

UNITED STATES DEPARTMENT OF THE INTERIOR

GEOLOGICAL SURVEY

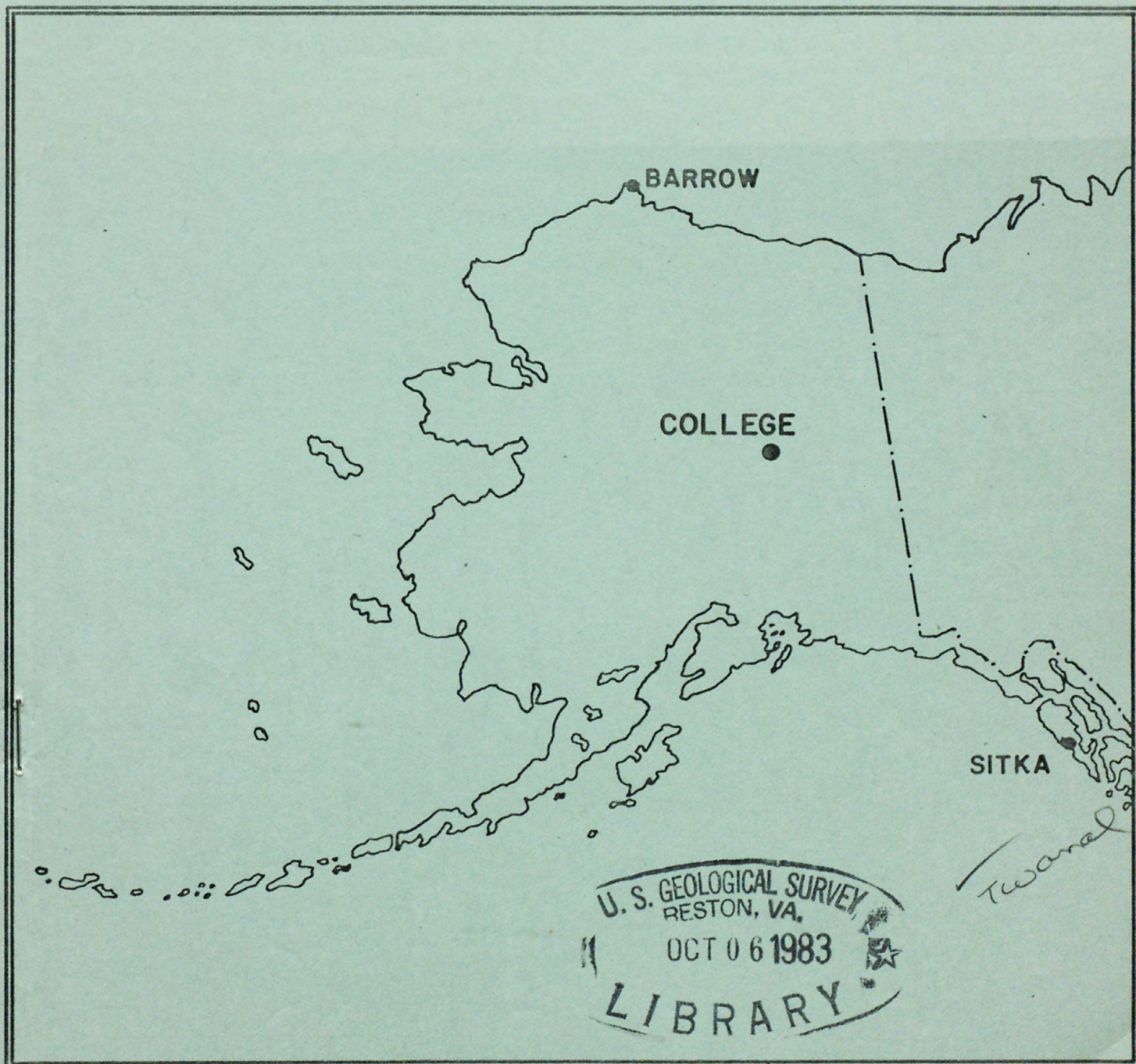
PRELIMINARY GEOMAGNETIC DATA

COLLEGE OBSERVATORY

FAIRBANKS, ALASKA

MAY 1983

OPEN FILE REPORT 83-0300E



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THIS REPORT WAS PREPARED UNDER THE DIRECTION OF JOHN B. TOWNSHEND, CHIEF OF THE COLLEGE OBSERVATORY, WITH THE ASSISTANCE OF THE OBSERVATORY STAFF MEMBERS: J.E. PAPP, E.A. SAUTER, L.Y. TORRENCE, T.K. CUNNINGHAM AND IN COOPERATION WITH THE GEOPHYSICAL INSTITUTE OF THE UNIVERSITY OF ALASKA. THE COLLEGE OBSERVATORY IS A PART OF THE BRANCH OF GLOBAL SEISMOLOGY AND GEOMAGNETISM OF THE U.S. GEOLOGICAL SURVEY.

Explanation of Data and Reports

Magnetic Activity Report

Outstanding Magnetic Effects

Principal Magnetic Storms

Preliminary Calibration Data and Monthly Mean Absolute Values

Magnetogram Hourly Scalings

Sample Format for Normal and Storm Magnetograms

Normal Magnetograms

Storm Magnetograms (When Normal is too disturbed to read)

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

346444

COLLEGE OBSERVATORY PRELIMINARY GEOMAGNETIC DATA

EXPLANATION OF DATA AND REPORTS

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..... $64^{\circ}51.6'N$
Geographic longitude..... $147^{\circ}50.2'W$
Geomagnetic latitude..... $+64.6^{\circ}$
Geomagnetic longitude..... $+256.5^{\circ}$
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 10 γ 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 γ)

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)

COLLEGE OBSERVATORY

MONTH AND YEAR

MAY 1983

DATE	K-INDICES									AK	TIME SCALE ON MAGNETOGRAMS 20 mm/hr	
	00-03	03-06	06-09	09-12	12-15	15-18	18-21	21-24	SUM			
1	3	3	5	6	5	2	4	3	31	32	SUDDEN COMMENCEMENTS d h m	
2	3	2	2	3	4	5	3	2	24	18		
3	1	2	2	2	2	1	2	2	14	06		
4	3	4	5	5	6	6	3	3	35	41		
5	3	3	2	6	7	6	3	3	33	46		
6	3	4	5	5	4	4	2	2	29	26		
7	2	2	2	4	5	2	2	2	21	15		
8	3	2	2	5	1	2	2	2	19	13		
9	2	3	1	1	1	1	2	2	13	06		
10	1	1	0	3	4	2	2	1	14	08		
11	2	2	6	6	4	7	4	4	35	50	POSSIBLE SOLAR-FLARE EFFECTS BASED ON INSPECTION OF GRAMS ALONE (WITHOUT REFERENCE TO DATA FROM OTHER SOURCES)	
12	5	5	7	6	6	6	4	5	44	69		
13	4	5	7	5	5	6	3	3	38	53		
14	5	4	4	5	5	4	4	2	33	32		
15	3	4	3	6	5	4	2	2	29	28		
16	2	3	3	5	4	4	2	2	25	19		
17	4	3	3	5	6	6	6	4	37	47		
18	2	3	4	3	4	1	2	2	21	14		
19	2	3	5	3	1	1	1	0	16	12		
20	1	1	0	0	2	0	3	3	10	05		
21	2	3	3	4	6	6	4	2	30	32	BEGIN	END
22	3	5	5	7	5	6	5	4	40	57		
23	5	5	7	6	5	6	5	3	42	63	d h m	d h m
24	5	5	4	5	4	8	8	5	44	91		
25	5	3	3	1	0	1	1	0	14	11		
26	1	1	1	1	2	3	2	3	14	07		
27	4	3	3	3	4	4	2	2	25	18		
28	3	3	1	0	0	1	1	1	10	05		
29	1	2	0	1	3	1	0	1	09	04		
30	0	2	1	1	1	3	2	2	12	06		
31	3	3	4	3	2	3	2	1	21	13		

K SCALE USED:

LOWER LIMIT FOR K = 9.....

D

683.8

H

321.7

Z

(mm)

CURRENT SCALE VALUE.....

3.73

7.76

(γ/mm)

LOWER LIMIT FOR K = 9.....

2550

2500

(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
MAY

YEAR
1983

DATE	TIME U.T.	NATURE OF PHENOMENON ¹	REMARKS
17	0020	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

Data from Individual Observatories:

COLLEGE OBSERVATORY, COLLEGE, ALASKA

MAY

1983

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

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	04	03xx	..	..	..	..	05	5	7	196	1620	670	06 20
		11	07xx	..	..	..	..	11 12 13	6 3 3	7 7 7	286	1630	1090	15 19
		17	0020	s.c.*	+19	+192	+16	17	5,6,7	6	285	1500	760	18 01
		20	18xx	..	..	..	..	24	6,7	8	396	2610	1230	25 07

MAY

1983

NORMAL MAGNETOGRAPHE

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 5-1-83	2400 U.T., 5-31-83	1.6/mm	3.78/mm	27° 46.8 E
H	0000 U.T., 5-1-83	2400 U.T., 5-31-83	7.88/mm		127618
Z	0000 U.T., 5-1-83	2400 U.T., 5-20-83	7.78/mm		551518
	0000 U.T., 5-21-83	2400 U.T., 5-31-83	"		551448

STORM MAGNETOGRAPHE

COMPONENT	PERIOD		CALIBRATION		
	FROM	TO	SCALE VALUE		BASELINE
D	0000 U.T., 5-1-83	2400 U.T., 5-31-83	7.9/mm	29.68/mm	24° 21.8 E
H	0000 U.T., 5-1-83	2400 U.T., 5-31-83	43.98/mm		108048
Z	0000 U.T., 5-1-83	2400 U.T., 5-20-83	48.48/mm		540978
	0000 U.T., 5-21-83	2400 U.T., 5-31-83	"		540808

RAPID RUN MAGNETOGRAPHE

COMPONENT	PERIOD		CALIBRATION	
	FROM	TO	SCALE VALUE	
D				
H				
Z				

MONTHLY MEAN ABSOLUTE VALUES*

D	H	Z
27° 52.0 E	129518	553868

* COMPUTED FROM TEN QUIETEST DAYS DURING MONTH.

DAYS USED: MAY 3, 9, 10, 19, 20, 25, 26, 28, 29, 30

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geologic Division
Denver Federal Center
DENVER, CO 80225OBSY. YEAR MONTH ELEMENT
CO 83 MAY DValues are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (150 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	-23	-45	-43	-96	31	16	-16	-9	-191*	-40*	-9	301*	01	127	66	103	114	155	168	175	298	-73*	-28	10	-4	987
					02	-13	-25	-31	17	14	9	21	48	32	43	62	51	02	83	95	137	237	413	222	129	68	-17	-8	0	31	1618
					03	24	12	-3	-10	6	14	15	14	17	20	25	67	03	81	109	129	140	148	162	141	110	49	33	36	-11	1328
					04	-20	9	-25	-96	70	-100*	-39	-17	-52	71	155*	11	04	125	-179*	274*	377*	226	166	163	94	89	41	60	32	1435
					05	17	16	6	27	52	60	46	27	53	52	67*	32	05	70	266*	133	313*	52	155	158	156	53	-2	-11	5	1803
					06	12	-3	16	2	-18	238	72	16	18	-92*	37	62	06	80	108	96	162	121	117	138	132	72	77	40	16	1521
					07	-8	-21	2	-2	34	60	124	40	38	52	47	59	07	85	78	82	122	144	156	118	102	63	42	35	47	1499
					08	32	5	16	7	35	52	64	54	38	31	30	96	08	42	56	58	112	176	146	136	119	107	32	6	46	1496
					09	-24	-2	13	29	11	60	56	46	42	33	31	42	09	59	78	99	119	116	131	124	104	72	46	17	-3	1299
					10	-8	7	18	35	57	60	61	53	44	40	48	12	10	22	42	67	86	162	167	194	200	138	78	11	-7	1587
					11	-4	0	26	18	27	23	45	-32	-20*	-123*	-156*	33	11	10	58	130	385*	480*	543*	253	107*	30	81	76	29	2019
					12	38	50	-115*	-28*	-68*	-53*	-28*	31	-226*	-76*	18	3*	12	-92*	-19	92	297*	424*	194*	66	179	154	-57	-35	141	890
					13	69	7	-22	-38	-46	-115*	-100*	-203*	-139*	-53*	99*	89	13	78	137	249	266*	424*	201	218	152	60	46	31	22	1432
					14	-19	-47	16	-24	-54	64	23	-43	8	-68	-93	0	14	42	77	41	164	312	284	128	60	42	54	3	-4	966
					15	34	15	-35	-66	-36*	0	48	46	16	-16	-22	35*	15	-24	93	85	161	212	206	120	94	-14	42	13	-69	938
					16	-37	-19	-4	2	11	-10	36	52	29	-8	-63*	62*	16	64	83	114	115	212	211	170	136	106	-46	16	10	1242
					17	-32	-54	-117*	-33	-51	-11	-12	8	10	-13	-72	42*	17	173	455*	820*	423*	606*	495*	352*	300	182	206	-101*	-101*	3475
					18	-65	-38	-10	24	48	38	-11	-26	-46	-16	11	20	18	35	56	109	108	143	165	144	116	80	24	6	-1	914
					19	-9	-9	-1	10	9	30	76	-11	-45*	76	-3	34	19	50	70	123	129	172	170	145	116	82	36	8	8	1266
					20	4	-1	12	20	27	32	41	46	36	28	42	37	20	30	58	83	103	122	144	130	196	247	142	-117*	-126	1336
					21	-37	-9	-11	-13	-26	2	1	0	-38	-35	-32	6	21	88	192	234	469	357	279	331	130	106	39	-18	-35	1980
					22	-59	-71	-64	-64	-112	-204*	-268*	-109*	-37*	22	2	34*	22	106*	196	328*	360*	335*	320*	332	200	122	94	74	110	1647
					23	-7	-45	41	34	21	-35	-6*	-212*	-77*	-46	-111	-101*	23	-21*	-13	93	280*	368*	73	292	198	136	26	39	8	935
					24	-22	-24	-62	40	14	9	35	-54*	0	-38	37	-34	24	36	-48	169	153	257*	526*	201*	301	195	113*	-109*	-101*	1594
					25	-85	-61*	-68*	-45	34	62	60	49	65	27	21	22	25	29	46	76	100	121	135	109	74	43	-7	-27	-43	737
					26	-31	-3	22	46	59	59	52	44	41	53	7	1	26	15	16	41	99	192	248	265	225	90	37	-80	-26	1472
					27	-35	-61	-34	-58	-18	-70	22	16	4	10	18	27	27	18	51	93	145	217	189	114	102	95	-8	-48	-38	751
					28	-23	-9	-32	30	59	50	41	28	22	20	35	42	28	53	52	85	122	166	180	144	116	65	22	-6	-37	1225
					29	-28	-46	-23	6	20	43	36	34	30	45	15	29	29	83	105	104	138	170	164	163	117	83	37	9	-24	1310
					30	-17	-11	-8	6	18	31	40	40	29	25	30	29	30	34	51	73	114	153	179	166	75	47	26	21	-31	1120
					31	-40	-65	-81	-12	-14	28	66	28	42	22	52	5	31	23	3	64	72	153	163	176	137	84	13	2	-25	896

SCALED BY: LYT, TAC

CHECKED BY: TAC, JEP

SIGNS REVIEWED BY: JEP

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.

[] 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 Mgp., converted to Normal Mgp.

MONTHLY SUM: 42718

MONTHLY MEAN: 57

DATES WITH GAPS:

MAGNETOGRAM HOURLY SCALINGS
(UNIVERSAL TIME)

U.S. DEPARTMENT OF INTERIOR
Geological Survey, Geologic Division
Denver Federal Center
DENVER, CO 80225

OBSY.	YEAR	MONTH	ELE- MENT
CO	83	MAY	Z

Values are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (150 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	T	Y	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	341	331	343	345	399	347	339	314	205	299	433	574	01	242	257	299	322	324	314	310	349	188	216	283	298	7672	
				02	304	339	355	380	371	358	366	362	326	291	299	306	02	330	411	325	167	43	56	129	231	252	279	306	323	6909	
				03	323	315	312	308	308	306	302	302	305	301	298	309	03	306	309	305	304	307	303	298	290	288	293	304	304	7300	
				04	286	316	306	309	374	344	323	209	326	418	674	438	04	545	492	415	315	194	266	286	272	293	302	320	324	8347	
				05	318	316	314	312	335	369	334	325	336	288	359	166	05	248	523	213	284	175	226	291	313	314	294	301	310	7264	
				06	320	329	336	318	336	392	280	303	214	158	280	324	06	260	220	238	208	249	298	297	302	285	299	305	311	6882	
				07	310	308	318	317	342	358	401	334	323	318	298	242	07	175	241	303	312	315	312	278	298	290	295	302	305	7295	
				08	330	330	316	306	312	328	345	328	312	306	273	267	08	279	297	293	278	275	298	283	256	285	284	304	324	7209	
				09	315	324	318	312	318	372	363	318	308	296	305	301	09	302	302	300	303	306	304	302	305	297	290	290	296	7447	
				10	302	317	315	322	324	314	310	305	306	297	288	288	10	203	230	271	290	271	282	302	304	280	266	264	273	6924	
				11	304	308	312	322	345	319	323	289	7	238	337	352	11	359	459	524	574	706	688	121	235	301	321	312	317	8373	
				12	288	329	176	139	222	245	276	202	202	497	386	408	12	301	334	285	417	517	221	198	294	304	277	301	363	7182	
				13	358	338	340	340	358	244	139	51	244	561	283	277	13	457	419	452	435	227	244	293	308	291	313	340	342	7654	
				14	338	310	216	310	304	345	270	340	311	192	222	331	14	324	332	289	174	172	170	137	230	285	307	306	317	6532	
				15	339	364	349	351	330	374	344	323	325	314	301	466	15	282	200	196	247	232	258	239	278	275	310	333	328	7358	
				16	328	344	334	320	316	318	359	362	334	325	155	240	16	265	285	258	184	215	196	244	272	280	284	325	336	6879	
				17	318	331	313	335	301	315	314	312	309	284	244	193	17	251	411	234	385	310	159	159	211	311	364	349	258	6971	
				18	302	330	349	356	355	350	286	267	283	310	326	332	18	304	278	190	277	319	311	296	297	296	294	298	307	7313	
				19	312	312	333	339	329	364	368	318	306	274	314	318	19	316	325	334	329	330	316	306	298	294	290	286	293	7604	
				20	301	301	308	322	331	325	327	324	308	301	308	298	20	299	260	281	303	320	316	308	316	316	284	250	280	7287	
				21	294	292	295	302	307	324	322	314	280	206	227	279	21	362	394	356	263	168	267	306	226	252	265	272	278	6851	
				22	293	290	323	336	287	136	-18	206	268	281	422	632	22	284	173	354	480	512	518	152	167	302	332	368	374	7472	
				23	312	279	263	340	375	305	209	120	91	210	274	384	23	336	197	292	443	144	-21	168	192	257	270	314	322	6076	
				24	343	340	310	308	351	366	322	205	337	290	177	126	24	248	389	230	285	405	927	379	192	229	295	265	295	7614	
				25	321	323	369	370	388	348	342	332	331	318	315	310	25	314	314	320	322	320	320	320	316	307	305	311	321	7857	
				26	328	335	334	332	330	329	320	319	321	320	293	320	26	314	310	303	310	303	257	270	266	228	266	269	297	7274	
				27	303	303	342	339	376	360	372	356	331	304	278	310	27	306	261	243	198	144	63	207	287	303	294	308	312	6900	
				28	330	324	334	420	441	373	332	321	313	312	313	312	28	314	316	320	325	323	310	299	294	288	291	292	299	7796	
				29	309	304	307	316	324	331	322	312	308	311	301	310	29	327	265	290	314	319	314	314	308	304	301	303	305	7419	
				30	312	319	324	328	332	334	327	320	311	314	303		30	301	307	310	323	299	263	258	236	250	277	289	294	7259	
				31	307	333	336	377	350	396	329	341	392	349	299	274	31	311	324	321	323	286	250	277	268	266	270	289	304	7572	
SCALED BY	LYT, TAC			Preliminary base-line and scale values:																											
CHECKED BY	TAC, JEP			Interval Beginning				Base-line Value				Scale Value				☐ () Interpolated ