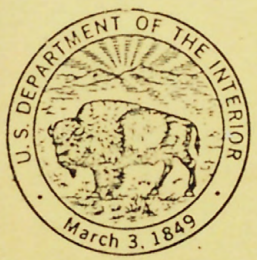
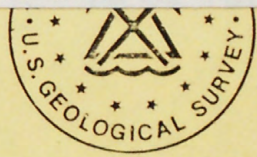
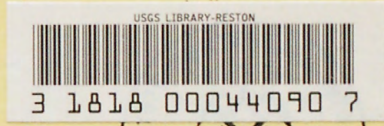


80-300-I



GEOLOGICAL SURVEY

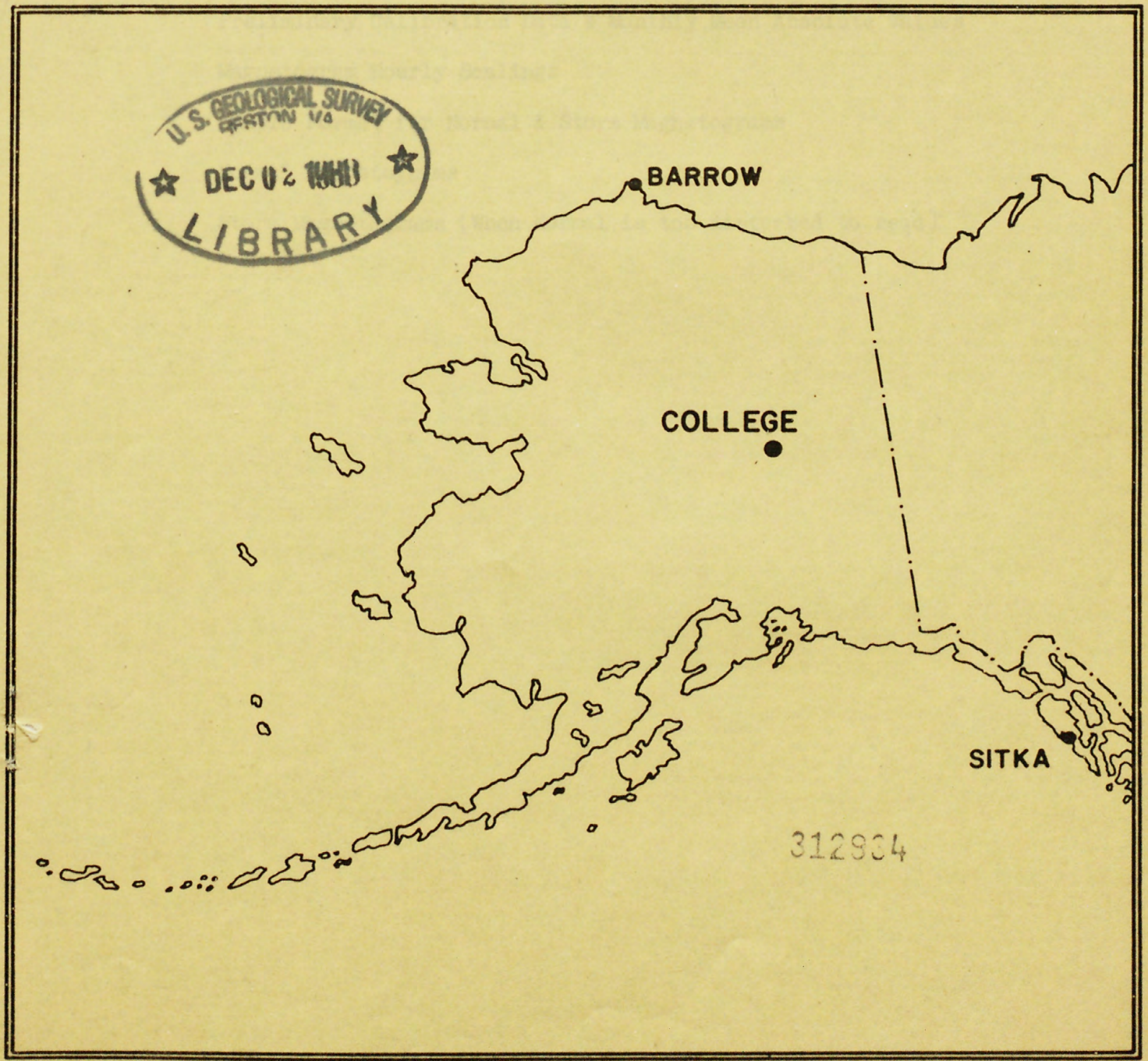


PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA

SEPTEMBER 1980

OPEN FILE REPORT

80-3001



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Explanation of Data & Reports

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Preliminary Calibration Data & Monthly Mean Absolute Values

Magnetogram Hourly Scalings

Sample Format for Normal & Storm Magnetograms

Normal Magnetograms

Storm Magnetograms (When Normal is too disturbed to read)

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, E.A. SAUTER, 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°51.6'N
Geographic longitude.....147°50.2'W
Geomagnetic latitude.....+64.6°
Geomagnetic longitude.....+256.5°
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 ≈ 11	0
11 ≈ 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.

MAGNETIC ACTIVITY

(Greenwich civil time, counted from midnight to midnight)

MONTH AND YEAR

SEPTEMBER 1980

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	3	2	3	0	0	0	0	0	08	05	SUDDEN COMMENCEMENTS d h m
2	1	1	0	0	2	0	0	0	04	02	
3	1	0	0	1	3	5	5	3	18	17	
4	3	3	2	3	3	1	1	1	17	10	
5	1	4	4	4	3	5	4	2	27	23	
6	2	2	2	1	2	3	1	1	14	07	
7	2	2	1	4	1	2	1	2	15	08	
8	2	1	1	4	2	2	1	1	14	08	
9	1	1	2	3	4	3	1	1	16	10	
10	2	1	0	0	0	1	1	1	06	02	
11	1	1	0	3	3	3	1	0	12	07	
12	0	4	5	4	4	6	2	3	28	29	
13	3	4	4	6	6	4	2	1	28	27	
14	2	2	1	2	1	1	0	2	11	05	
15	2	2	2	4	4	3	2	1	20	13	
16	0	2	3	3	1	0	3	2	14	08	
17	2	1	4	5	5	3	1	2	23	20	
18	1	1	4	2	0	1	1	1	11	06	
19	1	0	0	4	4	1	1	1	12	08	
20	3	2	1	0	1	2	0	0	09	04	
21	0	0	0	0	0	0	0	0	00	00	
22	0	0	3	4	5	3	1	0	16	14	
23	1	0	0	4	1	0	1	0	07	05	
24	0	0	2	2	0	0	0	0	04	02	
25	1	2	3	3	1	2	0	0	12	06	
26	0	0	2	4	3	0	0	0	09	06	
27	0	0	0	1	1	1	1	1	05	02	
28	1	0	0	0	4	3	0	1	09	06	
29	1	0	1	0	0	2	2	1	07	03	
30	2	1	0	0	0	0	1	0	04	02	
31											

POSSIBLE SOLAR-FLARE
EFFECTS BASED ON
INSPECTION OF GRAMS
ALONE (WITHOUT
REFERENCE TO DATA
FROM OTHER SOURCES)

BEGIN

END

d h m

d h m

K SCALE USED:

LOWER LIMIT FOR K = 9.....

CURRENT SCALE VALUE.....

LOWER LIMIT FOR K = 9.....

D

H

Z

683.8

321.7

3.75

7.81

2560

2510

(mm)

(γ /mm)

(to nearest 10 γ)

SCALINGS AND COMPUTATIONS HAVE BEEN CHECKED.

APPROVED JOHN B. TOWNSHEND, CHIEF, COLLEGE OBSERVATORY

OBSERVER IN CHARGE

OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY
COLLEGE, ALASKA

MONTH
SEPTEMBER

YEAR
1980

DATE	TIME U.T.	NATURE OF PHENOMENON ¹	REMARKS
19	1115	Pi 2	
27	0927	Pi 2	
IDENTIFIED BY: JBT			VERIFIED BY: JBT

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

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

Data from Individual Observatories: COLLEGE OBSERVATORY, COLLEGE, ALASKA
SEPTEMBER 1980

Obs. 2 letter IAGA code	Geomag. lat.	Commencement			SC - amplitudes			Max. 3 hr - index K			Ranges			UT End day hr
		day	hr min (UT)	type	D(')	H(γ)	Z(γ)	day (3 hr - period)	K	D(')	H(γ)	Z(γ)		
CO	64.6 N													

NO PRINCIPAL MAGNETIC STORMS FOR SEPTEMBER, 1980.

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T. 9-1-80	2400 U.T. 9-30-80	1.0/MM	3.78/MM	27° 47.1 E
H	0000 U.T. 9-1-80	2400 U.T. 9-30-80	2.88/MM		12772
Z	0000 U.T. 9-1-80	2400 U.T. 9-30-80	7.38/MM		55165

STORM MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T. 9-1-80	2400 U.T. 9-30-80	7.8/MM	29.78/MM	23° 47.3 E
H	0000 U.T. 9-1-80	2400 U.T. 9-30-80	44.08/MM		11534
Z	0000 U.T. 9-1-80	2400 U.T. 9-30-80	48.58/MM		54028

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION	
	FROM	TO	SCALE VALUE	
D				
H				
Z				

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
28° 06.6 E	13015	55379

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: SEP 1, 2, 10, 14, 20, 21, 24, 27, 29, 30

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geologic Division
Denver Federal Center
DENVER, CO 80225OBSY. YEAR MONTH ELEMENT
CO 80 SEP DValues are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (1500M.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	Pen	Ill.	01	02	03	04	05	06	07	08	09	10	11	12	Ill.	13	14	15	16	17	18	19	20	21	22	23	24	SUM	
				01	128	118	104	138	141	118	231	172	164	178	191	199	01	208	207	231	260	290	303	294	268	251	219	181	151	4745
				02	151	140	130	160	151	159	168	170	171	180	191	189	02	232	227	249	278	301	303	304*	289	261	198	158	141	4901
				03	141	142	160	154	157	163	170	170	168	177	191	187	03	200	222	242	342	400*	510*	373	228	169	149	106	135	5056
				04	110	79	106	109	109	72	167	172	117	140	151	178	04	201	241	239	264	299	373	303	279	213	121	90	97	4230
				05	88	81	92	100	97	92	-39	106	162	158	176	264	05	222	242	285	331	384*	407*	218	218	82	-3	-7	62	3818
				06	98	138	164	178	184	153	151	171	172	199	199	197	06	201	211	224	289	320	315	280	236	199	173	157	138	4747
				07	92	128	152	177	198	200	198	185	172	191	153	202	07	199	181	188	226	280	338	316	228	167	116	148	149	4584
				08	143	138	164	191	197	191	181	177	173	231	221	186	08	191	199	240	291	308	308	293	271	249	182	143	147	5015
				09	153	159	180	169	170	170	249	250	211	164	195	226	09	226	232	259	272	351	287	271	278	251	208	141	121	5193
				10	94	128	147	168	187	187	186	183	187	186	185	188	10	199	199	221	257	269	299	297	250	221	190	157	150	4735
				11	131	140	139	150	170	180	163	163	170	160	190	218	11	248	244	245	262	336	290	249	226	191	158	149	138	4710
				12	130	122	127	129	125	70	3*	35*	19*	64	160	183	12	288	210	260	463*	590*	343	286	244	186	181	180	171	4569
				13	158	146	122	150	19*	3*	20	65	128	51*	84	150	13	170*	240	204	310	282	332	325	290	188	175	148	149	3909
				14	151	122	134	118	141	171	160	178	170	150	157	184	14	209	221	250	262	283	280	275	258	249	216	223	151	4713
				15	131	180	171	171	158	140	151	171	154	168	180	225	15	196	265	285	290	303	290	237	203	222	172	165	178	4806
				16	169	159	159	137	149	123	84	119	129	148	198	210	16	212	222	230	247	267	285	289	328	209	162	170	165	4570
				17	141	140	124	160	170	151	169	150	187	107	193	233*	17	308	256	288	278	264	254	249	214	220	238	172	178	4844
				18	170	165	165	164	160	149	151	132	202	170	189	199	18	213	220	226	240	251	258	241	222	201	182	189	180	4639
				19	175	160	175	169	171	168	177	176	182	189	190	216	19	351	290	240	249	258	270	239	230	228	210	181	169	5063
				20	160	118	110	98	79	130	151	160	165	180	190	199	20	218	220	230	245	299	289	287	249	229	181	169	158	4514
				21	170	169	170	169	170	172	171	169	171	169	180	189	21	200	211	230	239	255	261	276	261	230	198	171	171	4772
				22	173	169	158	148	155	149	139	140	142	139	68	197	22	213	201	324	267	261	277	273	232	203	158	147	151	4484
				23	148	161	173	173	176	171	171	172	175	171	199	157	23	223	225	224	250	267	270	268	252	218	181	140	125	4690
				24	151	161	161	170	174	175	169	167	201	179	189	197	24	197	198	201	216	240	241	234	249	216	199	168	151	4604
				25	158	138	131	150	153	131	156	162	134	169	201	231	25	206	200	209	210	251	267	247	201	181	169	157	160	4372
				26	159	170	167	160	167	159	155	138	151	156	184	212	26	238	231	240	254	259	262	247	221	217	207	194	190	4738
				27	181	173	161	159	160	169	162	164	165	171	195	206	27	210	239	231	240	258	251	269	228	190	205	185	175	4745
				28	169	148	161	150	160	162	158	154	148	159	189	200	28	209	210	306	339	289	308	309	265	235	236	161	160	4985
				29	160	140	141	140	143	149	138	134	160	179	194	200	29	210	229	230	245	277	290	270	262	200	202	189	160	4642
				30	159	125	130	155	148	162	163	160	172	180	198	200	30	260	200	205	221	247	264	295	262	289	219	199	182	4795
				31												31														

