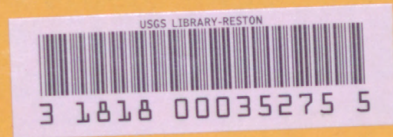


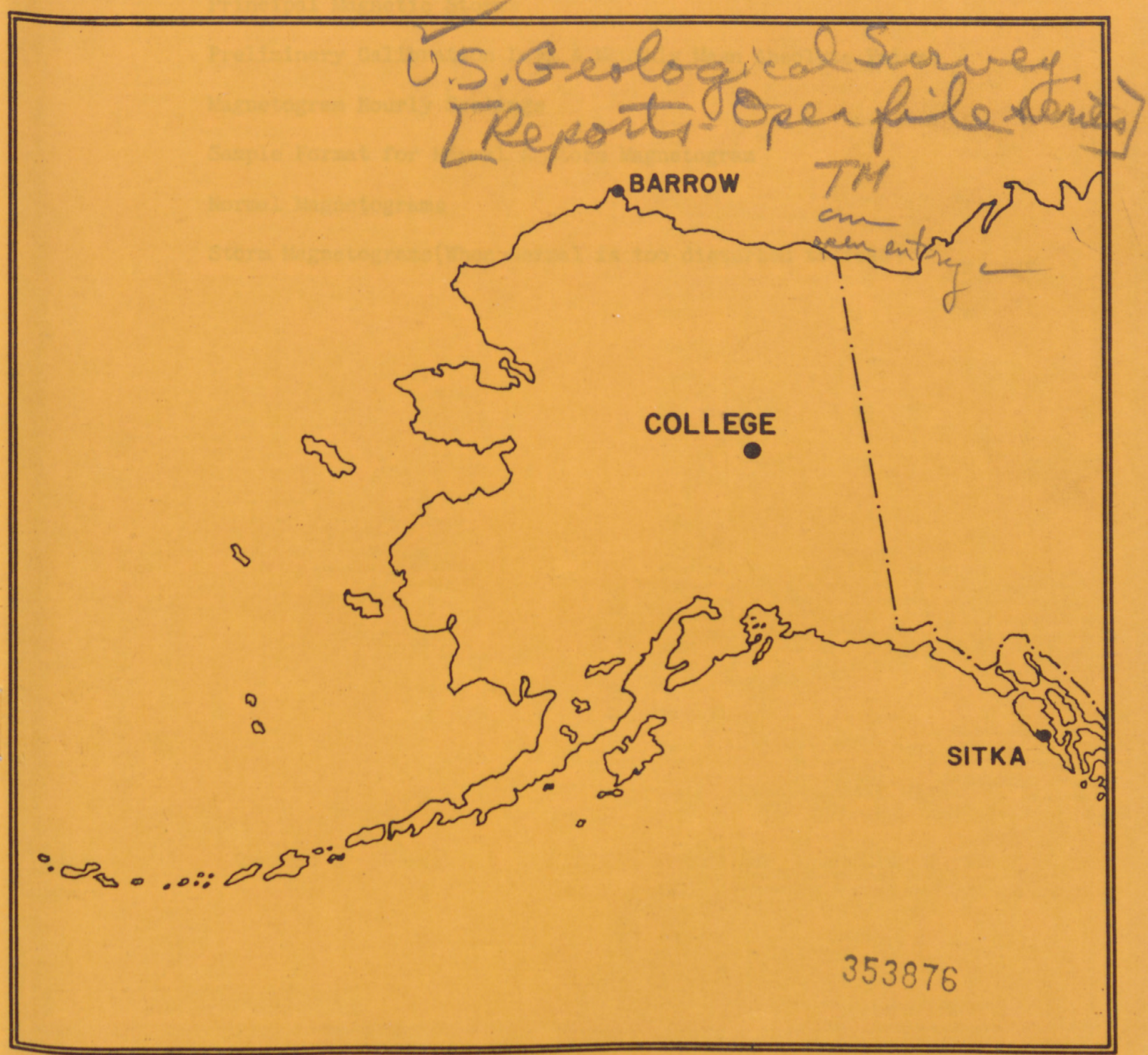
(200)
R290
no. 77-300-A-L
UNITED STATES DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



PRELIMINARY GEOMAGNETIC DATA
COLLEGE OBSERVATORY
FAIRBANKS, ALASKA

JANUARY 1977

OPEN FILE REPORT 77-300A-L



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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, 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

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

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.

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

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

JANUARY, 1977

DATE	K-INDICES									REMARKS	TIME SCALE ON MAGNETOGRAMS			
	00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM		AK	20 mm/hr		
1	2	1	6	5	6	3	2	3	28	32	SUDDEN COMMENCEMENTS d h m			
2	1	1	0	1	0	1	0	0	04	02				
3	0	1	1	1	0	2	3	1	09	04				
4	1	1	0	6	5	5	3	1	22	25				
5	2	2	1	3	3	2	3	2	18	10				
6	2	1	3	3	3	3	2	1	18	10				
7	1	0	2	2	2	2	1	0	10	04				
8	0	1	1	3	3	4	0	0	12	08				
9	0	1	0	1	4	1	1	0	08	05				
10	0	0	0	1	3	1	0	0	05	03				
11	0	0	1	2	4	6	3	3	19	18	POSSIBLE SOLAR-FLARE EFFECTS BASED ON INSPECTION OF GRAMS ALONE (WITHOUT REFERENCE TO DATA FROM OTHER SOURCES)			
12	3	2	2	3	4	4	3	1	22	15				
13	1	2	0	2	2	2	0	1	10	04				
14	2	2	3	4	3	5	4	3	26	20				
15	3	4	4	3	4	3	1	1	23	17				
16	1	2	2	1	3	3	1	0	13	07				
17	0	1	1	3	5	4	0	0	14	12				
18	1	3	4	2	1	0	0	0	11	07				
19	1	0	0	0	0	1	1	2	05	02				
20	3	3	1	5	3	1	1	1	18	13				
21	1	0	1	5	0	1	0	1	09	08	BEGIN END d h m d h m			
22	0	0	1	3	6	3	0	0	13	14				
23	0	0	1	2	2	1	1	1	08	03				
24	1	1	2	2	4	2	2	1	15	08				
25	0	0	2	1	5	2	2	1	13	09				
26	1	0	0	2	1	0	0	0	04	02				
27	0	0	0	2	1	1	1	0	05	02				
28	0	0	1	3	3	1	3	5	16	12				
29	4	3	4	5	3	4	2	1	26	21				
30	3	4	5	6	6	5	4	4	37	44				
31	4	3	4	4	6	1	1	1	24	23				

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

1977

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

JANUARY

19 77

Obs. 2 letter IAGA code	Geomag. lat.	Commencement			SC - amplitudes			Max. 3 hr - index K			Ranges			UT End	
		day	hr min (UT)	type	D(')	H(γ)	Z(γ)	day	(3 hr - period)	K	D(')	H(γ)	Z(γ)	day	hr
CO	64.6 N	28	1756	s.c.*	..	-9	+5	30 31	4,5 5	6 6	252	1340	1030	31	15

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 UT, 1-1-77	2400 UT, 1-31-77	1.0/mm	3.88/mm	28°07.0E
H	0000 UT, 1-1-77	2400 UT, 1-31-77	7.88/mm		127508
Z	0000 UT, 1-1-77	2400 UT, 1-31-77	7.78/mm		551378

STORM MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 UT, 1-1-77	2400 UT, 1-31-77	7.9/mm	29.88/mm	24°23.5E
H	0000 UT, 1-1-77	2400 UT, 1-31-77	44.18/mm		114908
Z	0000 UT, 1-1-77	2400 UT, 1-31-77	48.98/mm		540258

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION	
	FROM	TO	SCALE VALUE	
D	0000 UT, 1-1-77	2400 UT, 1-31-77	0.3/mm	
H	0000 UT, 1-1-77	2400 UT, 1-31-77	1.08/mm	
Z	0000 UT, 1-1-77	2400 UT, 1-31-77	2.48/mm	

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
28°20.6E	130528	553578

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: JAN. 2, 3, 7, 9, 10, 13, 19, 23, 26, 27

