

UNITED STATES (DEPARTMENT OF THE INTERIOR)

(200)  
R290

GEOLOGICAL SURVEY.

[Reports - Open  
file series]

no. 76-300G

PRELIMINARY GEOMAGNETIC DATA

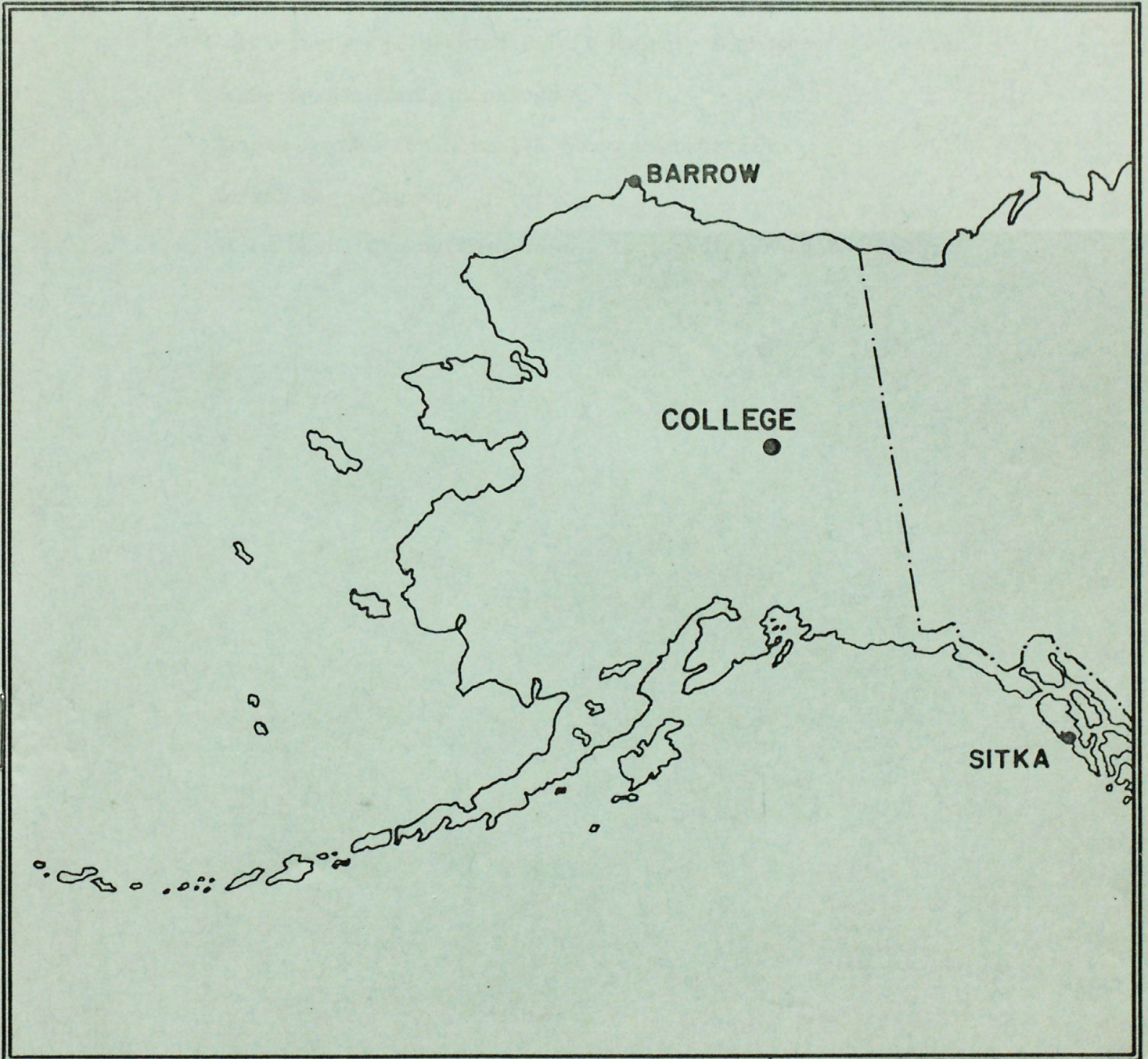
COLLEGE OBSERVATORY

FAIRBANKS, ALASKA

TM  
an  
open entry

JULY 1976

OPEN FILE REPORT 76-300G







WAS PREPARED UNDER THE SUPERVISION OF JOHN F. LINDVALL  
ATTORNEY OF GEOLOGICAL SURVEY  
AND IN COOPERATION WITH THE NATIONAL BUREAU OF STANDARDS  
PHYSICAL LABORATORY OF THE BUREAU OF ELECTRODYNAMICS



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271509



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, M. J. MOORMAN, C. E. DEADMON, 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.

COLLEGE OBSERVATORY PRELIMINARY GEOMAGNETIC DATA

INTRODUCTION

OBSERVATORY LOCATION

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

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.

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

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.

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.

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.

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

JULY 1976

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	5	4	6	4	4	3	2	31	31	SUDDEN COMMENCEMENTS d h m
2	3	2	3	4	4	2	2	1	21	14	
3	1	3	4	7	3	5	2	2	27	33	
4	2	3	6	6	4	4	3	2	30	32	
5	2	2	3	4	4	2	1	1	19	12	
6	2	2	3	2	3	2	1	1	16	08	
7	2	1	1	3	4	3	1	1	16	10	
8	2	3	4	3	5	2	2	2	23	17	
9	3	4	2	5	3	1	1	1	20	15	
10	1	2	2	4	2	0	1	1	13	07	
11	1	1	1	2	0	1	1	1	08	03	
12	2	2	1	1	1	1	1	1	10	04	
13	2	1	1	1	1	0	1	1	08	03	
14	1	1	2	1	1	2	0	0	08	03	
15	1	1	1	3	2	3	4	3	18	11	
16	3	4	6	3	5	2	2	2	27	26	
17	1	2	1	3	3	1	1	1	13	07	
18	2	2	2	0	1	1	2	2	12	05	
19	2	1	1	0	1	2	1	1	09	04	
20	1	1	1	2	0	1	0	0	06	02	
21	1	1	0	1	3	0	0	0	06	03	
22	2	1	3	4	0	0	0	1	11	07	
23	1	1	1	1	2	2	0	0	08	03	
24	1	1	1	0	1	1	2	1	08	03	
25	2	2	2	4	3	3	1	1	18	11	
26	3	1	0	0	1	0	1	1	07	03	
27	1	2	1	5	3	2	2	3	19	13	
28	3	3	5	5	5	3	3	2	29	26	
29	4	4	6	6	5	3	2	3	33	37	
30	2	4	4	6	6	2	2	2	28	30	
31	2	2	4	5	3	2	2	2	22	16	

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

SUM

K SCALE USED:

LOWER LIMIT FOR K = 9.....

CURRENT SCALE VALUE.....

LOWER LIMIT FOR K = 9.....

D

683.8

3.76

2570

H

321.7

7.82

2520

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                      YEAR  
                              JULY                      1976

DATE	TIME U.T.	NATURE OF PHENOMENON <sup>1</sup>	REMARKS
12	0247	si	
17	1144	bps	
18	19XX	pc1	Pearl event.
21	12XX	pi2	With bay.
Aug. 01	0140	si	

IDENTIFIED BY:                      JEP, MJM

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

JULY 1976

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	28	04XX	..	..	..	..	29	3,4	6	83	1100	410	29 19

## NORMAL MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 uT, 7-1-76	2400 uT, 7-31-76	1.0' /mm	3.8 $\gamma$ /mm	28° 07' 1 E
H	0000 uT, 7-1-76	2400 uT, 7-10-76	7.8 $\gamma$ /mm		12767 $\gamma$
	0000 uT, 7-11-76	2400 uT, 7-28-76	7.8 $\gamma$ /mm		12773 $\gamma$
	0000 uT, 7-29-76	2400 uT, 7-31-76	7.8 $\gamma$ /mm		12779 $\gamma$
Z	0000 uT, 7-1-76	2400 uT, 7-31-76	7.6 $\gamma$ /mm		55120 $\gamma$

## STORM MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 uT, 7-1-76	2400 uT, 7-31-76	7.9' /mm	29.8 $\gamma$ /mm	24° 21' 1 E
H	0000 uT, 7-1-76	2400 uT, 7-10-76	44.1 $\gamma$ /mm		11510 $\gamma$
	0000 uT, 7-11-76	2400 uT, 7-31-76	44.1 $\gamma$ /mm		11526 $\gamma$
Z	0000 uT, 7-1-76	2400 uT, 7-10-76	48.6 $\gamma$ /mm		54008 $\gamma$
	0000 uT, 7-11-76	2400 uT, 7-31-76	48.6 $\gamma$ /mm		54019 $\gamma$

## RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION	
	FROM	TO	SCALE VALUE	
D	0000 uT, 7-1-76	2400 uT, 7-31-76	0.3' /mm	
				1.0 $\gamma$ /mm
H	0000 uT, 7-1-76	2400 uT, 7-31-76	1.0 $\gamma$ /mm	
Z	0000 uT, 7-1-76	2400 uT, 7-31-76	2.4 $\gamma$ /mm	

## MONTHLY MEAN ABSOLUTE VALUES\*

D	H	Z
28° 22' 0 E	13057 $\gamma$	55358 $\gamma$

\* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: July 11, 12, 13, 14, 19, 20, 21, 23, 24, 26



FORM C&GS-404a  
(10-67)

MAGNETOGRAM HOURLY SCALINGS  
(UNIVERSAL TIME)

U.S. DEPARTMENT OF COMMERCE  
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY  
BROOMFIELD DIVISION

OBLY. YEAR MONTH CLE-  
MENT  
CO 76 JULY D

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	M	S	Te	Q	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
						92	58	91	49	156	100	138	204	165	115	188	225	166	180	193	193	255	272	220	225	175	160	117	89	5816
						100	70	79	100	118	127	125	252	110	125	197	144	144	144	150	182	221	231	229	222	200	170	150	150	3700
						111	110	109	104	95	161	130	139	159	199	188	45	130	197	200	257	236	234	253	233	182	119	118	105	3704
						114	109	92	99	103	89	184	69	239	14	101	101	123	148	222	160	233	262	298	210	173	135	121	104	3503
						98	103	108	117	126	124	134	121	178	223	138	208	154	221	218	189	254	280	240	228	189	144	123	112	4030
						124	89	97	112	113	108	103	104	114	112	117	115	138	170	177	174	219	252	248	233	192	164	135	102	3514
						90	82	136	138	132	131	154	177	131	107	128	138	150	158	224	217	262	263	282	239	192	158	136	112	3937
						104	98	91	117	172	229	127	174	121	129	89	133	209	182	216	268	309	290	241	192	127	124	118	119	3979
						87	47	46	82	106	220	148	163	99	109	93	110	107	153	187	228	242	253	228	209	168	158	104	111	3458
						108	109	109	119	114	158	237	144	137	139	197	148	132	141	181	218	238	258	259	247	211	134	97	73	3908
						70	88	100	117	133	150	149	149	133	150	153	155	150	150	181	209	264	283	266	239	221	174	148	111	3943
						88	83	80	109	122	113	143	142	125	132	139	163	160	148	182	239	255	281	257	219	222	163	118	74	3777
						62	57	76	122	123	138	132	168	136	130	133	122	148	162	193	213	248	268	260	225	188	144	114	98	3660
						81	77	81	73	82	109	113	159	143	127	128	128	122	123	165	200	283	286	259	213	161	131	125	118	3477
						99	88	76	89	95	119	140	139	120	125	212	228	167	158	189	217	344	249	280	255	88	139	108	94	3818
						34	36	14	59	57	80	57	174	62	160	152	150	133	127	156	182	253	260	240	220	123	102	102	77	2896
						52	54	79	92	112	137	132	143	154	118	123	110	110	148	178	184	217	238	231	227	197	158	128	109	3431
						99	108	94	123	123	108	173	183	120	128	129	138	144	158	174	214	235	243	252	218	192	159	99	64	3678
						42	66	73	92	130	141	142	139	136	129	128	134	132	139	179	209	244	241	239	208	170	159	133	100	3499
						97	112	127	133	134	129	142	138	139	161	138	137	139	143	177	212	229	241	228	207	179	154	129	99	3724
						88	78	76	91	114	128	153	140	142	143	133	138	168	148	178	208	225	233	242	209	172	138	110	100	3525
						102	108	113	127	129	127	98	72	37	92	73	137	154	182	212	221	227	238	252	222	196	150	109	99	3457
						91	83	84	101	122	121	129	132	124	140	127	126	132	170	170	204	228	199	201	194	177	153	109	87	3404
						83	82	84	102	117	121	123	122	128	122	121	133	145	142	167	233	269	271	268	252	195	104	119	87	3590
						92	69	61	97	105	97	121	173	153	120	148	242	157	123	108	188	251	285	264	227	171	138	101	87	3578
						70	86	97	113	138	150	151	148	144	143	148	142	138	143	167	208	240	241	256	213	178	171	98	73	3675
						59	70	94	103	134	138	137	136	129	133	69	167	138	149	178	204	264	296	290	301	184	137	31	89	3629
						78	37	72	117	108	121	353	49	89	80	112	225	158	153	158	212	312	264	287	243	127	98	76	86	3615
						74	81	107	117	157	117	303	209	135	143	231	101	244	271	73	183	271	299	293	246	184	122	67	70	4098
						61	77	97	77	260	142	248	132	160	128	132	272	160	81	188	242	248	267	257	237	171	154	129	76	3996
						72	81	83	107	129	133	144	231	215	143	53	202	118	113	123	169	256	272	273	238	209	170	119	104	3757

SCALED BY: SPT  
 CHECKED BY: CED, MJM, JEP  
 SIGNS REVIEWED BY: CEP  
 PUNCHED BY:

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

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

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

MONTHLY SUM: 113796  
 MONTHLY MEAN: 153  
 DATES WITH GAPS:

MAGNETOGRAM HOURLY SCALINGS  
(UNIVERSAL TIME)

U.S. DEPARTMENT OF COMMERCE  
SCIENCE SERVICES ADMINISTRATION  
COAST AND GEODETIC SURVEY  
MAGNETISM DIVISION

OBSV. YEAR MONTH ELEMENT  
CO 76 JULY H

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.

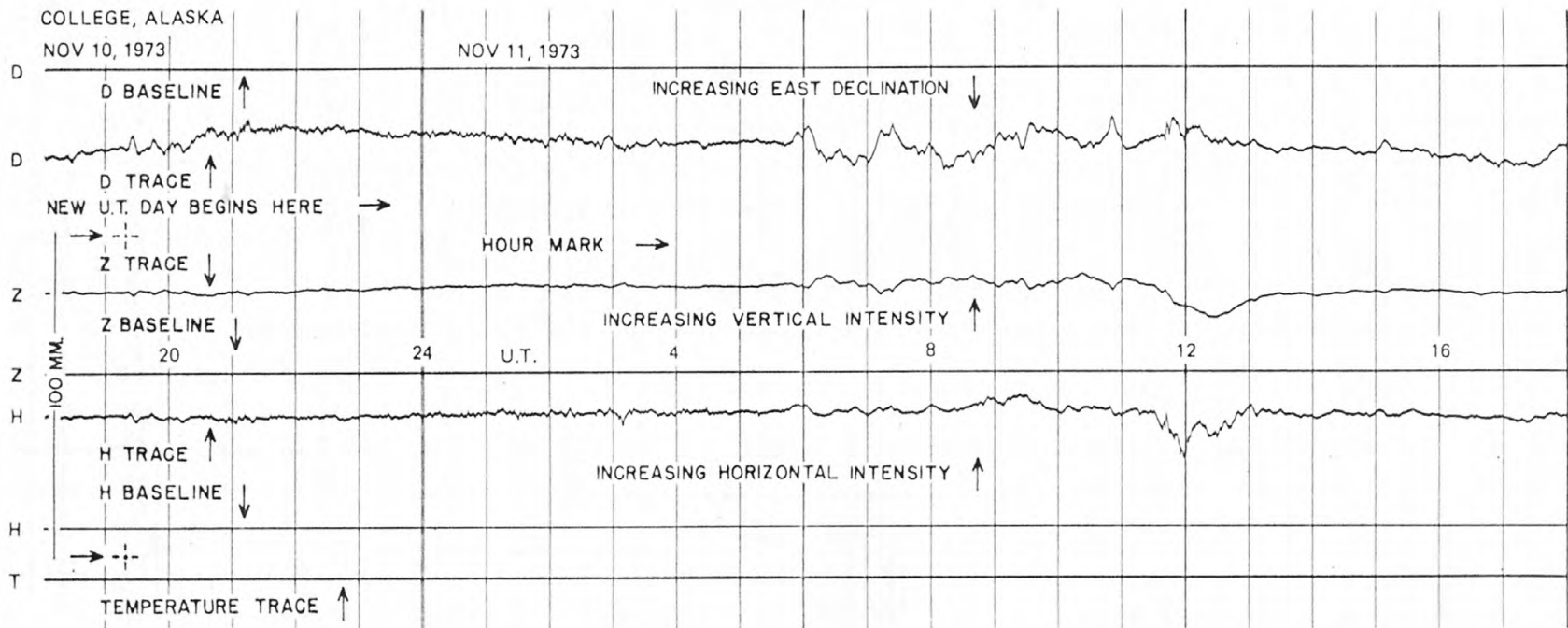
C	Q	Y	Q	11	12	13	14	15	16	17	18	19	20	21	22	23	24	SUM												
				01	386	404	423	538	680	449	466	401	307	257	238	-35*	01	120	235	183	336	367	354	334	341	335	361	344	371	8195
				02	394	393	370	411	388	375	426	422	422	363	259	244	02	137	362	394	384	391	357	362	362	374	361	359	363	8667
				03	361	363	368	392	436	500	425	395	358	333	-6*	22*	03	377	349	370	181	189	401	372	352	322	341	361	370	8131
				04	380	362	361	371	388	455	497	465	93	398	304	-14*	04	285	387	117	219	378	332	319	333	373	370	354	352	7746
				05	353	376	359	374	372	392	389	412	443	383	318	178	05	109	205	246	355	333	329	381	361	345	360	354	356	8083
				06	379	368	369	372	373	391	382	423	450	422	406	386	06	336	273	219	362	325	376	362	376	369	368	357	348	8836
				07	348	393	386	389	386	394	389	380	382	386	324	302	07	282	299	180	290	212	318	359	366	365	362	357	345	8188
				08	366	368	375	415	459	465	475	471	434	326	264	316	08	75	121	328	381	370	361	367	360	351	350	360	362	8500
				09	341	368	428	429	537	509	371	378	402	379	224	176	09	357	388	391	385	378	361	361	346	342	338	341	334	8864
				10	358	374	376	362	393	433	405	372	389	386	306	362	10	371	354	399	399	385	387	369	362	352	349	355	355	8953
				11	353	362	365	375	376	382	373	371	386	397	363	365	11	381	382	382	369	358	358	375	373	359	349	345	355	8864
				12	352	366	389	373	378	405	388	391	386	379	372	375	12	368	389	376	366	356	358	371	352	333	315	329	335	8802
				13	358	369	392	372	385	386	376	402	392	388	395	399	13	382	395	394	381	373	362	355	351	339	338	336	341	8901
				14	362	363	370	393	396	378	415	437	385	387	383	373	14	378	346	342	352	387	385	368	353	343	336	336	337	8905
				15	346	361	372	376	398	384	387	374	381	389	387	361	15	395	413	419	392	359	399	370	328	342	345	317	328	8923
				16	334	382	394	379	459	626	460*	-9*	395	415	422	365	16	26	206	355	396	385	366	352	315	313	335	337	326	8334
				17	359	362	377	382	401	388	369	373	368	372	368	332	17	315	358	362	361	353	366	355	336	331	320	319	326	8563
				18	355	352	398	381	390	368	391	388	379	369	371	372	18	375	378	366	381	385	382	366	335	327	309	325	341	8804
				19	340	329	347	362	363	381	384	391	371	372	378	375	19	384	361	358	358	374	375	375	371	355	338	335	331	8708
				20	341	344	359	372	376	389	376	378	376	376	374	368	20	379	381	379	378	369	366	353	338	335	338	339	336	8714
				21	358	362	378	371	368	368	369	366	369	372	382	364	21	312	371	378	369	371	368	358	343	326	328	325	343	8629
				22	349	352	356	362	378	387	411	444	492	447	349	378	22	375	379	379	372	369	356	348	331	321	320	332	327	8924
				23	348	354	370	372	362	367	365	368	379	382	388	384	23	370	331	365	364	381	357	374	360	337	328	327	331	8578
				24	347	361	377	377	367	369	376	370	381	386	395	392	24	390	387	363	376	376	388	381	349	334	345	345	334	8866
				25	371	397	379	357	389	374	392	401	396	386	308	214	25	357	363	277	315	361	360	349	335	332	335	339	336	8423
				26	342	379	389	369	359	359	359	369	359	361	365	368	26	365	361	362	365	368	362	350	346	340	325	328	341	8580
				27	364	354	374	391	374	360	357	368	374	412	243	173	27	253	344	244	367	392	376	368	340	333	309	338	356	8164
				28	342	381	386	365	386	449	476	519	395	353	233	9	28	118	141	298	321	319	351	250	251	323	325	341	347	7699
				29	378	419	539	533	542	438	459	400	255	242	50*	60*	29	-109*	-111	318	401	339	341	351	348	326	310	349	344	7522
				30	339	375	389	437	508	521	460	466	371	385	342	-242*	30	-42	-114*	342	400	392	373	355	331	334	318	311	319	7740
				31	341	357	364	358	367	395	435	437	380	197	-27	214	31	332	290	310	314	354	380	361	348	337	317	332	334	7827

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 262703	
CHECKED BY	CED, JEP, MJM		( ) Significant portion of hour interpolated.	<> Record off sheet for part in all of hour; if value is given, curve was estimated for missing part.		MONTHLY MEAN 353
SIGNS REVIEWED BY	CED		( ) No record, or no values available because of faulty record.			DATES WITH GAPS:
PUNCHED BY			* Derived from Storm _____ Mgph., converted to Normal Mgph.			

FORM CAGL-404a 10-57		MAGNETOGRAM HOURLY SCALINGS (UNIVERSAL TIME)																			U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION COAST AND GEODETIC SURVEY MAGNETISM DIVISION				OBSY.	YEAR	MONTH	ELE- MENT		
Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight, Hour 01 of local day (1500W M.T.) is hour 11 of the 88th universal day. Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.																						CO	76	JULY	Z					
C	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	333	348	389	344	302	348	382	355	188	248	335*	43	01	114	193	237	253	309	325	274	292	283	291	301	311	6796		
		02	331	351	361	351	351	345	347	343	311	297	226	199	02	96	219	298	318	326	320	301	302	305	307	311	320	7234		
		03	322	327	321	321	341	397	357	278	221	264	356	218	03	301	292	312	292	174	266	312	317	304	302	313	320	7228		
		04	351	340	328	337	340	352	372	251	71	164	287	151	04	160	258	314	139	265	291	296	270	298	303	300	309	6527		
		05	313	323	311	322	330	332	331	322	346	258	243	232	05	202	253	275	300	288	253	283	301	299	295	302	311	7025		
		06	325	343	340	325	321	326	340	344	351	338	338	328	06	315	274	236	249	314	321	315	303	299	292	295	302	7554		
		07	306	315	363	362	333	334	361	345	330	314	274	250	07	217	233	256	263	251	252	257	265	290	301	306	322	7100		
		08	328	320	307	339	369	368	372	362	321	295	301	327	08	455	410	231	277	312	293	280	298	281	292	304	321	7763		
		09	337	321	352	394	399	368	361	340	314	320	228	144	09	242	292	322	333	324	317	310	306	292	301	301	312	7530		
		10	322	335	335	332	324	368	360	340	328	308	231	272	10	293	285	301	322	315	307	307	302	302	295	306	306	7496		
		11	306	312	321	319	321	328	334	339	336	330	319	271	11	306	315	317	318	308	283	296	298	299	292	298	303	7471		
		12	309	313	317	318	318	321	348	336	330	323	319	306	12	292	288	309	310	295	281	281	287	294	293	294	305	7387		
		13	311	318	318	338	324	331	345	369	345	336	331	326	13	316	313	319	318	316	311	308	299	296	293	299	305	7685		
		14	308	325	340	350	366	375	365	390	341	343	328	308	14	309	301	289	278	305	308	299	293	288	296	305	310	7740		
		15	312	311	323	343	349	349	344	324	318	328	280	218	15	252	303	322	323	273	273	318	315	258	303	308	319	7366		
		16	331	336	333	335	361	343	153	250	320	348	345	331	16	318	202	191	293	312	324	324	303	275	274	299	312	7213		
		17	313	322	324	335	346	364	350	328	313	313	318	293	17	263	308	318	318	313	318	316	307	300	300	302	304	7586		
		18	309	312	312	343	339	333	342	289	306	309	309	310	18	308	312	318	319	312	304	305	294	292	287	286	301	7487		
		19	306	320	318	314	318	320	335	360	331	315	315	312	19	311	289	301	300	310	309	306	300	299	299	299	303	7490		
		20	308	311	312	316	323	322	332	325	334	322	309	290	20	292	299	315	316	309	305	301	299	290	286	292	299	7487		
		21	305	320	333	337	325	315	311	311	309	308	306	286	21	231	268	309	318	309	301	301	306	305	301	299	298	7312		
		22	299	311	305	310	312	313	314	337	277	326	269	305	22	314	325	323	315	311	300	298	304	306	302	298	304	7378		
		23	305	314	330	348	338	322	324	315	314	323	322	321	23	305	261	265	305	273	252	285	295	294	297	300	303	7311		
		24	308	317	317	321	318	315	324	322	317	314	315	314	24	313	303	288	292	290	300	299	302	290	278	298	301	7356		
		25	306	327	392	400	360	354	364	379	342	320	287	262	25	215	291	238	229	288	307	317	308	305	309	316	323	7538		
		26	321	348	356	329	321	319	318	315	312	311	310	307	26	308	300	289	295	294	291	292	291	287	289	288	285	7376		
		27	297	310	310	317	344	334	317	310	321	329	248	234	27	294	274	217	263	293	297	303	306	282	298	280	318	7156		
		28	338	400	402	348	325	369	265	266	293	277	348	362	28	293	245	254	306	270	311	224	202	239	280	290	306	7213		
		29	310	343	420	399	408	393	392	301	289	213	288	173	29	84	180	172	298	309	304	303	291	291	297	304	319	7081		
		30	330	333	360	360	393	350	261	376	361	324	318	363	30	419	340	179	282	321	315	314	315	294	307	317	326	7858		
		31	339	342	333	320	319	340	351	320	257	237	319	175	31	222	248	249	267	281	304	312	305	300	306	307	314	7067		
SCALED BY	SPT	Preliminary base-line and scale values:																			<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.				<input type="checkbox"/> Scaling uncertain because of magnetic storm. <input type="checkbox"/> Record off sheet for part or all of hour; if value is given, curve was estimated for missing part.				MONTHLY SUM	227695
CHECKED BY	CED, JEP, MJM	Interval Beginning	Base-line Value	Scale Value																								MONTHLY MEAN	306	
SIGNS RE- VIEWED BY	CED																													
PUNCHED BY																														
* Derived from <u>Stoitt</u> Mgpb., converted to Normal Mgpb.																														

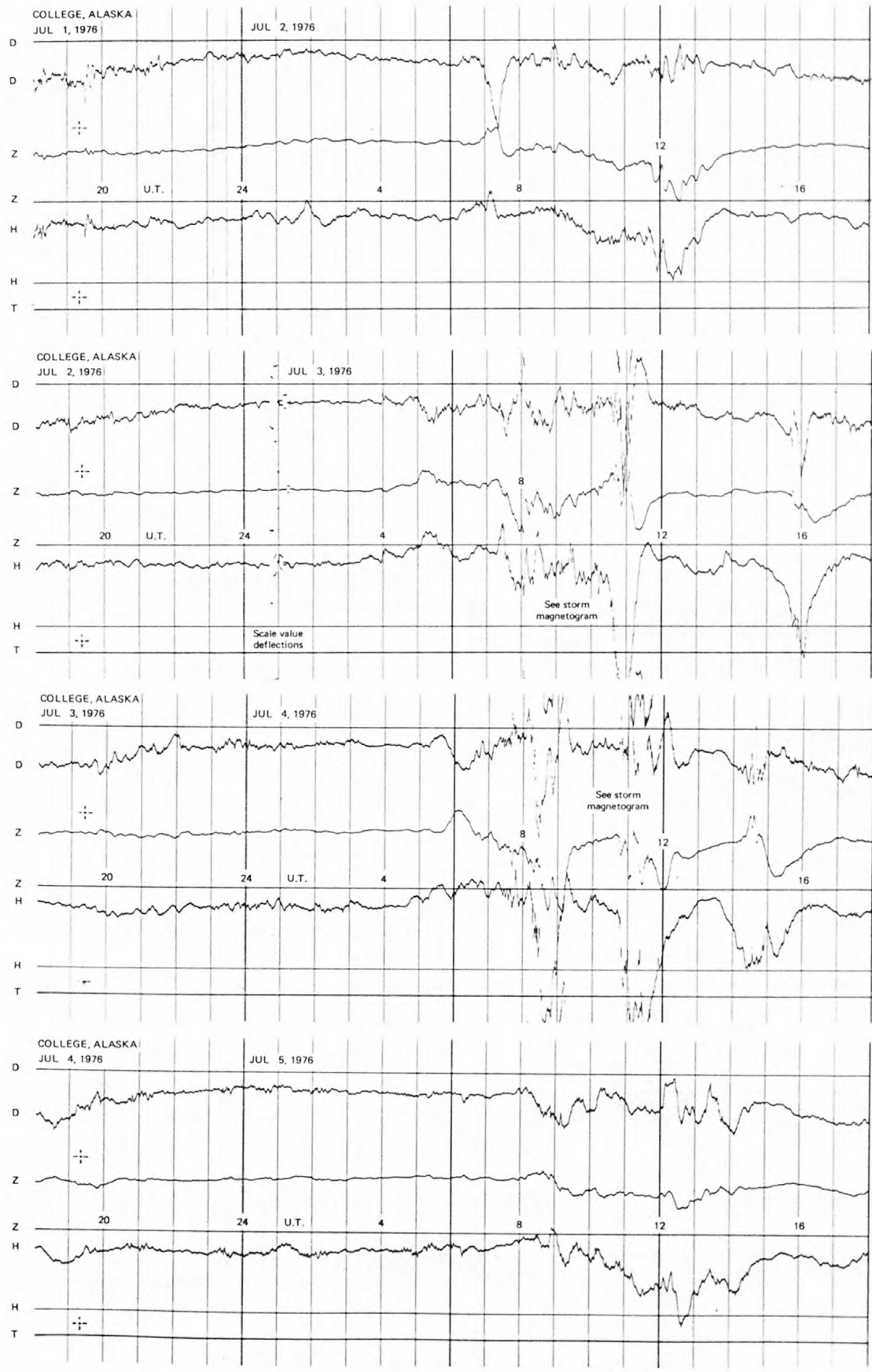
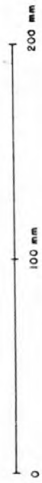


# FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)

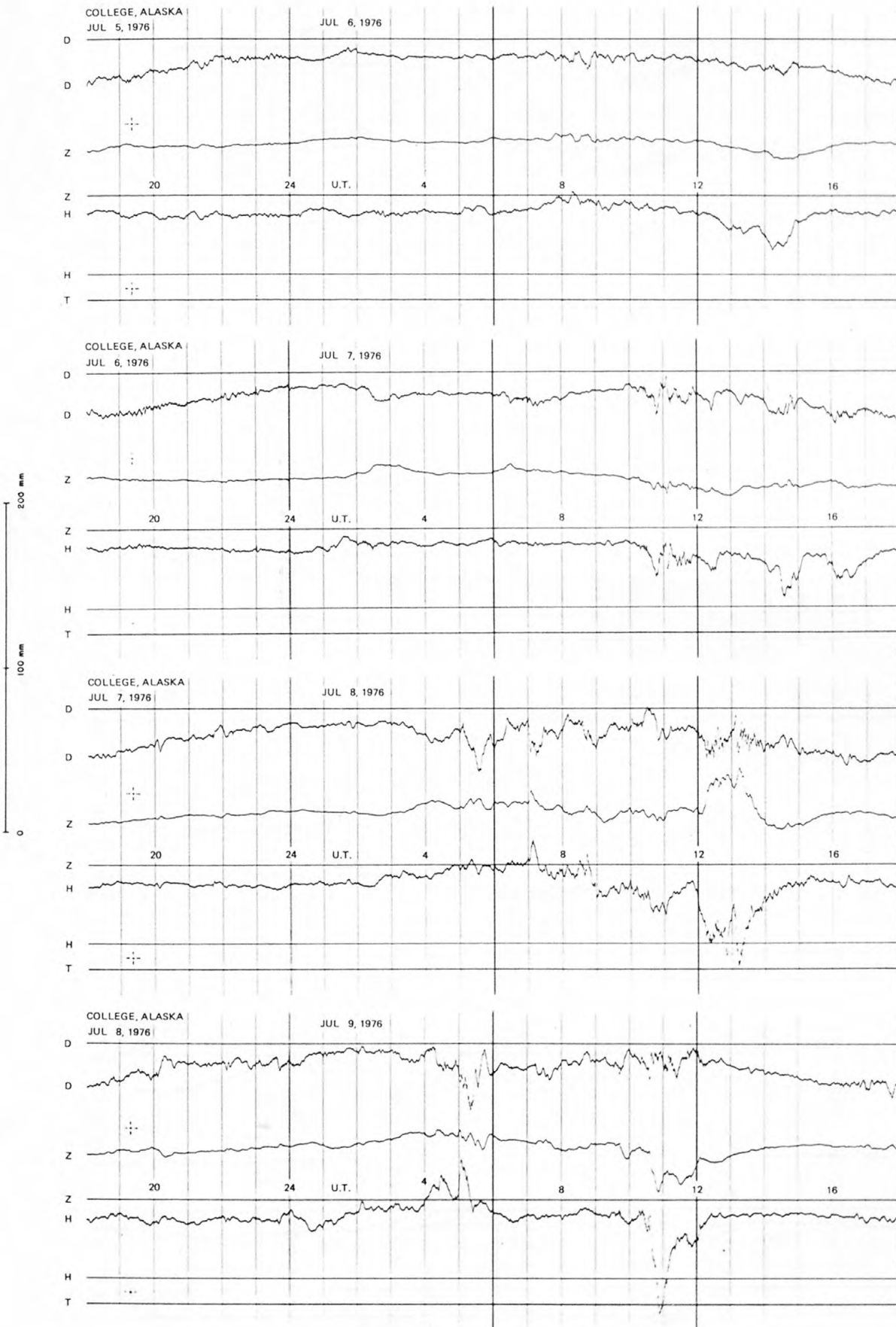


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

NORMAL MAGNETOGRAMS

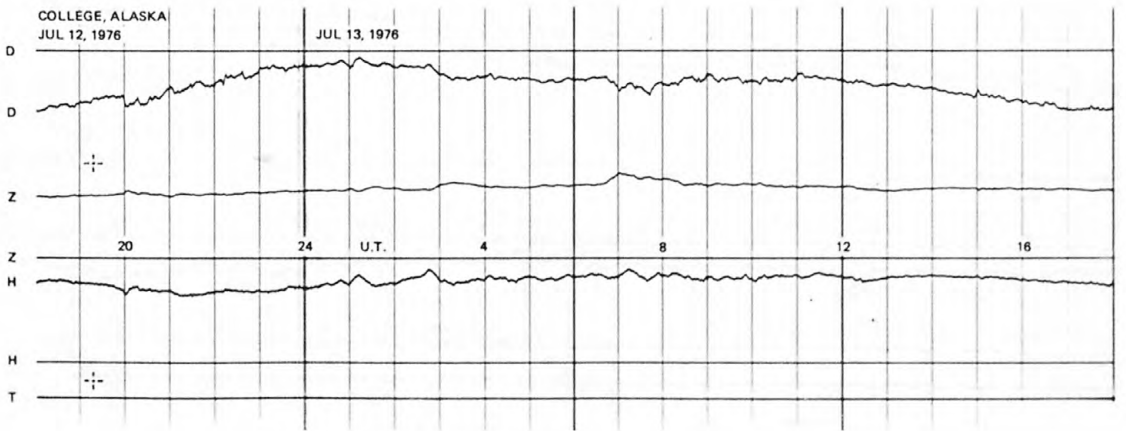
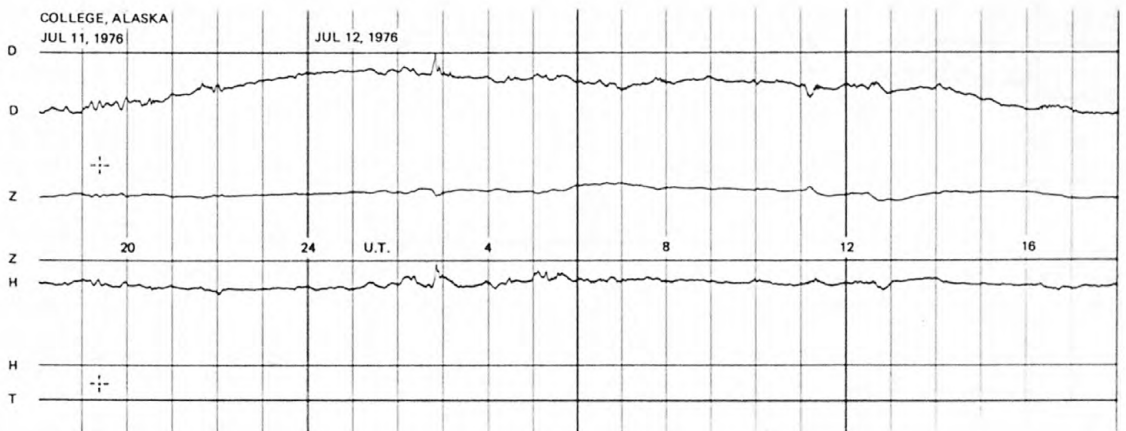
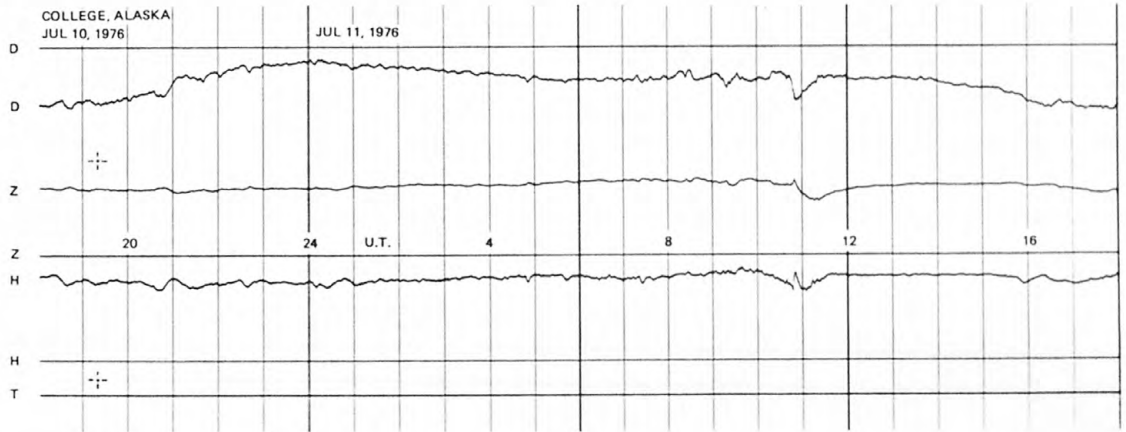
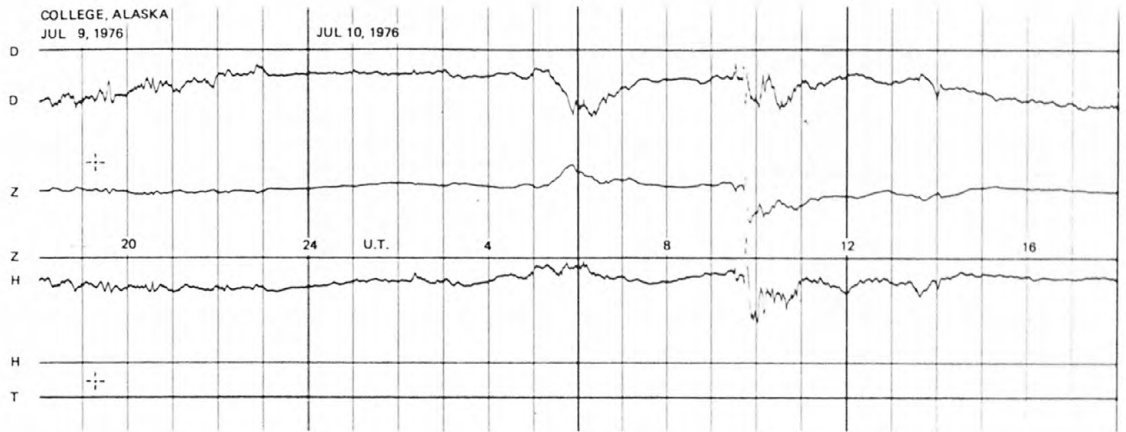
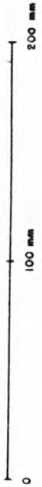


NORMAL MAGNETOGRAMS

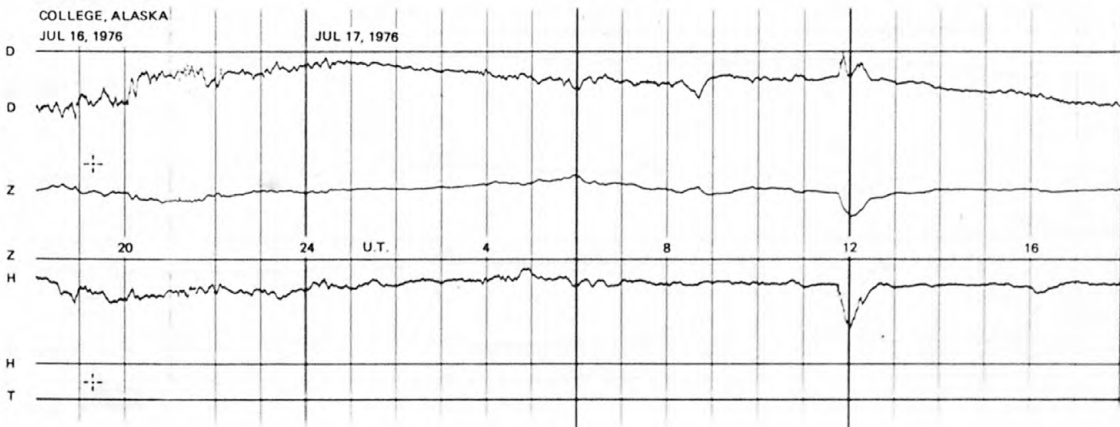
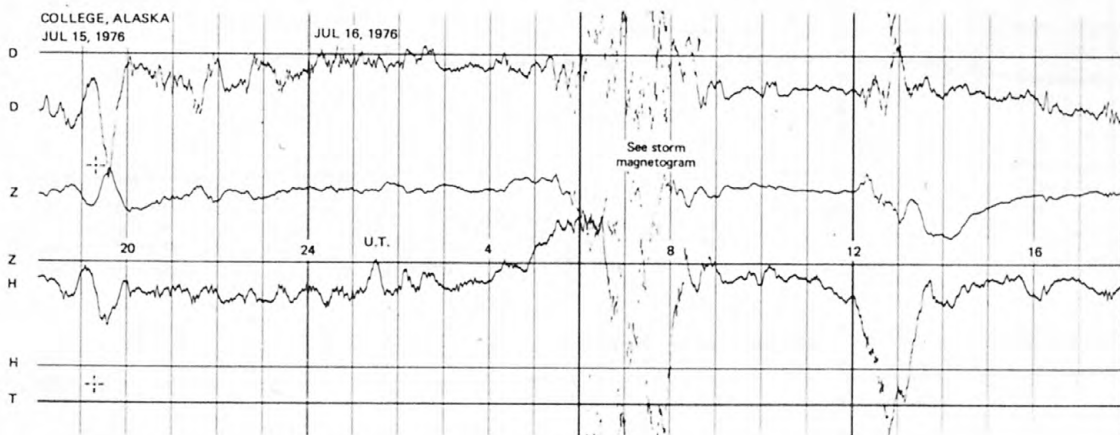
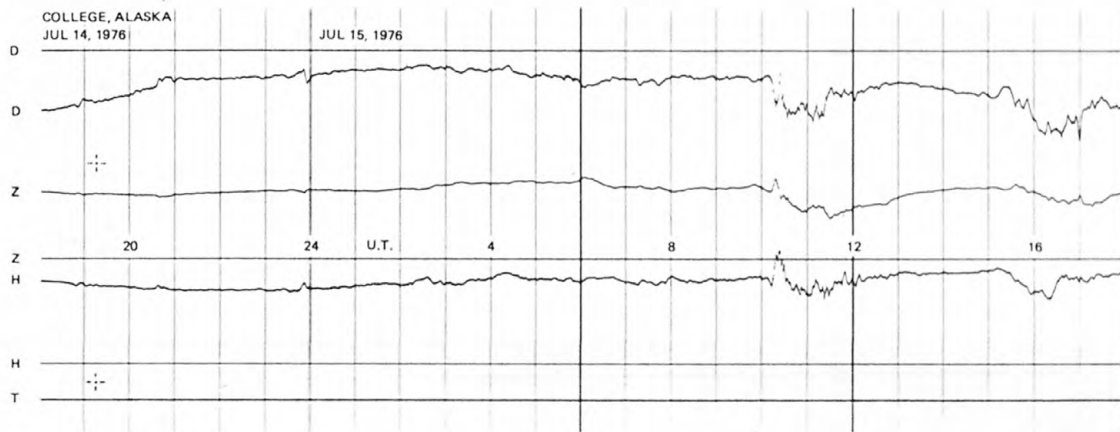
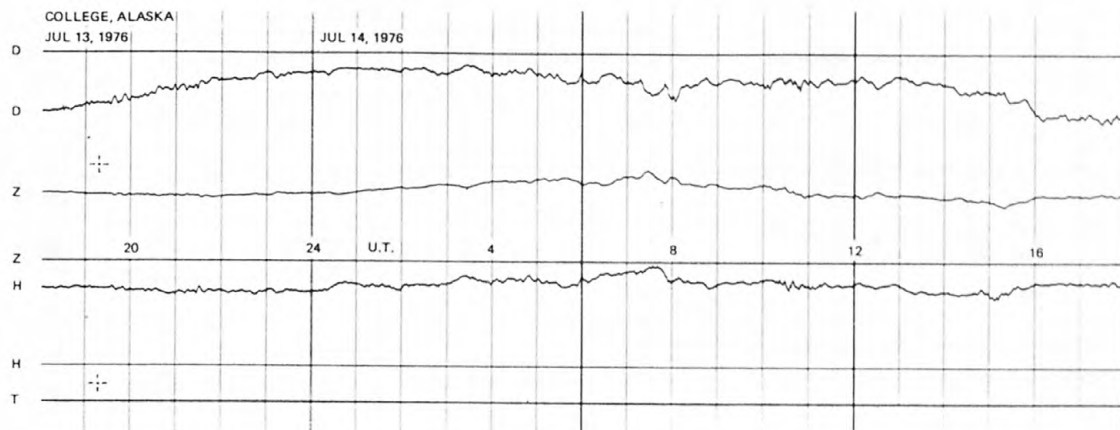




NORMAL MAGNETOGRAMS

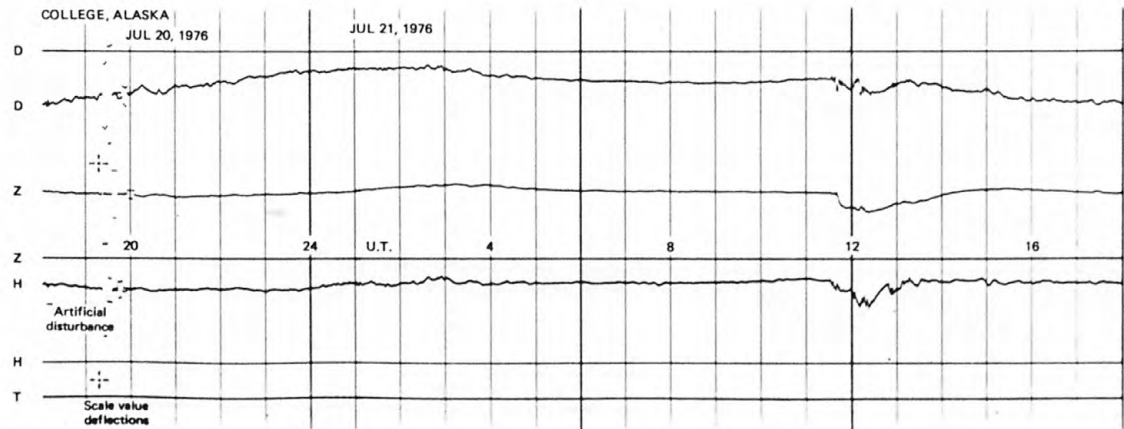
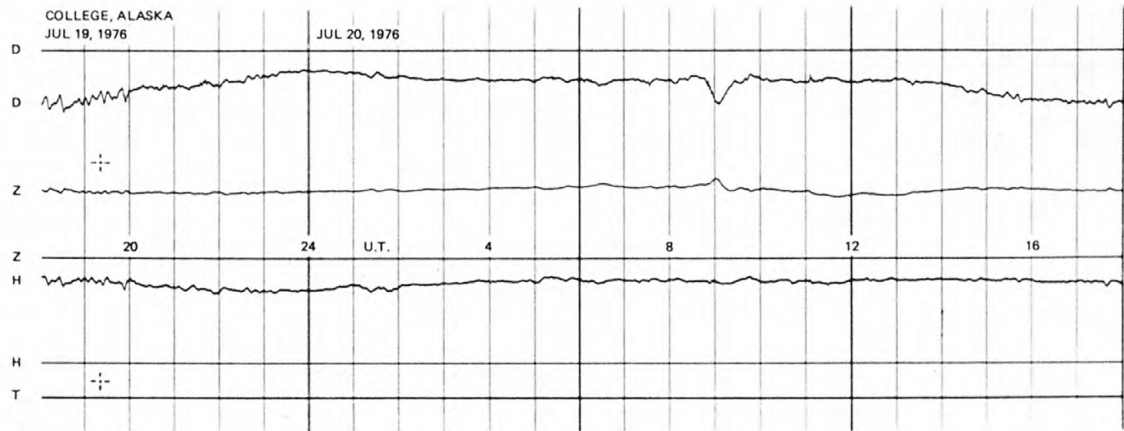
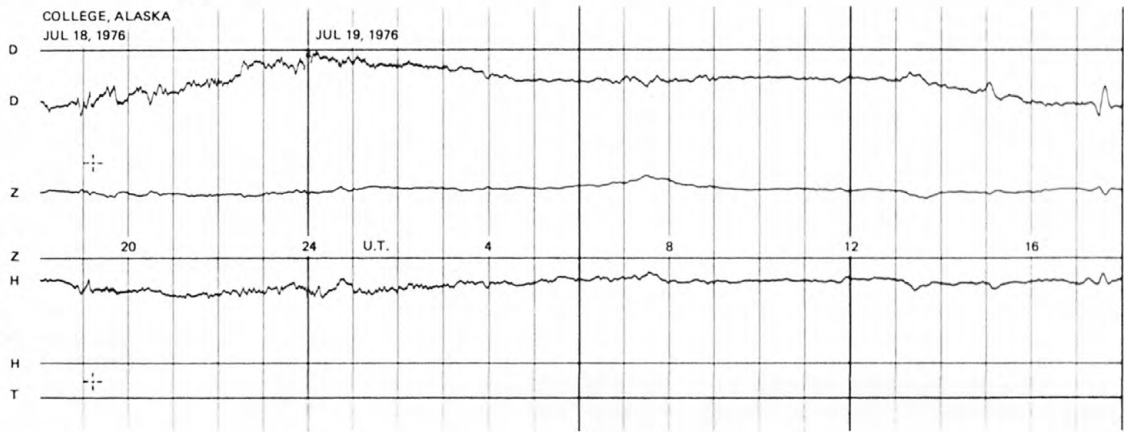
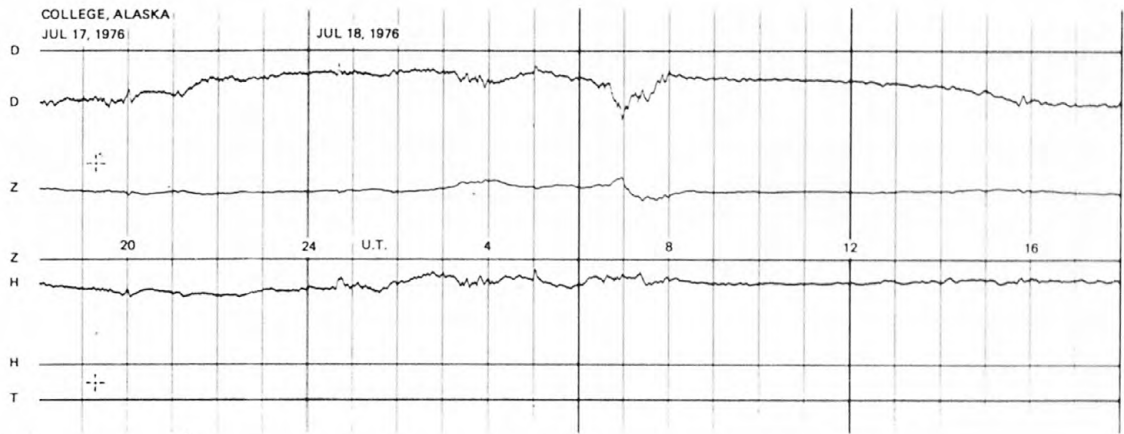


NORMAL MAGNETOGRAMS



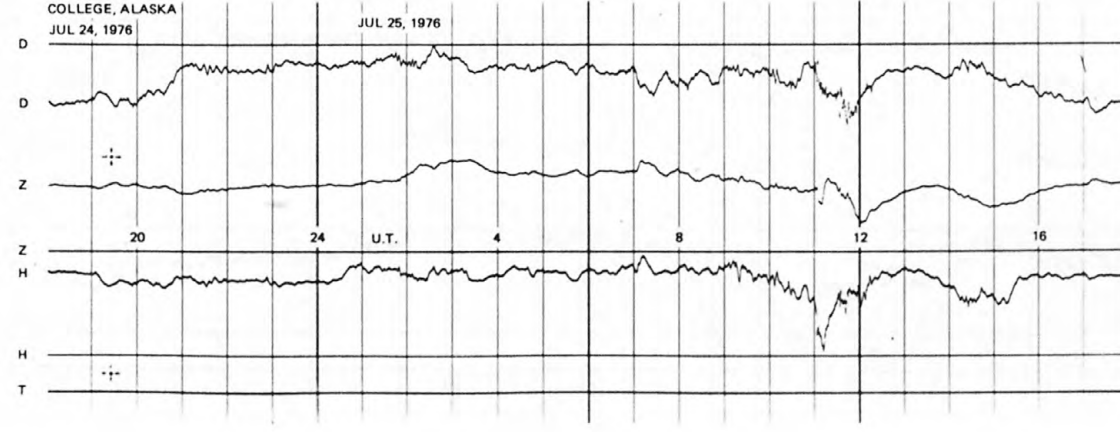
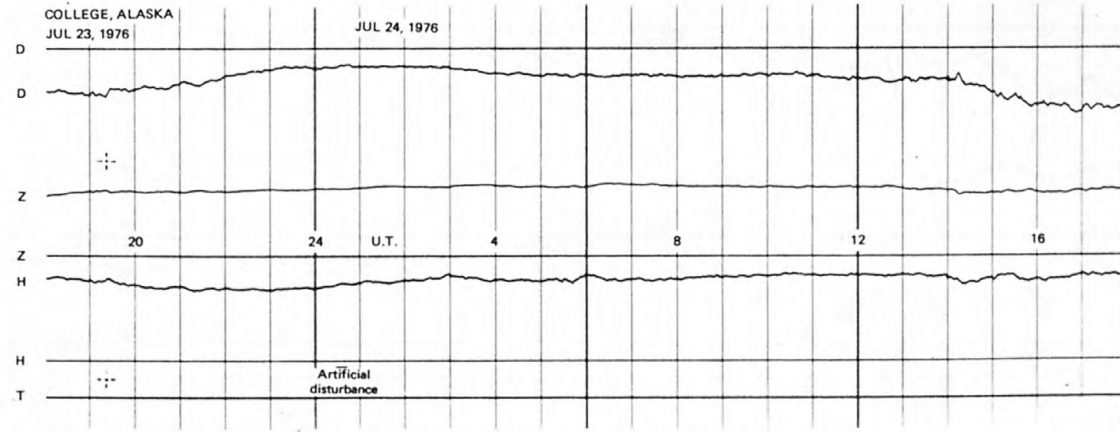
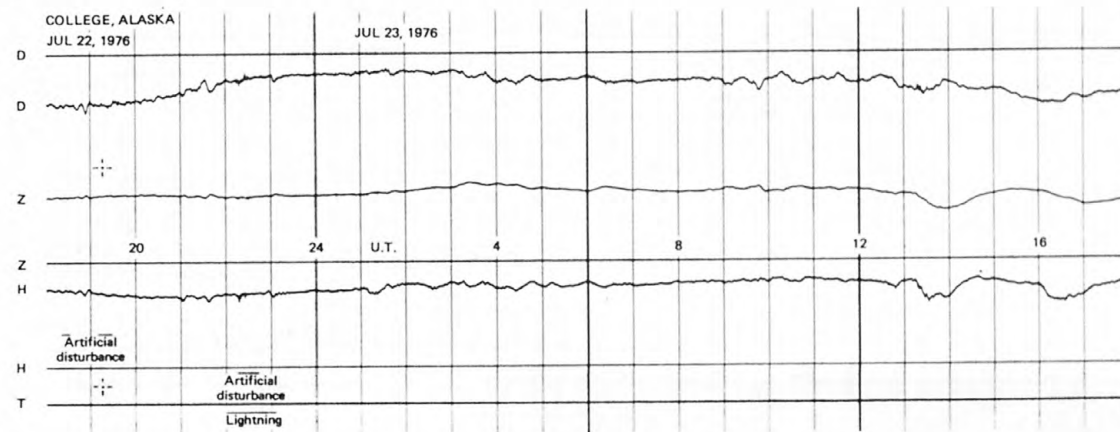
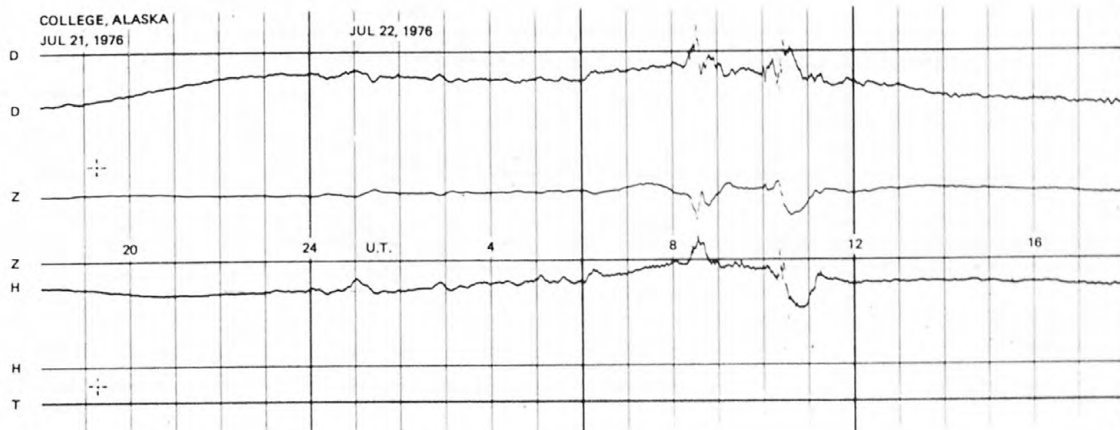
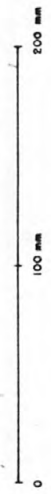
**NORMAL MAGNETOGRAMS**

200 mm  
100 mm  
0

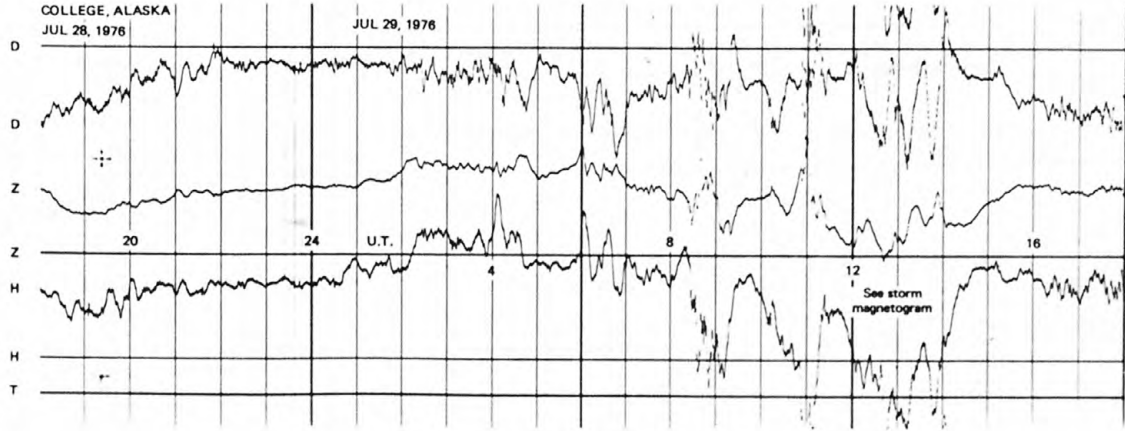
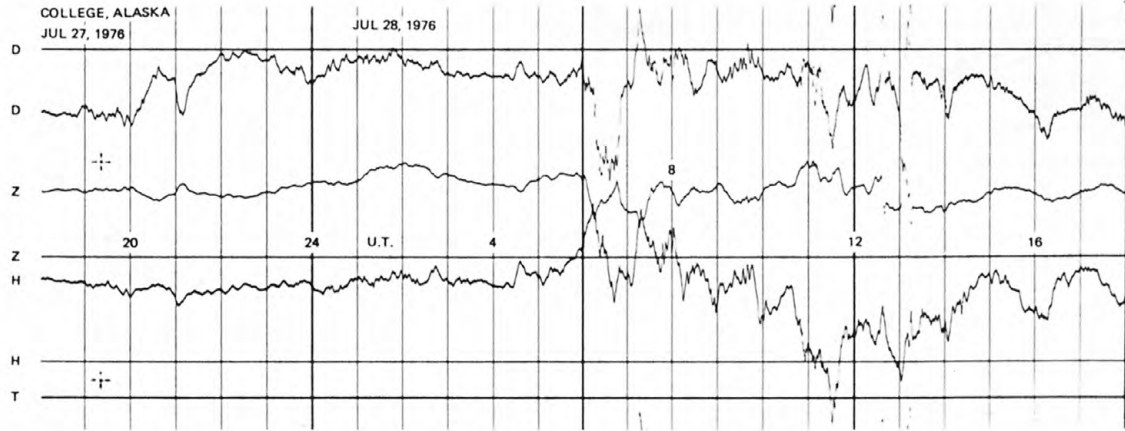
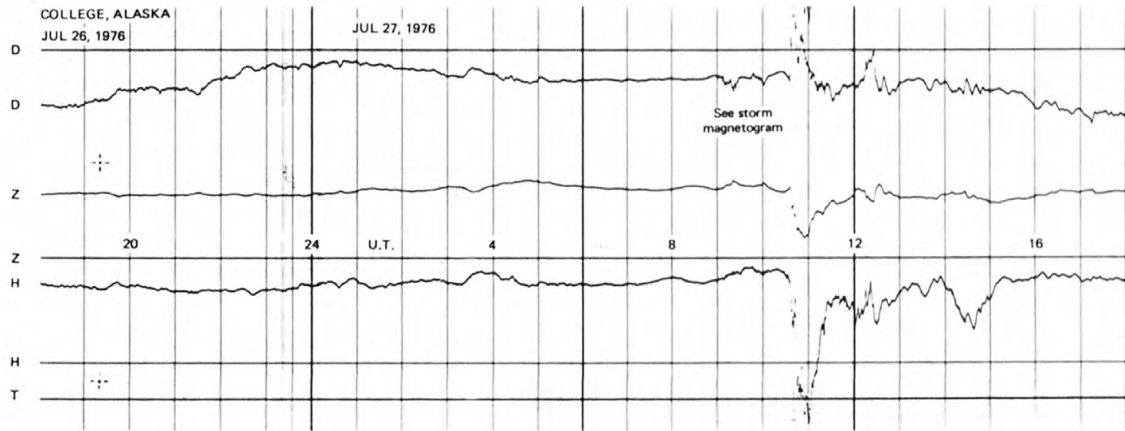
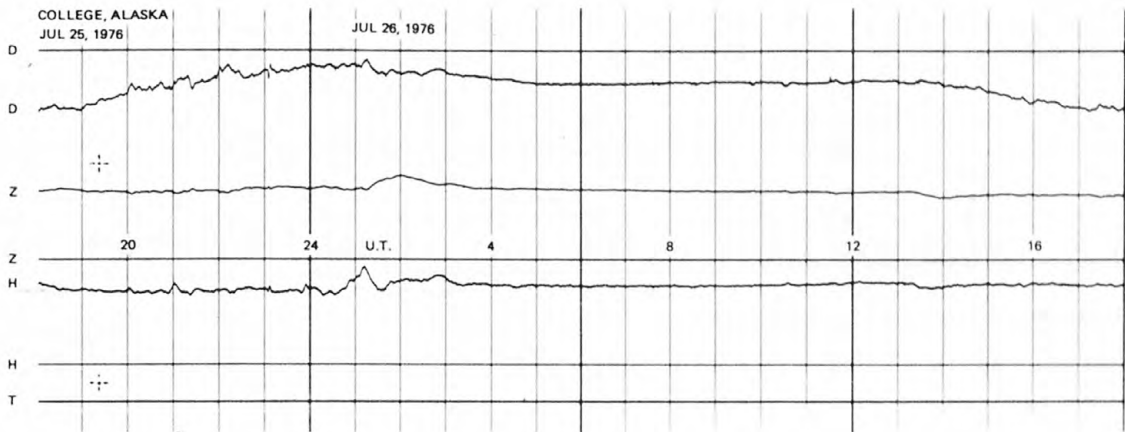
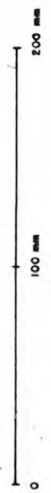




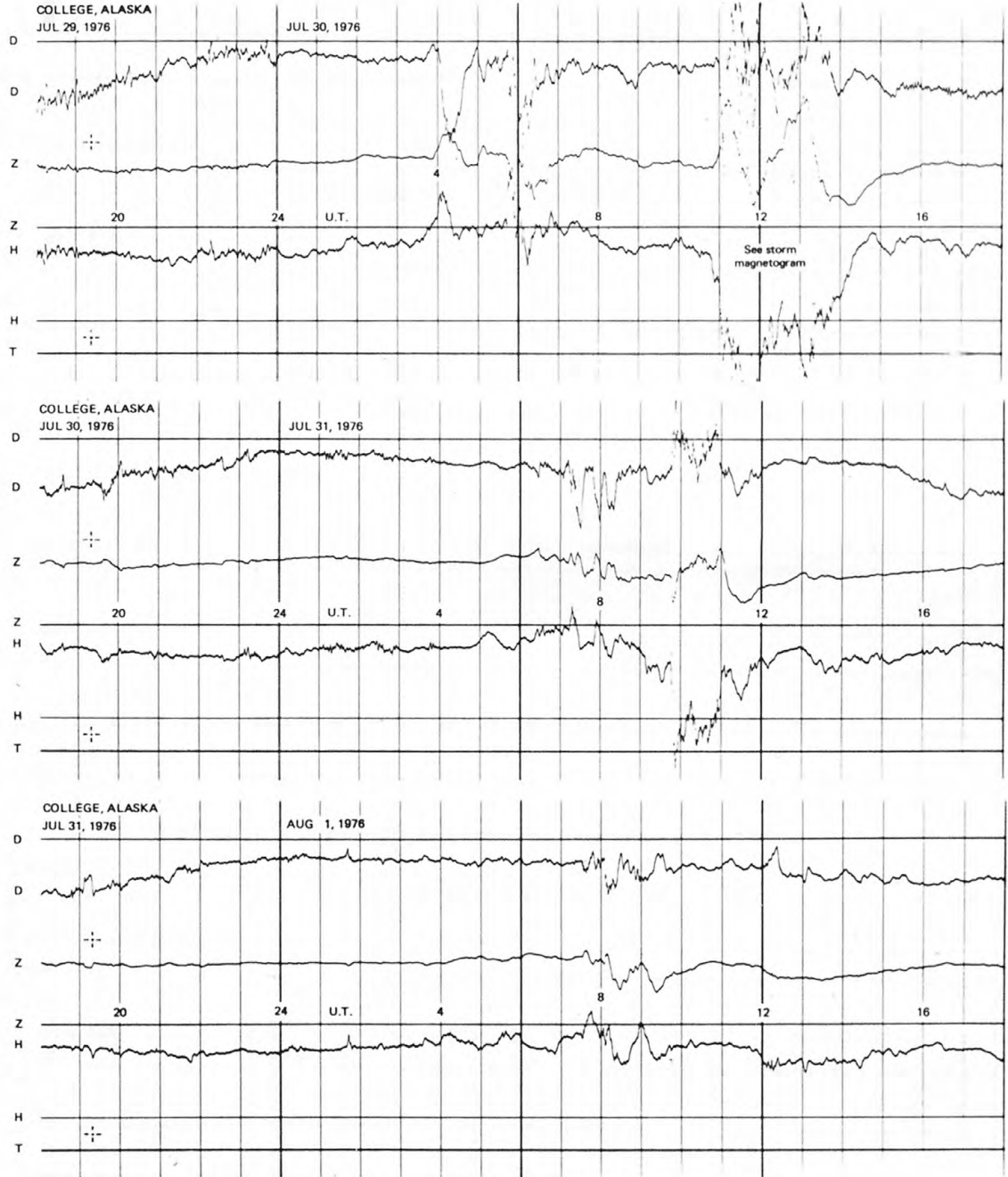
NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



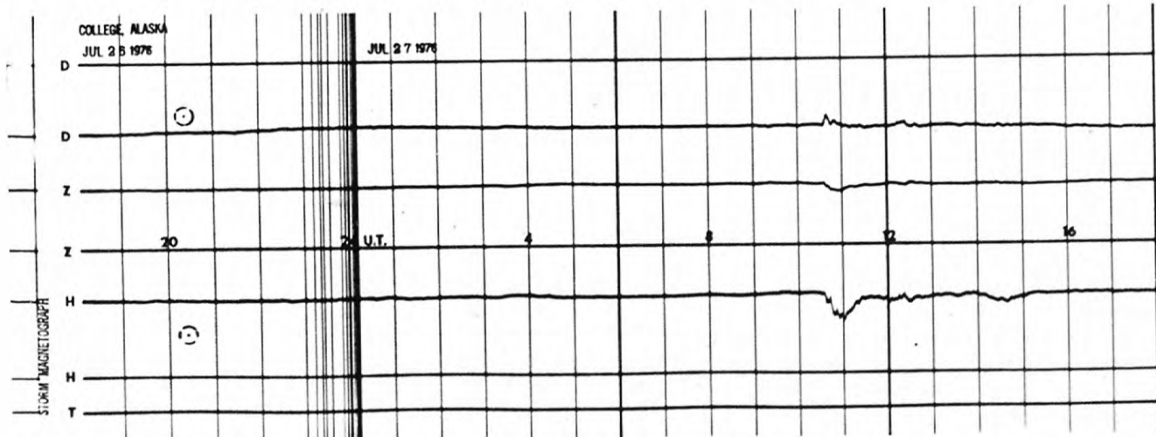
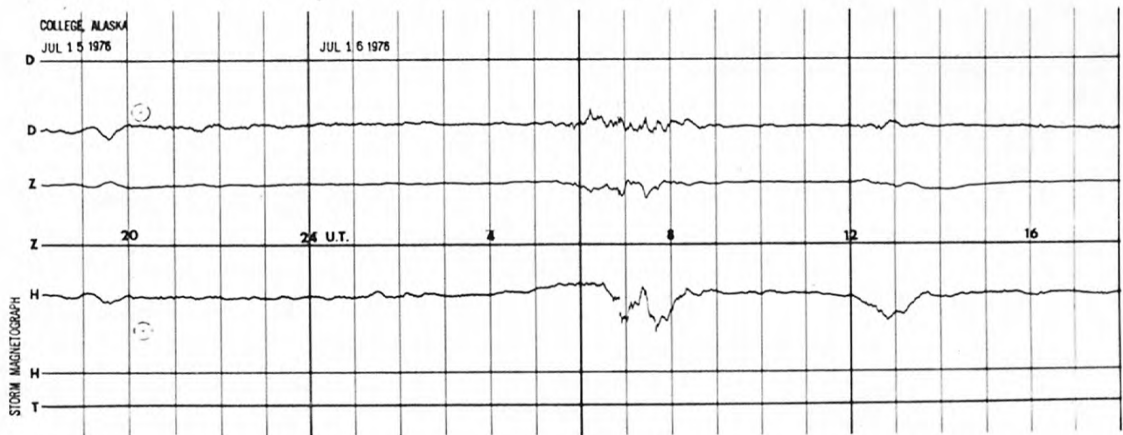
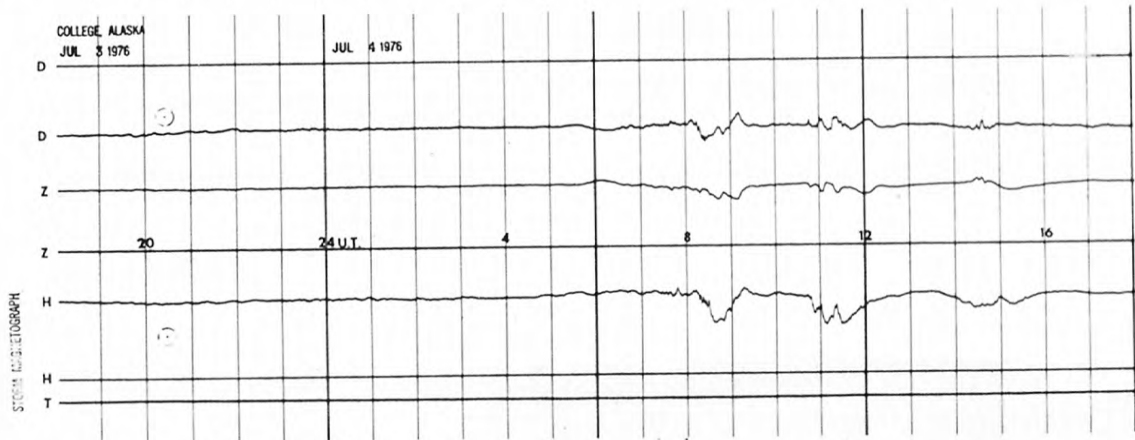
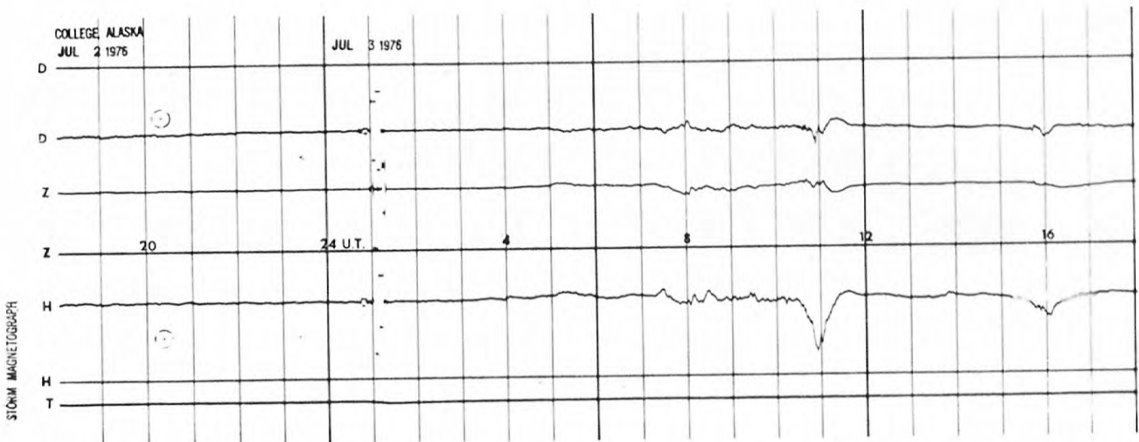
**NORMAL MAGNETOGRAMS**



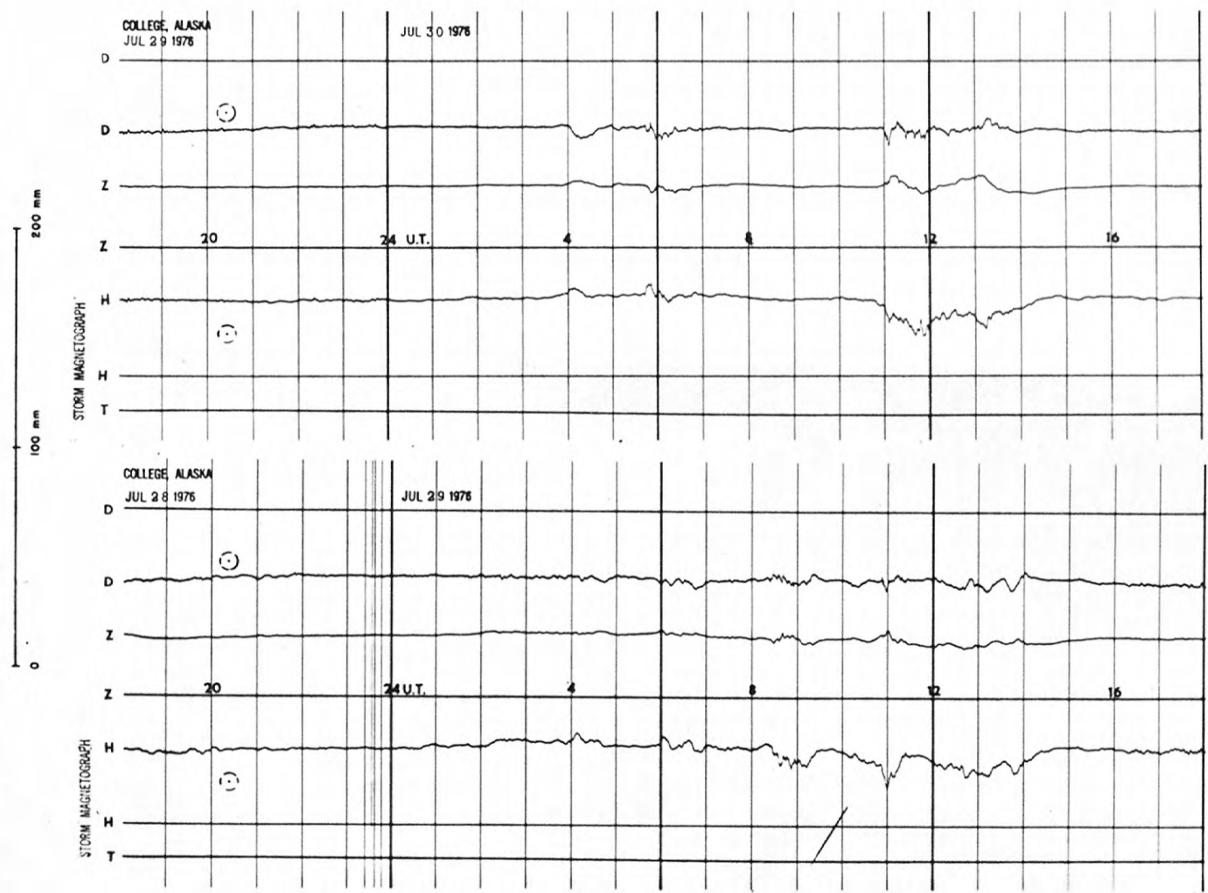


# STORM MAGNETOGRAMS

200 mm  
100 mm  
0



# STORM MAGNETOGRAMS



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3 1818 00076176 5