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77-300H

UNITED STATES DEPARTMENT OF THE INTERIOR  
GEOLOGICAL SURVEY

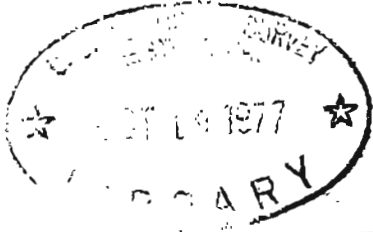
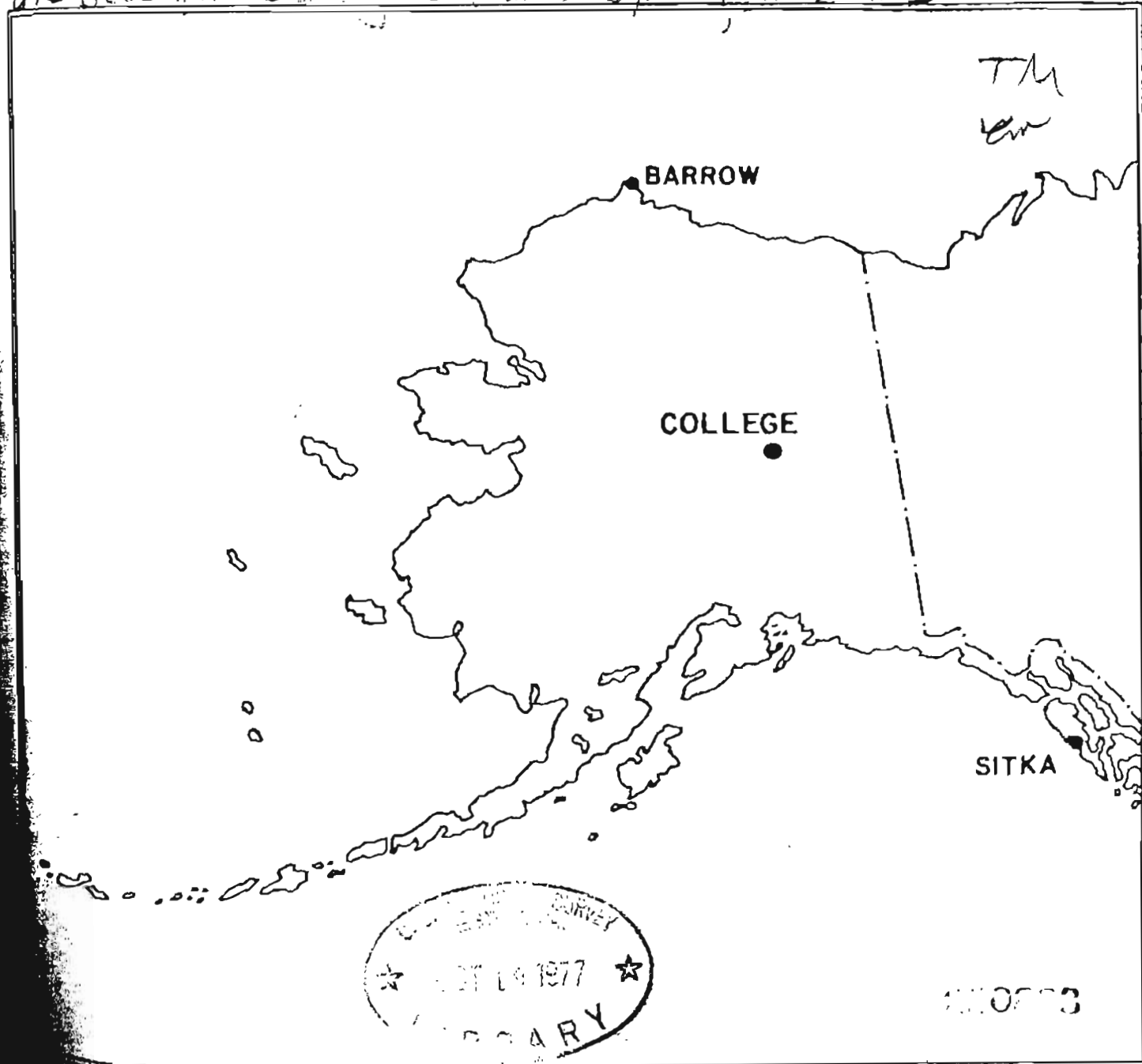
PRELIMINARY GEOMAGNETIC DATA  
COLLEGE OBSERVATORY  
FAIRBANKS, ALASKA

AUGUST 1977

OPEN FILE REPORT 77-300H

*U.S. Geological Survey, Fairbanks Open File Report*

*TM  
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## ORDER OF CONTENTS

Explanation of Data & Reports

Magnetic Activity Report

Outstanding Magnetic Effects

Principal Magnetic Storms

Preliminary Calibration Data & Monthly Mean Absolute Values

Magnetogram Hourly Scalings

Sample Format for Normal & Storm Magnetogram

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, 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	42
600 < 1000	6	80
1000 < 1650	7	140
1650 < 2500	8	240
2500+	9	400 (1Cr)

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<sub>D</sub>, B<sub>H</sub> and B<sub>Z</sub> are base-line values;  
S<sub>D</sub>, S<sub>H</sub> and S<sub>Z</sub> 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

AUGUST 1977

DATE	K-INDICES								SUM	AK	TIME SCALE ON MAGNETOGRAMS  20 mm/hr
	0003	0308	0808	0912	1215	1518	1821	2124			
1	1	2	2	2	4	2	1	0	14	08	SUDDEN COMMENCEMENTS d h m
2	1	2	1	3	2	1	2	0	12	06	
3	1	0	1	1	0	1	2	2	08	03	
4	2	2	3	4	2	2	2	2	19	11	
5	3	3	6	7	6	6	4	3	38	57	
6	4	5	5	5	4	3	3	3	32	30	
7	3	3	6	6	4	4	3	3	32	34	
8	3	3	3	3	2	3	2	2	21	12	
9	3	3	4	6	5	5	3	2	31	32	
10	3	4	3	4	4	3	2	1	24	17	
11	3	4	6	5	4	2	3	2	29	28	
12	1	3	2	5	3	4	2	2	22	16	
13	2	2	4	6	5	3	2	2	26	25	
14	1	1	4	6	7	2	2	1	24	34	
15	1	4	4	5	4	1	2	1	22	18	
16	1	2	0	5	6	4	2	2	22	22	
17	2	3	5	7	6	6	3	3	35	50	
18	3	2	3	5	5	3	2	2	25	20	
19	3	4	4	6	5	3	3	3	31	30	
20	2	2	3	3	3	2	1	0	16	09	
21	1	1	3	4	2	0	0	0	11	07	
22	0	0	1	2	0	1	1	1	06	02	
23	1	0	1	2	1	3	2	2	12	06	
24	3	2	1	6	5	5	0	0	22	25	
25	0	1	3	6	6	6	3	1	26	35	
26	3	2	3	6	7	4	2	0	27	36	
27	2	3	4	6	3	4	2	1	25	23	
28	2	2	2	4	3	2	1	0	16	09	
29	1	1	2	5	6	1	0	0	16	18	
30	1	1	2	2	2	1	0	0	09	04	
31	1	2	0	1	0	0	0	0	04	02	

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..... UPPER LIMIT FOR K = 9.....	D	H	Z	(mm)
	683.8	321.7		(γ/mm)
	3.76	7.82		(to nearest 10γ)
	2570	2520		

MEASUREMENTS AND COMPUTATIONS HAVE BEEN CHECKED.

APPROVED JOHN B. TOWNSEND, CHIEF, COLLEGE OBSERVATORY

OBSERVER IN CHARGE

# OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY  
COLLEGE, ALASKA

MONTH  
AUGUST

YEAR  
1977

DATE	TIME U.T.	NATURE OF PHENOMENON <sup>1</sup>	REMARKS
02	15XX	pg	
20	04XX	pc5	
20	10XX	pi2	
21	19XX	pc4	
31	16XX	pc5	

IDENTIFIED BY: MJM

VERIFIED BY: JEP

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  
COLLEGE OBSERVATORY, COLLEGE, ALASKA  
AUGUST 1977

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

Data from Individual Observatories:

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(Y)	Z(Y)	day	{3 hr - period}	K	D(')	H(Y)		Z(Y)
C0	64.6 N	05	00XX	..	..	..	..	05	4	7	142	1320	750	08 11
		11	01XX.	..	..	..	..	11	3	6	98	1100	360	11 23
		14	07XX	..	..	..	.. (polar storm)	14	5	7	158	1430	470	14 15
		17	04XX	..	..	..	..	17	4	7	162	1450	910	19 14
		25	07XX	..	..	..	..	25	4, 5, 6	6	136	910	580	25 22

NORMAL MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 8-1-77	2400 U.T., 8-31-77	1.0/mm	3.88/mm	27° 46.5 E
H	0000 U.T., 8-1-77	2400 U.T., 8-31-77	7.88/mm		127798
Z	0000 U.T., 8-1-77	2400 U.T., 8-31-77	7.78/mm		551188

STORM MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 8-1-77	2400 U.T., 8-31-77	7.9/mm	29.88/mm	24° 20.4 E
H	0000 U.T., 8-1-77	2400 U.T., 8-31-77	44.18/mm		115458
Z	0000 U.T., 8-1-77	2400 U.T., 8-31-77	46.98/mm		540078

RAPID RUN MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		
D	0000 U.T., 8-1-77	2400 U.T., 8-31-77	0.3/mm		1.08/mm
H	0000 U.T., 8-1-77	2400 U.T., 8-31-77	1.08/mm		
Z	0000 U.T., 8-1-77	2400 U.T., 8-31-77	2.48/mm		

MONTHLY MEAN ABSOLUTE VALUES*					
D	H		Z		
28° 18.0 E	130458		553608		

\* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: AUG 1, 2, 3, 20, 21, 22, 23, 28, 30, 31

MAGNETOGRAM HOURLY SCALINGS																		U.S. DEPARTMENT OF COMMERCE ENVIRONMENTAL SCIENCE SERVICES AND INFORMATION SYSTEMS DIVISION GEOPHYSICAL OBSERVATORY				STATION	YEAR	MONTH	EXTENT		
Values are in units of $\gamma$ and are corrected for successive periods of magnetic storm beginning at midnight. Time of onset of each day (1200 U.T.) is given in the <u>0000</u> universal day.																		03	77	APR	D						
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			
238	259	275	287	291	290	340	325	313	340	312	312	312	349	341	315	357	439	448	408	359	302	286	267	7825			
261	257	247	271	293	281	297	301	301	300	347	320	317	332	340	406	424	440	423	400	331	313	297	280	7819			
259	260	261	270	277	283	283	277	277	281	289	307	337	351	379	400	378	410	407	392	371	322	252	244	7575			
215	200	227	224	253	260	269	269	263	314	290	309	320	339	377	428	426	479	481	408	338	272	263	248	7472			
247	168	157	147	193	236	112	140	44	108	434	386	326	344	497	322	403	441	467	406	356	280	278	274	6798			
274	268	234	267	273	307	333	278	385	250	382	266	307	328	327	391	428	437	466	432	367	299	262	300	7801			
279	268	277	296	323	322	304	303	420	353	196	266	277	262	372	401	383	416	413	407	355	338	303	270	7864			
244	261	283	267	256	329	376	273	267	253	241	297	312	331	349	365	367	431	413	382	367	238	297	270	7589			
291	308	262	243	207	281	421	247	261	257	231	172	301	333	394	499	454	460	424	370	311	273	260	215	7499			
226	251	246	209	216	283	244	231	337	238	287	278	311	333	462	464	550	517	436	377	334	301	273	267	7745			
238	211	193	265	227	263	310	215	275	318	281	277	307	414	283	383	416	423	452	411	382	322	231	227	7330			
216	257	282	222	333	303	310	367	317	403	312	303	282	281	311	320	363	397	403	357	320	170	253	237	7425			
256	267	283	303	301	370	319	253	271	296	301	309	251	417	311	373	431	422	411	363	283	280	234	235	7561			
250	291	307	322	324	321	314	294	249	253	226	227	538	276	326	337	459	460	404	304	280	278	270	226	7596			
242	247	281	271	286	268	278	384	186	292	290	267	272	307	346	393	417	400	394	351	318	278	271	272	7531			
272	282	300	286	310	307	311	303	291	282	319	341	475	562	157	381	401	398	394	376	357	297	298	296	7996			
262	247	243	272	251	282	288	343	319	220	586	125	318	322	467	387	503	514	412	366	327	327	268	241	7890			
236	271	256	281	287	331	338	317	273	284	243	283	319	317	362	366	417	422	406	353	327	290	267	251	7559			
238	230	313	252	317	313	293	309	261	300	225	252	233	233	272	350	414	421	382	313	297	288	301	324	7151			
209	241	258	269	286	290	368	392	341	307	293	342	307	291	316	353	390	410	392	376	342	313	289	253	7688			
258	273	287	237	298	307	343	381	308	282	302	297	282	290	333	357	373	388	391	377	373	350	293	268	7713			
261	261	271	231	297	297	319	303	301	321	287	296	301	321	343	367	400	406	378	374	317	291	280	277	7566			
269	279	278	281	280	277	282	272	283	282	280	296	316	331	356	362	392	366	320	270	290	185	197	214	6898			
233	220	250	248	295	289	292	306	287	281	348	543	489	398	578	440	548	415	357	331	312	282	270	271	8283			
256	290	291	293	292	321	327	263	221	174	229	438	449	350	414	633	626	509	387	303	261	256	265	273	8247			
258	272	259	300	310	326	265	347	351	210	189	331	411	347	373	509	488	430	410	386	328	289	266	264	7923			
260	273	267	259	322	283	410	333	256	249	45	271	293	382	408	458	466	450	389	327	297	257	247	248	7450			
262	279	280	277	287	381	301	276	276	287	317	339	340	317	321	388	388	400	378	339	310	283	249	258	7553			
261	270	287	294	293	344	351	330	292	351	275	331	343	304	343	363	404	422	387	343	321	306	280	269	7769			
260	249	284	294	290	300	304	299	300	273	292	296	323	350	412	415	453	420	427	410	370	296	252	257	7908			
253	259	255	261	279	278	292	293	290	289	281	298	313	329	353	386	411	444	440	417	380	323	290	271	7685			
SCALE BY	OPT, MIM		Preliminary base-line and scale values.										Baseline Value		Scale Value		() Interpolated		() Scaling increase because of magnetic storm.		MONTHLY S.W.		234699				
CHECKED BY	MIM, SEP		Baseline										Value		Scale		() Significant portion of data interpolated.		() Revised all data for part or all of time; if value is given, curve was estimated for missing part.		MONTHLY MEAN		218				
REVISIONS BY	SEP																				DAILY MEAN						
APPROVED BY																											
																		* Derived from <u>Storm</u> Meph., converted to Normal Meph.									



FORM C&G-30a		MAGNETOGRAM HOURLY SCALINGS (UNIVERSAL TIME)																				MAGNETIC DEVIATION		MAGNETIC VARIATION		MAGNETIC ANOMALY	
		Values are in millitesla (mT) and are averages of successive periods of one hour beginning at midnight. (Hour 01 of local day (1500 M.T.) is hour 11 of the 6000 universal day.)																				CO		YEAR		MONTH	
																						11		1950		AUG H	
UT	LT	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		319	330	350	350	355	387	381	370	367	345	337	275	01	236	155	94	345	368	353	348	337	331	329	325	325	7712
02		347	344	348	341	343	361	350	344	356	397	402	331	02	330	373	353	353	371	363	354	345	337	332	337	339	8451
03		346	345	357	370	373	375	373	373	390	371	377	359	03	357	353	360	360	339	311	310	329	338	322	319	333	8444
04		352	354	350	386	417	399	366	376	436	456	376	361	04	340	350	325	355	365	330	319	296	289	291	319	317	8529
05		371	369	396	520	529	486	603	90	269	184	-232*	343	05	321	247	-312*	91	426	359	274	267	320	343	340	350	6960
06		343	411	370	576	483	497	416	466	370	238	243	289	06	273	329	289	203	236	254	319	326	280	271	303	356	8229
07		357	341	356	280	406	426	486	479	176*	53	56*	230	07	165	270	271	219	336	330	337	326	326	313	321	319	7270
08		401	437	373	361	389	415	396	430	339	316	272	347	08	364	341	315	281	292	337	360	344	316	314	316	323	8439
09		394	392	346	367	427	427	424	432	430	433	243	-20	09	287	290	220	157	148	199	234	300	323	329	316	337	7374
10		339	400	383	466	384	436	477	374	376	236	316	356	10	201	71	240	236	330	320	344	327	334	333	353	346	8224
11		359	412	497	633	472	566	524	464	-91*	256	347	313	11	191	153	184	330	391	378	362	331	309	320	301	318	8360
12		333	336	339	436	460	413	363	370	351	69	66	119	12	326	263	326	243	317	379	364	340	330	326	340	338	7547
13		363	360	376	377	424	419	424	477	446	393	319	69	13	-4	47	271	379	343	323	326	300	317	296	300	329	7657
14		241	350	348	350	346	350	360	399	465	382	298	81	14	-53*	32*	203	367	334	337	301	294	324	329	340	327	6680
15		349	366	360	426	510	336	424	506	445	356	73	276	15	210	236	360	360	362	336	323	326	336	319	315	337	5337
16		340	349	340	274	340	347	361	355	256	360	371	255	16	165*	-358*	-8*	240	353	387	380	351	340	326	332	350	6676
17		326	346	367	359	437	373	480	449	150	140	-49*	-137*	17	211	237	-188*	-92*	160	185	326	374	327	314	366	370	5445
18		389	416	406	360	336	384	360	377	376	366	339	234	18	123	122	122	297	370	330	309	317	309	311	334	338	7655
19		374	467	480	454	631	458	370	394	333	-69*	104	216	19	-24	116	320	313	326	306	222	293	309	310	344	329	7356
20		360	344	337	364	357	376	379	357	367	346	341	279	20	289	298	269	321	321	356	345	321	309	308	316	315	7975
21		323	343	345	351	246	367	380	447	393	374	243	293	21	308	318	359	343	351	350	349	330	316	316	316	325	8216
22		331	343	350	350	347	354	360	360	375	359	360	350	22	343	339	326	321	344	347	327	309	311	306	321	333	8165
23		333	343	353	356	357	361	364	383	330	370	356	350	23	356	360	349	344	300	190	232	280	285	300	335	344	7997
24		343	375	345	380	376	396	363	352	369	344	296	-160*	24	-36*	104	-250*	-19	96	302	371	362	346	350	357	361	6143
25		365	367	370	360	359	350	380	405	402	372	304	-233*	25	-121*	407	232	-154*	-58*	248	325	285	307	339	342	360	6313
26		333	354	412	371	407	379	410	386	394	349	178	155*	26	365*	240	212	190	246	402	370	334	323	331	339	340	7090
27		350	354	379	390	389	450	457	486	460	-54*	-156*	304	27	159	207	184	270	340	336	324	321	324	348	340	331	7323
28		350	356	357	349	376	377	380	358	357	387	350	241	28	241	356	343	343	333	320	331	329	316	324	326	339	8173
29		326	353	350	347	360	348	347	384	391	326	283	160	29	-4*	317	356	369	354	355	350	346	334	325	324	336	7769
30		347	354	343	350	359	367	370	346	371	349	333	311	30	314	321	313	351	341	356	352	337	317	302	320	339	8153
31		341	352	363	355	350	362	360	360	363	372	379	369	31	370	362	360	353	352	341	330	310	299	308	320	337	8367

WIND BY	SPT, MFM
CHECKED BY	MFM, JEP
REVIEWED BY	JEP
APPROVED BY	

Preliminary baseline and scale values:		
Interval	Baseline Value	Scale Value
Beginning		

Interpolated  
 Significant portion of hour interpolated.  
 No record; or no values available because of faulty record.  
 Scaling uncertain because of magnetic storm.  
 Record off sheet for part or all of hour; if value is given, value not estimated for missing part.  
 \* Derived from Storm Map, converted to Normal Map.