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
GEOMAGNETISM DIVISIONOBSY. CO
YEAR 77
MONTH JAN
ELEMENT DValues are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour: 01 of local day (150W M.T.) is hour 11 of the same universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q	Tee	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	SUM		
			01	102	124	122	123	132	130	133	137	12*	68*	168	174	01	223	172	214	133	154	160	159	145	134	91	109	113	3212
			02	131	130	136	133	132	133	137	139	146	147	158	169	02	172	157	148	155	168	188	183	181	169	149	127	114	3602
			03	113	106	118	114	122	112	111	122	124	148	148	145	03	151	148	143	143	150	141	82	138	114	119	110	85	3007
			04	108	131	138	132	131	123	122	133	142	153	166	375	04	315	360	367	487	329	296	216	171	111	113	107	88	4814
			05	108	105	104	83	110	173	119	118	119	134	134	143	05	143	158	128	172	184	170	94	87	67	78	104	110	2945
			06	91	114	113	157	152	158	143	131	187	138	127	173	06	218	138	232	244	232	203	180	138	134	108	112	113	3736
			07	131	134	139	138	143	144	147	195	109	133	137	145	07	142	138	128	149	188	158	146	142	119	118	128	119	3370
			08	123	123	131	145	144	157	162	158	130	132	130	151	08	149	152	101	119	143	152	148	145	140	135	129	123	3316
			09	128	132	139	142	154	134	130	132	131	141	142	150	09	162	157	172	182	165	137	135	143	135	122	123	130	3418
			10	132	133	140	145	150	148	147	139	133	140	139	146	10	126	148	160	167	150	151	148	147	143	132	122	123	3409
			11	129	132	137	142	150	148	149	162	138	133	112	152	11	148	232	270	600*	529	388	155	118	73	44	62	90	4393
			12	79	77	112	124	134	137	122	148	235	85	115	124	12	193	129	132	239	313	133	126	123	94	111	102	91	3281
			13	102	112	124	131	136	139	137	138	139	141	103	159	13	169	186	191	176	163	160	144	147	136	100	82	75	3290
			14	114	134	143	137	116	119	117	109	141	132	172	81	14	121	222	218	221	339	377	262	114	77	93	52	38	3649
			15	71	81	116	88	153	118	111	136	230	72	128	149	15	192	113	160	174	170	145	149	151	143	127	118	119	3214
			16	144	142	132	134	133	188	153	129	137	137	133	144	16	138	159	168	164	227	139	145	157	128	122	98	105	3456
			17	120	148	143	133	138	132	133	117	152	118	134	167	17	202	219	195	278	167	157	158	149	137	129	135	118	3679
			18	109	78	82	62	52	31	58	106	140	128	137	134	18	140	162	148	152	152	151	147	143	133	132	133	132	2848
			19	119	111	112	135	150	149	140	132	129	132	139	152	19	142	143	146	148	152	140	143	112	67	95	105	78	3071
			20	49	89	142	113	124	109	151	137	129	138	7	174	20	162	173	168	177	149	149	159	155	139	114	87	86	3080
			21	107	148	154	153	149	148	144	142	170	67*	27*	158	21	152	153	148	163	155	159	162	143	128	119	122	132	3303
			22	142	148	148	142	133	130	123	123	119	99	114	128	22	202	90	230	190	249	180	159	138	129	92	88	95	3391
			23	132	150	144	145	142	139	139	133	123	133	131	149	23	152	153	163	178	168	162	127	91	107	95	79	79	3214
			24	93	124	142	131	137	133	128	179	137	134	124	133	24	143	69	138	242	188	158	133	109	97	98	103	112	3185
			25	122	134	142	143	143	138	125	126	123	122	130	142	25	168	247	261	224	218	204	163	143	87	36	58	92	3491
			26	100	108	117	118	132	134	135	128	138	139	148	108	26	154	155	154	148	154	153	147	136	122	116	107	107	3158
			27	118	124	134	135	137	138	138	142	141	142	156	160	27	150	162	158	161	148	168	155	155	131	126	120	124	3423
			28	126	120	131	131	130	128	130	135	127	151	151	150	28	129	134	175	171	171	185	172	185	159	30	-46	0	3075
			29	46	82	150	148	114	115	173	10	75	68	73*	160*	29	157	148	204	183	238	229	294	207	158	57	62	83	3264
			30	114	107	74	27	49	-17	25*	149	120	64	89*	231*	30	271*	597*	303*	406*	289	214	170	84	113	148	125	138	3890
			31	93	69	130	72	85	128	166	163	21	113	98	122	31	501*	133	157	184	162	162	164	149	140	134	131	121	3398

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

Preliminary base-line and scale values:

Interval
BeginningBase-line
ValueScale
Value

() Interpolated

[] Significant portion of
how 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 Mph., converted to Normal Mph.

MONTHLY SUM 105582

MONTHLY MEAN 142

DATES WITH GAPS:

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY
GEOMAGNETISM DIVISIONOBSY. YEAR MONTH ELEM-
CO 77 JAN HValues 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 GMT universal day.
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q	S	Ten	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	
				01	386	395	404	409	389	390	422	420	56*	366	406	292	01	62*	299	346	390	361	388	403	399	372	336	406	398	8495
				02	382	372	396	391	395	400	394	393	393	388	385	379	02	373	380	383	380	376	383	402	406	403	391	383	383	9311
				03	397	403	397	389	397	403	405	408	413	412	396	389	03	383	383	383	383	384	362	351	403	402	381	380	392	9396
				04	388	395	399	400	390	389	397	393	389	385	277	-23	04	184	186	79	20	309	316	245	296	368	388	381	391	7342
				05	376	405	438	415	433	433	411	403	393	406	410	393	05	383	356	271	339	333	303	298	375	374	358	383	400	9089
				06	401	374	414	409	398	391	383	388	402	403	362	316	06	267	261	295	351	379	396	416	412	411	401	391	392	9013
				07	389	382	377	391	395	389	378	372	400	392	391	374	07	373	365	328	345	402	406	402	403	385	386	384	388	9197
				08	396	399	398	396	396	389	383	393	392	389	380	341	08	356	333	301	239	401	407	401	396	396	391	388	392	9053
				09	397	400	399	396	386	392	388	391	389	388	391	381	09	302	345	409	391	393	381	390	387	382	384	389	395	9246
				10	398	402	398	399	398	393	391	391	389	388	386	376	10	316	394	398	388	385	392	391	393	392	389	389	391	9327
				11	395	396	398	399	401	396	392	385	402	416	414	393	11	387	301	202	-176*	-271*	242	464	391	398	359	382	379	7841
				12	378	363	408	448	423	420	435	466	488	495	418	376	12	322	189	287	321	263	426	411	382	385	387	379	382	9252
				13	385	394	407	420	388	398	391	386	384	387	376	373	13	382	374	360	328	385	392	386	386	382	362	356	374	9156
				14	372	394	396	399	421	424	463	502	448	454	467	417	14	373	336	353	69	39	140	331	407	399	396	350	355	8705
				15	422	412	483	460	542	410	396	409	405	407	403	341	15	243	372	354	868	332	307	376	383	384	392	392	384	9407
				16	388	382	389	391	392	378	409	400	399	403	394	389	16	368	328	326	353	361	393	391	389	386	389	391	385	9168
				17	388	390	390	390	398	389	392	400	401	403	406	338	17	379	279	151	241	409	398	396	392	396	399	396	392	8913
				18	373	377	401	415	450	511	642	497	453	406	381	381	18	389	373	385	388	385	385	384	387	391	393	389	387	9923
				19	384	372	382	397	393	392	391	386	387	386	389	387	19	392	387	387	387	376	353	363	360	372	382	353	349	9107
				20	361	382	412	418	495	473	393	391	388	391	123	198	20	409	391	385	371	375	391	391	388	398	393	391	360	9068
				21	380	386	393	392	389	389	388	383	378	340	302	403	21	386	389	385	372	371	372	383	386	388	393	395	396	9139
				22	392	394	394	391	390	382	387	390	399	393	398	358	22	225	41*	318	417	375	398	401	402	403	398	403	408	8857
				23	405	404	402	402	401	401	395	395	396	423	401	398	23	380	381	406	395	393	389	370	369	388	401	379	387	9461
				24	394	396	394	399	401	402	400	413	429	423	423	399	24	380	162	325	372	402	396	382	386	389	398	402	403	9270
				25	399	396	395	395	395	393	383	382	415	422	402	391	25	365	91	251	368	386	396	388	381	346	342	366	381	8829
				26	379	387	395	392	395	392	395	391	386	383	386	373	26	401	383	378	379	378	379	381	376	381	383	378	379	9230
				27	386	390	388	389	389	389	391	388	386	388	396	392	27	381	381	378	366	351	358	374	382	383	377	382	381	9166
				28	379	380	383	382	384	386	390	387	398	413	402	382	28	293	333	381	392	402	397	393	380	328	272	202	386	8825
				29	372	403	401	405	393	424	463	620	558	557	605*	218	29	406	385	326	152	263	345	322	362	364	373	373	382	9472
				30	419	413	408	581	490	662	695*	678*	468	339	312	206	30	-474*	-521*	-41	-62	-139	240	257	156	188	264	397	474	6410
				31	496	574	494	490	425	397	439	522	593	467	365	270	31	-181*	311	430	379	369	384	381	379	385	386	392	384	9551

SCALED BY	SPT, MJM, JEP
CHECKED BY	MJM, JEP
SIGNS REVIEWED BY	MJM
PUNCHED BY	

Preliminary base-line and scale values:

Interval	Base-line	Scale
Beginning	Value	Value

() Interpolated

[] Significant portion of hour interpolated.

[] No record; or no values available because of faulty record.

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

[] Scaling uncertain because of magnetic storm.

<> Record off sheet for part or all of hour; if value is given, curve was estimated for missing part.

MONTHLY SUM 278219

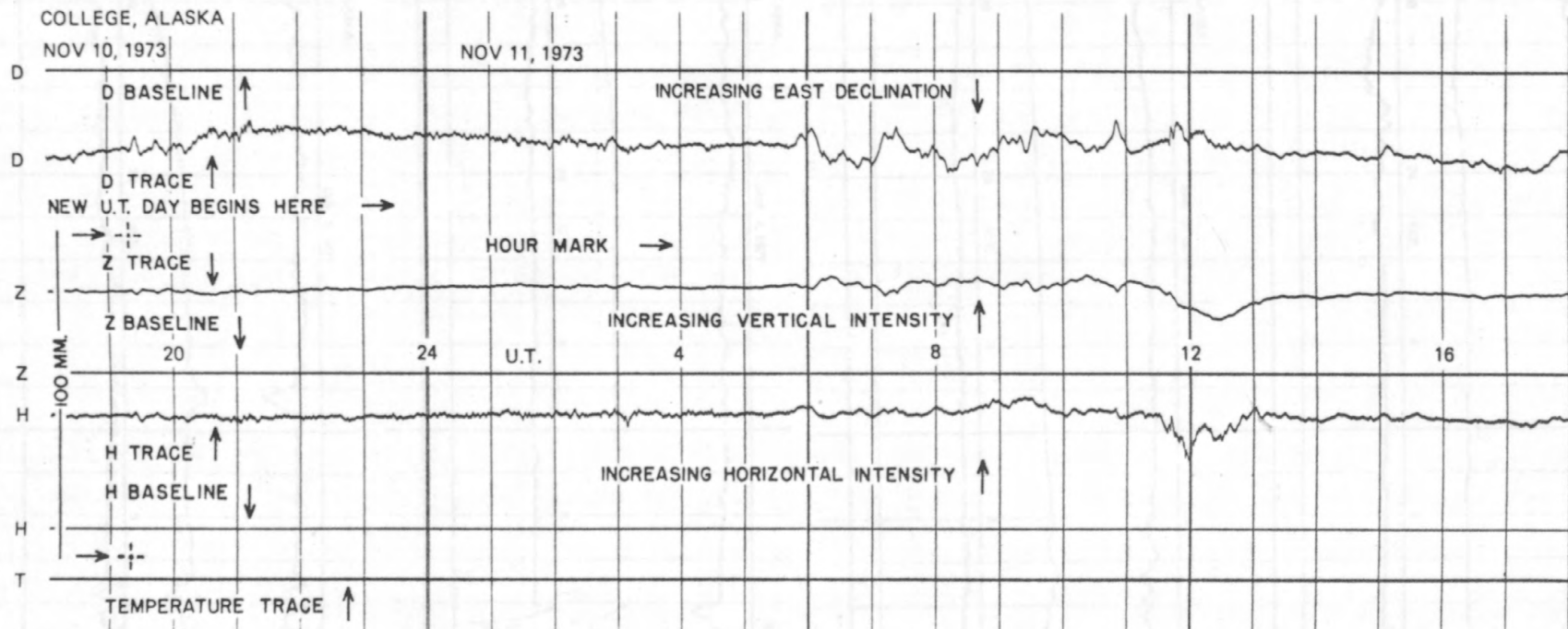
MONTHLY MEAN 374

DATES WITH GAPS:

FORM C&GS-604e (8-67)														MAGNETOGRAM HOURLY SCALINGS (UNIVERSAL TIME)														U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION COAST AND GEODETIC SURVEY GEOMAGNETISM DIVISION				OBSV.	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 (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				77	JAN	2															
C	U	S	T	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						
					293	303	313	310	316	320	325	339	272	235	285	321	01	210	170	221	258	284	286	298	293	279	269	278	303	6781					
					02	307	310	318	318	311	306	305	301	306	305	309	02	293	288	286	292	285	271	263	264	265	273	281	286	7044					
					03	291	295	299	301	303	310	318	338	335	351	313	03	293	291	292	292	291	281	193	221	249	271	289	302	7018					
					04	303	303	301	299	301	299	308	313	309	307	206	04	138	209	181	150	121	125	137	132	179	218	252	282	5575					
					05	301	319	305	313	320	335	295	296	312	278	279	05	299	286	220	219	231	187	137	148	211	241	275	285	6394					
					06	307	315	329	342	317	298	295	313	278	267	278	06	241	170	194	217	237	223	242	257	277	282	288	299	6538					
					07	299	299	298	297	297	300	302	321	295	301	281	07	288	284	254	247	270	275	280	290	287	291	296	294	6936					
					08	298	299	291	294	293	297	299	291	291	298	288	08	237	229	198	140	228	270	280	284	284	287	288	297	6469					
					09	287	286	286	287	292	288	290	292	293	293	287	09	233	163	267	278	271	264	269	267	275	274	281	287	6598					
					10	291	288	288	288	288	288	284	287	290	294	292	10	235	251	278	283	269	258	261	269	277	284	286	291	6702					
					11	292	293	292	291	291	291	292	297	281	251	302	11	299	250	281	478*	56	-81	191	219	253	254	257	290	6251					
					12	294	315	333	323	318	322	338	342	359	325	349	12	300	201	178	237	224	223	309	289	277	293	297	303	7073					
					13	314	317	316	323	324	311	302	295	296	296	283	13	296	293	289	244	267	270	280	284	282	281	267	287	7004					
					14	304	314	321	311	310	338	365	381	375	332	309	14	242	282	243	197	42	-64	6	143	207	241	291	297	5990					
					15	318	354	349	324	398	338	313	325	282	23	301	15	271	258	268	279	271	237	248	261	278	277	279	285	7048					
					16	298	298	296	299	302	320	295	301	298	294	301	16	276	248	227	248	242	248	261	264	270	283	290	292	6752					
					17	300	300	299	294	299	303	306	309	313	306	303	17	255	247	137	73	211	278	281	282	283	286	289	286	6471					
					18	289	289	303	323	348	384	398	434	381	335	314	18	303	291	288	293	293	293	291	290	289	289	293	294	7613					
					19	291	295	298	300	300	292	291	293	298	299	295	19	283	283	288	290	289	258	220	215	200	244	273	282	6665					
					20	317	309	332	323	389	418	359	319	309	302	122	20	212	268	282	270	248	250	262	267	270	272	274	286	6713					
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					22	292	292	291	291	289	295	295	299	295	259	283	22	191	39	93	240	239	219	230	241	255	261	278	292	6008					
					23	308	305	298	292	285	285	287	288	298	330	318	23	278	243	268	277	278	280	259	221	242	260	274	275	6750					
					24	298	301	316	318	308	308	318	337	325	328	328	24	293	138	165	231	259	271	275	268	275	280	286	294	6835					
					25	299	299	296	294	295	295	304	316	315	348	318	25	308	237	145	212	245	263	275	270	262	253	265	280	6705					
					26	303	316	313	310	305	303	305	304	308	310	309	26	307	311	298	293	292	291	288	286	280	286	291	294	7191					
					27	299	302	301	299	296	295	290	292	295	299	312	27	275	288	291	278	254	246	251	255	261	274	282	290	6816					
					28	291	295	297	299	299	300	307	313	331	339	331	28	235	201	242	271	285	284	273	276	276	281	211	191	6729					
					29	275	290	310	309	308	318	366	321	301	262	199*	29	285	328	291	194	163	213	190	167	176	194	217	254	6165					
					30	303	313	324	336	351	380	276*	181*	160	165	265	30	148*	371*	417*	369	126	-21	39	112	201	299	353	335	6110					
					31	304	277	322	352	363	351	296	188	257	305	292	31	270*	134	262	288	293	299	299	293	292	290	290	291	6924					

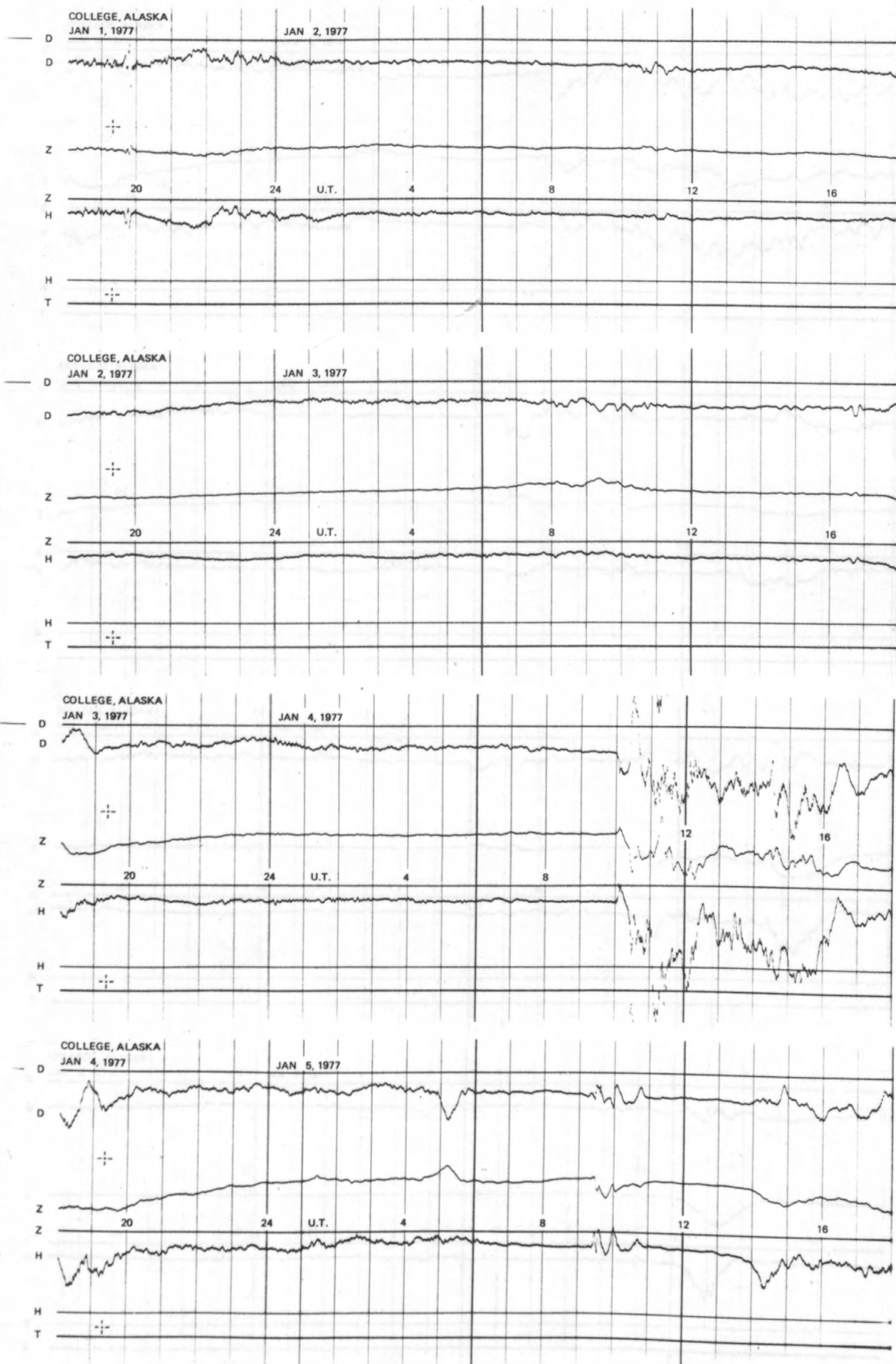
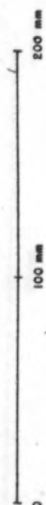
SCALED BY	SPT, MIM, JEP	Preliminary base-line and scale values: Interval Beginning Base-line Value Scale Value <input type="checkbox"/> Interpolated <input type="checkbox"/> Significant portion of hour interpolated. <input type="checkbox"/> No record; or no values available because of faulty record. * 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	206644
CHECKED BY	MIM, JEP			MONTHLY MEAN	278
SIGNS RE-VIEWED BY	MIM			DATES WITH GAPS:	
PUNCHED BY					

FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)

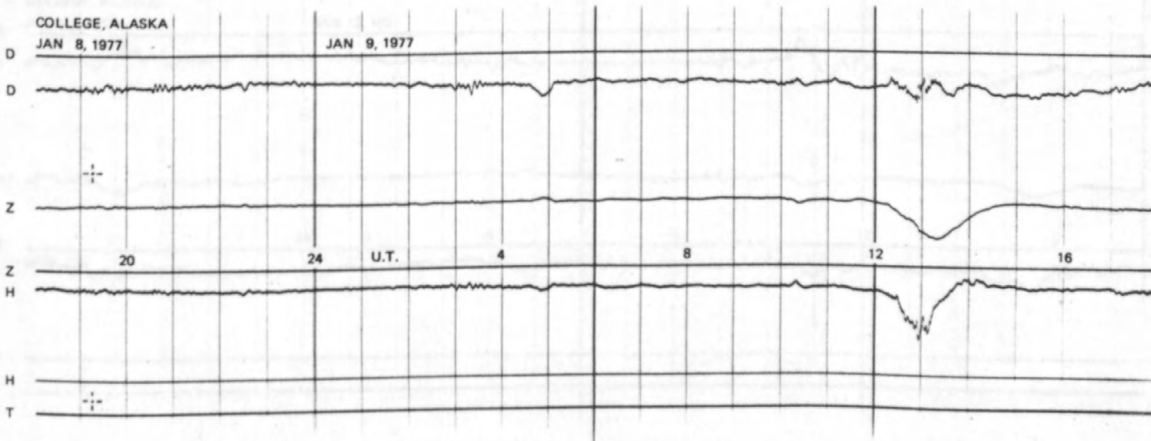
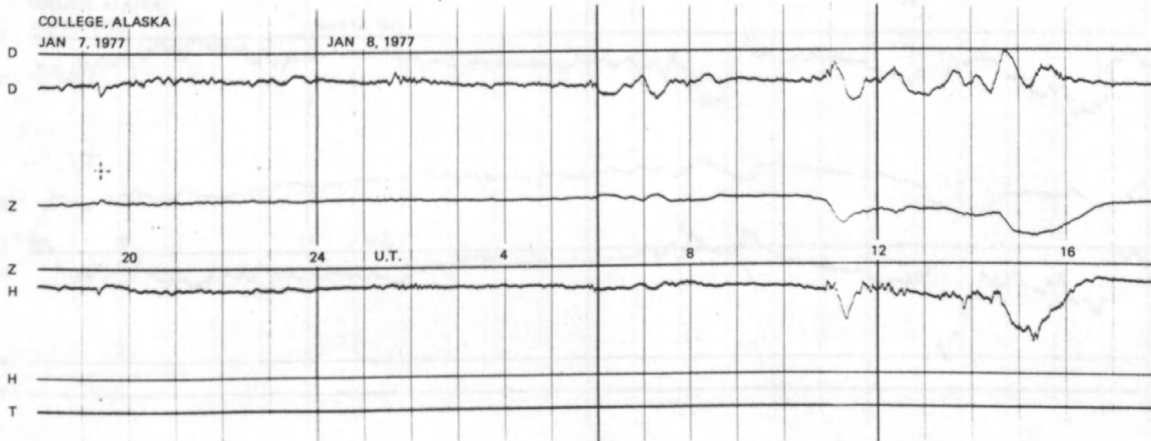
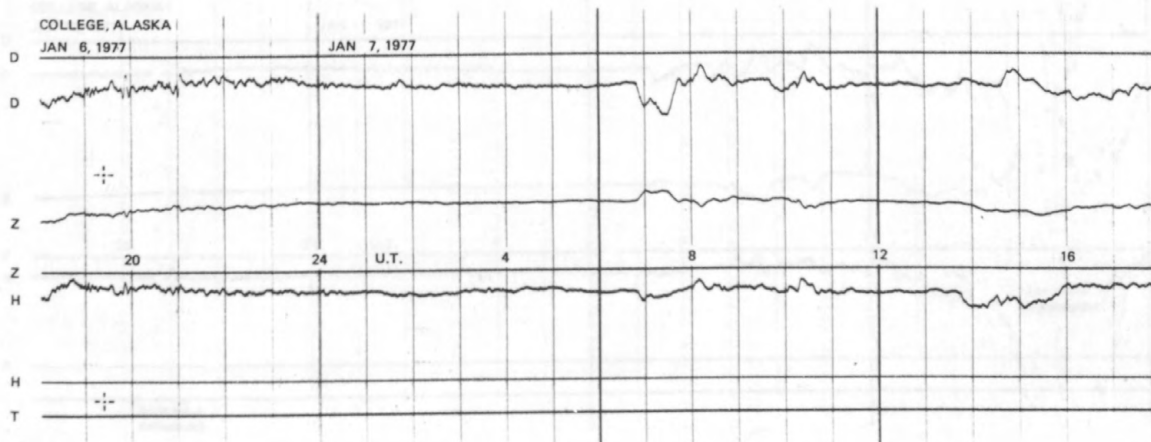
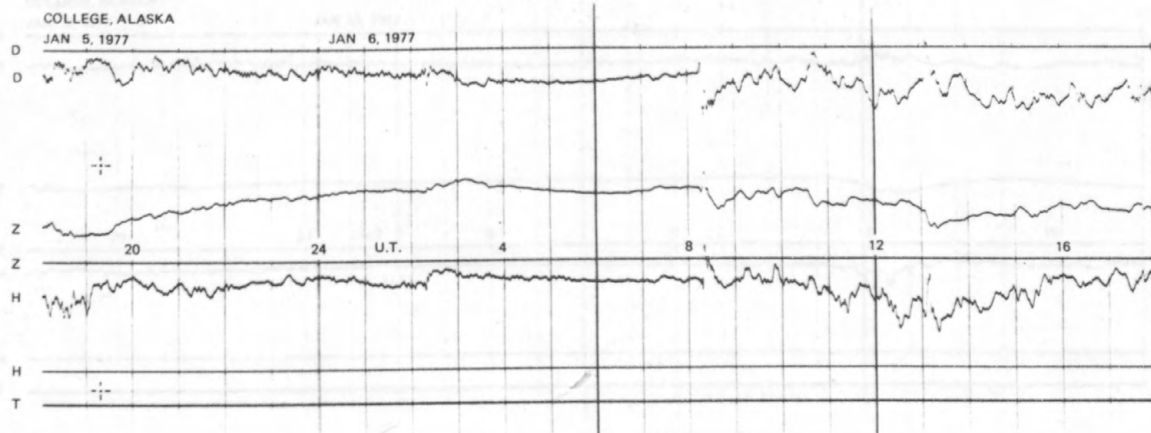
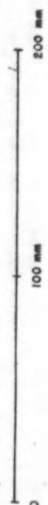


