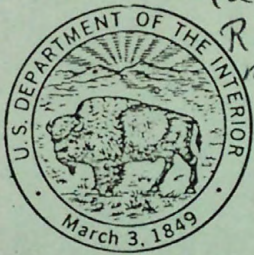


UNITED STATES DEPARTMENT OF THE INTERIOR

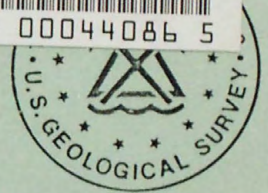


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no. 80-300-E

GEOLOGICAL SURVEY



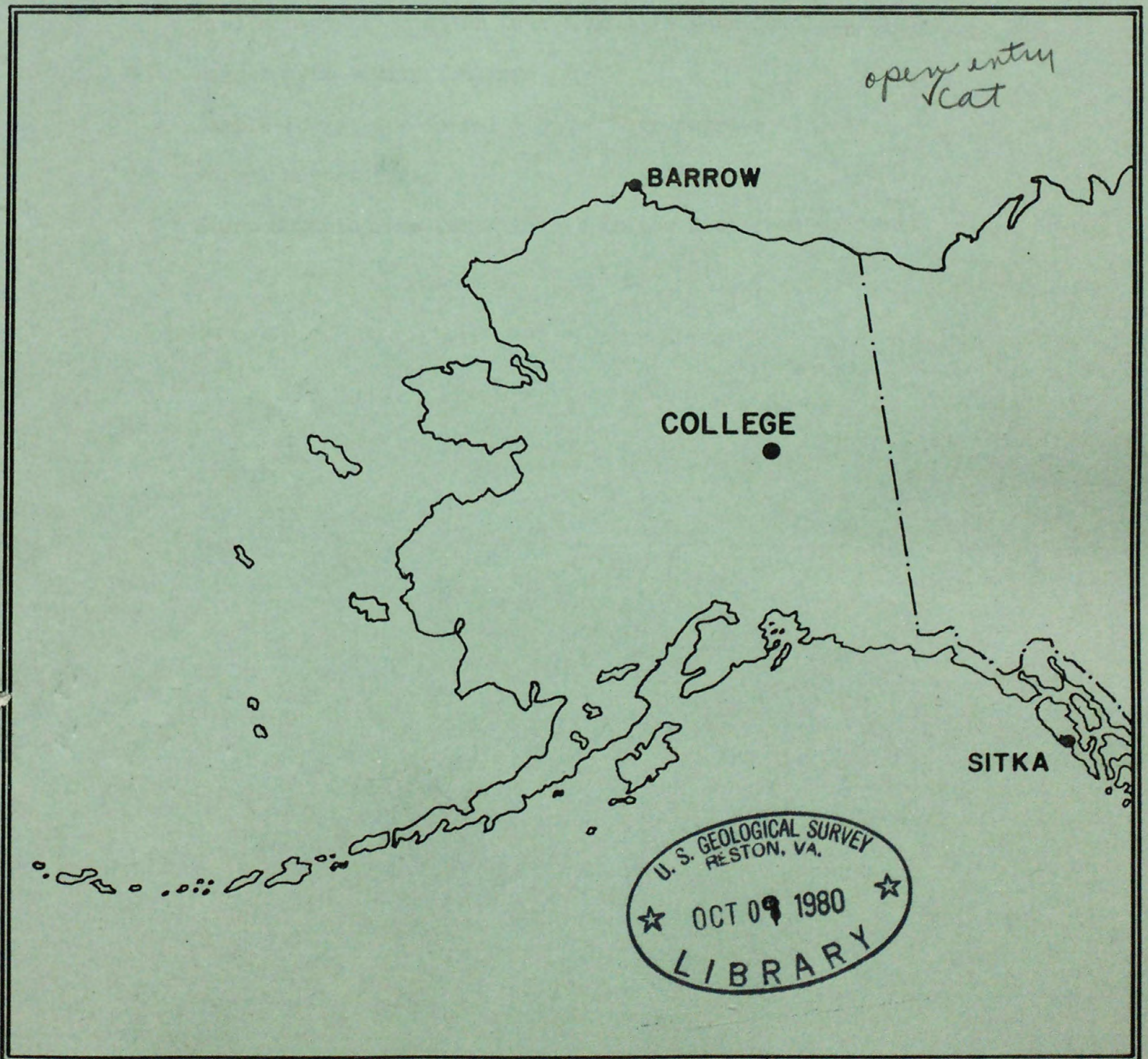
PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA



MAY 1980

OPEN FILE REPORT TM
_{cm}

80-300E



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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	43
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.

COLLEGE, ALASKA

MAGNETIC ACTIVITY

(Greenwich civil time, counted from midnight to midnight)

MONTH AND YEAR

MAY 1980

DATE	K-INDICES									AK	TIME SCALE ON MAGNETOGRAMS 20 mm/hr
	00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM		
1	3	2	0	2	1	2	1	0	11	05	SUDDEN COMMENCEMENTS d h m
2	2	1	1	1	0	0	0	0	05	02	
3	0	1	1	0	0	0	0	0	02	01	
4	0	2	0	0	2	1	0	0	05	02	
5	0	0	1	0	2	2	1	2	08	03	
6	3	2	4	4	4	3	1	1	22	16	
7	1	1	2	1	2	2	2	2	13	06	
8	2	3	3	1	1	1	1	1	13	07	
9	4	2	3	4	4	5	3	3	28	23	
10	3	1	2	1	1	1	2	1	12	06	
11	2	2	4	5	3	4	4	4	28	23	
12	5	4	4	4	4	3	3	2	29	24	
13	2	3	2	1	0	1	3	4	16	10	
14	5	5	2	2	2	3	4	2	25	21	
15	1	3	3	1	2	0	1	0	11	06	
16	1	2	2	1	1	0	0	0	07	03	
17	0	0	0	0	0	0	0	0	00	00	
18	0	0	0	3	0	1	0	0	04	02	
19	0	1	2	3	5	4	2	2	19	14	
20	2	2	2	2	1	1	0	0	10	04	
21	0	0	1	0	0	0	0	1	02	01	
22	1	2	1	1	2	2	0	0	09	04	
23	2	2	1	0	5	4	1	1	16	12	
24	1	1	2	5	4	5	5	3	26	25	
25	3	3	5	6	5	5	2	2	31	34	
26	3	2	2	2	1	0	1	2	13	06	
27	2	2	2	1	0	0	1	0	08	03	
28	2	1	1	0	0	2	0	0	06	03	
29	0	1	1	1	1	1	3	1	09	04	
30	2	2	3	1	1	2	2	2	15	07	
31	3	4	3	4	4	5	2	4	29	24	

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

683.8

3.75

2560

H

321.7

7.81

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
MAY

YEAR
1980

DATE	TIME U.T.	NATURE OF PHENOMENON ¹	REMARKS
28	10XX	pi2	
29	1832	si	
30	1518	ssc*	
31	2137	si	
IDENTIFIED BY: JEP		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 80302 U.S.A.

Data from Individual Observatories: COLLEGE OBSERVATORY, COLLEGE, ALASKA
MAY 19 80

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	64.06 N	11	06XX	..	..	..	..	11	4	5	99	710	510	12	23
		24	07XX	..	..	..	..	25	4	6	130	860	600	26	03
		30	1518	s.c.*	..	..	..	Jun 01	4	6	126	900	550	Jun 01	19

NORMAL MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 5-1-80	2400 U.T., 5-31-80	1.0/mm	3.78/mm	27° 47.3 E
H	0000 U.T., 5-1-80	2400 U.T., 5-15-80	7.88/mm		127608
	0000 U.T., 5-16-80	2400 U.T., 5-31-80	"		127658
Z	0000 U.T., 5-1-80	2400 U.T., 5-31-80	7.38/mm		551658

STORM MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 5-1-80	2400 U.T., 5-31-80	7.8/mm	29.78/mm	23° 48.6 E
H	0000 U.T., 5-1-80	2400 U.T., 5-31-80	44.08/mm		115238
Z	0000 U.T., 5-1-80	2400 U.T., 5-31-80	48.58/mm		540368

RAPID RUN MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		
D					
H					
Z					

MONTHLY MEAN ABSOLUTE VALUES*		
D	H	Z
28° 08.5 E	130188	553778

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: MAY 2, 3, 4, 5, 16, 17, 18, 21, 27, 28

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)Values 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 80 MAY D

