

# UNITED STATES DEPARTMENT OF THE INTERIOR



## GEOLOGICAL SURVEY

ALASKAN GEOLOGY BRANCH

TECHNICAL DATA FILE

### PRELIMINARY GEOMAGNETIC DATA

### COLLEGE OBSERVATORY

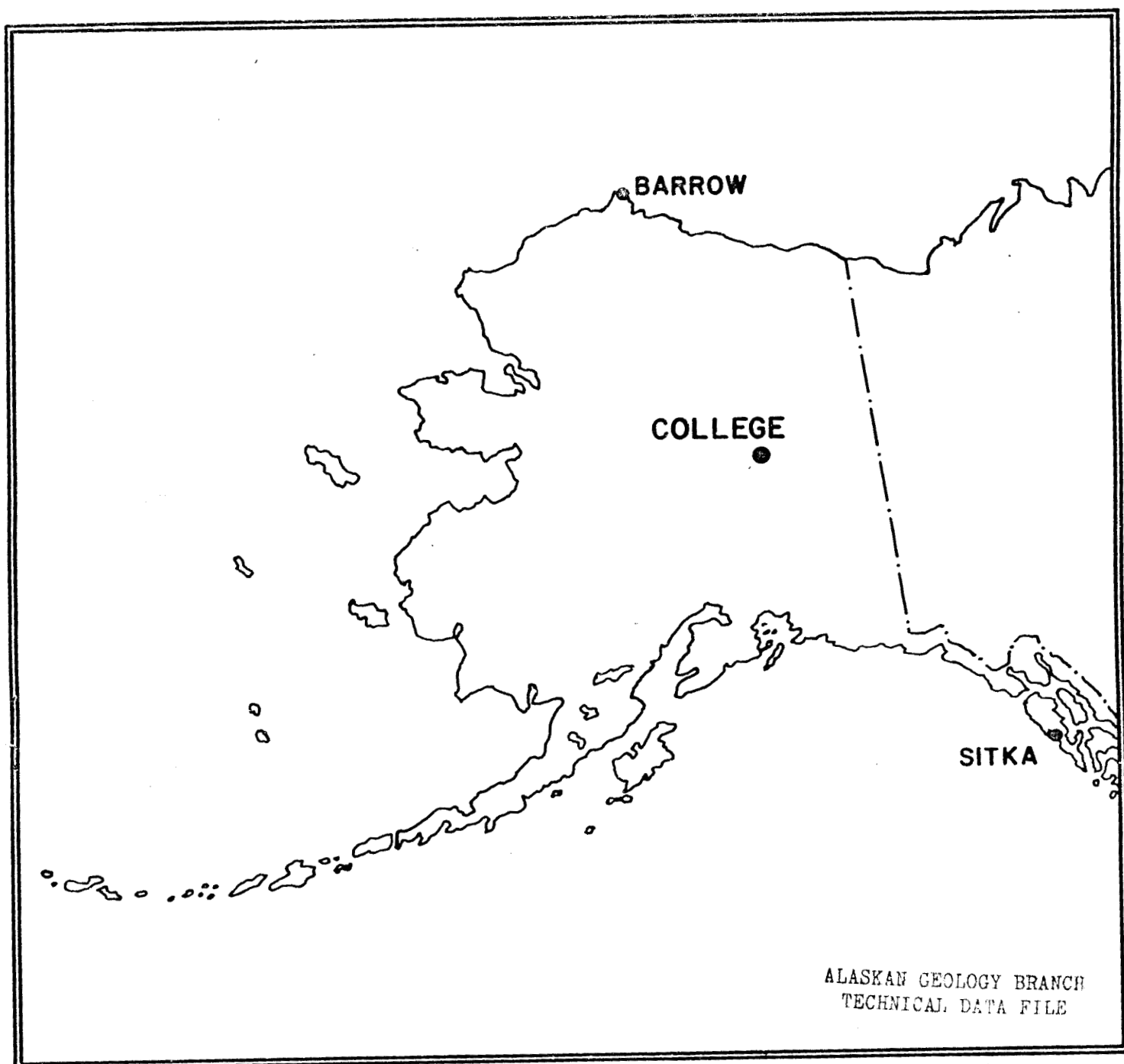
### FAIRBANKS, ALASKA



JANUARY 1980

OPEN FILE REPORT

80-300A



ALASKAN GEOLOGY BRANCH  
TECHNICAL DATA FILE

## 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 Magnetograms

Normal Magnetograms

Storm Magnetograms (When Normal is too disturbed to read)

THIS REPORT WAS PREPARED UNDER THE DIRECTION OF JOHN B. TOWNSHEND, CHIEF OF THE COLLEGE OBSERVATORY WITH THE ASSISTANCE OF OBSERVATORY STAFF MEMBERS J.E. PAPP, E.A. SAUTER, AND S.P. TILTON, AND IN COOPERATION WITH THE GEOPHYSICAL INSTITUTE OF THE UNIVERSITY OF ALASKA. THE COLLEGE OBSERVATORY IS A PART OF THE BRANCH OF ELECTROMAGNETISM AND GEOMAGNETISM OF THE U.S. GEOLOGICAL SURVEY.

## COLLEGE OBSERVATORY PRELIMINARY GEOMAGNETIC DATA

### INTRODUCTION

The preliminary geomagnetic data included here is made available to scientific personnel and organizations, as part of a cooperative effort and on a data exchange basis because of the early need by some users. To avoid delay, all of the data is copied from original forms processed at the observatory; therefore it should be regarded as preliminary. Inquiries about this report or about the College Observatory should be addressed to:

Chief, College Observatory  
U.S. Geological Survey  
Yukon Drive on West Ridge  
Fairbanks, Alaska 99701

Requests for copies of the magnetograms except for the current month should be addressed to:

World Data Center A-NOAA  
Environmental Data Service  
Boulder, Colorado 80302

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 10 $\gamma$  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 (10 $\gamma$ )

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

### GEOMAGNETIC DATA

#### 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.

U. S. DEPARTMENT OF COMMERCE NOAA FORM 76-133 (9-72) NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION										OBSERVATORY COLLEGE, ALASKA		
MAGNETIC ACTIVITY (Greenwich civil time, counted from midnight to midnight)										MONTH AND YEAR JANUARY 1980		
DATE	K-INDICES								SUM	AK	TIME SCALE ON MAGNETOGRAMS	
	00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24			20 mm/hr	
1	1	1	3	6	5	5	5	4	30	34	SUDDEN COMMENCEMENTS d h m	
2	3	2	1	5	5	3	1	1	21	18		
3	2	2	1	5	5	3	3	3	24	20		
4	3	2	3	4	4	4	4	2	26	19		
5	2	2	1	5	5	4	2	3	24	20		
6	2	2	1	2	3	3	1	1	15	08		
7	0	0	0	0	2	1	1	2	06	03		
8	1	1	1	4	0	0	0	0	07	05		
9	0	0	0	1	1	0	0	0	02	01		
10	0	0	0	0	1	1	0	0	02	01		
11	0	1	1	5	5	5	3	3	23	23	POSSIBLE SOLAR-FLARE EFFECTS BASED ON INSPECTION OF GRAMS ALONE (WITHOUT REFERENCE TO DATA FROM OTHER SOURCES)	
12	0	0	0	1	0	0	0	0	01	00		
13	0	2	3	6	5	5	5	3	29	33		
14	2	1	2	3	2	3	2	1	16	08		
15	0	0	0	2	4	2	2	1	11	06		
16	3	2	2	3	3	0	0	0	13	07		
17	0	0	2	5	6	5	1	0	19	23		
18	1	0	2	1	2	0	0	0	06	03		
19	0	0	0	1	0	0	1	1	03	01		
20	1	1	0	1	2	0	0	0	05	02		
21	0	0	0	2	4	1	0	0	07	05	BEGIN d h m	END d h m
22	0	0	1	2	3	0	1	1	08	04		
23	0	0	2	3	2	0	0	0	07	04		
24	0	0	0	3	0	1	1	0	05	03		
25	0	0	0	0	3	2	2	1	08	04		
26	0	0	0	1	3	0	1	1	06	03		
27	1	2	2	4	6	6	5	4	30	35		
28	2	4	3	3	6	6	5	3	32	36		
29	4	3	2	4	6	5	4	2	30	30		
30	2	2	3	5	3	4	0	1	20	15		
31	0	0	0	0	0	0	1	1	02	01		

K SCALE USED:	D	H	Z		
	LOWER LIMIT FOR K = 9.....	683.8	321.7		(mm)
	CURRENT SCALE VALUE.....	3.75	7.81		(γ/mm)
	LOWER LIMIT FOR K = 9.....	2560	2510		(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 JANUARY	YEAR 1980
DATE	TIME U.T.	NATURE OF PHENOMENON <sup>1</sup>	REMARKS	
03	15XX	pc5		
04	18XX	pc5		
05	16XX	pc5		
07	1815	si		
13	0510	ssc*		
15	18XX	pc3		
22	13XX	pi2	With bay.	
25	13XX	pi2		
26	13XX	pi2	With bay.	
IDENTIFIED BY: JEP			VERIFIED BY: JBT	

1. NATURE OF PHENOMENON: ssc, ssc\*, si, si\*, b, bp, bs, bps, pc1, pc2 - - - pc5, pg, pi 1, pi 2, sfe.

NOAA FORM 86-500  
(11/73)

