

UNITED STATES DEPARTMENT OF THE INTERIOR

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R290
no. 78-300-J

GEOLOGICAL SURVEY

PRELIMINARY GEOMAGNETIC DATA

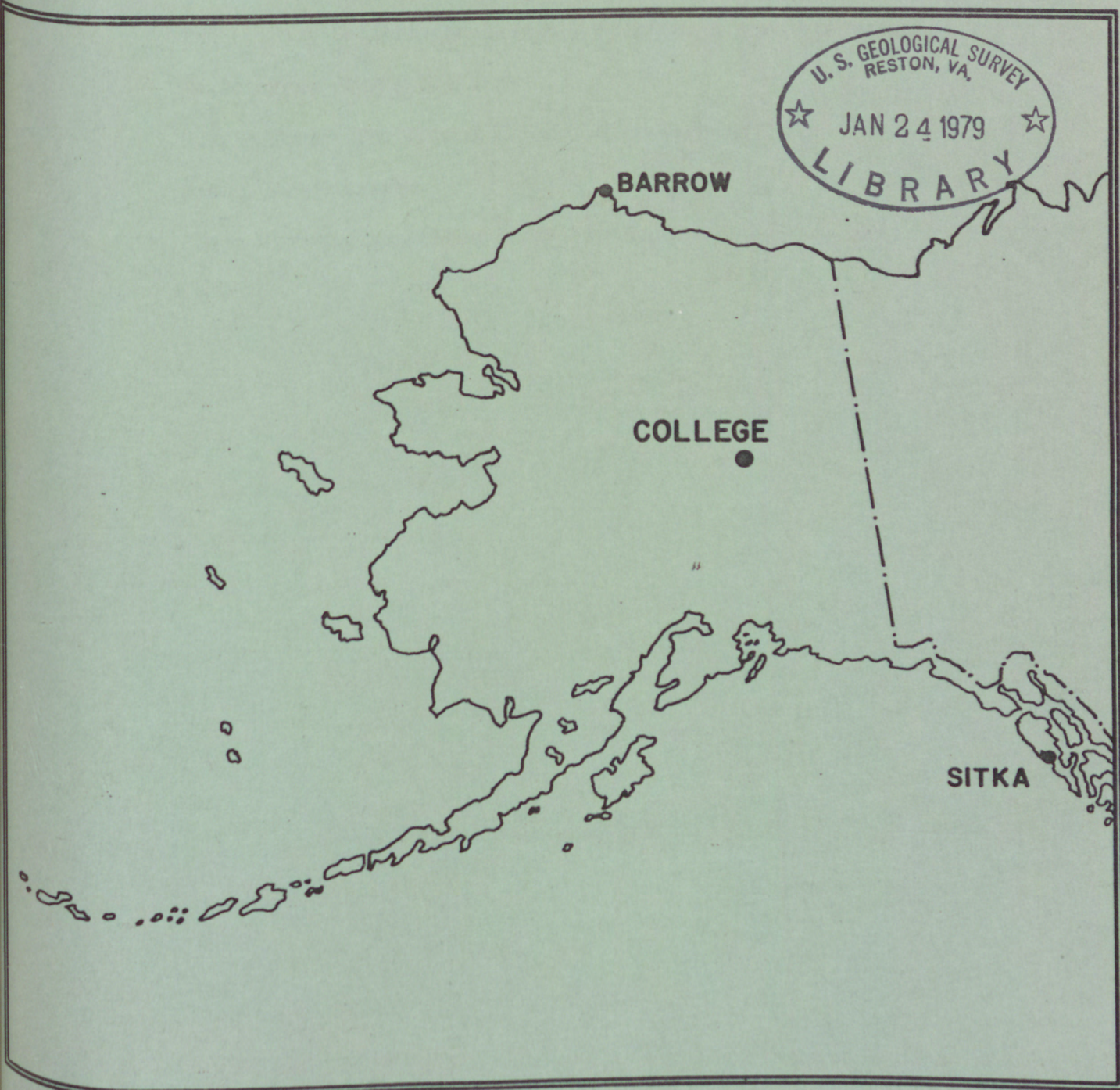
COLLEGE OBSERVATORY

FAIRBANKS, ALASKA

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OCTOBER 1978

OPEN FILE REPORT 78-300J





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Normal Magnetograms

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THIS REPORT WAS PREPARED UNDER THE DIRECTION OF JOHN B. TOWNSHEND, CHIEF OF THE COLLEGE OBSERVATORY WITH THE ASSISTANCE OF OBSERVATORY STAFF MEMBERS J. E. PAPP, ASST. CHIEF, AND S. P. TILTON, AND IN COOPERATION WITH THE GEOPHYSICAL INSTITUTE OF THE UNIVERSITY OF ALASKA. THE COLLEGE OBSERVATORY IS A PART OF THE BRANCH OF ELECTROMAGNETISM AND GEOMAGNETISM OF THE U.S. GEOLOGICAL SURVEY.

COLLEGE OBSERVATORY PRELIMINARY GEOMAGNETIC DATA

INTRODUCTION

The preliminary geomagnetic data included here is made available to scientific personnel and organizations, as part of a cooperative effort and on a data exchange basis because of the early need by some users. To avoid delay, all of the data is copied from original forms processed at the observatory; therefore it should be regarded as preliminary. Inquiries about this report or about the College Observatory should be addressed to:

Chief, College Observatory
U.S. Geological Survey
Yukon Drive on West Ridge
Fairbanks, Alaska 99701

Requests for copies of the magnetograms except for the current month should be addressed to:

World Data Center A-NOAA
Environmental Data Service
Boulder, Colorado 80302

OBSERVATORY LOCATION

The College Observatory, operated by the U. S. Geological Survey, is located at the University of Alaska, Fairbanks, Alaska. It is near the Auroral Zone and the northern limit of the world's greatest earthquake belt, the circum-Pacific Seismic belt. Although the observatory's basic operation is in geomagnetism and seismology, it cooperates with other scientists and organizations in areas where the facility and personnel can be of service.

The observatory is one of three operated by the USGS in Alaska. The others are located at Barrow and Sitka.

The position of the observatory site is:
Geographic latitude..... $64^{\circ}51.6'N$
Geographic longitude..... $147^{\circ}50.2'W$
Geomagnetic latitude..... $+64.6^{\circ}$
Geomagnetic longitude..... $+256.5^{\circ}$
Elevation.....200 meters

GEOMAGNETIC DATA

Normal, Storm, and Rapid Run magnetograms and appropriate calibration data are processed daily at the observatory and are available for analysis or copying. Also available are mean hourly scalings, K-Indices, selected magnetic phenomena reports, and on a real-time basis are recordings from a 3-component fluxgate magnetometer and F-component proton magnetometer.

Magnetic Activity

The K-Index. The K-Index is a logarithmic measurement of the range of the most disturbed component (D or H) of the geomagnetic field for eight intervals beginning 0000-0300, 0300-0600...2100-2400 UT. It is a measure of 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.

The Equivalent Daily Amplitude, AK. The K-Index is converted into an equivalent range, ak, which is near the center of the limiting gamma ranges for a given K. The average of the eight values is called equivalent daily amplitude AK. The unit 10γ has been chosen so as not to give the illusion of an accuracy not justified.

The schedule for converting gamma range to K, and K to ak is as follows:

Gamma Range	K - Index	ak*
0 < 25	0	0
25 < 50	1	3
50 < 100	2	7
100 < 200	3	15
200 < 350	4	27
350 < 600	5	48
600 < 1000	6	80
1000 < 1650	7	140
1650 < 2500	8	240
2500+	9	400 (10γ)

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 moderately disturbed; C=2 if it is greatly disturbed. The method used to assign characters at the College Observatory is based on AK as follows:

AK Range	C
$0 \approx 11$	0
$11 \approx 50$	1
50+	2

Routine assignment of C was discontinued at College on January 1, 1976.

Selected Phenomena & Outstanding Magnetic Effects

Prior to January 1, 1976, the Normal & Rapid Run records were reviewed at the observatory for selected magnetic phenomena and the events identified were forwarded to the IUGG Commission on Magnetic Variations and Disturbances. This was discontinued on January 1, 1976, but a report on Outstanding Magnetic Effects is prepared monthly for this report.

Principal Magnetic Storms

Gradual and sudden commencement magnetic disturbances with at least one K-Index of 5 or greater, which are believed to be part of a world-wide disturbance, are classified as principal magnetic storms. The time of the storm beginning and ending; direction and amplitude of sudden commencements; period of maximum activity; and storm range are reported. Monthly reports of these data are forwarded to the World Data Center A in Boulder, Colorado.

Magnetogram Hourly Scalings

Magnetogram hourly scalings are averages for successive periods of one hour for the D, H, and Z elements. The value in the column headed "01" is the average for the hour beginning 0000 and ending 0100. Note that the values on the scaling sheets are in tenths of mm with the decimal point omitted. The user of these scalings should keep in mind that the tabular values are hourly means and if he is interested in the detailed morphology of the magnetic field, he should refer directly to the magnetograms.

Magnetograms

The normal magnetograms in this report are reproduced at about one-third the size of the originals. Preliminary base-line values and scale values adopted for use with the original magnetograms are included. For days when the magnetic field is too disturbed for the Normal magnetogram to be readable, Storm magnetograms are reproduced.

Absolutes, Base-lines, and Scale Values

To determine the absolute value of the magnetic field from the hourly means or from point scalings the following equations should be used:

$D = B_D + d \cdot S_D$; $H = B_H + h \cdot S_H$; $Z = B_Z + z \cdot S_Z$
where D, H, and Z are absolute values;
 B_D , B_H and B_Z are base-line values;
 S_D , S_H and S_Z are scale values;
and d, h, and z are scalings in millimeters.