SCALED BY SPT,EAS
CHECKED BY EAS,SPT,JP
SIGNS RE-VIEWED BY EAS
PUNCHED BY

Preliminary base-line and scale values:
Interval Beginning Base-line Value Scale Value

- Interpolated
 Significant portion of hour interpolated.
 No record; or no values available because of faulty record.

- 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.

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

MONTHLY SUM 140188
MONTHLY MEAN 195
DATES WITH GAPS:

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geologic Division
Denver Federal Center
DENVER, CO 80225OBSY. YEAR MONTH ELEM-
CO 80 SEP IIValues 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	Ten	Hr	01	02	03	04	05	06	07	08	09	10	11	12	Hr	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	267	300	334	311	314	354	353	319	320	311	310	310	01	313	313	317	329	327	319	307	290	271	275	271	279	7414
			02	281	290	319	293	303	313	320	319	319	317	321	334	02	290	307	301	303	309	300	275*	269	251	253	260	273	7120
			03	294	301	299	300	302	310	317	321	327	330	331	330	03	314	321	201	131	-57	-144	-109*	220	266	234	264	311	5714
			04	314	330	394	393	361	435	411	393	417	374	328	287	04	291	220	216	261	250	259	269	259	238	249	272	300	7521
			05	312	342	360	381	439	546	593	484	420	371	340	228	05	209	159	144	39	-81*	-149*	98	190	210	241	280	291	6447
			06	319	283	303	301	299	320	309	289	306	306	312	311	06	320	327	320	321	236	319	303	279	270	260	280	310	7203
			07	294	276	297	313	299	303	300	304	310	287	201	333	07	323	323	313	309	293	233	231	221	238	259	290	309	6859
			08	307	349	329	297	300	309	310	310	309	184	169	307	08	284	309	288	241	280	280	277	269	259	267	274	291	6799
			09	303	317	301	304	306	321	301	309	316	320	311	240	09	274	275	71	136	179	229	261	271	257	249	254	261	6366
			10	289	298	302	291	299	304	307	301	300	304	310	313	10	319	319	309	301	279	270	278	260	246	250	270	289	7008
			11	298	296	300	300	320	313	310	320	318	320	291	253	11	238	261	251	236	145	263	272	270	277	290	292	291	6725
			12	296	302	310	322	345	416	519	200	227	323	256	224	12	168	142	189	-279*	-137*	136	282	260	259	252	314	326	5652
			13	345	438	482	506	655	610	515	492	420	276	280	181	13	-98*	73	150	172	303	359	310	268	287	289	285	301	7899
			14	295	343	320	330	340	291	290	280	299	362	363	335	14	310	311	300	305	293	291	280	271	272	280	273	243	7277
			15	299	249	261	270	301	324	377	328	330	320	256	100	15	145	217	272	246	229	227	260	261	249	256	286	292	6355
			16	290	287	281	310	306	325	378	390	441	414	329	285	16	303	305	303	308	300	290	280	261	249	254	272	263	7424
			17	280	297	298	291	300	314	319	352	433	238	141	135	17	46	258	131	260	240	281	278	280	285	283	271	299	6310
			18	280	282	287	297	311	317	323	390	342	378	325	310	18	301	300	300	289	288	272	282	290	291	289	293	287	7324
			19	289	290	281	289	299	309	301	305	306	309	313	146	19	86	209	288	279	280	292	291	279	287	279	273	281	6561
			20	288	325	311	342	348	329	319	325	325	317	313	312	20	310	307	290	280	273	298	281	280	282	290	289	281	7315
			21	280	279	284	296	205	304	301	309	310	311	311	311	21	309	307	300	293	300	300	287	281	285	289	300	303	7155
			22	296	296	300	305	301	314	330	396	409	389	304	333	22	334	269	-54*	189	271	253	290	289	277	281	283	276	6951
			23	300	289	284	296	300	304	301	309	313	343	221	219	23	329	316	321	319	310	300	290	283	283	266	276	286	7361
			24	289	297	301	303	309	309	311	318	319	303	319	312	24	318	313	310	306	299	294	291	284	279	277	288	297	7246
			25	280	299	292	322	321	319	319	348	347	311	311	307	25	310	296	289	256	229	279	284	270	273	269	277	279	7087
			26	290	281	283	288	300	309	325	356	379	289	219	156	26	279	311	290	289	300	301	281	270	272	273	274	281	6896
			27	285	283	290	300	301	300	311	312	320	322	311	318	27	311	327	324	318	309	301	276	270	278	278	279	270	7194
			28	285	300	297	309	311	319	331	333	329	322	321	322	28	315	287	171	249	316	300	281	269	275	271	265	280	7058
			29	277	280	289	302	316	320	324	344	346	323	320	316	29	316	311	313	299	297	295	297	279	278	271	276	278	7267
			30	264	293	299	279	302	305	319	325	317	310	303	306	30	308	308	304	302	300	295	279	272	270	279	280	276	7095
			31												31														

SCALED BY SPT, EAS	Preliminary base-line and scale values: Interval Base-line Scale Beginning Value Value	<input type="checkbox"/> Interpolated <input type="checkbox"/> Significant portion of hour interpolated. <input type="checkbox"/> No record; or no values available because of faulty record. * Derived from Storm Mgph., converted to Normal Mgph.	<input type="checkbox"/> 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	208603
CHECKED BY EAS, SPT, JEP				MONTHLY MEAN	290
SIGNS REVIEWED BY EAS				DATES WITH GAPS:	
PUNCHED BY					

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geologic Division
Denver Federal Center
DENVER, CO 80225

OBSY. YEAR MONTH FILE-MENT
CO 87 SEP 7

Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (1500 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 of S	Ten Q	HR	01	02	03	04	05	06	07	08	09	10	11	12	HR	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	297	299	321	321	316	311	361	309	299	300	297	292	01	297	294	297	298	298	292	294	290	285	279	280	281	7228
			02	289	293	300	310	299	290	290	290	290	291	293	290	02	260	264	288	289	290	290	271*	289	289	280	287	281	6903
			03	288	289	292	291	289	290	288	284	284	288	290	281	03	287	267	217	213	271*	304*	197	137	234	298	303	327	6509
			04	337	349	380	327	364	400	405	361	306	311	309	303	04	299	289	246	257	262	237	237	258	263	260	278	295	7333
			05	299	326	349	376	384	359	277	353	331	329	311	260	05	239	260	282	321	376*	241	94	160	227	228	248	301	6931
			06	333	329	319	309	307	294	302	306	301	304	297	294	06	298	297	300	300	253	264	293	297	301	316	318	347	7279
			07	361	368	331	339	330	318	311	309	309	290	239	271	07	281	290	303	301	300	265	210	180	201	241	301	331	6980
			08	347	358	371	353	317	309	311	312	300	181	281	259	08	251	267	293	276	261	261	276	289	294	287	293	307	7054
			09	310	304	317	303	309	310	340	290	283	281	285	169	09	179	217	214	158	125	213	237	259	277	294	301	308	6283
			10	319	334	298	300	294	295	299	297	293	294	290	290	10	291	290	297	296	279	255	268	289	300	301	297	300	7066
			11	300	304	308	311	320	320	300	291	299	294	294	260	11	236	220	242	258	200	201	237	271	283	289	300	311	6649
			12	320	331	347	350	349	346	101	106	118	272	329	384	12	463	376	400	510*	11*	-34	122	217	237	260	310	331	6556
			13	373	376	395	255	203	251	285	300	244	299	387	413	13	610*	334	384	320	247	291	313	300	280	303	303	312	7778
			14	320	314	340	343	362	339	320	319	310	312	291	317	14	310	312	313	320	317	311	314	310	307	301	317	318	7637
			15	324	332	310	309	301	311	335	332	321	324	325	296	15	190	174	230	268	247	203	216	287	313	310	320	326	6904
			16	322	315	310	308	312	311	361	368	329	330	339	310	16	308	309	304	307	308	310	310	310	280	270	286	290	7507
			17	299	305	315	326	312	302	319	310	243	240	349	522*	17	425	290	304	248	268	272	286	283	298	301	301	305	7423
			18	304	298	300	299	299	300	317	310	178	280	335	321	18	310	304	300	299	295	288	272	269	270	279	289	291	7007
			19	291	300	301	296	294	293	299	298	298	299	298	243	19	178	141	215	230	238	254	271	271	271	280	293	311	6463
			20	309	301	310	310	336	242	321	329	323	320	310	300	20	290	290	290	270	260	276	287	283	280	279	286	291	7193
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			22	280	283	289	288	293	291	307	309	267	287	141	291	22	287	279	299	157	201	224	221	263	279	289	296	295	6416
			23	300	303	297	291	290	290	289	290	299	300	293	240	23	251	247	281	293	299	299	299	299	292	292	292	300	6932
			24	307	300	300	299	299	299	303	311	300	224	297	287	24	272	277	283	290	289	281	276	289	287	283	290	289	6932
			25	300	299	308	339	327	328	331	327	257	277	287	271	25	271	269	273	257	221	246	282	289	291	296	300	298	6944
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			29	294	293	296	295	292	299	301	311	321	318	303	291	29	290	281	286	279	280	271	254	266	270	283	281	281	6936
			30	286	290	300	304	299	295	291	301	305	298	292	291	30	289	289	290	296	298	300	302	282	280	281	281	285	7025
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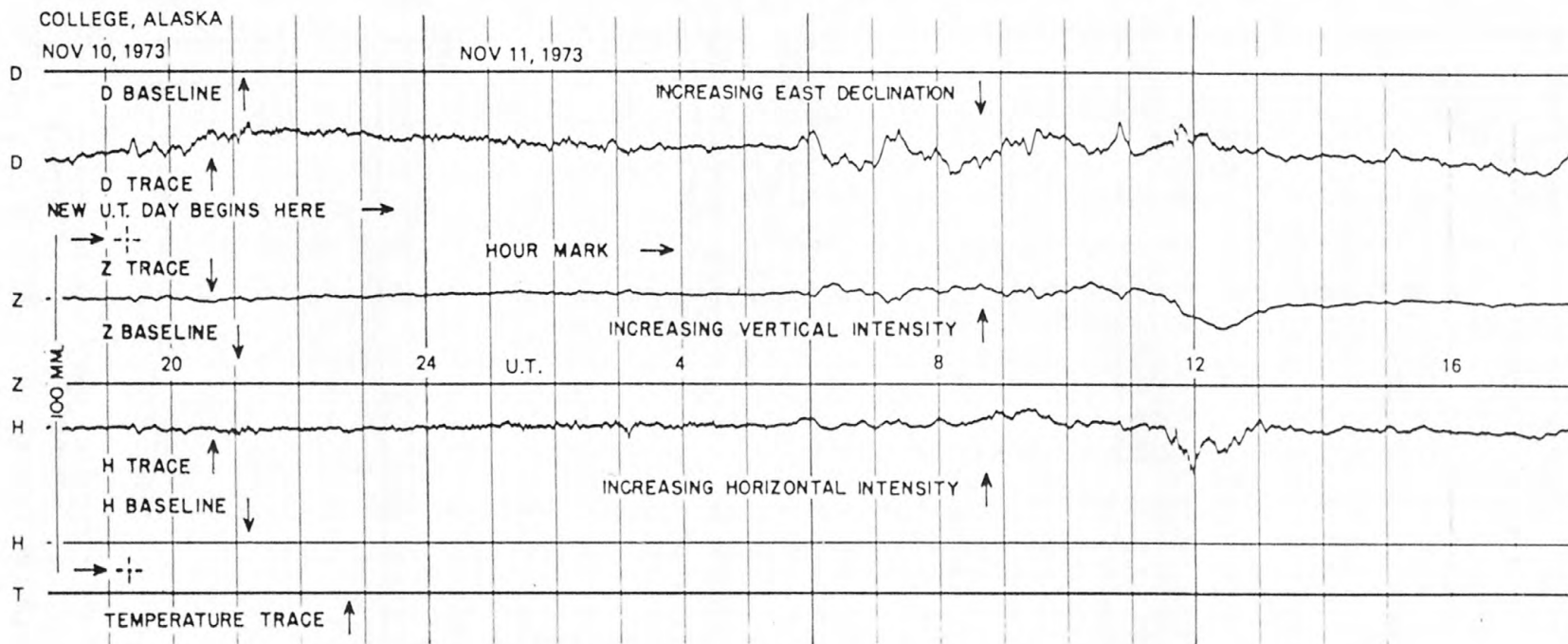
SCALED BY SPT.EAS
CHECKED BY EAS.SPT.JEP
SIGNS RE-VIEWED BY EAS
PUNCHED BY

Preliminary base-line and scale values:
Interval Beginning Base-line Value Scale Value

() Interpolated
 Significant portion of hour interpolated.
 No record; or no values available because of faulty record.
[] 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.
* Derived from STORM Mpph., converted to Normal Mpph.

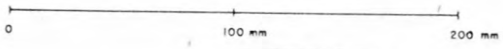
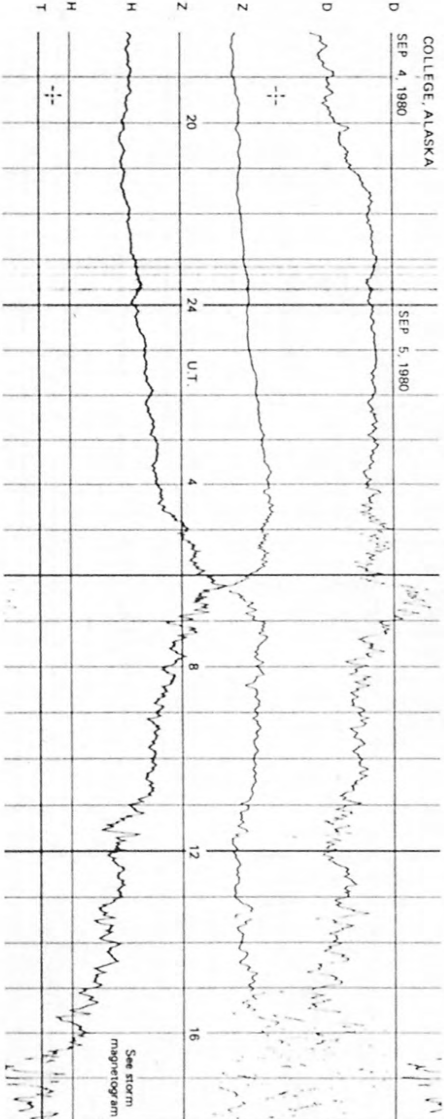
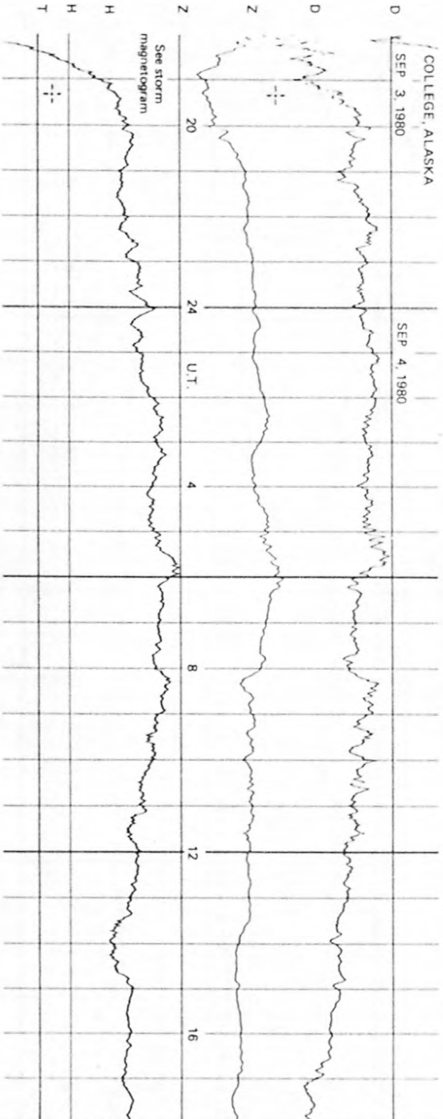
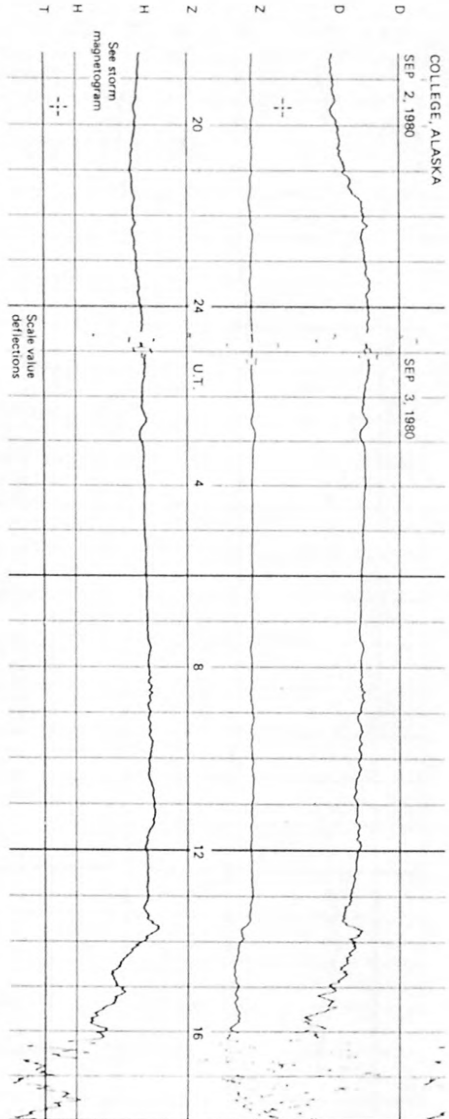
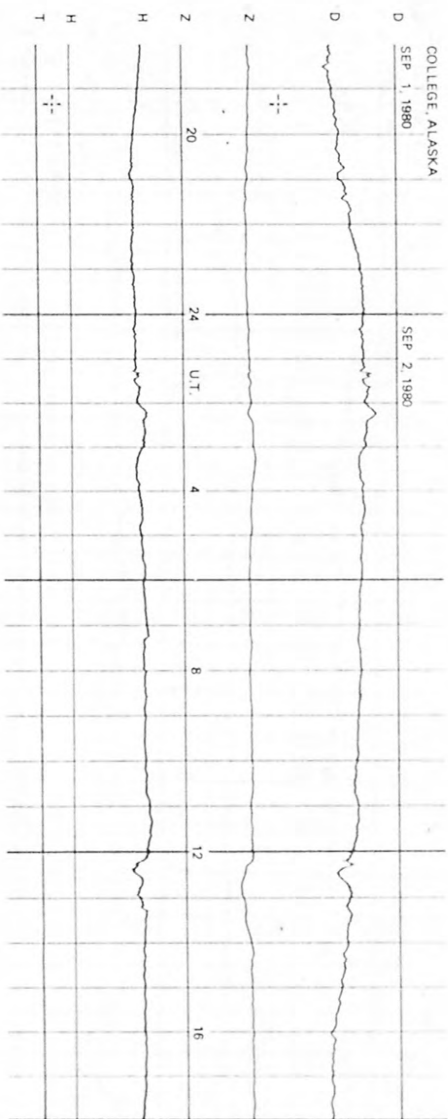
MONTHLY SUM 209155
MONTHLY MEAN 290
DATES WITH GAPS

FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)

