

UNITED STATES DEPARTMENT OF THE INTERIOR

(200)

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no. 82-300A

GEOLOGICAL SURVEY

PRELIMINARY GEOMAGNETIC DATA

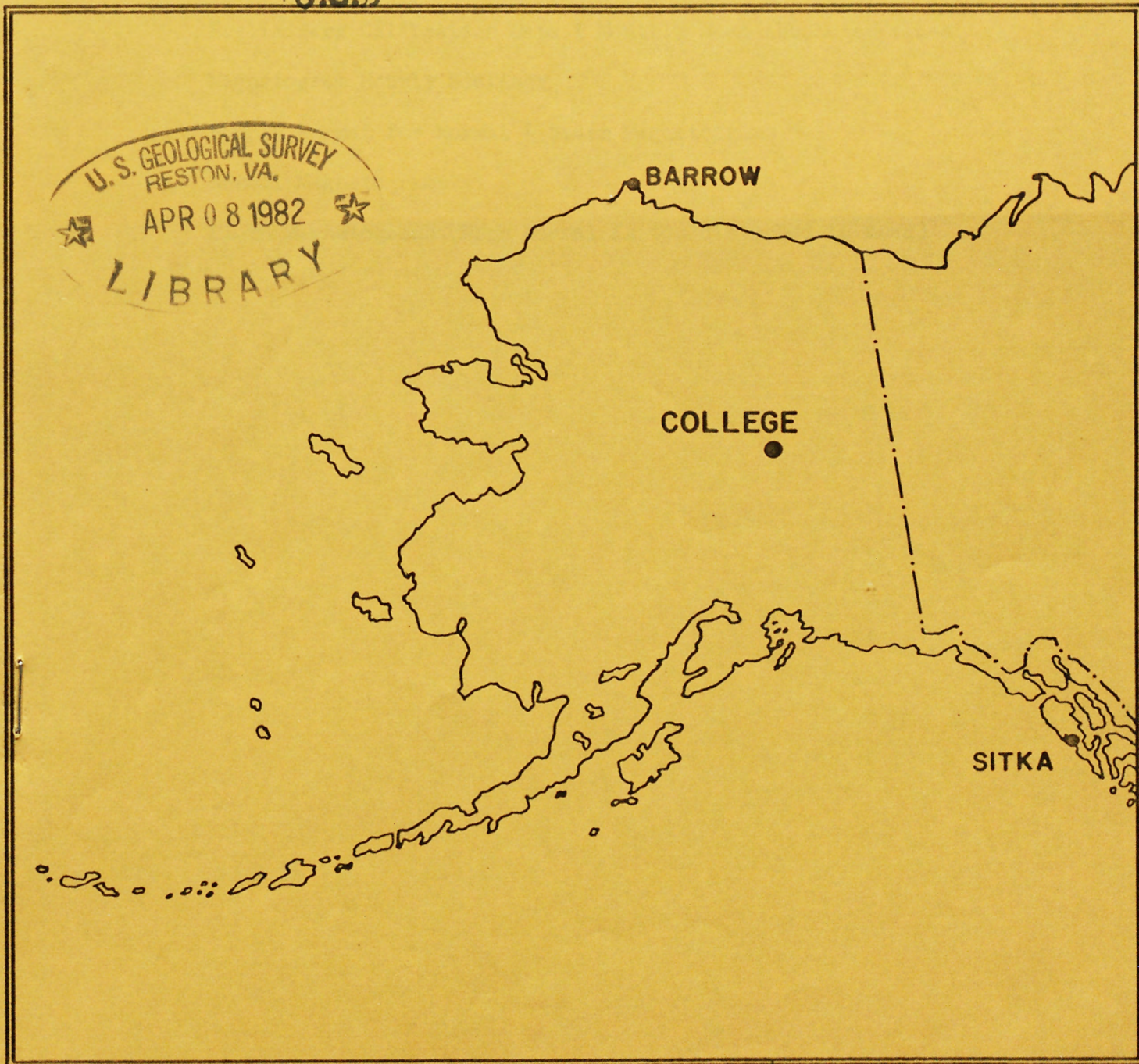
COLLEGE OBSERVATORY

FAIRBANKS, ALASKA

JANUARY 1982

Open-file report  
(Geological Survey  
(U.S.))

OPEN FILE REPORT 82-0300A





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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 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 L.Y. TORRENCE 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  
800 Yukon Drive  
Fairbanks, Alaska 99701

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

World Data Center A  
NOAA D63, 325 Broadway  
Boulder, Colorado 80303

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.....+256.9°  
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	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.

Selected Phenomena & Outstanding Magnetic Effects

Prior to January 1, 1976, the Normal and 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.

**MAGNETIC ACTIVITY**  
(Greenwich civil time, counted from midnight to midnight)

MONTH AND YEAR  
JANUARY 1982

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	0	0	1	2	4	5	2	0	14	12	SUDDEN COMMENCEMENTS d h m
2	0	0	1	4	4	4	3	2	18	13	
3	2	2	5	4	4	6	4	3	30	30	
4	3	1	1	3	4	5	2	1	20	15	
5	1	2	1	3	0	0	1	0	08	04	
6	0	1	4	4	3	1	3	1	17	12	
7	0	2	4	2	4	4	2	2	20	14	
8	1	2	2	2	1	1	3	1	13	06	
9	1	1	1	2	1	1	0	0	07	03	
10	0	0	0	0	0	1	1	0	02	01	
11	0	0	1	1	2	1	0	0	05	02	
12	0	1	0	1	0	0	0	0	02	01	
13	0	1	0	1	0	0	0	0	02	01	
14	0	0	0	0	0	0	0	0	00	00	
15	0	2	2	6	5	4	2	2	23	23	
16	0	0	4	4	6	6	3	3	26	31	
17	3	1	2	4	3	4	0	1	18	12	
18	0	1	1	2	2	2	5	3	16	11	
19	2	0	0	1	3	0	0	0	06	03	
20	1	1	0	1	0	0	1	1	05	02	
21	0	1	5	4	3	3	2	2	20	15	
22	1	4	6	7	5	6	4	3	36	53	
23	2	3	3	5	6	5	3	3	30	30	
24	3	3	4	4	6	5	3	3	31	30	
25	3	2	2	3	4	3	1	0	18	11	
26	1	0	0	1	1	1	2	2	08	03	
27	2	2	2	4	5	4	1	2	22	17	
28	2	3	3	6	3	2	1	1	21	18	
29	0	0	0	0	3	3	3	2	11	07	
30	4	3	5	5	5	5	4	1	32	33	
31	2	4	3	6	6	5	5	3	34	40	

POSSIBLE SOLAR-FLARE  
EFFECTS BASED ON  
INSPECTION OF GRAMS  
ALONE (WITHOUT  
REFERENCE TO DATA  
FROM OTHER SOURCES)

BEGIN

END

d h m

d h m

K SCALE USED:

LOWER LIMIT FOR K = 9.....

CURRENT SCALE VALUE.....

LOWER LIMIT FOR K = 9 .....

D

683.8

3.75

2560

H

321.7

7.81

2510

Z

(mm)

( $\gamma$ /mm)

(to nearest 10 $\gamma$ )

SCALINGS AND COMPUTATIONS HAVE BEEN CHECKED.

APPROVED JACK B. TOWNSHEND, CHIEF, COLLEGE OBSERVATORY

OBSERVER IN CHARGE

# OUTSTANDING MAGNETIC EFFECTS

OBSERVATORY  
COLLEGE, ALASKA

MONTH  
JANUARY

YEAR  
1982

DATE	TIME U.T.	NATURE OF PHENOMENON <sup>1</sup>	REMARKS
01	1840	si	
05	20XX	pc3	
10	18XX	pc5	
16	19XX	pc5	
29	1744	ssc*	
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 80302 U.S.A.

Data from Individual Observatories:

COLLEGE OBSERVATORY, COLLEGE, ALASKA

JANUARY

1982

Obs. 2 letter IAGA code	Geomag. lat.	Commencement			SC - amplitudes			Max. 3 hr - index K			Ranges			UT End	
		day	hr min (UT)	type	D(')	H(γ)	Z(γ)	day	(3 hr - period)	K	D(')	H(γ)	Z(γ)	day	hr
CO	64.06 N	21	07XX	..	..	..	..	22	4	7	176	1300	510	24	24
		29	13XX 1744	.. s.c.*	.. +36	.. +136	.. +47	Feb. 01 02 04	4, 5, 7 3, 4 5	7 7 7	366	2350	1500	Feb. 07	20

NORMAL MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 1-1-82	2400 U.T., 1-31-82	1.0/mm	3.78/mm	27° 46.8 E
H	0000 U.T., 1-1-82	2400 U.T., 1-31-82	7.88/mm		127468
Z	0000 U.T., 1-1-82	2400 U.T., 1-9-82	7.78/mm		551578
	0000 U.T., 1-10-82	2400 U.T., 1-31-82	"		551518

STORM MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 1-1-82	2400 U.T., 1-31-82	7.9/mm	29.68/mm	23° 43.0 E
H	0000 U.T., 1-1-82	2400 U.T., 1-31-82	44.08/mm		114858
Z	0000 U.T., 1-1-82	2400 U.T., 1-9-82	48.58/mm		540078
	0000 U.T., 1-10-82	2400 U.T., 1-31-82	"		540218

RAPID RUN MAGNETOGRAPH

COMPONENT	PERIOD		CALIBRATION	
	FROM	TO	SCALE VALUE	
D				
H				
Z				

MONTHLY MEAN ABSOLUTE VALUES\*

D	H	Z
28° 00.8 E	129838	553828

\* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: JAN 5, 9, 10, 11, 12, 13, 14, 19, 20, 26



FORM 76-106

MAGNETOGRAM HOURLY SCALINGS  
(UNIVERSAL TIME)U.S. DEPARTMENT OF INTERIOR  
Geological Survey, Geologic Division  
Denver Federal Center  
DENVER, CO 80225OBSY. YEAR MONTH FILE-  
MENT

CO 82 JAN D

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	S	T	U	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	136	137	134	134	137	143	151	166	165	143	132	138	01	180	142	132	292	192	166	210	198	186	185	172	142	3913
					02	128	132	130	134	132	140	132	141	130	138	192	147	02	179	196	302	321	162	173	180	136	112	90	111	110	3748
					03	114	114	103	84	72	112	163	150	147	171	176	172	03	161	173	163	190	370	124	202	187	144	81	72	125	3570
					04	70	114	81	108	124	150	158	139	142	158	152	155	04	182	194	200	263	238	273	193	173	171	170	168	153	3929
					05	132	139	134	127	120	118	129	135	132	195	184	149	05	157	153	150	152	156	162	165	175	178	178	172	148	3640
					06	132	132	138	126	119	112	81	105	126	154	140	140	06	223	166	138	145	160	187	184	216	128	166	160	151	3529
					07	133	124	105	110	100	114	72	35	101	138	139	140	07	181	182	160	195	111	199	198	146	139	99	113	79	3113
					08	77	96	80	106	119	126	138	133	188	137	130	135	08	141	137	149	118	154	191	155	151	154	147	135	106	3203
					09	121	124	117	104	114	113	118	126	129	140	137	130	09	143	154	137	154	182	186	154*	177*	162*	145*	145*	121*	3333
					10	98*	113*	106*	121*	121*	129*	129*	129*	121*	129*	137*	137*	10	137*	137*	145*	145*	145*	154*	174	183	174	123	96	87	3170
					11	96	104	113	101	104	123	127	116	124	133	134	138	11	152	184	108	156	125	181	197	170	146	137	126	119	3214
					12	110	110	97	96	118	122	140	136	135	130	136	149	12	153	114	152	156	159	154	155	153	154	158	150	151	3288
					13	136	129	123	121	125	140	147	132	124	115	111	125	13	142	147	150	154	156	163	161	156	154	145	144	135	3335
					14	124	126	130	134	135	136	143	144	143	143	138	139	14	141	145	147	154	159	166	167	174	174	164	153	120	3499
					15	110	120	109	74	126	146	133	130	142	173	167	337	15	256	302	237	180	150	202	202	179	142	123	123	108	3971
					16	115	125	132	130	114	143	127	136	359	67	45	185	16	156	225	421*	565*	306	260	194	136	34	111	119	100	4305
					17	81	91	84	117	129	130	141	140	168	228	231	186	17	181	198	141	138	186	136	157	186	191	163	156	130	3695
					18	122	113	120	126	140	131	127	142	143	148	160	151	18	180	171	169	150	124	152	140	-71*	70	114	56	58	2936
					19	70	102	125	125	131	140	143	144	140	149	154	150	19	146	156	130	129	149	154	167	179	191	184	156	136	3450
					20	125	117	119	127	130	136	144	143	136	123	125	138	20	147	145	138	145	146	155	167	176	180	173	154	130	3419
					21	115	108	101	106	115	100	92	48	-74	86	108	40	21	163	196	193	183	179	241	134	174	174	151	142	112	2987
					22	91	93	93	50	76	-110*	114	77	160*	48*	199*	168*	22	302*	365*	405*	358*	479*	386*	248*	177*	106*	47*	38*	74*	4044
					23	79	43	60	48	127	152	146	149	141	126	145	207*	23	32*	281*	254*	390*	160*	192*	193*	146*	130*	80*	45*	61*	3387
					24	103	142	158	118	112	198	121	96	146	125	81	147	24	233*	326*	199*	508*	164*	137*	166*	131*	92*	25*	73*	78*	3679
					25	94	123	124	141	142	162	165	136	139	126	122	135	25	137*	164*	142*	73*	156*	172*	175*	175*	186*	167*	145*	133*	3434
					26	125	124	126	131	133	136	135	137	134	145	160	169	26	167*	146*	143*	163*	175*	184*	188*	172*	143*	70*	91*	98*	3395
					27	116	133	134	140	119	172	113	133	134	124	144	230	27	246*	365*	254*	273*	301*	222*	216*	173*	153*	116*	107*	69*	4187
					28	96	115	87	119	126	139	128	128	111	-23*	48*	78*	28	126*	153*	163*	182*	177*	157*	158*	164*	159*	154*	137*	126*	3008
					29	137	146	137	128	129	134	125	131	126	127	134	139	29	150*	156*	191*	231*	232*	215*	238*	125*	121*	124*	108*	123*	3607
					30	101	47	36	127	94	155	107	128	107	204	59	133	30	182*	127*	276*	238*	197*	187*	181*	154*	142*	128*	117*	126*	3353
					31	125	124	115	137	144	132	101	106	87	102	64*	492*	31	-190*	153*	461*	818*	454*	454*	231*	114*	106*	85*	101*	116*	3648

SCALED BY

TKC, LYT

Preliminary base-line and scale values:

Interval

Base-line

Scale

Beginning

Value

Value

CHECKED BY

EAS, JEP

SIGNS RE-  
VIEWED BY

JEP

PUNCHED BY

 Interpolated Significant portion of  
hour interpolated. No record; or no values  
available because of  
faulty record.

\* Derived from STORM Mghb., converted to Normal Mghb.

 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 108989

MONTHLY MEAN 146

DATES WITH GAPS:

MAGNETOGRAM HOURLY SCALINGS  
(UNIVERSAL TIME)U.S. DEPARTMENT OF INTERIOR  
Geological Survey, Geologic Division  
Denver Federal Center  
DENVER, CO 80215OBSY. YEAR MONTH ELEMENT  
CO 82 JAN 2Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (150W M.T.) is hour 11 of the same universal day.  
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q or S	Tex	W	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	330	328	329	331	330	331	324	330	310	307	301	292	01	257	201	220	248	274	220	287	293	303	313	317	311	7087
				02	320	322	320	321	320	321	318	312	310	310	275	206	02	166	172	123	117	141	143	216	167	182	153	251	296	5782
				03	320	333	335	330	338	385	364	333	272	225	227	233	03	274	280	260	151	104	123	230	251	262	300	305	323	6558
				04	330	356	326	337	339	327	323	329	329	310	295	300	04	298	261	207	173	82	36	131	219	270	292	307	317	6494
				05	316	320	315	312	320	329	330	321	322	291	219	285	05	300	303	302	308	309	308	306	304	304	309	306	302	7341
				06	307	309	308	309	321	331	373	380	273	296	328	328	06	270	239	299	319	321	311	307	309	282	297	298	305	7420
				07	306	307	308	311	294	332	336	244	272	341	329	320	07	306	264	223	242	204	184	271	263	265	260	282	280	6744
				08	301	311	333	341	332	322	317	320	321	279	262	299	08	310	298	285	252	271	269	271	252	300	316	293	299	7154
				09	317	311	301	312	317	318	316	313	316	312	283	300	09	302	297	279	249	277	281	284*	284*	284*	290*	297*	297*	7137
				10	297*	303*	303*	303*	297*	297*	303*	297*	297*	297*	297*	297*	10	290*	290*	284*	290*	284*	284*	290	283	282	277	280	295	7017
				11	300	310	309	323	320	320	321	332	331	327	322	321	11	307	263	276	280	269	276	282	282	290	297	304	309	7271
				12	310	309	311	320	325	323	313	309	317	338	336	330	12	316	310	306	303	303	301	298	297	297	298	300	307	7477
				13	303	301	300	301	301	301	299	297	316	330	326	313	13	309	300	296	295	294	292	292	291	291	292	291	291	7222
				14	292	294	291	291	290	290	291	291	290	290	290	290	14	291	289	289	290	290	290	289	290	290	289	288	287	6962
				15	287	290	290	324	357	311	303	312	313	281	271	289	15	157	50	87	129	250	285	247	247	264	269	278	298	6189
				16	307	306	305	306	326	334	332	331	230	190	246	316	16	288	298	290*	133*	-20	161	182	200	209	264	299	302	6135
				17	312	316	341	353	328	314	312	306	306	257	242	270	17	284	285	276	290	239	246	277	306	308	302	306	308	7084
				18	312	308	310	315	323	310	310	311	306	307	286	278	18	280	275	250	257	304	290	224	124	134	274	296	302	6686
				19	319	333	322	318	314	312	310	310	310	312	302	288	19	278	270	291	301	307	306	311	312	312	308	300	299	7345
				20	302	301	301	305	311	330	314	304	304	310	312	310	20	308	293	291	295	295	296	298	300	300	301	299	298	7278
				21	294	293	292	298	300	309	343	382	340	378	311	261	21	328	301	273	287	291	244	217	238	271	279	284	288	7102
				22	287	295	316	339	316	194*	331	362	233*	176*	350	320*	22	365*	282	292	205	221	279	260	196	194	223	290	317	6643
				23	328	342	361	376	330	347	390	369	321	311	304	356	23	236	255	201	329	187	218	245	252	276	279	300	312	7225
				24	343	348	323	313	346	365	330	339	283	222	213	301	24	408	305	138	31	156	282	298	284	282	282	306	321	6819
				25	324	324	323	330	328	334	319	306	308	304	289	268	25	267	279	258	252	289	292	294	297	301	302	308	310	7206
				26	304	303	301	303	302	302	301	300	298	299	304	295	26	264	276	285	291	289	284	289	280	270	256	270	299	6965
				27	313	321	318	311	318	376	337	315	298	293	301	263	27	284	319	151	128	114	181	221	230	256	263	283	302	6496
				28	317	324	320	326	320	303	296	281	263	228	246	269	28	277	298	338	331	298	300	308	306	300	300	305	301	7155
				29	309	304	306	303	305	308	299	302	301	305	307	302	29	296	291	241	222	254	269	234	241	263	286	290	304	6842
				30	302	310	397	396	361	281	304	244	154	98	153	429	30	316	166	227	333	237	269	294	299	302	302	311	321	6806
				31	319	329	337	359	394	443	422	359	269	269	440	353*	31	145*	439	820*	542*	523*	220*	177	226	288	316	333	335	8657

SCALED

BY

TKC,LYT

Preliminary base-line and scale values:

Interval

Base-line

Scale

Beginning

Value

Value

CHECKED

BY

EAS, JEP

SIGNS RE-

VIEWED BY

JEP

PUNCHED

BY

() Interpolated

[] Scaling uncertain because of magnetic storm.

[] Significant portion of hour interpolated.

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

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

\* Derived from STORM Mgpb., converted to Normal Mgpb.

MONTHLY SUM 216299

MONTHLY MEAN 291

DATES WITH GAPS

FORM 76-106

MAGNETOGRAM HOURLY SCALINGS  
(UNIVERSAL TIME)U.S. DEPARTMENT OF THE INTERIOR  
Geological Survey, Geologic Division  
Denver Federal Center  
DENVER, CO 80225OBSY. YEAR MONTH ELE-  
MENT  
CO 82 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 82<sup>nd</sup> universal day.  
Shrinkage corrections have been applied. Negative values are in red, with minus signs shown.

C	Q <sup>m</sup> S	Tea Q	HT %	01	02	03	04	05	06	07	08	09	10	11	12	HT (M)	13	14	15	16	17	18	19	20	21	22	23	24	SUM
				280	291	289	288	294	300	304	307	303	291	289	261	01	104	171	281	123	-65	290	324	313	290	284	281	280	6173
				284	298	299	293	301	300	311	308	305	292	260	159	02	137	165	2	-91	6	161	179	170	161	210	263	284	5057
				301	327	333	361	341	340	331	328	257	103	153	169	03	288	264	222	-97	-278	336	315	289	171	200	249	238	5541
				303	328	333	306	324	311	298	311	309	310	277	202	04	190	43	68	-37	-100	123	284	321	319	299	288	262	5672
				281	290	291	296	313	311	301	302	313	302	260	297	05	300	301	298	299	302	304	306	302	297	291	280	279	7116
				292	297	297	306	302	304	382	426	366	346	285	198	06	215	285	344	328	324	319	322	319	318	284	279	282	7420
				296	309	322	324	341	360	397	440	458	354	335	317	07	254	94	156	139	85	281	337	294	260	269	281	272	6975
				293	297	323	337	338	335	321	325	321	310	304	317	08	311	302	291	275	302	295	286	273	326	311	291	296	7380
				298	292	308	325	323	336	335	326	318	315	311	308	09	307	300	281	275	305	297	302*	302*	302*	297*	297*	291*	7351
				291*	297*	302*	302*	308*	308*	308*	308*	308*	302*	302*	302*	10	302*	302*	302*	302*	302*	308*	310	311	305	301	297	292	7266
				299	303	310	324	327	321	324	330	328	321	317	310	11	294	282	309	298	292	306	309	308	302	301	295	293	7403
				298	300	318	325	332	325	320	312	316	328	314	300	12	309	308	309	307	306	306	299	302	301	302	298	290	7425
				293	300	307	311	321	319	320	332	325	334	328	316	13	312	314	314	310	310	309	307	301	300	302	303	300	7488
				304	307	310	311	317	318	315	311	310	309	306	310	14	316	318	320	321	319	321	320	318	314	304	295	297	7491
				305	313	314	319	334	318	312	309	308	304	230	-178*	15	-72	54	100	208	346	328	306	272	282	263	276	298	5849
				303	303	309	311	312	310	323	353	279	210	305	217	16	276	9	-359*	-309*	144	337	280	236	312	309	313	278	5361
				274	310	338	322	322	328	318	314	339	211	86	150	17	144	173	261	252	200	302	324	322	312	307	292	293	6494
				290	290	301	308	321	322	325	316	316	308	308	283	18	287	279	256	295	343	322	205	-88	127	236	330	263	6543
				280	305	292	294	303	307	306	311	309	309	301	287	19	235	251	304	309	309	311	311	303	294	285	279	286	7081
				292	289	299	310	309	300	316	319	317	330	316	303	20	300	301	313	311	313	313	310	307	300	288	285	286	7327
				291	303	319	321	319	328	332	486	591	518	427	443	21	321	272	278	316	326	276	262	313	318	310	300	311	8281
				302	290	299	379	488	586*	489	485	228*	115*	48*	-185*	22	-207*	-88	-117	49	55	73	306	265	186	261	299	322	4928
				311	319	350	353	361	440	435	449	382	313	96	24*	23	-344*	-185*	109	43	206	283	310	286	289	260	224	264	5578
				340	339	332	333	379	384	362	377	338	298	253	168	24	-4	-367*	-219*	7	353	379	328	279	260	219	262	261	5661
				264	310	314	305	308	314	319	315	301	293	276	221	25	271	270	112	272	309	311	312	302	286	270	274	276	6805
				284	293	300	308	309	310	306	304	300	298	300	304	26	290	300	305	310	311	311	300	279	260	246	270	281	7079
				293	312	320	321	322	347	328	307	300	299	290	218	27	-9	-147*	155	163	193	307	328	311	298	287	257	261	6061
				296	312	314	317	308	300	300	317	260	114	-163*	269	28	327	354	331	320	304	311	308	306	300	299	283	276	6663
				281	288	291	300	300	308	310	305	306	300	301	298	29	296	282	249	286	330	326	258	301	320	301	301	291	7129
				299	318	411	448	389	412	409	419	358	164	254	63	30	-49	96	66	28	218	329	308	285	288	281	290	283	6367
				289	298	297	330	414	503	416	357	412	315	41*	-327*	31	-112*	-86	-203*	-345*	-203*	-135	-15	258	304	319	290	285	3702

SCALED  
BY  
CHECKED  
BY  
SIGNS RE-  
VIEWED BY  
PUNCHED  
BY

TKC, LYT, EAS, JEP

EAS, JEP

JEP

Preliminary base-line and scale values:

Interval  
BeginningBase-line  
ValueScale  
Value

() Interpolated

 Significant portion of  
hour interpolated. No record; or no values  
available because of  
faulty record.\* Derived from STORM M<sub>gph.</sub>, converted to Normal M<sub>gph.</sub>[] 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

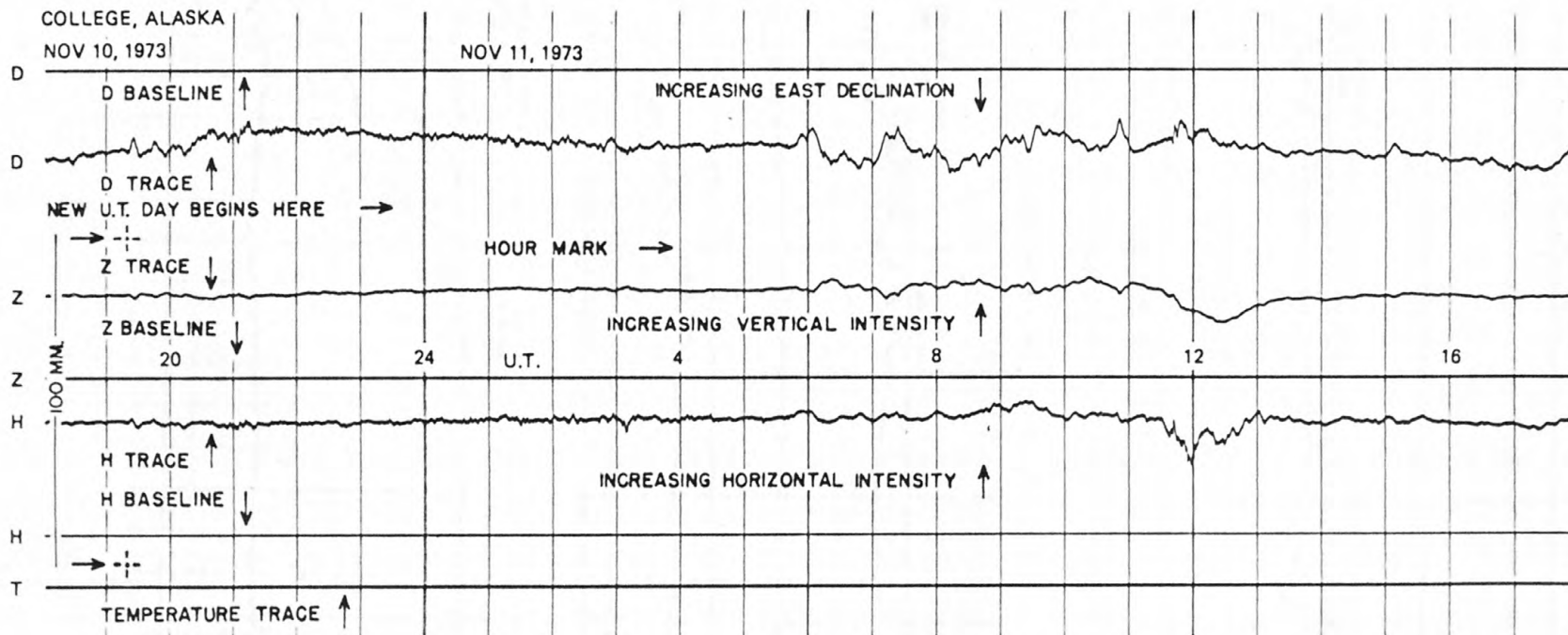
202667

MONTHLY MEAN

272

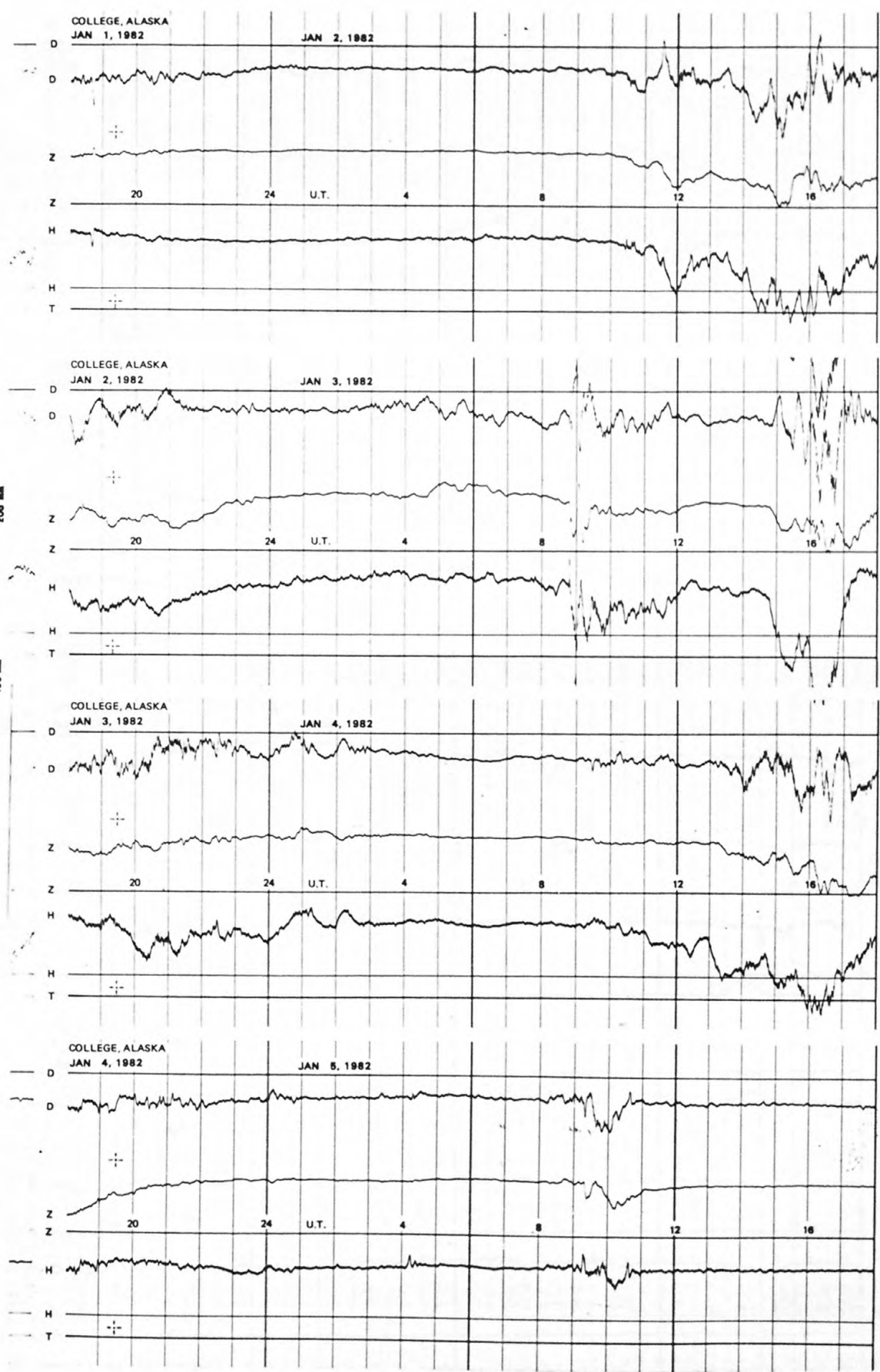
DATES WITH GAPS:

# FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)

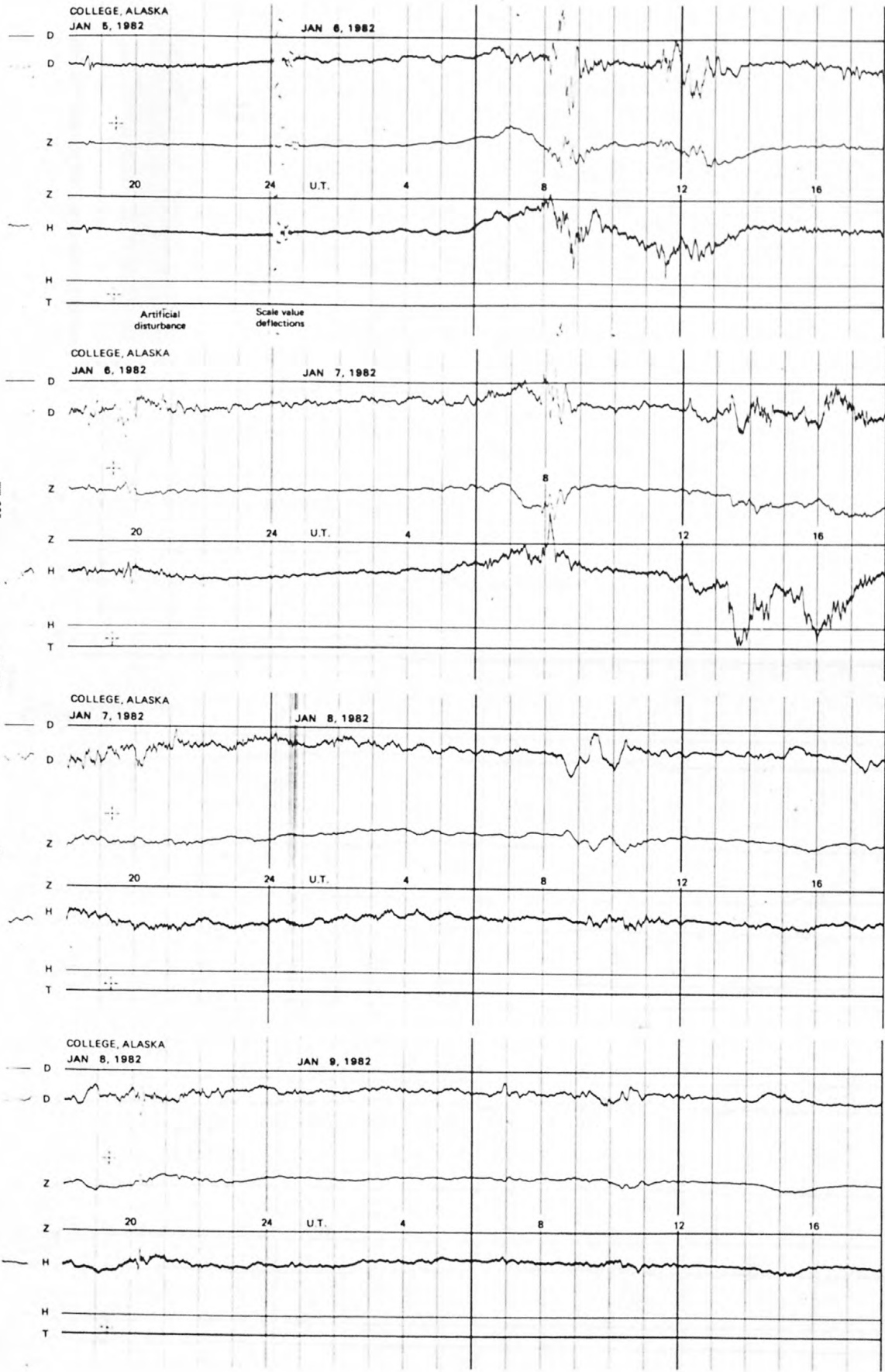


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



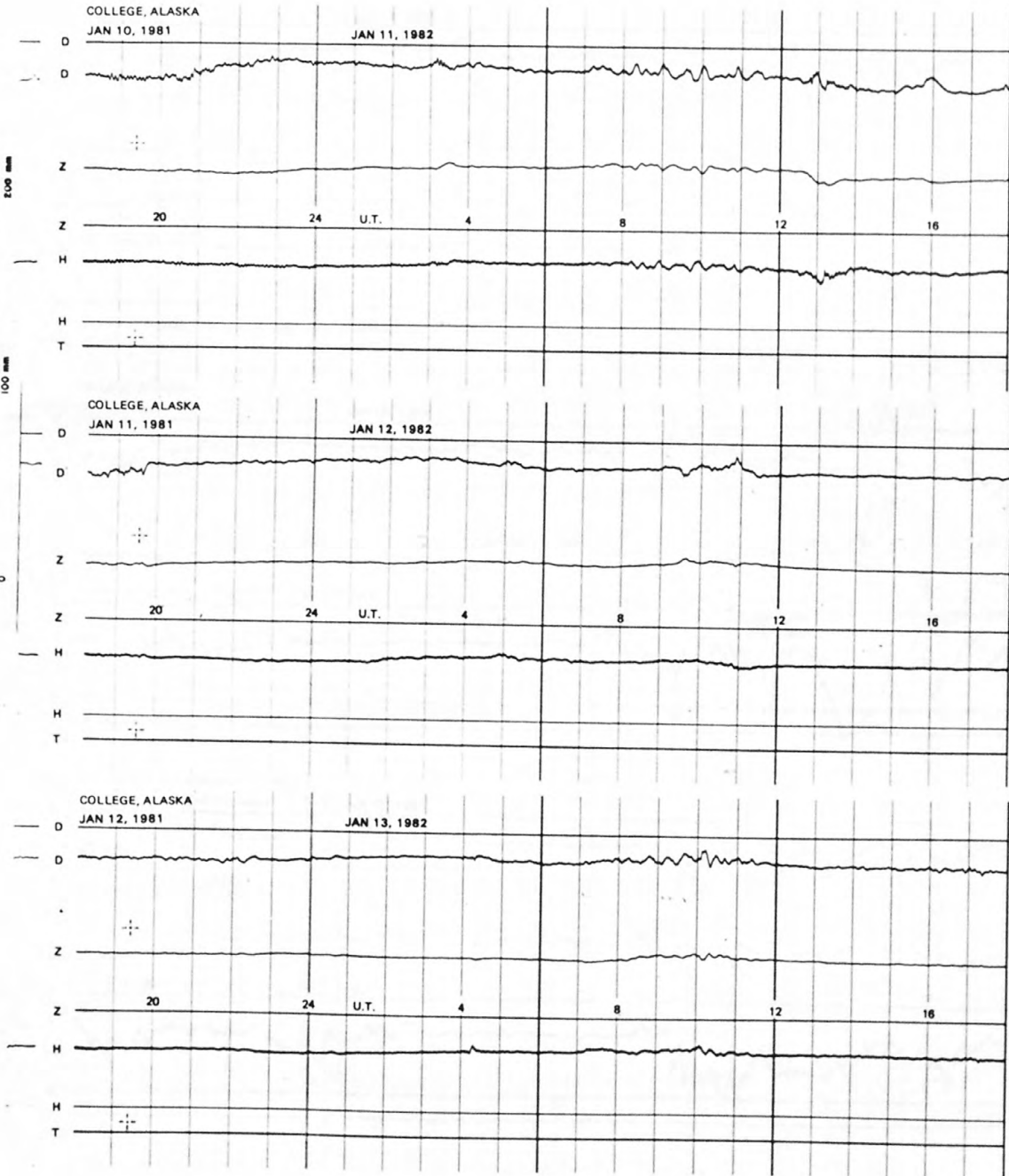
COLLEGE, ALASKA  
JAN 9, 1982

JAN 10, 1982

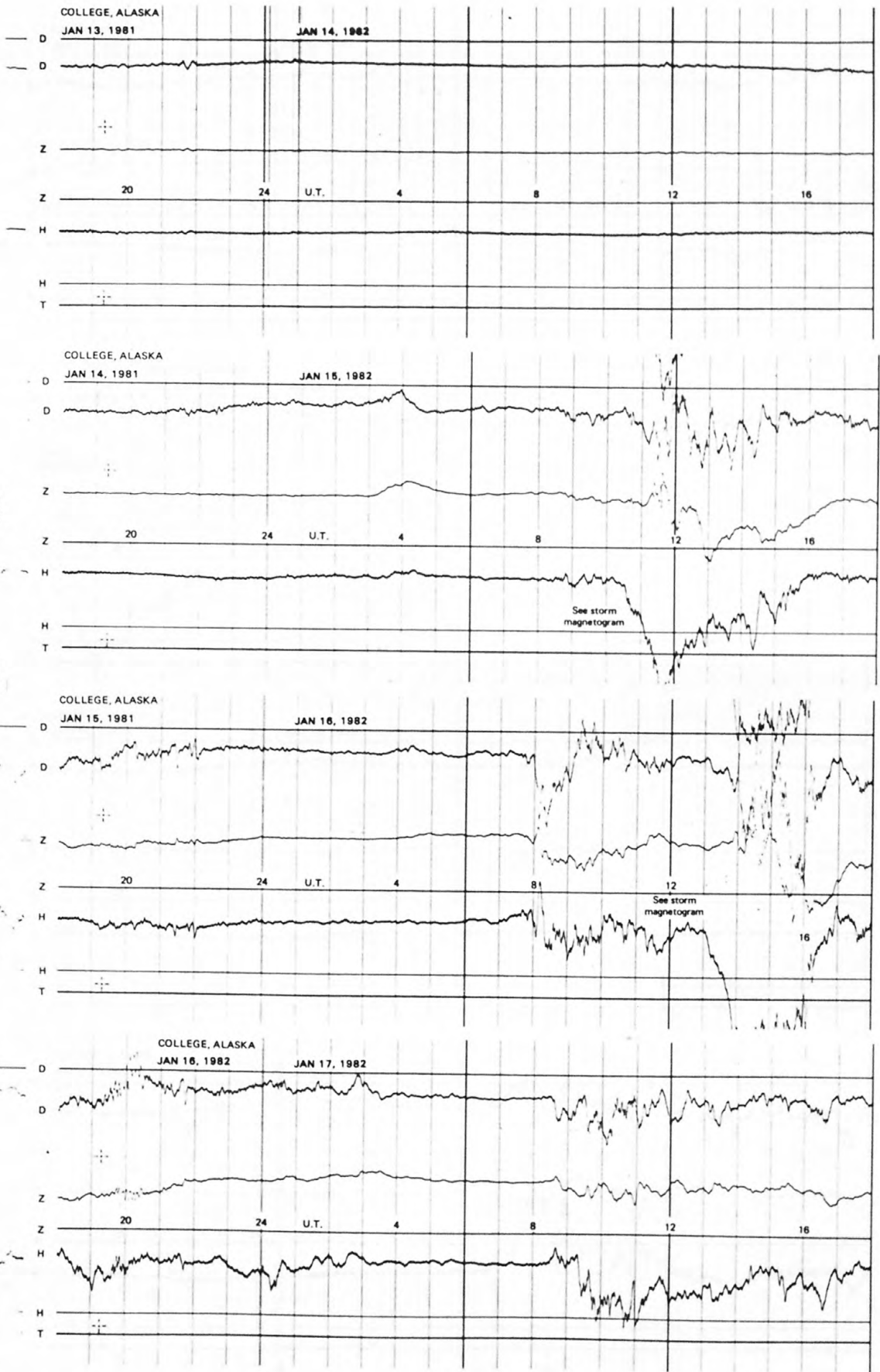
See storm  
magnetogram

RECORDER STOPPED

NORMAL MAGNETOGRAMS

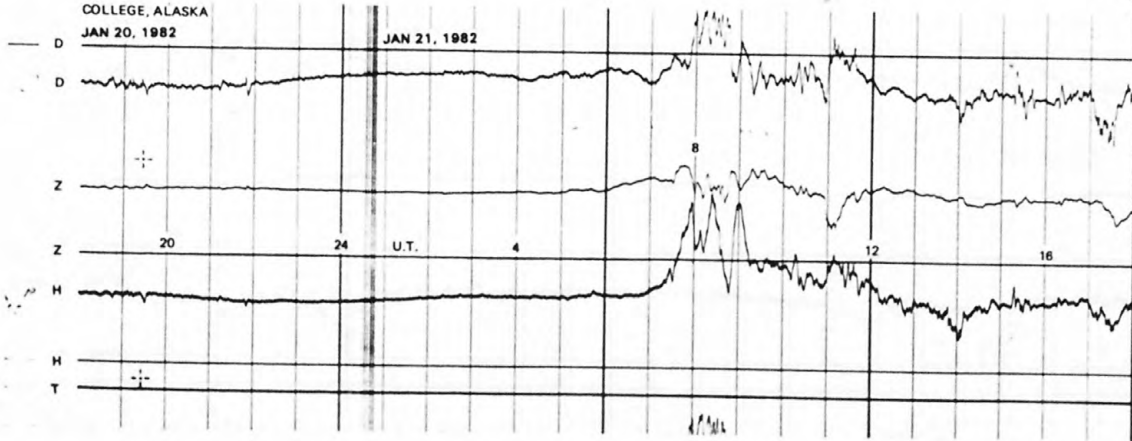
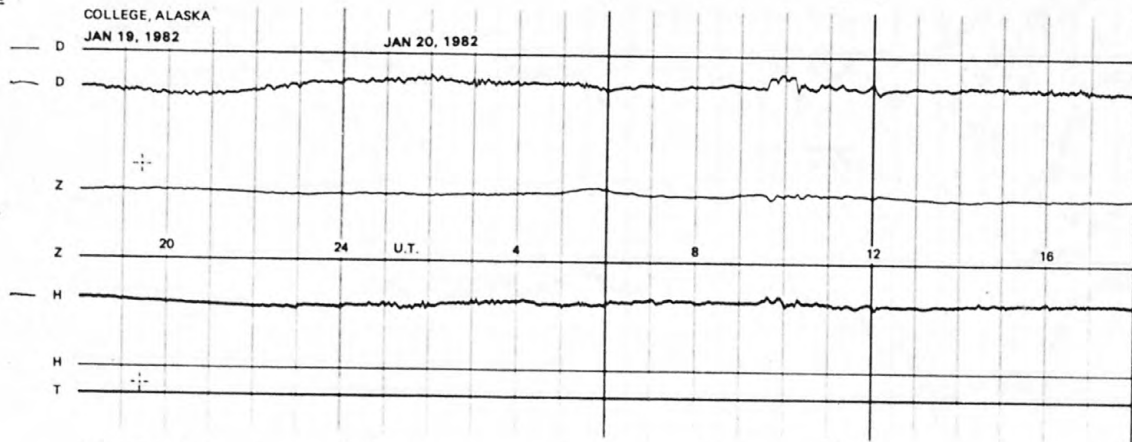
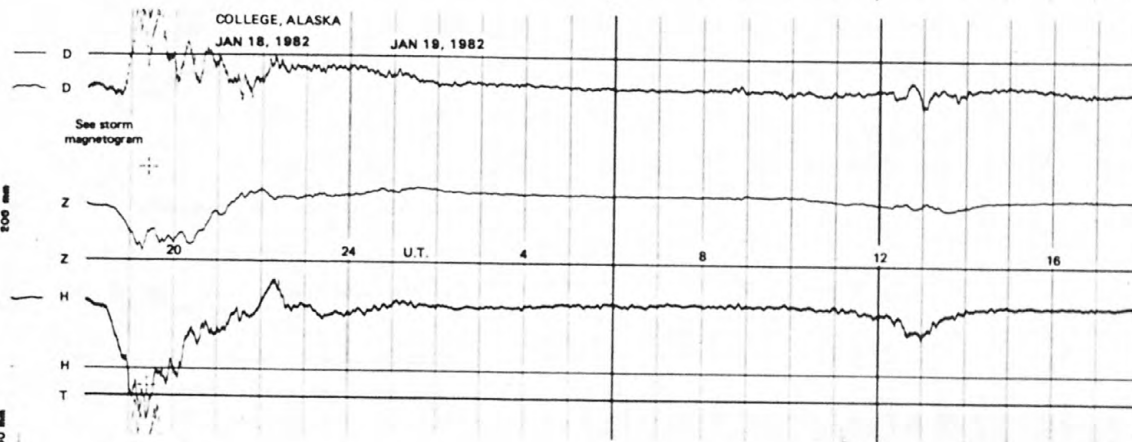
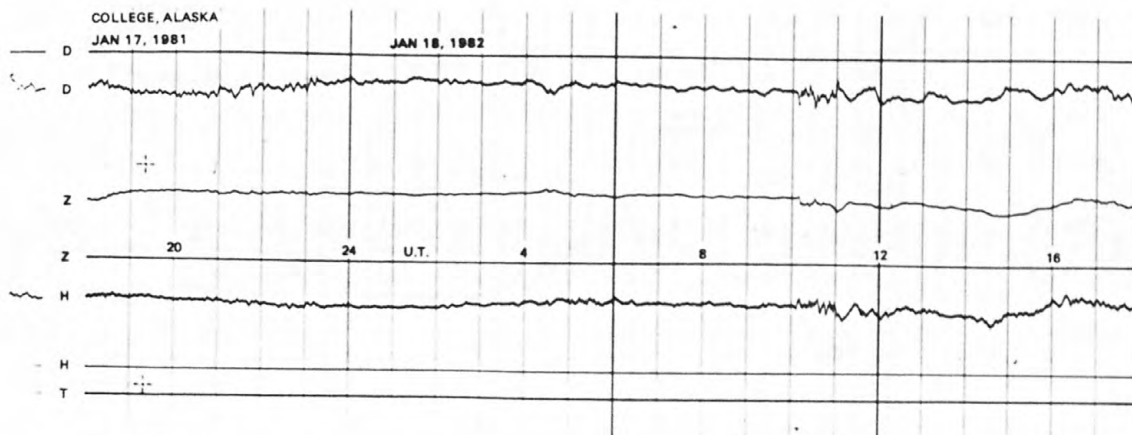


NORMAL MAGNETOGRAMS

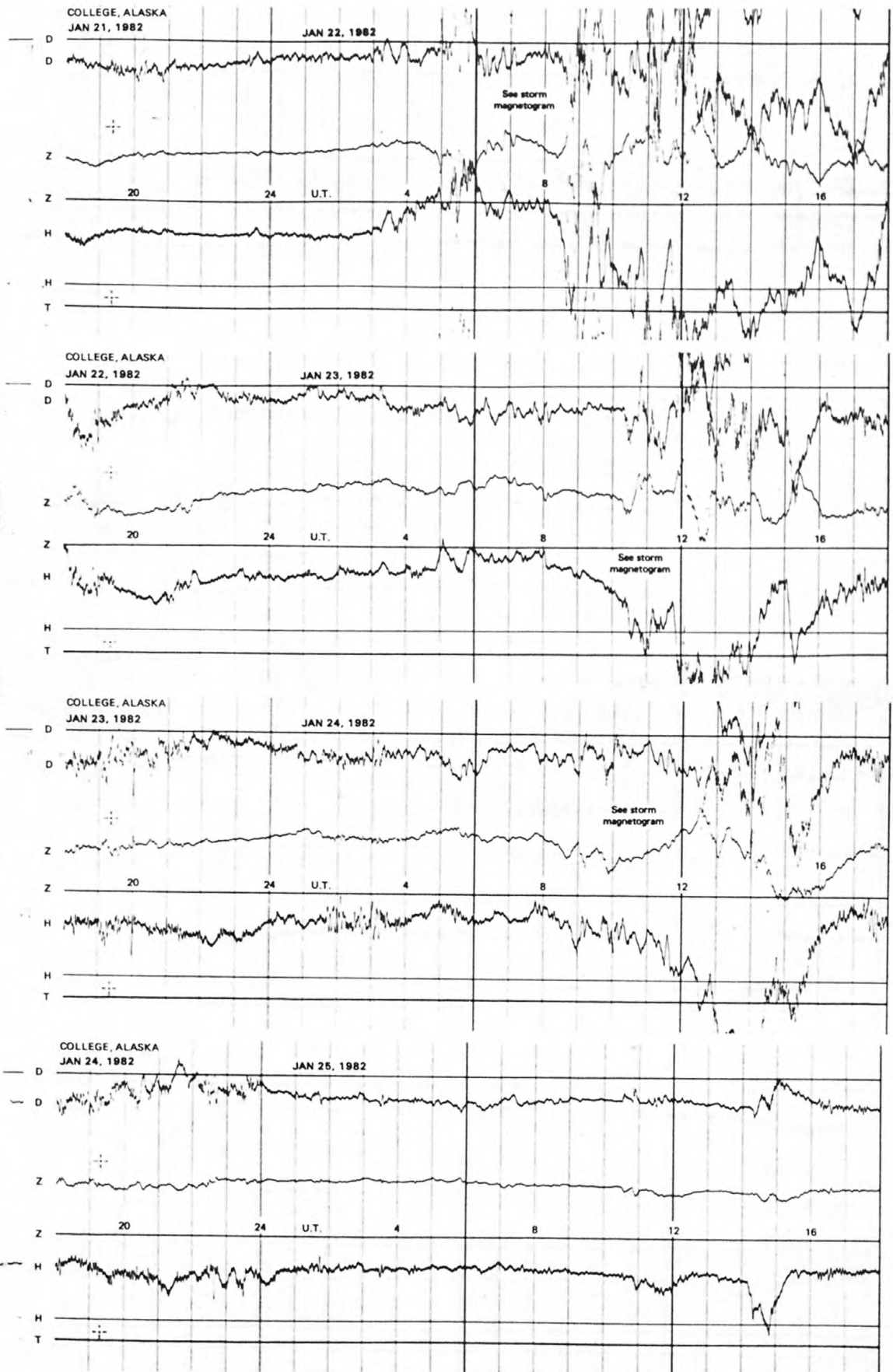




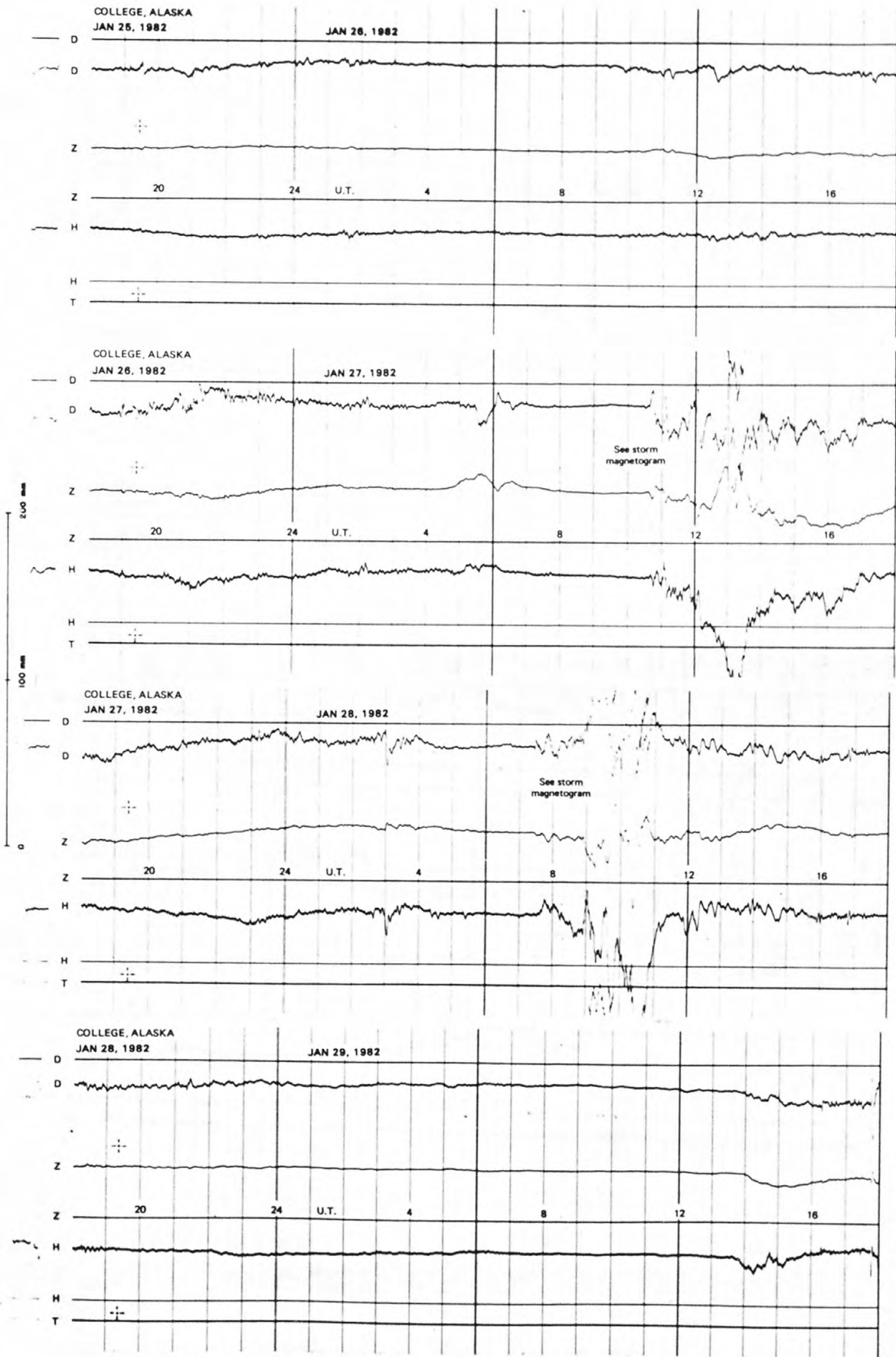
NORMAL MAGNETOGRAMS



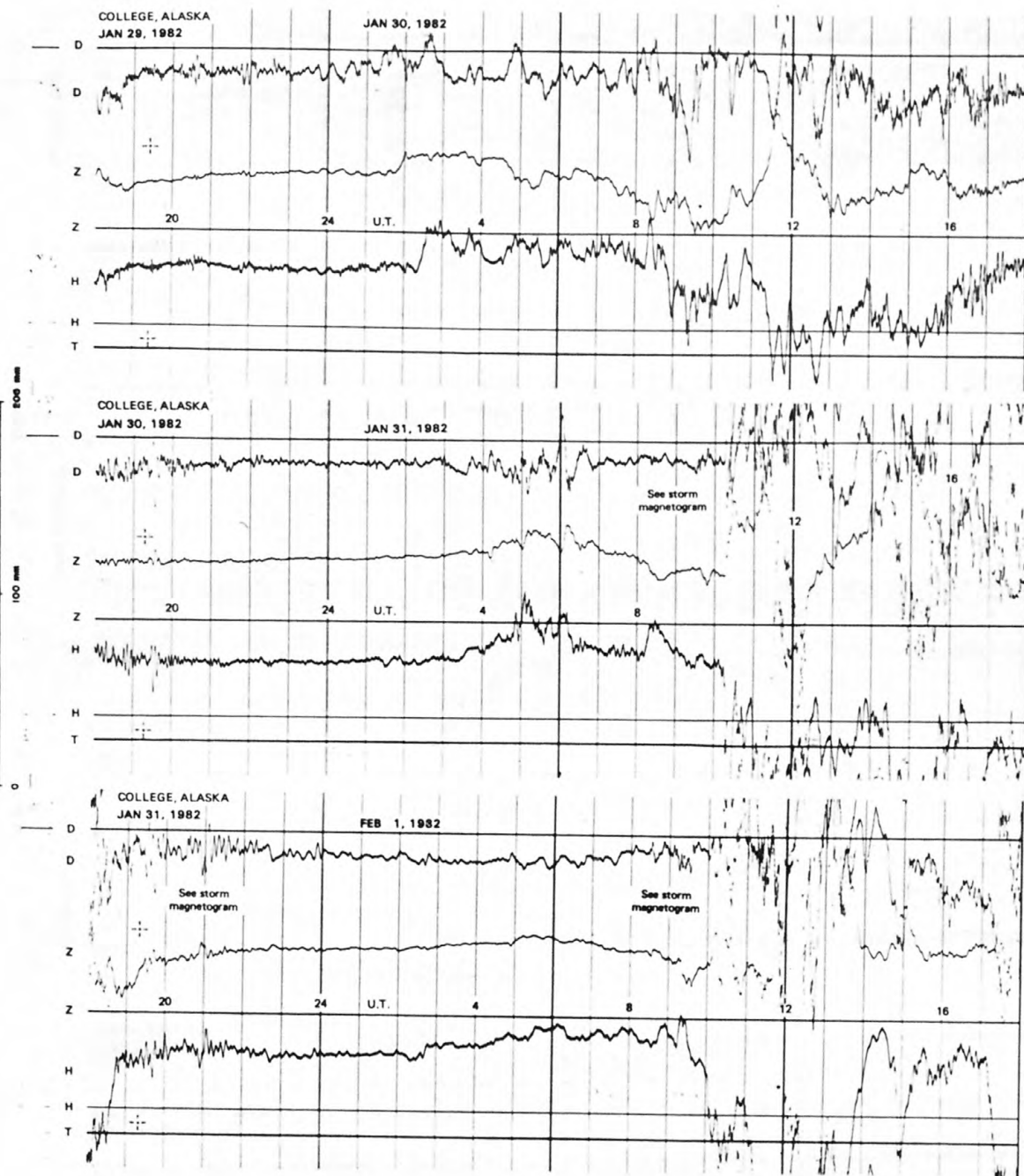
NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