PRINCIPAL MAGNETIC STORMS

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

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

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	01	07XX	..	..	..	..	01	4	6	152	920	570	02	05
		13	0510	s.c.*	-5	+68	-13	13	4	6	141	970	550	13	23
		27	08XX	..	..	..	..	27 28 29	5, 6 5, 6 5	6 6 6	240	1230	750	29	22

COLLEGE OBSERVATORY, COLLEGE, ALASKA -- PRELIMINARY CALIBRATION DATA FOR:

JANUARY

1980

COLLEGE OBSERVATION, \_\_\_\_\_

NORMAL MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASLINE
D	0000 U.T., 1-1-80	2400 U.T., 1-31-80	1.6/mm	3.78/mm	27° 47.3 E
H	0000 U.T., 1-1-80	2400 U.T., 1-20-80	7.88/mm		127438
	0000 U.T., 1-21-80	2400 U.T., 1-31-80	7.88/mm		127498
Z	0000 U.T., 1-1-80	2400 U.T., 1-12-80	7.38/mm		551788
	0000 U.T., 1-13-80	2400 U.T., 1-31-80	7.38/mm		551738

STORM MAGNETOGRAPH					
COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASLINE
D	0000 U.T., 1-1-80	2400 U.T., 1-31-80	7.8/mm	29.78/mm	23° 51.8 E
H	0000 U.T., 1-1-80	2400 U.T., 1-20-80	44.08/mm		114848
	0000 U.T., 1-21-80	2400 U.T., 1-31-80	44.08/mm		115058
Z	0000 U.T., 1-1-80	2400 U.T., 1-31-80	48.58/mm		540388

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

MONTHLY MEAN ABSOLUTE VALUES*		
D	H	Z
28° 10.0 E	130178	553778

\* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: JAN 7, 9, 10, 12, 18, 19, 20, 24, 26, 31

NOAA FORM 76-106  
(5-72)

U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

CO

YEAR  
80

MONTH  
JAN

FILE -  
MENT  
D

MAGNETOGRAM HOURLY SCALINGS

(UNIVERSAL TIME)

Hour 01 of local day 11 of the 59th universal day.

Values are in tenths of mm, and are averages for successive periods of one hour beginning at midnight, with minus signs shown.

Shrinkage correction have been applied. Negative values are in red.

C	Q <sub>1</sub>	Q <sub>2</sub>	Q <sub>3</sub>	Q <sub>4</sub>	Q <sub>5</sub>	Q <sub>6</sub>	Q <sub>7</sub>	Q <sub>8</sub>	Q <sub>9</sub>	Q <sub>10</sub>	Q <sub>11</sub>	Q <sub>12</sub>	Q <sub>13</sub>	Q <sub>14</sub>	Q <sub>15</sub>	Q <sub>16</sub>	Q <sub>17</sub>	Q <sub>18</sub>	Q <sub>19</sub>	Q <sub>20</sub>	Q <sub>21</sub>	Q <sub>22</sub>	Q <sub>23</sub>	Q <sub>24</sub>	SUM	
01	178	197	197	208	209	199	184	171	139	122	95	339	381	442	749	603	381	539	452	381	316	269	168	181	7120	
02	179	158	182	210	201	201	211	231	211	203	191	238	356	363	262	248	272	239	252	267	248	242	241	218	5644	
03	213	181	186	182	142	161	228	234	232	228	216	122	233	297	251	239	243	321	308	310	263	212	144	179	5325	
04	167	211	191	188	136	180	176	217	219	224	222	281	208	241	351	311	231	230	252	250	221	218	218	228	5371	
05	201	200	203	211	200	190	208	227	221	231	149	229	340	344	378	233	240	232	263	281	258	241	221	221	5757	
06	211	220	189	177	190	208	219	228	248	213	203	228	248	238	242	250	211	268	280	279	271	270	251	237	5599	
07	219	210	199	199	199	201	211	228	215	221	228	232	229	232	220	211	221	251	270	290	289	288	280	251	5594	
08	201	219	201	201	200	196	230	199	218	249	291	220	220	231	228	238	241	249	258	271	277	271	267	241	5637	
09	219	218	212	217	211	209	208	210	221	211	249	217	241	218	221	202	221	229	258	281	300	299	283	268	5629	
10	251	238	223	221	215	209	201	199	181	199	203	200	199	208	270	259	243	247	247	279	287	281	277	269	5606	
11	258	261	252	252	239	229	199	210	187	240	297	309	261	241	278	261	362	391	299	289	241	241	209	219	6225	
12	221	217	210	209	214	218	218	212	218	218	229	236	239	222	221	230	238	240	251	267	267	268	250	231	5544	
13	221	218	216	211	211	213	218	182	194	171	236	257	600	407	471	364	356	289	273	186	209	201	209	203	6322	
14	193	200	199	208	202	219	221	230	260	233	209	208	233	231	230	253	259	257	270	282	261	247	233	211	5549	
15	203	208	211	219	221	219	219	210	199	229	241	218	198	248	218	228	240	252	218	287	259	253	242	213	5453	
16	211	211	169	171	210	209	231	212	227	239	248	238	229	243	210	219	236	242	249	251	249	249	241	230	5424	
17	211	209	209	221	221	223	218	275	221	222	236	225	234	298	334	332	268	232	238	251	239	237	228	219	5701	
18	200	204	207	208	209	209	212	215	241	229	223	237	216	241	238	221	239	242	262	272	262	246	219	203	5455	
19	197	198	208	203	212	218	222	218	212	226	214	221	228	232	236	238	232	238	234	241	225	229	231	210	5323	
20	163	169	174	188	192	198	219	222	218	222	222	238	248	239	223	227	238	249	260	256	240	239	232	213	5309	
21	200	179	201	205	212	222	223	225	219	245	253	245	232	231	214	234	211	246	250	259	259	250	240	218	5473	
22	208	209	211	211	211	217	210	210	211	200	247	233	230	224	222	237	251	261	278	258	213	201	218	201	5372	
23	190	191	200	193	191	188	238	191	201	186	271	220	218	228	228	248	224	230	243	255	261	240	220	211	5269	
24	201	209	211	210	209	207	209	219	210	201	199	231	229	223	249	266	278	270	299	265	248	266	240	219	5660	
25	213	208	208	209	209	197	210	223	214	218	236	243	241	306	306	218	205	230	237	249	250	239	275	262	233	5409
26	193	185	174	173	198	198	222	223	225	219	245	253	266	333	363	363	647	520	322	273	351	158	132	179	148	6331
27	203	187	188	130	211	228	222	210	270	220	256	315	27	266	333	363	647	520	322	273	351	158	132	179	148	6331
28	156	151	121	97	70	97	240	231	220	204	211	231	28	425	473	321	607	695	481	623	199	242	193	223	187	6698
29	201	117	151	178	181	202	217	227	229	220	208	130	29	232	272	251	598	288	356	361	294	292	254	218	185	5862
30	145	170	184	198	208	212	208	198	179	124	238	252	30	204	233	250	253	233	270	280	269	267	245	206	5308	
31	198	203	190	188	198	201	212	209	207	228	213	222	233	232	227	228	236	248	275	302	307	301	287	230	5575	

SCALED BY

CHECKED BY

SIGNS RE-  
VIEWED BY

PUNCHED BY

SPT, PEF

JEP, EAS, SPT, PEF

JEP

Preliminary base-line and scale values:

Interval Beginning

Base-line Value

Scale Value

( ) Interpolated

( ) Significant portion of hour interpolated.

( ) No record; or no values available because of faulty record.

( ) Scaling uncertain because of magnetic storm.

( ) Record of sheet for pair or all of hour; if value is given, curve was estimated for missing part.

( ) Derived from GLADIM Magph., converted to Normal Magph.

MONTHLY SUM

MONTHLY MEAN

DATES WITH GAPS:

U. S. G. P. O. 1974-769-571/432 REG. #6



NOAA FORM 76-106 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION MAGNETOGRAM HOURLY SCALINGS (UNIVERSAL TIME) Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (5:30 M.T.) is hour 11 of the 24-hour universal day. Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	10 mi	10 mi	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	YEAR	MONTH	DAY	
01	351	351	351	351	350	363	361	361	389	418	449	361	-9	-91	-91	-11	218	-136	202	-331	-162	46	-121	189	331	347	331	347	3292	
02	319	388	423	388	423	357	379	374	368	359	369	383	371	246	-58	231	351	379	333	329	353	349	339	330	329	329	329	7930		
03	333	360	361	341	406	341	406	410	380	361	357	367	376	-4	56	336	331	371	359	321	345	279	329	296	281	321	321	7673		
04	367	362	369	386	429	386	429	406	449	381	363	349	310	177	292	344	198	84	172	271	351	313	339	340	329	340	340	7735		
05	353	360	367	371	372	379	379	387	387	383	381	359	181	267	48	-112	13	206	279	331	361	361	351	341	331	330	330	7070		
06	341	359	374	339	369	362	369	376	376	369	370	356	319	341	342	349	288	271	340	363	351	350	337	330	329	329	329	8295		
07	331	341	350	357	360	362	362	360	360	362	361	359	359	351	334	309	331	350	361	361	361	351	336	331	324	299	299	8301		
08	327	341	342	356	355	349	359	349	359	376	359	341	219	247	361	359	356	356	359	359	356	349	342	331	324	321	321	8174		
09	331	341	342	342	340	340	340	346	347	341	331	341	339	340	346	350	343	359	359	359	353	350	347	339	329	320	320	8233		
10	329	334	339	340	340	340	340	348	351	353	351	350	348	342	349	329	341	369	371	359	359	359	349	330	320	321	321	8277		
11	331	344	351	351	359	360	360	374	360	353	361	323	90	-56	11	133	260	14	213	293	276	369	319	249	301	330	330	6754		
12	333	339	340	347	350	353	353	353	351	351	351	351	350	351	356	351	359	359	360	359	351	351	349	339	339	331	331	8382		
13	336	346	349	350	350	350	350	350	351	351	351	351	351	351	356	351	359	359	360	359	351	351	349	339	339	331	331	3451		
14	364	373	386	361	361	361	361	361	347	348	360	279	321	293	327	331	318	314	258	329	359	351	349	348	331	331	331	8092		
15	341	350	347	349	349	344	344	350	350	345	349	350	351	331	134	259	371	369	360	344	288	341	340	341	345	344	344	7993		
16	344	329	380	389	389	355	355	360	360	353	361	323	299	239	269	327	351	351	350	351	351	349	339	336	332	331	331	8255		
17	340	341	351	351	351	353	350	351	349	367	363	281	199	229	349	256	-114	230	372	377	371	362	350	344	347	348	348	7466		
18	349	351	359	359	359	351	353	353	356	357	359	339	341	340	328	330	361	360	359	360	359	357	347	338	334	328	334	8375		
19	334	346	357	357	357	357	357	358	358	358	358	361	363	350	353	353	354	357	358	350	345	349	348	332	334	333	333	8427		
20	340	340	328	359	359	357	357	371	368	363	368	357	350	342	322	353	353	358	357	357	348	336	339	338	338	332	332	8371		
21	323	331	343	349	349	350	351	351	351	351	351	343	333	302	309	222	206	343	367	368	360	349	339	331	331	339	339	7904		
22	334	341	347	347	347	350	351	351	351	361	370	381	360	361	350	256	351	361	363	367	342	321	324	326	329	330	330	8274		
23	333	333	339	347	347	350	354	354	389	370	390	393	361	341	329	353	346	360	361	361	356	341	339	333	333	330	330	8472		
24	337	340	341	349	349	351	356	356	359	357	361	361	351	364	364	364	351	349	342	353	338	342	348	343	338	327	337	8373		
25	330	340	347	351	351	353	358	358	362	360	361	359	358	362	345	345	338	266	359	365	338	353	350	343	335	328	328	8320		
26	342	352	362	362	362	362	362	362	359	359	360	354	342	319	327	307	362	367	368	373	375	368	362	356	338	316	316	8475		
27	333	333	337	349	347	347	347	352	349	348	369	277	189	100	342	196	-280	-230	-190	-77	-5	99	154	201	293	353	353	4539		
28	352	357	376	472	610	623	623	389	348	348	344	368	367	266	-32	-9	253	-162	-162	155	23	321	367	379	353	332	332	6710		
29	294	398	549	450	413	372	351	357	351	357	336	347	344	252	344	269	-127	-71	7	215	293	218	209	287	326	285	285	6718		
30	330	352	371	358	356	362	358	365	358	365	433	415	269	106	363	344	313	208	329	356	353	342	331	331	326	319	319	8015		
31	318	327	342	354	354	357	351	352	351	352	354	352	348	345	342	345	343	340	345	348	343	332	337	331	321	306	306	8165		
SCALED BY																									MONTHLY SUM		MONTHLY MEAN		DATES WITH GAPS:	
CHECKED BY																														
SIGNS RE-VIEWED BY																														
PUNCHED BY																														

( ) Interpolated ( ) Significant portion of hour interpolated. ( ) No record or no value available because of faulty record. ( ) Scaling uncertain because of magnetic storm. < > Record off sheet for part or all of hour; if value is given, error is estimated in missing part. \* Derived from 11:00 Mph., converted to Normal Mph.

U.S.G.P.O. 1973-760-571/932 REG. #6

NOAA FORM 76-106  
(10-72)MAGNETOGRAM HOURLY SCALINGS  
(UNIVERSAL TIME)U. S. DEPARTMENT OF COMMERCE  
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

OBSY.

YEAR

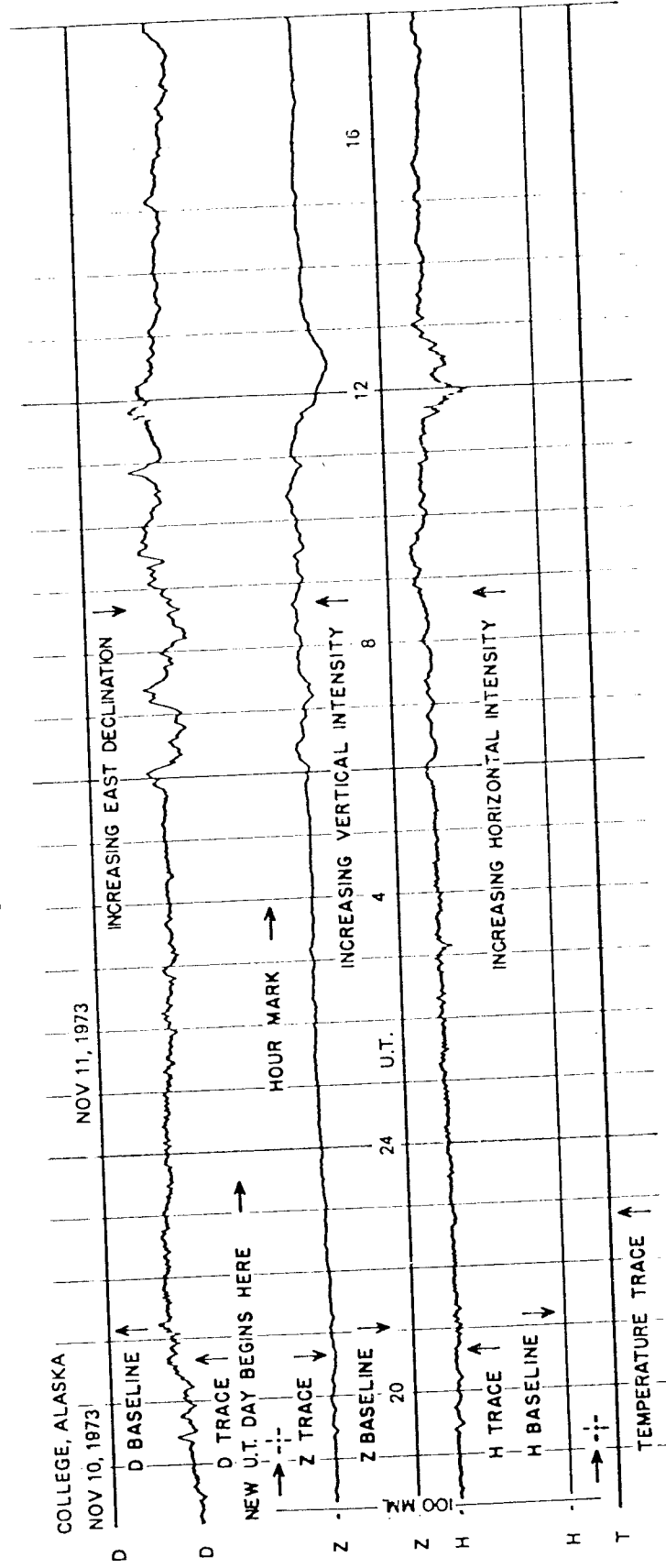
MONTH

DAY

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 0000 universal day.  
Shrinkage corrections have been applied. Negative values are in red, with minus sign shown.