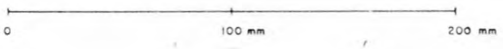
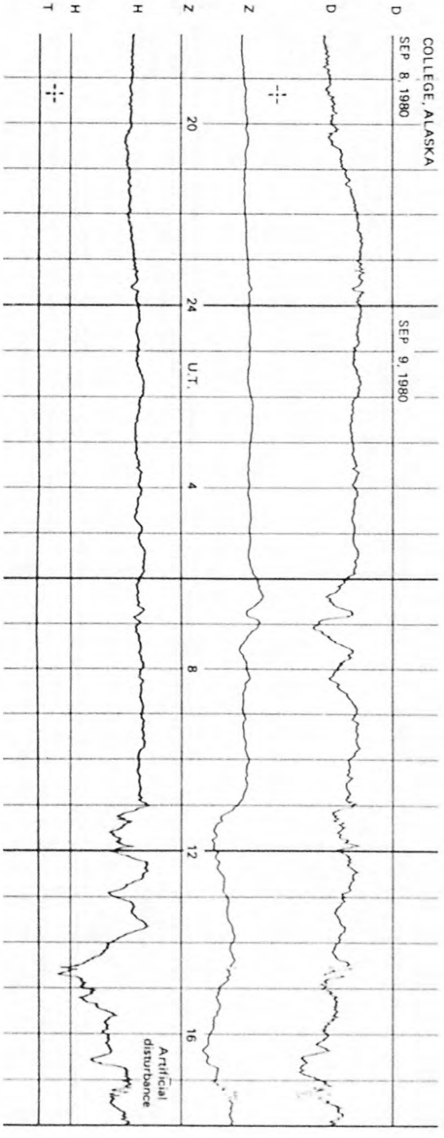
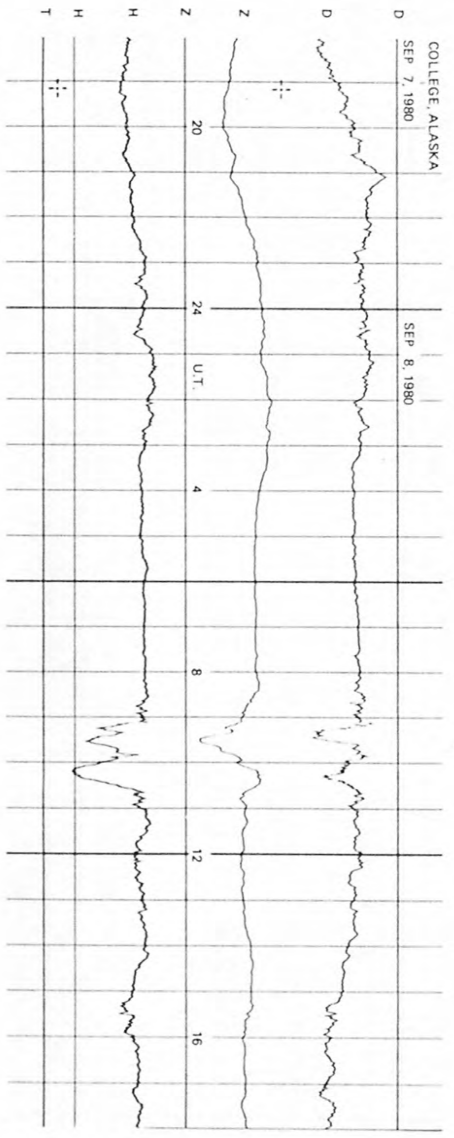
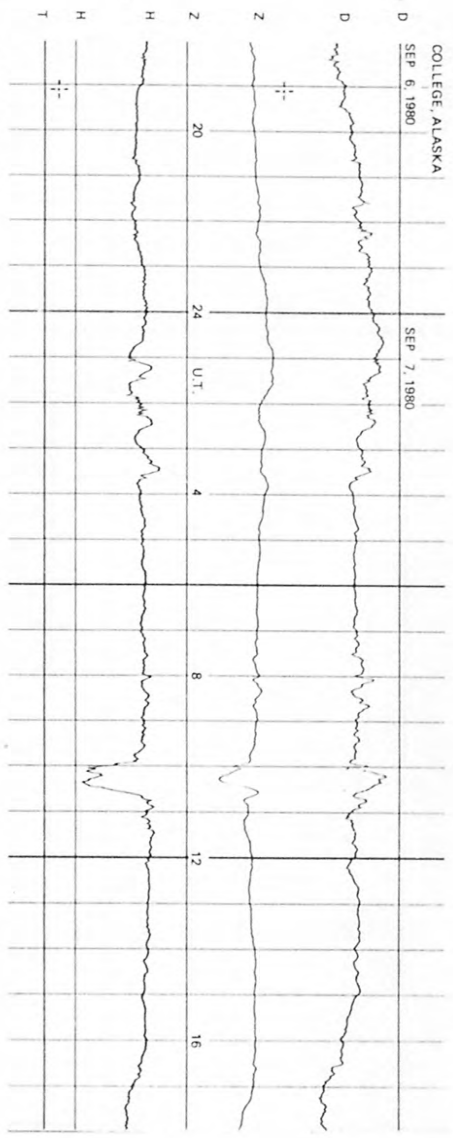
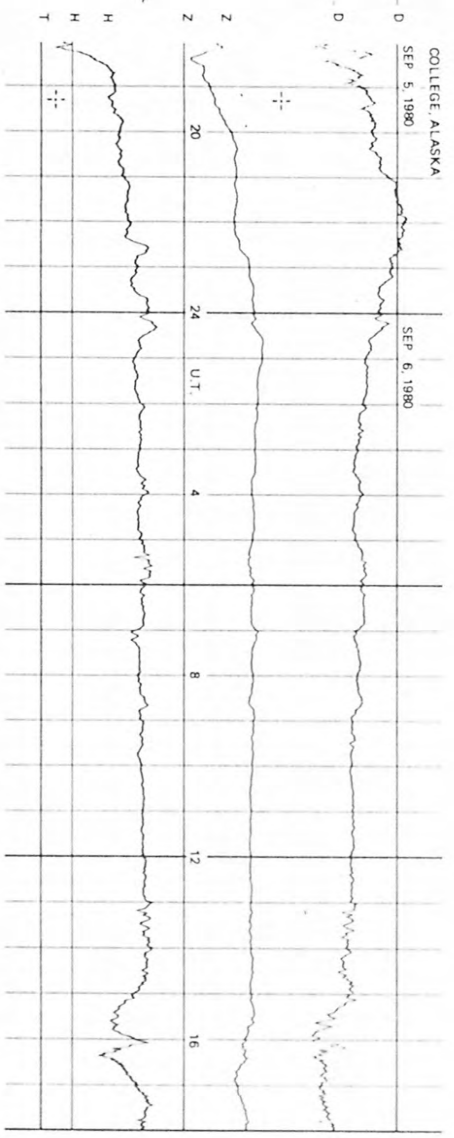


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

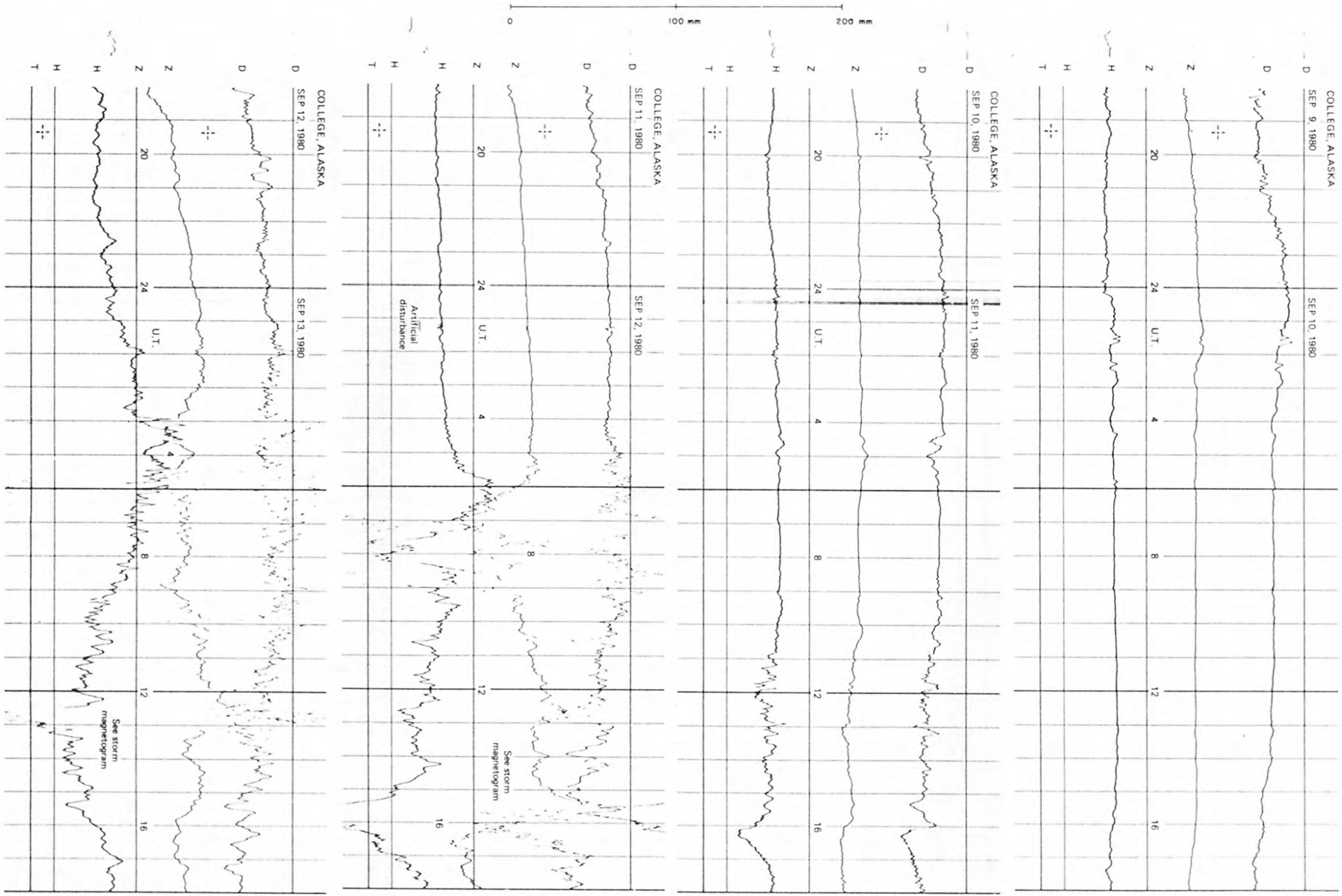
NORMAL MAGNETOGRAMS



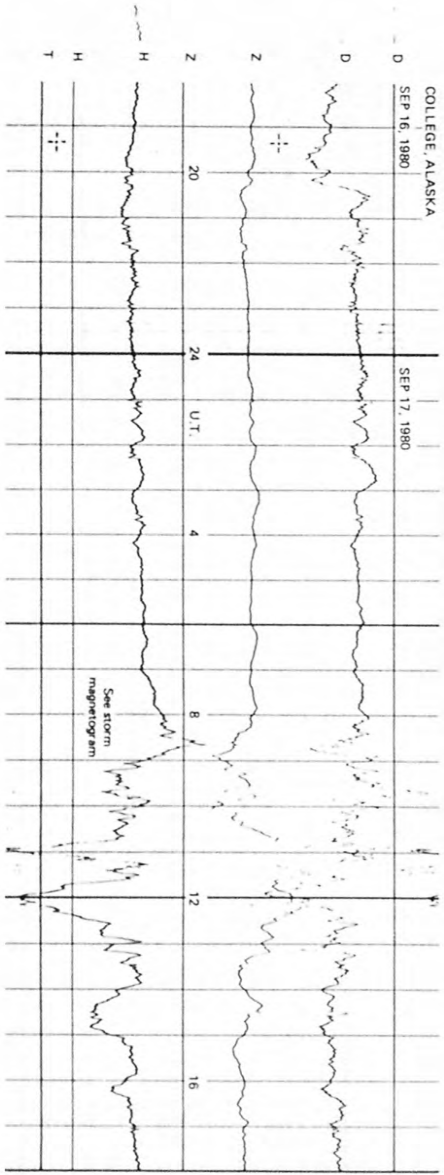
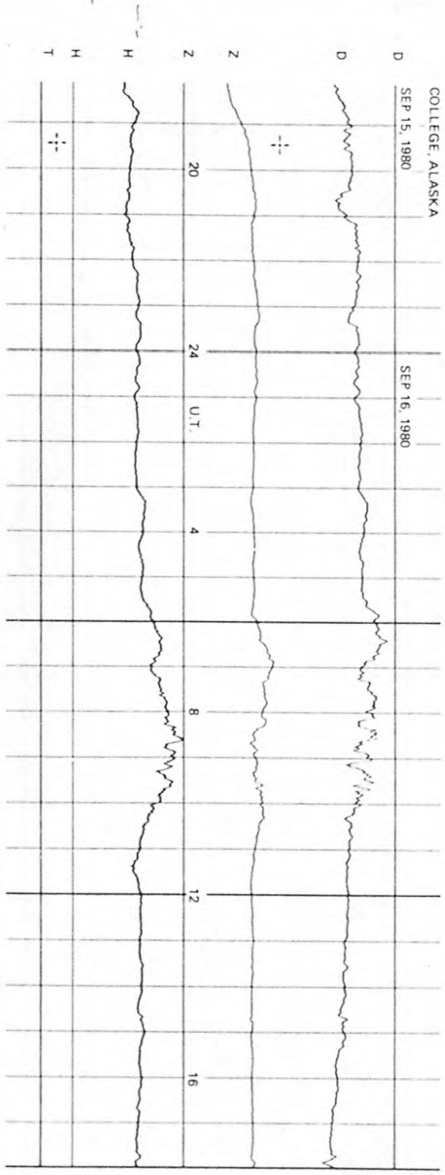
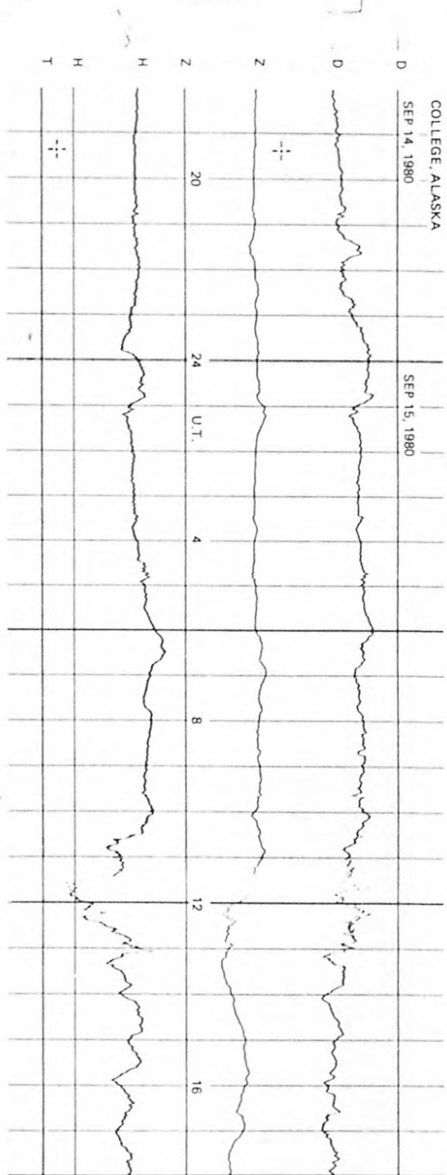
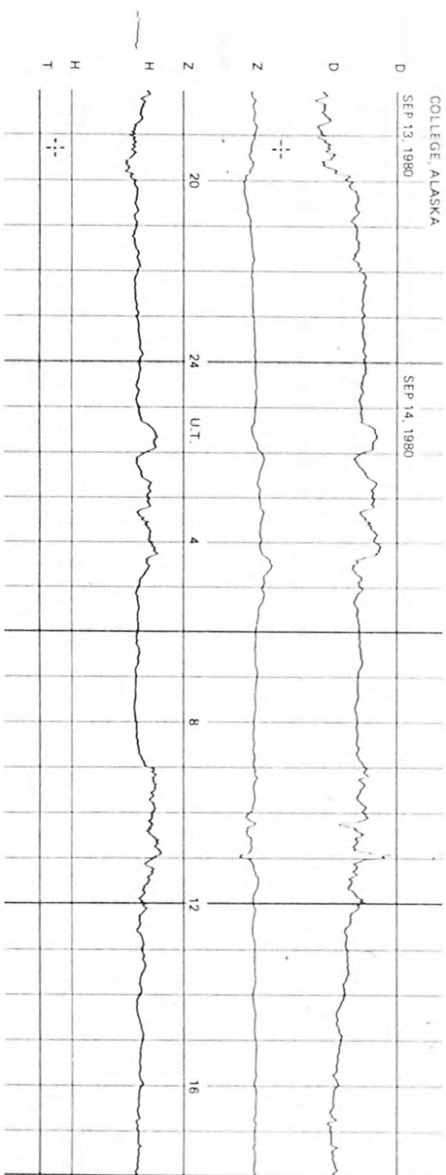
NORMAL MAGNETOGRAMS