COLLEGE, ALASKA

MAGNETIC ACTIVITY

(Greenwich civil time, counted from midnight to midnight)

MONTH AND YEAR

OCTOBER 1978

DATE	K-INDICES								SUM	AK	TIME SCALE ON MAGNETOGRAMS 20 mm/hr
	00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24			
1	2	2	3	5	5	4	2	3	26	22	SUDDEN COMMENCEMENTS d h m
2	2	2	2	6	5	4	1	1	23	23	
3	1	2	3	5	4	2	1	1	19	14	
4	3	4	5	6	5	3	2	2	30	31	
5	2	1	1	5	4	1	1	0	15	12	
6	1	1	1	0	0	2	0	1	06	02	
7	0	0	0	1	2	0	0	0	03	01	
8	0	2	1	5	3	0	1	1	13	10	
9	0	1	2	4	4	2	1	2	16	10	
10	2	3	2	6	5	0	1	2	21	21	
11	1	1	2	3	0	0	0	1	08	04	
12	1	1	0	6	5	5	2	2	22	25	
13	2	2	3	2	0	0	2	1	12	06	
14	1	1	1	1	1	1	2	1	09	04	
15	1	0	0	1	2	2	1	1	08	03	
16	1	1	0	1	0	0	0	0	03	01	POSSIBLE SOLAR-FLARE EFFECTS BASED ON INSPECTION OF GRAMS ALONE (WITHOUT REFERENCE TO DATA FROM OTHER SOURCES)
17	0	0	0	0	0	0	1	2	03	01	
18	3	5	5	5	3	4	4	3	32	30	
19	3	4	7	5	6	3	2	2	32	42	
20	2	2	1	6	4	3	2	1	21	19	
21	1	2	1	6	5	3	2	2	22	21	
22	2	2	5	6	3	3	2	1	24	23	
23	0	1	3	3	3	2	1	1	14	08	
24	1	1	1	1	0	1	1	0	06	02	
25	0	0	1	5	4	3	2	1	16	13	
26	0	1	2	3	5	4	4	4	23	19	BEGIN d h m END d h m
27	4	5	5	6	5	3	1	2	31	35	
28	2	4	6	4	4	4	1	1	26	25	
29	2	2	3	4	6	5	5	2	29	30	
30	2	4	4	6	5	6	5	3	35	41	
31	2	2	3	5	6	6	3	2	29	32	

K SCALE USED:

LOWER LIMIT FOR K = 9.....

CURRENT SCALE VALUE.....

LOWER LIMIT FOR K = 9.....

D

683.8

3.75

2560

H

321.7

7.80

2510

Z

(mm)

(γ/mm)

(to nearest 10γ)

SCALINGS AND COMPUTATIONS HAVE BEEN CHECKED.

APPROVED JOHN B. TOWNSHEND, CHIEF, COLLEGE OBSERVATORY

OBSERVER IN CHARGE

OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY
COLLEGE, ALASKA

MONTH
OCTOBER

YEAR
1978

DATE	TIME U.T.	NATURE OF PHENOMENON ¹	REMARKS
4	0047	ssc*	
9	0321	si*	
11	19XX	pc4	
31	1831	si*	
<p>IDENTIFIED BY: JBT</p> <p>VERIFIED BY: JEP</p>			

1. NATURE OF PHENOMENON: ssc, ssc*, si, si*, b, bp, bs, bps, pc1, pc2 - - - pc5, pg, pi 1, pi 2, sfe.

NOAA FORM 86-500
(11/73)

PRINCIPAL MAGNETIC STORMS

Data from Individual Observatories:

COLLEGE OBSERVATORY, COLLEGE, ALASKA
OCTOBER 1978

WDC-A FOR SOLAR-TERRESTRIAL PHYSICS
ENVIRONMENTAL DATA SERVICE, NOAA
BOULDER, COLORADO 80502 U.S.A.

Obs. 2 letter IAGA code	Geomag. lat.	Commencement			SC - amplitudes			Max. 3 hr - index K			Ranges			UT End	
		day	hr min (UT)	type	D(')	H(γ)	Z(γ)	day	(3 hr - period)	K	D(')	H(γ)	Z(γ)	day	hr
CO	64°6 N	04	0047	s.c.*	+15	+100	+23	04	4	6	83	830	380	04	16
		17	23XX	..	..	..	..	19	3	7	186	1640	1010	19	16
		26	08XX	..	..	..	..	27	4	6	240	1480	1080	31	19
								28	3	6					
								29	5	6					
								30	4,6	6					
								31	5,6	6					

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASILINE
D	0000 U.T., 10-1-78	2400 U.T., 10-31-78	1.0/mm	3.88/mm	27° 47.2 E
H	0000 U.T., 10-1-78	2400 U.T., 10-15-78	7.88/mm		127718
	0000 U.T., 10-16-78	2400 U.T., 10-31-78	"		127608
Z	0000 U.T., 10-1-78	2400 U.T., 10-15-78	7.88/mm		551228
	0000 U.T., 10-16-78	2400 U.T., 10-31-78	"		551288

STORM MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASILINE
D	0000 U.T., 10-1-78	2400 U.T., 10-31-78	7.9/mm	29.78/mm	24° 18.7 E
H	0000 U.T., 10-1-78	2400 U.T., 10-31-78	44.18/mm		115188
Z	0000 U.T., 10-1-78	2400 U.T., 10-31-78	48.88/mm		540018

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION	
	FROM	TO	SCALE VALUE	
D			"	
H				
Z				

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
28° 14.5 E	130338	553838
* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.		
DAYS USED: OCT 6, 7, 11, 13, 14, 15, 16, 17, 23, 24		

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATIONOBSY. YEAR MONTH ELEMENT
CO 78 OCT DValues are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (150W M.T.) is hour 11 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q or S	Q	1h	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	SUM	
			01	260	236	250	260	260	259	267	265	284	192	170	339	01	299	311	334	297	294	350	361	327	302	289	258	248	6912
			02	251	257	250	271	268	251	241	256	300	241	178	452	02	466	531	419	551	311	309	312	281	277	259	242	242	7420
			03	244	250	268	228	240	241	328	241	247	198	247	241	03	312	271	280	340	343	351	330	299	270	238	260	251	6518
			04	249	230	242	248	200	221	161	159	232	419	301	205	04	404	443	218	210	258	257	237	339	269	188	238	250	6658
			05	240	237	248	258	241	258	260	270	251	240	249	281	05	280	292	308	322	337	327	306	312	312	279	253	241	6602
			06	241	248	251	256	259	251	253	251	256	260	262	271	06	278	287	292	291	310	320	339	339	336	293	268	250	6662
			07	244	241	251	250	251	247	261	260	260	263	261	287	07	297	320	319	319	316	317	321	310	303	281	253	258	6700
			08	260	257	244	238	227	242	247	248	252	261	258	271	08	281	308	299	308	314	320	308	303	300	299	267	251	6563
			09	257	250	250	250	251	257	244	248	242	225	254	273	09	326	329	321	331	333	307	313	310	303	282	319	282	6757
			10	208	221	209	229	178	199	231	209	220	239	279	443	10	378	292	292	298	320	322	322	344	324	237	240	237	6471
			11	228	241	221	241	252	238	247	240	229	249	214	266	11	280	289	282	298	308	319	328	318	300	281	358	238	6465
			12	232	231	239	228	242	250	241	249	251	258	259	238	12	418	417	546	452	350	342	359	326	327	222	239	227	7143
			13	210	227	229	241	246	250	204	224	239	242	268	272	13	281	292	292	308	311	330	361	320	267	230	212	263	6313
			14	268	251	241	242	252	251	260	291	258	269	259	269	14	279	292	300	322	338	389	349	318	304	291	269	266	6828
			15	232	241	246	249	251	251	252	261	269	288	287	276	15	279	281	279	282	301	329	339	339	310	298	271	269	6680
			16	248	230	229	218	260	261	254	259	261	270	288	291	16	290	294	292	292	301	320	342	349	332	318	282	262	6743
			17	251	247	241	242	242	248	249	248	250	250	269	270	17	268	281	291	292	310	343	356	363	311	255	233	238	6548
			18	227	159	161	189	110	384	66	263	179	322	341	507	18	298	334	291	328	372	342	308	242	151	167	221	227	6189
			19	206	221	241	241	208	213	207	76	94	186	253	281	19	507	201	414	308	306	310	318	338	289	240	237	256	6151
			20	271	268	231	252	260	252	261	249	246	259	281	427	20	271	290	280	312	358	351	310	269	230	260	264	261	6713
			21	262	242	240	242	232	241	250	249	260	258	362	359	21	319	371	306	332	341	327	301	261	250	250	232	212	6699
			22	241	228	210	201	230	249	126	191	152	102	301	279	22	281	282	318	289	294	297	250	226	251	251	251	272	5772
			23	270	261	259	228	229	242	242	258	330	300	279	291	23	341	361	361	328	300	298	317	314	293	241	251	262	6856
			24	250	250	238	242	248	261	260	253	262	267	282	281	24	268	271	271	270	291	319	336	321	279	261	259	261	6501
			25	257	251	251	256	259	260	260	259	268	262	241	313	25	469	417	439	347	261	288	316	282	276	269	277	278	7058
			26	268	259	248	241	248	251	241	249	240	257	271	341	26	317	411	572	451	349	351	311	181	280	309	288	177	7111
			27	258	227	235	170	140	201	172	-33	86	205	491	323	27	391	371	277	332	347	271	282	282	269	250	241	230	6018
			28	241	231	238	250	211	236	269	191	241	194	237	271	28	290	308	408	318	299	329	300	288	278	242	251	249	6370
			29	241	237	240	248	250	236	242	249	250	256	291	338	29	424	404	610	596	530	468	212	193	194	171	211	229	7320
			30	232	233	242	250	241	201	199	187	86	126	102	253	30	618	571	705	523	610	324	296	265	148	199	210	216	7037
			31	231	254	236	246	229	219	241	219	258	322	472	406	31	376	546	729	602	359	231	291	272	249	210	242	247	7687

SCALED BY	SPT	Preliminary base-line and scale values: Interval Beginning Base-line Value Scale Value	() Interpolated	[] Scaling uncertain because of magnetic storm.	MONTHLY SUM 207465	
CHECKED BY	SOT, EAS		[] Significant portion of hour interpolated.	<> Rec'd off sheet for part or all of hour; if value is given, curve was estimated for missing part.		MONTHLY MEAN 279
SIGNS REVIEWED BY	SOT		[] No records or no values available because of faulty record.			DATES WITH GAPS:
PUNCHED BY			* Derived from Storm Mph., converted to Normal Mph.			

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATIONOBSY. YEAR MONTH ELE-
MENTValues are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (150W M.T.) is hour 11 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

CO 78 OCT II

Percentage corrections have been applied. Negative values are in red, and minus signs show.																														
C	Q	S	T	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	SUM		
				01	327	340	314	327	337	333	350	327	333	232	6	137	01	98	-79	54	52	258	221	329	320	327	319	296	331	6096
				02	347	320	330	320	346	341	340	356	401	379	109	-145	02	-314	-155	-5	143	300	274	319	326	329	323	336	331	5651
				03	327	320	341	356	340	366	383	399	391	236	194	219	03	159	161	283	289	331	333	321	319	318	328	332	334	7390
				04	338	355	330	358	376	489	631	511	371	82	124	-12	04	84	-67	107	281	354	361	347	321	283	280	340	348	7012
				05	304	348	352	370	353	341	335	340	387	364	276	26	05	321	340	350	344	342	319	322	319	317	314	313	320	7689
				06	327	331	340	339	340	351	353	352	349	346	349	348	06	348	343	341	332	310	310	336	330	320	311	319	330	8055
				07	320	311	321	341	349	350	352	351	352	349	344	336	07	320	276	323	349	350	340	330	330	323	321	320	313	7971
				08	316	321	333	348	358	365	360	359	359	351	297	141	08	271	360	353	354	350	351	349	341	336	321	311	303	7908
				09	310	324	331	350	364	370	370	367	421	429	349	326	09	202	354	352	344	346	349	349	333	325	339	327	294	8225
				10	337	356	380	478	451	391	391	436	411	397	292	-138	10	121	359	360	342	336	334	330	316	293	304	325	329	7931
				11	330	329	332	331	340	351	353	369	410	398	439	387	11	348	339	343	339	338	336	320	319	318	320	323	319	8331
				12	324	329	333	355	350	351	356	358	359	360	381	-9	12	69	35	-122	181	389	364	353	341	319	322	319	347	6764
				13	367	332	341	351	356	350	399	449	471	420	370	362	13	360	359	350	351	341	335	316	308	324	331	336	339	8618
				14	333	341	343	340	347	354	361	379	364	360	356	359	14	351	349	333	344	339	333	331	325	330	325	324	319	8238
				15	340	338	344	359	360	363	360	354	359	366	374	369	15	361	341	303	358	356	353	341	335	330	331	330	331	8356
				16	329	320	326	344	353	361	358	351	359	361	369	364	16	361	364	359	350	352	350	349	338	330	321	317	316	8302
				17	320	331	344	353	364	369	370	369	369	369	363	365	17	364	362	361	359	349	350	349	339	324	322	331	340	8436
				18	329	351	476	529	656	774	540	430	371	121	56	19	18	309	324	371	319	149	111	219	216	221	367	363	329	7950
				19	373	309	310	329	359	501	367	286	-94	179	247	131	19	-309	151	164	374	354	359	353	329	314	333	350	341	6430
				20	337	340	358	365	360	363	343	356	350	359	313	-21	20	254	183	179	338	341	301	303	283	302	318	329	330	7284
				21	321	333	341	340	357	361	361	353	369	350	-9	191	21	331	197	-32	334	338	333	299	277	303	312	291	337	6978
				22	329	330	348	361	375	381	311	441	279	-37	322	359	22	329	352	300	220	321	321	277	311	323	333	339	339	7574
				23	331	331	331	347	341	351	397	392	388	360	337	317	23	289	269	243	303	337	349	361	348	339	321	331	331	8056
				24	341	346	350	344	362	381	384	368	368	359	349	341	24	349	350	350	345	351	341	341	322	318	330	330	333	8353
				25	336	347	350	358	360	361	364	371	389	385	341	124	25	-10	81	189	283	342	330	336	350	349	341	336	330	7343
				26	320	339	349	350	361	370	373	380	374	402	345	287	26	309	169	-21	209	315	321	270	210	346	321	319	430	7480
				27	420	447	543	563	554	379	228	202	323	-190	-5	179	27	114	-21	304	319	309	379	364	361	351	340	321	341	7125
				28	351	370	341	432	513	481	371	468	391	409	393	294	28	251	171	31	169	361	351	350	340	389	389	324	335	8175
				29	359	356	354	351	354	360	386	413	434	399	316	273	29	19	-309	-246	-91	-89	-21	181	371	320	314	336	351	5491
				30	351	353	360	367	363	478	541	497	500	94	216	151	30	-201	-76	-297	-450	-422	-122	11	106	237	427	349	370	4203
				31	387	371	383	364	351	379	398	416	349	241	77	21	31	144	-246	-286	-65	277	397	361	363	340	313	356	357	6050

SCALED
BY
CHECKED
BY
SIGNS RE-
VIEWED BY
PUNCHED
BY

SPT

SPT, EAS

SPT

Preliminary base-line and scale values:

Interval
BeginningBase-line
ValueScale
Value

() Interpolated

[] Significant portion of
hour interpolated.[] No record; or no values
available because of
faulty record.

* Derived from Storm Mph., converted to Normal Mph.

[] Scaling uncertain because
of magnetic storm.<> Record off sheet for part
or all of hour; if value is
given, curve was estimated
for missing part.

MONTHLY SUM

MONTHLY MEAN

DATES WITH GAPS:

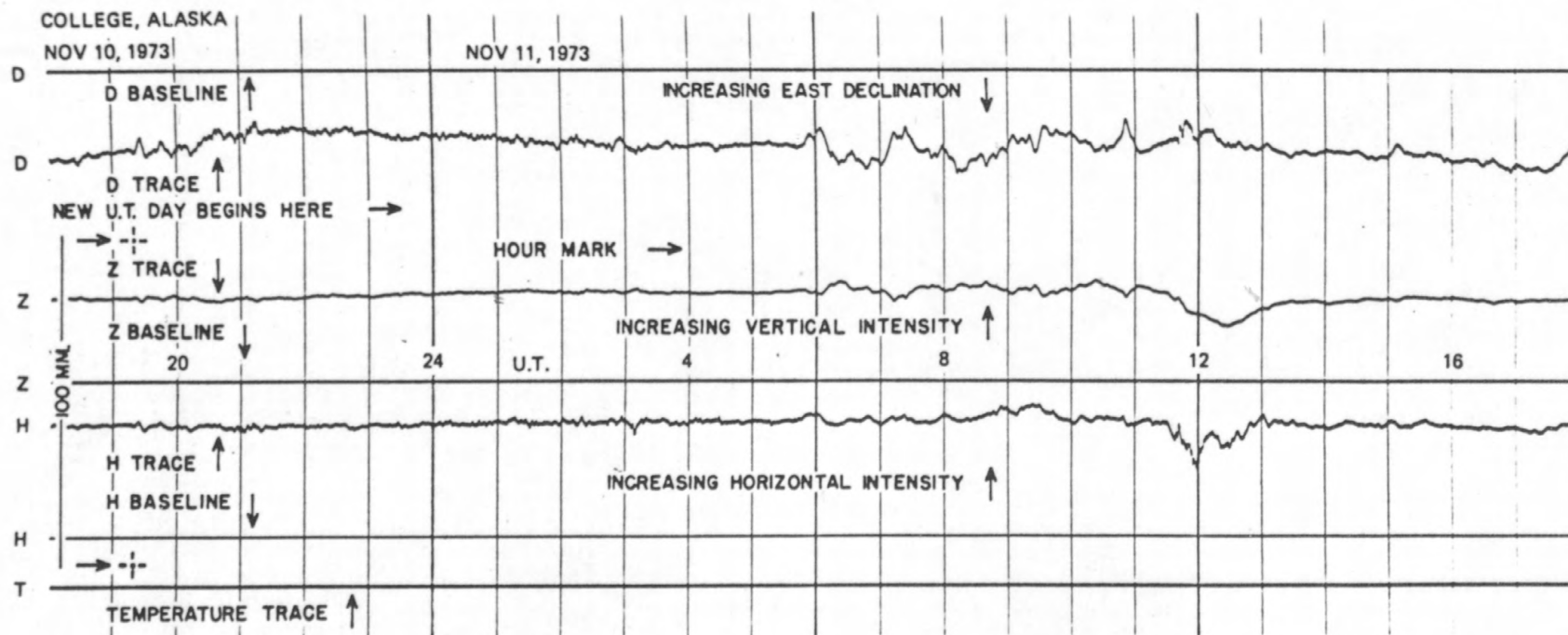
229485

308

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATIONOBSY. YEAR MONTH ELE-
CO 78 OCT 2
MENTValues are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (150W M.T.) is hour 11 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

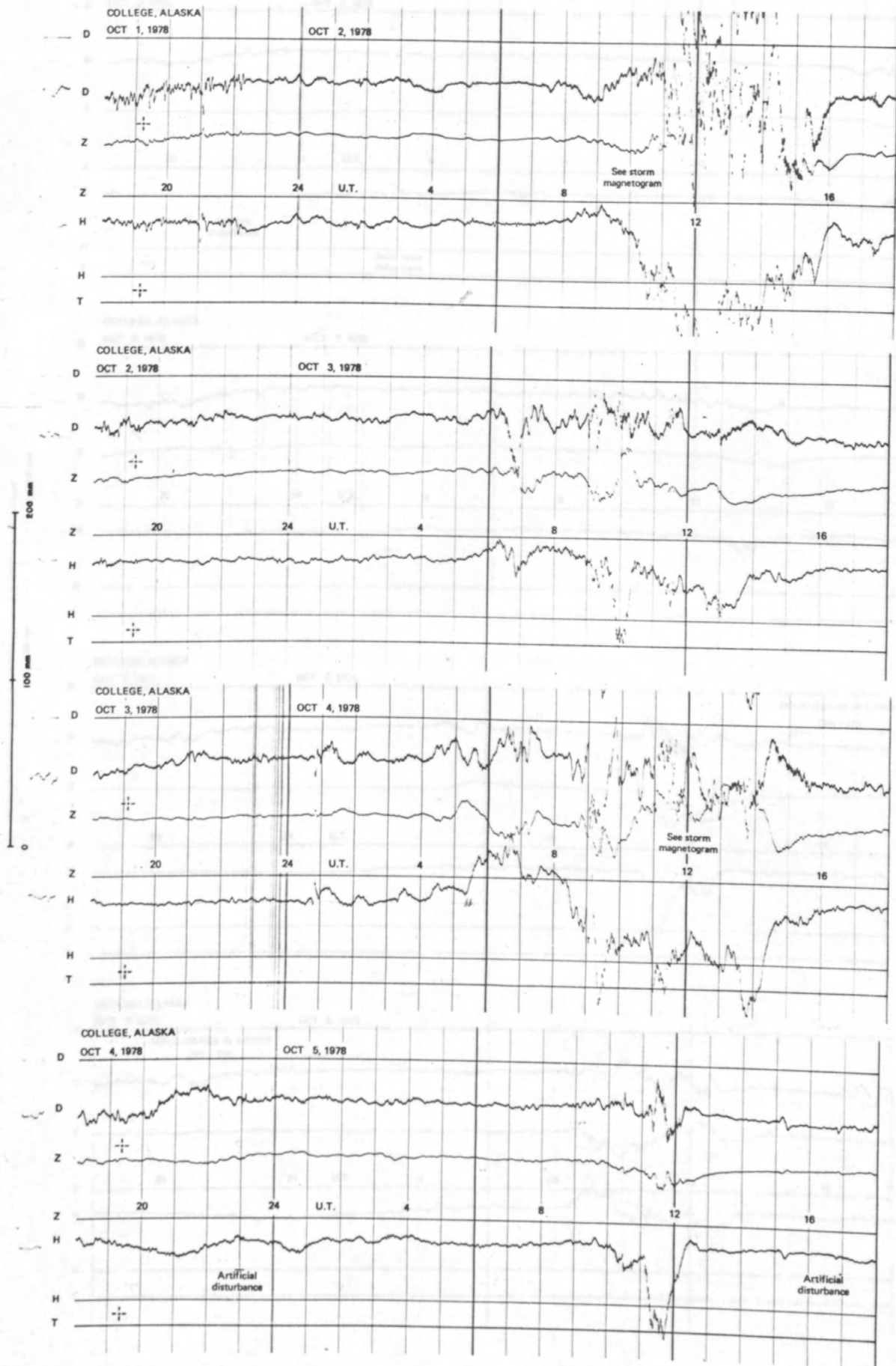
C	Q	Ten	h	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	SUM														
			01	379	380	380	380	372	379	337	320	305	266	326	238	01	379	343	170	149	189	277	327	330	354	377	376	377	7718													
			02	381	367	361	383	369	361	369	374	377	338	337	406	02	671*	676*	343*	227	281	307	327	334	349	356	361	377	9032													
			03	379	378	331	371	390	399	387	338	377	284	413	309	03	311	236	273	285	316	330	347	340	341	340	353	354	8182													
			04	363	380	368	360	358	409	276	343	331	247	364	494	04	431*	557*	331	289	320	339	340	347	347	331	347	377	8649													
			05	388	371	376	369	371	376	367	360	369	366	328	271	05	279	323	339	343	350	351	344	340	338	336	338	338	8831													
			06	339	344	348	350	347	347	349	350	351	351	351	348	06	344	341	341	345	341	310	309	329	340	337	337	348	8197													
			07	356	354	350	350	358	345	360	357	352	350	346	339	07	330	300	289	320	337	340	349	343	341	338	337	343	8184													
			08	342	342	340	341	344	376	371	360	360	353	320	193	08	189	292	326	336	339	340	333	331	330	336	340	339	7875													
			09	341	340	340	339	337	341	341	346	350	251	277	360	09	366	320	347	348	339	335	332	336	333	332	339	337	8027													
			10	369	397	382	387	417	419	398	359	351	357	387	437*	10	204	266	332	339	342	341	343	345	337	311	325	340	8485													
			11	346	350	347	354	349	348	361	358	361	358	376	373	11	351	345	340	338	340	343	340	332	330	330	328	331	8329													
			12	332	332	334	337	340	339	340	341	340	341	345	321	12	154	318	350*	140	224	284	312	311	331	320	329	336	7451													
			13	344	350	346	341	346	339	337	326	311	341	341	339	13	339	330	330	333	338	339	338	316	297	290	299	331	7941													
			14	345	346	352	350	349	358	357	359	332	339	339	331	14	330	326	309	311	310	301	300	310	312	320	319	327	7932													
			15	327	338	340	337	332	334	337	339	342	345	331	333	15	330	320	376	292	324	338	333	334	330	331	330	330	8003													
			16	327	330	337	340	347	341	339	337	332	336	330	333	16	326	324	320	314	317	323	329	330	328	326	324	321	7911													
			17	326	327	327	328	324	328	331	331	329	338	336	331	17	330	329	330	329	320	319	314	319	313	310	311	311	7791													
			18	301	359	382	344	-116*	-72	166*	234	281	481	525	437*	18	354	296	311	313	327	244	151	205	223	303	357	379	6685													
			19	378	389	359	347	330	359	237	64	330*	331	370	361*	19	488*	170	276	275	331	323	316	318	316	336	349	350	7703													
			20	351	349	350	367	346	337	340	340	351	364	334	361*	20	203	240	188	243	304	315	300	301	301	322	339	340	7586													
			21	342	347	340	347	350	373	357	349	366	352	191	141	21	235	266	247	230	291	290	291	271	280	319	347	356	7278													
			22	366	359	360	375	367	361	236	341	288	182	273	300	22	311	330	329	280	287	301	290	280	273	310	334	350	7503													
			23	347	340	342	337	363	360	369	353	281	307	310	297	23	286	259	234	231	279	289	316	321	317	319	328	331	7516													
			24	334	332	339	341	349	367	354	360	356	359	340	317	24	319	321	323	319	321	329	324	317	308	310	320	321	7982													
			25	330	332	331	330	331	330	331	336	351	342	321	290	25	381	360	303	292	289	279	289	300	309	316	327	330	7752													
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			27	364	349	306	337	292	244	170	149	309	708*	444*	421*	27	569	411	270	300	271	323	349	334	338	339	350	357	8312													
			28	376	377	383	387	367	330	116*	320	372	279	318	357	28	323	279	288	256	284	328	338	340	338	337	344	350	7813													
			29	368	368	359	351	350	361	381	369	350	275	261	311	29	374	551*	368*	126	109	286	103	232	319	311	329	337	7529													
			30	341	349	353	352	348	340	279	216	22*	116	339	453	30	361*	475*	514*	551*	474*	248	368	367	280	379	411	391	8367													
			31	389	379	377	367	364	386	371	323	360	347	236	339	31	337	614*	306*	160*	221	254	287	316	328	339	354	355	8109													
SCALED BY	SPT			Preliminary base-line and scale values:												() Interpolated												[] Scaling uncertain because of magnetic storm.												MONTHLY SUM	245873	
CHECKED BY	SPT, EAS			Interval Base-line Value												[] Significant portion of hour interpolated.												<> Record off sheet for part or all of hour; if value is given, curve was estimated for missing part.												MONTHLY MEAN	330	
SIGNS REVIEWED BY	SPT															[] No record; or no values available because of faulty record.																								DATES WITH GAPS:		
PUNCHED BY																																										
* Derived from STORM Mph., converted to Normal Mph.																																										

FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)

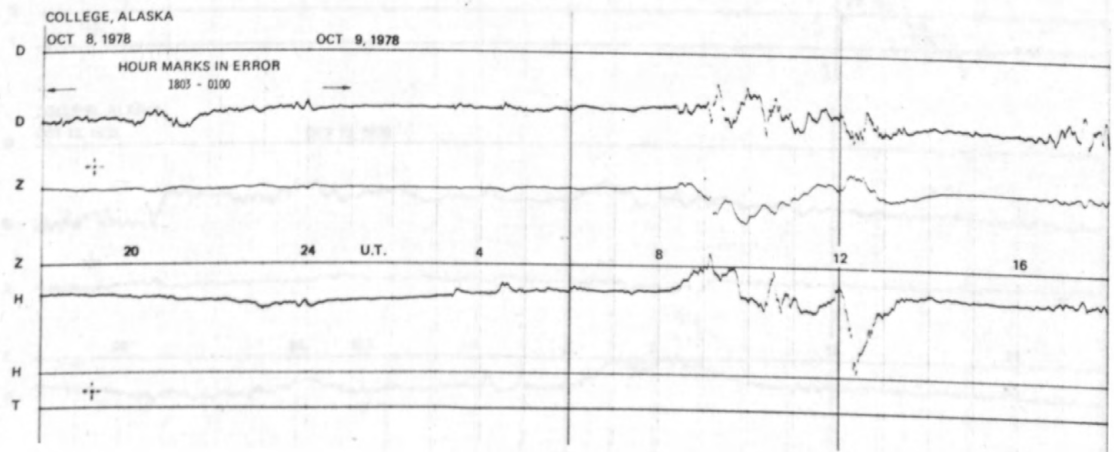
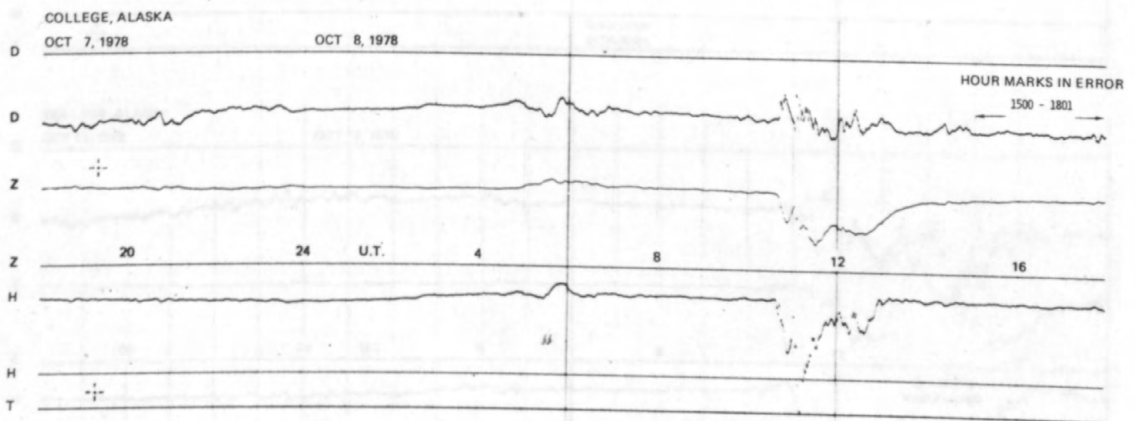
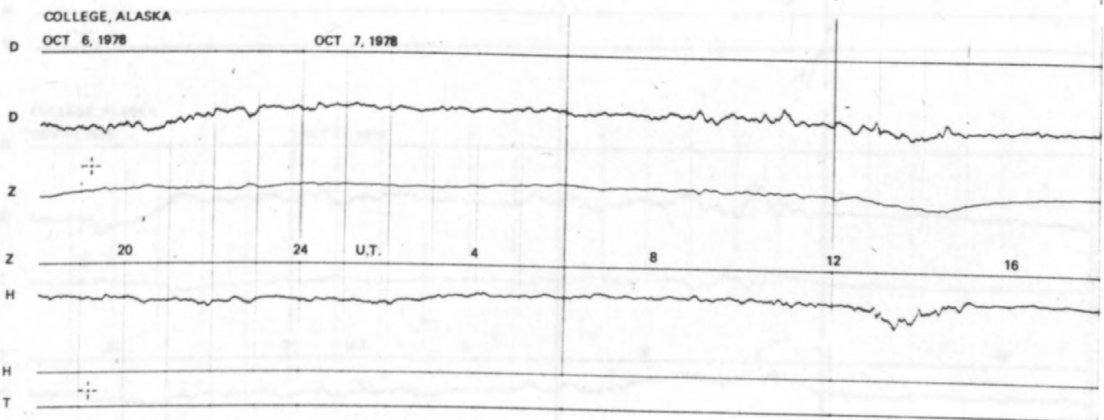
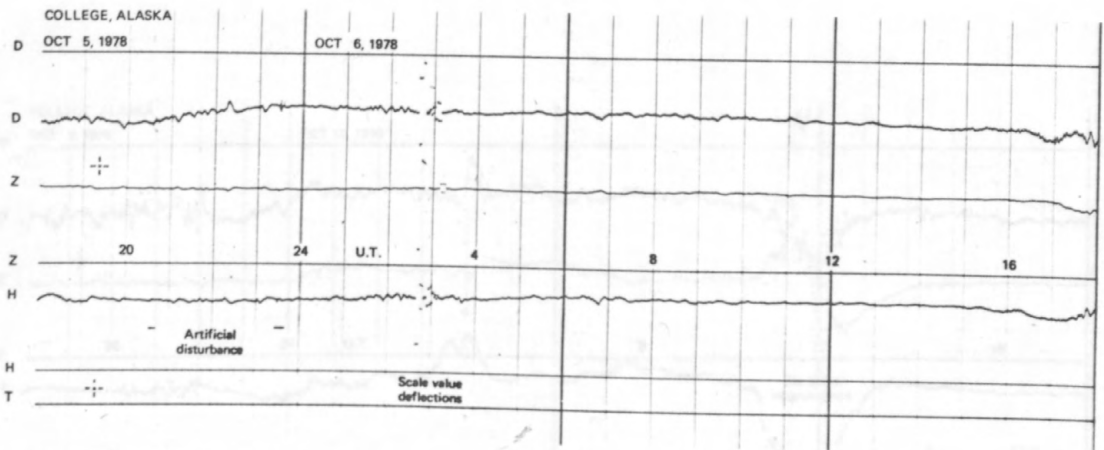


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

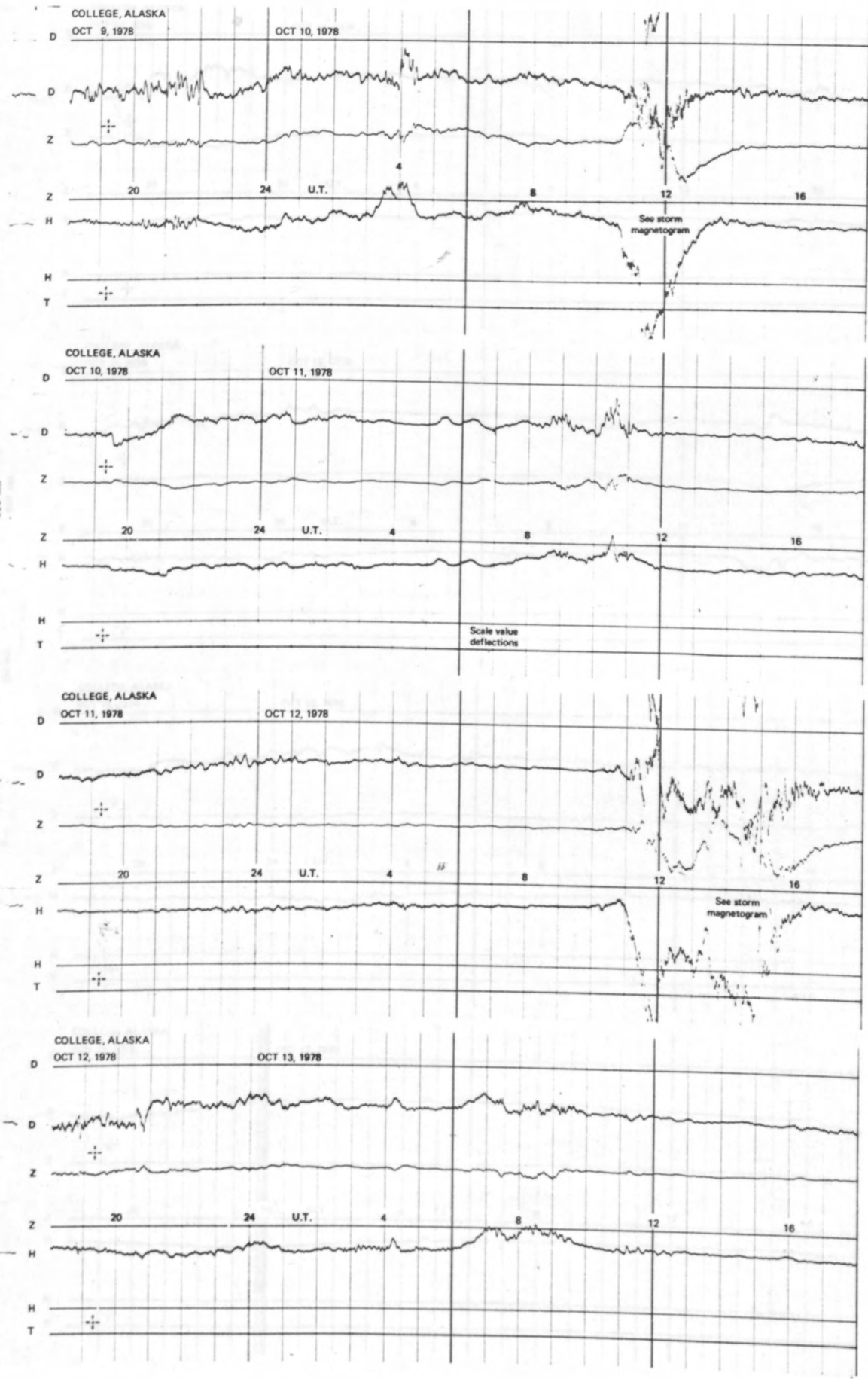
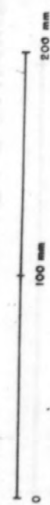
NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS

200 mm
100 mm
0

COLLEGE, ALASKA
OCT 13, 1978

OCT 14, 1978

D

D

Z

Z

H

H

T

20

24

U.T.

4

8

12

16

COLLEGE, ALASKA
OCT 14, 1978

OCT 15, 1978

D

D

Z

Z

H

H

T

20

24

U.T.

4

8

12

16

COLLEGE, ALASKA
OCT 15, 1978

OCT 16, 1978

D

D

Z

Z

H

H

T

20

24

U.T.

4

8

12

16

COLLEGE, ALASKA
OCT 16, 1978

OCT 17, 1978

D

D

Z

Z

H

H

T

20

24

U.T.