C	Q or S	Ten	TH	01	02	03	04	05	06	07	08	09	10	11	12	TH	13	14	15	16	17	18	19	20	21	22	23	24	SUM				
			01	131	119	173	170	172	214	201	193	193	193	207	215	01	171	210	223	291	286	304	303	281	262	218	182	177	5089				
			02	157	146	146	158	183	209	192	185	192	189	225	198	02	190	190	212	259	288	310	298	282	255	227	212	186	5089				
			03	148	138	138	142	167	197	228	217	191	188	135	188	03	206	229	243	277	328	325	307	265	247	232	195	193	5167				
			04	162	147	138	143	153	188	188	188	187	188	172	175	04	178	185	248	295	293	297	292	278	271	245	208	168	4987				
			05	152	142	127	123	147	163	172	175	173	188	185	201	05	212	245	287	375	378	389	400	386	323	269	204	169	5585				
			06	105	101	86	99	144	170	101	123	115	181	175	190	06	289	291	296	343	343	338	342	263	214	134	117	120	4680				
			07	108	111	122	134	154	167	173	178	155	172	176	197	07	215	252	267	304	335	377	341	187	184	162	156	169	4796				
			08	145	125	135	115	83	142	188	172	162	162	172	176	08	188	187	175	229	270	282	288	267	242	232	218	191	4546				
			09	179	163	112	156	119	146	143	185	168	139	141	104	09	189	265	327	458	423	395	325	332	226	152	178	143	5168				
			10	169	205	168	173	168	167	172	180	198	203	217	218	10	228	244	263	264	263	246	264	245	220	189	139	139	4942				
			11	135	138	152	141	142	162	138	133	-25*	-39	178	151	11	115	298	389	433	406	460	391	230	238	318	259	112	5055				
			12	89	172	69	76	197	205	204	76	117*	32	103	143	12	176	232	285	285	314	312	299	230	219	186	156	160	4337				
			13	144	131	141	120	134	157	195	189	194	171	168	189	13	211	229	257	290	311	317	323	339	265	230	222	199	5126				
			14	176	82	99	144	184	168	162	200	192	168	147	141	14	163	178	175	218	238	303	346	288	183	149	181	158	4443				
			15	122	137	158	174	185	167	241	229	183	182	176	172	15	166	202	228	262	297	322	332	327	290	274	228	169	5223				
			16	133	117	123	124	148	182	191	197	181	194	171	184	16	206	213	243	270	304	331	339	323	296	258	230	203	5161				
			17	172	143	123	122	144	172	182	188	192	198	208	209	17	224	232	238	268	316	335	337	332	284	249	196	176	5240				
			18	151	119	107	112	145	163	163	176	173	166	163	202	18	197	223	260	299	330	338	312	261	223	183	144	123	4733				
			19	102	112	110	120	142	158	164	162	126	92	131	156	19	189	228	263	338	340	337	261	208	226	174	151	147	4437				
			20	128	121	107	116	149	157	176	193	189	151	181	177	20	162	171	209	254	288	304	308	292	287	241	202	178	4741				
			21	150	129	132	142	168	183	188	194	188	192	194	198	21	202	218	253	298	323	347	343	308	282	243	197	173	5245				
			22	152	137	133	144	156	154	172	175	172	173	172	184	22	193	192	218	262	336	351	308	264	226	186	182	168	4810				
			23	137	132	109	148	145	151	157	178	178	178	188	202	23	182	216	281	278	376	371	307	252	197	176	155	136	4830				
			24	133	122	125	139	147	171	178	144	137	100	64	160	24	179	120	188	310	513	442	441	310	220	147	50	-26	4514				
			25	64	78	101	122	139	174	210	11*	-76*	-131*	19*	-28*	25	36	104	165	377	427	367	347	289	228	169	167	159	3518				
			26	161	138	149	179	196	196	190	177	189	184	200	167	26	191	219	261	301	317	321	309	321	261	196	144	141	5108				
			27	169	143	160	169	191	191	195	198	200	198	194	184	27	191	219	236	280	311	321	320	291	259	211	190	159	5180				
			28	156	159	151	156	161	185	189	181	181	182	180	161	28	187	196	246	289	327	323	267	250	219	202	183	170	4901				
			29	151	128	111	103	128	158	197	196	181	168	148	150	29	173	208	234	279	349	353	357	304	272	201	158	138	4845				
			30	107	83	110	125	173	191	181	186	172	167	161	184	30	168	195	251	276	290	320	308	285	219	188	167	151	4658				
			31	117	97	75	53	100	124	175	182	178	155	183	161	31	144	267	229	295	267	303	331	302	256	321	357	198	4870				
SCALED BY	PEF, SPT			Preliminary base-line and scale values:												<input type="checkbox"/> Interpolated <input type="checkbox"/> Significant portion of hour interpolated. <input type="checkbox"/> No records; or no values available because of faulty record. * Derived from <u>SLOTT</u> Mghp., converted to Normal Mghp.												<input type="checkbox"/> Scaling uncertain because of magnetic storm. <input type="checkbox"/> Record off sheet; if part or all of hour; if value is given, curve was estimated for missing part.				MONTHLY SUM	151044
CHECKED BY	JEP, EAS, SPT			Interval Beginning	Base-line Value	Scale Value																	MONTHLY MEAN	203									
SIGNS RE-VIEWED BY	JEP																			DATES WITH GAPS:													
PUNCHED BY																																	

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

Values 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 O	Hr Day	01	02	03	04	05	06	07	08	09	10	11	12	Hr Day	13	14	15	16	17	18	19	20	21	22	23	24	SUM
			01	335	342	313	338	375	371	352	347	340	352	351	324	01	356	351	356	354	352	314	306	310	300	288	282	286	7995
			02	281	309	327	331	343	360	378	363	349	347	343	347	02	347	348	351	356	356	357	347	324	322	312	303	293	8094
			03	289	299	313	327	339	348	342	351	357	349	350	350	03	352	358	357	348	345	346	338	325	311	293	288	297	7972
			04	298	306	327	332	356	341	343	348	344	352	346	346	04	343	289	288	352	357	349	335	328	308	294	292	292	7866
			05	297	303	315	330	347	358	358	362	369	365	358	358	05	356	346	306	322	352	332	318	294	288	283	283	284	7884
			06	302	287	403	389	361	337	477	512	452	422	371	290	06	184	88	146	251	310	313	296	291	270	278	283	276	7589
			07	278	305	313	329	335	338	342	342	370	367	359	365	07	372	355	336	243	284	271	264	306	316	315	298	307	7710
			08	334	359	350	386	495	459	404	303	309	322	338	342	08	338	342	333	328	338	352	350	347	323	303	283	298	8336
			09	322	318	463	534	493	499	506	422	362	367	306	73	09	195	167	45	88	198	255	285	255	260	322	335	378	7448
			10	457	310	292	297	311	327	333	340	356	364	358	358	10	349	341	340	341	347	335	330	320	310	314	307	318	8055
			11	310	316	304	315	330	339	438	552	446	284	176	276	11	250	273	261	173	181	193	150	261	309	322	429	412	7297
			12	473	748	674	675	620	430	354	295	219	144	228	114	12	135	117	193	280	284	279	232	288	281	288	295	307	7953
			13	307	334	322	379	367	360	387	379	385	368	353	339	13	347	344	340	333	329	306	329	258	252	178	242	338	7876
			14	411	450	719	633	321	299	342	363	340	339	328	314	14	280	280	279	322	315	261	113	224	237	252	280	300	8002
			15	280	288	287	297	316	369	404	365	332	331	327	323	15	309	278	324	336	337	328	316	296	280	288	298	298	7607
			16	308	304	318	332	333	370	388	359	352	359	341	327	16	315	298	319	321	322	322	325	316	298	287	282	282	7778
			17	285	289	307	327	333	338	342	337	337	337	338	338	17	338	343	348	339	329	318	329	322	312	301	306	310	7803
			18	298	300	312	330	332	333	349	361	370	375	301	311	18	329	329	319	317	327	339	328	308	288	277	271	278	7682
			19	288	308	318	318	322	338	348	398	435	448	418	360	19	342	250	-35	154	291	294	327	348	351	311	283	293	7508
			20	311	280	311	338	352	357	362	357	394	354	359	346	20	348	335	333	324	345	360	348	347	323	307	297	282	8070
			21	278	288	300	318	332	338	347	342	349	353	368	373	21	365	371	373	375	377	368	348	338	318	309	302	303	8133
			22	303	312	321	332	340	348	380	388	387	377	368	365	22	368	368	303	272	322	358	351	342	322	308	312	315	8162
			23	331	356	352	325	322	335	366	363	349	348	349	348	23	340	291	85	27	213	261	330	338	317	315	305	311	7277
			24	344	356	338	331	346	350	348	381	403	393	278	128	24	70	135	142	99	-31	-104	-150*	178	234	219	254	298	5340
			25	320	314	326	326	345	406	464	442	331	266	109*	47*	25	210	198	75	-35	136	376	339	314	306	290	289	311	6505
			26	319	299	343	336	384	385	292	301	339	371	367	349	26	309	310	321	324	323	316	300	287	269	281	259	307	7691
			27	284	276	289	330	300	304	301	329	359	357	344	329	27	331	326	329	333	339	329	319	297	294	296	299	304	7598
			28	313	289	293	309	310	327	323	339	358	359	359	323	28	353	346	342	313	320	349	339	333	323	321	321	311	7873
			29	299	297	299	313	331	339	343	334	361	361	353	341	29	339	310	330	336	333	329	332	330	320	319	297	301	7847
			30	310	327	332	369	419	381	375	353	324	332	338	337	30	338	317	343	350	371	362	358	337	326	304	288	298	8189
			31	303	324	335	486	547	583	425	390	375	339	184	134	31	95	33	95	-8	227	377	344	337	308	330	298	420	7341

SCALED BY: PEF, SPT
 CHECKED BY: JEP, EAS, SPT
 SIGNS RE-VIEWED BY: JEP
 PUNCHED BY:

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

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

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: 238481
 MONTHLY MEAN: 321
 DATES WITH GAPS:

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

Values 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 1960 universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

CO RO MAY 2

C	Q or S	Ten Q	1/1000	01	02	03	04	05	06	07	08	09	10	11	12	1/1000	13	14	15	16	17	18	19	20	21	22	23	24	SUM	
				01	304	320	343	310	292	326	311	293	288	285	270	220	01	262	289	293	307	309	310	266	268	288	288	295	296	7033
				02	292	291	294	292	300	316	318	340	330	305	289	282	02	292	298	300	307	306	311	308	299	291	287	288	290	7226
				03	291	282	272	277	286	297	302	294	283	284	285	282	03	287	293	298	297	294	287	278	277	283	287	283	282	6881
				04	278	274	272	262	296	306	292	289	285	282	280	275	04	277	237	213	259	287	299	297	288	287	282	278	272	6687
				05	287	289	283	278	280	278	282	282	281	287	280	283	05	283	277	231	215	245	260	253	248	235	252	267	288	6444
				06	310	337	351	380	374	321	292	234	244	334	303	251	06	269	358	250	196	218	230	245	238	254	262	290	285	6826
				07	282	286	288	284	287	288	289	288	280	292	292	292	07	288	286	272	235	198	227	200	191	230	246	270	293	6384
				08	323	358	399	395	383	378	366	329	300	290	292	298	08	297	293	298	309	308	300	298	289	287	296	301	313	7700
				09	330	337	342	375	389	408	373	359	322	301	215	176	09	285	278	317	208	169	197	214	246	245	255	287	298	6926
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				18	286	285	280	283	295	295	288	296	303	312	280	257	18	268	278	282	273	270	262	268	268	278	289	293	287	6776
				19	277	277	277	281	284	283	283	289	303	290	320	391	19	292	286	280	116	176	191	191	206	232	255	283	299	6362
				20	317	337	332	348	339	322	310	303	308	303	307	303	20	298	300	303	300	308	311	308	289	286	279	288	292	7391
				21	296	294	299	294	292	293	292	293	291	289	288	290	21	280	287	306	308	303	302	289	278	272	262	267	273	6938
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				24	314	346	339	340	330	337	336	314	300	279	320	464	24	314	332	381	432	492	252	201	124	216	260	285	322	7630
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				28	299	301	299	304	304	316	317	307	309	315	309	307	28	309	310	320	317	289	287	283	287	286	290	299	304	7268
				29	299	294	287	288	297	306	319	313	301	309	301	297	29	293	279	281	316	310	299	295	288	287	267	277	277	7080
				30	276	275	305	313	357	352	330	334	309	298	289	291	30	282	278	299	302	307	300	296	291	275	278	286	290	7213
				31	301	315	332	390	402	414	379	314	311	290	355	31	383	378	388	322	202	284	313	308	295	315	341	372	8063	