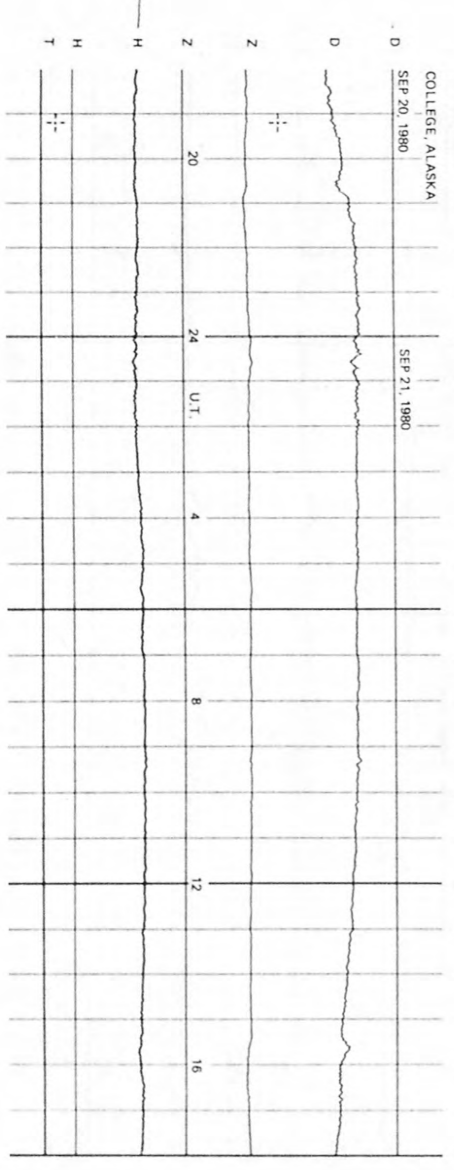
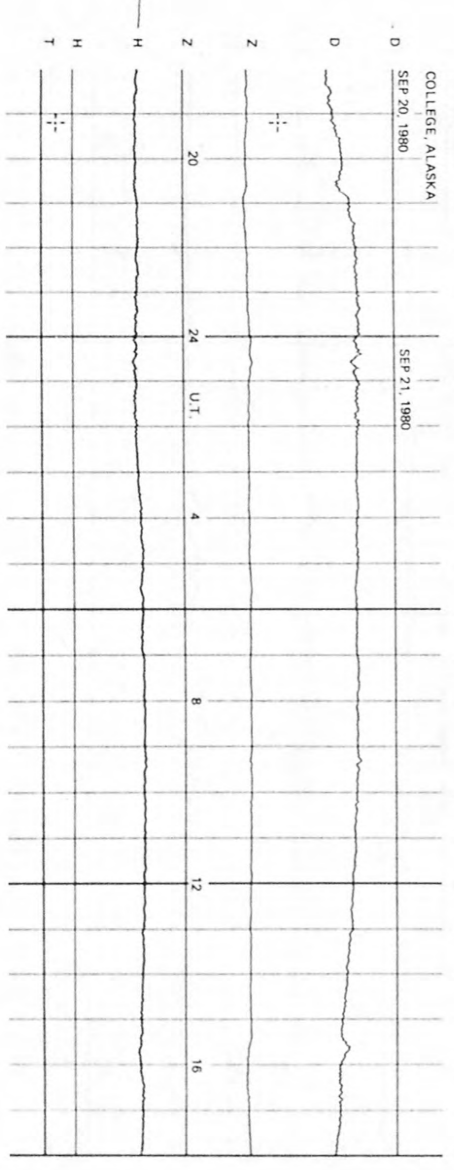
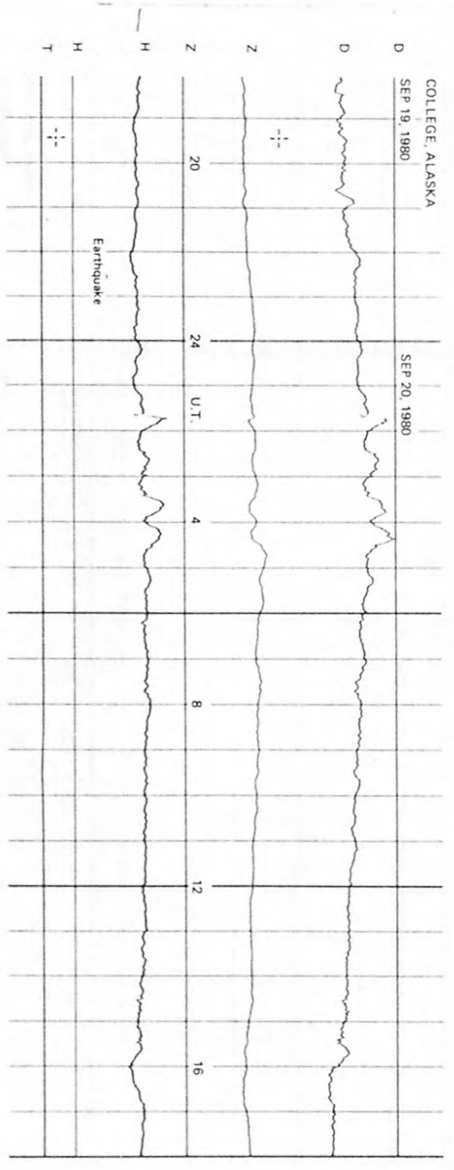
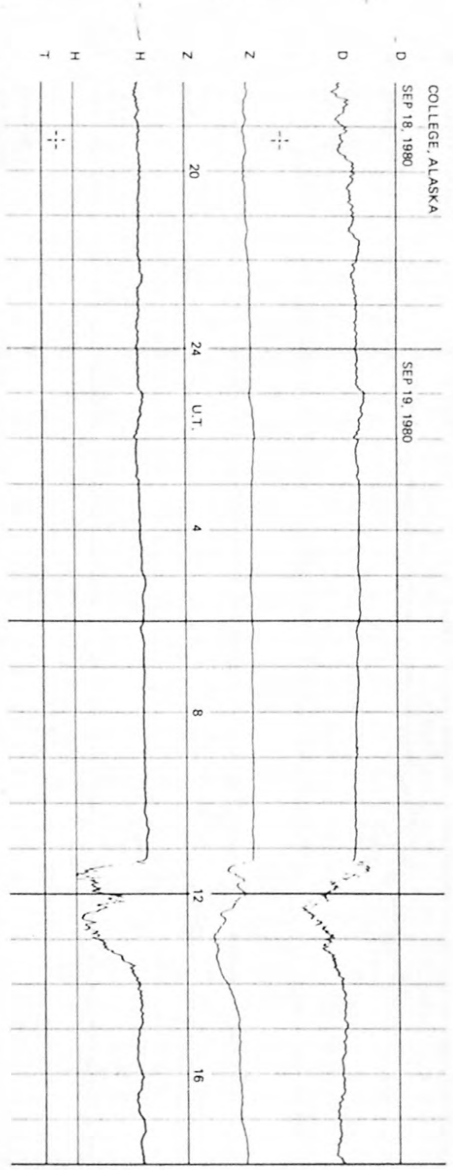
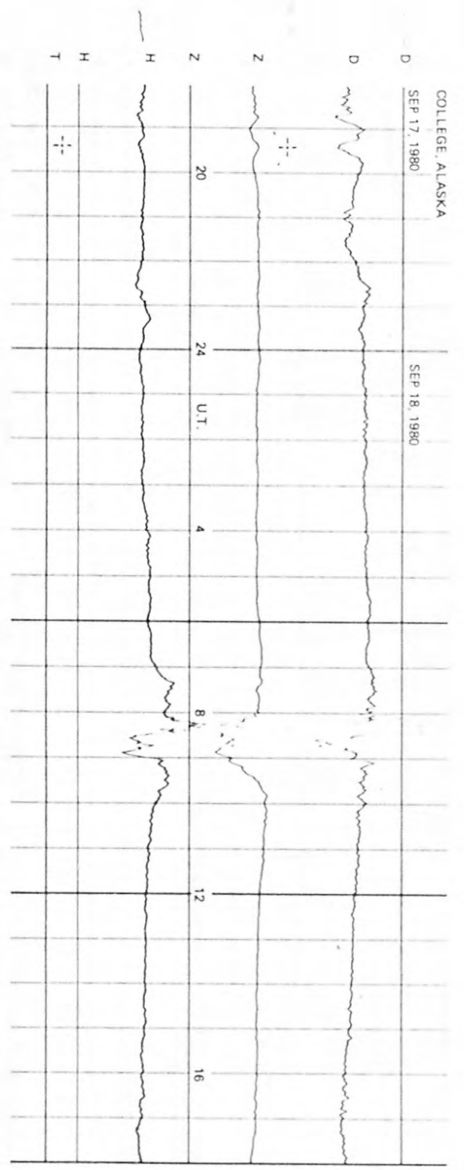
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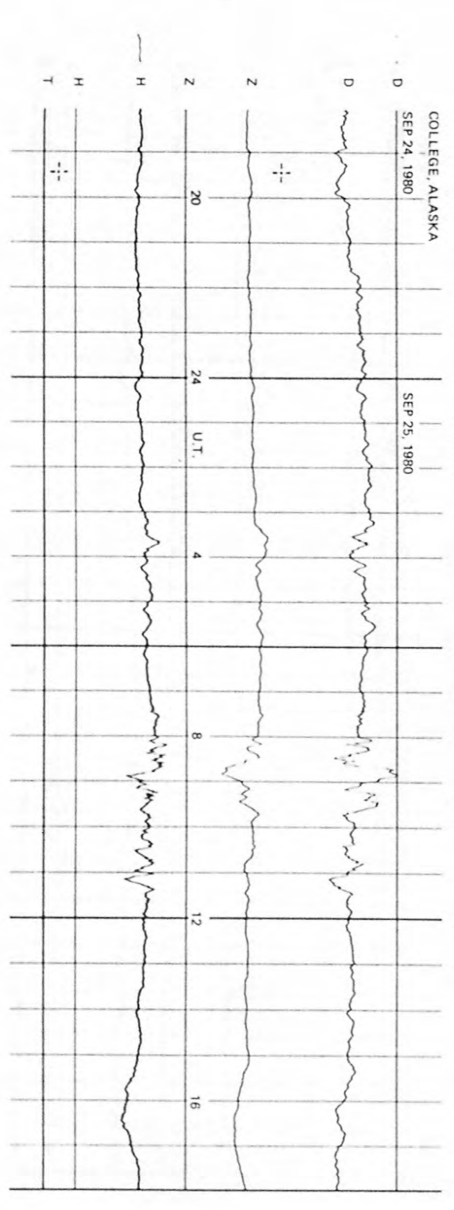
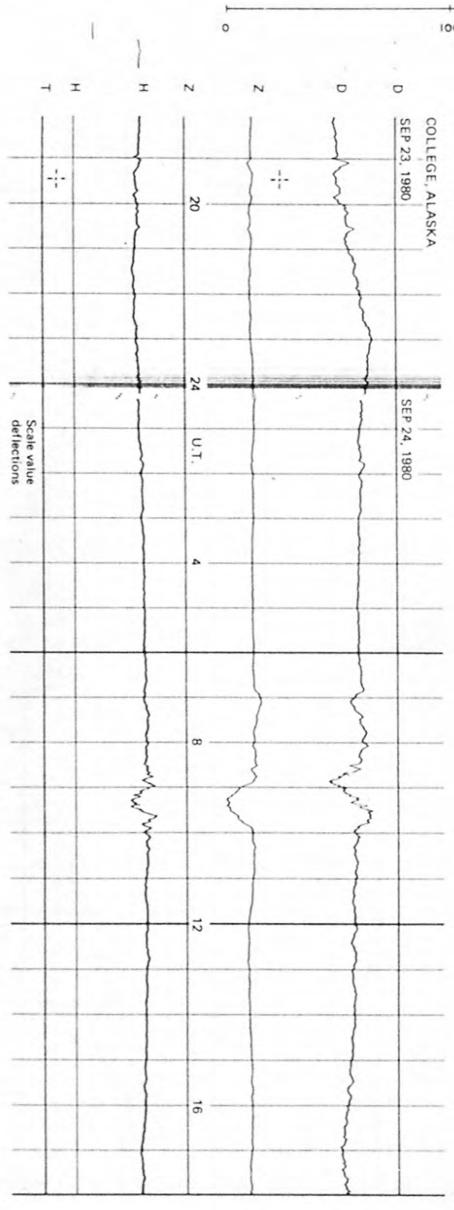
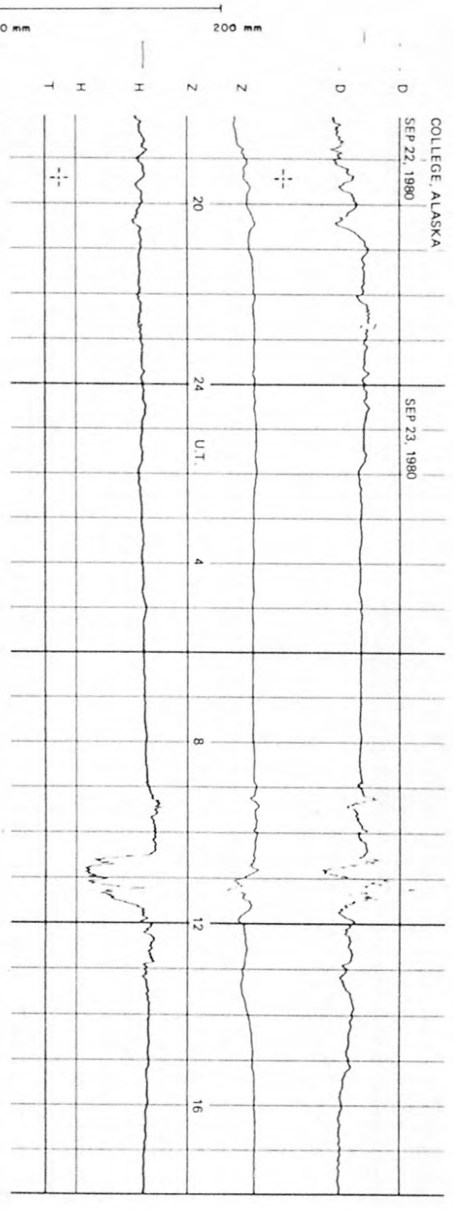
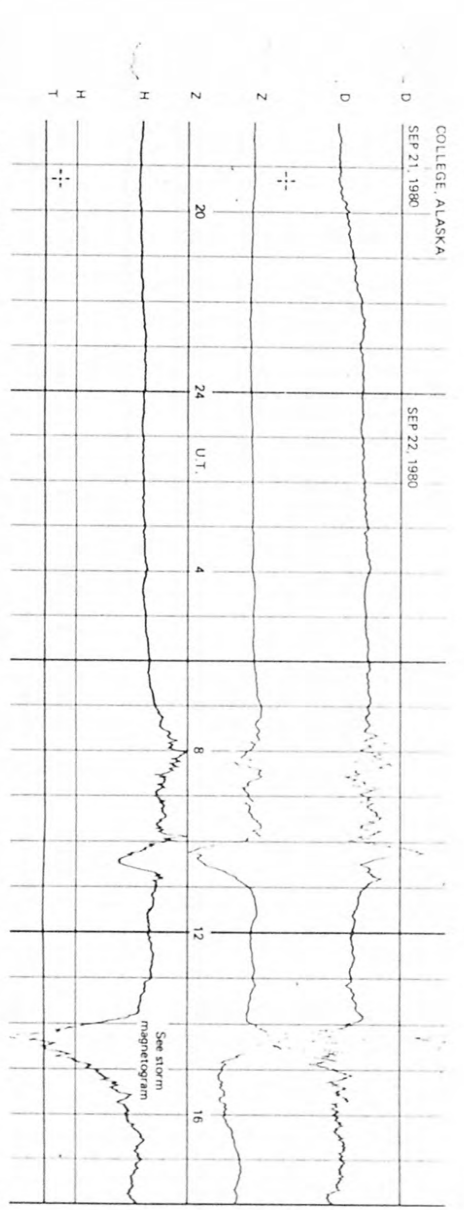
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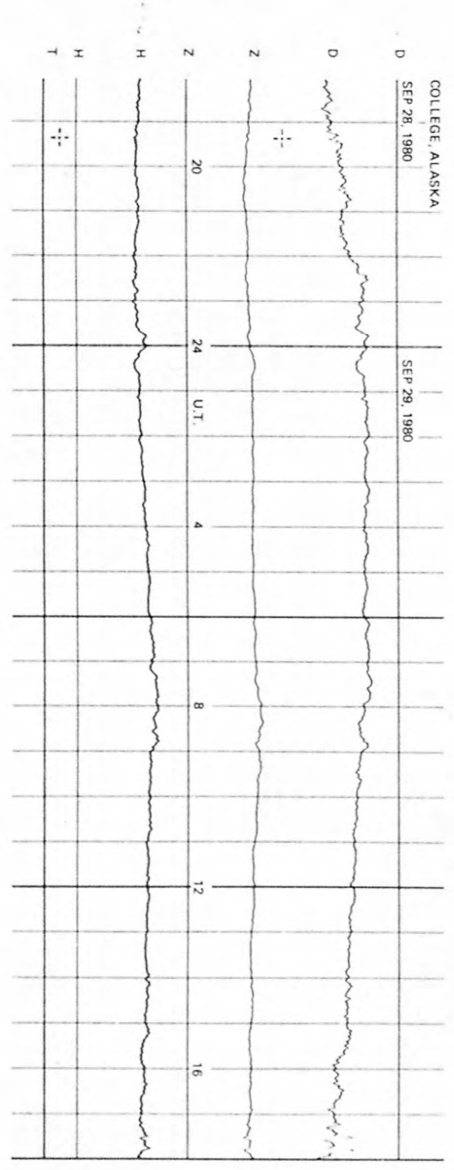
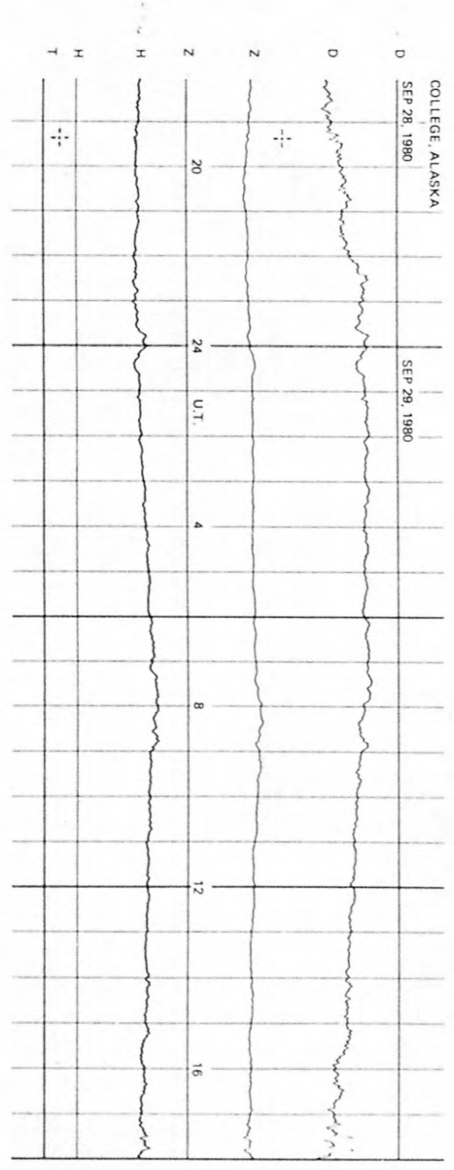
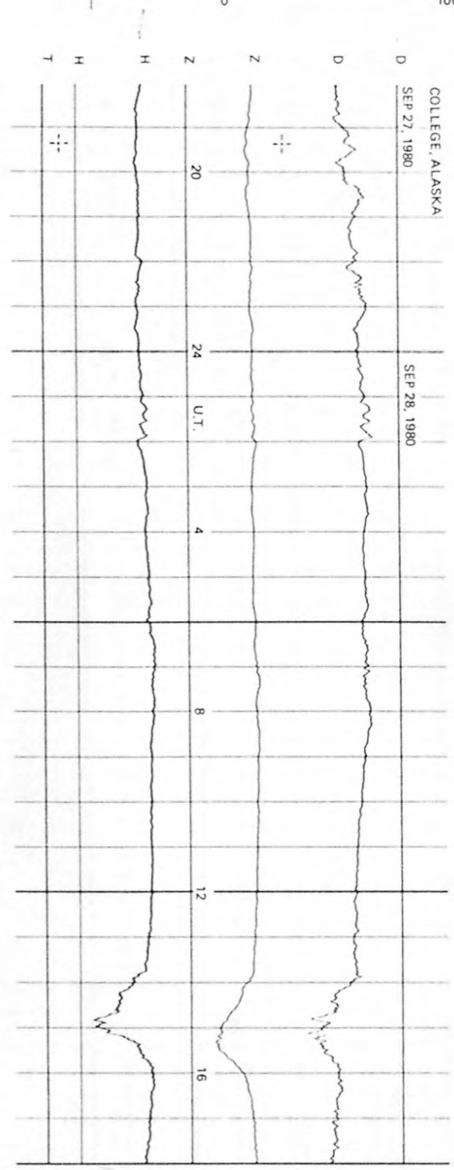
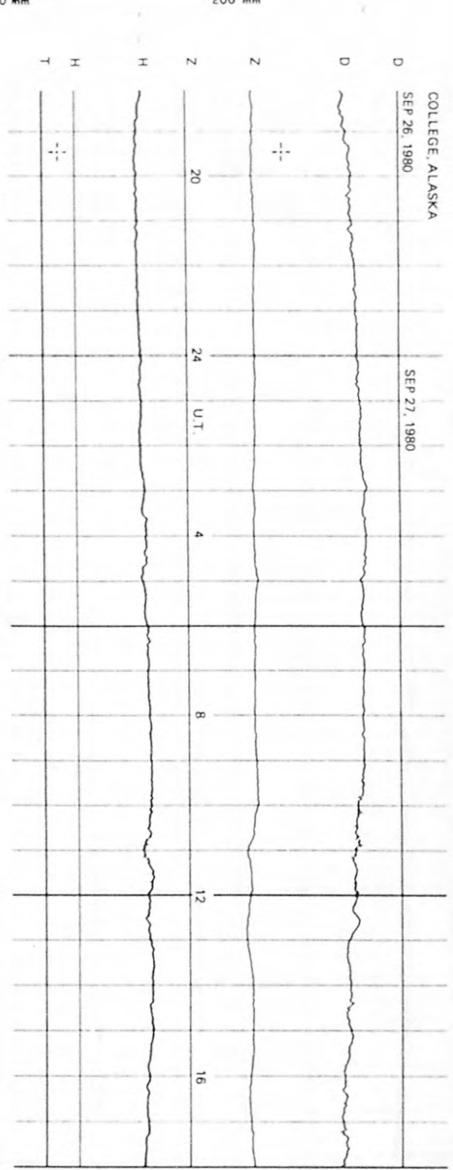
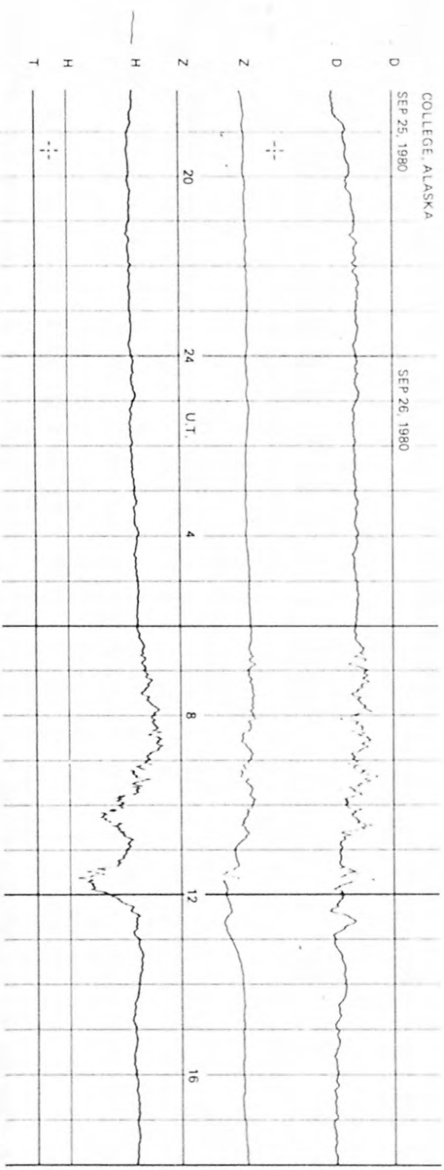
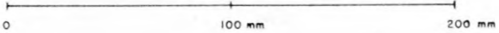
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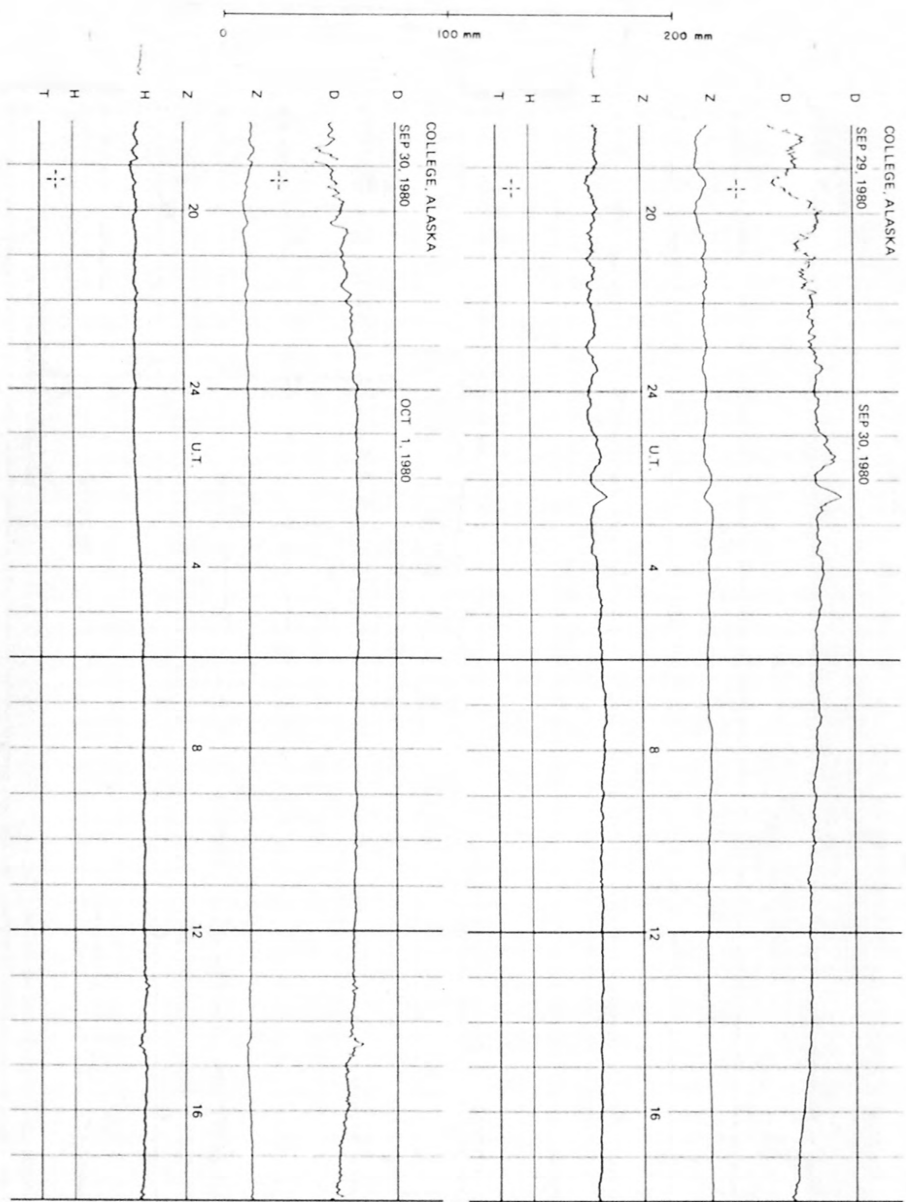
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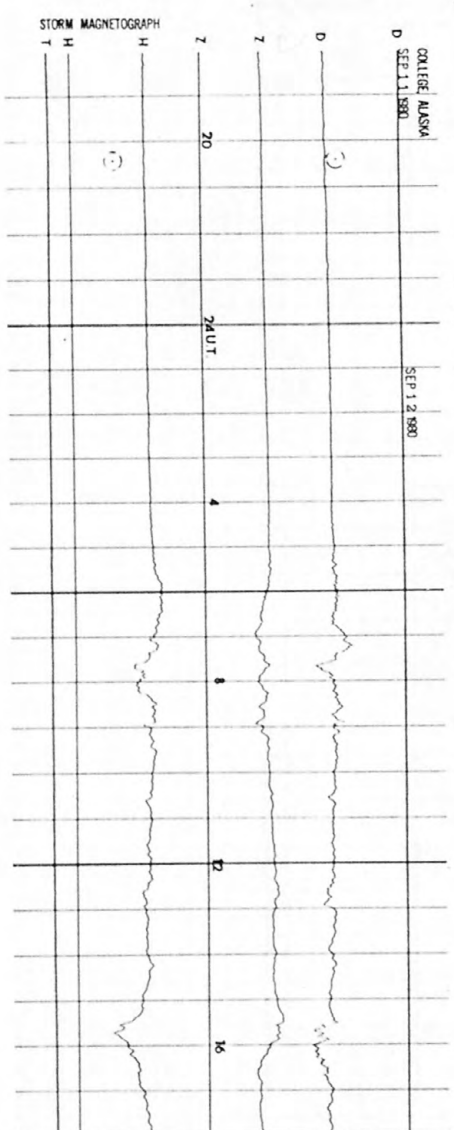