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

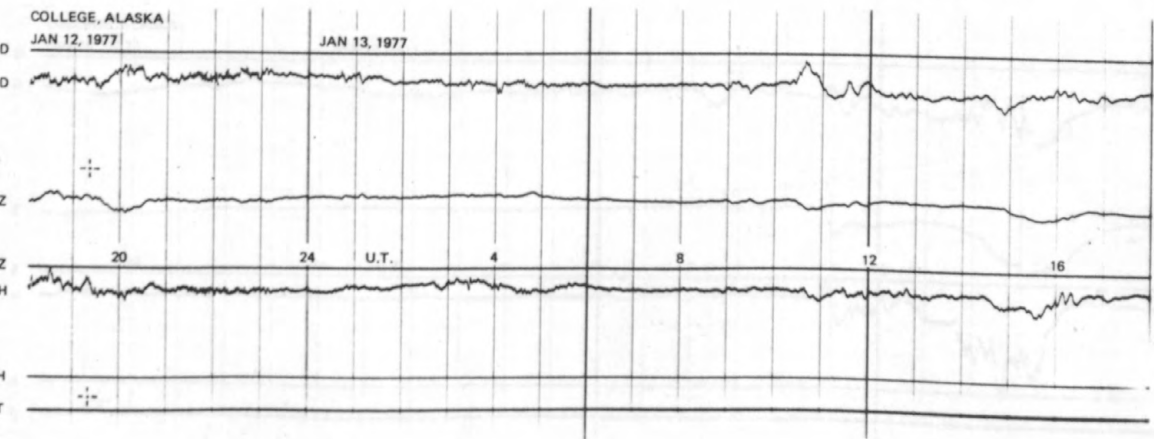
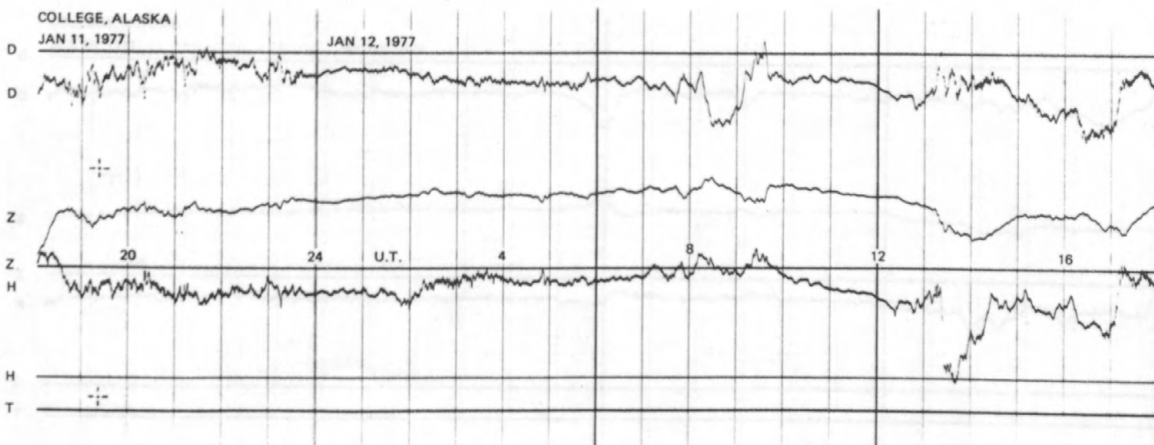
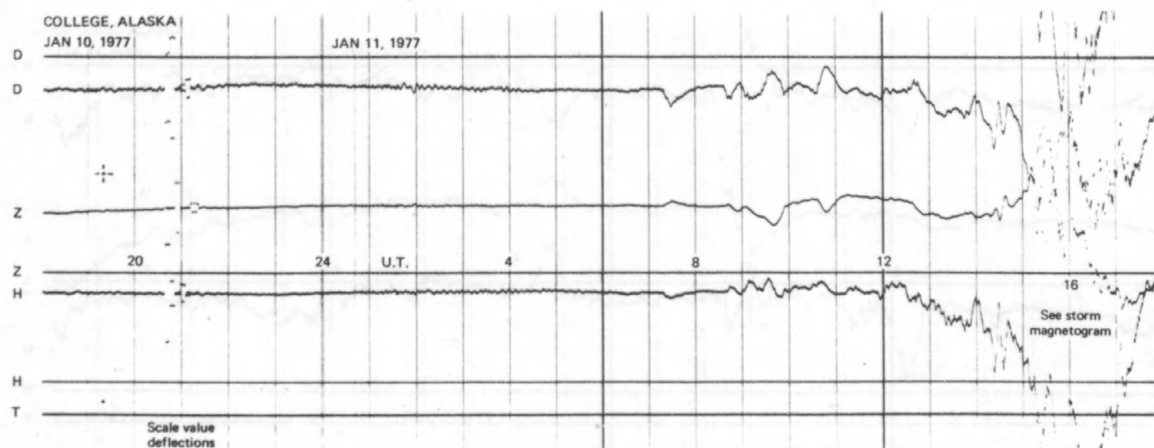
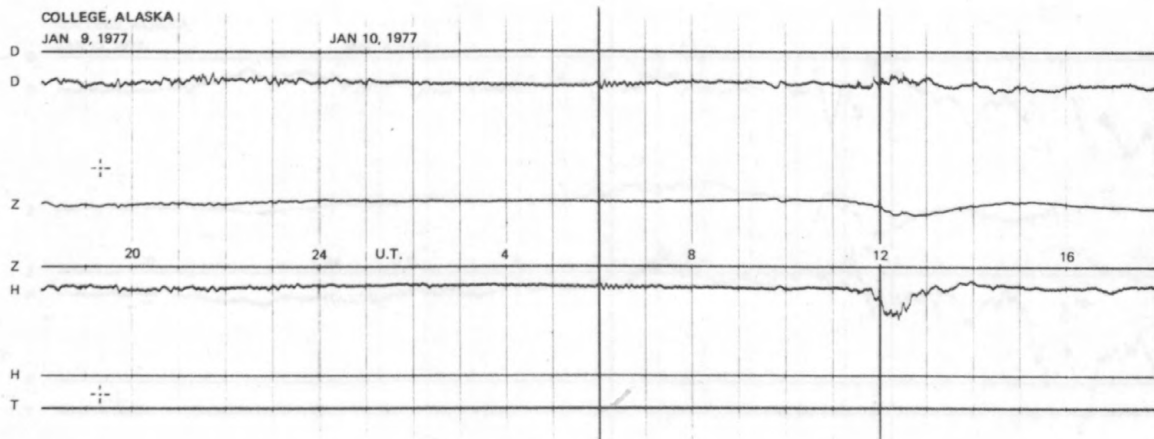
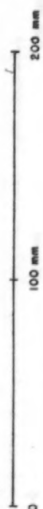
NORMAL MAGNETOGRAMS



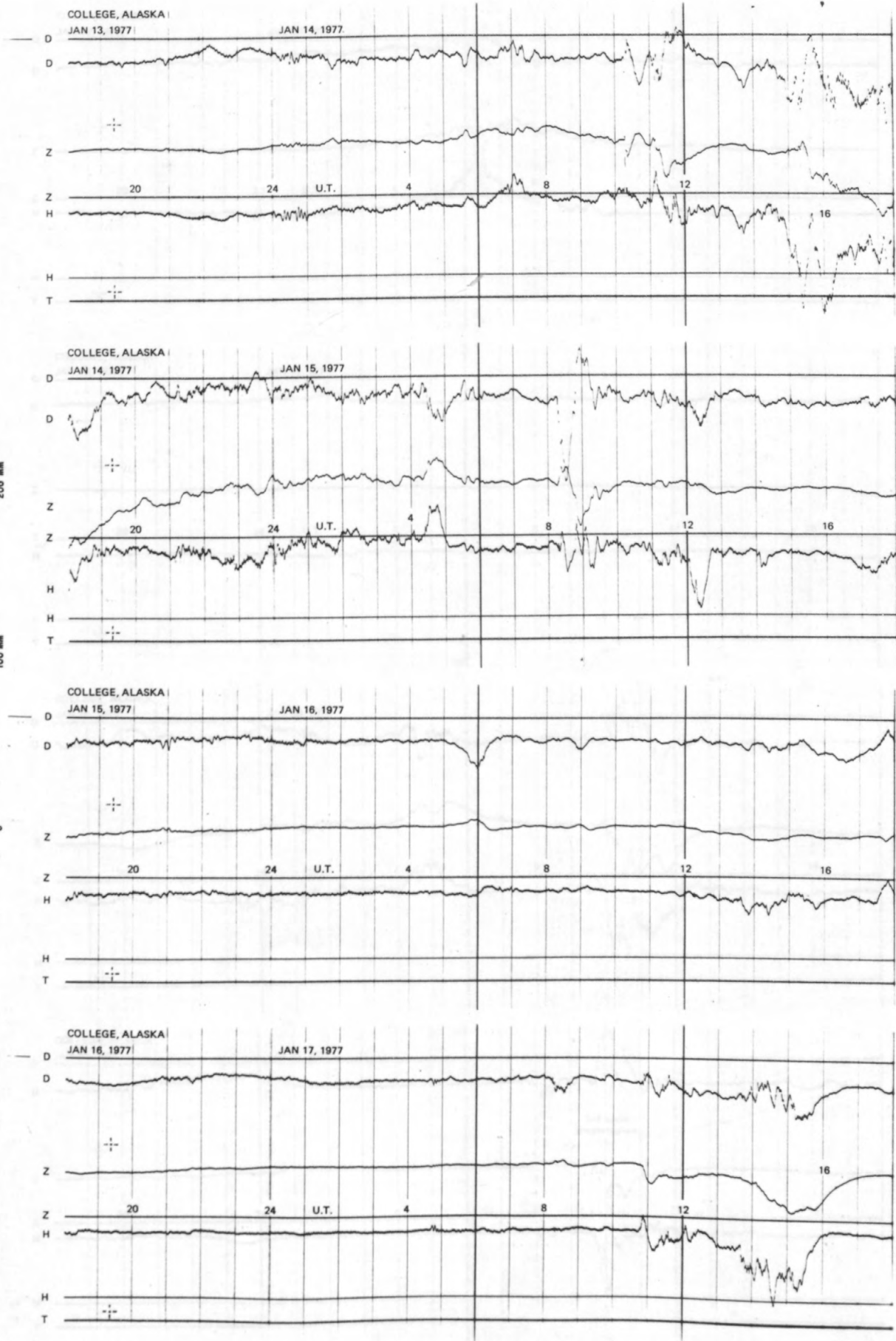
NORMAL MAGNETOGRAMS



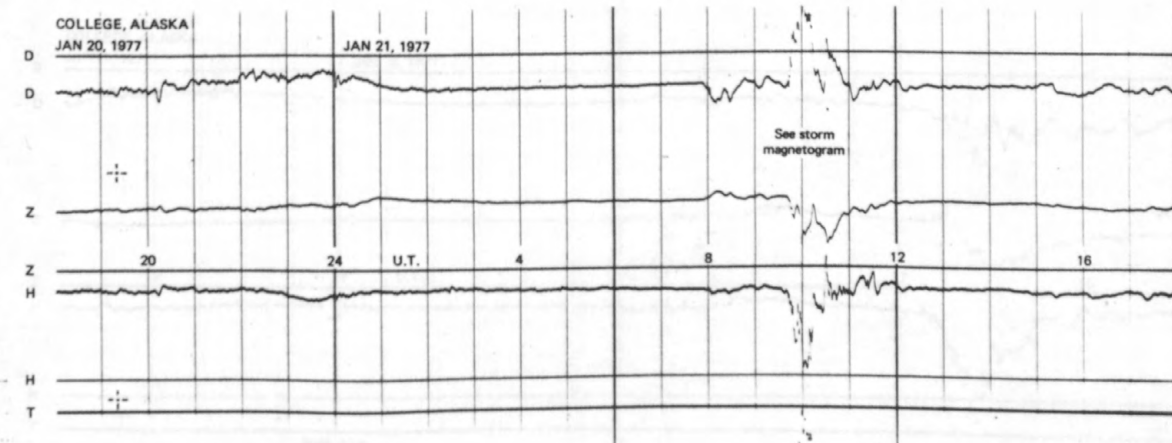
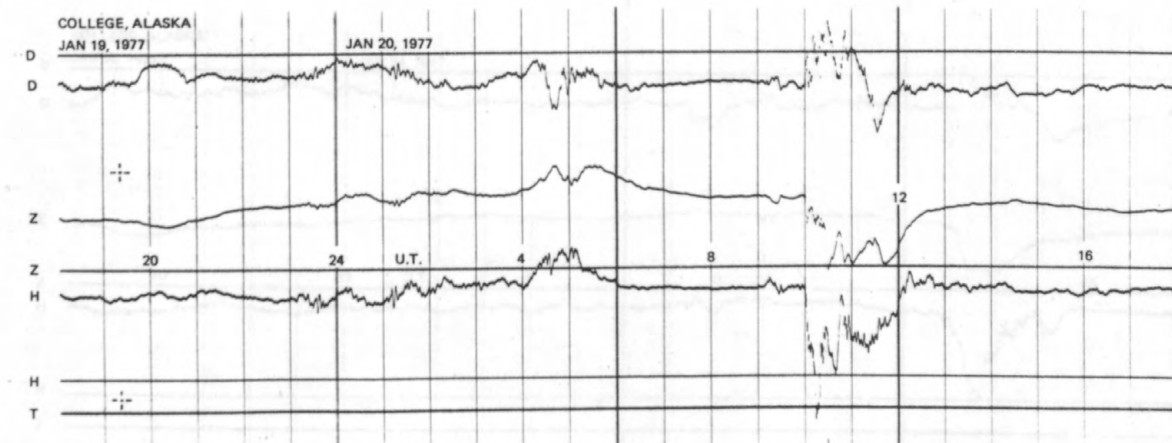
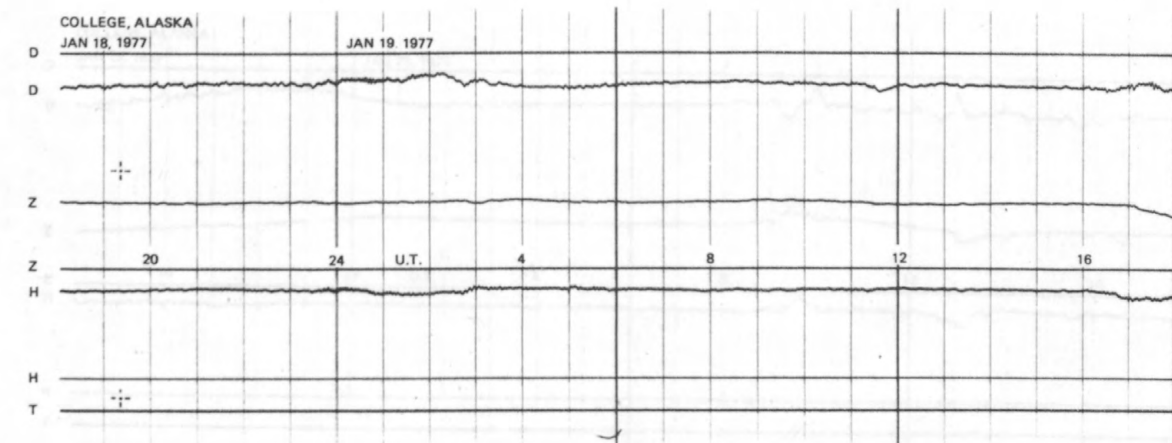
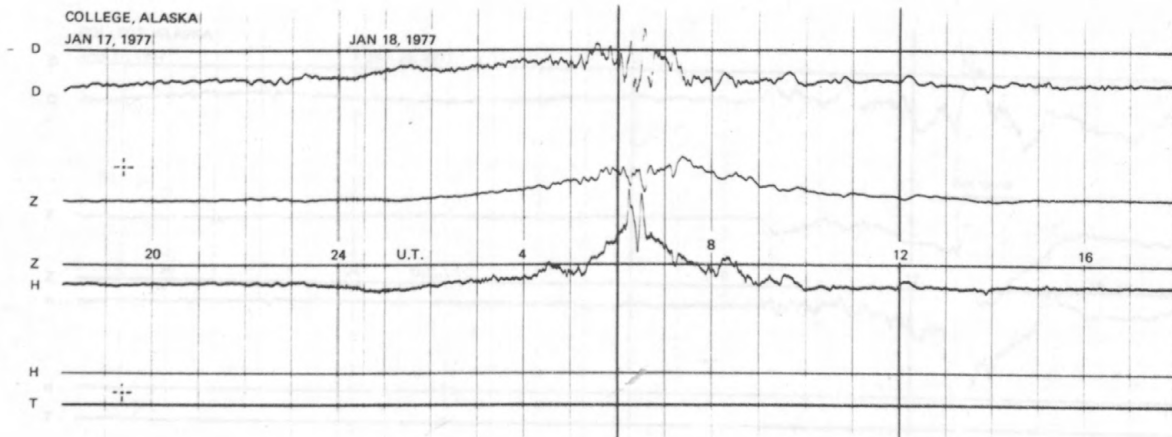
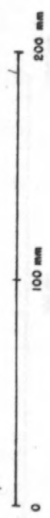
NORMAL MAGNETOGRAMS