SCALED BY PEF, SPT
 CHECKED BY JEP, EAS, SPT
 SIGNS RE-VIEWED BY JEP
 PUNCHED BY

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

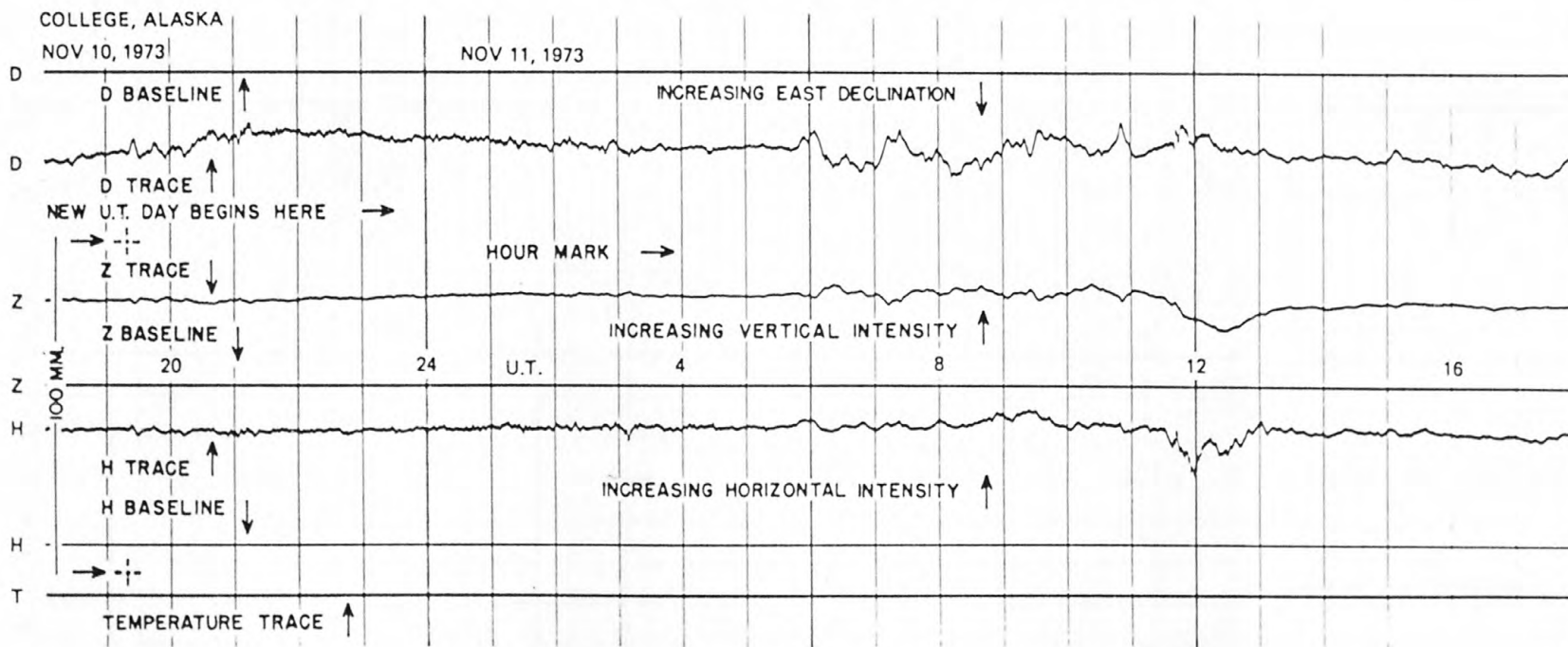
- () Interpolated
 Significant portion of hour interpolated.
 No record; or no values available because of faulty record.
 * Derived from Storm Mgrph., converted to Normal Mgrph.
- [] Scaling uncertain because of magnetic storm.
 <> Record off sheet for part or all of hour; if value is given, curve was estimated for missing part.

MONTHLY SUM 221423

MONTHLY MEAN 298

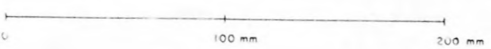
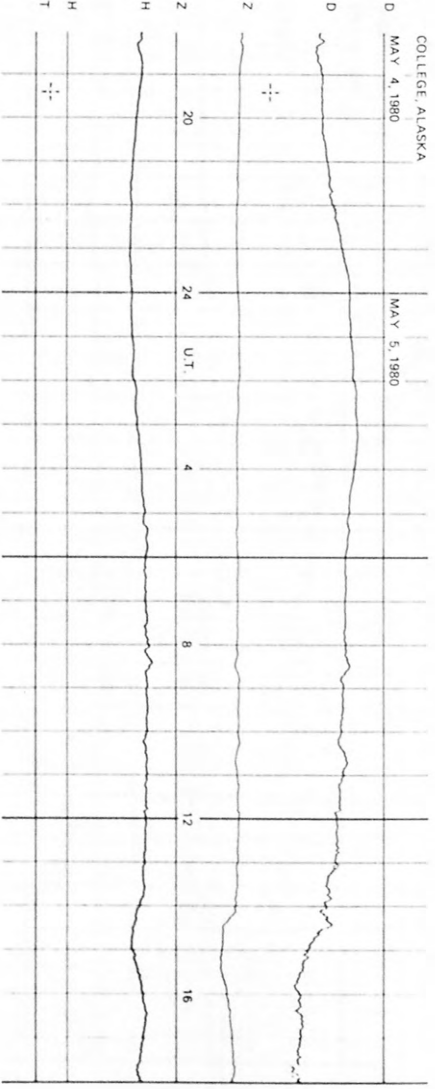
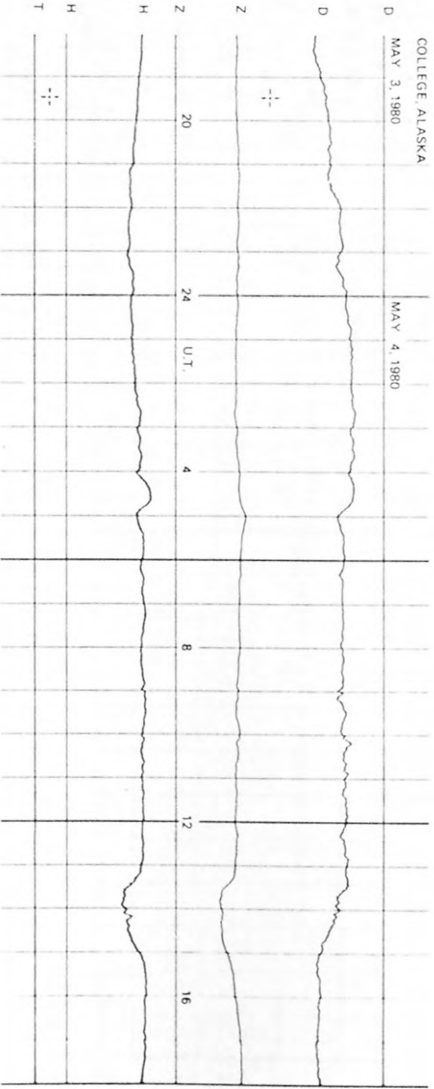
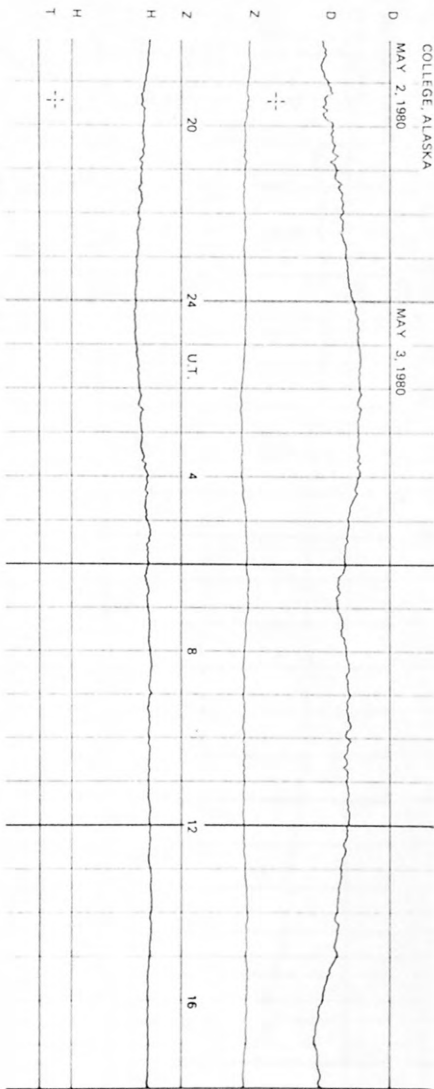
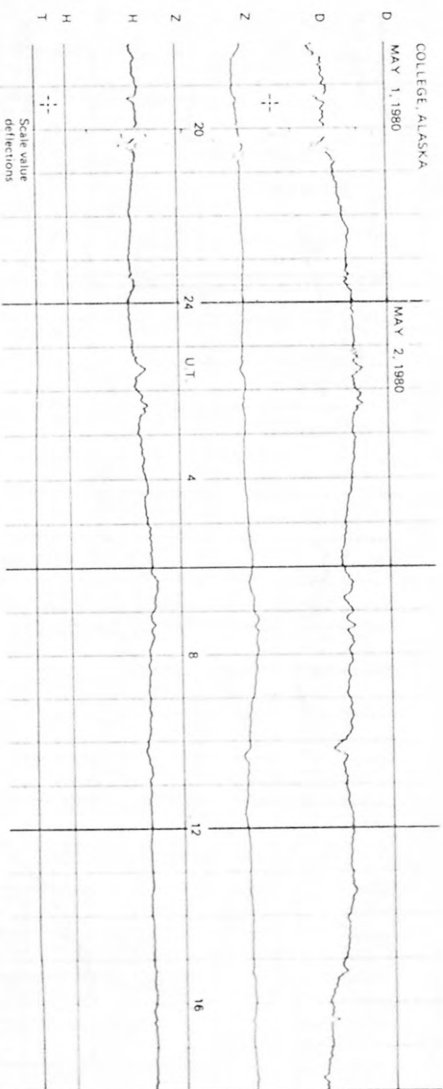
DATES WITH GAPS:

FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)



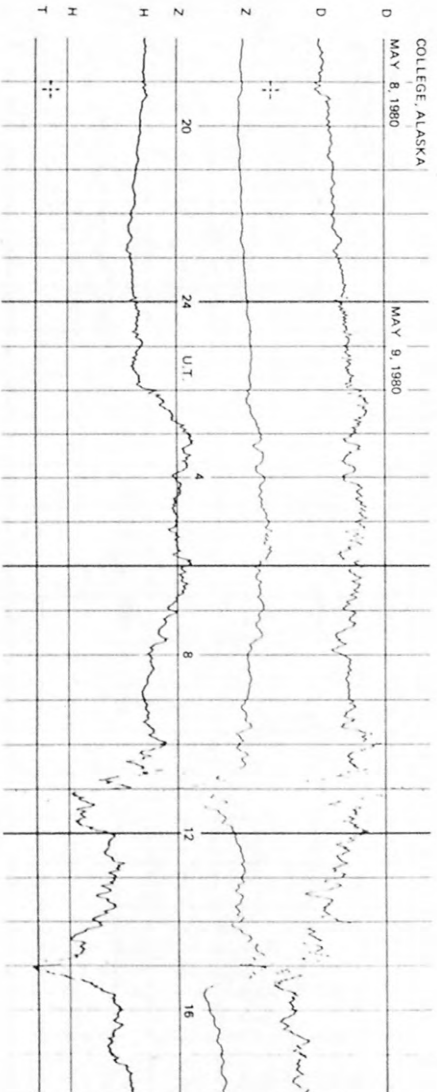
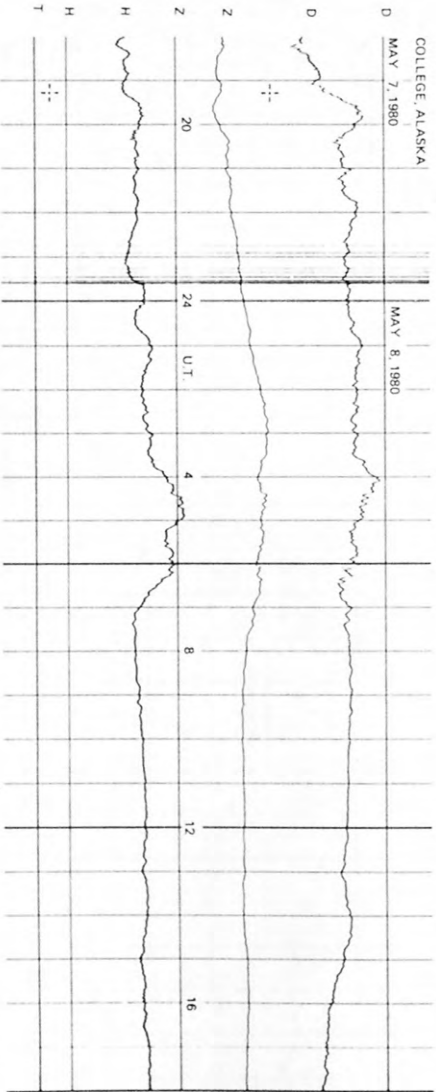
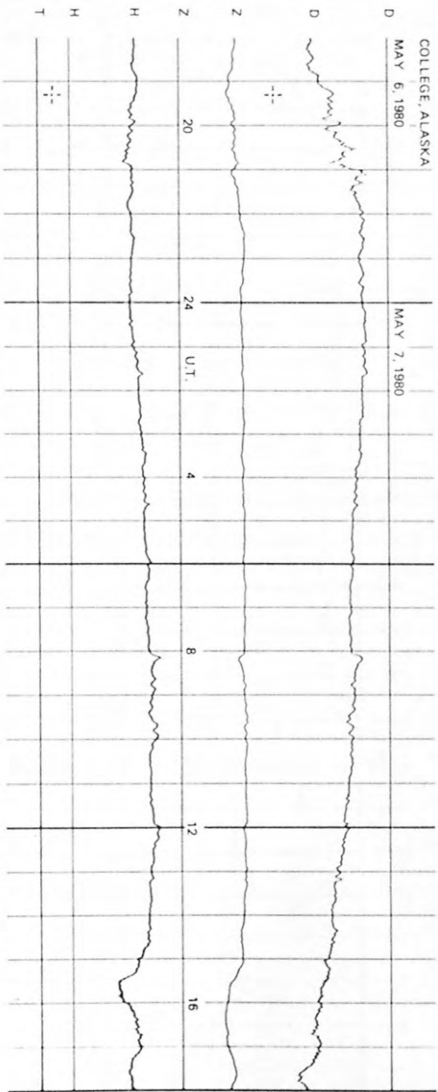
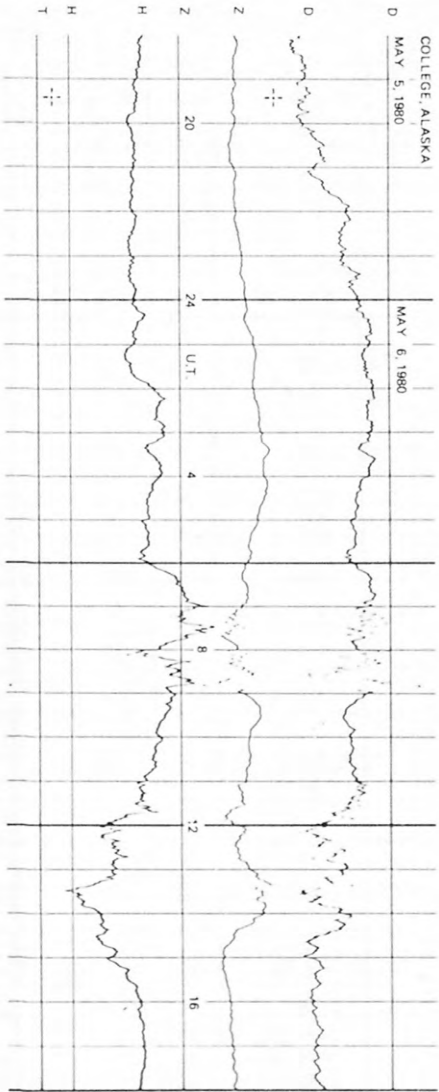
SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

NORMAL MAGNETOGRAMS

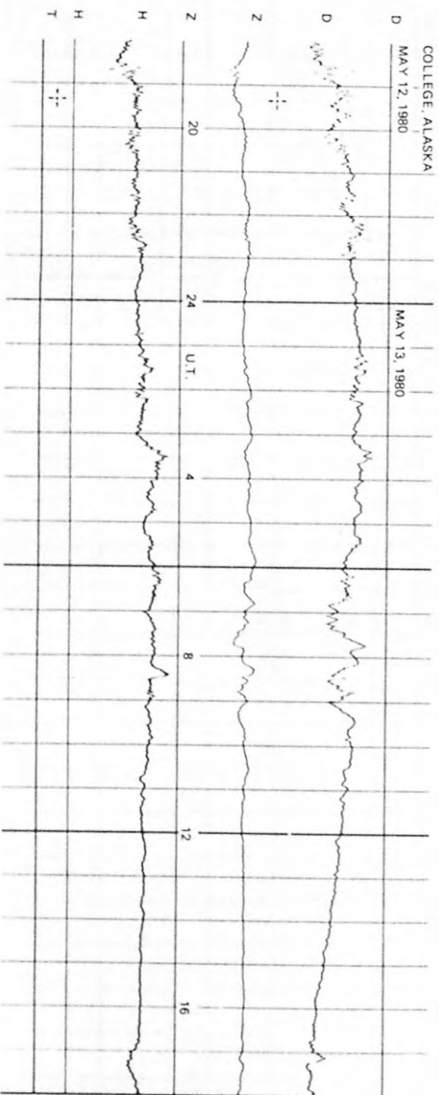
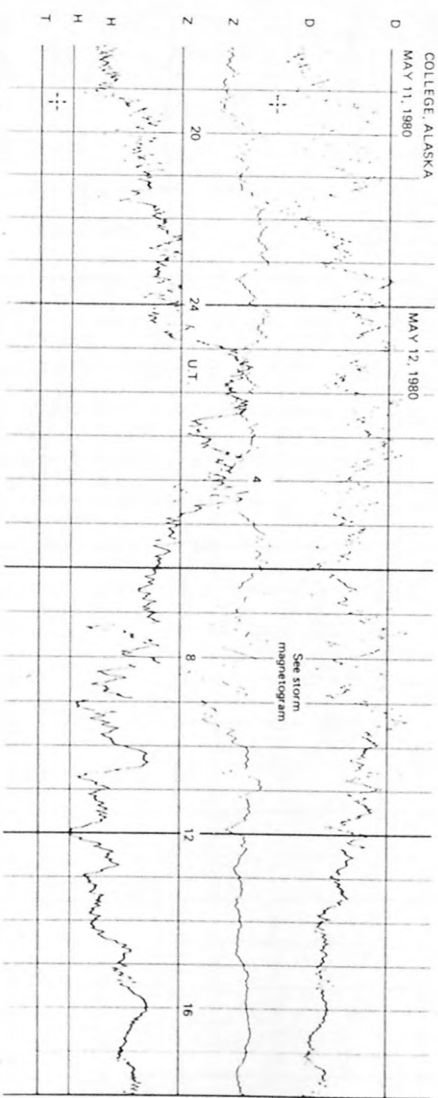
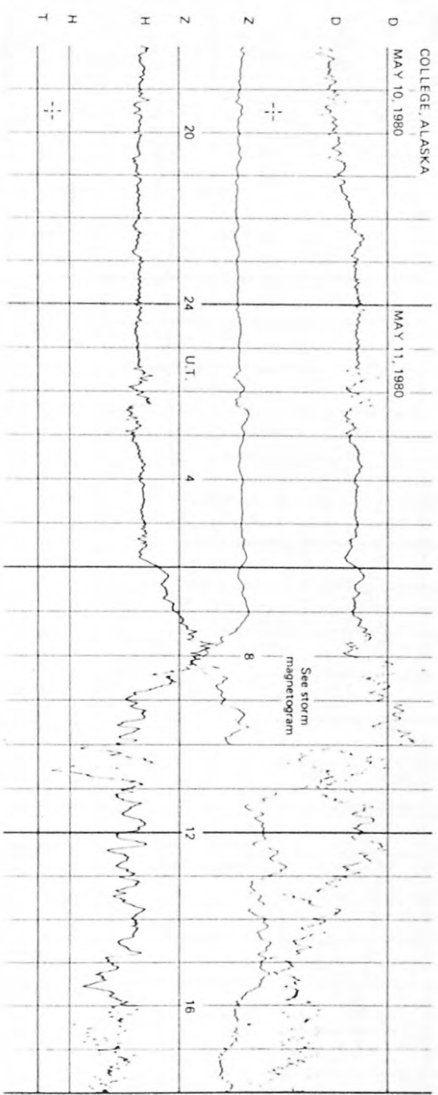
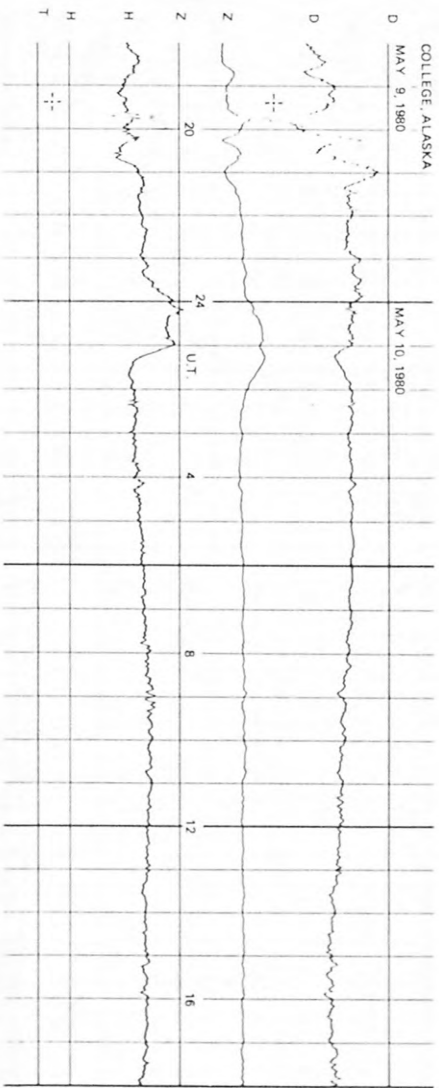
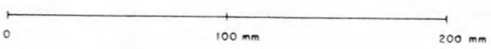


NORMAL MAGNETOGRAMS

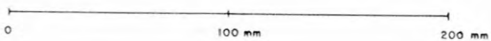
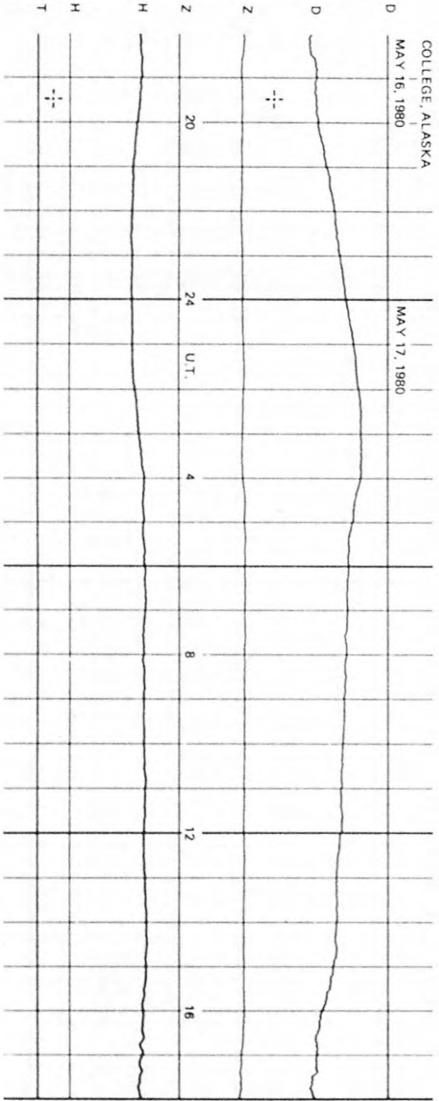
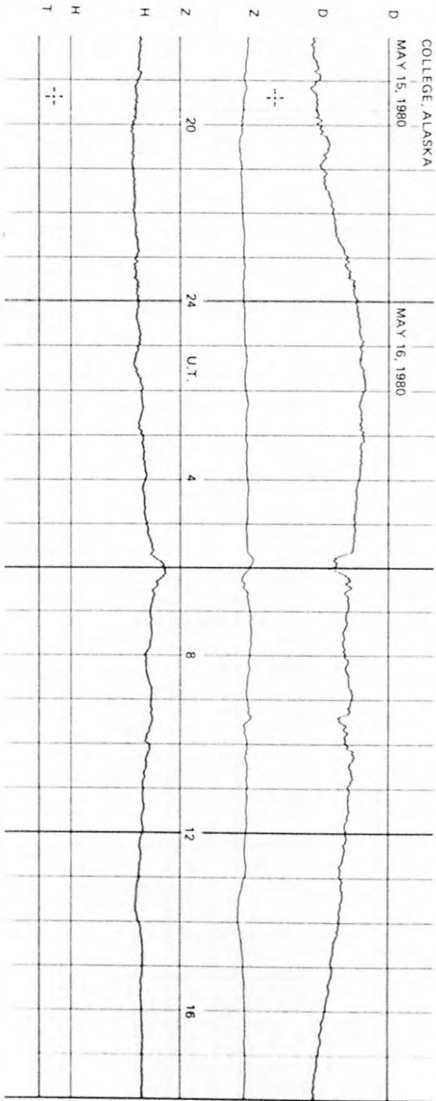
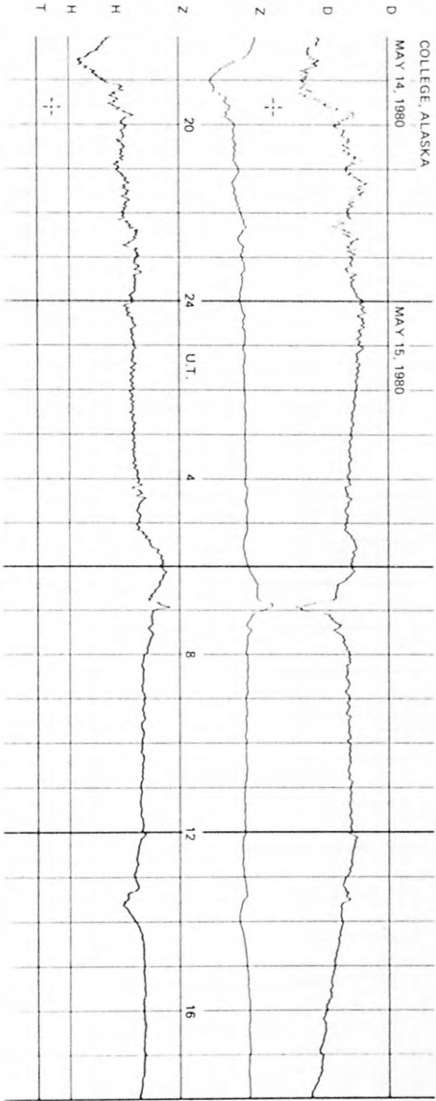
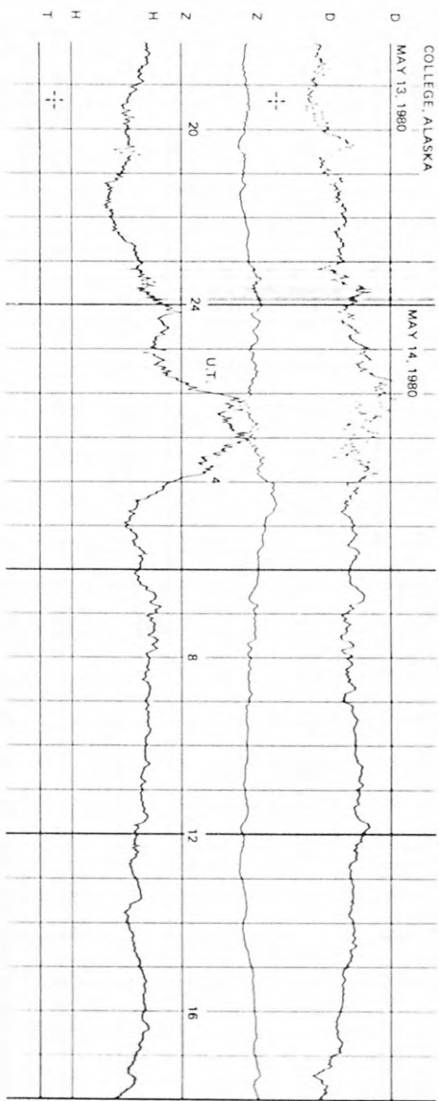
0 100 mm 200 mm



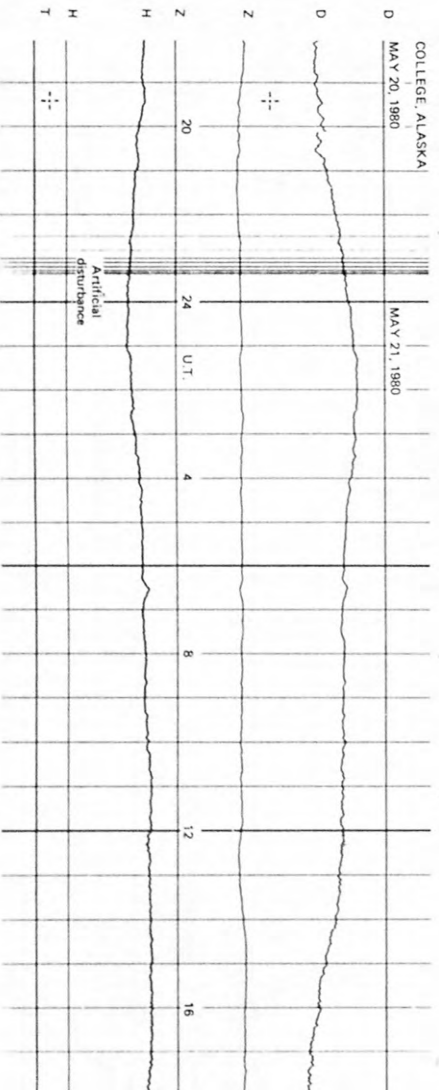
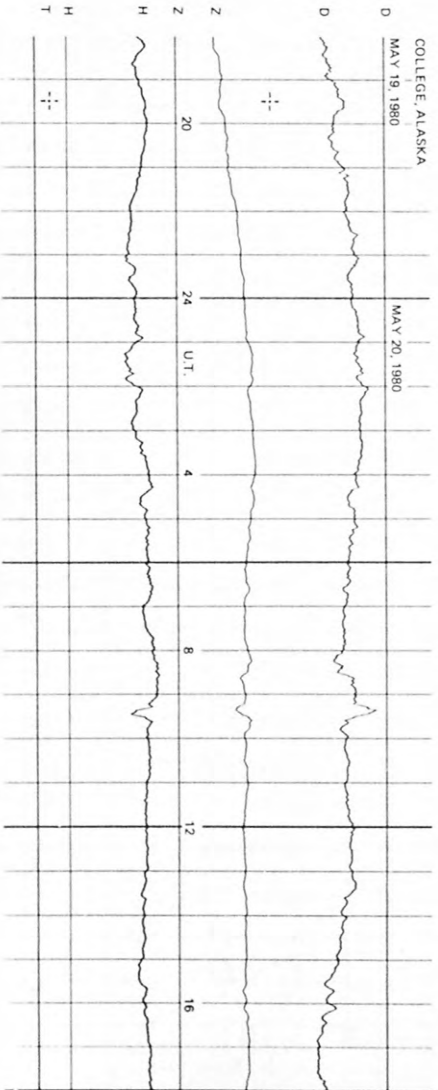
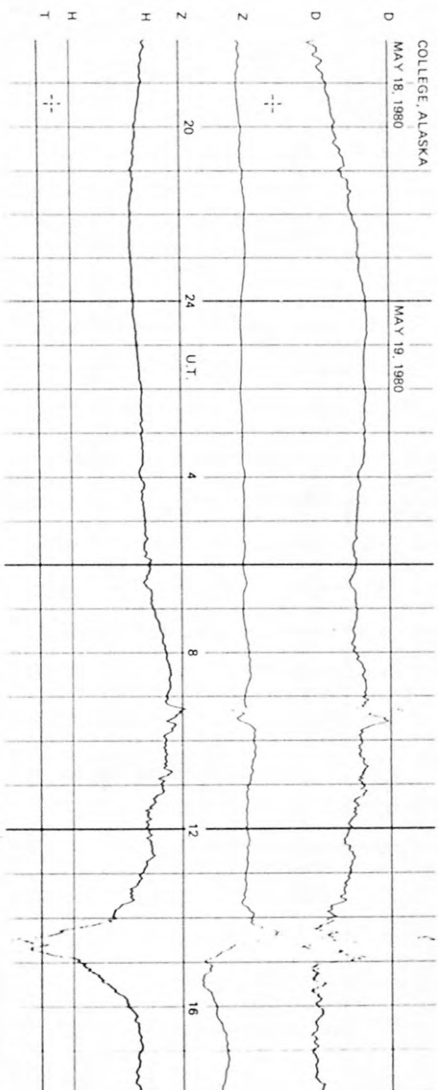
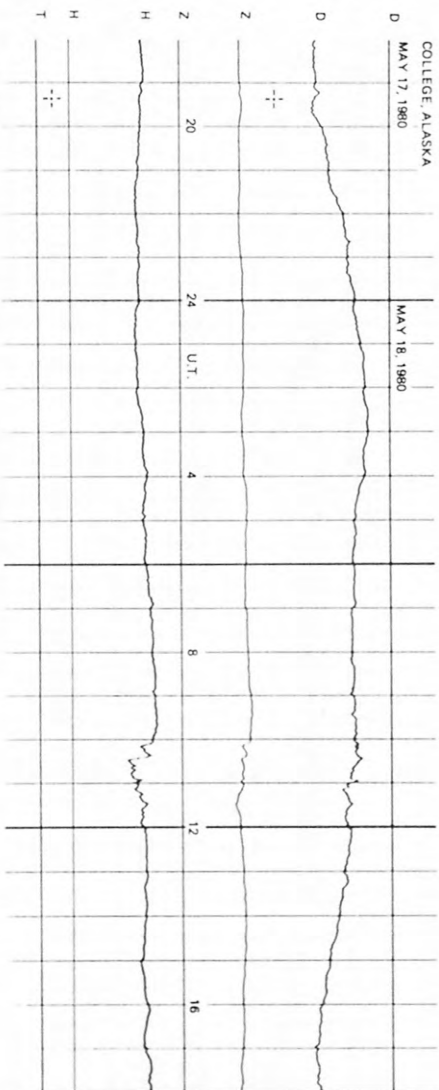
NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS

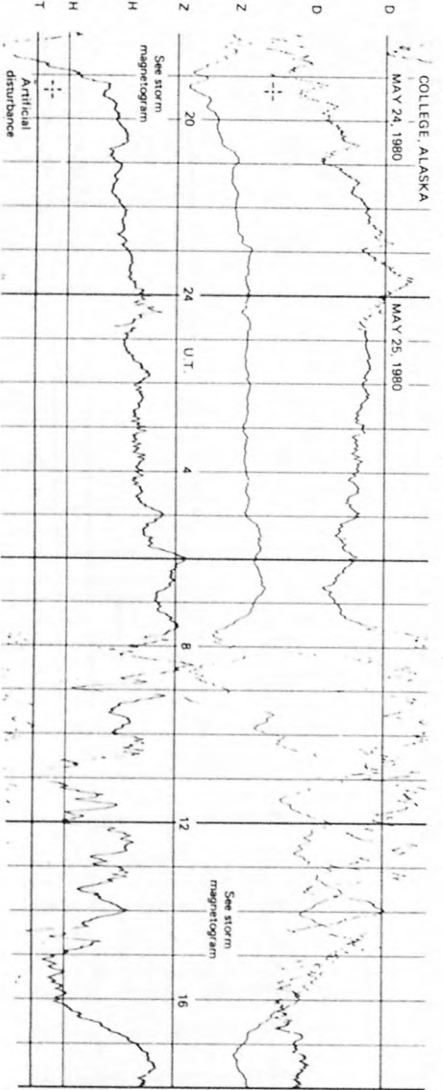
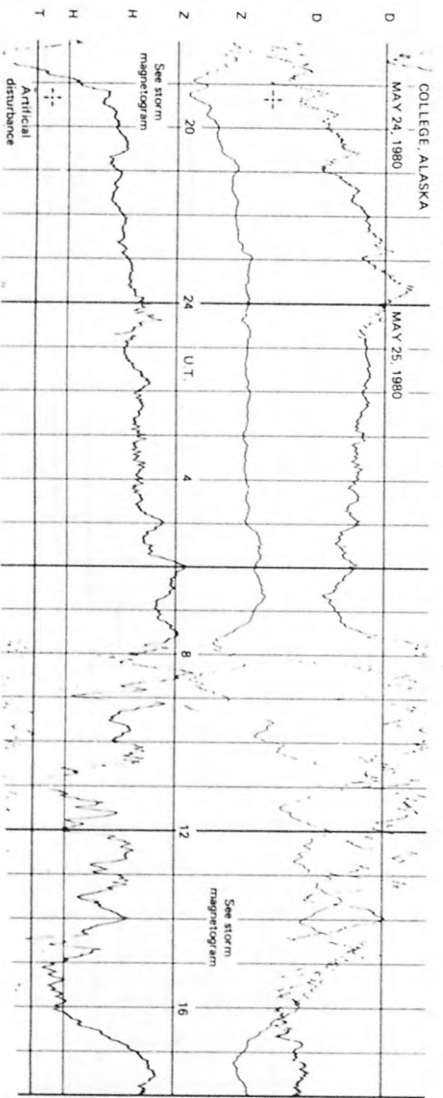
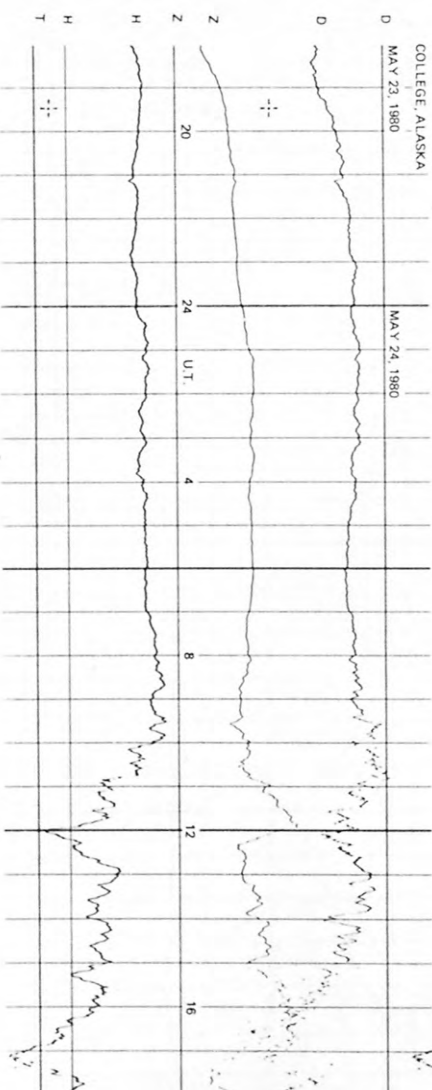
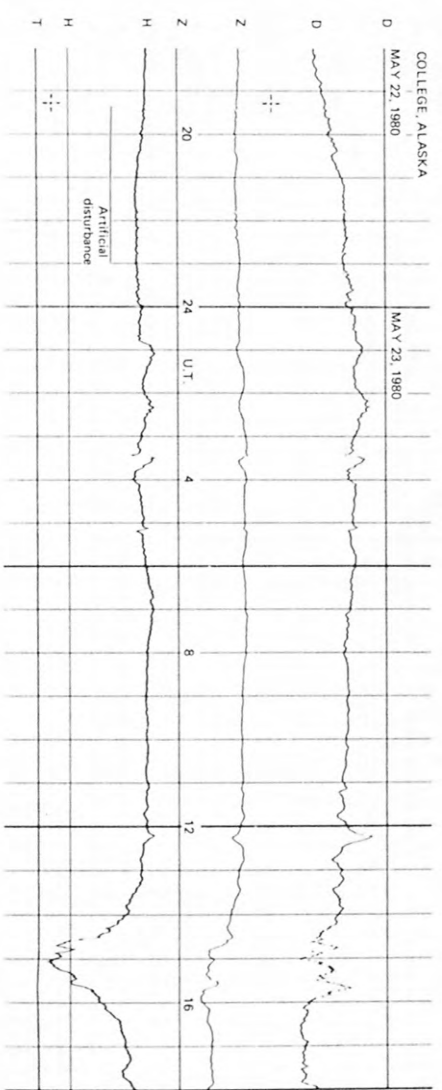
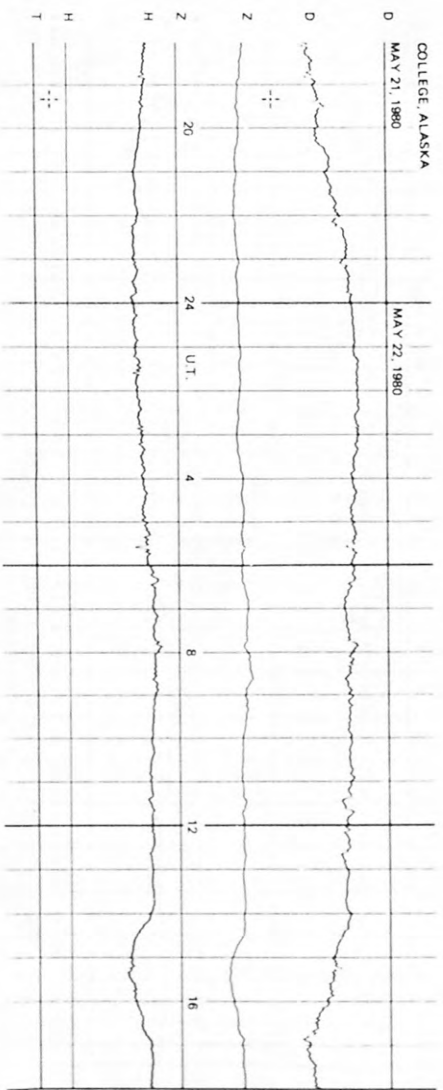
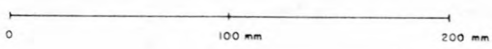