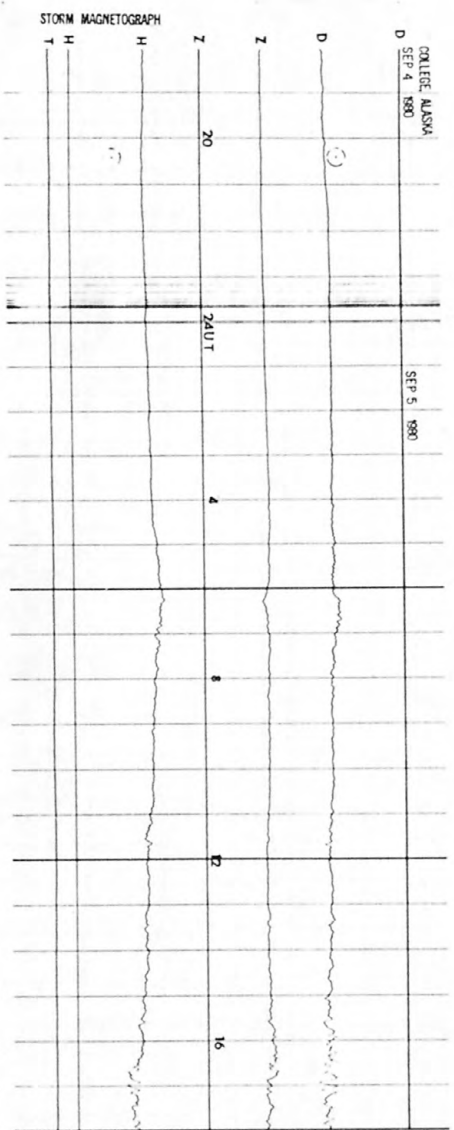
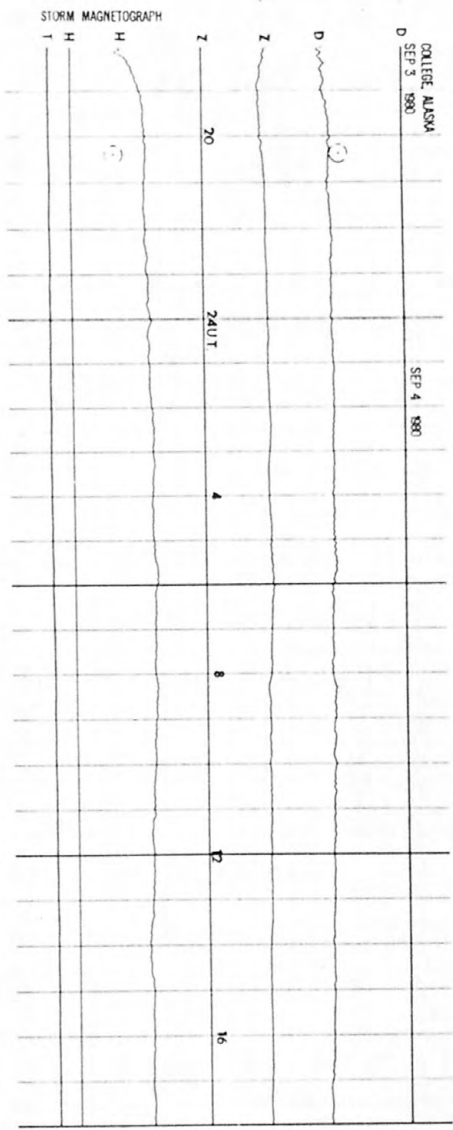
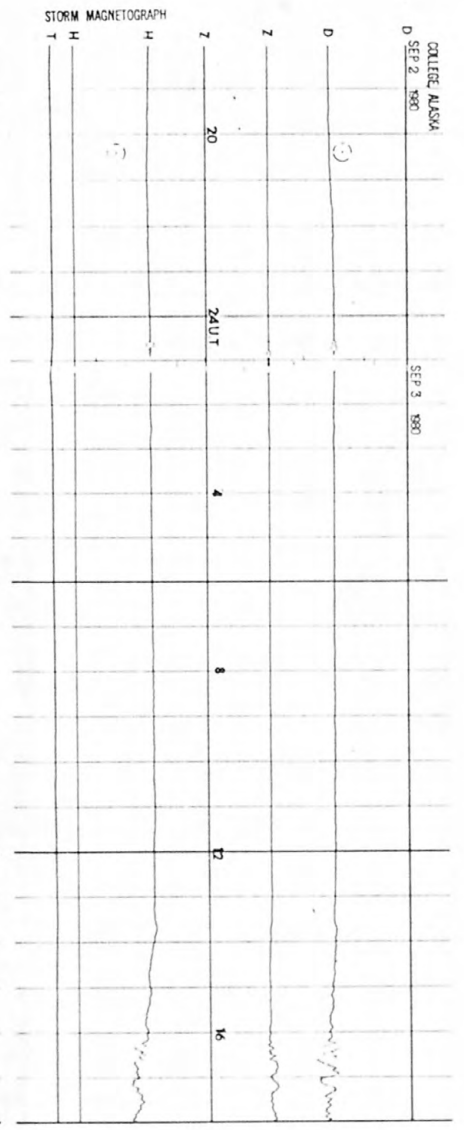
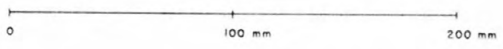
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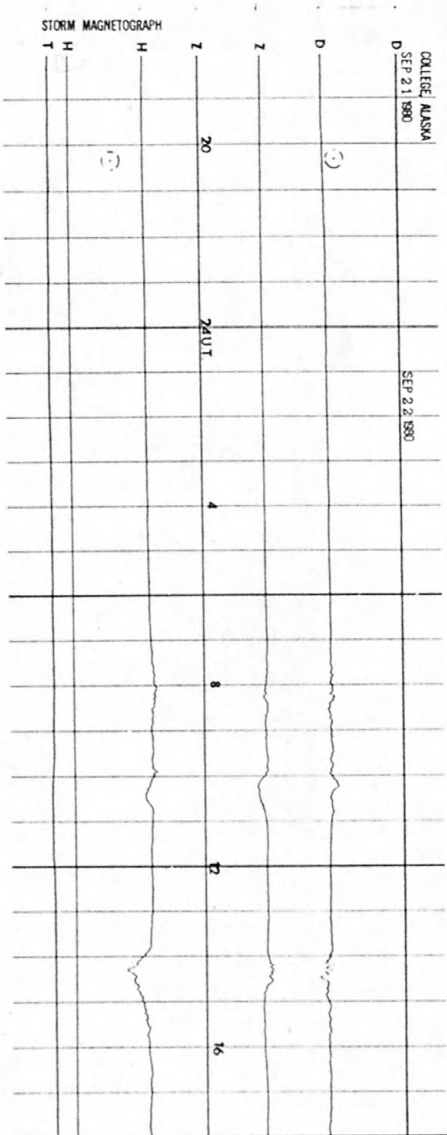
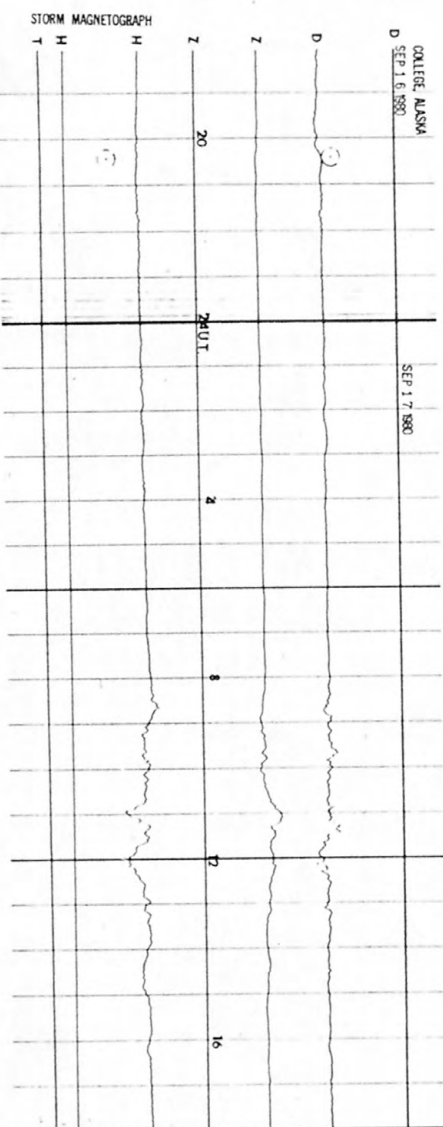
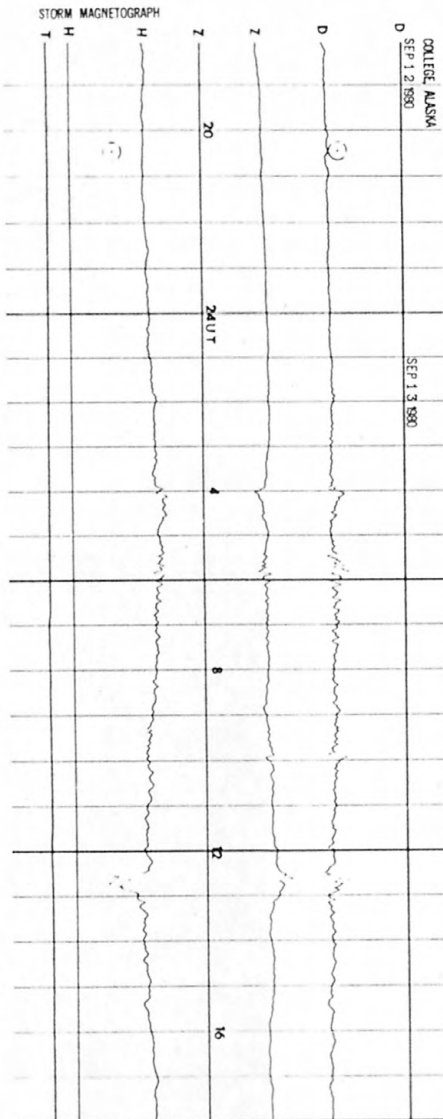
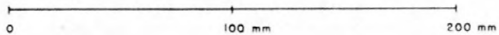
NORMAL MAGNETOGRAMS



STORM MAGNETOGRAMS



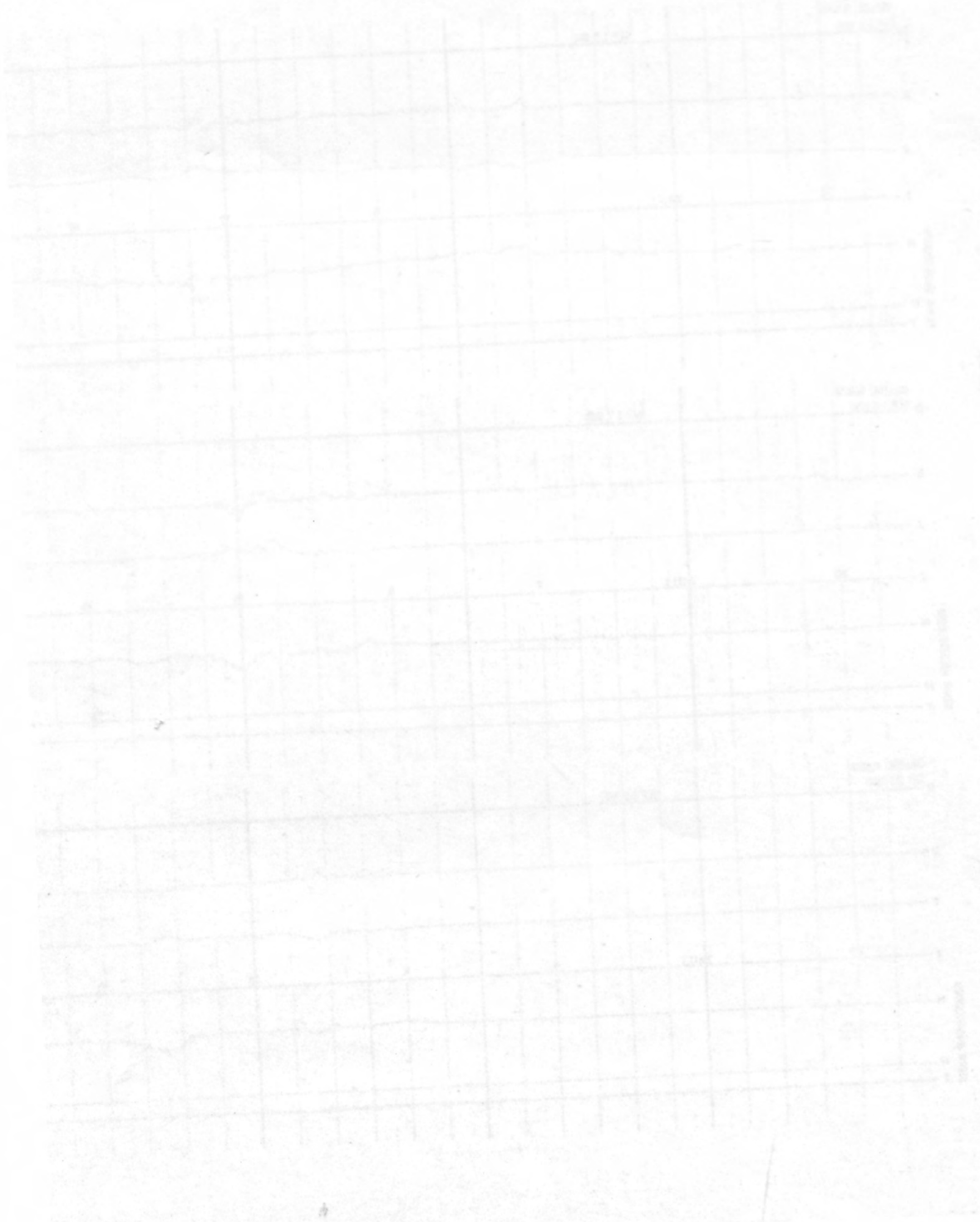
STORM MAGNETOGRAMS



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