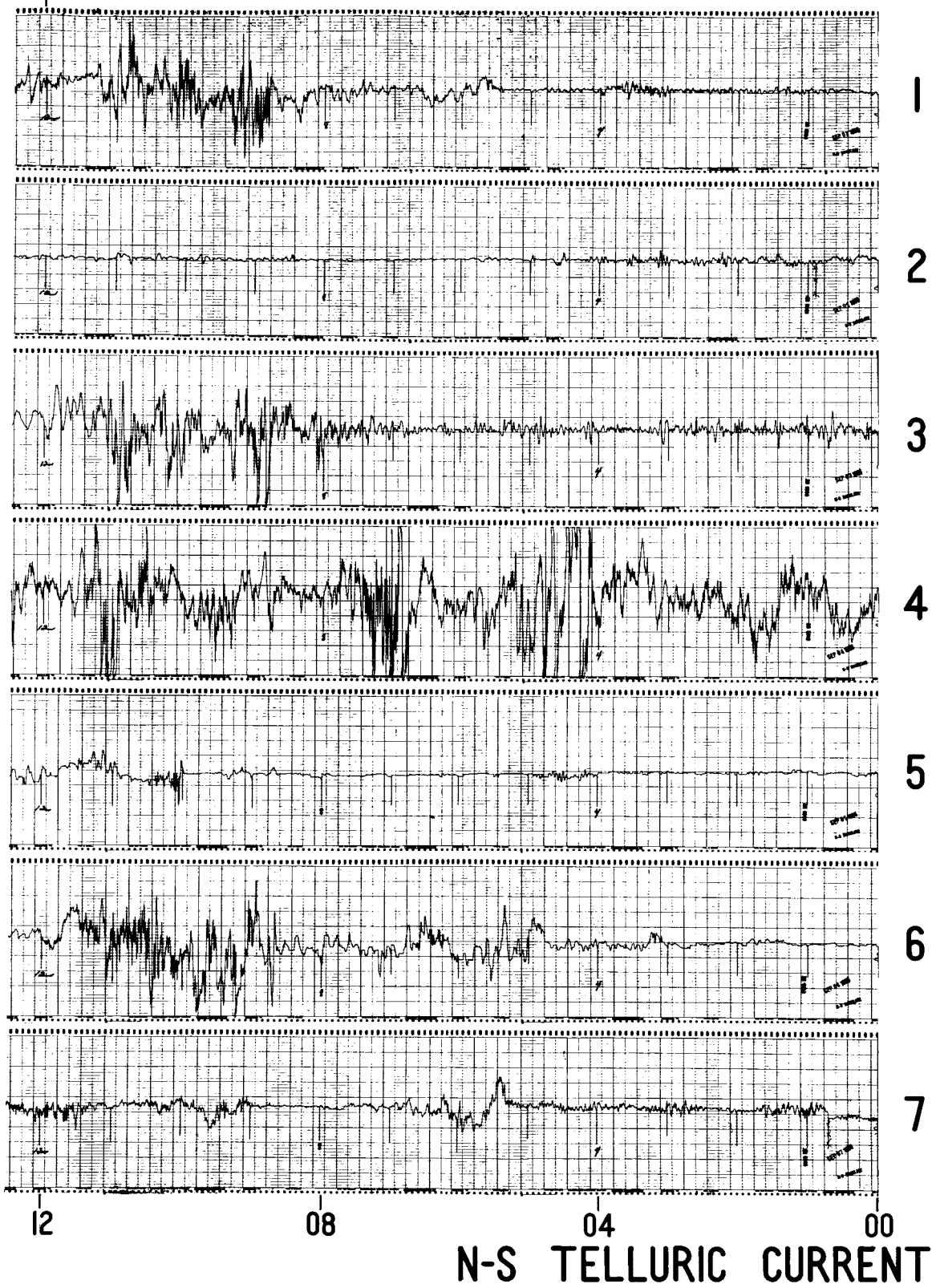
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UNIVERSAL TIME

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ALASKA

SEP 1966



SEP 1966

COLLEGE

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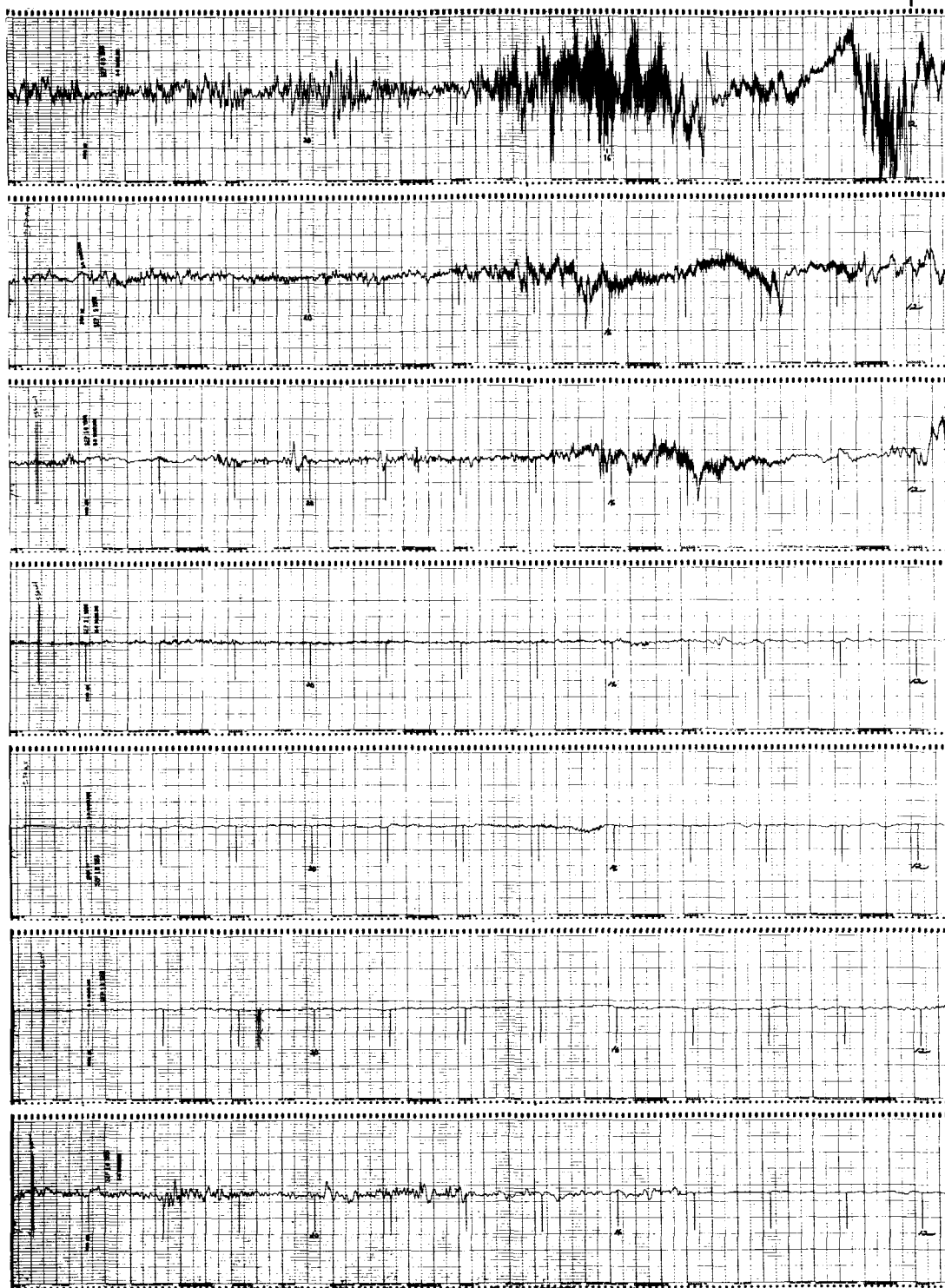
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UNIVERSAL TIME

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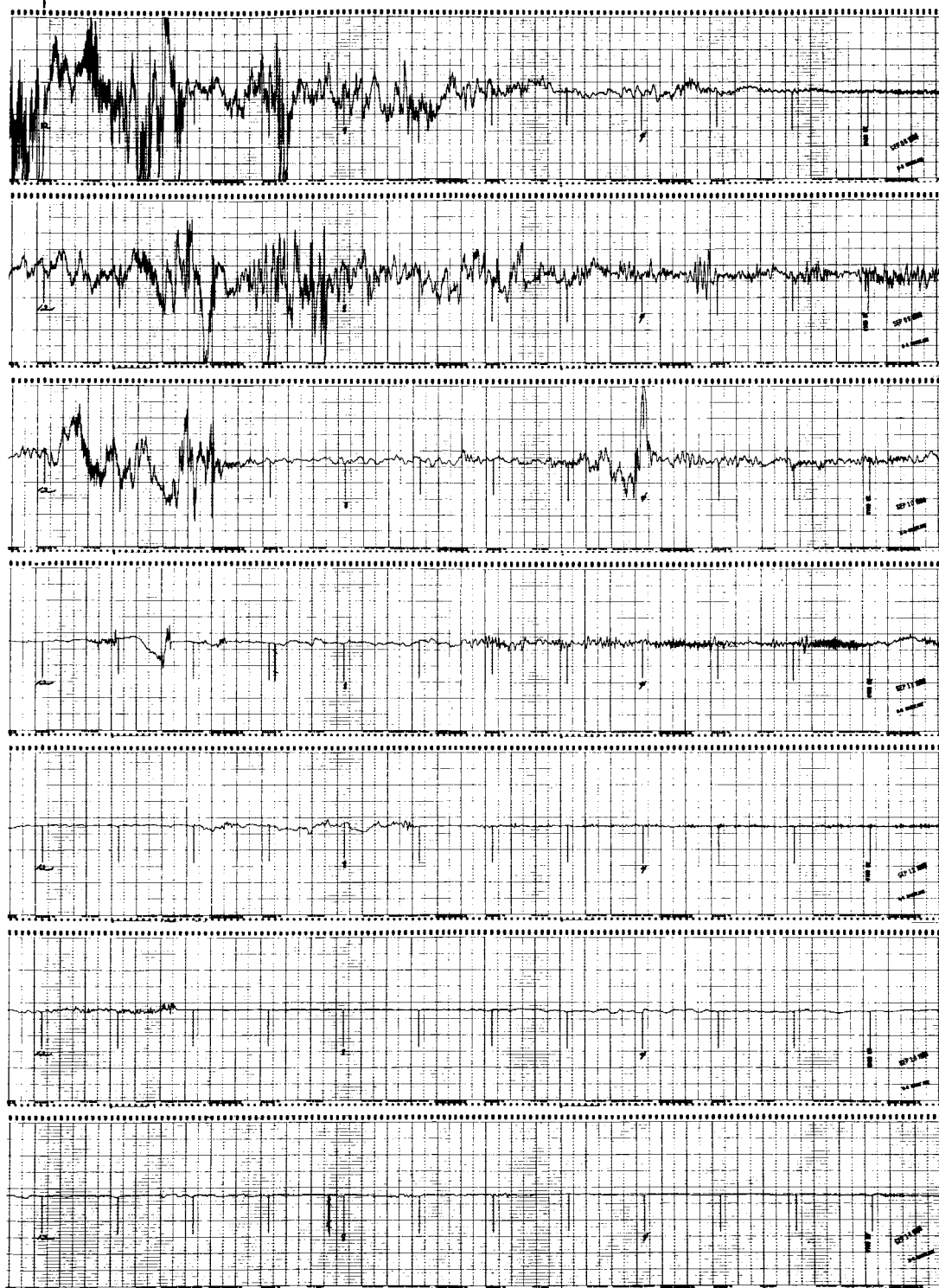
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ALASKA

SEP 1966



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N-S TELLURIC CURRENT

SEP 1966

COLLEGE

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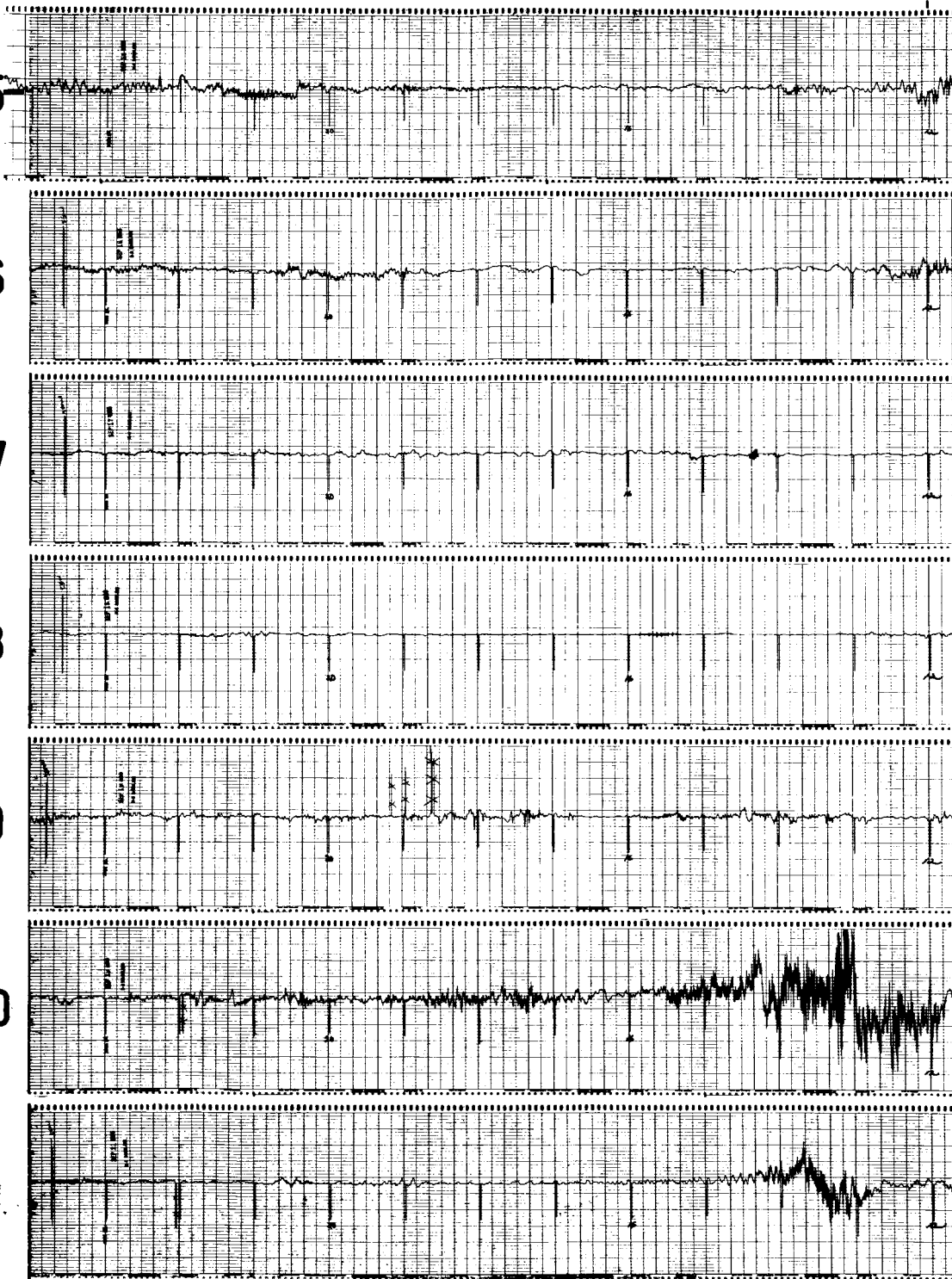
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UNIVERSAL TIME

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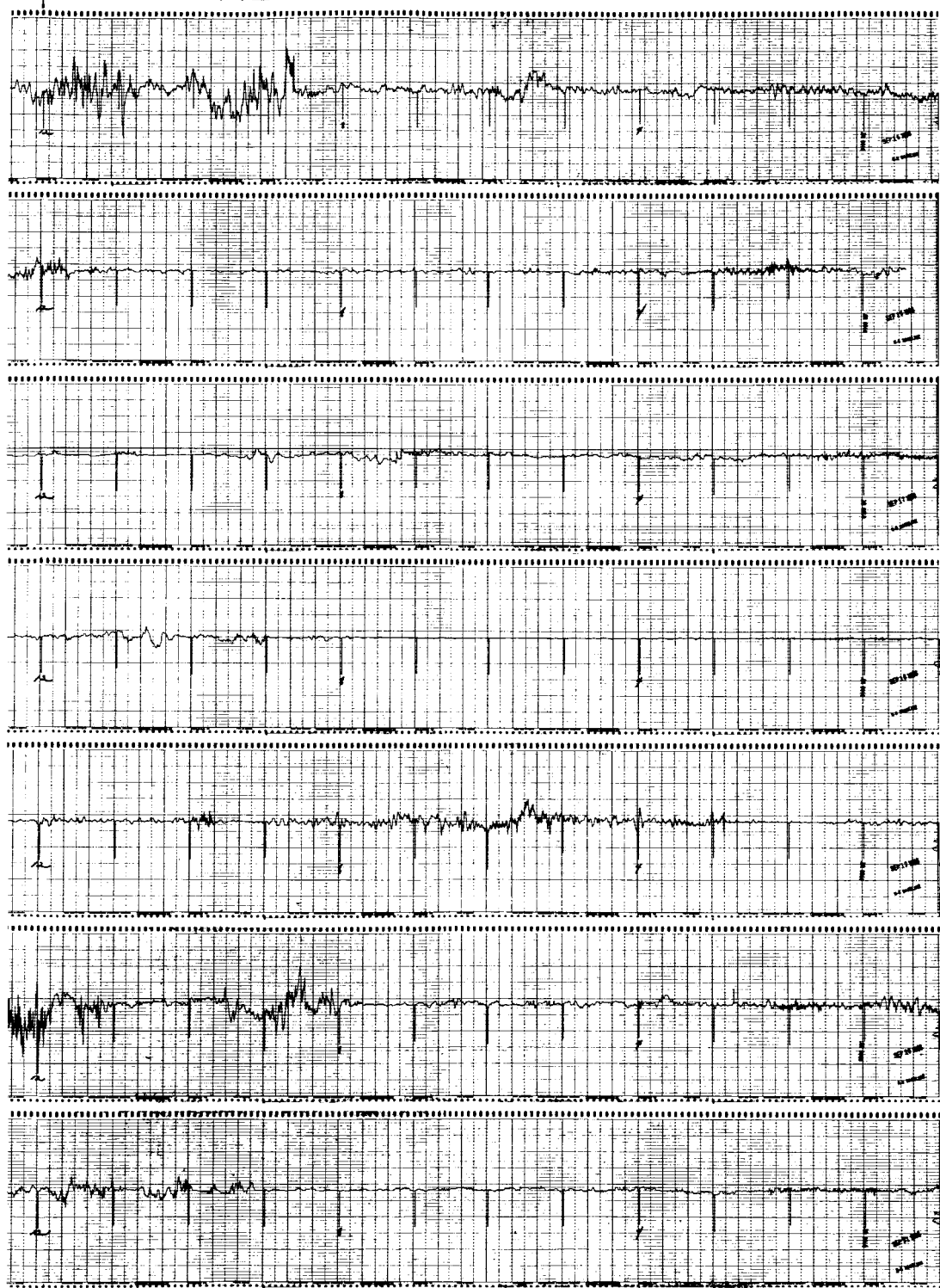
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ALASKA

SEP 1966



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N-S TELLURIC CURRENT

SEP 1966

COLLEGE

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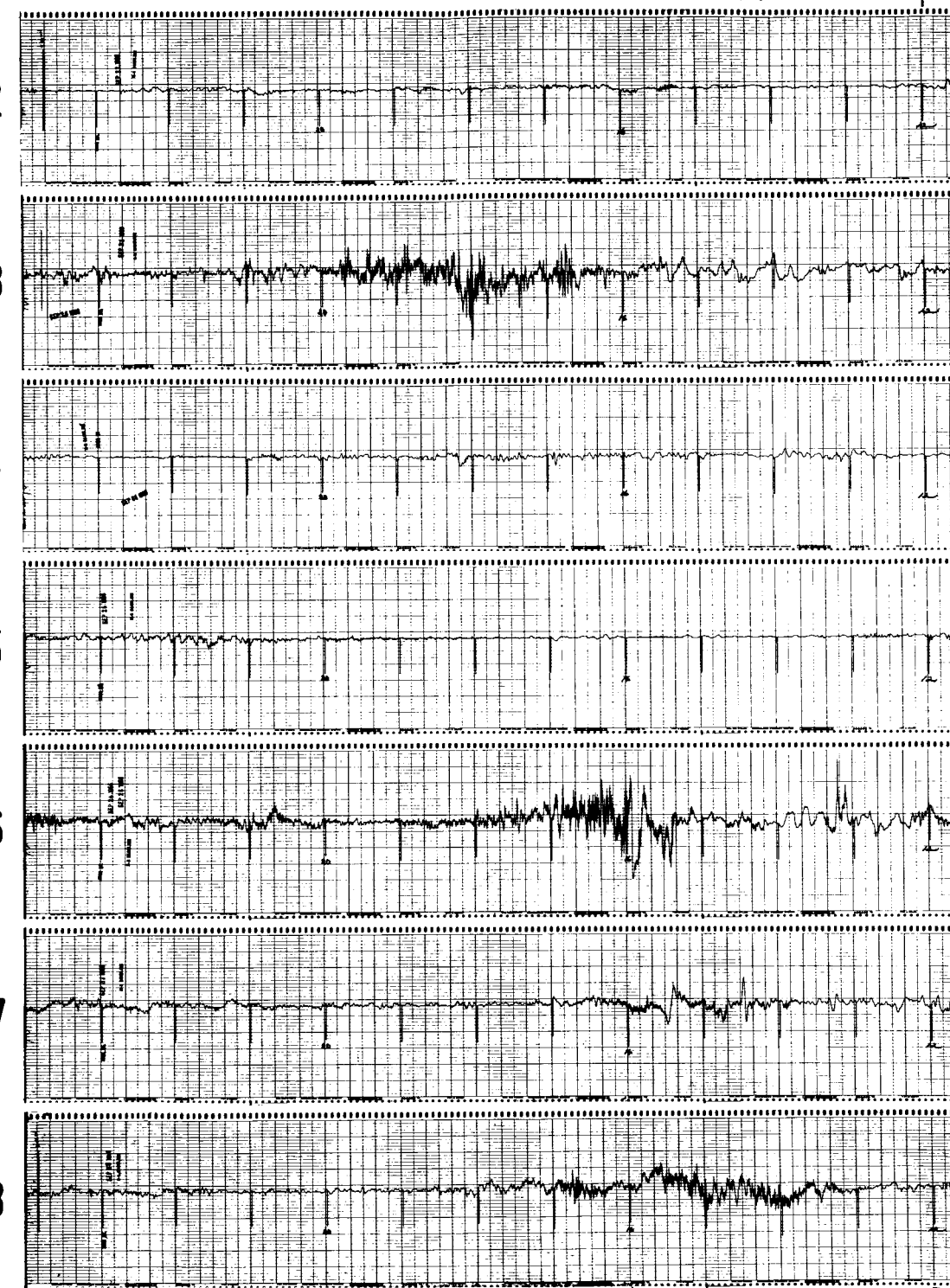
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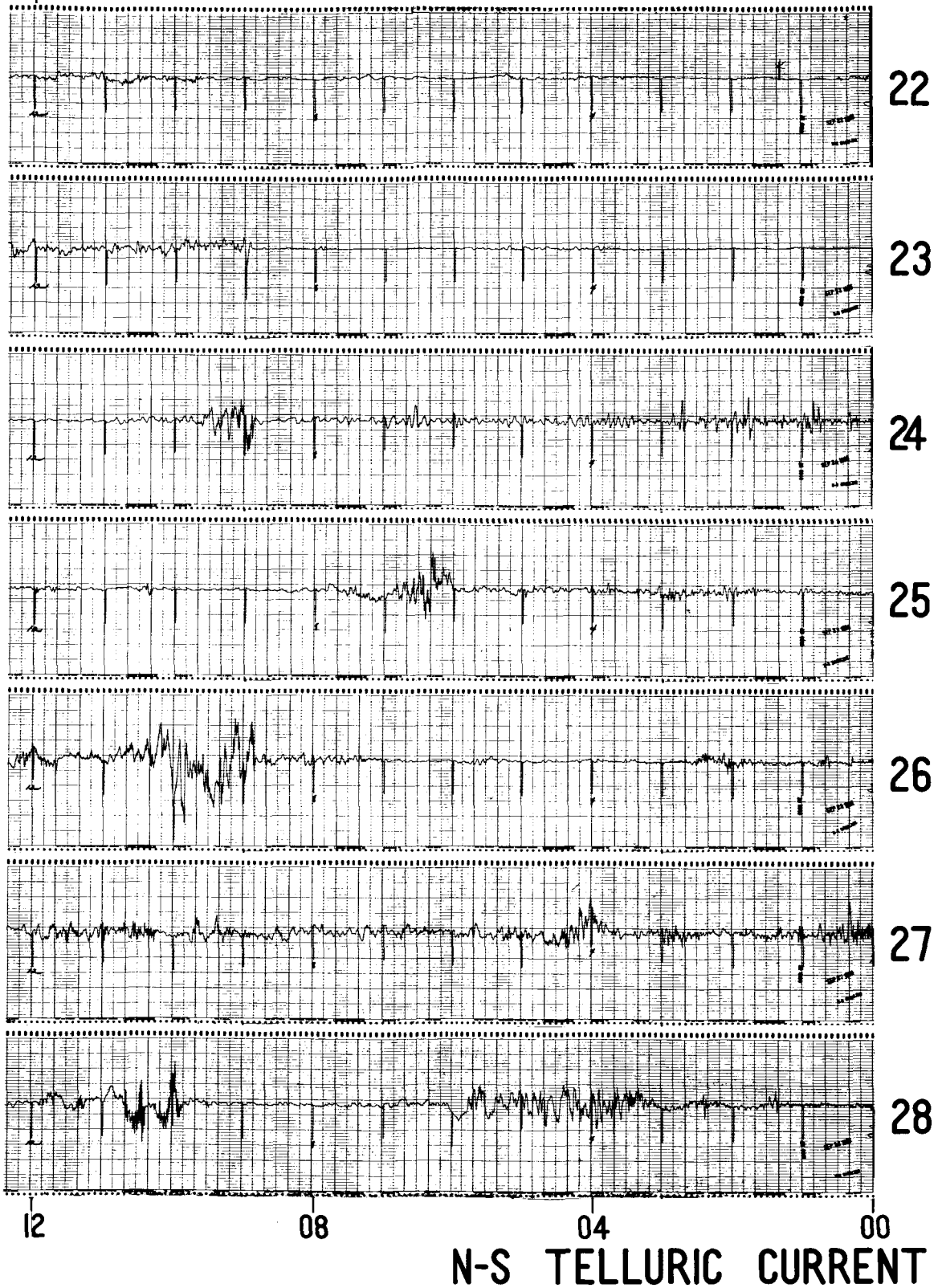
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UNIVERSAL TIME

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ALASKA

SEP 1966



SEP 1966

COLLEGE

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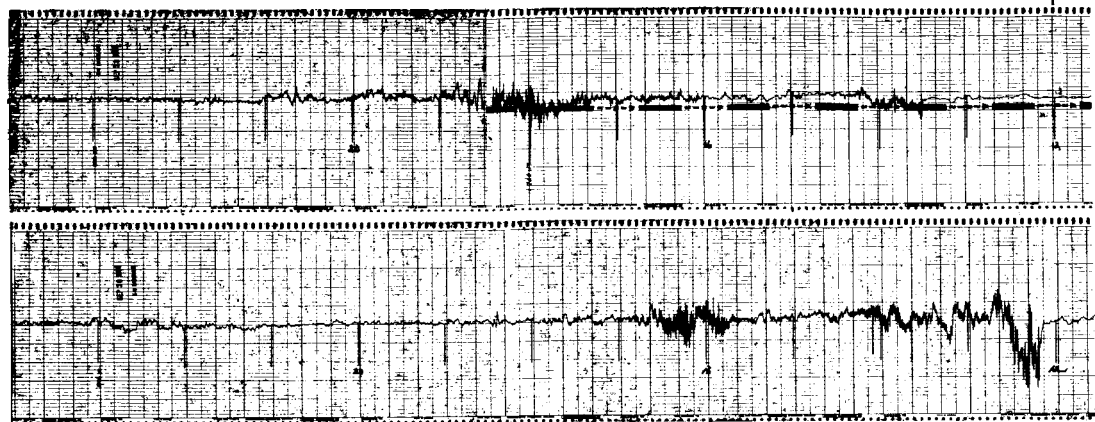
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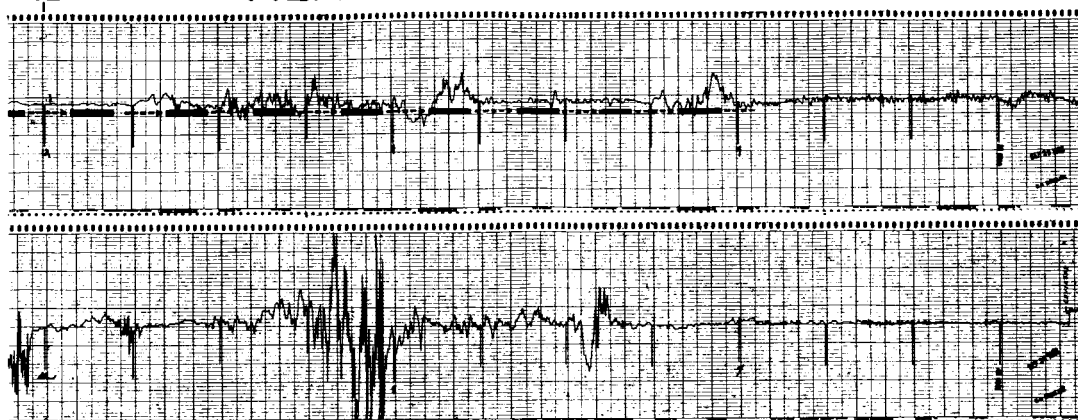
UNIVERSAL TIME



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ALASKA

SEP 1966



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N-S TELLURIC CURRENT

N-S TELLURIC CURRENT AMPLITUDE ACTIVITY - MV/KM

Month: July 1966																								Hour (Universal Time)												Observatory: College											
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	Avg																						
1	61	40	20	30	51	51	30	51	40	81	253	131	50	110	70	20	20	20	30	40	20	40	30	20	55																						
2	40	30	40	30	10	10	30	60	10	20	20	10	10	20	20	40	50	40	40	40	30	20	20	30	28																						
3	20	30	30	30	40	30	20	10	10	20	99	89	29	10	20	20	20	20	29	20	39	29	39	29	31																						
4	29	20	20	10	20	10	20	10	29	78	59	157	98	88	59	108	226	137	118	88	69	69	118	88	72																						
5	59	39	49	39	39	29	29	49	39	49	49	39	20	20	20	30	40	30	50	110	70	10	20	30	40																						
6	20	30	30	50	50	60	60	30	30	90	100	60	50	60	20	30	30	30	30	60	30	60	40	60	46																						
7	60	30	20	30	30	20	10	20	20	40	100	40	20	10	10	10	10	10	10	20	10	30	40	30	26																						
8	50	30	50	70	120	100	210	480	160	>1070	170	160	100	60	30	80	110	250	110	80	80	340	220	210	181																						
9	235	235	314	>608	>940	>1049	>1049	500	>804	>940	863	785	412	118	49	226	294	157	147	216	176	206	78	98	437																						
10	157	274	98	167	382	294	990	>930	323	452	>1049	725	435	149	79	69	89	79	79	79	109	89	119	99	305																						
11	89	99	99	69	119	50	218	50	30	89	50	20	30	50	59	40	50	50	50	40	59	69	79	109	70																						
12	109	89	119	119	228	366	455	574	>1000	>1059	356	396	410	250	130	40	30	40	20	40	110	30	40	60	253																						
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15	30	40	10	20	20	10	30	20	40	40	30	20	10	10	10	70	30	100	50	50	60	130	150	220	50																						
16	60	70	40	40	30	40	60	40	30	50	20	20	20	20	20	20	20	30	50	50	70	50	70	130	44																						
17	98	108	98	167	59	29	59	39	372	245	157	49	29	39	39	49	69	59	88	39	29	39	39	20	84																						
18	39	39	20	20	49	29	49	49	69	78	98	216	30	20	40	40	30	40	50	40	40	20	30	30	49																						
19	50	30	40	60	40	30	40	70	190	50	20	50	20	30	50	100	90	50	40	30	30	20	10	20	48																						
20	30	30	20	30	20	50	30	40	130	80	20	20	10	40	10	10	20	30	20	50	40	40	40	110	38																						
21	90	60	180	110	120	50	40	50	120	100	100	70	200	260	240	120	110	120	140	60	80	80	50	90	110																						
22	70	130	40	50	30	40	30	30	30	30	30	20	30	20	30	20	40	50	30	40	40	40	40	30	39																						
23	40	30	40	30	40	30	30	20	40	50	70	60	60	50	50	70	80	20	20	30	30	30	30	70	43																						
24	69	79	79	50	40	30	20	20	20	69	40	40	59	40	40	30	20	20	30	20	20	30	40	30	39																						
25	30	20	30	40	30	30	20	10	30	40	40	20	20	10	20	20	20	10	10	10	41	20	31	41	25																						
26	31	51	41	20	41	31	10	10	102	51	20	20	30	50	40	40	40	30	30	30	60	70	40	50	39																						
27	60	60	50	40	30	20	110	60	160	170	70	50	98	323	490	196	78	59	59	39	59	49	29	49	100																						
28	20	49	98	137	88	49	157	216	412	657	353	88	91	273	121	172	51	40	51	51	30	30	40	40	139																						
29	20	30	71	40	30	30	40	71	111	121	232	202	20	20	20	30	40	20	30	51	30	20	30	40	56																						
30	10	10	29	88	108	49	59	264	363	78	20	10	10	20	29	29	29	20	22	20	20	29	39	20	57																						
31	20	20	20	29	20	20	10	39	167	39	78	69	29	29	78	118	59	29	39	29	20	20	29	20	43																						
Avg	58	61	63	75	93	88	128	125	165	197	149	121	80	72	62	61	60	53	48	49	51	58	53	62	85																						

Five Disturbed 8-9-10-12-28

Selected Days: Five Quiet 2-3-7-13-25

N-S TELLURIC CURRENT AMPLITUDE ACTIVITY - MV/KM

Month: August 1966												Hour (Universal Time)												Observatory: College											
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	Avg										
1	176	59	49	69	69	59	98	29	78	88	69	29	294	88	29	29	20	29	20	78	39	49	49	29	68										
2	29	10	20	20	10	20	10	10	10	0	0	0	20	10	20	10	10	10	10	10	10	10	10	10	12										
3	30	40	51	40	30	40	40	131	61	61	71	61	61	81	273	152	71	30	30	30	20	30	40	20	62										
4	20	10	30	20	10	20	20	30	40	380	250	680	540	430	>>1070	720	80	40	30	70	80	70	60	60	199										
5	40	50	40	20	30	30	30	110	>>1070	110	40	420	430	90	240	320	140	50	50	40	60	50	60	60	149										
6	30	20	40	30	40	40	30	50	70	70	70	30	40	20	30	80	80	30	20	30	40	50	50	30	43										
7	40	40	30	20	40	10	20	20	20	50	20	50	10	10	10	20	20	30	20	20	30	30	40	50	27										
8	30	20	20	20	20	10	10	40	30	70	50	20	30	40	40	30	20	40	60	40	40	80	70	90	38										
9	60	30	70	70	40	50	20	40	50	160	300	130	39	29	59	59	69	29	69	49	127	59	59	49	72										
10	39	226	108	59	69	59	39	49	39	29	480	167	287	396	317	158	139	69	49	30	40	50	40	59	125										
11	50	59	40	40	59	69	149	624	297	79	89	524	220	340	400	350	150	110	160	60	90	120	70	60	175										
12	90	90	110	80	70	230	130	420	400	230	130	640	420	100	50	50	40	60	60	90	60	50	40	40	153										
13	60	60	70	60	60	100	40	50	120	60	70	70	58	19	19	19	29	39	59	49	29	29	39	49	53										
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16	39	20	20	29	20	29	59	59	274	88	69	20	20	20	29	20	20	20	20	29	29	29	29	39	43										
17	20	20	20	20	20	20	10	20	0	0	10	10	20	50	30	30	20	30	30	20	20	20	20	20	20										
18	20	20	10	20	20	10	40	30	30	238	188	317	353	69	59	49	78	167	88	69	69	39	39	29	86										
19	49	69	59	127	206	69	29	29	49	540	412	549	560	200	130	90	140	290	170	100	130	120	120	70	180										
20	50	70	90	60	70	40	70	130	170	60	40	30	40	40	30	30	30	30	30	30	40	50	50	40	55										
21	40	40	50	40	30	20	20	30	60	10	30	40	30	20	20	50	50	60	50	60	40	40	50	50	39										
22	30	30	20	30	20	10	10	10	10	10	10	10	10	10	30	70	40	40	40	40	50	60	80	60	30										
23	110	50	90	90	80	60	60	70	110	150	540	>880	350	220	90	120	170	270	480	360	210	150	130	160	209										
24	118	206	98	69	59	78	78	69	69	49	69	764	255	147	147	98	88	167	157	147	235	127	118	186	150										
25	137	78	59	49	49	78	69	59	49	147	137	460	216	59	49	69	39	69	49	108	69	59	59	98	97										
26	39	88	127	59	78	176	127	176	98	59	49	98	50	30	20	30	20	20	40	40	30	30	40	50	66										
27	50	50	59	79	69	69	69	50	149	129	50	30	50	139	30	79	59	40	30	40	40	30	20	30	60										
28	20	20	20	20	20	10	30	30	30	30	30	10	20	30	20	70	30	30	30	30	30	40	30	30	28										
29	30	20	20	10	20	20	20	10	10	50	119	119	20	120	50	70	50	60	40	70	60	140	230	190	65										
30	120	280	440	400	190	240	260	130	220	70	50	570	260	320	370	470	410	>>1070	>800	670	800	490	460	460	423										
31	594	435	416	307	268	69	228	69	109	119	40	69	149	317	278	218	258	158	158	89	59	50	89	99	193										
Avg	72	74	76	66	61	63	70	95	133	118	141	232	161	119	131	118	78	102	103	92	81	81	73	73	100										

Selected Days: Five Quiet 2-7-17-22-28

Five Disturbed 4-19-23-30-31

N-S TELLURIC CURRENT AMPLITUDE ACTIVITY - MV/KM

Month: September 1966

Hour (Universal Time)

Observatory: College

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	Avg
1	60	60	50	130	40	140	160	160	520	840	730	390	280	290	330	260	190	520	420	450	230	110	170	110	277
2	82	102	112	122	102	41	20	20	61	71	82	51	82	133	82	143	316	163	276	306	204	184	296	173	135
3	266	234	173	184	204	133	122	234	>835	653	>928	551	143	255	867	816	>>1091	>>1091	>>1091	>>1091	530	>1020	448	418	557
4	470	730	350	630	>>1070	740	>>1070	>>1050	540	630	>1060	>>1070	>>1070	410	310	70	180	510	230	140	70	70	80	100	527
5	50	50	40	50	110	50	40	40	80	90	350	210	>910	>1050	330	110	370	120	30	30	60	120	90	80	186
6	30	70	70	150	270	580	370	340	910	900	820	610	190	780	580	540	220	80	140	140	110	70	80	60	338
7	100	110	120	80	90	380	190	60	40	230	120	190	630	800	310	380	460	200	90	90	100	120	100	50	210
8	50	40	70	160	90	150	370	420	>950	410	>>1070	>840	>1010	320	670	870	>960	570	200	520	280	240	170	190	442
9	180	200	130	320	190	380	350	360	>880	>780	600	290	230	350	220	210	470	230	120	120	90	110	130	100	293
10	100	100	100	540	650	80	120	70	50	610	630	530	110	90	300	260	260	100	170	130	200	90	50	90	226
11	90	120	70	100	90	100	90	40	50	70	270	120	30	30	60	50	30	30	30	40	40	50	40	40	70
12	40	40	30	30	30	30	20	80	100	70	20	20	30	20	30	20	71	30	20	20	20	20	20	30	35
13	20	20	20	30	30	20	10	10	10	10	81	40	20	30	20	20	30	20	20	20	20	20	20	20	23
14	30	20	10	10	10	30	20	20	10	20	20	20	20	20	10	90	80	80	140	150	60	180	100	100	52
15	130	70	110	90	70	210	100	80	460	360	430	380	170	80	60	50	40	30	70	70	130	160	130	120	150
16	120	90	130	70	50	40	50	30	30	30	30	140	160	50	30	50	60	50	90	90	120	40	80	80	71
17	70	80	60	50	40	40	60	110	80	80	30	40	30	30	79	59	40	50	59	59	50	30	50	40	55
18	30	30	20	20	20	10	10	20	40	89	139	69	40	20	20	30	20	20	20	30	40	50	20	40	35
19	50	40	119	139	109	218	158	119	109	129	40	89	60	80	110	70	60	120	140	80	70	60	90	80	98
20	130	80	80	90	60	60	70	60	420	220	60	340	630	960	530	220	110	210	180	90	130	120	60	70	207
21	90	40	50	60	50	50	30	20	20	90	150	200	194	520	163	61	31	31	71	61	71	31	41	61	91
22	51	31	21	31	31	41	20	51	31	51	82	82	30	20	60	60	50	50	60	40	50	40	40	30	44
23	20	20	20	40	30	30	20	30	170	200	110	80	139	188	198	168	327	356	475	356	278	149	119	139	153
24	218	287	228	99	79	99	168	59	258	287	59	30	59	89	50	59	89	59	89	50	50	30	20	40	106
25	50	69	119	109	89	69	455	129	40	30	79	59	40	30	20	20	40	30	30	50	59	109	69	59	77
26	99	69	149	30	30	59	30	69	416	703	564	168	218	465	149	644	485	228	89	50	178	119	119	149	220
27	297	119	158	208	347	119	109	119	109	188	139	149	109	109	287	268	109	50	50	50	59	79	89	109	143
28	60	150	160	320	280	240	100	50	30	380	460	180	70	180	230	290	220	110	80	50	50	60	70	90	163
29	120	80	80	70	240	50	100	300	200	180	120	20	40	170	130	70	90	230	250	90	110	60	40	50	121
30	40	30	50	50	70	460	180	270	>1020	250	120	230	540	230	110	220	250	70	100	30	50	70	80	50	190
Avg	105	106	97	137	152	155	154	147	283	288	313	239	242	260	211	206	224	182	161	150	117	120	97	92	177

Selected Days:

Five Quiet 12-13-14-18-22

Five Disturbed 3-4-6-8-9

TELLURIC CURRENT FLUCTUATIONS - CYCLES PER HOUR

Month: July 1966

Month: July 1966													Hour (Universal Time)											Observatory: College										
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	110*	40	20	20	30*	10	10	30	10	50	110	30	20	110	140	20	10	10	20	20	10	20	20	10										
2	10	10	20	10	10	0	10	30	10	0	10	0	0	10	0	10	20	20	30	10	10	20	10	20										
3	50	20	20	10	20	0	10	0	10	0	40*	60*	20	0	10	0	10	10	10	10	20	30	10	30										
4	10	10	10	10	20	10	10	10	20	10	20	30	40	30	20	60	220	140	30	70	60	60	60	80										
5	70	50	70*	60	100*	20	20	30	20	10	20	20	10	20	10	20	40	50	40	20	40	20	20	30										
6	20	30	60	50	40	50	40	20	10	30	40	40	30	40	10	10	0	20	20	20	20	30	30	30										
7	20	40	50	30	30	20	10	10	10	10	20	30	0	10	10	0	10	10	0	10	10	-	-	-										
8	20	30	60*	50*	120*	20	90*	110*	40	130	160	110	40	30	20	40	30	100	70	30	30	130	200	130										
9	240*	320*	190*	>170	140	80	30	-	-	60	10	10	10	-	-	-	-	-	-	90	60	90	60	40										
10	70	50	80	80	130*	80	140	>90	40	120	>120	300	260	90	20	30	30	30	40	90	90	70	80	80										
11	60	40	40	40	40	30	30	20	30	30	30	10	0	20	10	10	30	30	60	70	90	100*	120	90										
12	100*	70*	60	40	30	40	60	70	160	220	110	50	190	140	30	70	30	10	30	60	50	80	50	60*										
13	60*	50*	30	30	40	30	10	20	10	20	20	20	10	10	10	20	0	30	10	30	20	30	40	20										
14	40	30	30	50	30	30	10	10	40	80	40	60	30	10	10	10	30	20	20	10	10	40	30	10										
15	30	50	30	10	10	10	10	30	20	30	20	20	0	10	0	10	20	20	30	20	20	30	40	50										
16	30	70	90	70	30	20	20	40	20	20	20	0	10	30	10	10	10	20	30	50	70	50	90	60										
17	70	40	80	210*	30	40	30	20	100	70	30	20	10	10	20	20	20	50	40	30	30	20	60	10										
18	30	40	0	30	20	20	20	20	30	30	50	70	40	20	20	20	20	30	50	40	60	60	40	40										
19	80*	80	70	60*	100	30	30	40	30	20	0	10	10	0	20	100	80	20	20	40	30	30	20	30										
20	10	40	0	30	10	10	20	20	10	150*	0	10	10	30	10	20	30	30	30	20	40	50	60	60*										
21	50*	20	280*	120*	240*	30	10	30	40	20	50	40	40	140	220	40	130	60	80	50	60	50	20	50										
22	40	50*	30	10	10	10	10	10	10	10	10	10	10	10	0	10	20	20	10	20	10	20	10	20										
23	20	20	10	10	20	10	10	0	10	20	20	20	20	10	10	0	30	10	10	10	10	10	40	30										
24	20	20	170*	20	10	0	10	10	0	10	0	10	20	10	10	10	0	10	20	30	30	20	40	30										
25	50	30	40	20	20	20	0	10	10	10	10	10	0	0	0	10	10	10	0	20	20	20	50	70										
26	70	50	40	40	10	10	10	10	10	20	0	10	10	30	10	10	20	20	30	20	170*	300*	20	20										
27	80*	20	10	20	20	10	20	30	40	20	20	20	60	100	150	130	40	20	40	50	70	70	90	90										
28	70	20	20	40	30	10	30	20	60	150	100	30	20	100	230	140	60	50	70	40	20	30	70	50										
29	30	20	60	60	30	30	10	10	20	60	90	130	10	0	10	0	10	10	30	20	30	30	30	30										
30	20	20	10	30	20	40	10	40	70	50	20	0	10	10	10	10	30	20	20	10	20	30	30	10										
31	0	20	20	40	10	10	0	20	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-										

0 (zero) = no activity

- (dash) = no record

* = Pearls

TELLURIC CURRENT FLUCTUATIONS - CYCLES PER HOUR

Month: August 1966																								
Hour (Universal Time)																								
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	150*	270*	90	190*	170*	40	20	20	10	70	20	10	140	100	20	20	20	20	20	60	70	90	40	30
2	20	20	30	50	10	30	20	10	0	10	0	0	-	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	-	-	-	-	10	20	10	0	70	60	40	230	280	200*	150	40	60	30	80	60	60	50
11	60	50	40	40	20	20	50*	120*	110	20	20	130	260	260	250	250	180	120	60	60	80	30	10	10
12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
13	20	20	40	50*	40	20	10	10	30	20	10	30	10	10	10	0	10	10	40	10	20	30	40	60
14	30	10	20	30	30	60	50*	30	40	50	50	60	30	30	110	50	20	0	10	20	10	10	20	30
15	20*	20*	10	10	20	20	20	20	20	40	170	50	40	130	90	20	10	10	10	30	10	0	10	30
16	20	0	20	10	0	10	20	10	70	10	20	10	0	0	10	10	0	10	0	20	20	30	20	10
17	20	10	0	0	0	10	0	0	0	0	0	0	10	10	10	20	0	10	20	10	10	30	20	10
18	40	10	10	0	10	0	10	10	10	50*	90	100	250	60	30	30	40	100	80	120	50	60	60	60
19	70	70*	30	70*	160*	50*	30	20	10	70	130	330	270	50	40	20	60	260	180	40	50	70	50	50
20	40	30	40	40	20	10	20	20	30	20	10	0	10	20	10	10	-	-	-	-	-	-	-	-
21	90*	-	-	-	-	10	0	-	-	-	10	0	0	0	0	20	20	10	30	-	40	-	-	-
22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
23	30*	60*	40*	80*	140*	60*	20	10	30	60	80	220	240	150	60	60	70	200	140	90	110	130	120	120*
24	90	130*	80*	60*	50	50	20	20	20	20	20	130	50	60	50	50	50	50	50	70	50	80*	40	60
25	50*	60*	40*	10	50*	40	20	30	10	30	20	170	210	20	30	90	20	40	40	60	60	40	30	40
26	10	40	30	50	30	30	20	30	40	20	10	40	20	10	0	10	0	10	20	20	10	10	50	40
27	40	70	40	40	30	30	30	10	30	50	40	10	10	40	30	20	90	20	40	30	70	60	30	40
28	20	30	40	10	10	10	10	0	10	10	10	0	0	10	10	10	0	20	20	40	30	60	30	30
29	30	10	10	0	10	0	10	0	10	20	20	20	10	20	30	40	50	40	40	60	40	30	40*	50*
30	100*	90*	280*	70	20	40	60	20	20	20	10	30	60	160	110	120	70	>290	>400	290	310	320	310	140*
31	20	30	20	20	20	30	10	10	20	10	20	20	60	50	50	30	40	30	60	80	100	90	60	50

0 (zero) = No activity

- (dash) = No record

* = Pearls

TELLURIC CURRENT FLUCTUATIONS - CYCLES PER HOUR

Month: September 1966										Hour (Universal Time)										Observatory: College				
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	30	20	60*	70*	30	20	30	30	80	220	150	60	150	160	310	240	190	210	330	290	170	50	60	30
2	30	30	20	30	10	10	10	0*	10	10	10	20	10	20	30	50	50	40	60	80	80	40	50	40
3	40	60	40	120	40	20	20	150	250	70	80	50	40	30	240	280	>390	>340	>290	>250	220	>260	410	300
4	160	140	120	220	>210	50	>>80	>110	80	130	>170	>140	>300	300	190	50	60	280	220	120	90	60	90	80
5	60	30	30	20	20	20	20	30	30	20	90	70	100	380	180	80	240	20	10	10	20	20	30	40
6	30	60*	10*	60	70*	90*	170	80	90	130	270	260	120	190	230	340	160	60	20	30	60	40	30	40*
7	60	60*	50*	60*	50*	50	40	30	20	80	90	70	230	360	280	290	280	130	90	80	80	110	150	110*
8	140	100	60*	60*	40	70	110	70	130	160	>150	400	370	270	270	400	300	220	130	90	80	100	90	120*
9	90*	70*	80*	50*	50*	60	70	50	110	110	230	140	180	210	280	210	280	170	60	50	80*	70*	80	-*
10	60*	60*	50	40	50*	30	20	20	10	60	140	210	40	80	260	270	140	60	50	40	40*	50*	20	60*
11	170*	1290*	60*	440*	40	150*	20	20	20	30	30	20	0*	20*	20	30	40	40	30	50*	50	60	40	60
12	50	40	40	20	30	10	10	10	20	30	10	0	0	10	0	0	60	30*	10*	10	10	10	0	10*
13	0	10	10	20	10	10	0	0	0	0	30	30	10	0	10	20	0	10	10*	20*	20*	20	10	10
14	420*	250*	0	0	10	10	0	10	10	10	0	10	10	10	0	20*	10	20	50	50	30	220	50	60
15	120	100	50	100	20	110	40	60	40	80	80	90	30	40	50	20	20	30	40	40	50	90	30	50
16	50	90*	560*	180*	110*	20	20	10	10	0	10	40	80	30	10	10	10	10	10	60	60	30	70	60
17	50	30	30	30	10	10	20	20	0	10	10	0	10	0	30	30	10	10	20	20	10	20	40	50*
18	40*	270*	60*	20	0	0	10	0	10	40	30	20	10	0	0	420*	50*	10*	0	10	20	30	20	30*
19	90*	10	60*	280*	50*	460*	150*	30	20	80	20	20	10	40*	60	60	20	30	>40	30	40	30	30	60
20	60*	50	50	20	20	30	20	10	70	30	20	80	260	340	290	180	70	200	210	80	70	70	70	40
21	50	90	30	30	10	10	10	10	0	40	30	70	70*	270	120	20	10	10	20	30	40	20	30	50
22	20	10	0	40	20	10	10	10	10	20	40	20	10	0	20	30	50	30	30	10	20	20	10	30
23	20	10	0	10	10	10	0	0	10	20	30	50	40	20	30	50	90	240	250	180	50	40	50	60
24	40	30*	30*	30*	20	20	10	10	50	50	20	0	10	20	10	10	10	20	30	10	20	10	0	20
25	10	20	40	30	20	30	80	20	0	10	20	10	20	0	10	10	10	20	40	60	40	70	60	40
26	20	30*	210*	20*	10	0	10	20	30	120*	130	90	40	70	150	230	320	160	120	60	160	140	170	110
27	80*	60*	90*	30*	110*	40	50	30	40	50	60	60	20	30	140	230	130	50	40	60	80	80	90	90
28	140	70	60	80*	60	50*	30	30	10	60	100	80	20	120	230	200	220	80	40	10	30	40	60	40
29	60*	40	50	30	30	30	20	50	40	60	40	0	10	50	80	40	100	180	230	70	60	50	50	50
30	50	50	40	20	20	50	50	70	100	50	20	40	160	280	170	180	260	50	50	20	20	60	80	70

0 (zero) = No activity

- (dash) = No record

* = Pearls

FREQUENCY-TIME DISPLAYS OF TELLURIC CURRENT ACTIVITY

R. R. Heacock and V. P. Hessler

These frequency-time displays of electromagnetic micropulsation activity in the period range ~ 5.7 to 500 sec were recorded with the telluric current technique using the N-S College electrodes described in the preceding section. The telluric system has the advantage of larger low frequency response than an induction loop system and a better signal to noise ratio because of the millivolts available from the telluric electrodes in comparison with the microvolt signals of the induction loop. A magnetometer of the required dynamic and frequency range for this application would be far more expensive.

The amplifier is a Medistor microvoltmeter set at 10 mv range and logarithmic scale. The logarithmic response makes it possible to accomodate the wide dynamic range of activity which occurs at College in the frequency range under investigation. Thus with constant gain settings the low amplitude Pc 3 day-time activity can be brought out clearly on the sonagrams, and with no overloading of the instrumentation due to the powerful nighttime Pi activity.

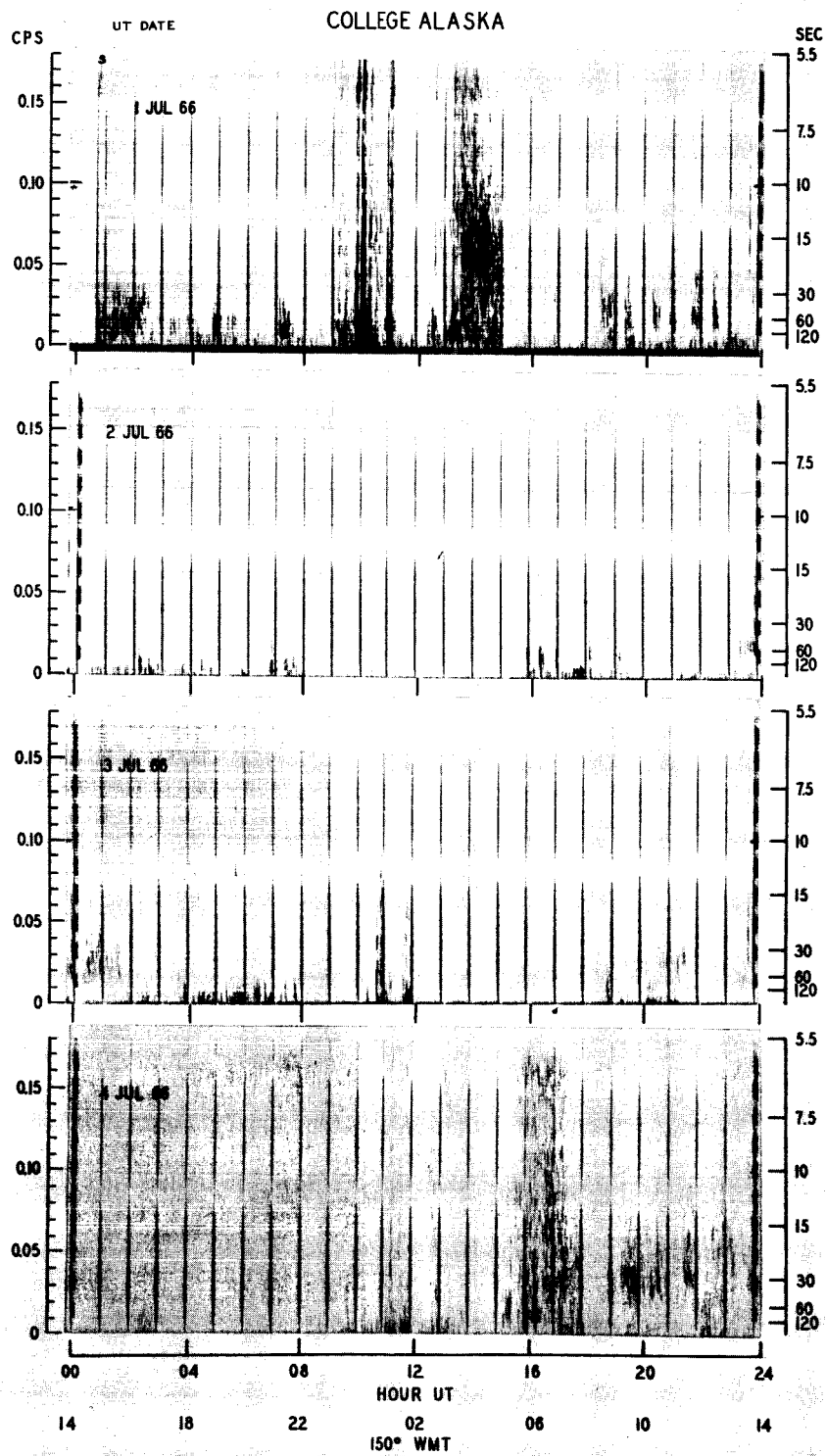
The tape recorder is a Knight 4000A AM recorder which has been modified to record at 1 1/6 inch per hour. The playback recorder is another Knight 4000A which has 15 ips tape speed. Thus a speedup factor of 46,000 is achieved. This speedup permits the display of 24 hours of data on one sonagram, and the resulting data period range is 5.7 to 500 secs.

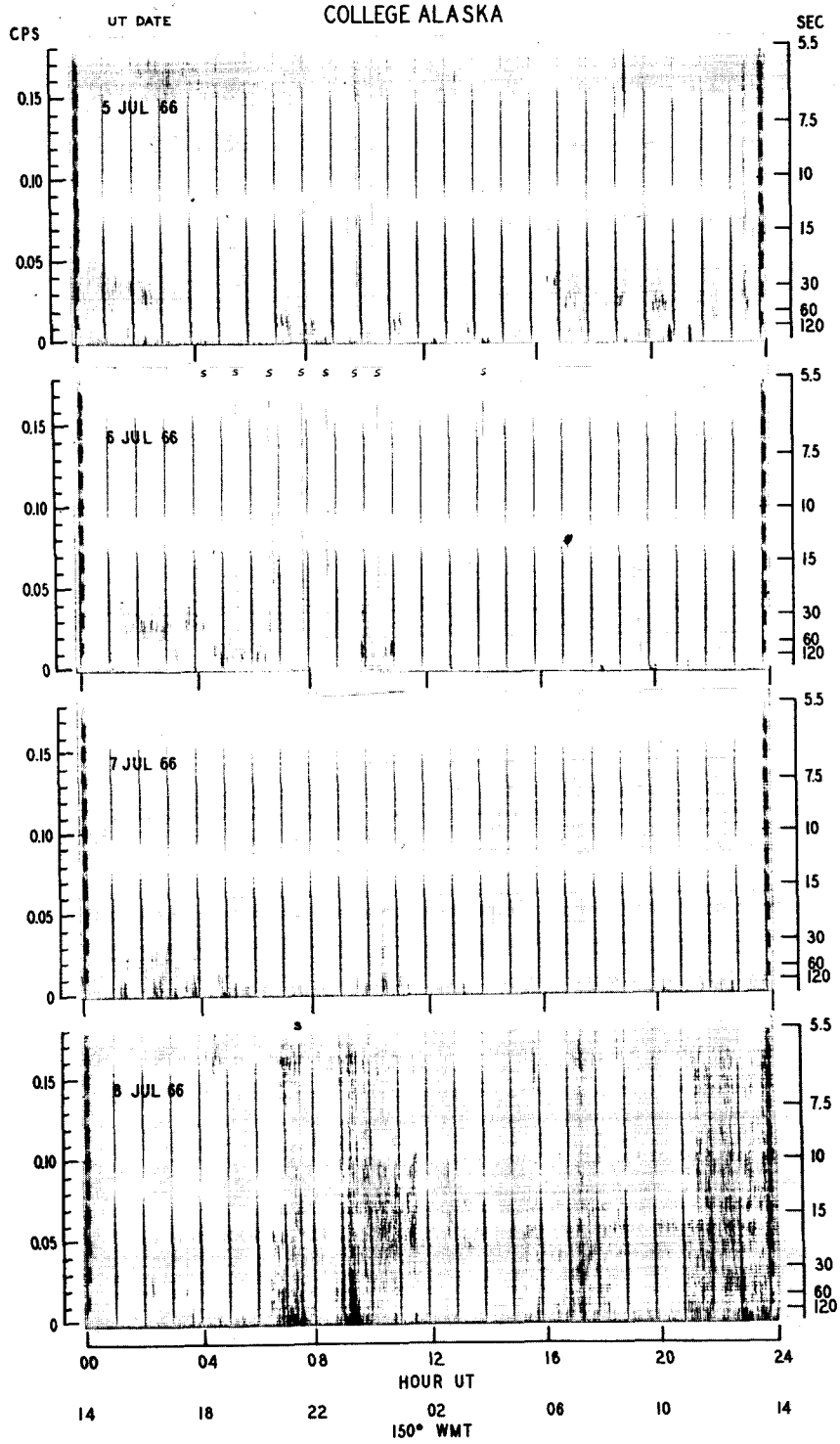
The playback amplifier is a Tektronix Type 122. The frequency response of the amplifier and Sonagraph are shaped such that average activity at the bottom of sonagrams is not too black and average activity at the top is not too faint. To accomplish this, the response was made to increase monotonically toward higher frequencies. If a flat response had been used, the upper part of the sonagrams would usually be blank when a reasonable level was present at the bottom. The departure from flatness is not sufficient to significantly distort the Pc 3 - 5 activity; however, care should be used in interpreting near 0.1 cps, the actual frequency of maximum power will be somewhat lower, perhaps near 0.05 cps. One should thus not use these sonagrams to infer the power spectra of the activity. The intent is to display the general frequency-time characteristics in all parts of the 5.7 - 500 sec period range.

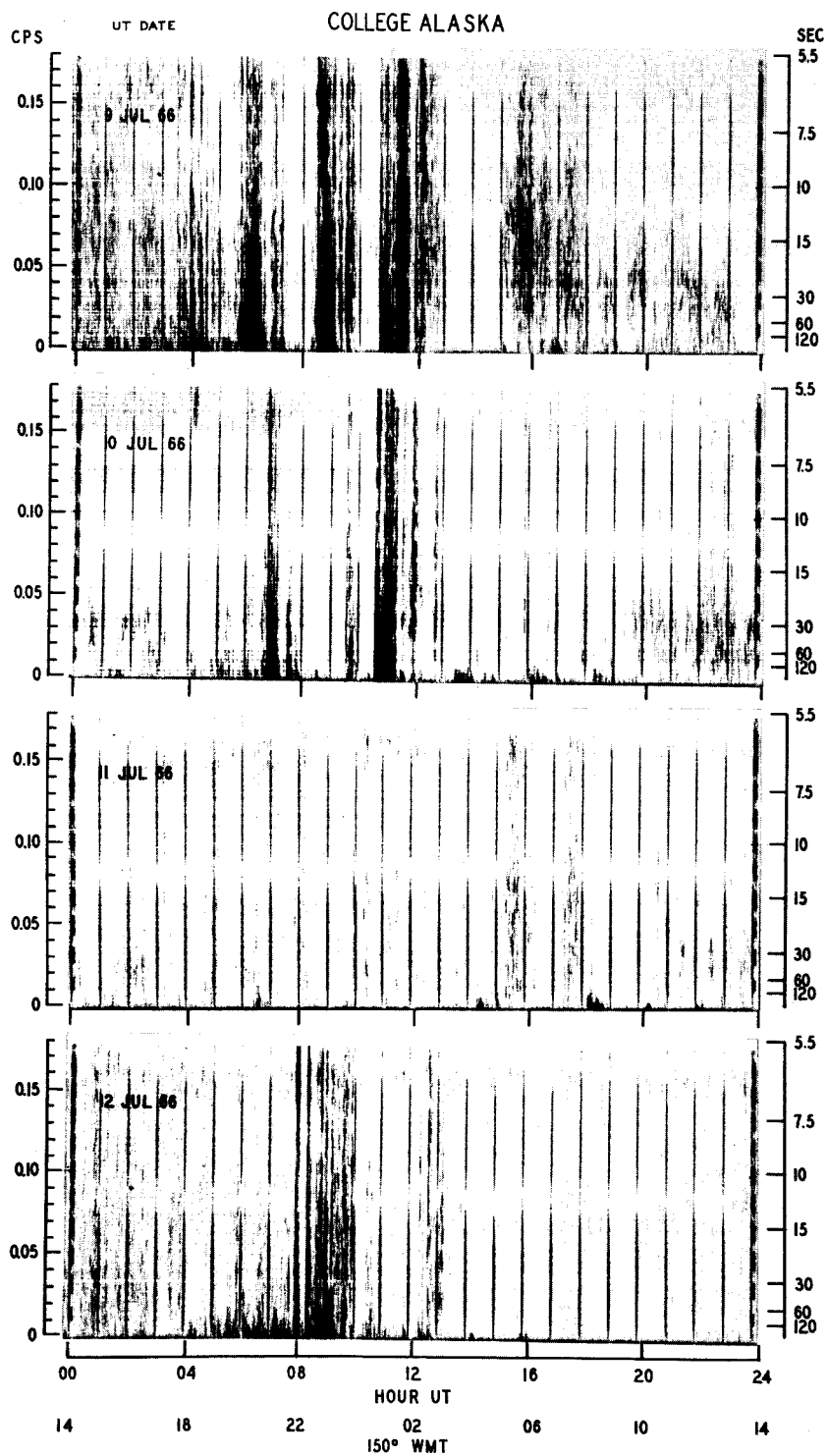
Spurious effects on the sonagrams are indicated by an "S" at the top.