NORMAL MAGNETOGRAMS

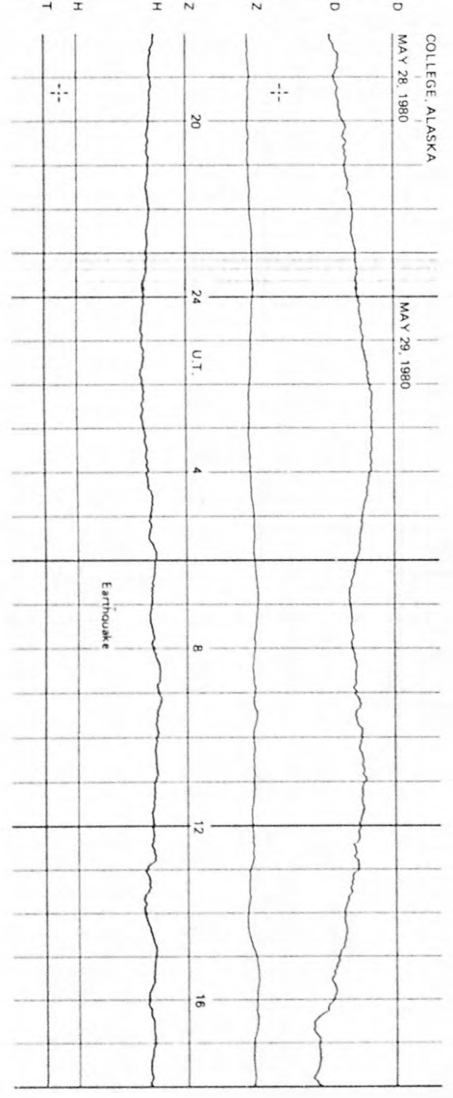
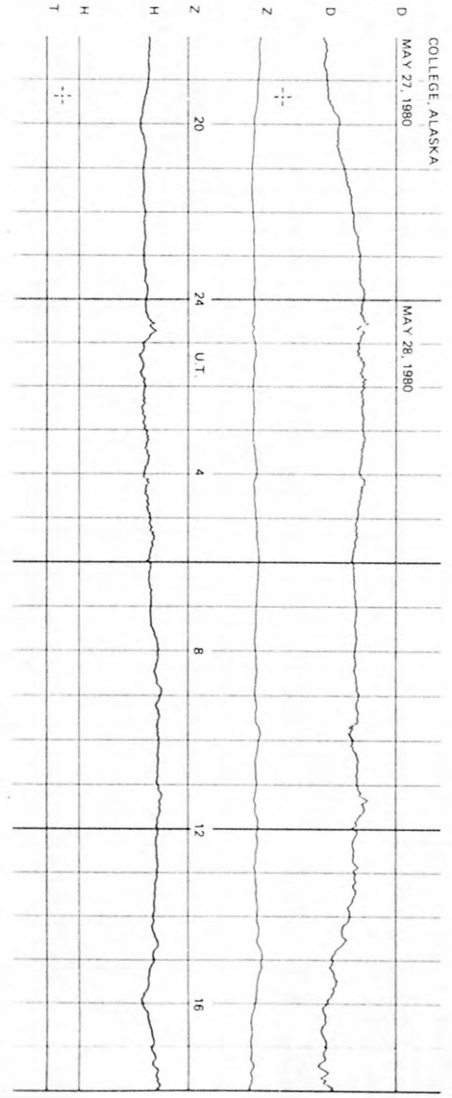
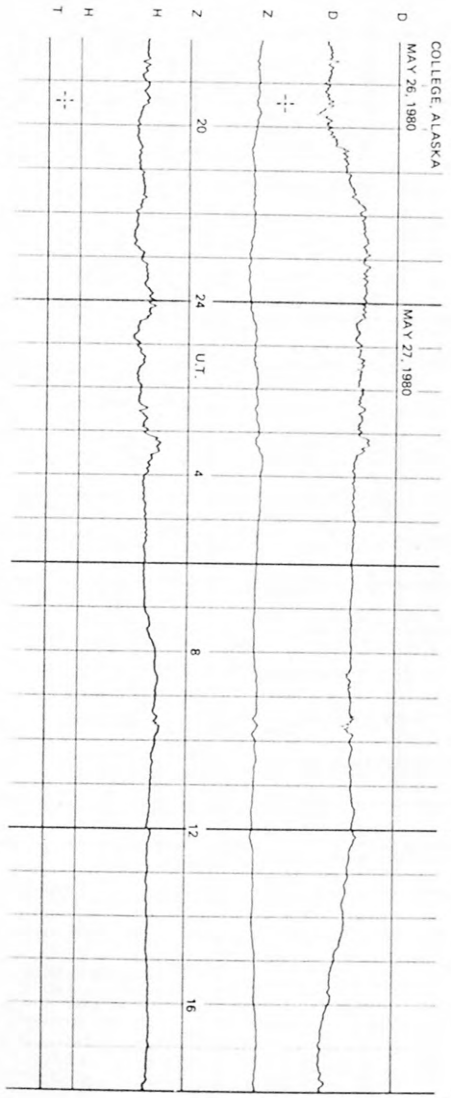
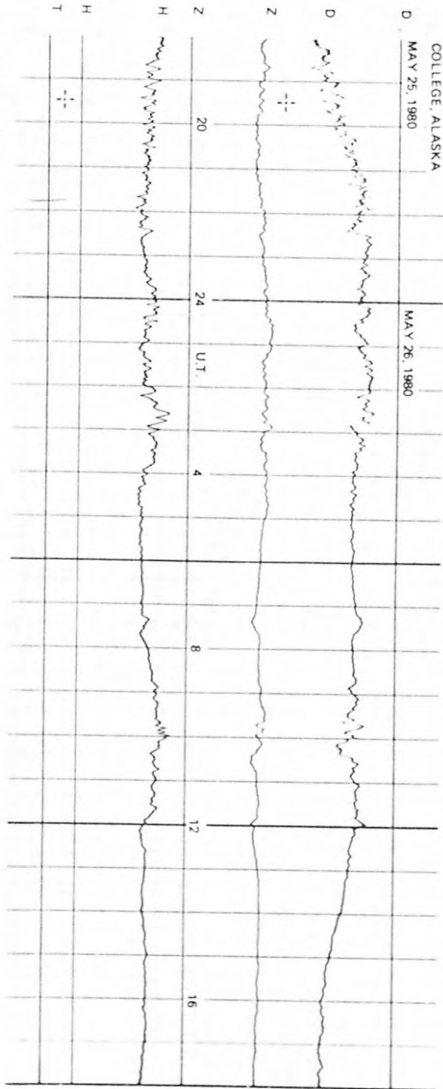
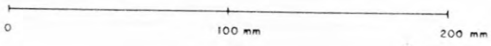


0 100 mV 200 mV

NORMAL MAGNETOGRAMS

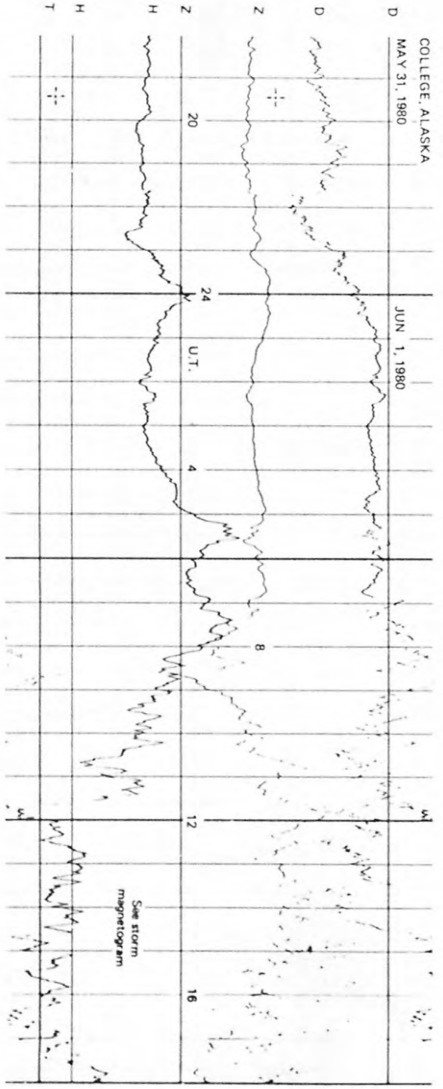
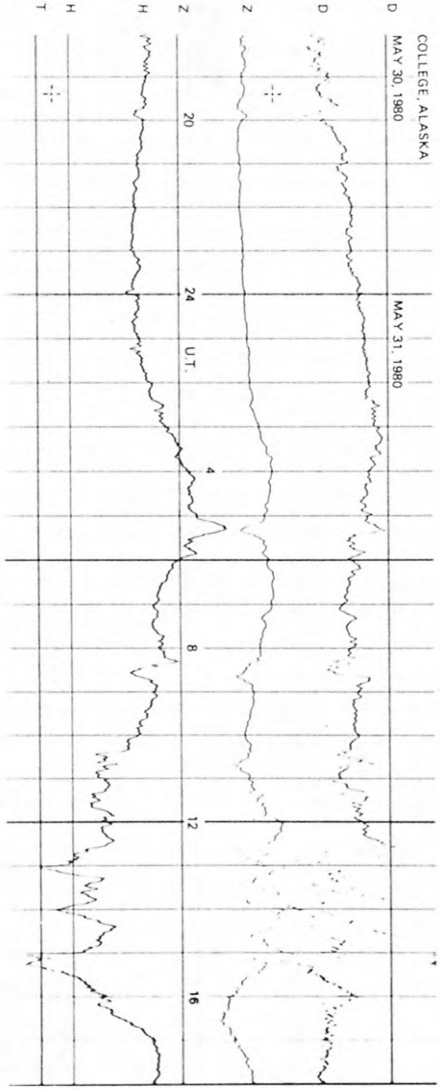
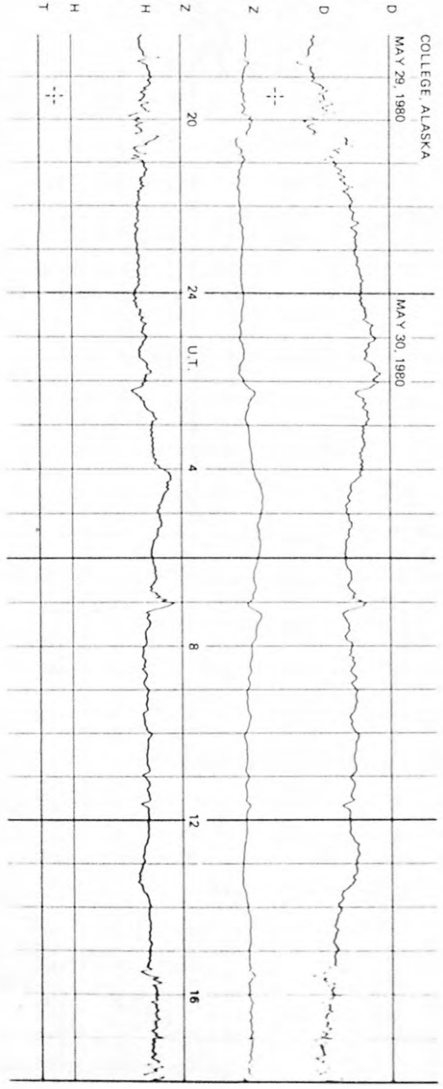


NORMAL MAGNETOGRAMS

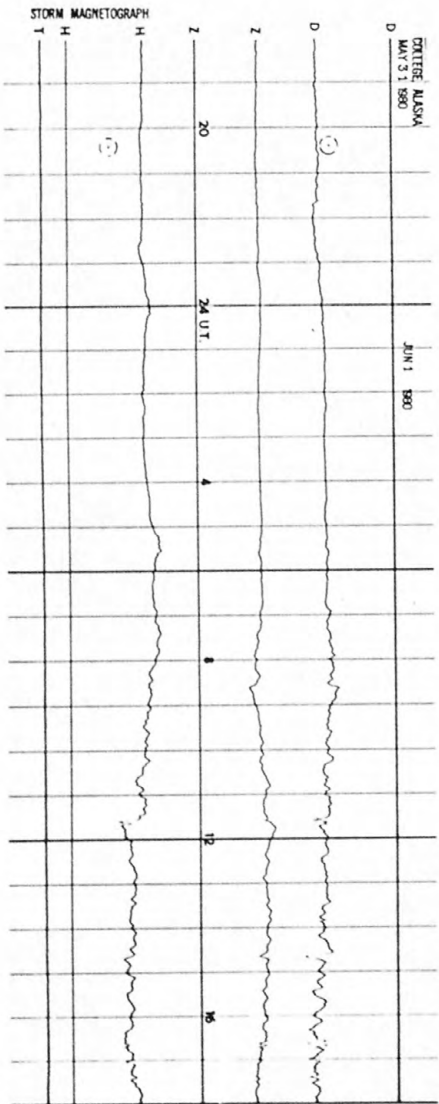
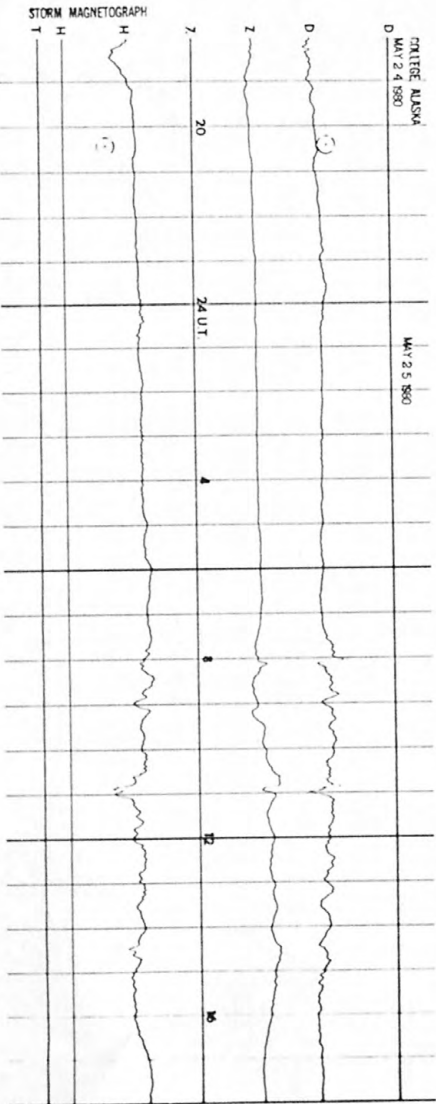
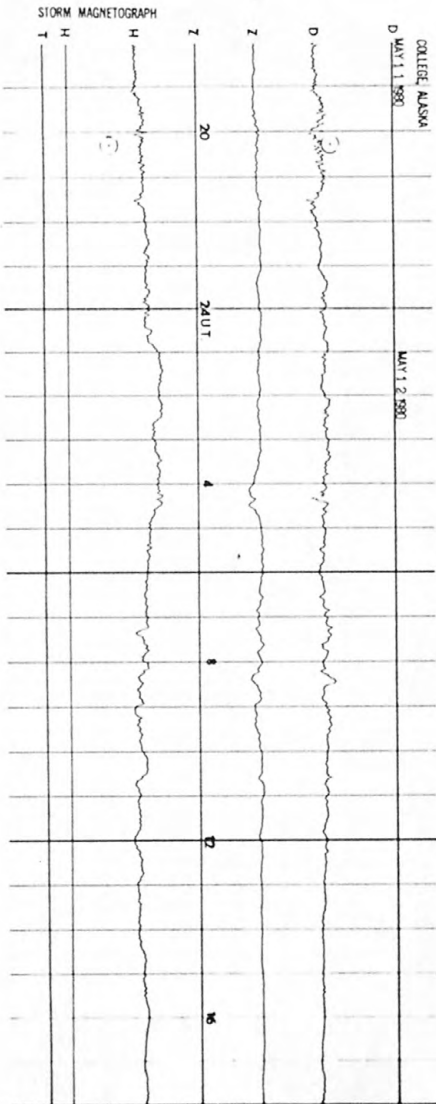
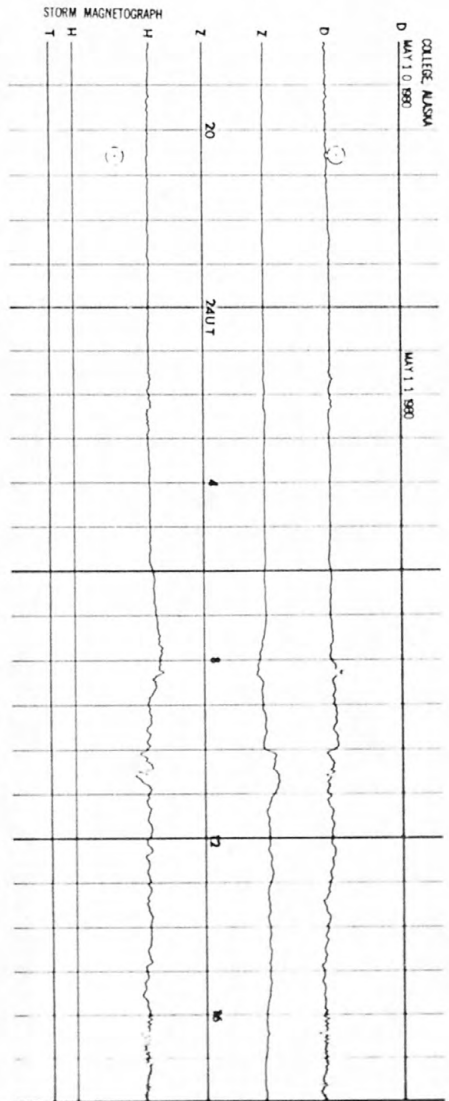
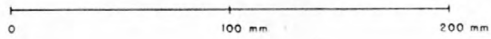


NORMAL MAGNETOGRAMS

0 100 mm 200 mm



STORM MAGNETOGRAMS

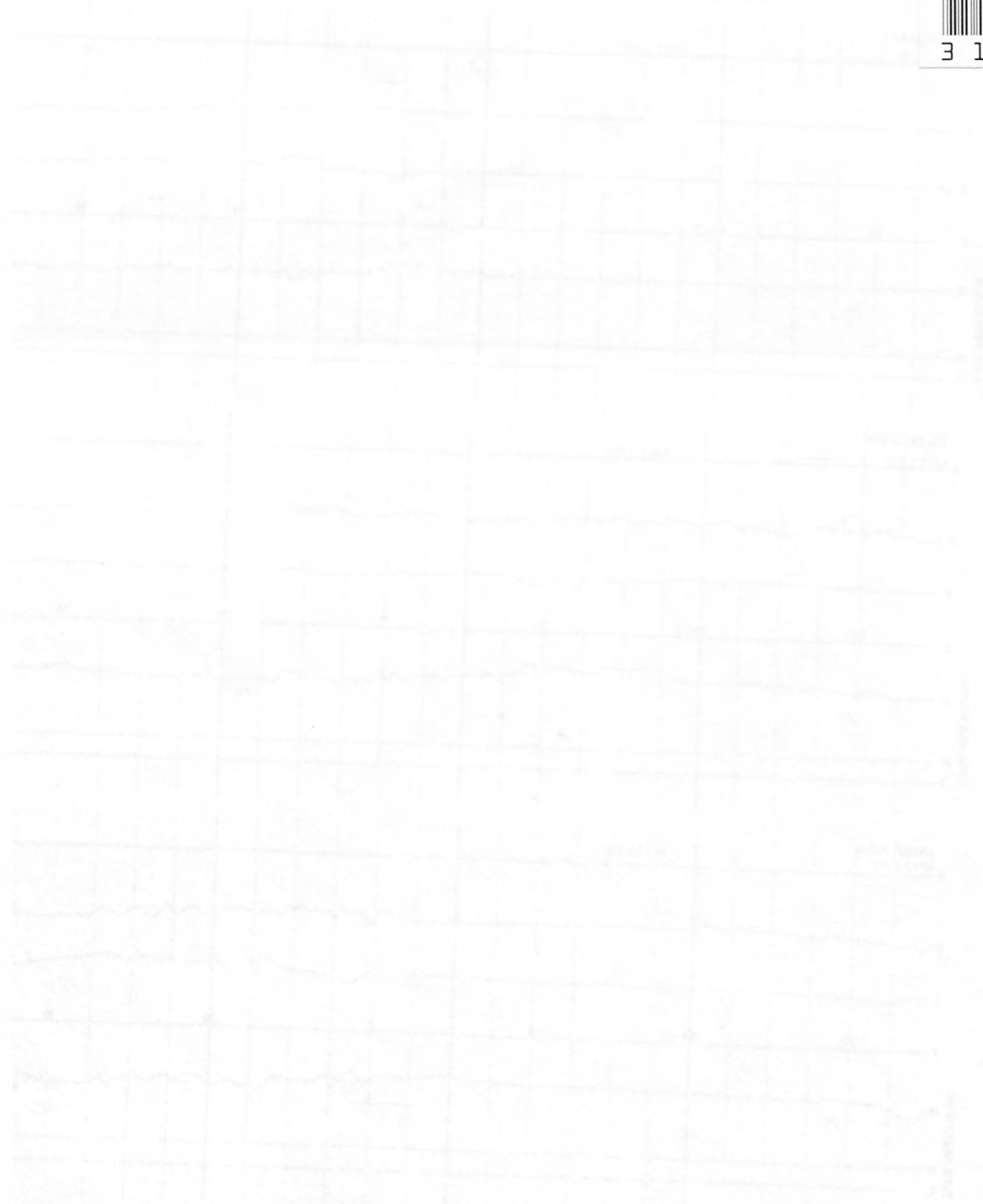


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