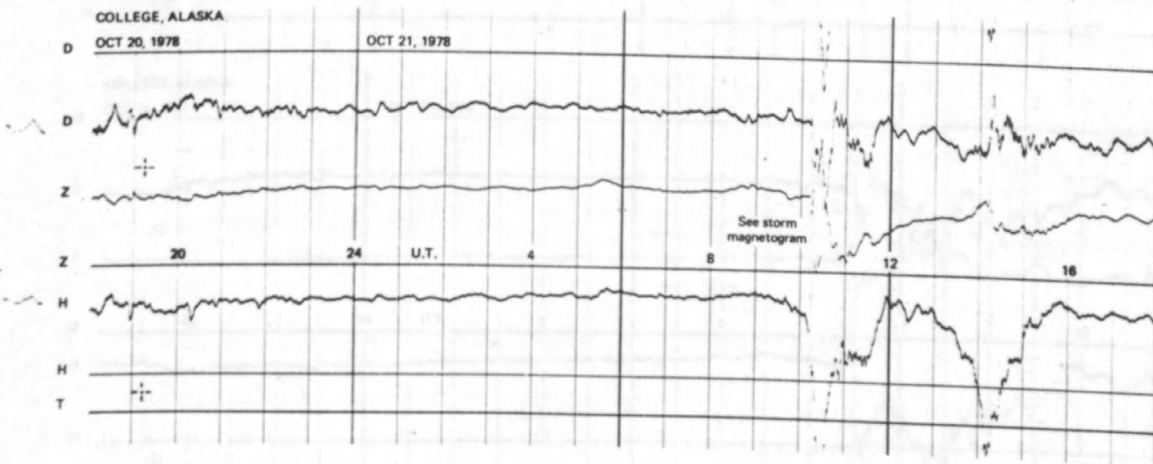
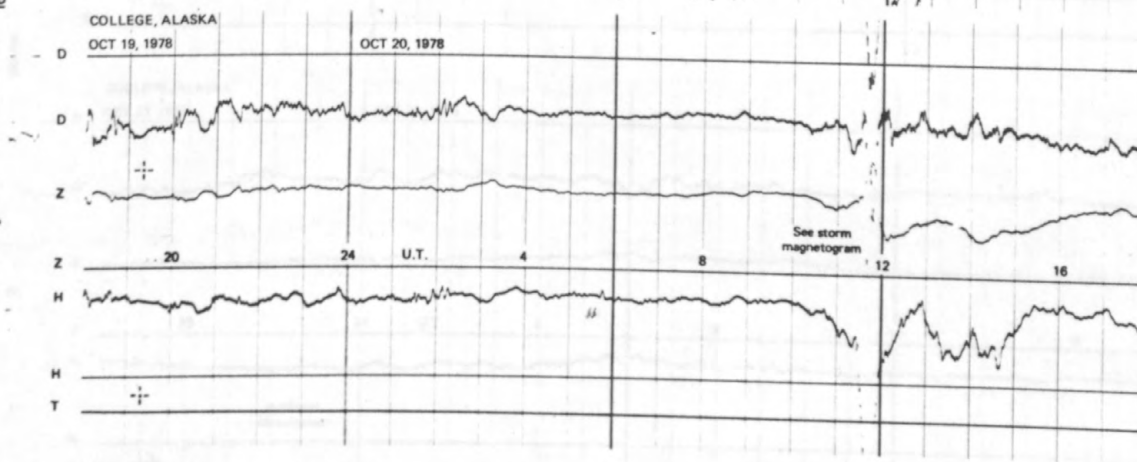
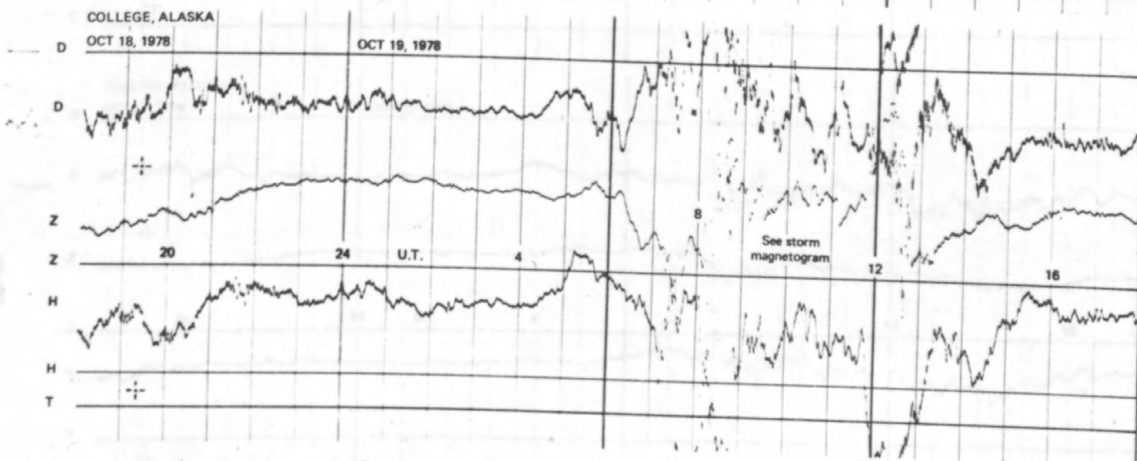
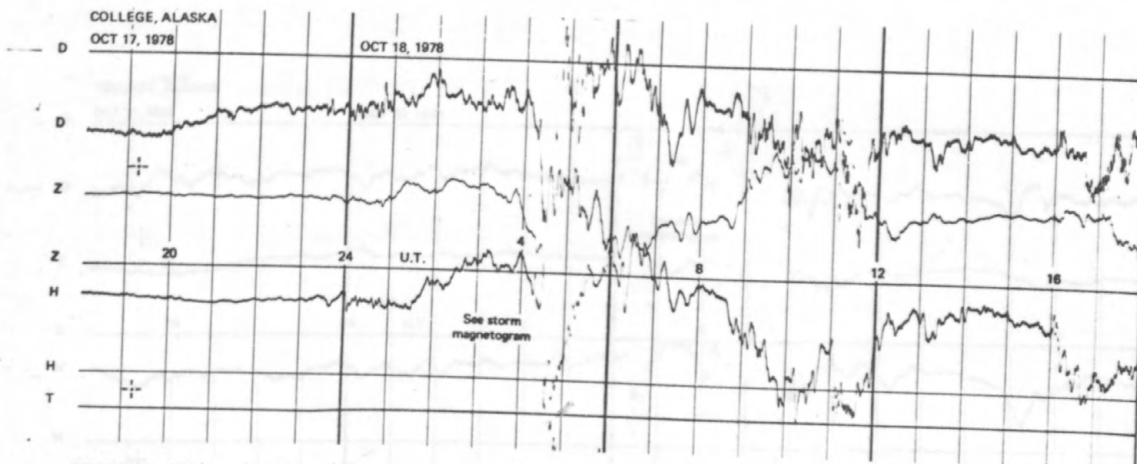
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8

12

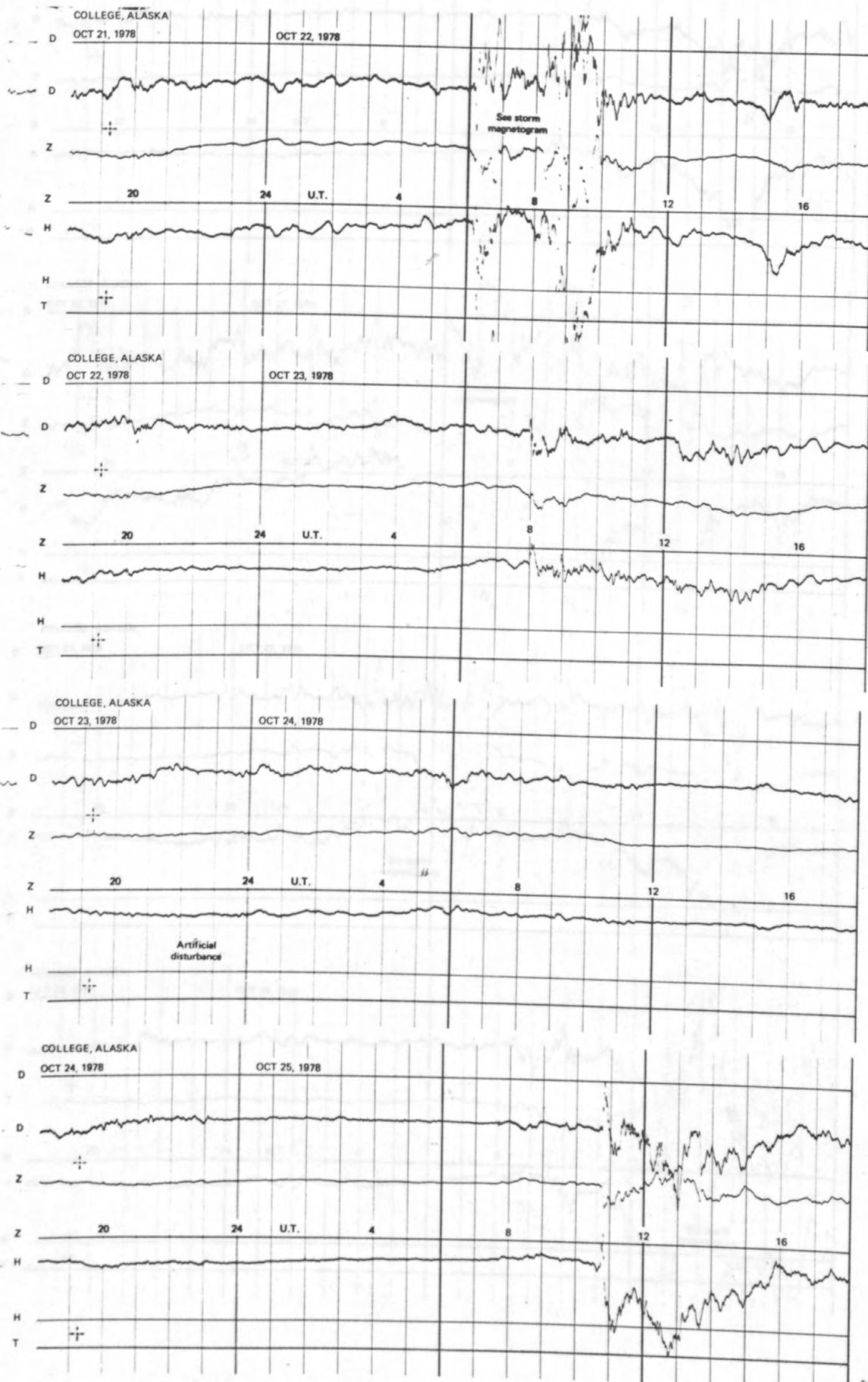
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NORMAL MAGNETOGRAMS

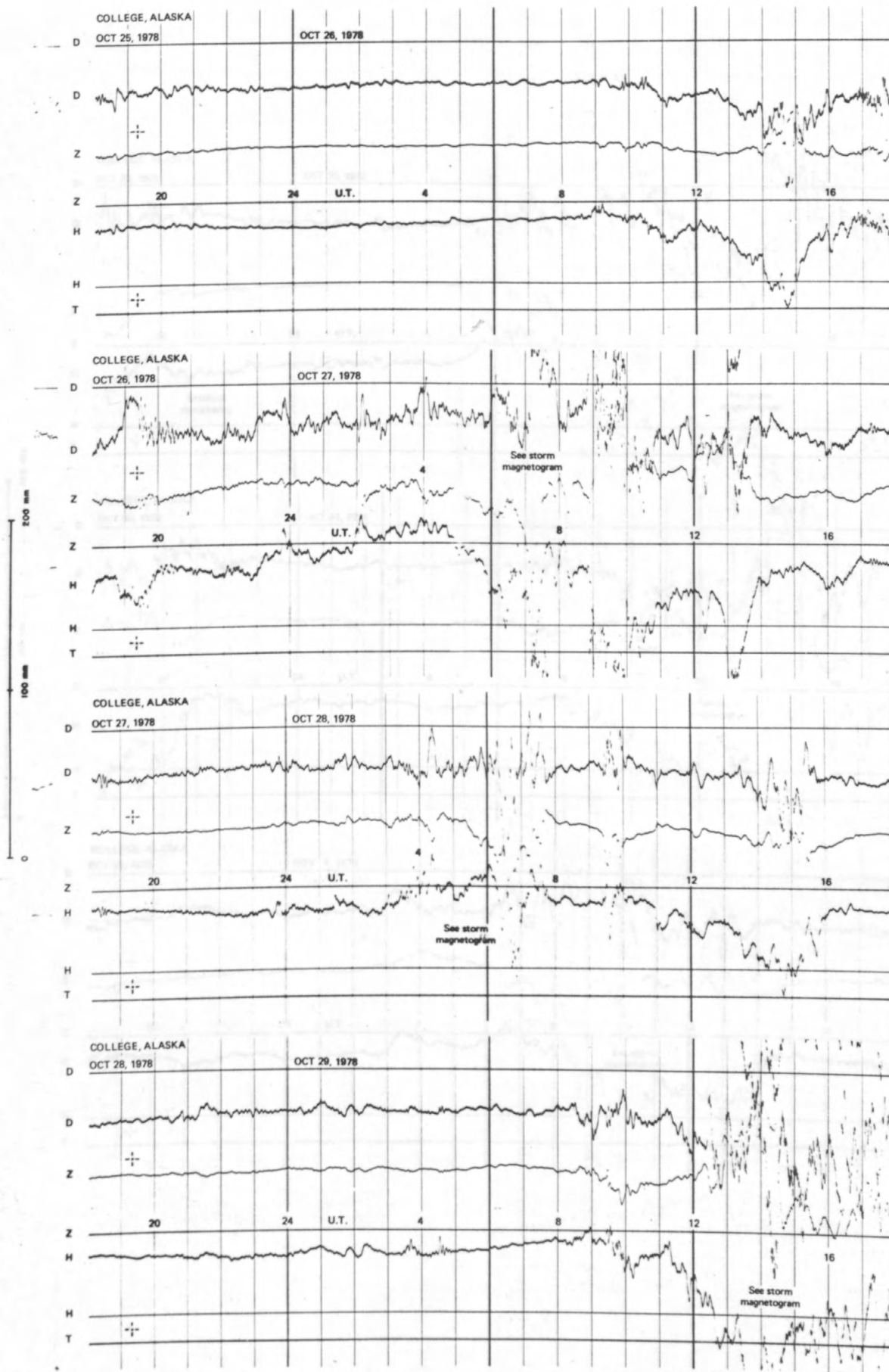


NORMAL MAGNETOGRAMS

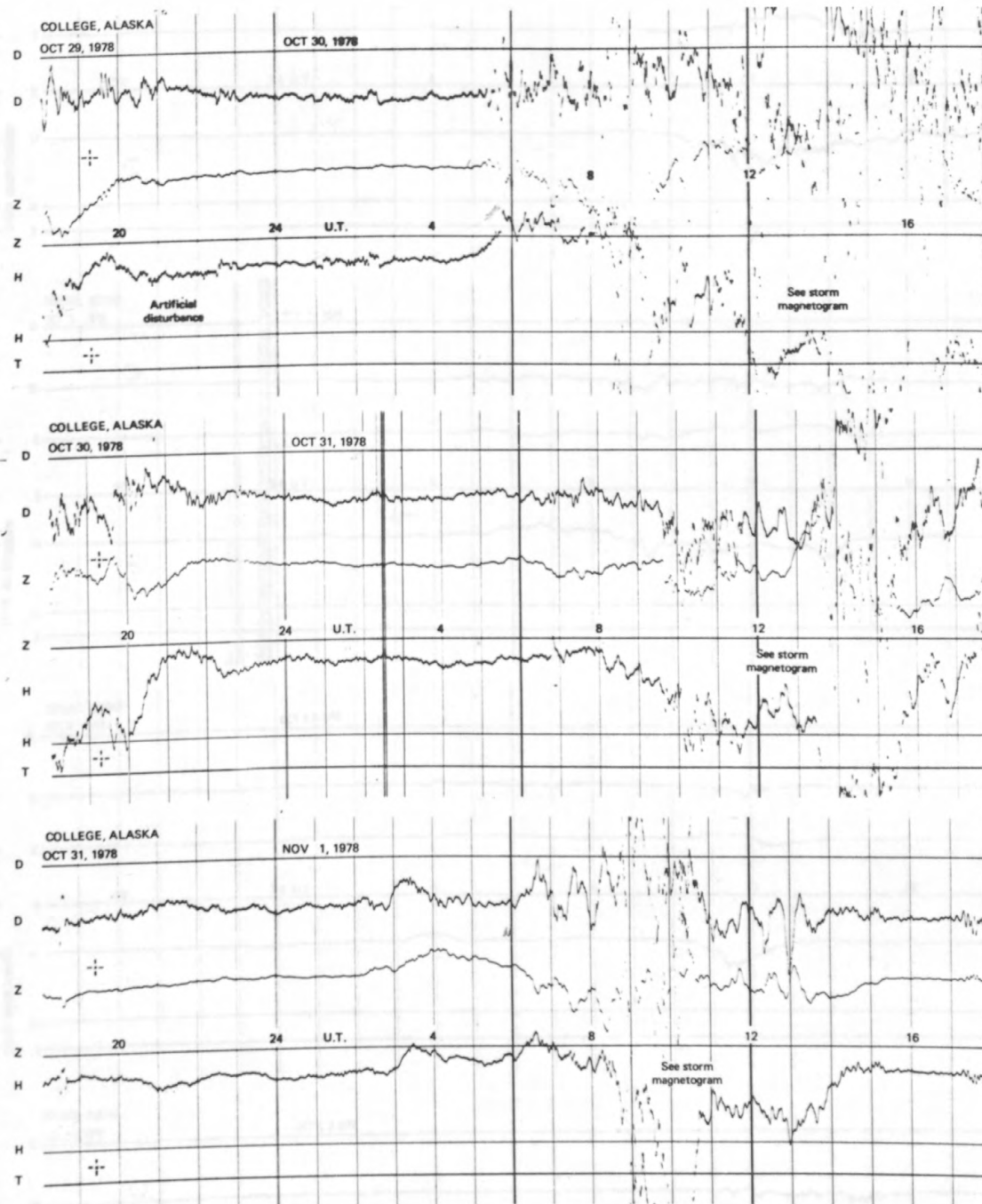
200 mm
100 mm
0



NORMAL MAGNETOGRAMS

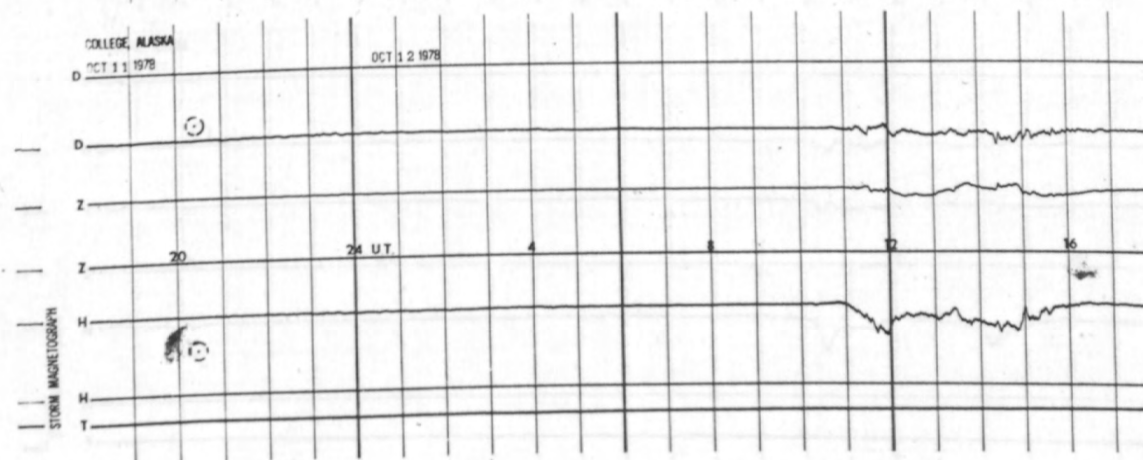
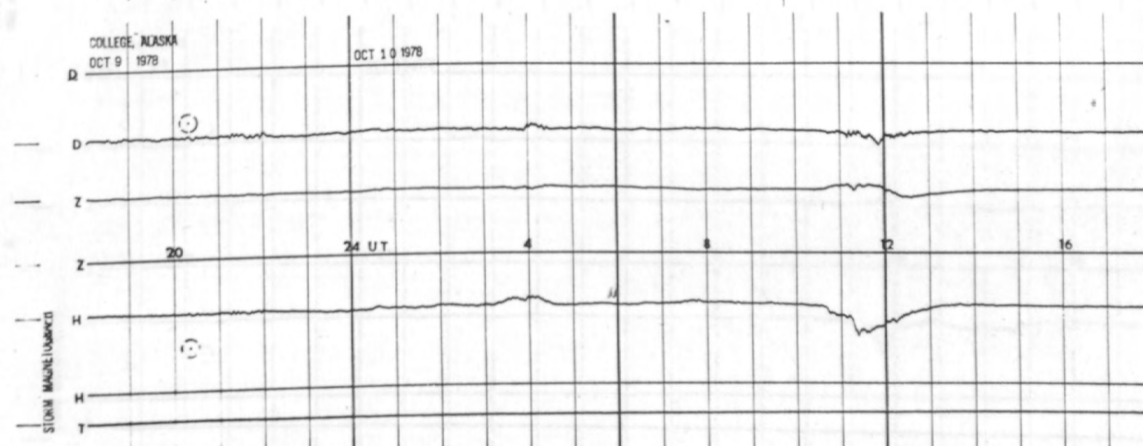
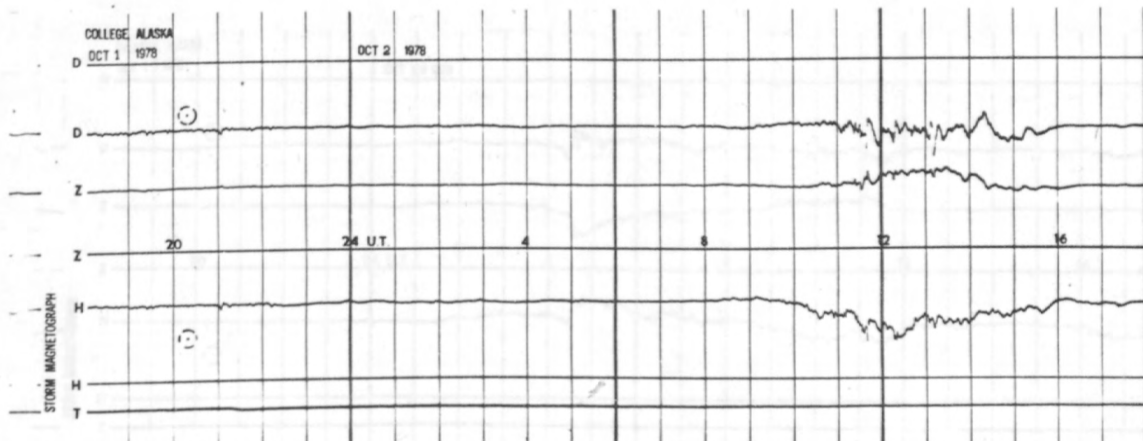


NORMAL MAGNETOGRAMS



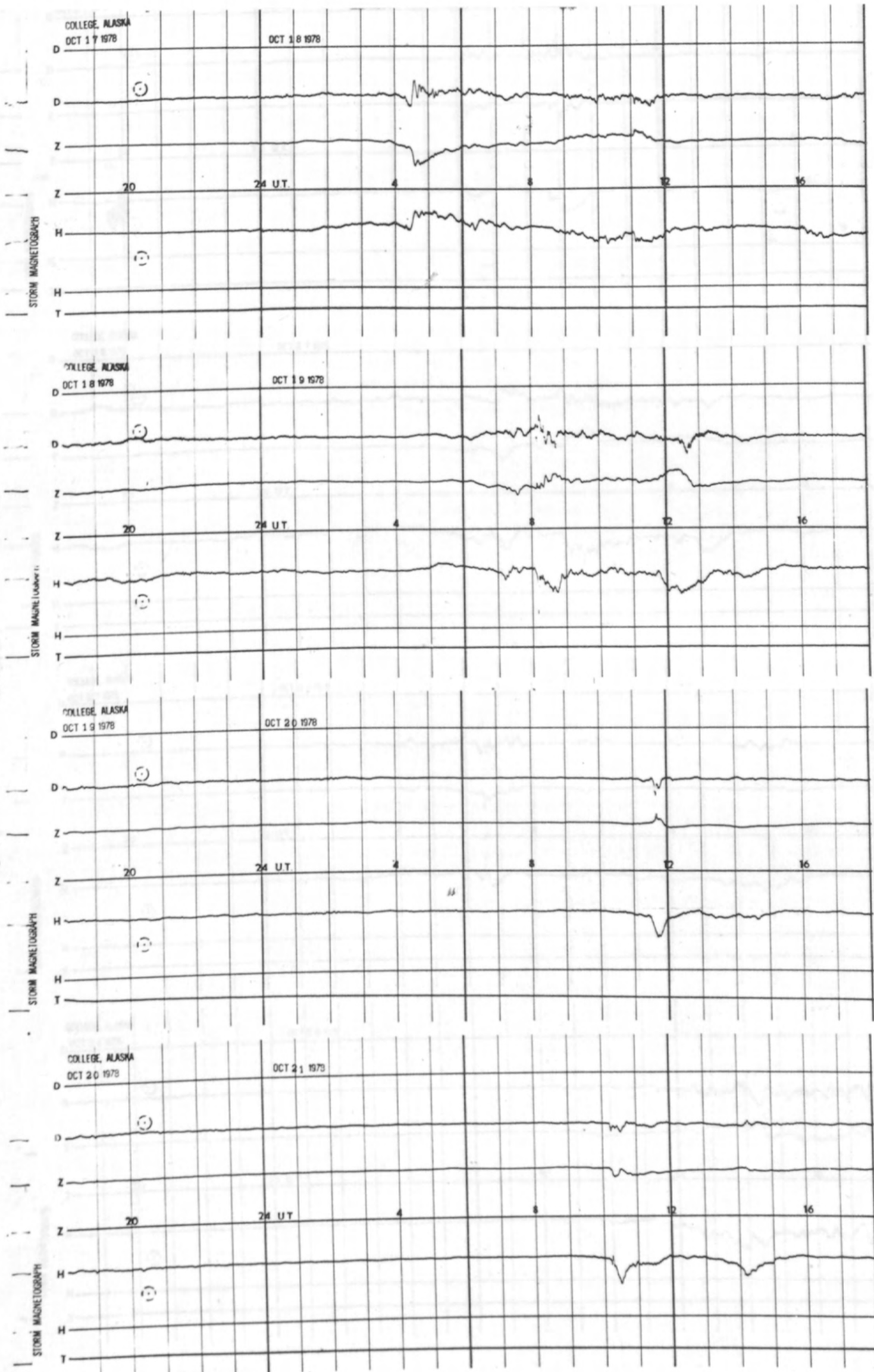
STORM MAGNETOGRAMS

200 nm
100 nm
0

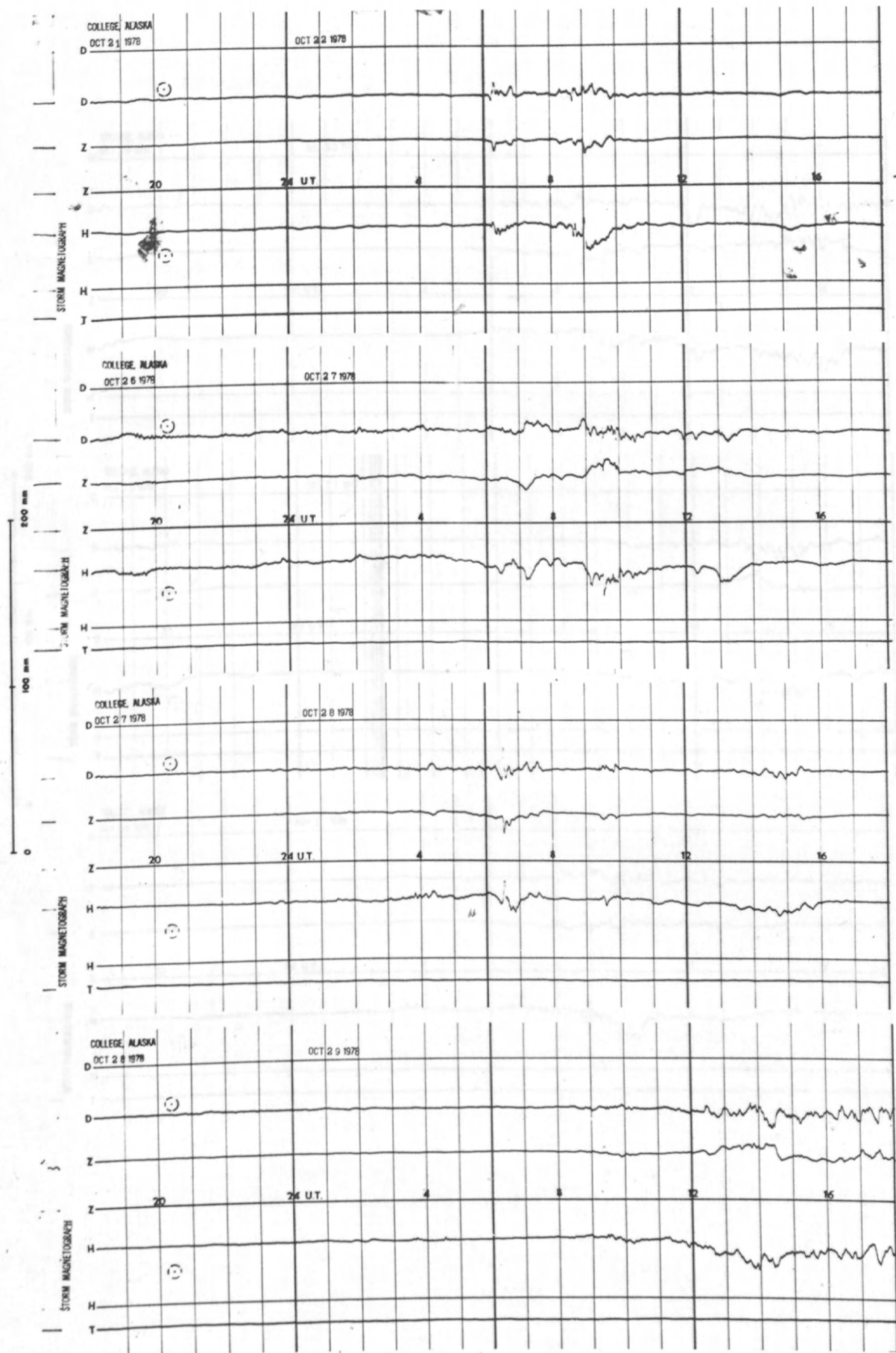


STORM MAGNETOGRAMS

200 nm
100 nm
0



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS