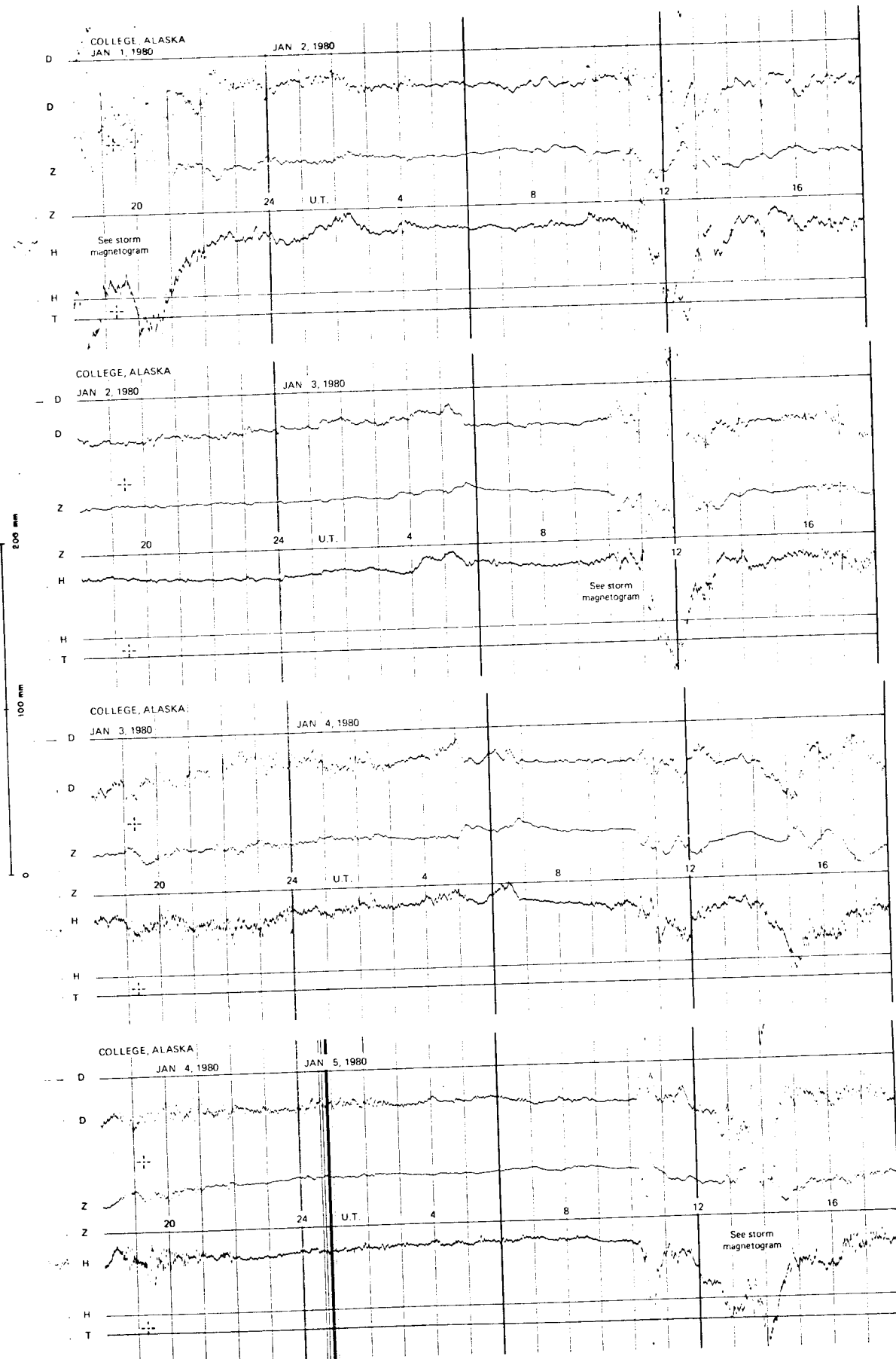
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01	299	300	288	300	301	309	310	303	281	270	348	311	01	416	354	412*	415*	229*	122*	408*	423	343	288	244	219	7649																													
02	296	288	319	310	299	300	318	328	326	310	293	200	02	249	231	221	270	276	279	281	290	287	290	291	288	6840																													
03	287	289	298	300	321	341	321	310	301	299	233	143	03	223	207	260	262	278	251	247	222	249	256	257	274	6429																													
04	281	299	300	287	287	329	340	330	301	300	247	191	04	181	251	211	219	198	108	200	210	239	264	270	287	6130																													
05	298	296	300	294	291	294	309	300	310	299	264	221	05	197	277	158	178	192	210	231	263	270	296	300	309	6357																													
06	304	300	300	307	311	309	304	301	301	266	259	273	06	291	281	260	239	266	289	278	288	289	294	299	296	6905																													
07	296	290	287	288	288	289	290	290	289	289	289	288	07	269	236	241	258	264	290	288	290	287	286	293	290	6785																													
08	299	311	297	306	311	319	318	320	313	281	206	181	08	261	289	289	289	289	290	290	297	296	298	297	291	6938																													
09	289	287	288	289	287	290	288	287	271	258	259	251	09	240	257	249	259	279	283	293	299	300	301	298	293	6695																													
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13	281	280	279	278	279	277	277	280	231	249	292	304*	13	416*	456*	437*	484*	477*	243*	296	121	159	258	290	308	7252																													
14	303	296	279	290	300	308	308	310	300	257	278	260	14	273	278	274	259	250	247	276	274	279	282	289	290	6760																													
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17	291	289	288	291	290	288	289	310	303	257	128	151	17	223	251	169	90	213	233	279	278	271	282	289	290	6043																													
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25	283	283	281	280	280	280	279	278	276	274	272	265	25	258	233	165	189	253	256	241	220	250	262	261	267	6186																													
26	272	277	278	286	288	290	293	288	282	279	280	270	26	235	156	222	241	266	270	272	271	267	276	277	277	6413																													
27	279	288	289	318	337	305	290	292	294	228	226	271	27	225	276	328*	-139*	-12*	-38*	-51	109	179	230	274	289	5087																													
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31	297	298	298	299	300	299	296	295	294	305	296	295	31	289	286	284	283	283	290	289	279	275	277	278	265	6970																													
SCALED BY	SPT, PEF		Preliminary base-line and scale values:																						MONTHLY SUM		204523																												
CHECKED BY	JEP, EAS, SPT, PEF		Interval		Base-line		Scale																		MONTHLY MEAN		275																												
SIGNS RE-VIEWED BY	JEP		Beginning		Value		Value																		DATES WITH GAPS:																														
PUNCHED BY																																																							
<input type="checkbox"/> Interpolated																												<input type="checkbox"/> Scaling uncertain because of magnetic storm.																											
<input type="checkbox"/> Significant portion of hour interpolated.																												<> Record off sheet for part or all of hour; if value is given, curve was estimated for missing part.																											
<input type="checkbox"/> No record; or no values available because of faulty record.																																																							
* Derived from 0.0000 Mphs., converted to Normal Mphs.																																																							

# FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)

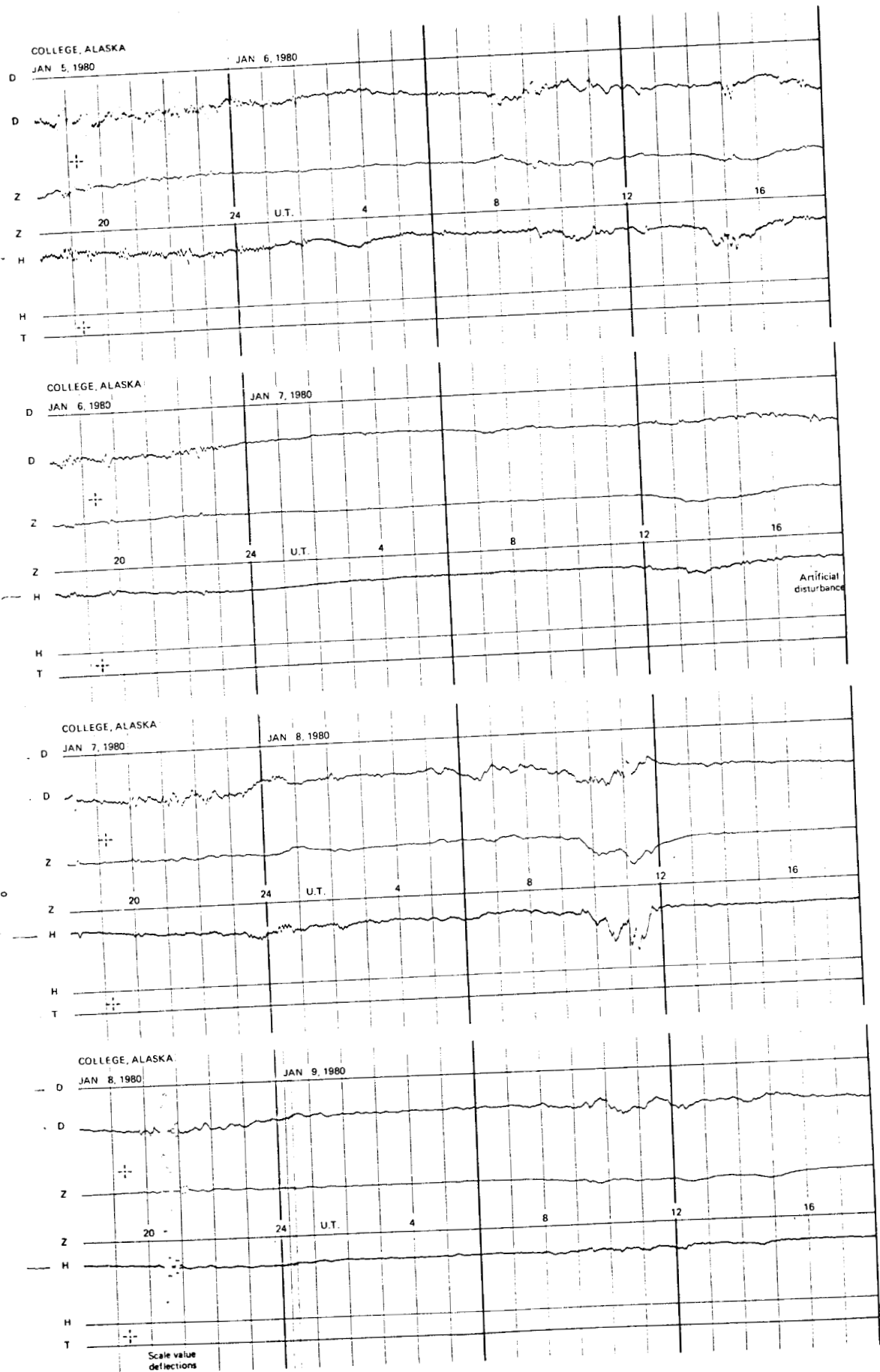


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

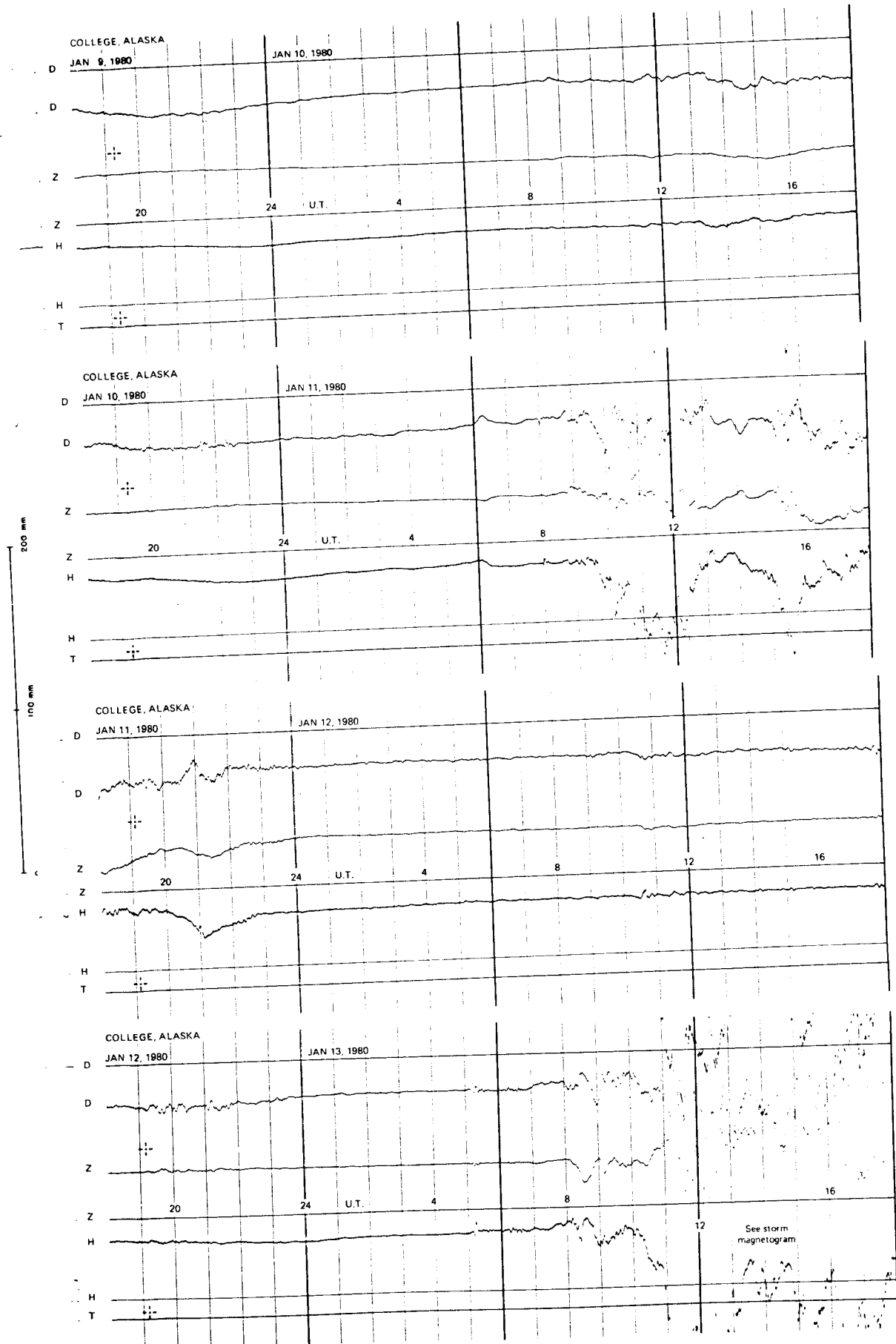
# NORMAL MAGNETOGRAMS



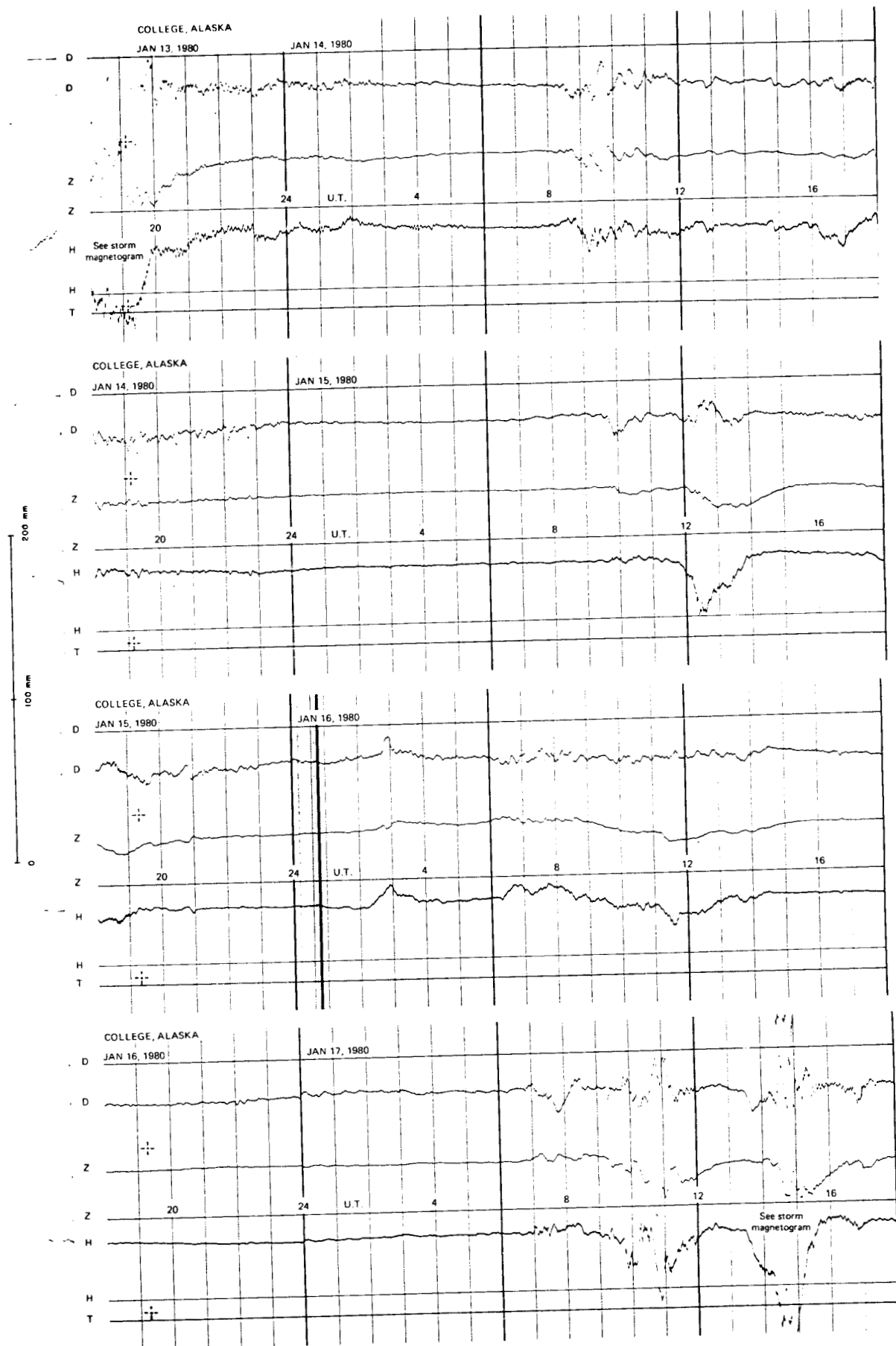
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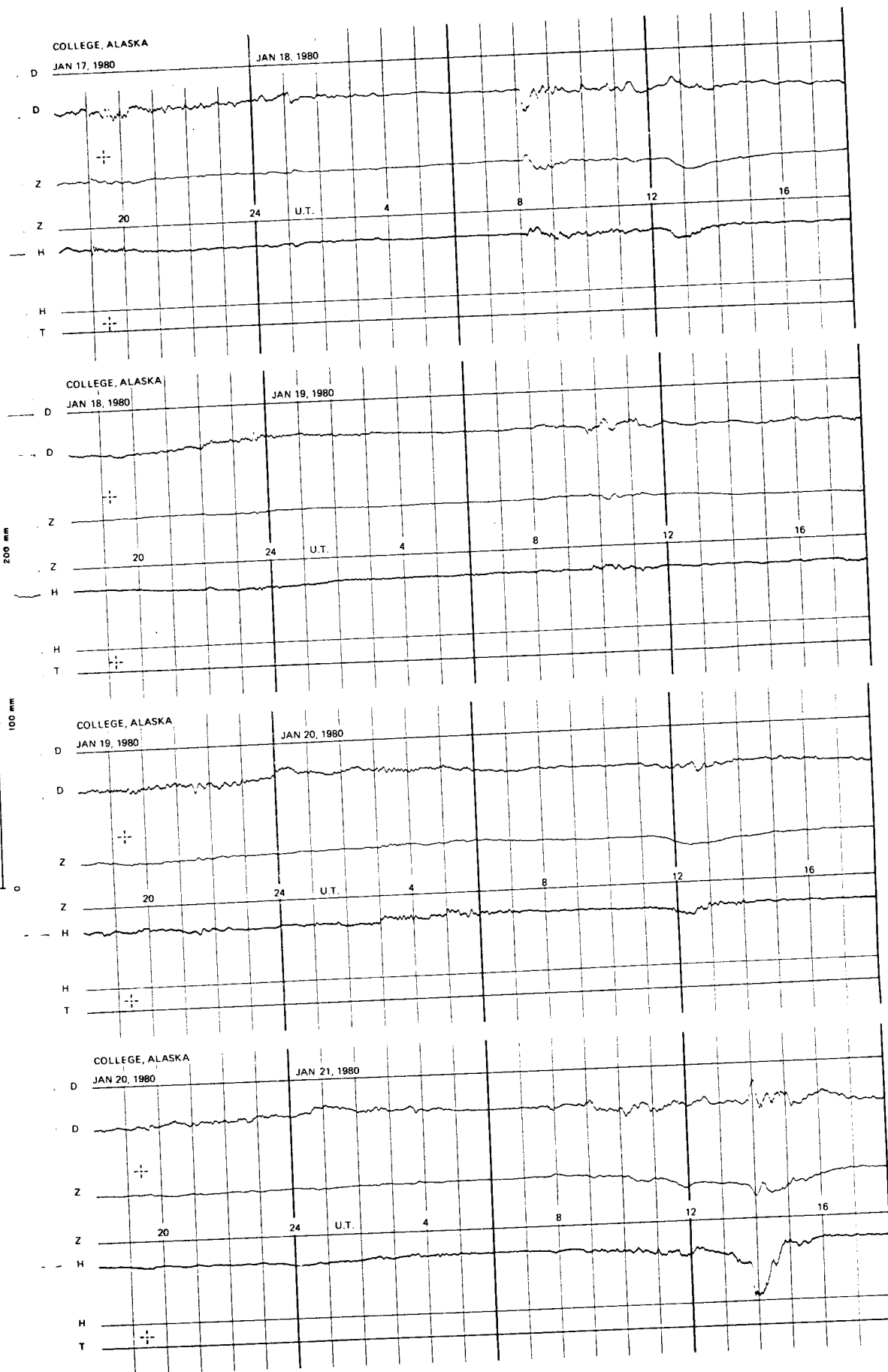
# NORMAL MAGNETOGRAMS



# NORMAL MAGNETOGRAMS

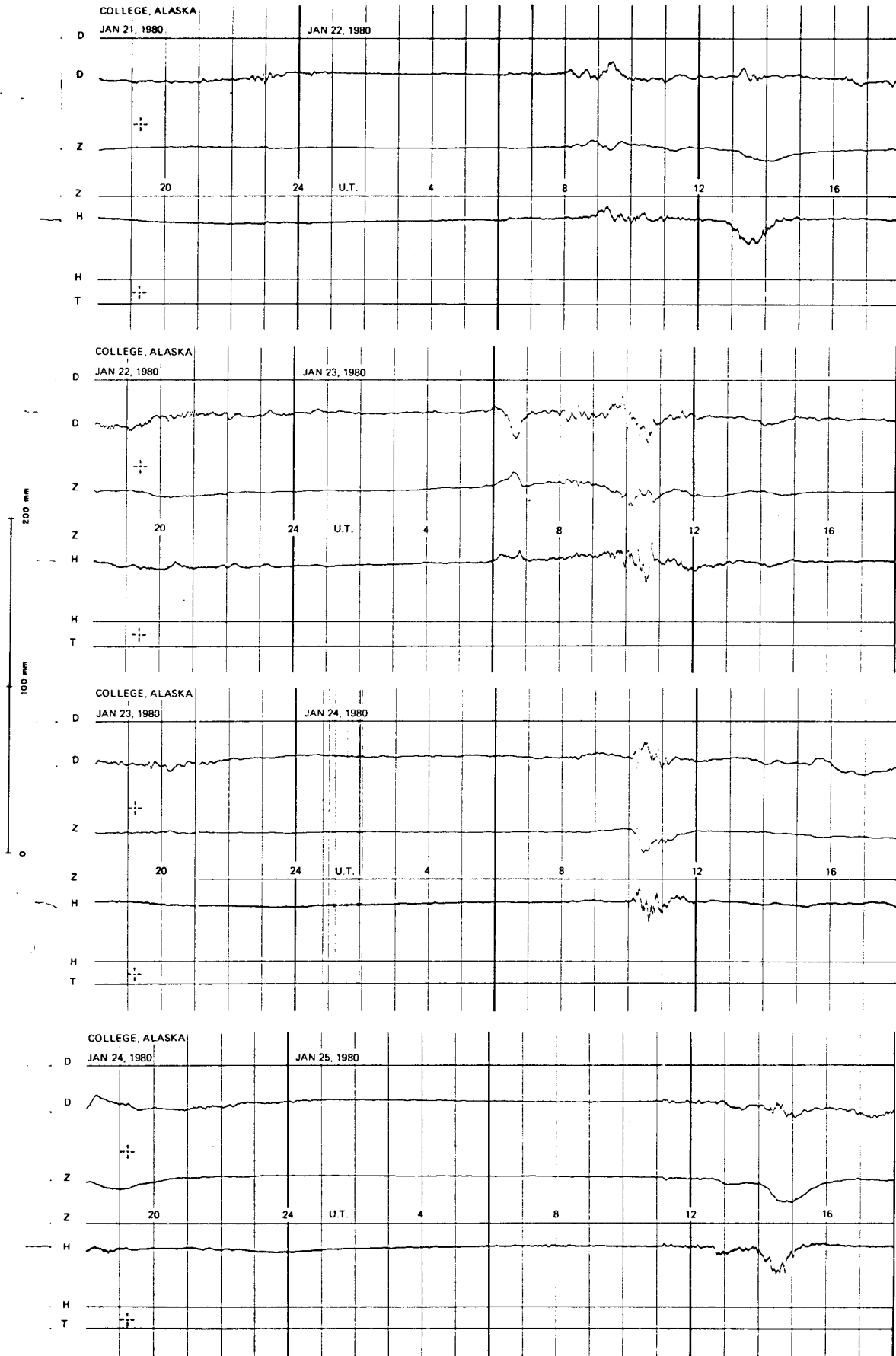


NORMAL MAGNETOGRAMS

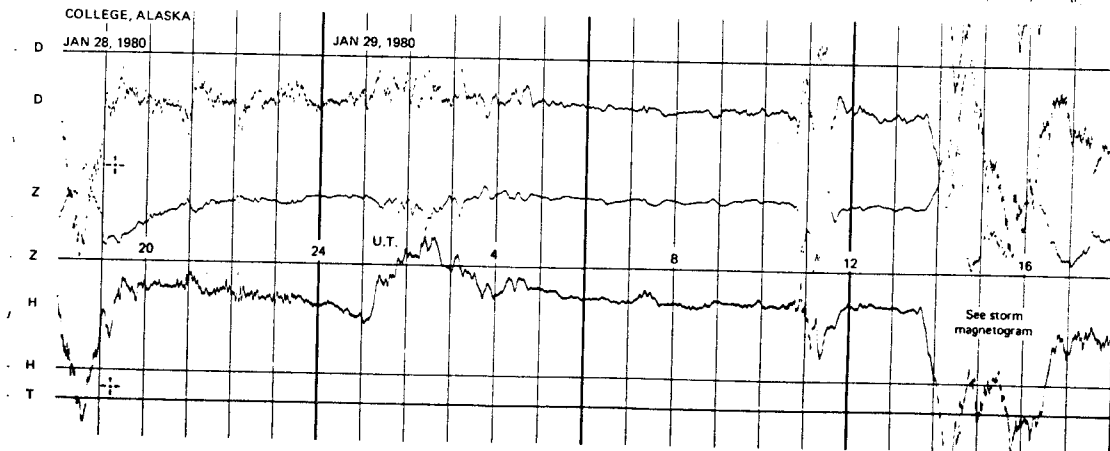
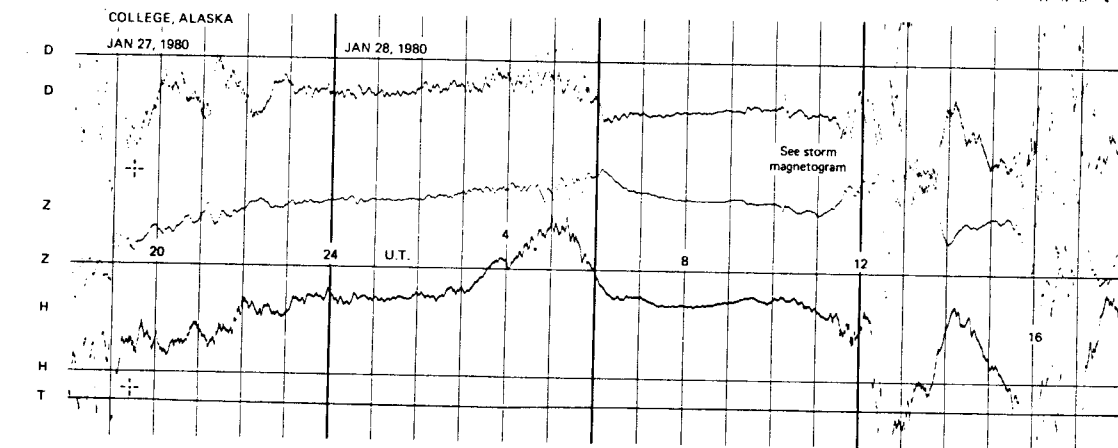
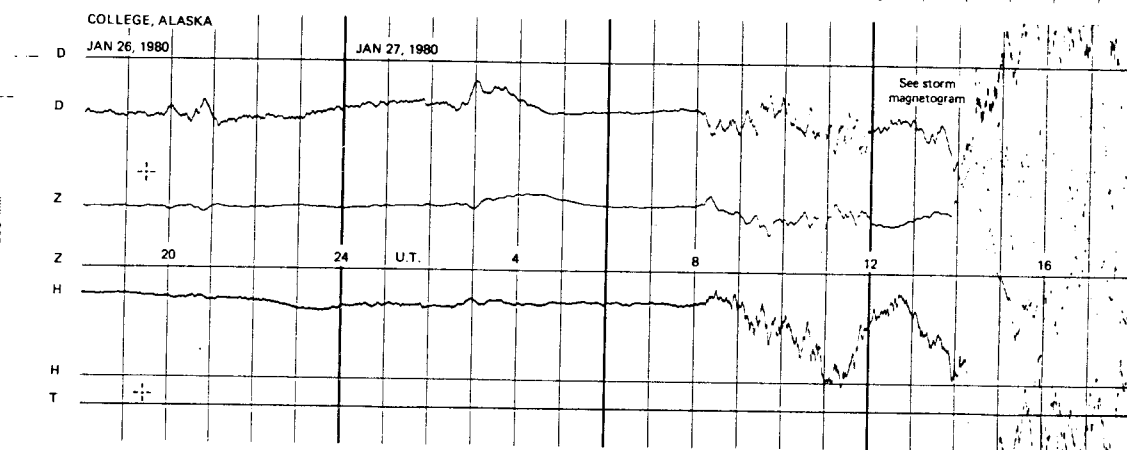
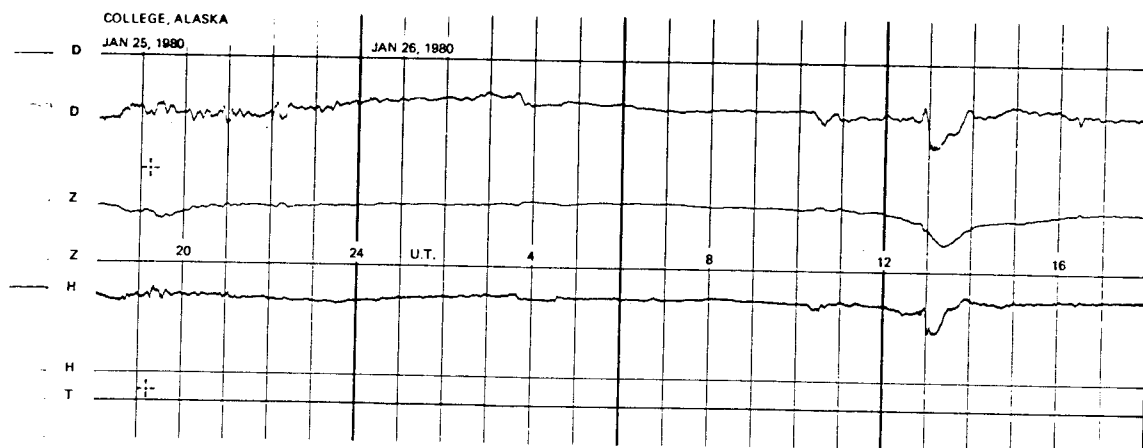