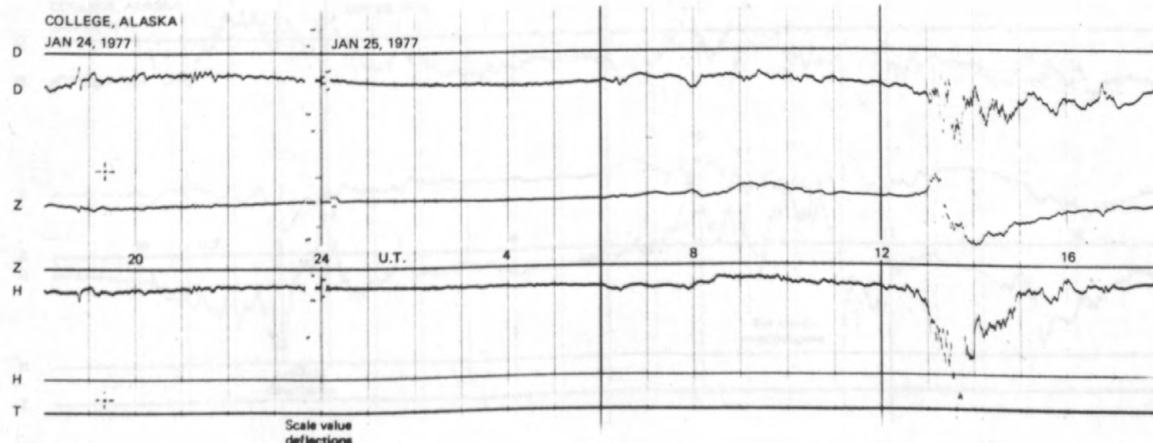
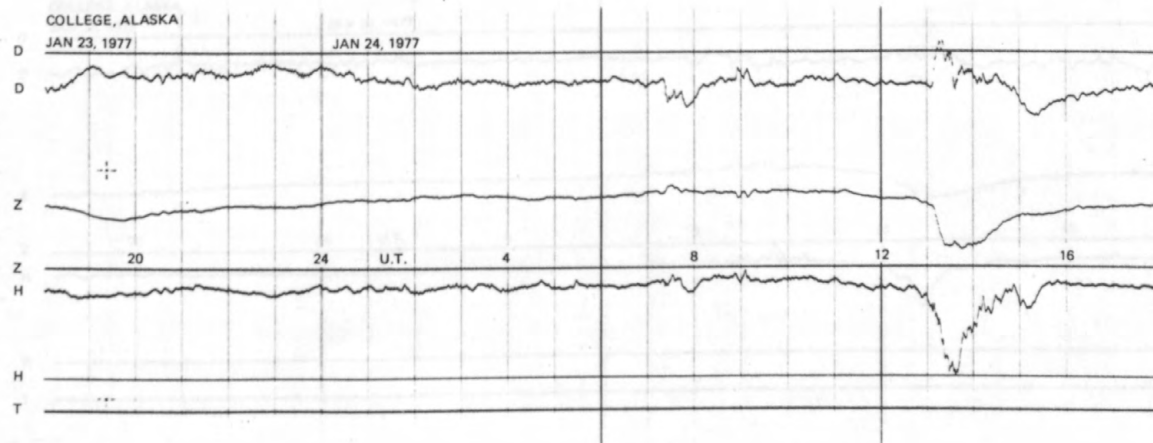
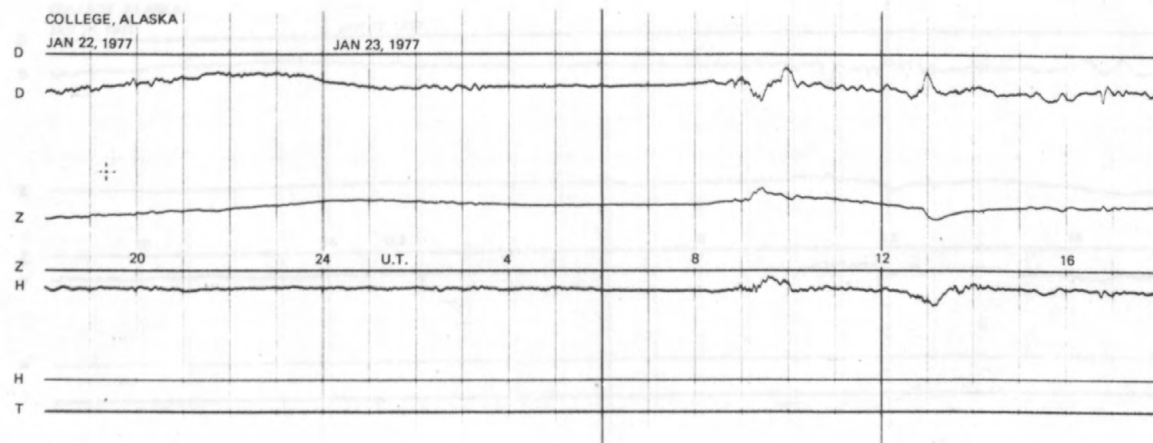
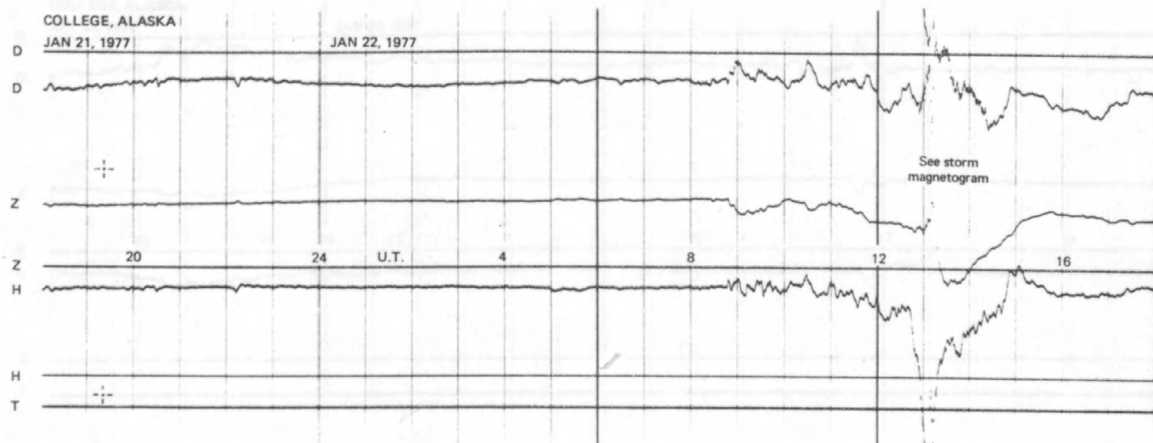
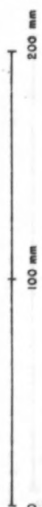
NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS

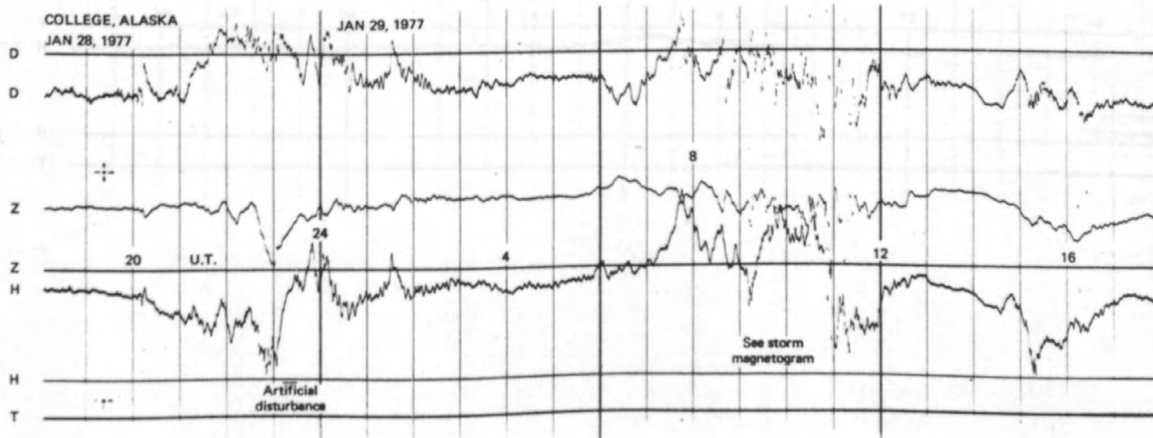
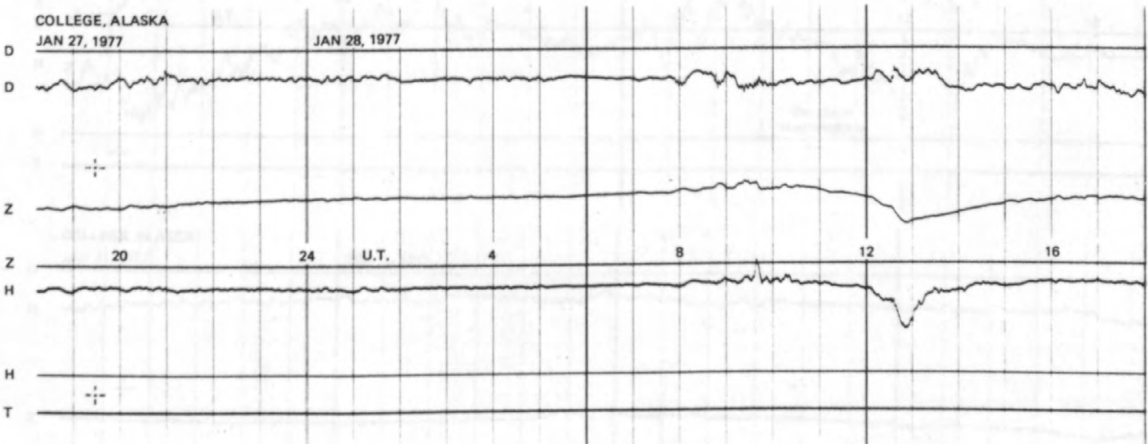
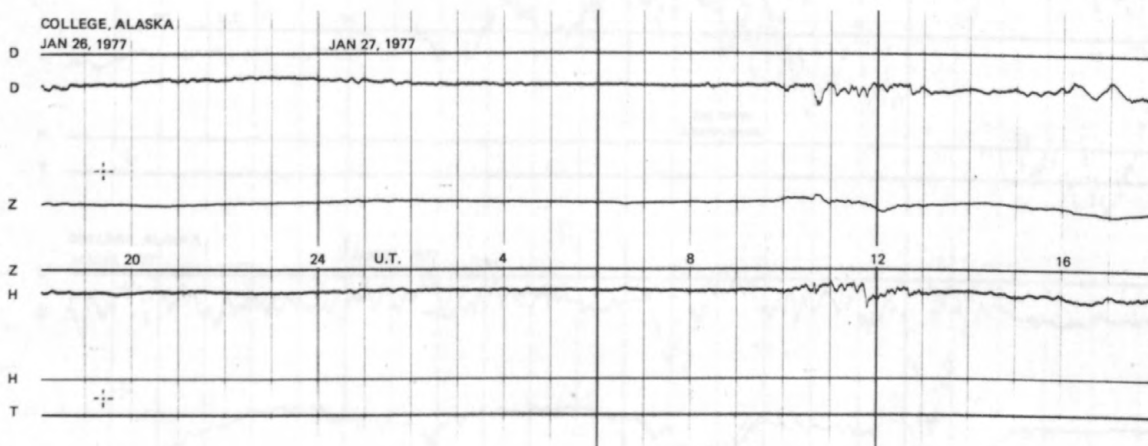
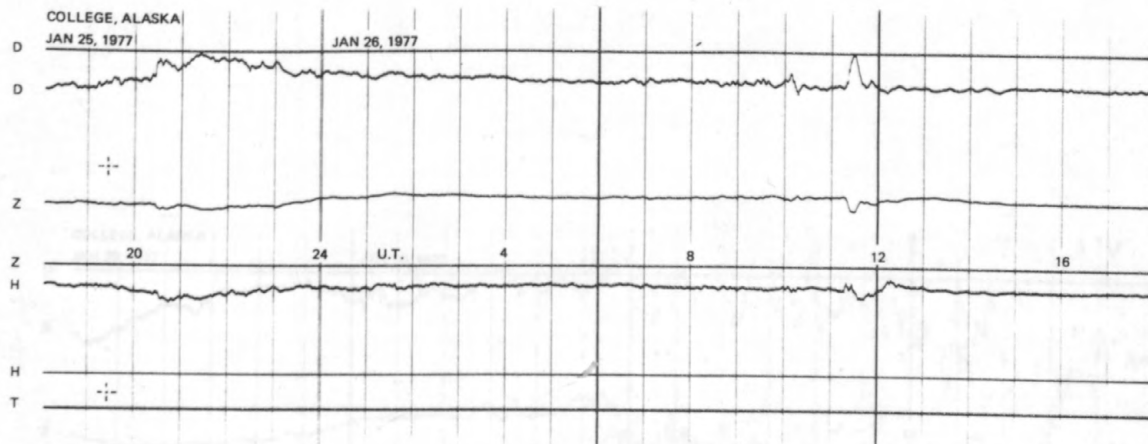
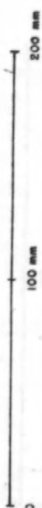


NORMAL MAGNETOGRAMS

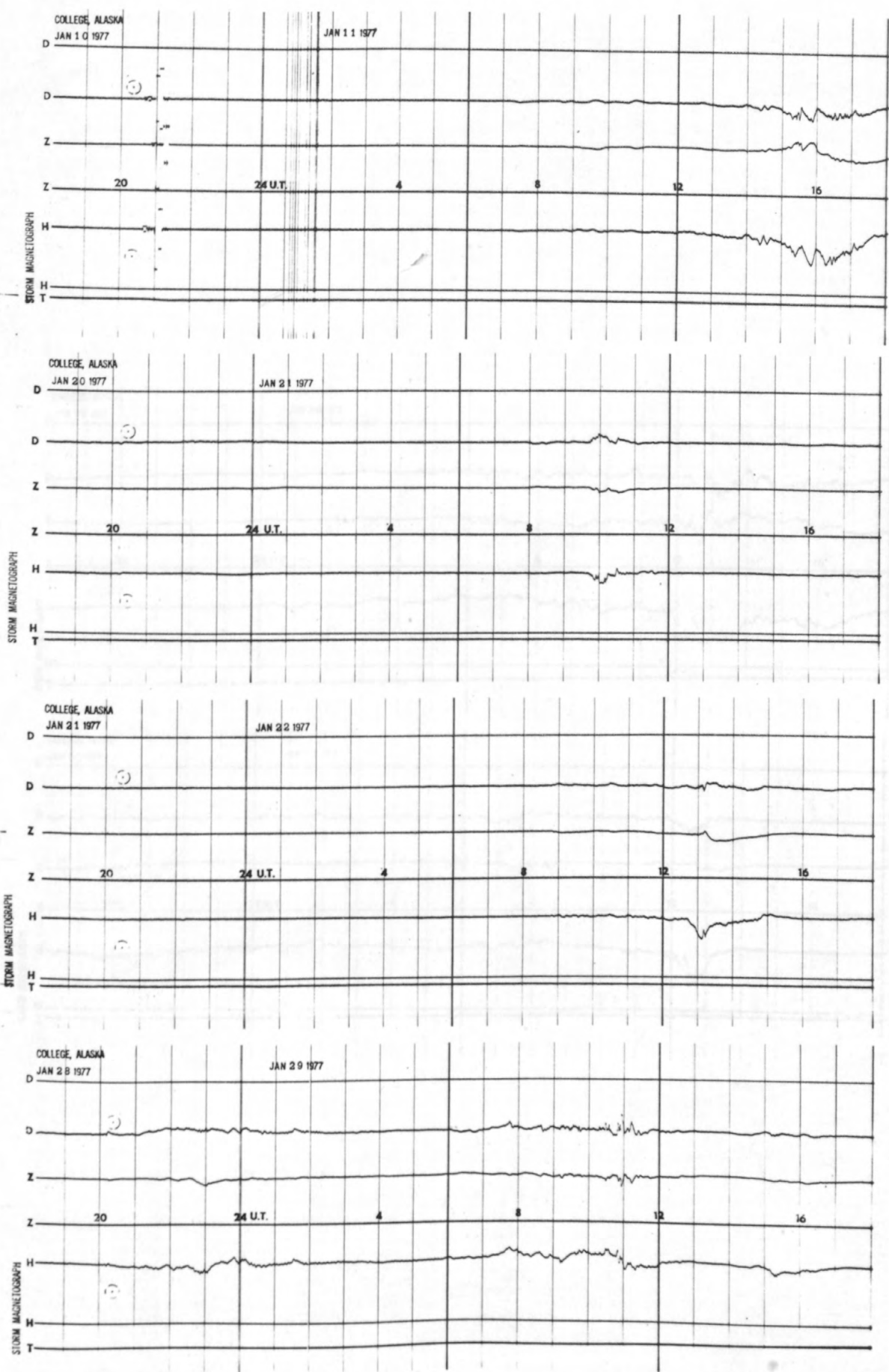
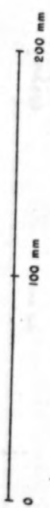


Scale value
deflections

NORMAL MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS