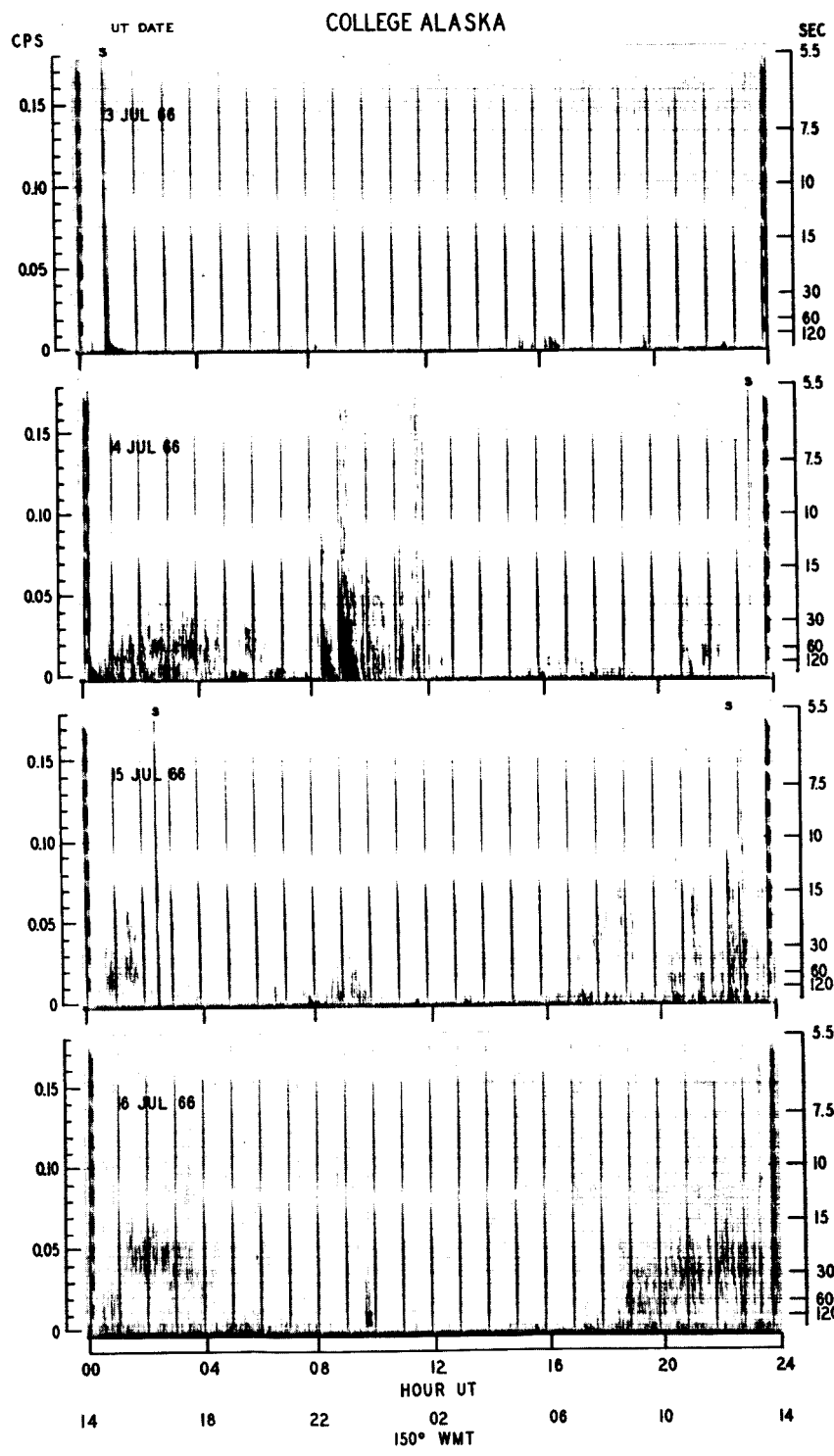
In general, these sonagrams should be studied together with the telluric current time-amplitude traces given in the preceding section.

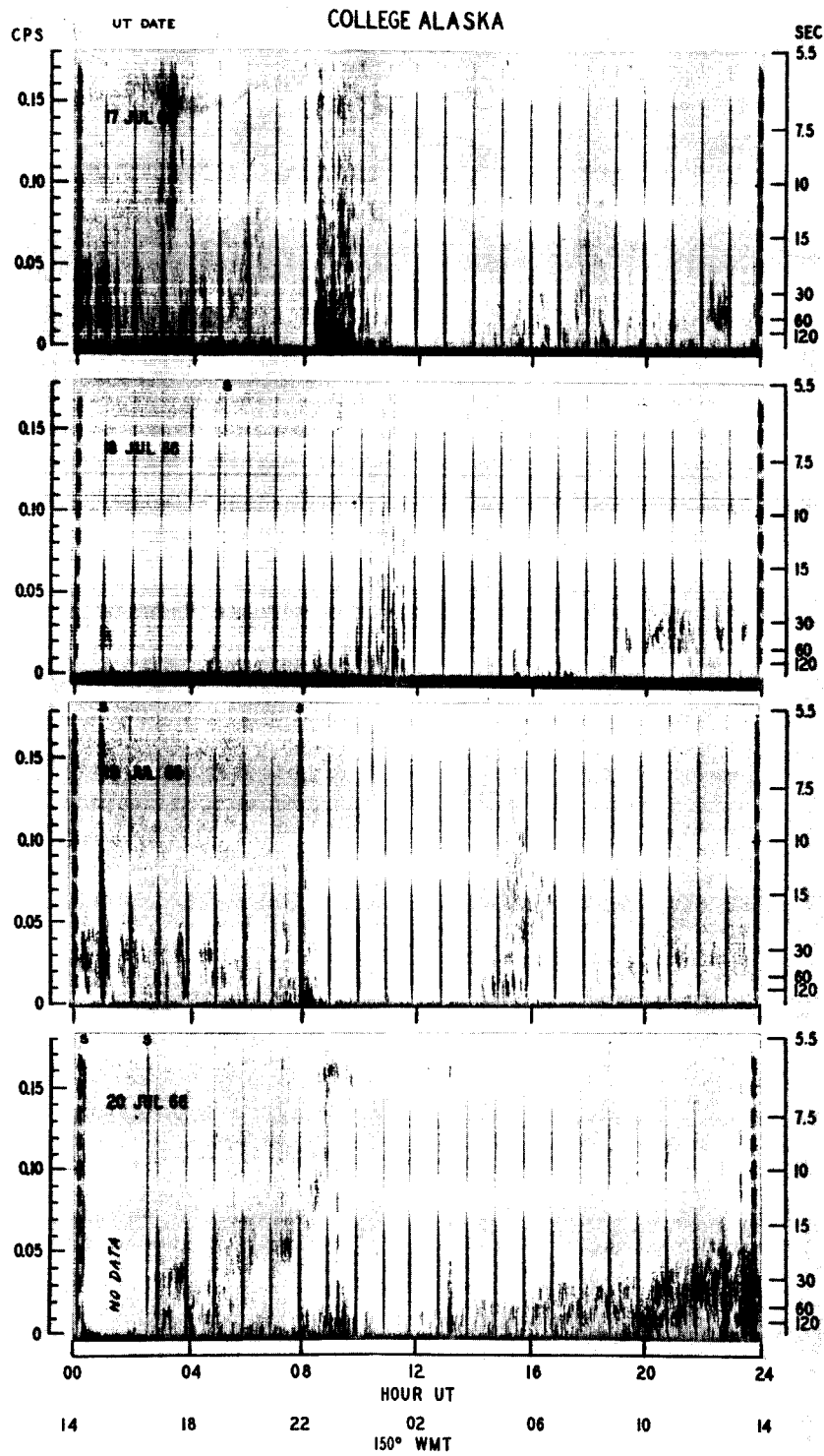
The collection and publication of these sonagrams is supported jointly by the Office of Naval Research under Contract NONR 3010 (01) and by the Air Force Cambridge Research Laboratories, Office of Aerospace Research under Contract No. AF 19(628)-1695.



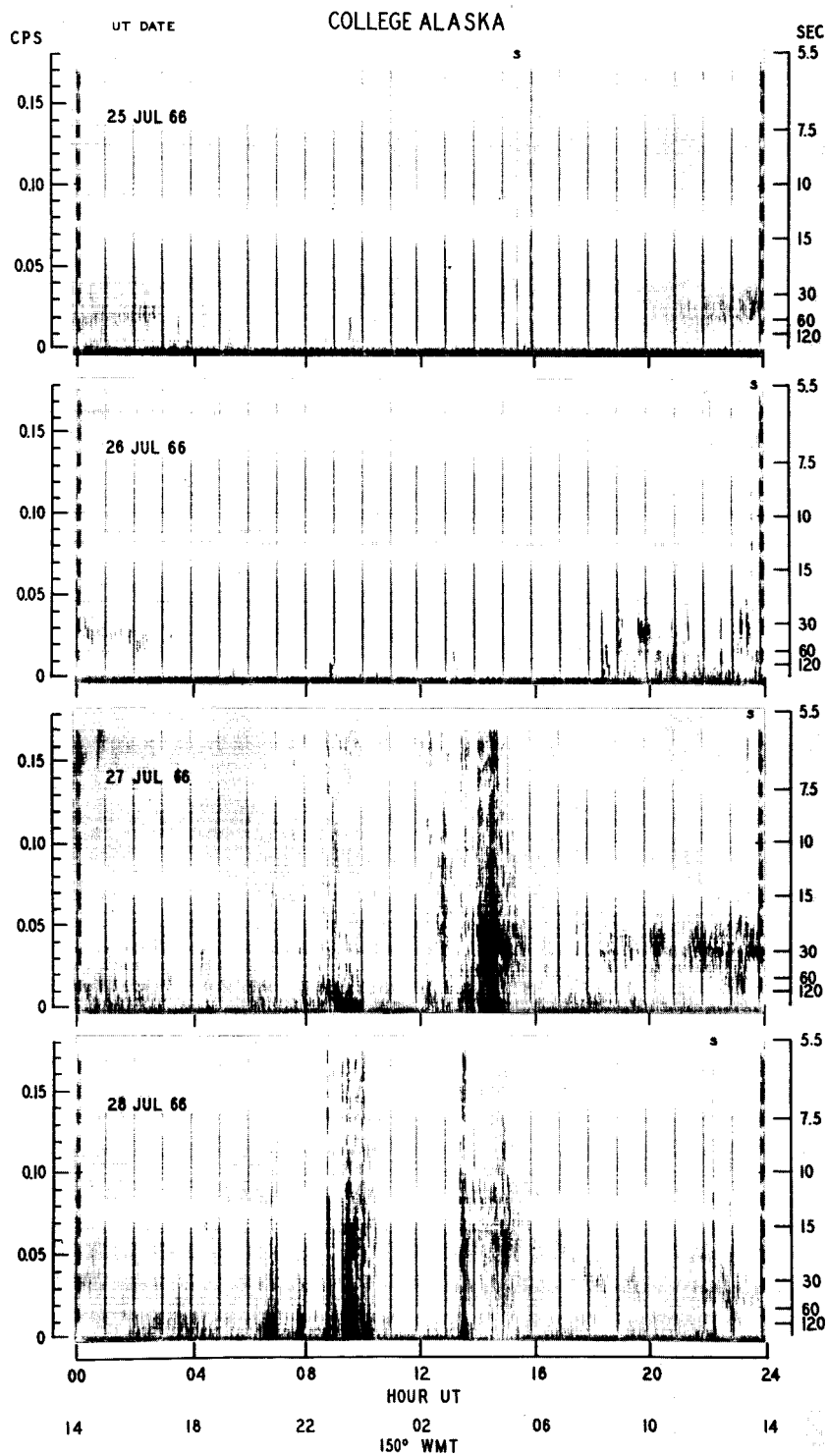


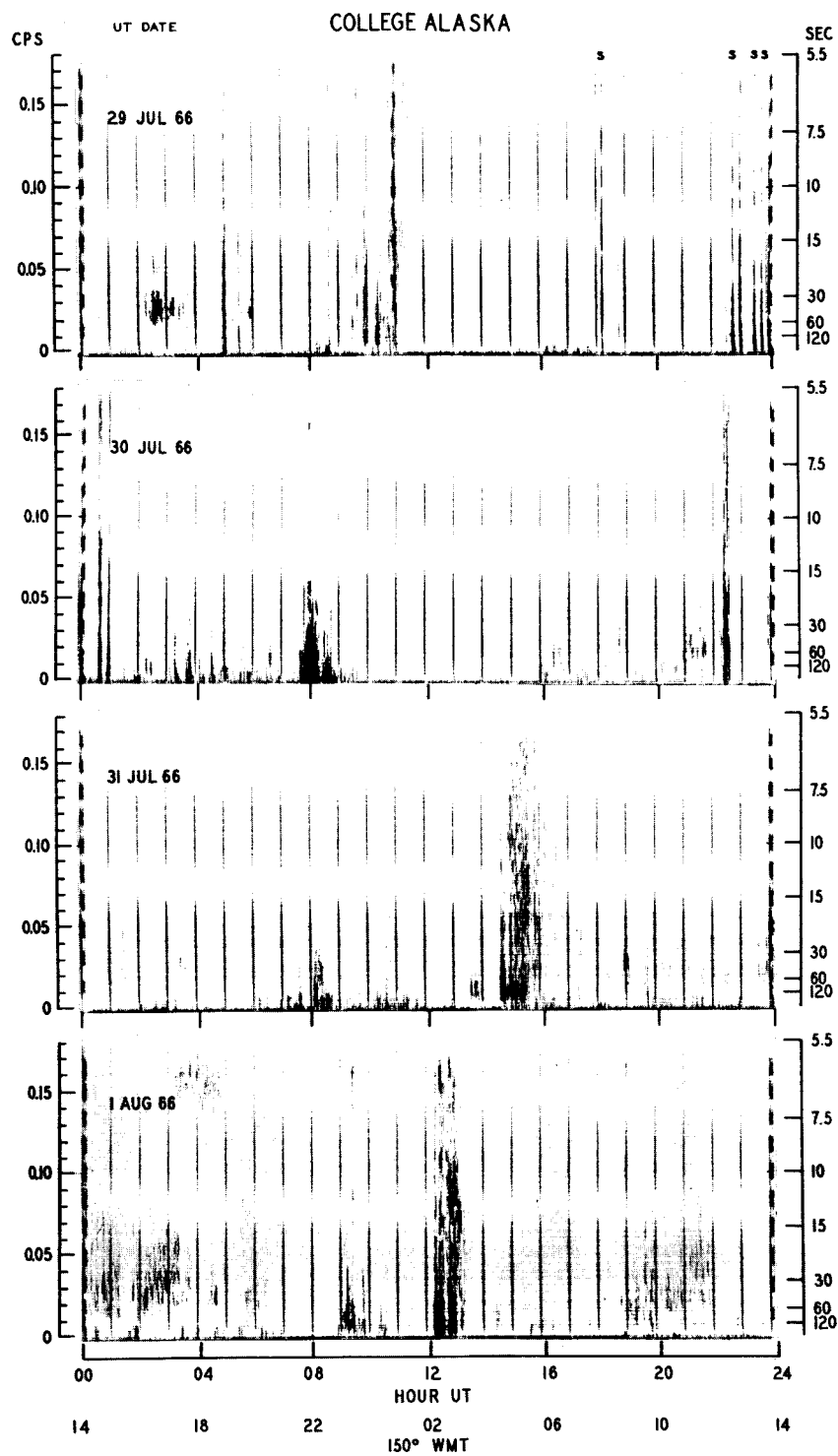


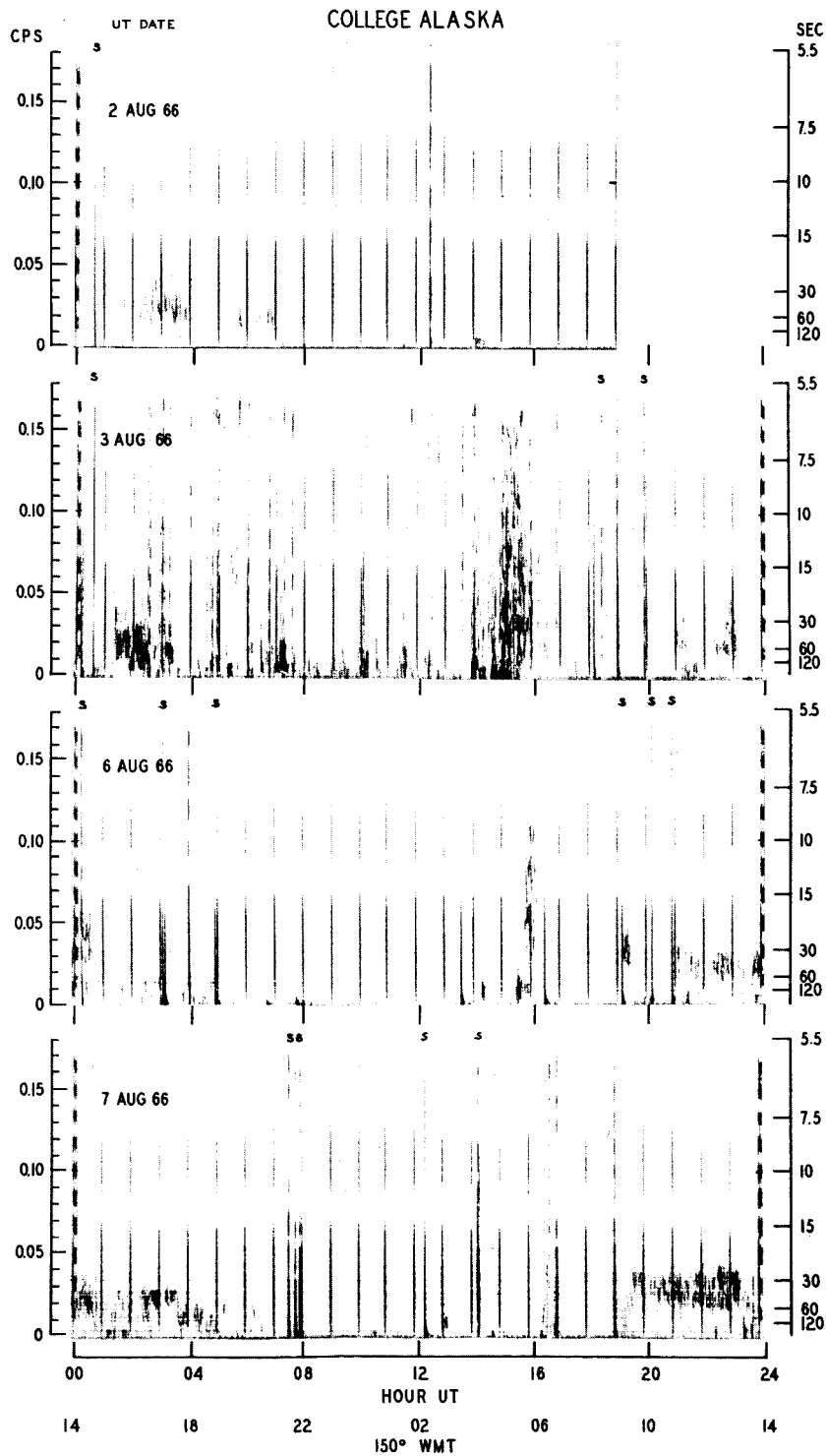


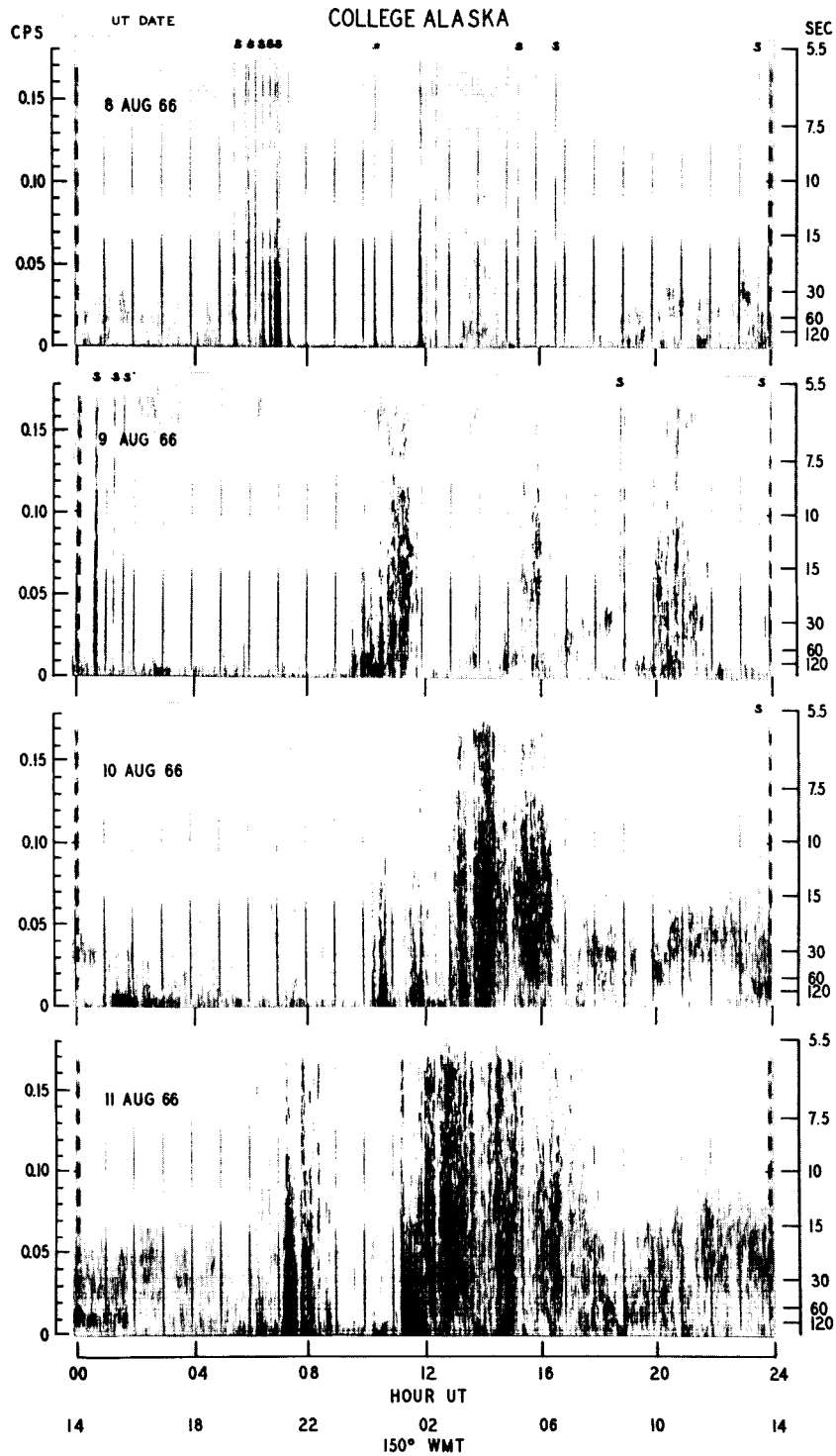


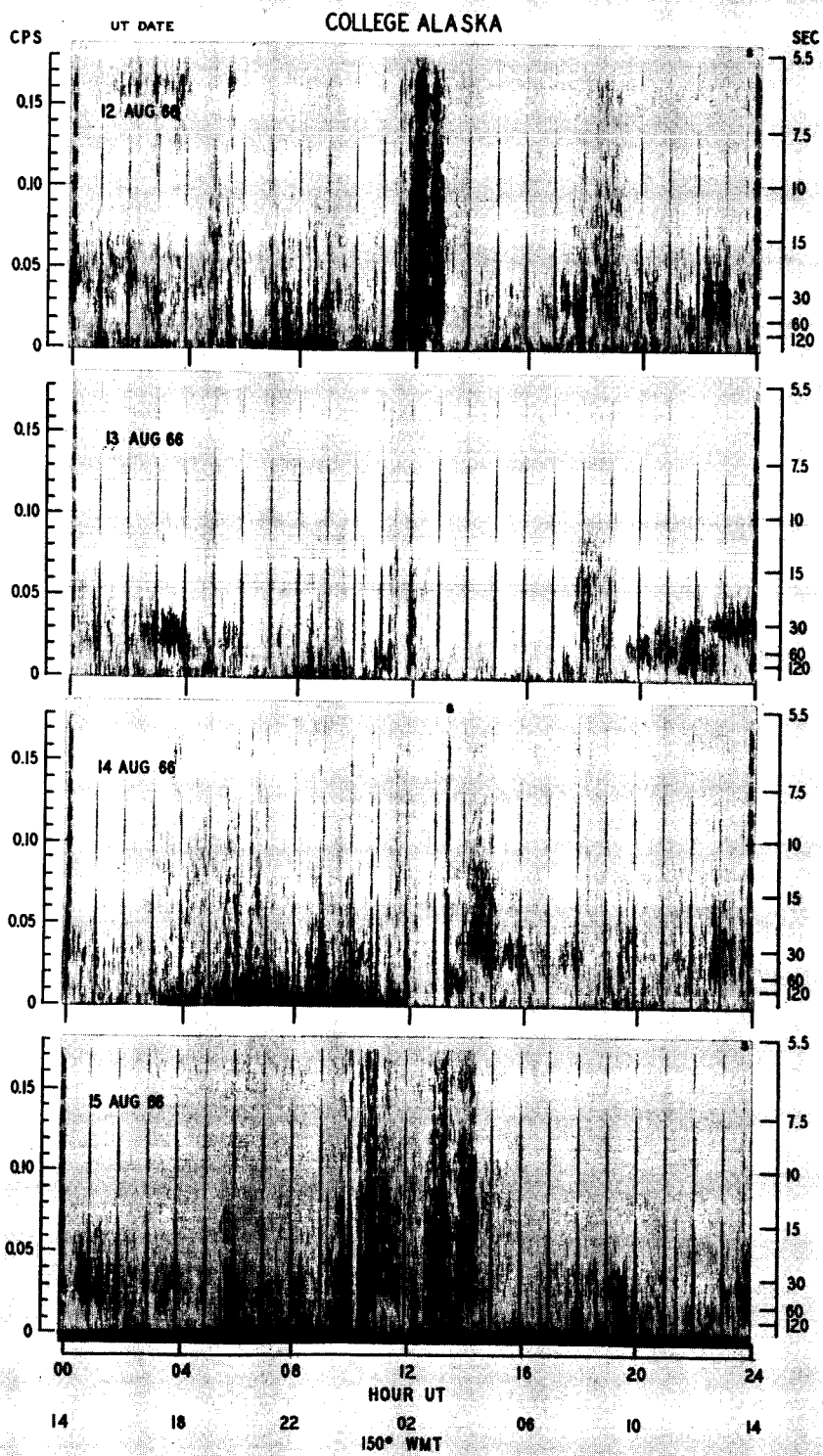
HOUR UT
02
150° WMT

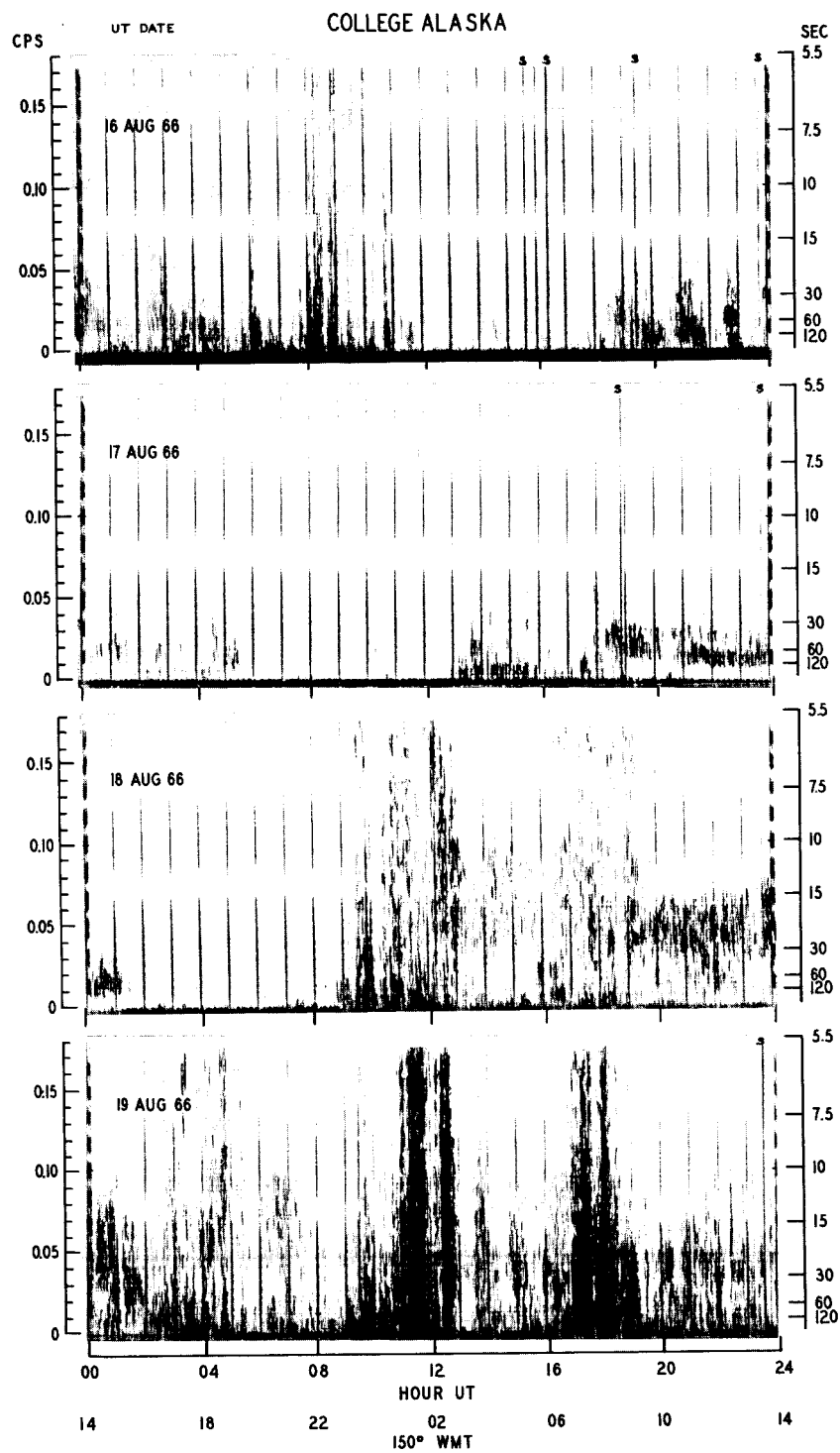


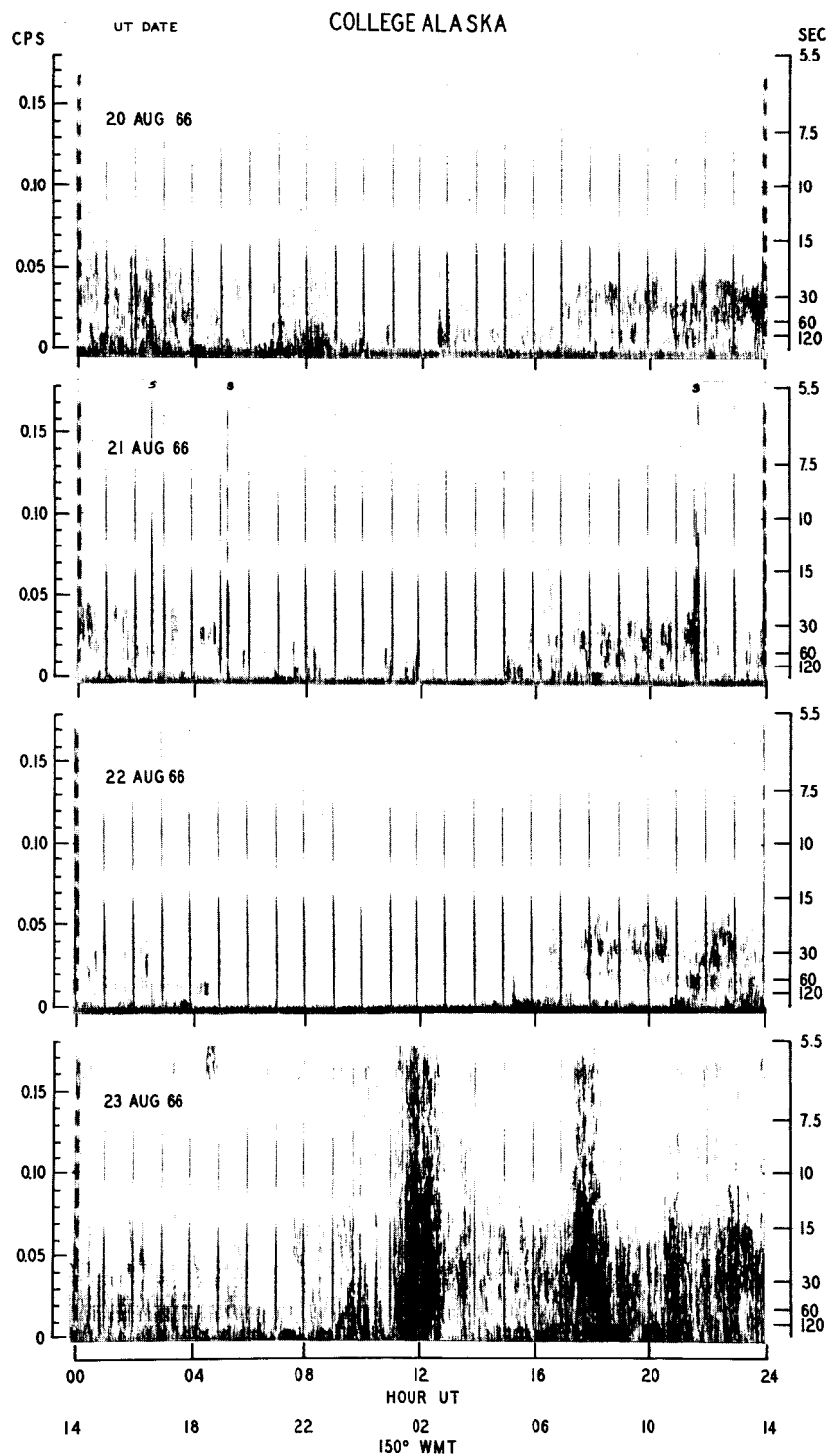


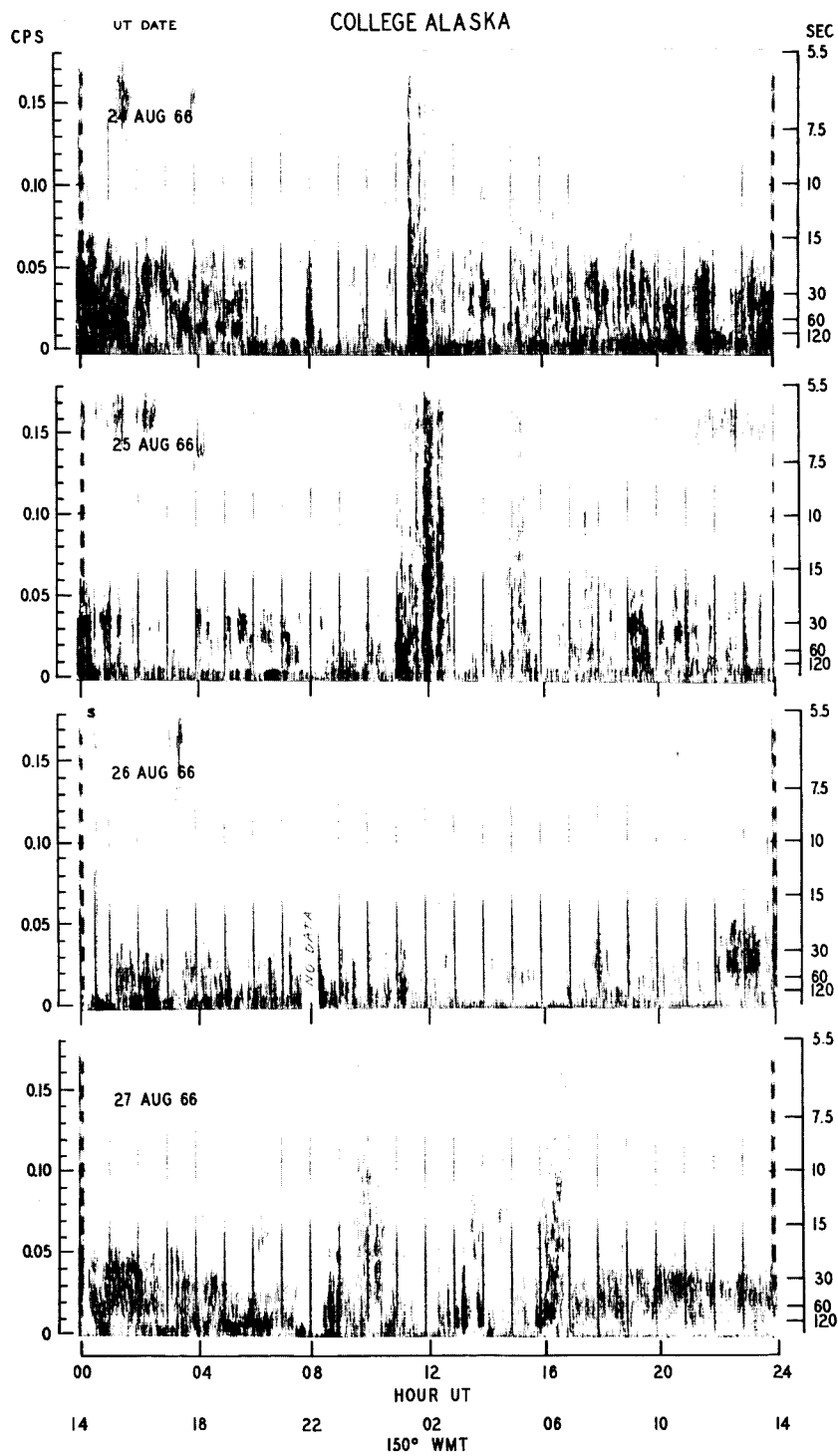


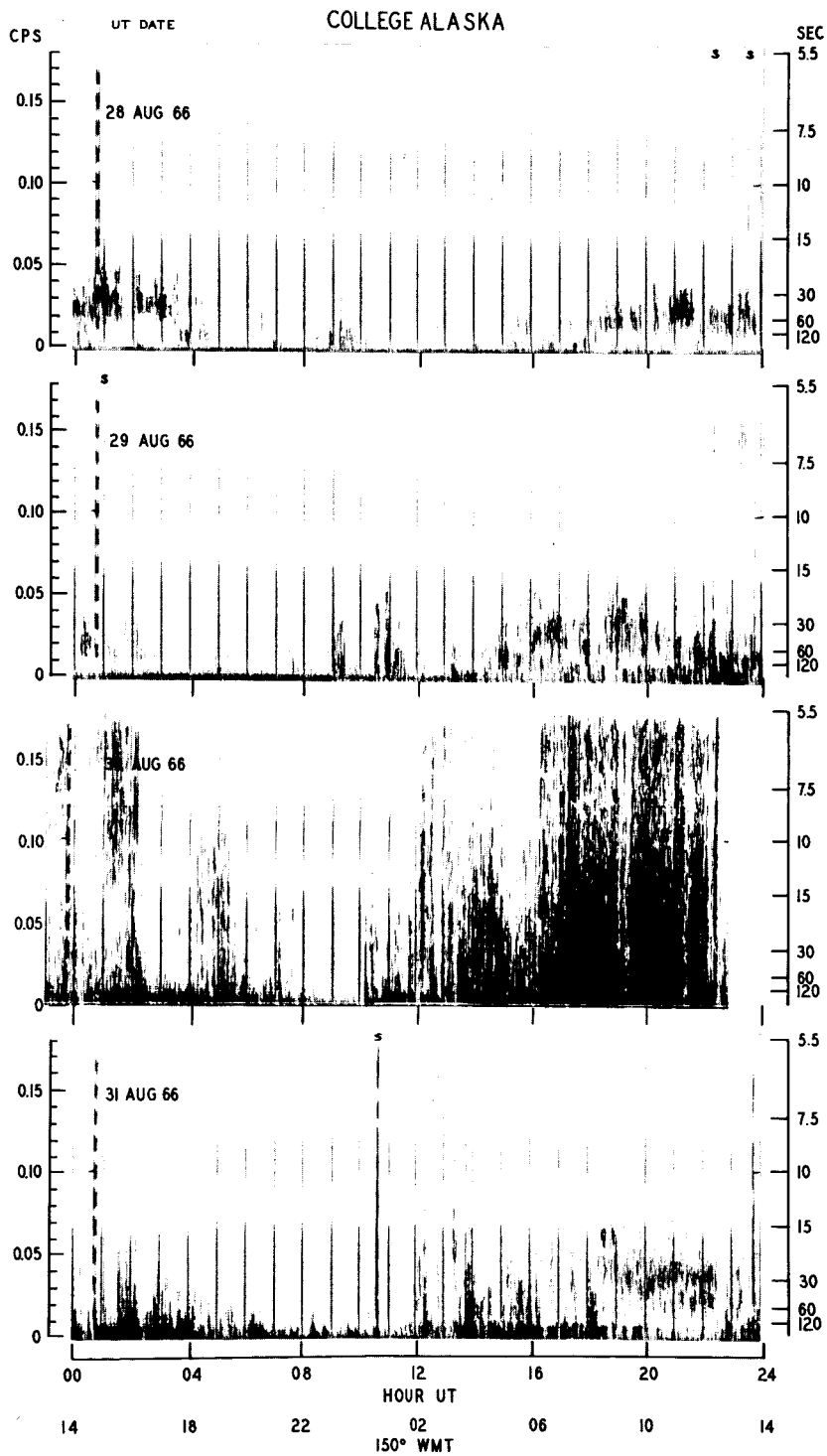


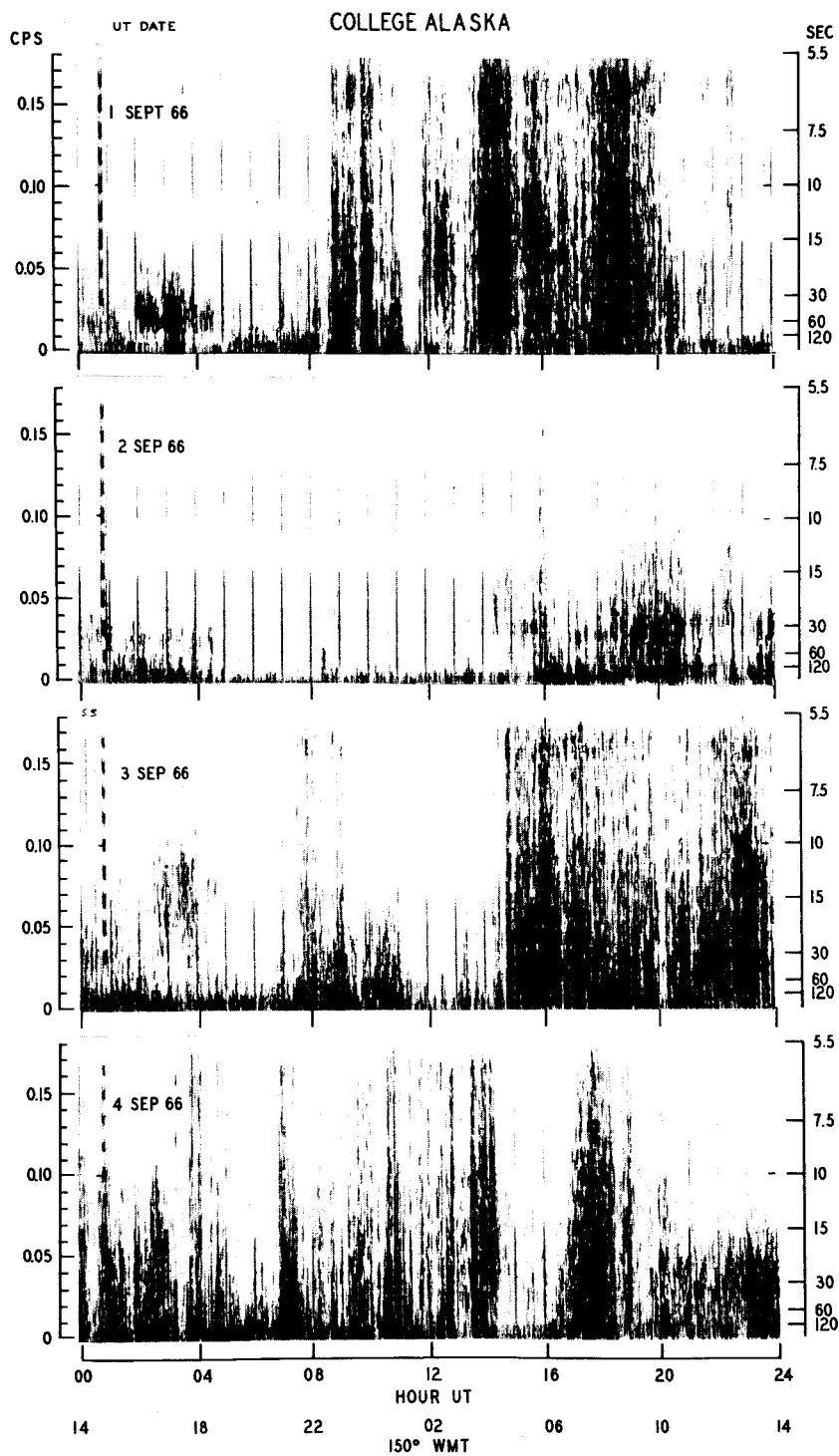


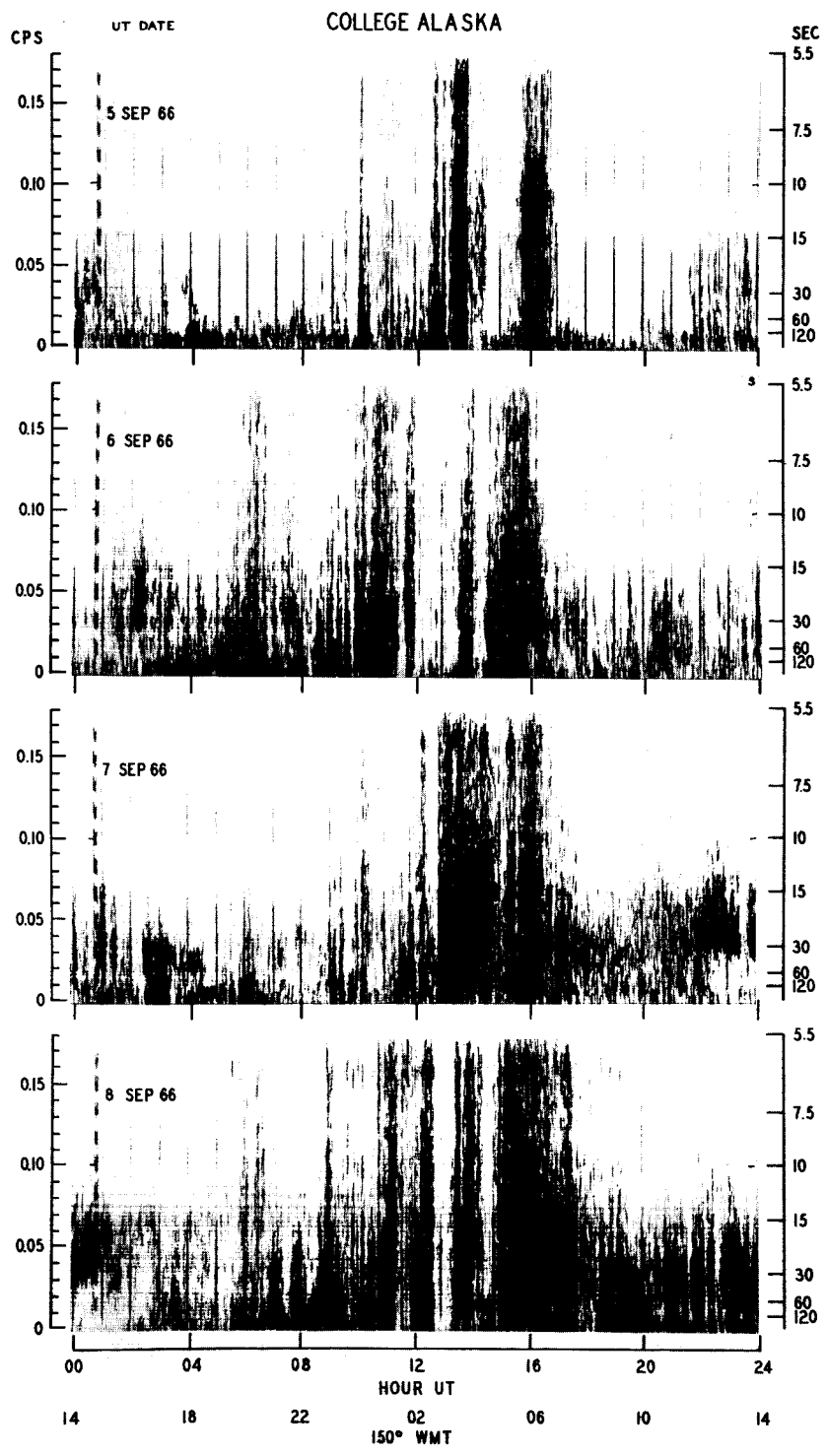


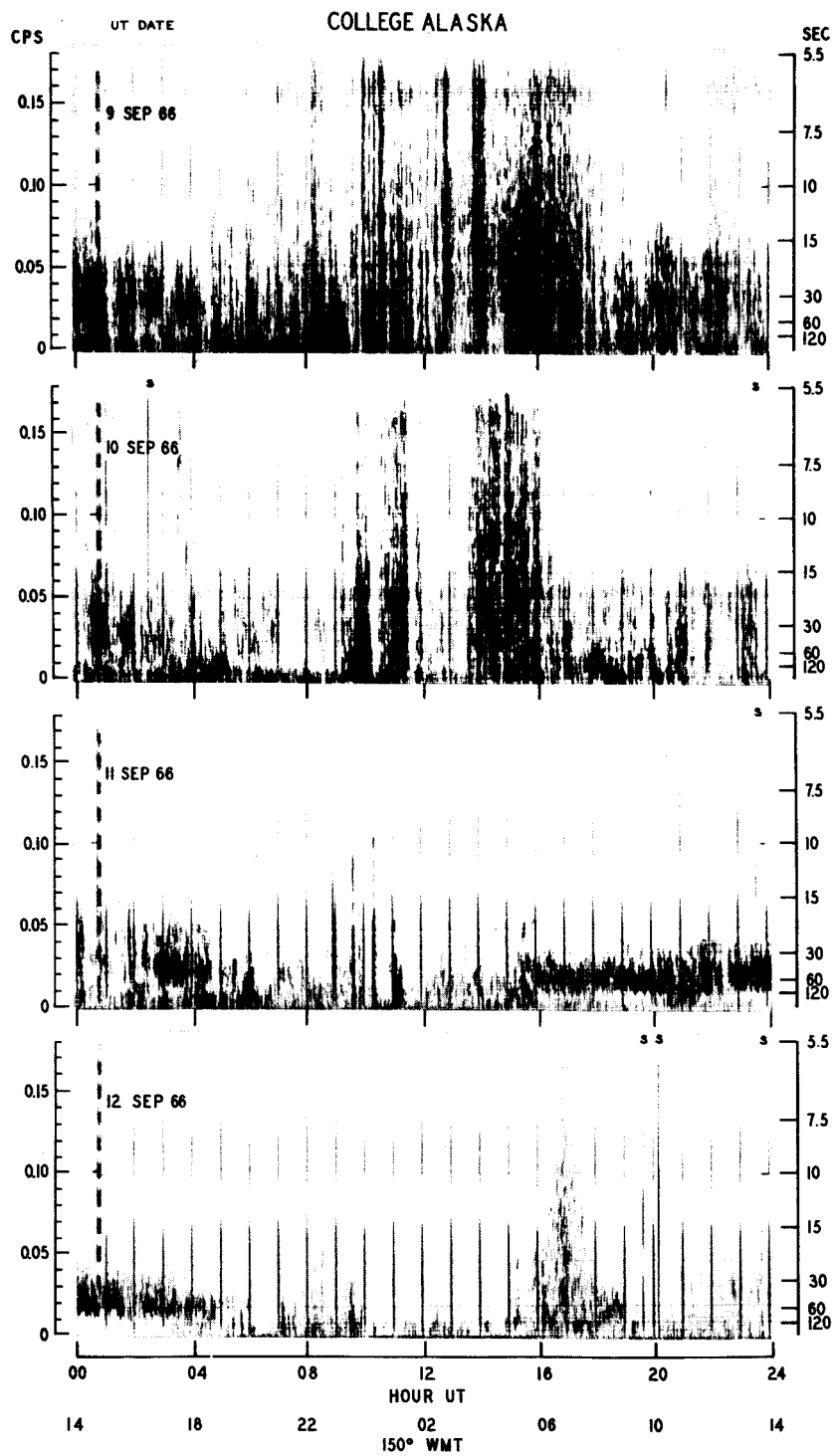


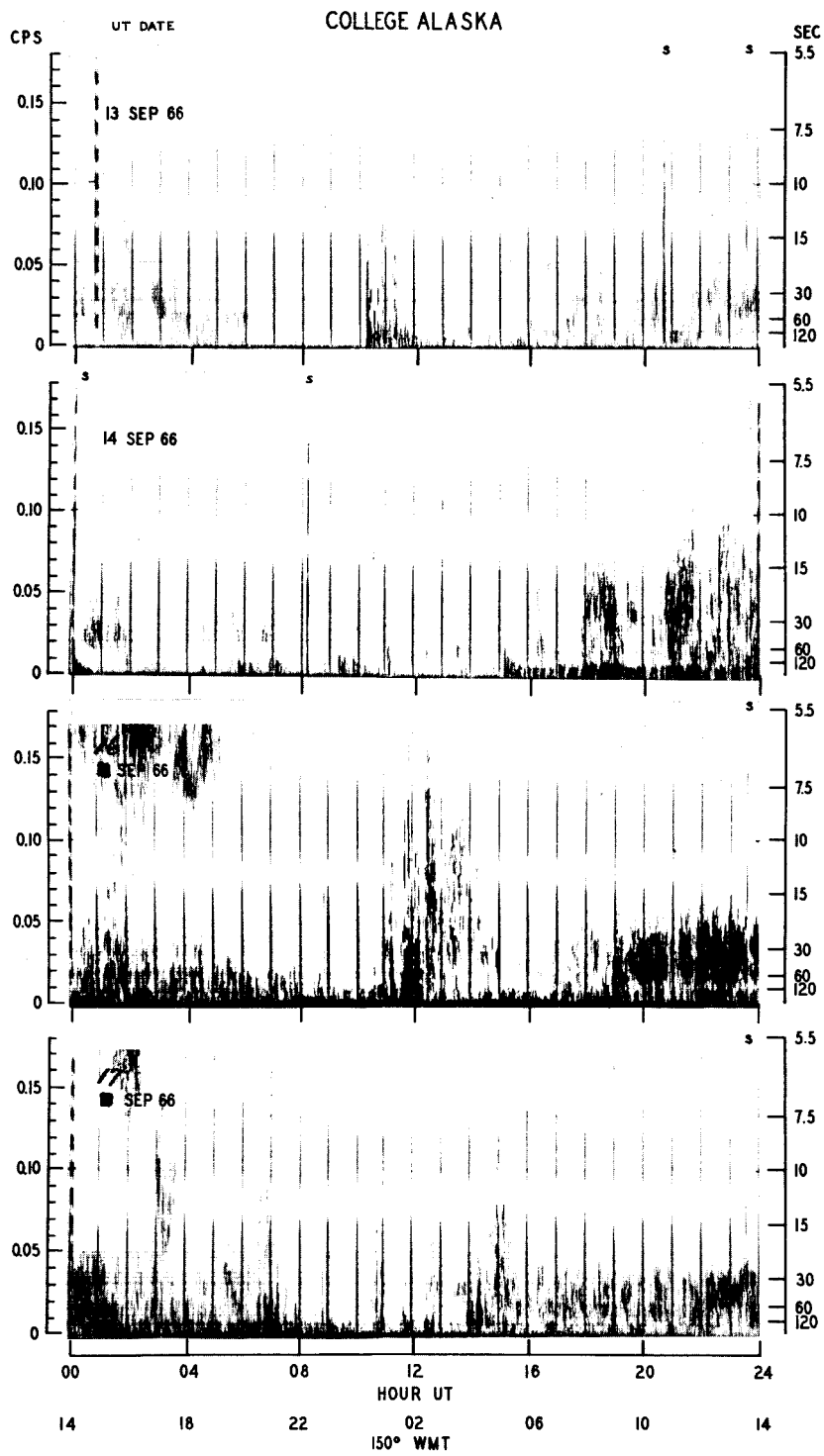


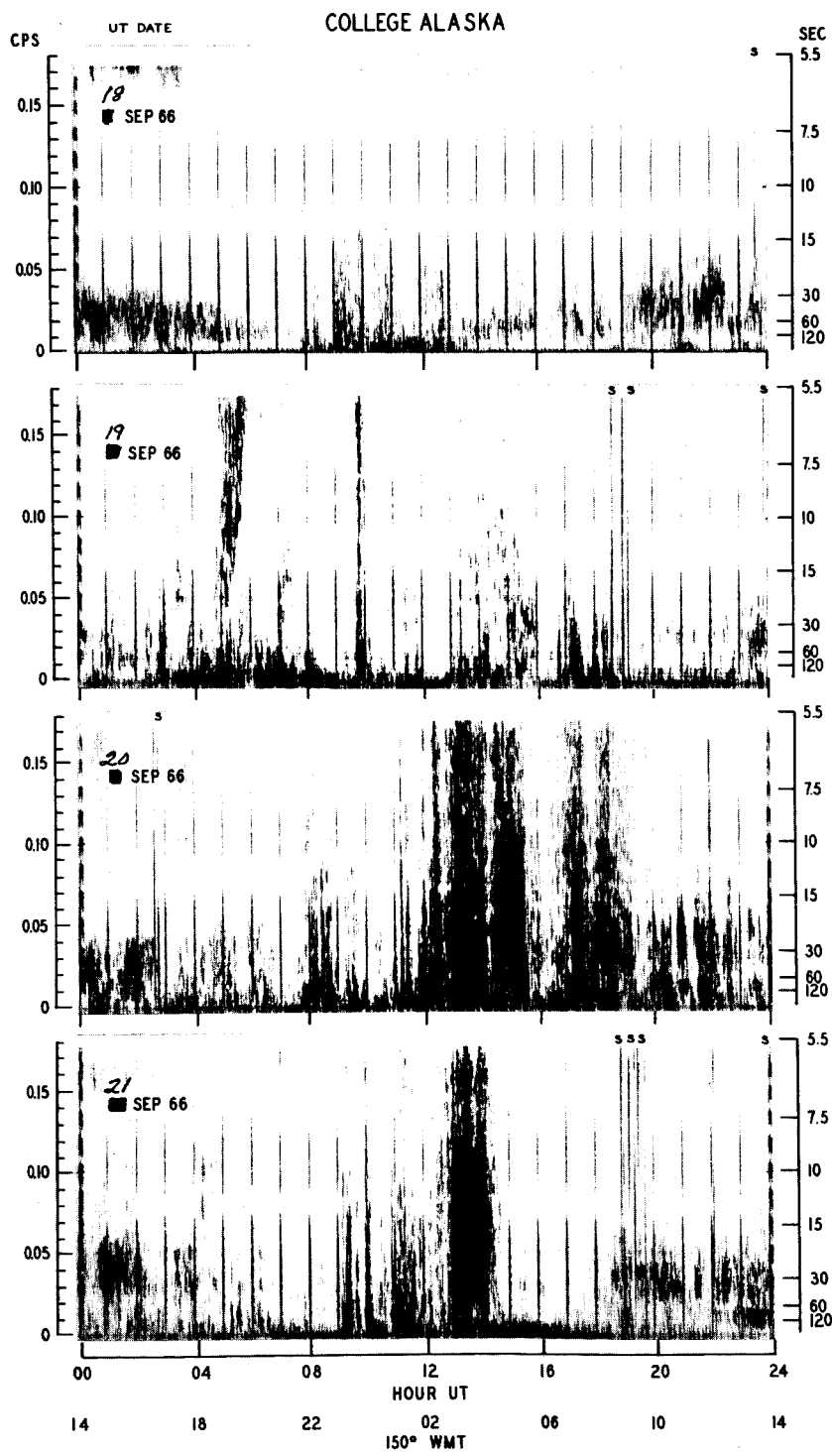


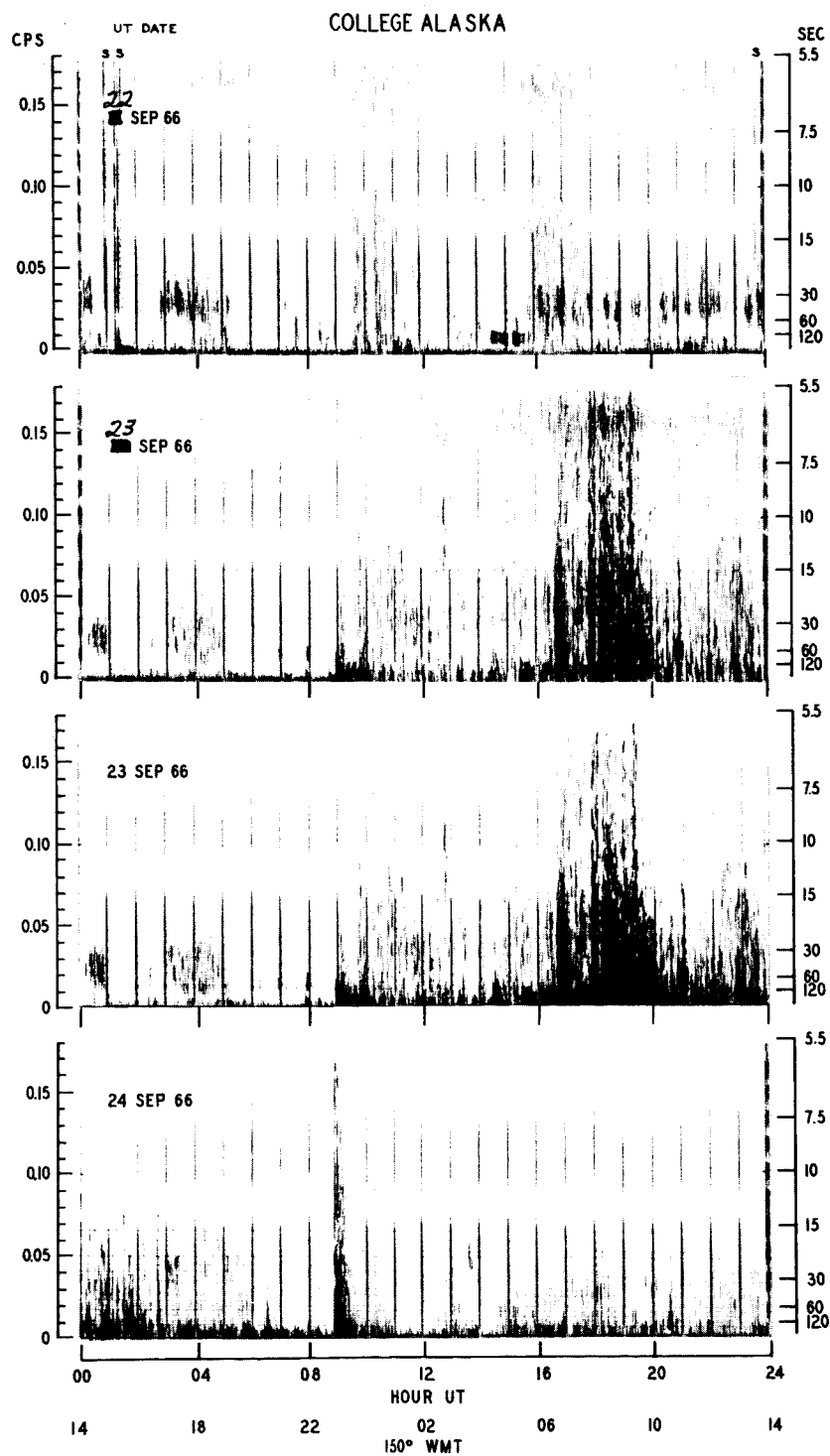


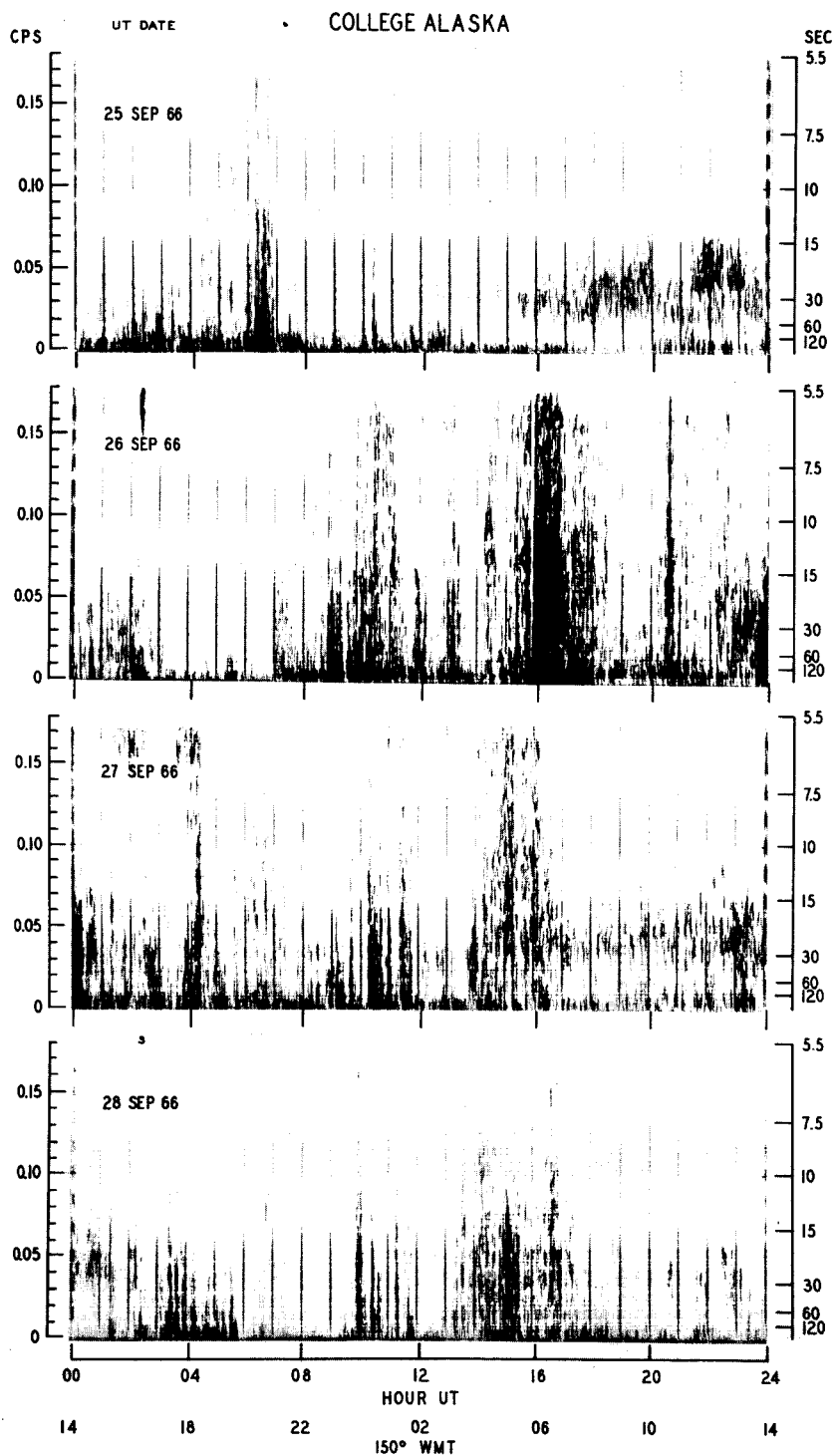


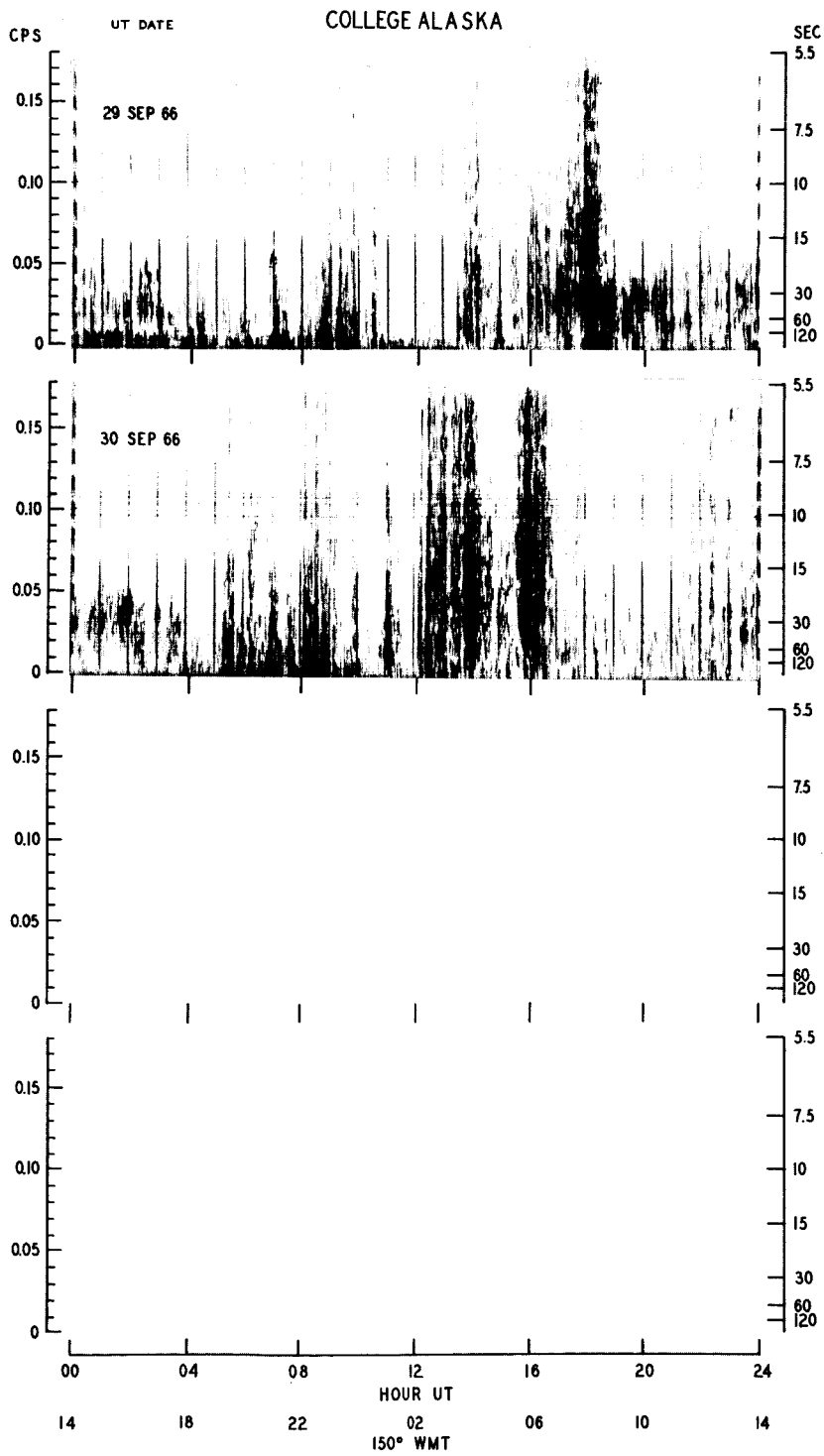












TELLURIC MICROPULSATION ACTIVITY - Pc 1

R. R. Heacock
Assistant Geophysicist

Instrumentation. The sensing elements are 200 meter spaced telluric current electrodes aligned north-south geographically. The recording system consists of a low pass LC 60 cps rejection filter, a 50k voltage divider gain control, a Tektronix type 122 preamplifier (X1000, h.f. cutoff 50 cps, l.f. cutoff 0.8 cps), a second 60 cps rejection filter, a Kronhite electronic band-pass filter with h.f. cutoff at 3 cps and l.f. cutoff at 0.06 cps, and an Esterline-Angus 1 ma recorder operating at a chart speed of 3/4" per min. Time mark signals furnished by the Institute operated NASA minitrack station are accurate to a millisecond.

The instrumentation has a rather flat response peak from 1 through 5 sec period essentially the period range of pearl-type micropulsations at College. Micropulsations are also being recorded continuously on tape, and the taped record has been inspected for evidence of pearl-type events at frequencies higher than 3 cps, with none being found to date.

Scaling procedures. The charts are inspected for half-hourly occurrences of pearl-type micropulsations. The criteria used for identification of pearls are a) a rather smooth "pearl"-like envelope, b) a rather constant pulse period in the range 0.5-10 secs, and c) a non-impulsive character (i.e. a small dynamic range). The maximum peak-to-peak amplitude of the pearl envelope is measured in each half-hour which contains more than ~ 1 minute of pearl-type activity, and this measurement is listed under amplitude, mv/km.

Sonagrams (frequency-time displays) are made of the pearl events. The approximate upper and lower frequency bounds of the activity are scaled by half-hour intervals and are entered under Frequency.

The form of the pearl activity is determined from the sonagram. If the event contains periodic structures with period 1-8 minutes, an S is entered in the Form column. If the activity seems intermediate between Pc 1 and Pi 1, an I is entered under Form. Thus the activity indicated by "I" may have a broader and more diffuse frequency range than for typical Pc 1 activity, or the event may be more impulsive than for typical Pc 1. The occurrence rate of "I" events has some positive correlation with Kp values.

This micropulsation recording and analysis program is supported by the Air Force Cambridge Research Laboratories, Office of Aerospace Research, under Contract No. AF 19(628)-1695.

TYPE Pc 1 (pearl) MICROPULSATION ACTIVITY
College N-S Telluric Currents

July 1966

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
1	0000	.40	.1		24	8	0130	.55	.26	S	5
1	0030	.37	.14	S	8	8	0200	.37	.27	S	4
1	0100	.37	.29	S	3	8	0230	.39	.26	S	8
1	0230	.21	.16		2	8	0300	.39	.29	S	10
1	0300	.29	.19		5	8	0330	.25	.14		2
1	0330	.30	.20	S	4	8	0400	.3	.1	S	11
1	0400	.23	.18		4	8	0430	.35	.14	S	9
1	0430	.25	.12		6	8	0500	.35	.2	S	5
3	0330	.19	.16		1	8	0530	.25	.15		2
3	0400	.25	.05		2	8	0630	.6	.2	I	18
3	0530	.23	.17		1	8	0700	.4	.1	I	18
3	0600	.27	.19	S	2	8	0730	.6	.1	I	6
3	1030	.4	.2	I	8	8	2230	.5	.4	I	2
3	1100	.38	.17	S	12	8	2300	.5	.3	I	2
3	1130	.3	.1	I	6	9	0030	.5	.2	I	24
4	0130	.28	.21		2	9	0100	.5	.2	S	22
4	0200	.28	.20		2	9	0130	.4	.1		24
4	1430	.4	.2		1	9	0200	.4	.1	I	16
4	1500	.5	.4		2	9	0230	.4	.1	I	7
4	1530	.4	.2	I	4	10	0000	.5	.1		4
4	1800	.4	.2	I	4	10	0030	.5	.1		1
4	2330	.45	.27		4	10	0100	.5	.2		2
5	0000	.4	.1		2	10	0130	.5	.2	I	3
5	0030	.25	.10		2	10	0200	.4	.1	I	3
5	0100	.25	.10		2	10	0230	.5	.4	I	3
5	0200	.21	.15	S	4	10	0300	.4	.1	I	1
5	0230	.27	.14	S	8	10	0330	.25	.1		8
5	0300	.24	.13	S	4	10	0400	.25	.15	I	20
5	0330	.25	.10	S	4	10	0430	.3	.1		1
5	0400	.32	.10	S	12	11	0000	.4	.2		2
5	0430	.30	.10		5	11	0100	.4	.2		3
5	0500	.25	.1		2	11	0130	.4	.1		2
6	0030	.24	.19		3	11	0200	.4	.15		4
6	0100	.26	.18	S	3	11	0230	.36	.16		7
6	0130	.30	.19	S	2	11	0400	.3	.1		2
6	0200	.28	.15		2	11	2100	.6	.5		8
6	0330	.3	.1		1	11	2200	.7	.5		3
6	0400	.30	.20		1	11	2230	.6	.4		2
6	0430	.30	.20		1	11	2330	.4	.1		2
6	0500	.3	.15	S	4	12	0000	.5	.2		7
6	0530	.28	.18		1	12	0100	.4	.2		8
7	0030	.30	.18		2	12	0130	.4	.2		2
7	0200	.22	.18		1	12	0230	.3	.1		1
7	0230	.25	.15		3	12	1630	.25	.2		2
7	0300	.26	.16		3	12	2100	.50	.35		2
8	0000	.4	.3		1	12	2130	.55	.30		2
8	0030	.4	.2		1	12	2200	.55	.30		2
8	0100	.5	.2		2	12	2230	.5	.2		2

Type Pc 1 (pearl) MICROPULSATION ACTIVITY (Cont'd.)

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
July 1966											
12	2300	.5	.2		2	19	0100	.40	.20		4
12	2330	.65	.3		8	19	0200	.40	.20		3
13	0000	.60	.30		8	19	0300	.40	.20		5
13	0030	.65	.35		8	19	2300	.2	.1	I	3
13	0100	.63	.40		8	19	2330	.4	.1		3
13	0130	.60	.40		5	20	0000	.4	.1		2
13	0200	.55	.38		5	20	0030	.25	.1		4
13	0230	.52	.40		4	20	0100	.3	.1		3
13	0330	.23	.15		2	20	0130	.3	.1		3
13	0400	.27	.16	S	3	20	0200	.3	.2		3
13	0430	.28	.15		3	20	0230	.4	.3		4
13	0500	.23	.18		3	20	0830	.3	.05		3
13	2030	.60	.47		3	20	0900	.40	.10		18
13	2100	1.05	.5		5	20	0930	.41	.10		14
13	2130	1.05	.48	S	3	20	2230	.37	.24	S	3
14	0000	1.07	.3	S	2	20	2300	.42	.21	S	9
14	0030	1.05	.3	S	2	20	2330	.4	.2	S	6
14	0130	.45	.3		1	21	0000	.42	.24	S	14
14	1130	.78	.63	S	4	21	0030	.44	.23		3
14	1200	.77	.64	S	2	21	0200	.22	.10	S	32
14	2130	1.0	.8	S	2	21	0230	.32	.1	S	20
14	2330	.7	.5		3	21	0300	.43	.11	S	20
15	0000	1.1	.9		2	21	0330	.4	.1	S	14
15	0030	1.1	.9		2	21	0400	.40	.10	S	28
15	2000	.8	.5		2	21	0430	.46	.06	S	28
15	2030	.8	.4		2	22	0100	.28	.1	S	8
15	2100	.7	.5	S	3	22	0130	.3	.1	S	5
15	2230	.80	.45	S	8	22	0200	.3	.1	S	8
15	2300	.8	.6	S	6	22	0230	.28	.12	S	3
16	0730	.3	.2		1	23	0100	.2	.1		2
16	1030	.7	.4		2	23	0130	.2	.1		1
17	0030	.1	.2		1	23	0200	.2	.1		1
17	0100	.1	.2		2	24	0200	.3	.1	S	20
17	0130	.1	.2		1	24	0230	.3	.1	S	16
17	0200	.1	.2		3	24	0300	.3	.1		5
17	0230	.1	.3		4	25	0230	.25	.15		2
17	0300	.22	.05	S	32	25	0300	.25	.15		2
17	0330	.30	.08	S	5	25	0330	.28	.14		4
17	0400	.35	.2	S	4	25	0400	.3	.15		2
17	0430	.90	.57	S	7	25	2300	.30	.25		1
18	0000	.4	.2		3	25	2330	.30	.24		1
18	0030	.4	.2		1	26	0900	.3	.1		4
18	0100	.3	.2		3	26	2000	.30	.21	S	16
18	0200	.35	.2	S	3	26	2030	.36	.22	S	20
18	0300	.3	.21		3	26	2100	.44	.19	S	20
18	0330	.4	.2		1	26	2130	.44	.18	S	22
18	0500	.4	.1		4	26	2200	.35	.17	S	4
19	0000	.25	.15	I	3	26	2230	.30	.18	S	2
19	0030	.40	.20		5	26	2300	.30	.16	S	3

Type Pc 1 (pearl) MICROPULSATION ACTIVITY (Cont'd.)

Hour		Frequency		AMP		Frequency		AMP		
Day	U.T.	High	Low	Form	mv/km	Day	U.T.	High	Low	mv/km
July 1966										
26	2330	.30	.15		3	30	0000	.7	.5	2
27	0000	.19	.15	S	7			.3	.1	2
27	0030	.20	.15	S	10	30	0030	.6	.5	2
27	0100	.27	.10	S	3			.3	.1	1
27	0130	.30	.1	S	7	30	0100	.6	.4	1
28	0230	.4	.1		3			.2	.1	1
28	0300	.4	.2		3	30	0130	.6	.4	1
28	2300	.4	.2		2			.25	.1	1
28	2330	.4	.2		2	30	0200	.55	.4	1
29	0330	.22	.15		2			.22	.1	1
29	0400	.30	.15		2	30	0500	.8	.1	6
29	2200	.6	.5		1	30	0530	.8	.1	3
		.3	.2		1	31	0200	.3	.2	3
29	2230	.7	.5		2	31	0230	.3	.2	3
		.3	.1		2	31	0300	.4	.2	3
29	2300	.7	.5		2	31	0330	.4	.25	1
		.3	.1		1	31	0400	.4	.2	1
29	2330	.7	.5		3	31	0430	.4	.25	2
		.3	.1		1					

TYPE Pc 1 (pearl) MICROPULSATION ACTIVITY
College N-S Telluric Currents

August 1966

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
1	0030	.53	.32	S	22	8	0900	.45	.3		8
1	0100	.57	.35	S	24	8	1000	.4	.1	I	5
1	0130	.50	.36	S	7	8	1200	.3	.1	I	2
1	0230	.42	.32		4	8	1330	.3	.1	I	2
1	0300	.40	.13	S	10	8	1700	.25	.15		2
					6	8	2100	.50	.35	S	11
1	0330	.50	.13	S	12	8	2130	.47	.32	S	16
1	0400	.42	.10		8	8	2200	.40	.30	S	8
1	0430	.3	.1		6	8	2230	.43	.22	S	28
1	0500	.25	.1		2	8	2300	.4	.25	S	4
2	0000	.35	.2		1	9	0000	.40	.18		10
2	0100	.4	.24		1	9	0130	.28	.15		8
2	1600	.2	.1		1	9	0200	.3	.15		10
3	0430	.25	.1		12						
3	0700	.3	.2	I	4	9	0230	.27	.13		13
3	0730	.35	.15		3	9	0300	.23	.10		7
5	0000	.5	.2		8	9	0330	.22	.10		5
5	0530	.4	.1		10	9	0600	.35	.05	S	7
5	0600	.4	.1	S	8	9	0930	.4	.1	I	5
5	0630	.25	.1		7	9	1330	.5	.1	I	3
5	1800	.25	.15		2	9	1430	.3	.2	I	4
5	2000	.3	.15		3	10	0000	.23	.1		4
5	2030	.25	.15		2	10	0130	.3	.15		4
5	2100	.5	.2		10	10	0200	.3	.1		3
5	2130	.5	.2		5	10	0230	.2	.1		3
5	2200	.5	.3		3	10	0300	.3	.1		5
5	2230	.5	.3		5	10	0330	.3	.1	I	2
5	2300	.5	.3		5	10	1530	.45	.3	I	32
6	0000	.5	.3		2	10	2300	.4	.2		3
6	0030	.4	.2		2	10	2330	.45	.2		3
6	1700	.2	.1		2	11	0000	.55	.23		2
6	1730	.27	.1		1	11	0200	.4	.3	I	1
6	2300	.25	.1	I	2	11	0230	.5	.3	I	1
6	2330	.25	.1	I	2	11	0300	.5	.3	I	3
7	0000	.2	.1		2	11	0330	.5	.2	I	6
7	0030	.25	.1		4	11	0430	.3	.2		4
7	0100	.25	.1		2	11	0600	.4	.1	I	8
7	0130	.25	.1		3	11	0630	.5	.1	I	12
7	0300	.2	.1		2	11	0730	.5	.1	I	34
7	0330	.2	.07		3	11	1100	.4	.2	I	3
7	0400	.22	.1		2	12	0130	.25	.1		10
7	0430	.3	.1		6	12	0200	.25	.1		14
7	0500	.33	.1	S	8	12	0230	.25	.1		18
7	2300	.32	.15	S	10	12	0300	.28	.1		12
7	2330	.44	.15	S	6	12	0330	.30	.10		14
8	0000	.40	.22	S	8	12	0400	.30	.13		8
8	0030	.40	.20	S	4	12	0430	.30	.1		8
8	0130	.32	.24	S	2	12	0500	.4	.1	I	22
8	0200	.32	.24	S	1	12	0530	.5	.1	S	60
8	0300	.3	.15	S	2	12	1130	.4	.2	I	36

Type Pc 1 (pearl) MICROPULSATION ACTIVITY (Cont'd.)

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
August 1966											
12	1500	.3	.2		1	16	0000	0.24	0.23		2
12	1530	.3	.2		1	16	0100	.22	.18		6
12	1600	.3	.2		2	16	0130	.25	.20		8
12	1700	.3	.2		2	16	0200	.4	.18		6
12	2100	.55	.3		3	16	0230	.3	.2		2
12	2130	.6	.3		2	16	0300	.3	.2		5
12	2200	.5	.2		1	16	0330	.25	.17		5
12	2230	.6	.3		5	16	0400	.26	.22		3
12	2300	.6	.2		2	16	0430	.26	.22		2
12	2330	.3	.2		2	16	0600	.35	.30		10
13	0000	.6	.4		4	16	1130	.35	.30		2
13	0030	.6	.4		3	17	0200	.3	.2		5
13	0100	.6	.4		5	18	0100	.25	.20	S	3
13	0130	.50	.37		6	18	0130	.28	.20	S	4
13	0200	.55	.30		6	18	0200	.3	.2	S	3
13	0230	.5	.1		4	18	0400	.3	.2		2
13	0300	.5	.1		6	18	0500	.40	.34	S	2
13	0330	.5	.2		4	18	0700	.27	.22	S	2
13	0400	.3	.18		3	18	0800	.4	.3		1
13	0430	.4	.1		4	18	0830	.4	.3		1
13	2030	.24	.14		3	18	0930	.5	.1	I	20
13	2100	.25	.18		2	18	1530	.3	.1		5
13	2130	.3	.18		2	18	1600	.4	.1		5
13	2200	.3	.2		8	18	2300	.2	.1		1
13	2230	.35	.2		2	18	2330	.2	.1		1
13	2300	.35	.2		3	19	0000	.7	.4		1
13	2330	.55	.2		4	19	0030	.6	.4		3
14	0000	.4	.2		4	19	0100	.6	.3		2
14	0030	.45	.2		2	19	0130	.7	.3		6
14	0100	.3	.2		4	19	0200	.5	.3		2
14	0130	.3	.2		3	19	0300	.5	.1	I	36
14	0200	.3	.2		4	19	0400	.3	.1		20
14	0600	.3	.2	I	6	19	0430	.3	.1		50
14	0630	.25	.1	I	8	19	0500	.5	.1		24
14	2200	.6	.4		2	19	0530	.6	.1		8
14	2230	.55	.4		2	19	0700	.2	.1		4
14	2300	.6	.4		4	19	2230	.7	.4		3
14	2330	.6	.4		5	19	2300	.7	.4		6
15	0000	.6	.4	S	6	19	2330	.7	.5		1
15	0030	.6	.4	S	10	20	0030	.6	.5		1
15	0100	.6	.4	S	10	20	0100	.6	.5		3
15	0130	.6	.4	S	14	20	0130	.6	.5		5
15	0200	.6	.4		6	20	0200	.4	.2		4
15	0230	.6	.4		3	20	0230	.4	.2		8
15	0400	.3	.2		1	20	0300	.3	.2		5
15	0430	.3	.2		2	20	0330	.3	.2		2
15	0500	.3	.2		1	20	0400	.15	.1		2
15	0530	.35	.2		6	20	0430	.3	.1		3

Type Pc 1 (pearl) MICROPULSATION ACTIVITY (Cont'd.)

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
August 1966											
20	0500	.3	.2		4	22	1900	.7	.6		2
20	1330	.22	.1		5	22	2030	.63	.5	S	10
20	2130	.50	.30	S	38	22	2100	.63	.45		10
20	2200	.5	.31	S	50	22	2130	.6	.4		8
		.8	.6		3	22	2300	.2	.1		2
20	2230	.5	.3		8	22	2330	.4	.1		18
		.7	.5		3	23	0000	.5	.1		14
20	2300	.45	.3		12	23	0030	.5	.1		10
20	2330	.6	.2		50	23	0100	.5	.1	S	18
21	0000	.6	.2	S	30	23	0130	.5	.1	S	24
21	0030	.6	.2	S	18	23	0200	.5	.1	S	
21	0100	.6	.2	S	60	23	0230	.5	.2		14
21	0130	.6	.3	S	36	23	0300	.4	.1	S	13
21	0200	.6	.2	S	46	23	0330	.5	.1	S	30
21	0230	.6	.2	S	44	23	0400	.55	.1	S	34
21	0300	.6	.2	S	72	23	0430	.4	.15	S	42
21	0330	.6	.18	S	24	23	0500	.4	.15	S	16
21	0400	.5	.18	S	32	23	0530	.4	.2	S	9
21	0430	.5	.3	S	22	23	0600	.35	.1	S	6
21	0500	.7	.3	S	3	23	0630	.3	.1		3
21	0530	.7	.5		3	23	0700	.3	.2		6
21	0730	.50	.44	S	3	23	0730	.3	.1		4
21	0800	.51	.44	S	3	23	0830	.30	.18		7
21	1200	.4	.2	S	4	23	2330	.5	.1	I	6
21	1230	.42	.36	S	4	24	0030	.2	.1	I	2
21	1300	.57	.34	S	26	24	0100	.3	.1	S	14
21	1330	.6	.3	S	44	24	0130	.6	.1	S	32
21	1400	.6	.3	S	33	24	0200	.3	.1		5
21	1430	.50	.3	S	5	24	0230	.3	.1		5
21	1500	.7	.6	S	2	24	0330	.2	.1	S	8
21	2000	.30	.27		4	24	0400	.2	.1		4
21	2030	.4	.24	S	16	24	0930	.5	.3		4
21	2100	.4	.25	S	8	24	2000	.2	.1		1
21	2130	.32	.20	S	10	24	2130	.5	.2		5
21	2200	.32	.20	S	4	24	2330	.2	.1		1
21	2230	.36	.2	S	14	25	0000	.3	.1		6
21	2300	.4	.2		12	25	0030	.3	.1		7
21	2330	.4	.2	S	16	25	0100	.3	.1	S	30
22	0000	.35	.2	S	14	25	0130	.3	.1		9
22	0030	.3	.2	S	4	25	0200	.26	.1	S	20
22	0100	.32	.18	S	9	25	0230	.2	.1	S	9
22	0130	.3	.20	S	9	25	0300	.2	.1		3
22	0300	.2	.15	I	3	25	0330	.2	.1	S	6
22	0330	.4	.1	I	4	25	0400	.2	.1	S	20
22	0400	.3	.1	I	3	25	0430	.2	.1	S	3
22	0700	.6	.4		2	25	0830	.47	.3		3
22	0730	.6	.4		1	25	2030	.25	.1		3
22	1630	.2	.1		2	25	2100	.2	.1		7

Type Pc 1 (pearl) MICROPULSATION ACTIVITY (Cont'd.)

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
August 1966											
25	2130	.3	.1		4	28	1800	.28	.1		2
25	2200	.25	.1		6	29	0630	.5	.3	I	1
25	2230	.25	.1		8	29	1200	.4	.2		2
25	2300	.2	.1		8	29	1300	.6	.2	S	4
25	2330	.2	.1		6	29	1400	.75	.25	S	1
26	0230	.2	.1		6	29	1430	.7	.3		5
26	0300	.3	.1	S	28	29	1500	.7	.1	S	1
26	0330	.3	.1	S	20	29	1730	.64	.54	S	2
26	0430	.4	.2		6	29	1800	.6	.5	S	1
26	0530	.2	.1	I	3	29	1830	.6	.47	S	2
26	1630	.3	.13		1	29	2200	.4	.1	I	16
26	1730	.25	.1		2	29	2230	.4	.1	I	5
26	2030	.2	.1	S	8	29	2300	.4	.1	I	12
26	2100	.25	.1	S	6	29	2330	.3	.1	I	5
26	2130	.32	.1		4	30	0000	.20	.10		20
26	2200	.35	.1	S	3	30	0030	.4	.1	I	19
26	2230	.4	.1		3	30	0100	.5	.25	I	22
26	2300	.4	.1	S	6	30	0130	.4	.1	I	20
26	2330	.4	.1	S	4	30	0200	.4	.1	I	34
27	0100	.22	.20		1	30	0330	.4	.3	I	2
27	0230	.3	.1	I	1	30	0400	.4	.3	I	2
27	0300	.3	.1	I	2	30	2330	.4	.2	I	20
27	0400	.3	.1		3	31	0000	.4	.2		3
27	0530	.4	.2		4	31	0030	.5	.2		5
28	0730	.4	.3	S	1	31	0100	.4	.2		2
28	0800	.4	.3	S	2	31	0130	.5	.2		4
28	0830	.4	.3	S	1	31	0200	.4	.2		5
28	0900	.4	.3	I	2	31	0230	.4	.2		2
28	1600	.2	.1	I	1	31	0300	.6	.3		2
28	1630	.3	.1	I	1	31	0330	.6	.3		1

TYPE Pc 1 (pearl) MICROPULSATION ACTIVITY

College N-S Telluric Currents

September 1966

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
1	0030	.4	.3		2	6	0200	.8	.5	I	10
1	0130	.4	.3		2	6	0230	.9	.4	I	7
1	0200	.4	.3		2	6	0400	.5	.1		12
1	0230	.4	.2		9	6	0430	.5	.1		16
1	0300	.4	.17		5	6	0500	.4	.1	I	18
1	0330	.3	.13		6	6	1300	2.0	1.4	S	2
2	0300	.3	.1		3	6	1330	2.0	1.5	S	3
2	0400	.3	.1		3	6	1400	2.3	1.7	S	6
2	0630	.8	.55	S	2	6	1430	2.5	2.0	S	6
2	0700	.8	.5	S	11	6	2330	.65	.5		5
2	0730	.8	.5	S	8	7	0030	.65	.5		4
2	0800	.8	.5	S	6	7	0130	.7	.3	I	8
2	1100	.7	.55	S	1	7	0230	.4	.15		8
2	1130	.7	.6	S	1	7	0300	.4	.2		5
3	0130	.4	.2		3	7	0330	.4	.14		2
3	0300	.85	.75		2	7	0400	.4	.15		6
5	0030	.6	.5		4	7	0430	.5	.2		2
		.4	.2		2	7	2300	.7	.5	I	6
5	0100	.6	.5		1	7	2330	.7	.5	I	6
5	0130	.6	.5		2	8	0130	.55	.4		3
5	0200	.6	.5		1	8	0200	.5	.4		6
5	0230	.3	.2			8	0230	.6	.4		12
		.6	.4		7	8	0300	.4	.2		18
5	0300	.35	.2		2	8	0330	.5	.2		5
		.65	.5		4	8	0430	.2	.1		6
5	0400	.35	.15		3			.3	.2		2
5	0430	.2	.1		1	8	2300	.5	.3		20
		.45	.35		1	8	2330	.5	.3		22
5	0500	.3	.2		1	9	0030	.5	.3		5
5	0630	.8	.4		2	9	0100	.5	.35		8
5	0700	.32	.28		2	9	0130	.6	.4		8
		.55	.4		2	9	0200	.3	.2		6
5	0730	.31	.30					.75	.55		6
		.55	.4		2	9	0230	.3	.2		4
5	0800	.5	.4		2	9	0300	.65	.5		4
5	0830	.6	.3		2			.4	.2		5
5	0900	.5	.3		3	9	0330	.3	.2	S	13
5	0930	.4	.3		1	9	0400	.3	.2		5
5	2200	.3	.2		3	9	1200	.5	.4	I	2
5	2230	.3	.2			9	1230	.5	.4	I	2
		.6	.4		8	9	1300	.5	.4	I	2
6	0000	.3	.2			9	2000	.25	.15	I	6
		.6	.5		2	9	2030	.27	.15	I	8
6	0030	.3	.2			9	2100	.3	.2	I	7
		.8	.5		8	10	0000	.7	.5		
6	0100	.9	.5	I	15			.4	.2	I	14
6	0130	.9	.5	I	14	10	0130	.3	.1		5

TYPE Pc 1 (pearl) MICROPULSATION ACTIVITY (Cont'd.)

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
September 1966											
10	0400	.6	.5	S	3	13	0300	1.0	.9		3
10	0430	.7	.5	S	14	13	1700	.52	.48	S	3
10	1230	.5	.4		2	13	1730	.55	.4	S	7
10	1300	.6	.4		2	13	1800	.5	.4	S	12
10	1330	.6	.4		3	13	1830	.5	.4	S	10
10	2000	.4	.2	I	10	13	1900	.52	.44	S	7
10	2100	.5	.3		3	13	1930	.52	.43	S	11
10	2130	.5	.3		7	13	2000	.50	.43	S	15
10	2230	.8	.6		4	13	2030	.55	.43	S	6
10	2300	.6	.4		7	13	2100	.55	.4	S	
10	2330	0.7	.4					.9	.8		6
		1.1	.8		14	13	2130	.6	.4	S	
11	0000	1.0	.7		37			.9	.8	S	3
11	0030	.8	.4		46	13	2200	.6	.5	S	2
11	0100	.7	.3		80	13	2330	1.0	.8	S	3
11	0130	.7	.3		80	14	0000	.6	.4	S	44
11	0200	.6	.3		10	14	0030	.65	.37	S	54
11	0300	.5	.3		56	14	0100	.67	.37	S	48
11	0330	.5	.3		56	14	0130	.70	.40	S	38
11	0400	.7	.6		4	14	0200	.70	.60	S	9
11	0430	.3	.2		3	14	0230	.65	.62	S	4
11	0500	.55	.35	S	53	14	1200	.2	.1		2
11	0530	.5	.4		1	14	1230	.2	.1		3
11	1030	.85	.68		7	14	1300	.2	.1		2
11	1230	.7	.5	S	12	14	1400	.5	.3	S	3
11	1300	.8	.5	S	12	14	1430	.5	.3	S	4
11	1330	.8	.5	S	10	14	1500	.9	.8		
11	1400	.78	.68		5			.4	.2	I	10
11	1830	1.1	.9		3	14	1530	.9	.8		
11	1900	1.1	.9		3			.4	.2	I	6
11	1930	1.0	.8	S	5	14	1700	.3	.1	I	2
11	2000	1.0	.8	S	2	16	0100	.2	.1		10
11	2030	.9	.74	S	4	16	0130	.3	.1		48
11	2100	.9	.73	S	3	16	0200	.3	.1		58
12	0000	.93	.77		4	16	0230	.3	.1		44
12	0030	.95	.75		3	16	0300	.3	.1		30
12	0130	.31	.17		2	16	0330	.3	.1		15
12	0200	.2	.1		2	16	0400	.3	.1		17
12	0230	.8	.6		2	16	0430	.2	.1		7
12	0330	.6	.4		1	16	1330	.5	.3	I	6
12	1100	1.0	.6	I	2	16	1400	.5	.3	I	6
12	1130	.8	.6	S	2	16	1430	.4	.3	I	5
12	1330	.8	.6		2	17	0100	.2	.1		3
12	1700	.7	.5	S	4	17	0130	.3	.1		8
12	1730	.8	.5	S	10	17	0200	.3	.1		7
12	1800	.75	.55	S	11	17	0330	.3	.1		3
12	1830	.75	.50	S	5	17	2030	.22	.18	S	8
12	2330	.5	.4	S	12	17	2100	.35	.20	S	8

TYPE Pc 1 (pearl) MICROPULSATION ACTIVITY (Cont'd.)

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
September 1966											
17	2130	.40	.20		8	19	1630	.7	.6		2
17	2200	.4	.2		5	19	2230	.2	.1		2
17	2300	.3	.2		6	20	0000	.3	.1		4
17	2330	.32	.20		9	20	0030	.32	.1		5
18	0000	.30	.18		5	20	0300	.4	.1		9
18	0030	.30	.17	S	12	20	0330	.3	.1		9
18	0100	.27	.15		30	21	0300	.5	.26		6
18	0130	.27	.15		21	21	0330	.5	.2		3
18	0200	.40	.18		16	21	0400	.4	.2		3
18	0230	.40	.17	S	6	21	1230	.4	.3	I	8
18	0300	.40	.17	S	5	21	2100	.25	.1		2
18	0330	.42	.17	S	7	21	2300	.4	.2		4
18	0400	.4	.27	S	1	22	0030	.5	.3		1
18	0900	.4	.2	I	4	22	0100	.5	.3		2
18	1000	.4	.2	I	9	22	0130	.4	.2		3
18	1330	.43	.37		2	22	0200	.3	.2		2
18	1400	.46	.34	S	4	23	0300	.3	.2		2
18	1430	.48	.33	S	7	23	0430	.5	.2		2
18	1500	.55	.2	S	58	23	1430	.4	.2	I	4
18	1530	.6	.2	S	58	23	2300	.5	.3		3
18	1600	.6	.25	S	28	24	0000	.5	.2		3
18	1630	.60	.27	S	15	24	0030	.5	.2		2
18	1700	.60	.27	S	14	24	0100	.43	.25		5
18	1730	.60	.30	S	12	24	0130	.45	.25		18
18	1800	.60	.34	S	5	24	0200	.45	.25		20
18	1830	.58	.38	S	2	24	0230	.45	.25		8
18	2200	.60	.43	S	4	24	0300	.40	.27		5
18	2230	.70	.37	S	5	24	0330	.43	.27		8
18	2300	.60	.30	S	10	24	1630	.30	.21		2
18	2330	.55	.25	S	20	25	2200	.4	.2		2
19	0000	.60	.20	S	26	25	2230	.4	.2		3
19	0030	.60	.25		21	25	2300	.4	.2		2
19	0100	.50	.30	S	9	25	2330	.4	.2		3
19	0130	.5	.3		8	26	0130	.5	.2		14
19	0200	.53	.30	S	19	26	0200	.5	.1		58
19	0230	.5	.2	S	6	26	0230	.6	.1		30
19	0300	.7	.2	I	54	26	0300	.4	.2		18
19	0330	.5	.2		54	26	0330	.4	.3		8
19	0400	.5	.3		3	26	0400	.4	.3		4
19	0430	.4	.2		19	26	0630	.38	.24	S	3
19	0500	.4	.1	I	58	26	0700	.38	.24	S	4
19	0530	.5	.1	I	56	26	0900	.4	.2	I	28
19	0600	.5	.1	I	28	27	0000	.3	.1		4
19	0630	.4	.1	I	8	27	0030	.35	.2		5
19	0700	.4	.1	I	4	27	0100	.30	.15	S	6
19	1300	.5	.2	I	20	27	0130	.30	.1		8
19	1330	1.1	0.9	S	1	27	0200	.3	.1		8
19	1600	.7	.6		2	27	0230	.4	.15		14

Type Pc 1 (pearl) MICROPULSATION ACTIVITY (Cont'd.)

Day	Hour U.T.	Frequency		Form	AMP mv/km	Day	Hour U.T.	Frequency		Form	AMP mv/km
		High	Low					High	Low		
September 1966											
27	0300	.3	.2		8	28	0830	.3	.2		1
27	0330	.4	.1		11	28	0900	.3	.2		1
27	0400	.4	.1		22	28	2200	.7	.5		
27	0430	.4	.1		12			.3	.2		2
27	2300	.5	.3	I	2	28	2230	.7	.4		3
28	0100	.5	.3	I	2	28	2300	.3	.2		1
28	0130	.4	.2		4	28	2330	.5	.3		3
28	0200	.4	.2		2	29	0000	.55	.25		9
28	0230	.4	.3		2	29	0030	.50	.25	S	10
28	0330	.6	.2	I	10	29	0100	.5	.3	S	4
28	0500	.8	.1		8	30	0400	.5	.2		1
28	0530	.5	.2		5	30	0430	.5	.2		3
28	0700	.5	.3		2						

GEOMAGNETIC ACTIVITY, K, A_k , C

J. B. Townshend, Director

College Magnetic and Seismological Observatory
Environmental Science Services Administration

The K, A_k and C-indices for College are assigned at the Coast & Geodetic Survey's College Magnetic & Seismological Observatory located at the University of Alaska.

The K-index. The K-index is an indication of the intensity of the solar particle-radiation effects for each eight intervals beginning 00-03, 03-06...21 to 24 U.T. It is defined as, the difference between the highest and lowest deviation from a smooth curve to be expected for a component on a magnetically quiet day, within a three hour interval, according to the season, the sunspot cycle, and the phase of the moon. The K-indices are scaled from the Normal and Storm magnetograms, D and H traces and are based on the most disturbed component. The Z component is no longer used for determining K. The schedule for K-indices vs gamma range for College is as follows:

<u>Gamma Range</u>	<u>K-index</u>
0 < 25	0
25 < 50	1
50 < 100	2
100 < 200	3
200 < 350	4
350 < 600	5
600 < 1000	6
1000 < 1650	7
1650 < 2500	8
2500 +	9

The Equivalent Daily Amplitude, A_k . The K-index is converted into an equivalent range, a_k which is near the center of the limiting gamma ranges for a given grade of K. The average of the eight values a_k is called the equivalent daily amplitude A_k . For College the equivalent a_k for K is:

K = 0	1	2	3	4	5	6	7	8	9	
a_k = 0	3	7	15	27	48	80	140	240	400	(10 γ)

The unit 10 γ has been chosen so as not to give the illusion of an accuracy not justified. The table for the re-conversion of K into an equivalent amplitude a_k is conventional and differs somewhat from the values adopted for the center of the limiting gamma range. The difference is of importance only in special studies, therefore, the conventional re-conversion of K into a_k is used.

The Magnetic Daily Character-Figure C. To each Universal day a character is assigned on the basis C=0, if it is quiet; C=1; if it is normal or moderately disturbed; C=2, if it is greatly disturbed. The method used to assign characters at the College Observatory is based on A_k as follows:

<u>A_k range</u>	<u>C</u>
0 < 11	0
11 < 50	1
50 +	2

Reference: Annals of the IGY, IV, pp. 227-236, 1957.

July 1966

K-indices

Lower limit for $K = 9$

**H
2490**

MAGNETIC ACTIVITY

August 1966

K-indices, Whole-day Character, and Equivalent Daily Amplitude, A_k
 Observatory, College Magnetic Observatory USC & GS.

K-indices

Date	Hours UT								Sum	C	A_k
	00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24			
1	2	2	2	2	4	0	1	0	13	0	07
2	1	0	0	0	0	0	0	0	01	0	00
3	1	1	1	2	5	4	1	1	16	1	12
4	1	1	2	5	6	6	2	1	24	1	29
5	1	2	5	5	5	5	1	1	25	1	26
6	2	2	1	1	1	2	1	1	11	0	05
7	2	1	1	1	0	1	0	1	07	0	03
8	1	1	1	0	2	0	1	2	08	0	03
9	2	2	1	4	2	3	3	1	18	1	11
10	3	2	1	4	6	3	1	1	21	1	19
11	1	3	6	5	4	4	2	2	27	1	27
12	3	4	5	6	5	2	2	1	28	1	29
13	2	2	2	2	1	1	1	1	12	0	05
14	2	3	4	4	2	1	1	0	17	1	11
15	1	1	1	4	4	1	1	0	13	0	09
16	1	1	3	2	0	0	0	0	07	0	04
17	0	1	0	0	0	1	0	0	02	0	01
18	0	0	1	5	5	3	2	1	17	1	16
19	3	4	1	6	5	5	4	2	30	1	32
20	3	2	3	1	0	1	1	1	12	0	06
21	2	2	1	0	0	1	1	1	08	0	03
22	2	1	0	0	0	2	1	2	08	0	03
23	3	3	3	6	5	5	4	3	32	1	33
24	3	2	2	4	4	2	2	3	22	1	14
25	3	2	2	5	4	2	1	2	21	1	15
26	2	3	2	1	1	0	1	1	11	0	05
27	2	2	2	2	2	2	0	0	12	0	05
28	1	0	0	0	0	1	1	1	04	0	02
29	1	1	0	2	2	1	2	4	13	0	07
30	4	5	4	5	5	7	6	5	41	2	58
31	4	3	3	1	3	3	2	1	20	1	12
Lower limit for K = 9									D	H	
									2530	2490	

MAGNETIC ACTIVITY

September 1966

K-indices, Whole-day Character, and Equivalent Daily Amplitude, A_k

Observatory, College Magnetic Observatory USC & GS.

K-indices											
Hours UT											
Date	00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	Sum	C	A _k
1	2	3	6	6	5	5	4	3	34	1	40
2	2	2	1	1	3	4	4	3	20	1	13
3	2	3	5	5	6	7	7	7	42	2	77
4	5	7	7	6	7	5	3	2	42	2	77
5	2	2	2	4	6	4	1	1	22	1	20
6	3	4	5	6	5	5	2	1	31	1	35
7	2	3	2	4	5	5	2	2	25	1	21
8	3	4	6	7	6	6	3	3	38	2	57
9	3	4	5	5	5	5	2	2	31	1	31
10	2	5	3	5	5	5	2	2	29	1	29
11	2	2	2	3	1	1	0	0	11	0	05
12	0	0	2	2	1	2	0	0	07	0	03
13	1	1	0	1	1	1	0	0	05	0	02
14	0	0	0	0	0	2	2	2	06	0	03
15	3	4	4	5	3	1	2	3	25	1	20
16	3	1	1	2	3	2	2	2	16	0	08
17	2	1	2	1	2	3	1	1	13	0	06
18	0	0	0	2	1	0	1	1	05	0	02
19	3	4	3	2	3	1	2	2	20	1	12
20	2	2	5	4	7	3	3	2	28	1	33
21	2	2	0	3	5	1	1	0	14	1	10
22	1	1	1	2	0	1	1	0	07	0	03
23	1	1	2	3	3	5	5	2	22	1	18
24	3	1	3	3	2	2	2	1	17	1	09
25	2	3	4	1	0	0	1	2	13	0	08
26	3	1	3	5	4	5	3	2	26	1	22
27	3	5	3	3	4	3	1	2	24	1	18
28	3	4	2	4	5	6	1	2	27	1	27
29	2	4	4	3	3	3	3	2	24	1	16
30	1	4	6	3	5	3	1	2	25	1	25

Lower limit for K = 9

D
2530H
2490

ERRATA

Note that daily sonagrams for 4 August, 5 August, and 15 September are missing.

A group of the September sonagrams were dated incorrectly.

The dates on all sonagrams dated from 15 September, 1966 through 22 September 1966 should be changed to one day later. Note that this will result in two sonagrams dated 23 September 1966, which are actually observed to be identical.

All sonagrams published since 1 January 1966 have now been rechecked for dates. All are correct.

V.P.H.