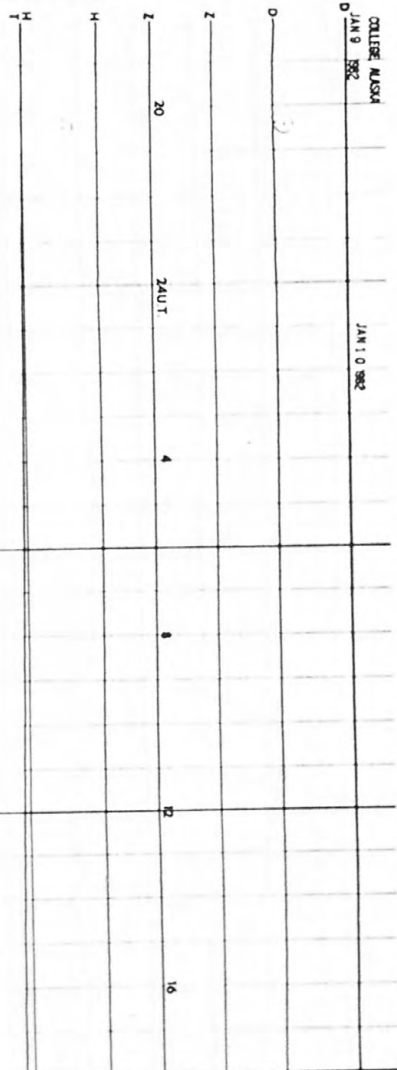
NORMAL MAGNETOGRAMS



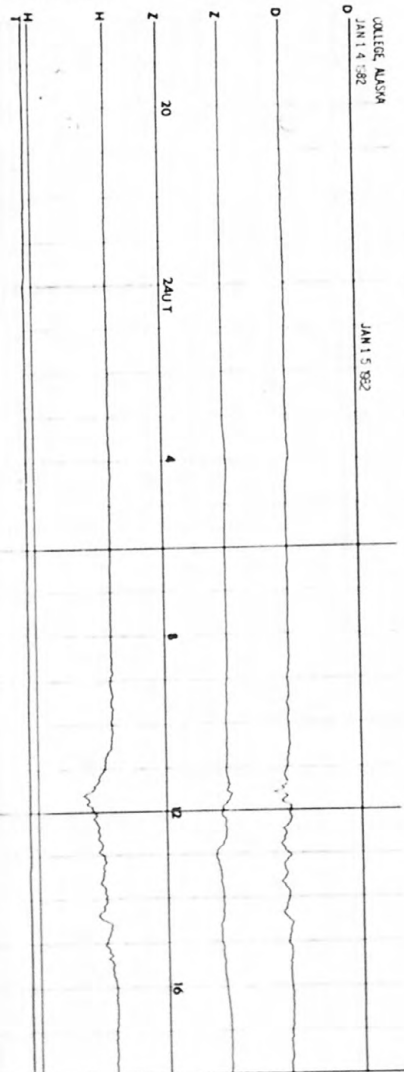
# STORM MAGNETOGRAMS

0 100 mm 200 mm

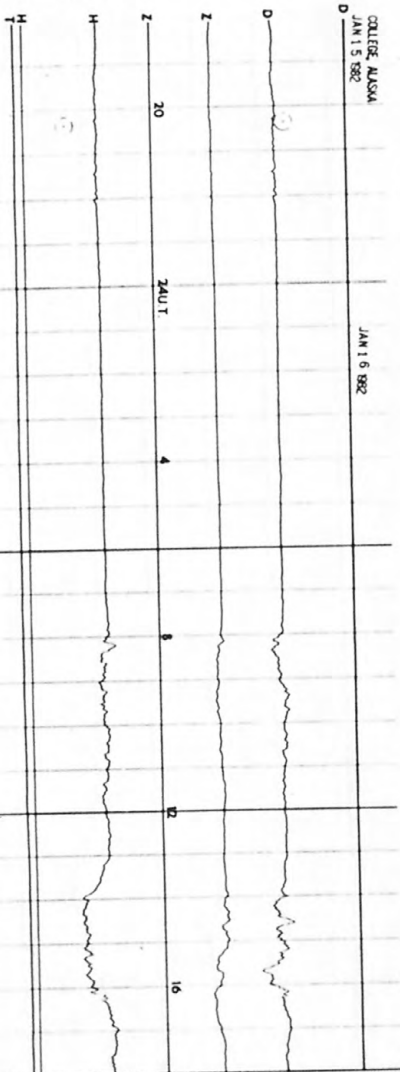
STORM MAGNETOGRAPH



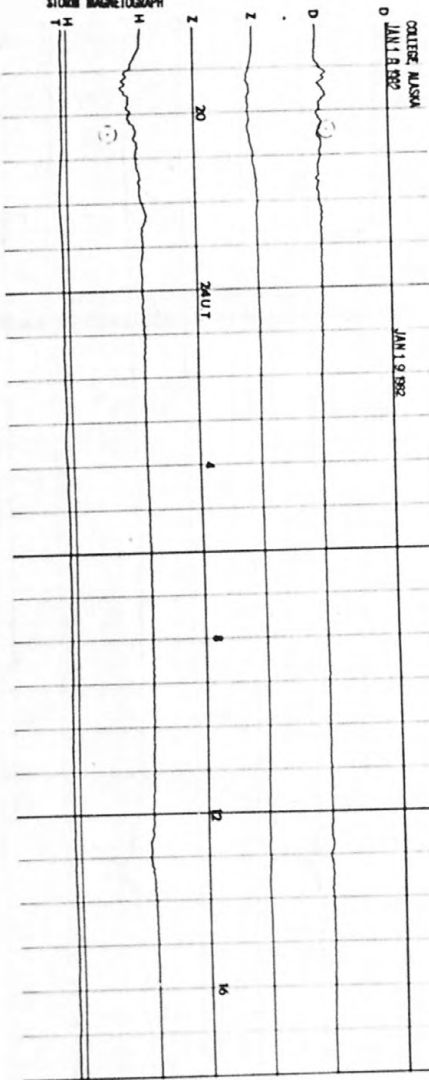
STORM MAGNETOGRAPH



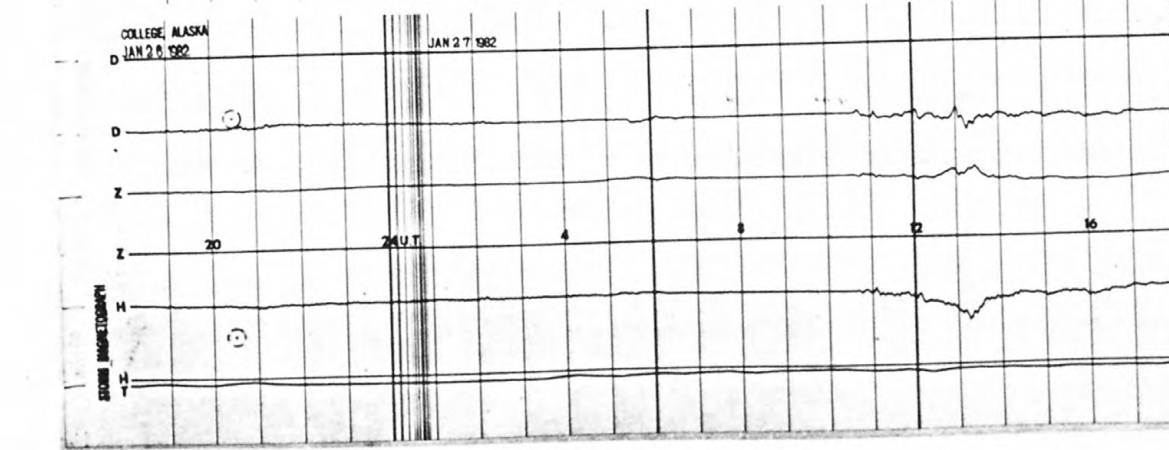
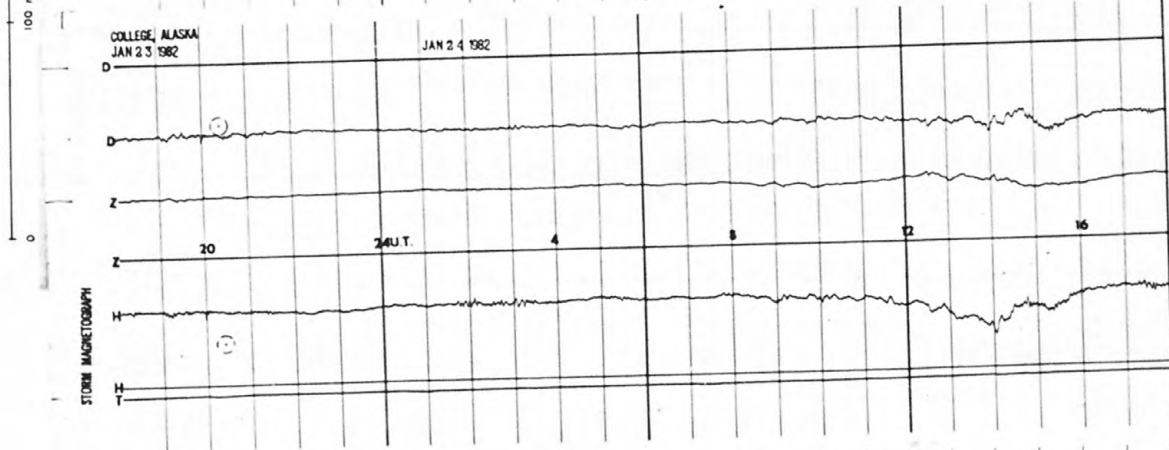
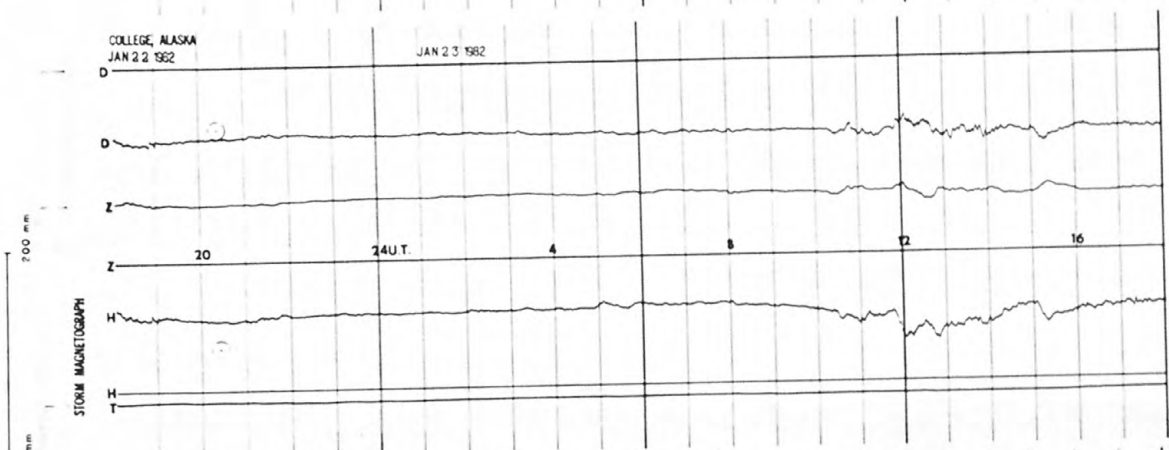
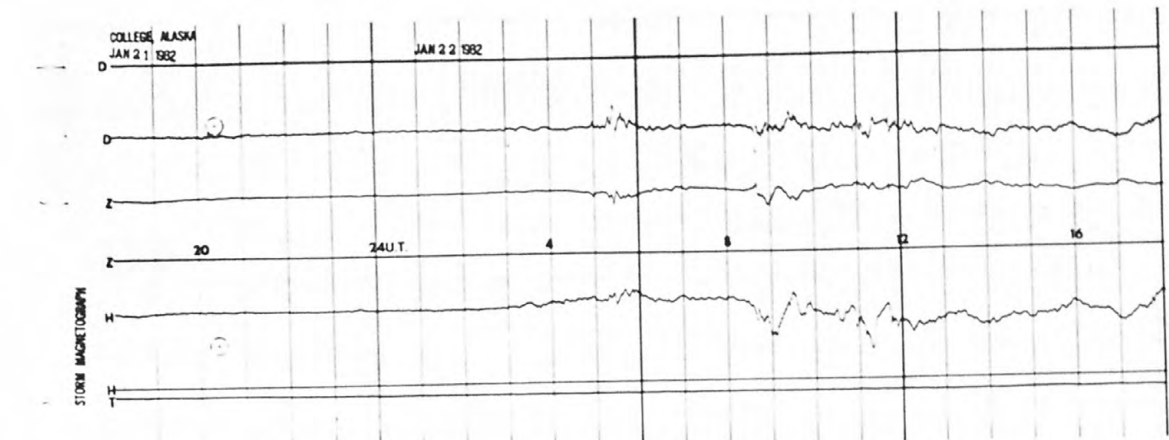
STORM MAGNETOGRAPH



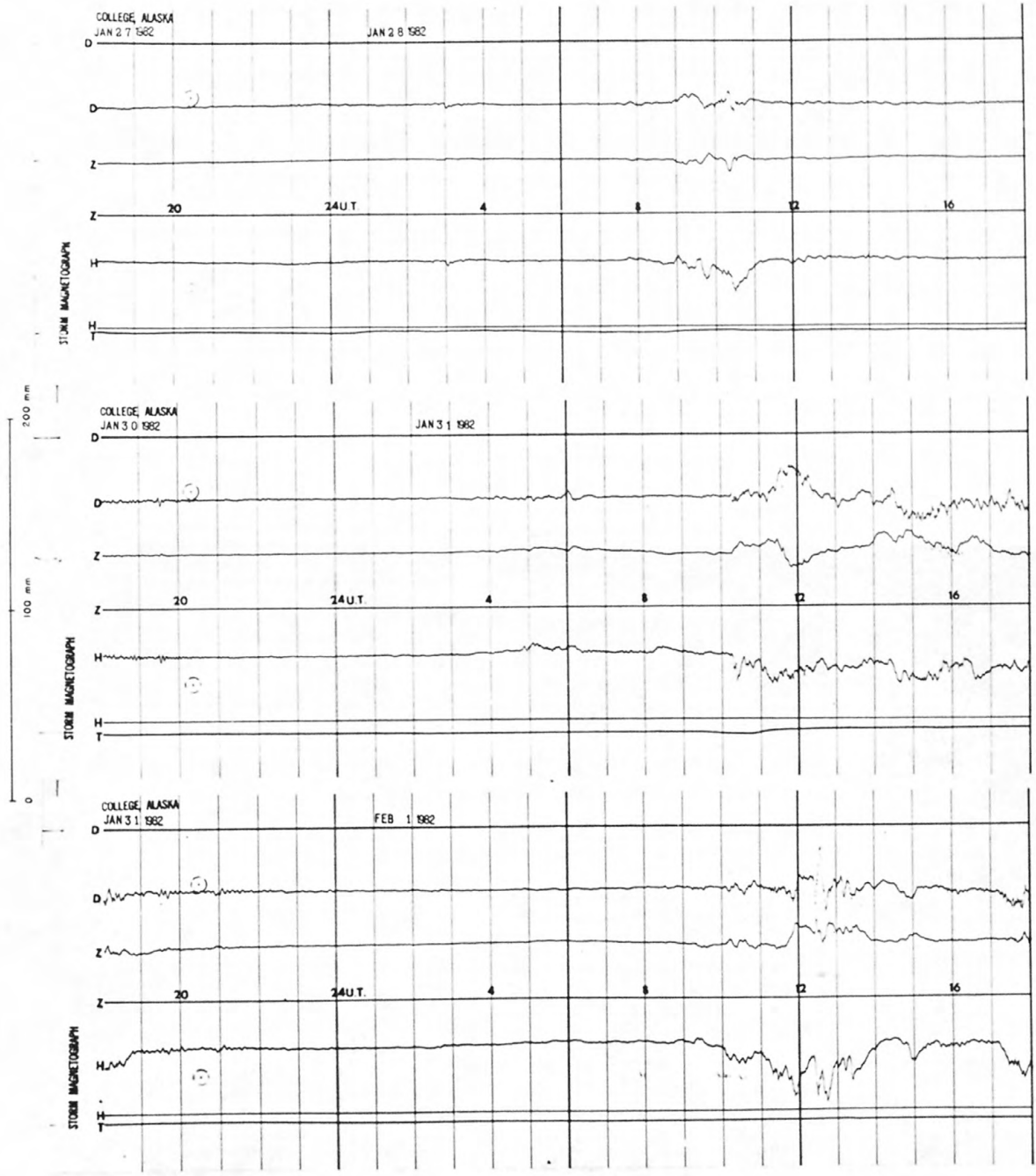
STORM MAGNETOGRAPH



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



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