MONTHLY SUM	237342
MONTHLY MEAN	319
DATE WITH DATA	

FORM 663-2 (Rev. 1-67)

MAGNETOGRAM HOURLY SCALINGS  
(UNIVERSAL TIME)

U.S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANOGRAPHIC ADMINISTRATION  
GEOPHYSICAL FLUID DYNAMICS DIVISION  
WASHINGTON, D.C. 20540

STATION NO. 03  
YEAR 77  
MONTH AUG  
DAY 2

Values are in Gauss of magnetic flux density for successive periods of one hour beginning at midnight. Hour 01 of local day 1527 U.T. is hour 11 of day 8158 universal date.

UT	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
01	347	350	352	353	346	360	396	366	350	323	304	282	256	240	185	230	312	330	314	340	309	311	314	317	7561
02	330	333	338	336	338	334	347	346	336	330	299	277	311	317	316	305	312	326	320	311	310	305	306	314	7703
03	327	326	328	329	336	340	326	346	364	350	347	339	327	323	325	323	318	290	250	247	257	271	281	307	7577
04	327	340	349	385	434	351	341	329	334	320	334	337	321	311	312	313	315	305	283	264	254	255	230	286	7694
05	309	313	347	376	393	416	234	116	97	387	595*	197	276	384	589*	167	206	323	333	293	313	311	317	330	7628
06	367	360	353	324	366	309	321	286	243	218	124	253	276	307	347	301	299	277	293	310	303	306	318	347	7178
07	344	334	340	346	363	368	357	267	224	254	421	378	362	274	290	283	296	308	303	302	291	302	309	326	7592
08	354	386	346	343	336	380	364	346	330	276	266	263	309	319	309	256	212	260	275	300	310	311	317	327	7515
09	375	317	342	327	343	389	393	347	313	326	363	353	234	279	290	246	201	214	237	260	273	287	301	307	7437
10	330	246	346	353	344	254	392	373	317	177	193	293	313	166	160	233	253	243	250	287	297	305	307	320	6992
11	344	370	387	326	367	386	383	301	322	194	276	319	279	313	209	291	326	333	324	316	306	308	313	326	7619
12	333	340	346	334	454	440	390	383	316	147	162	291	242	231	266	237	236	313	331	316	307	313	325	336	7359
13	348	367	367	387	361	426	400	261	350	353	331	241	67	214	261	325	313	297	277	274	268	296	316	316	7506
14	327	326	320	320	323	326	331	326	260	309	318	407	427*	164	177	268	320	318	280	283	386	299	320	327	7462
15	334	346	259	351	382	376	383	320	204	278	316	271	296	277	324	343	339	330	320	300	299	300	309	321	7678
16	332	336	339	331	346	339	336	333	334	359	337	247	452*	630*	127	150	221	308	326	319	318	320	326	336	7782
17	339	336	345	367	360	406	380	246	253	458*	789*	445*	372	406	643*	276	136	149	258	290	319	356	262	366	8657
18	353	384	376	386	366	376	353	333	334	321	261	304	261	216	312	247	287	316	294	300	307	306	311	318	7508
19	326	329	427	407	387	386	397	359	294	215	53	176	222	127	232	287	281	295	241	236	286	307	356	376	6983
20	377	347	323	334	342	334	373	313	283	270	293	234	272	267	282	307	299	308	320	319	313	310	311	310	7387
21	317	333	332	323	327	337	266	334	312	283	313	283	290	288	327	338	330	324	322	327	324	323	319	320	7703
22	326	320	333	343	243	337	357	307	352	327	320	326	326	320	319	308	307	318	324	326	309	316	316	327	7655
23	335	338	333	344	347	356	363	366	365	357	340	328	326	330	334	324	313	240	199	240	257	247	288	323	7588
24	347	353	382	373	399	399	381	353	340	345	314	207	282	310	478*	264	61	113	249	299	317	316	323	326	7532
25	376	324	320	319	317	326	329	338	248	256	341	465*	323	259	361	496*	193	118	210	242	270	290	316	337	7346
26	341	349	347	372	371	390	293	390	291	321	308	445*	445*	194	238	238	200	263	317	316	317	327	320	331	7827
27	333	329	347	379	411	381	343	248	336	152	168	306	287	258	254	246	278	256	237	266	294	306	316	326	7603
28	356	339	231	236	373	296	347	339	337	339	386	221	183	267	318	316	306	267	276	290	300	307	313	326	7589
29	329	329	331	321	327	363	345	356	349	208	246	230	156	173	250	299	310	300	296	294	297	307	316	317	7049
30	320	326	329	320	318	328	347	333	327	310	281	260	266	267	268	273	267	279	297	301	309	302	308	320	7256
31	322	327	330	331	322	323	330	323	318	320	320	323	318	312	313	310	300	292	298	298	293	288	290	293	7494

SCALED BY: SPT, MCM  
 CHECKED BY: MCM, JEP  
 SPECIAL INSTRUCTIONS BY: JEP  
 PLANNED BY:

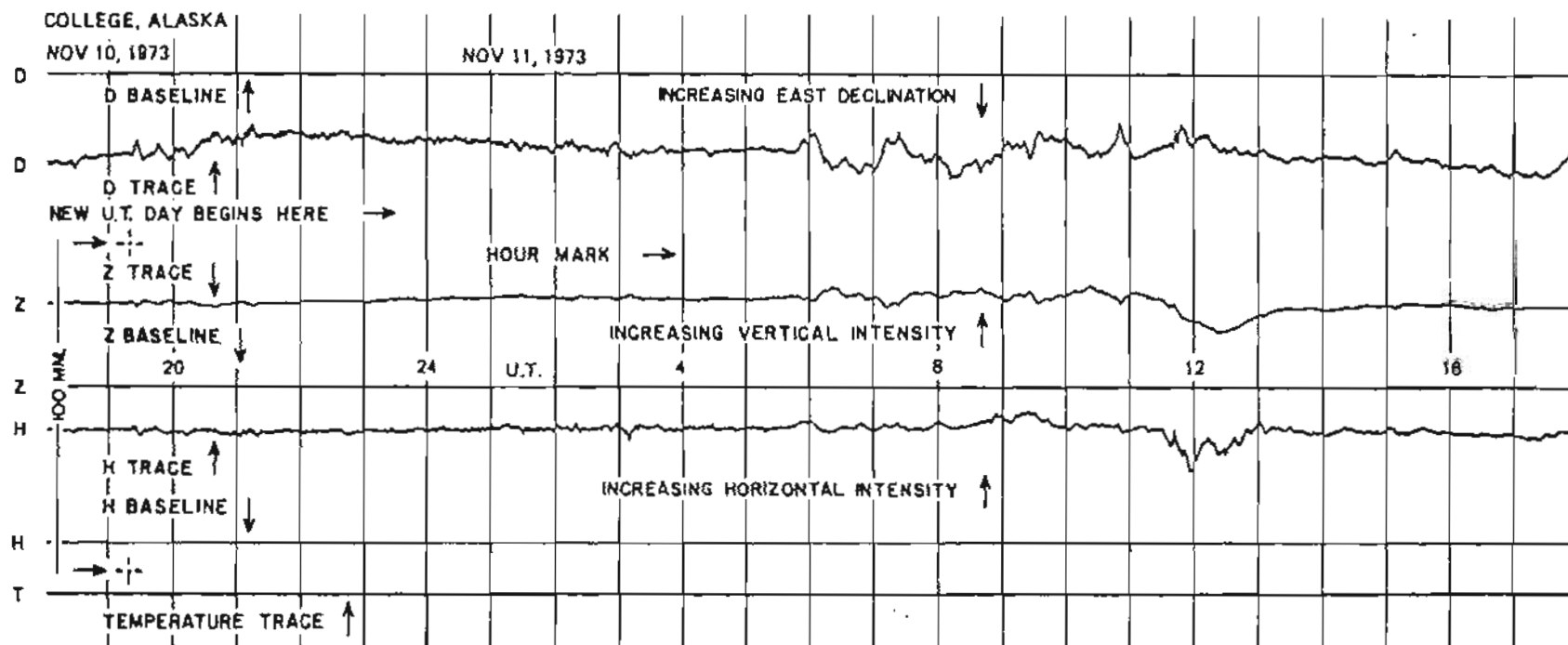
Preliminary baseline and scale values:  
 Interval Beginning: 0000  
 Baseline Value: 300  
 Scale Value: 100

- Interpolated
- Significant portion of hour interpolated.
- No records or no values available because of faulty record.
- Scaling uncertain because of magnetic storm.
- Broad cut sheet for part or all of hour; if value is given, error was estimated for missing part.

\* Derived from SI 073 Mapb., converted to Normal Mapb.

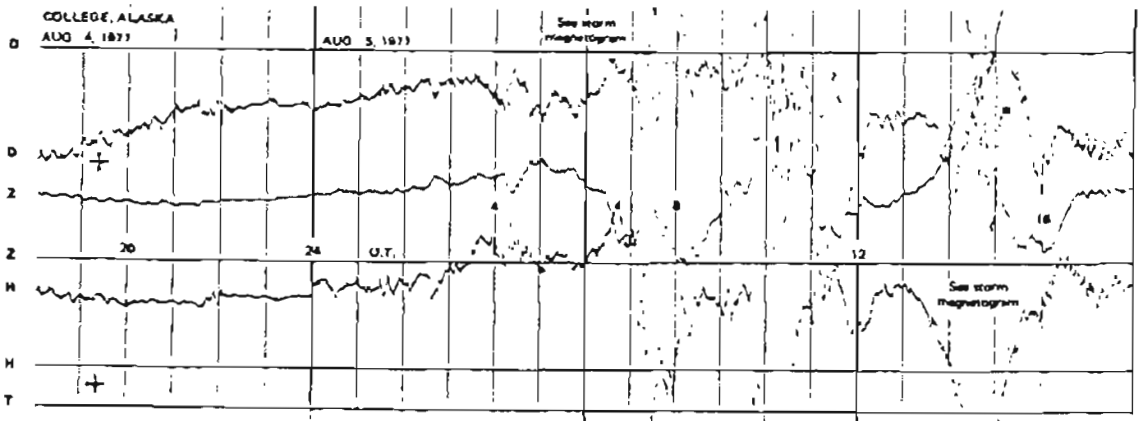
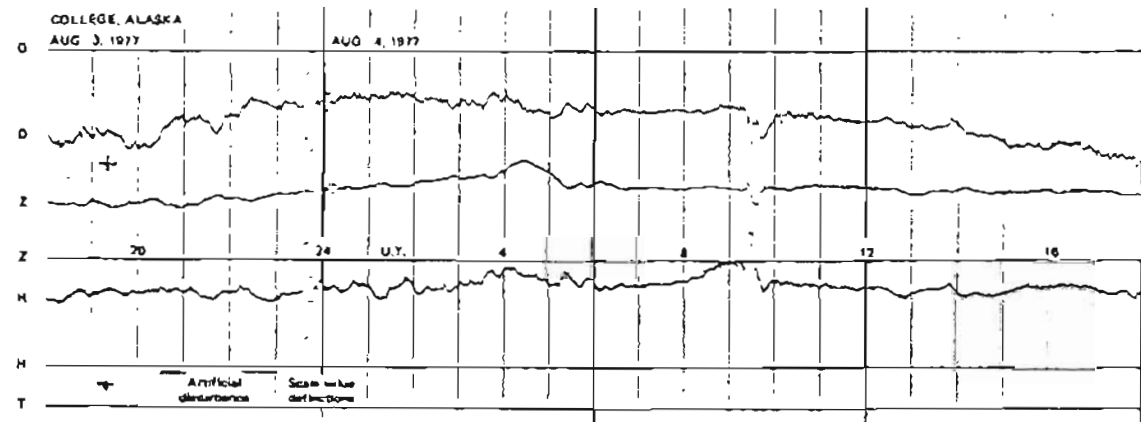
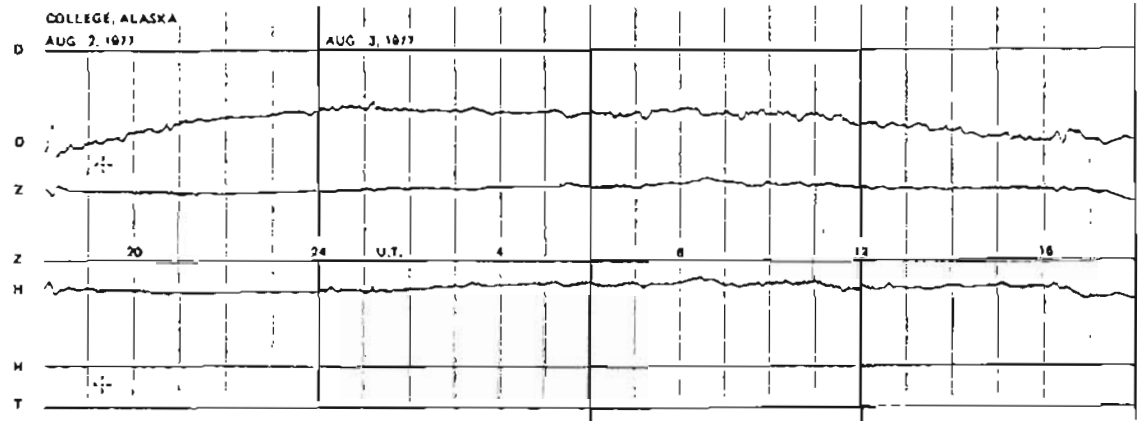
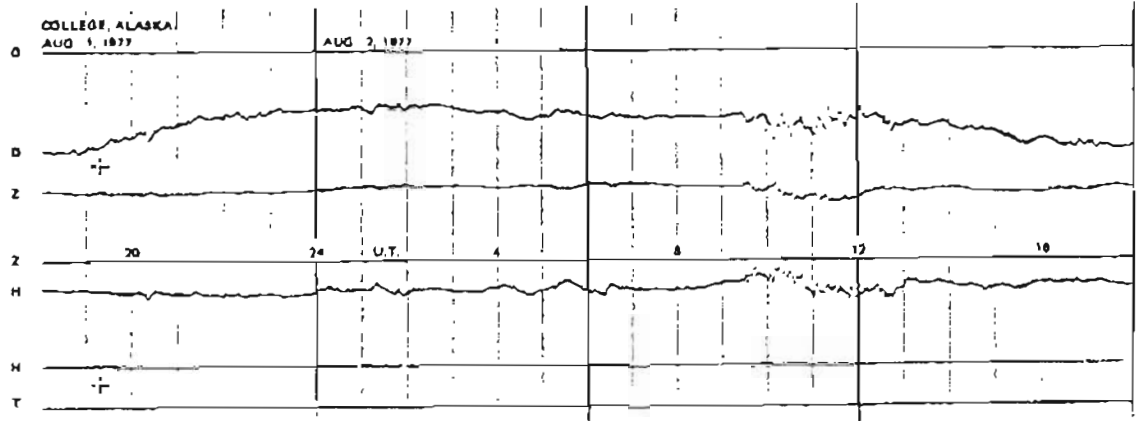
MONTHLY SUM: 233119  
 MONTHLY MEAN: 343  
 DATA WITH GAPS:

# FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)

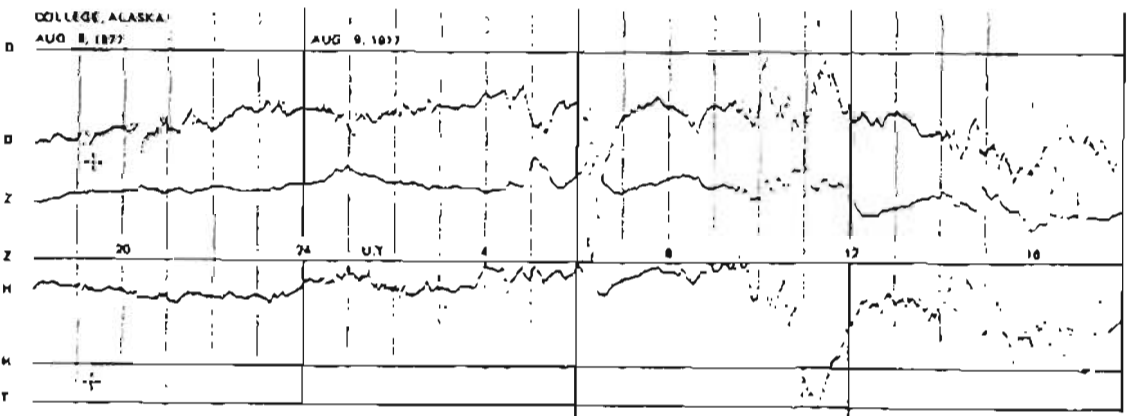
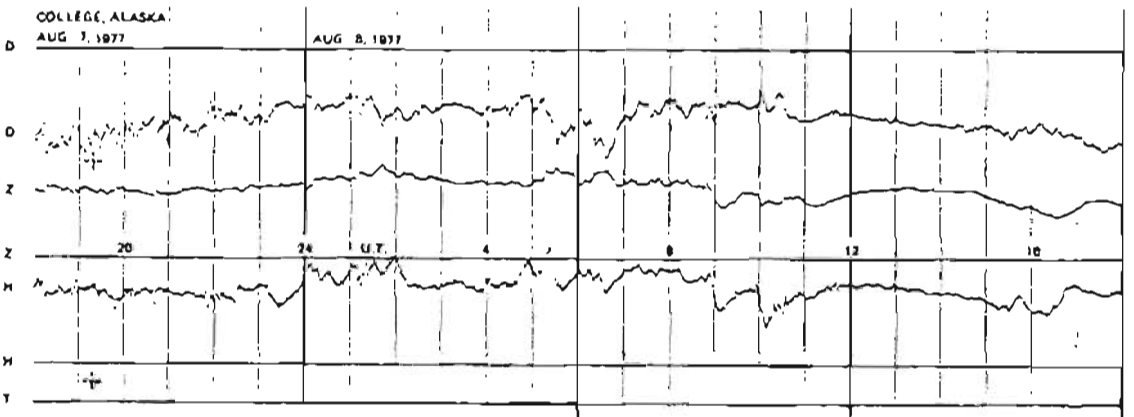
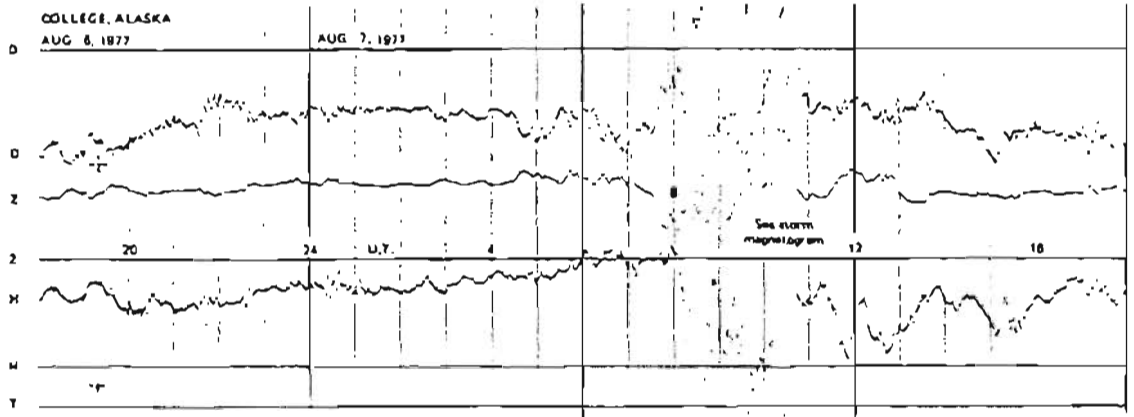
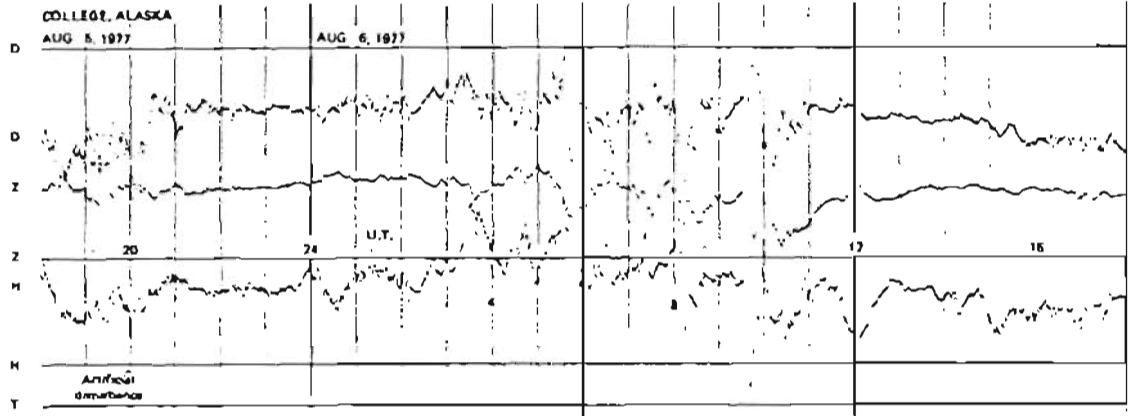


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

NORMAL MAGNETOGRAMS

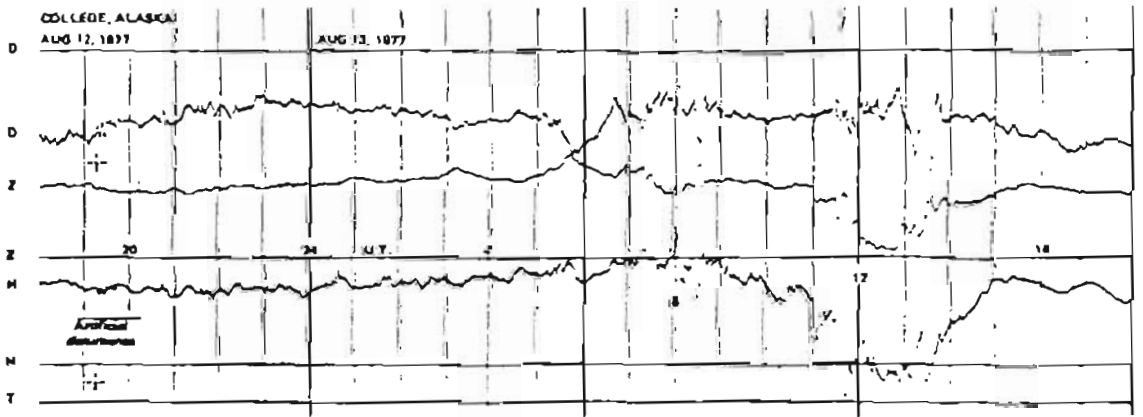
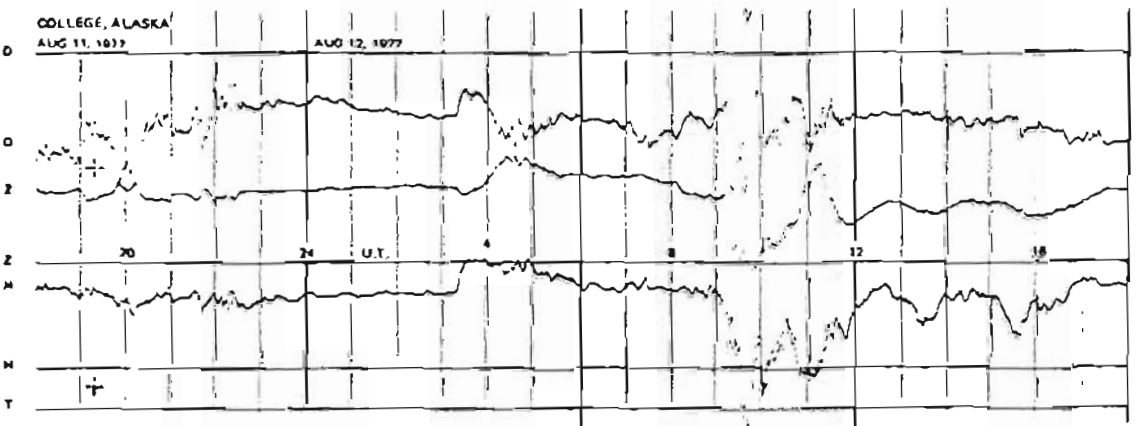
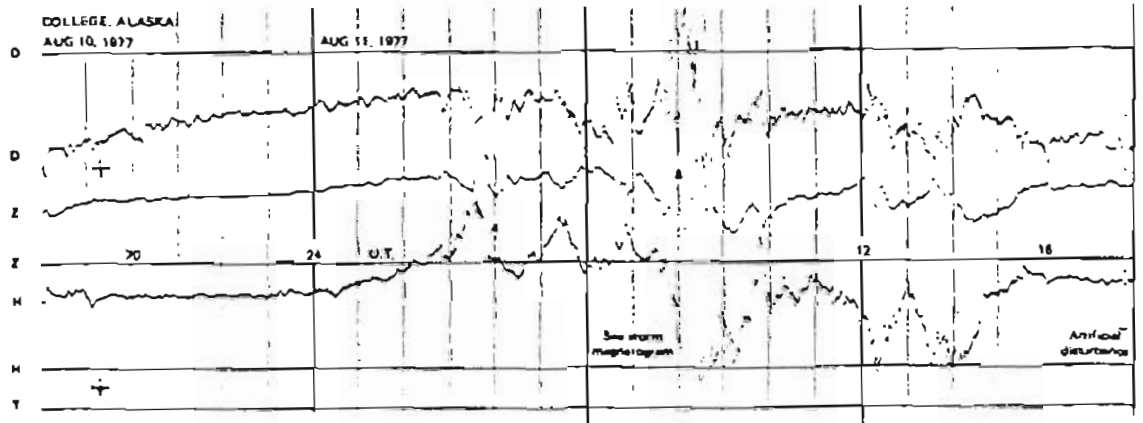
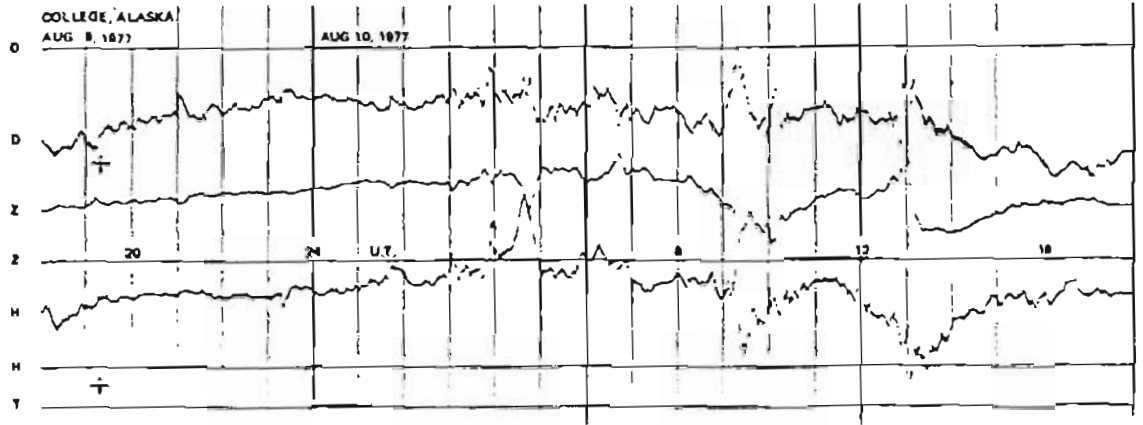


NORMAL MAGNETOGRAMS

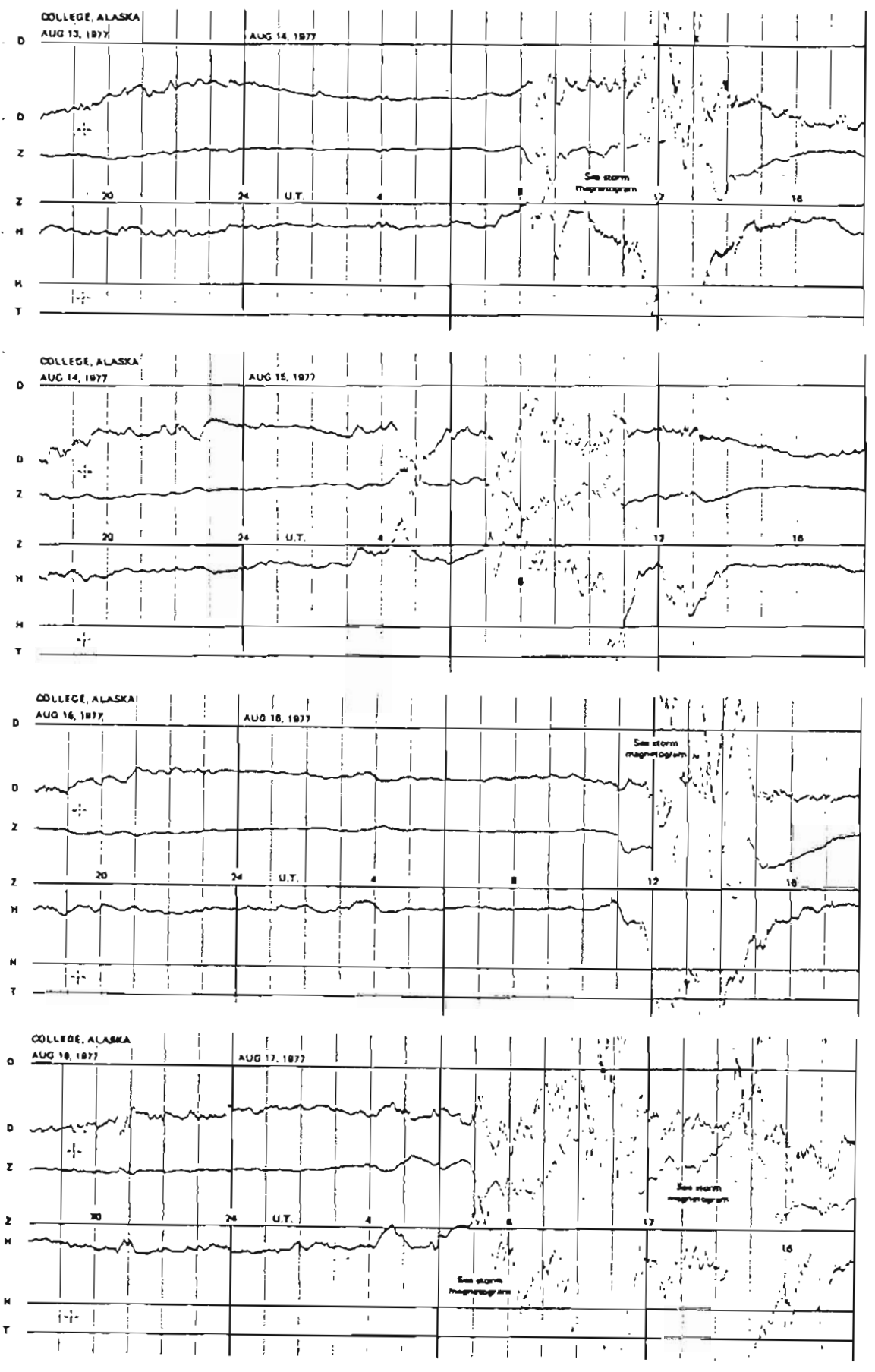
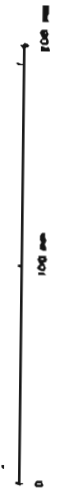


# NORMAL MAGNETOGRAMS

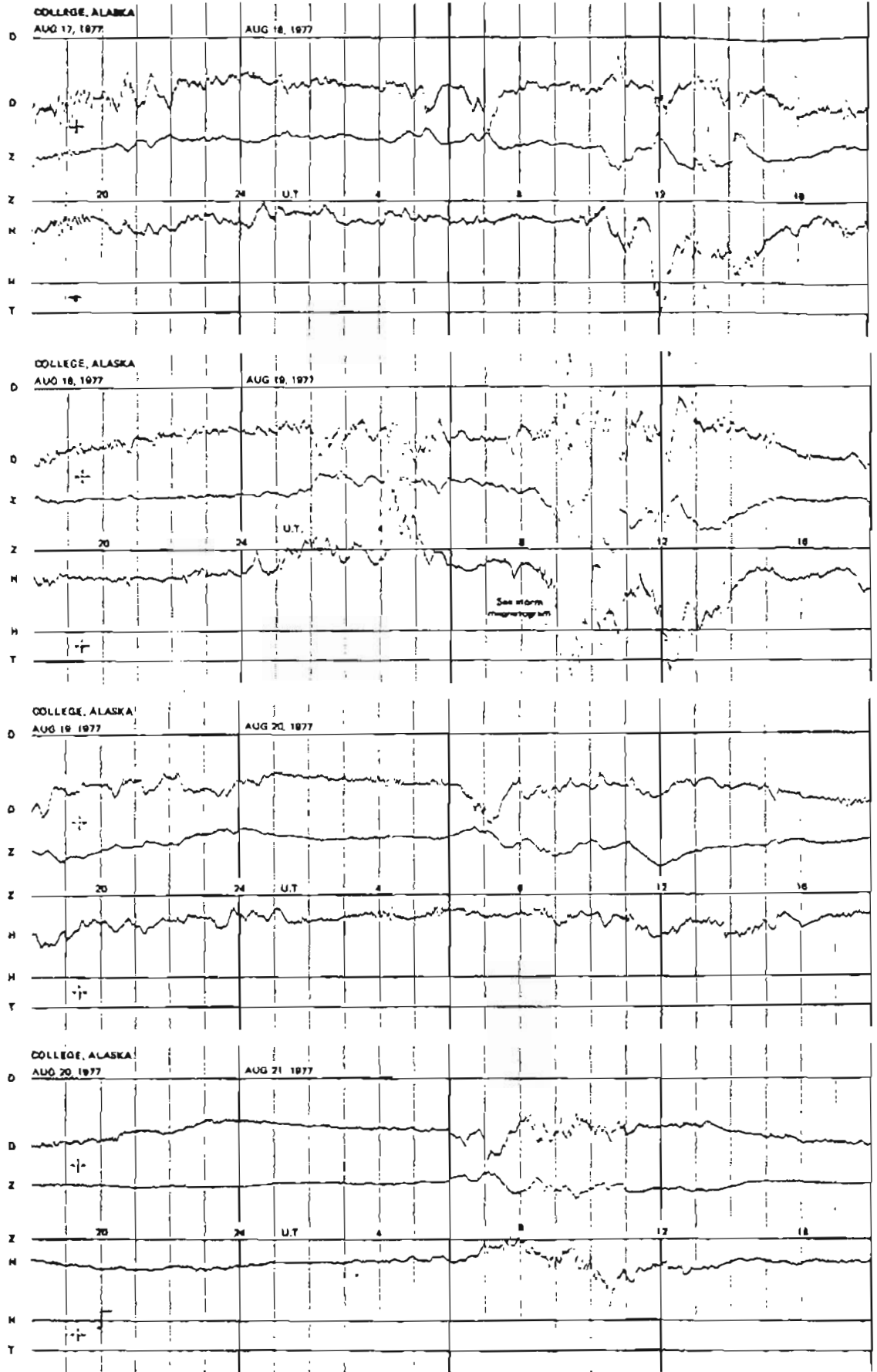
100 mV  
100 m



NORMAL MAGNETOGRAMS

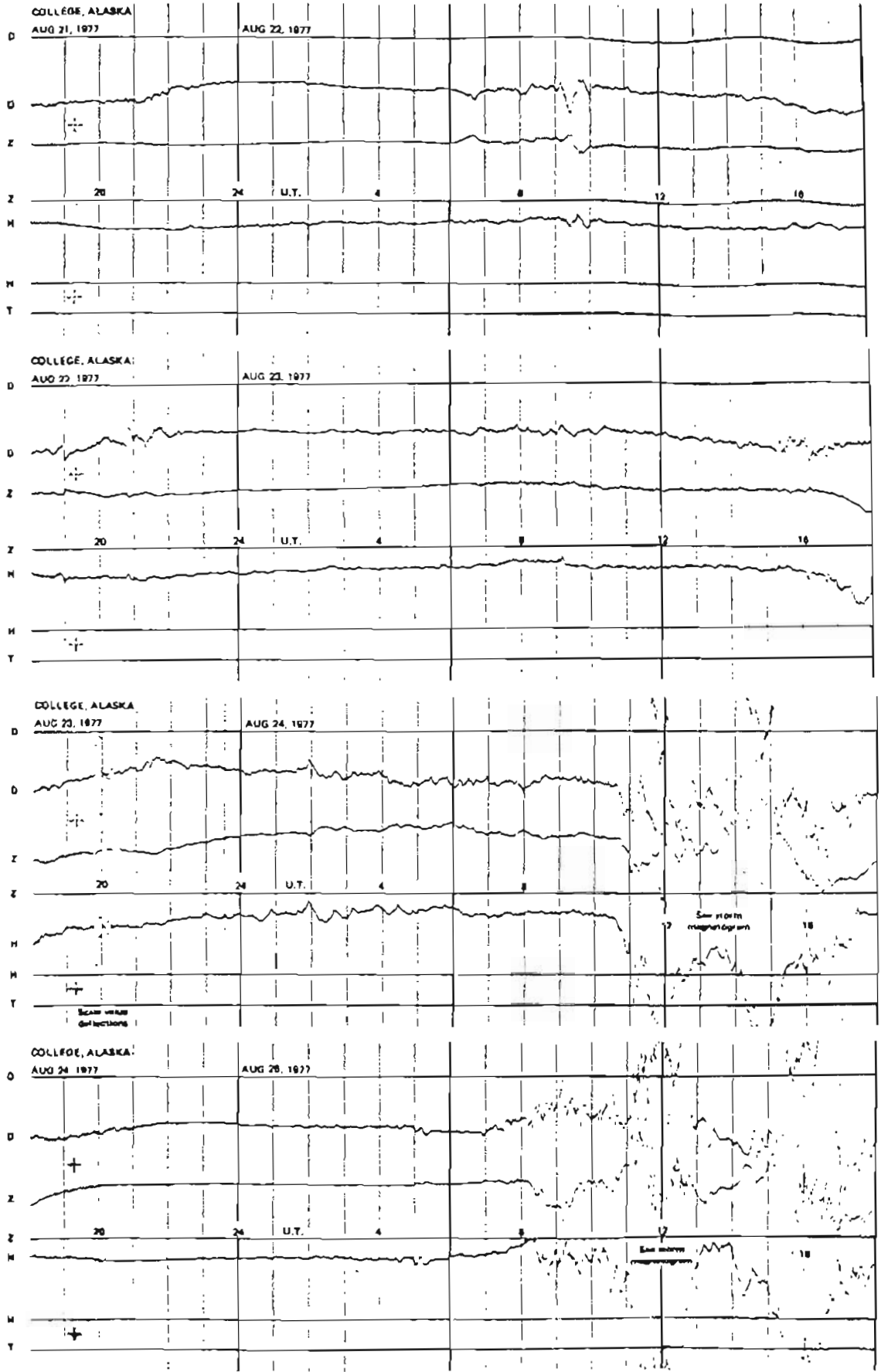


NORMAL MAGNETOGRAMS

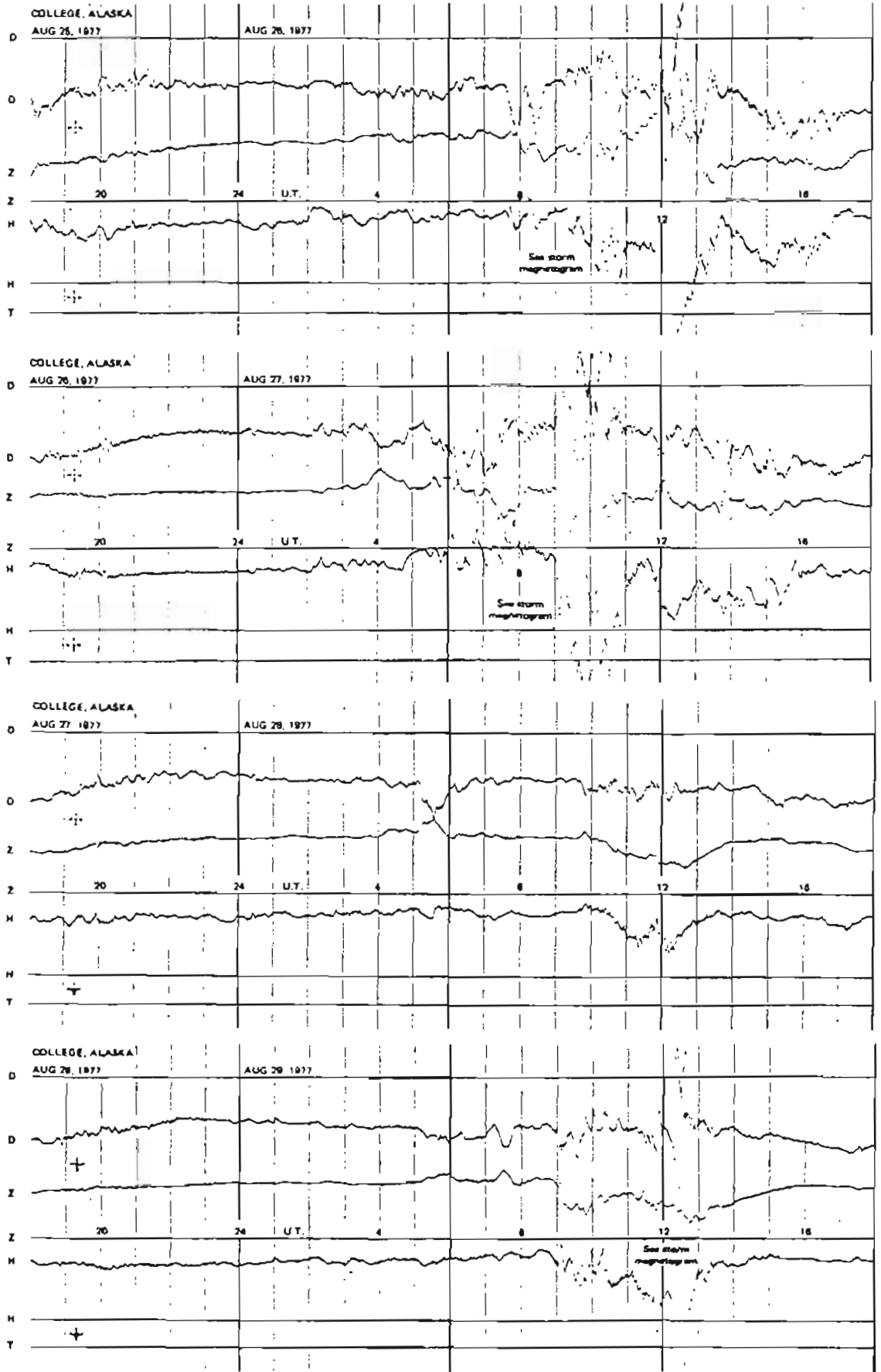




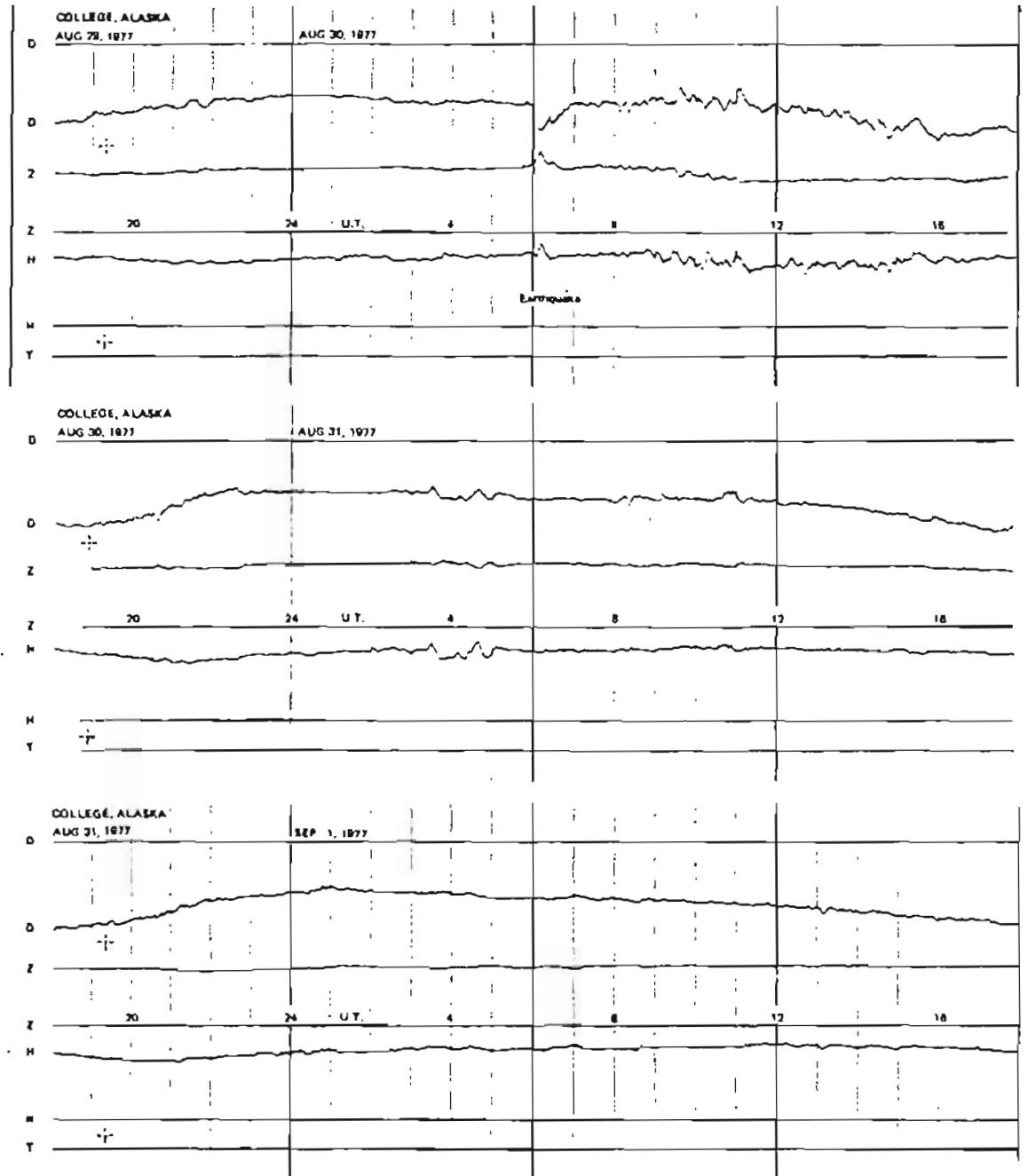
# NORMAL MAGNETOGRAMS



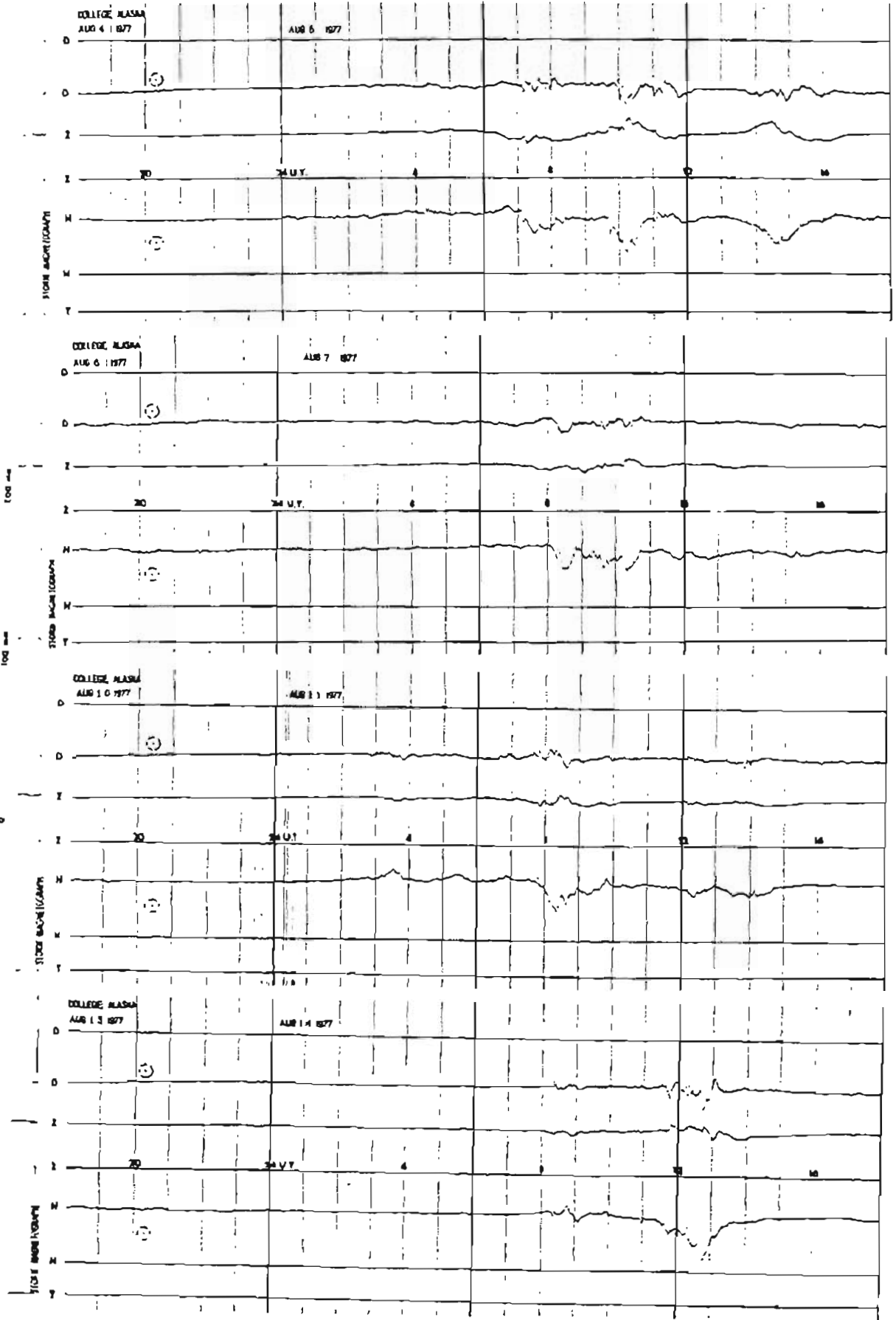
NORMAL MAGNETOGRAMS



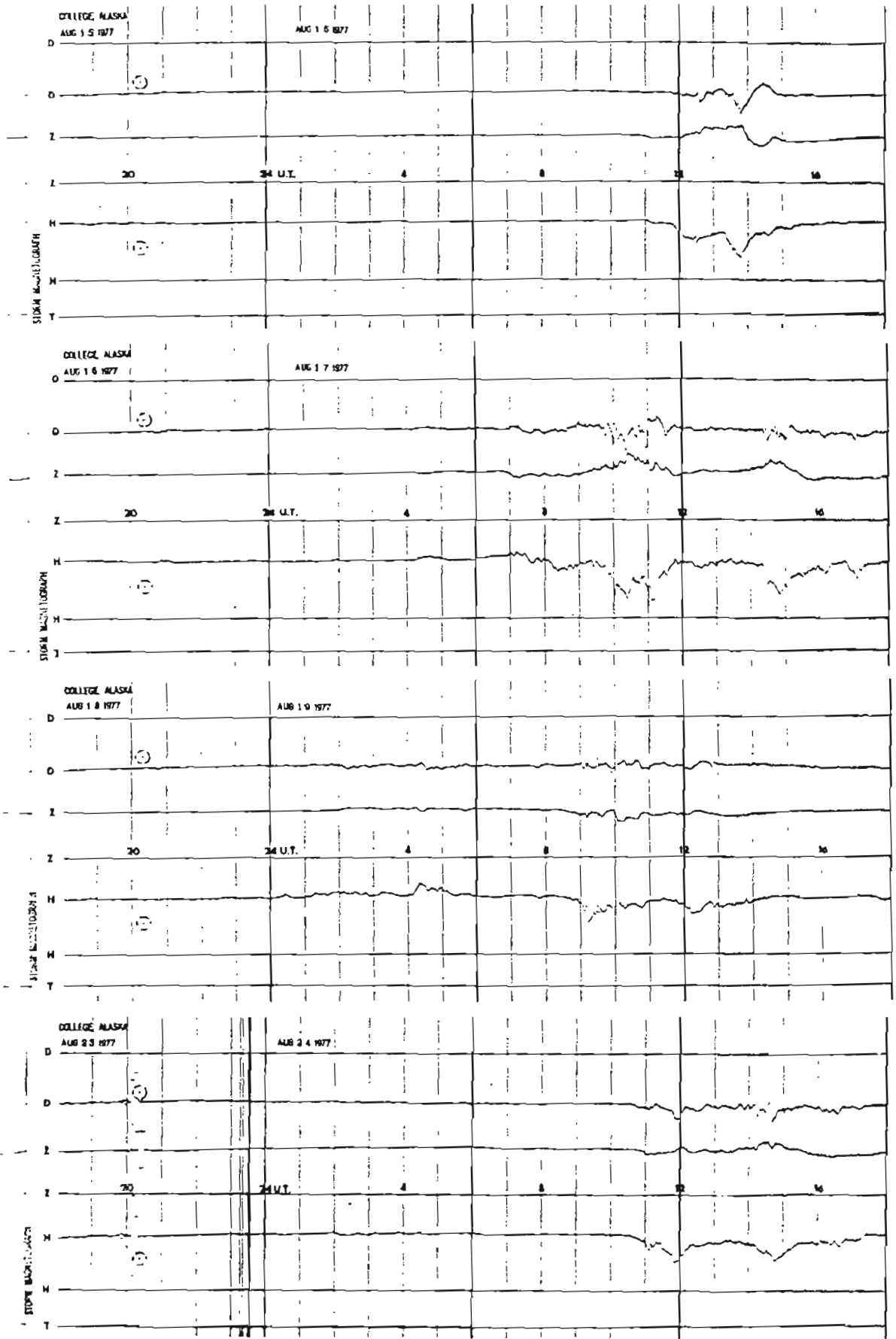
NORMAL MAGNETOGRAMS



# STORM MAGNETOGRAMS



# STORM MAGNETOGRAMS



# STORM MAGNETOGRAMS