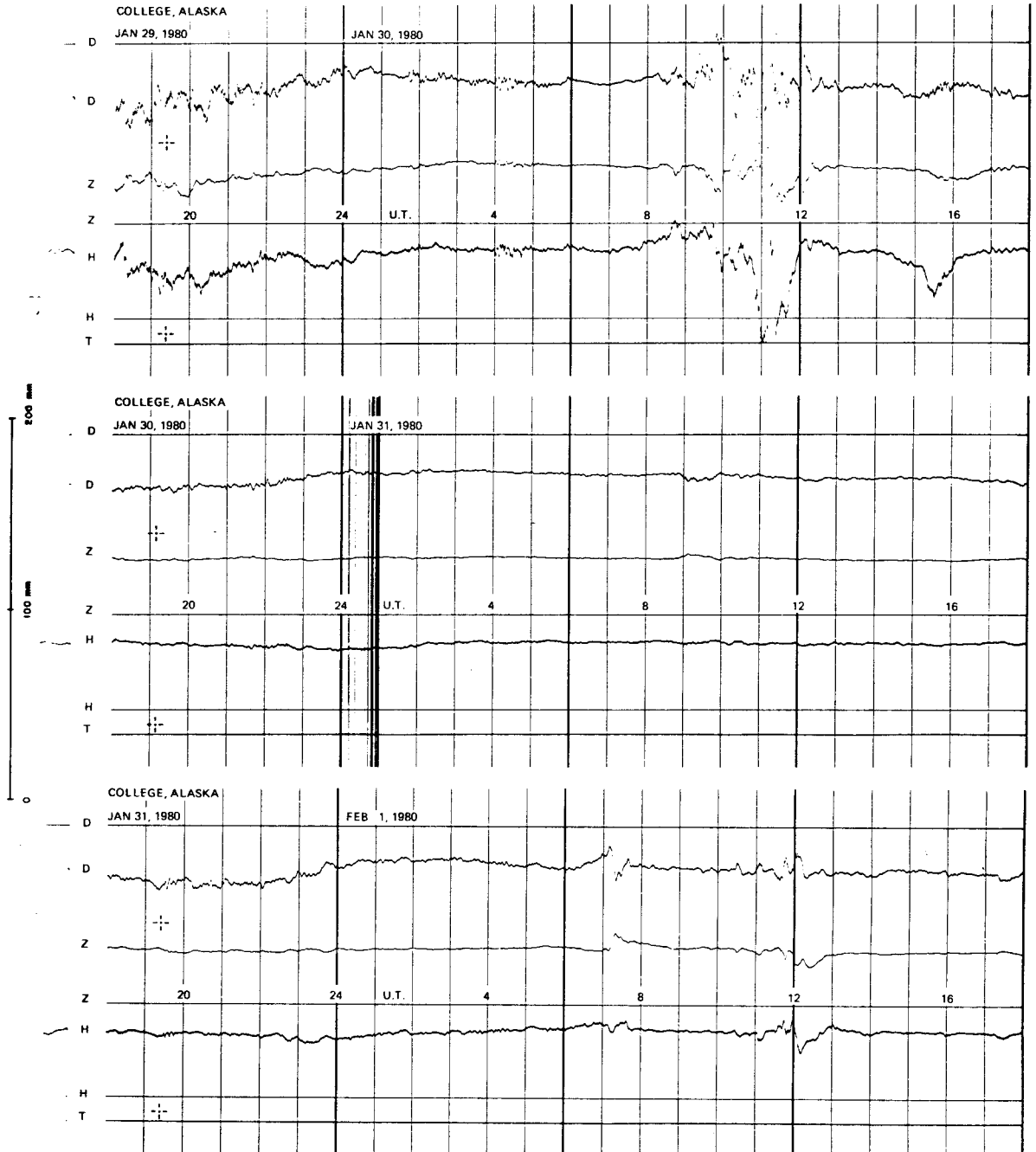
# NORMAL MAGNETOGRAMS



# NORMAL MAGNETOGRAMS

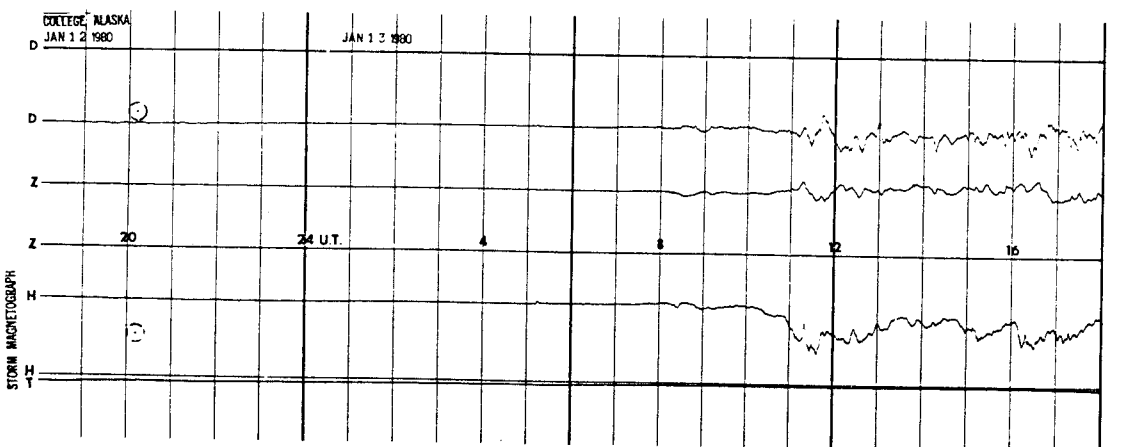
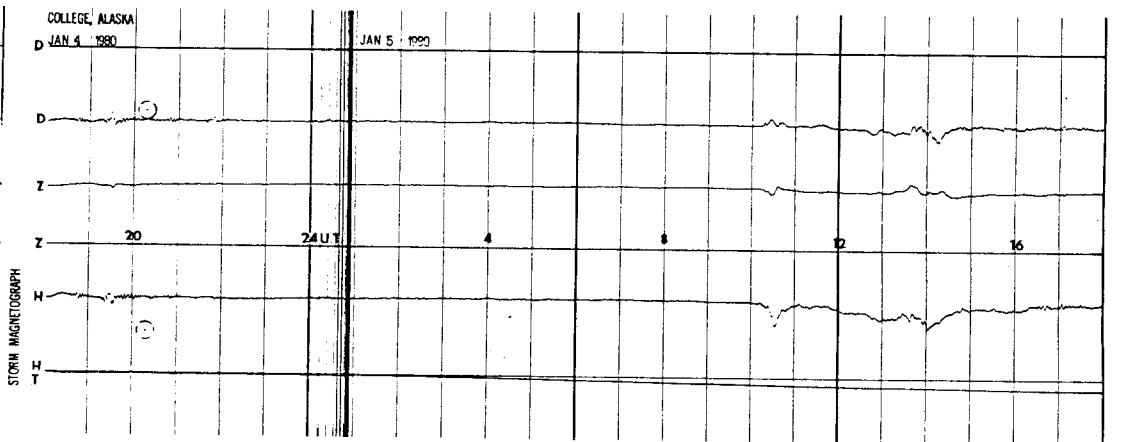
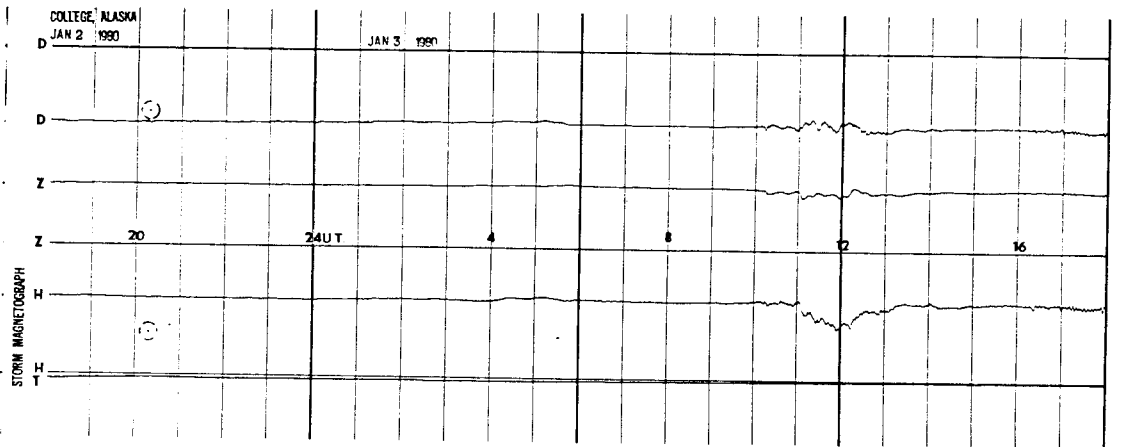
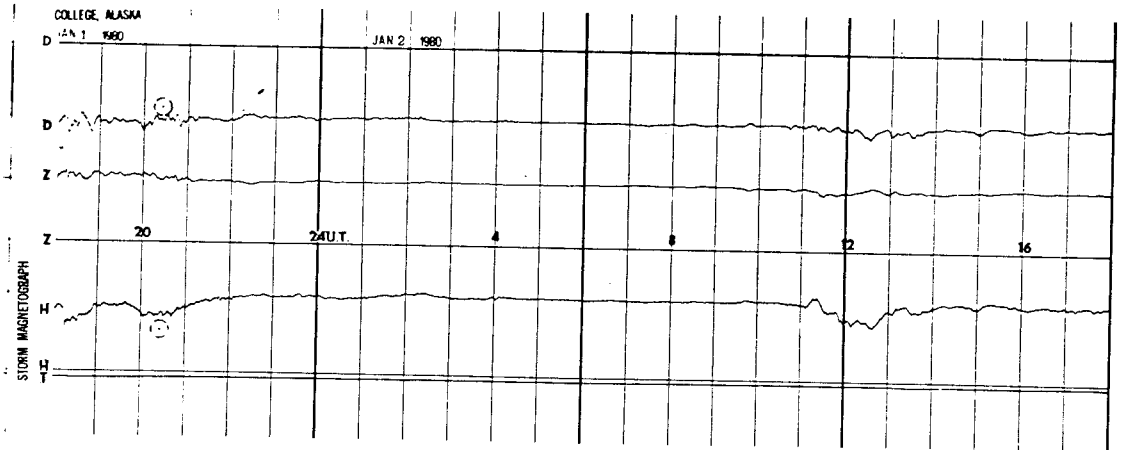


# NORMAL MAGNETOGRAMS

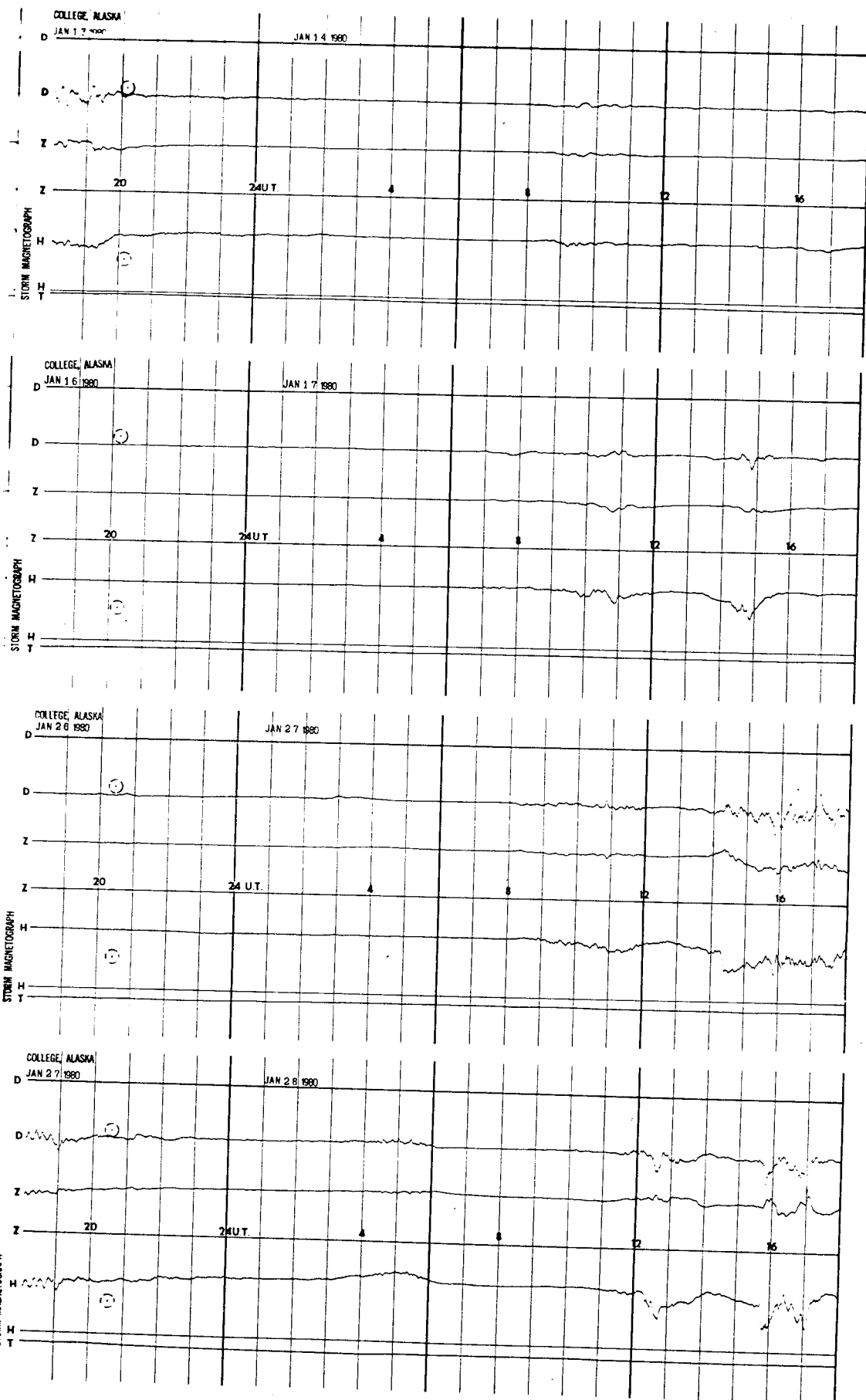
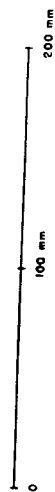


# STORM MAGNETOGRAMS

200 mm  
100 mm  
0



# STORM MAGNETOGRAMS



# STORM MAGNETOGRAMS

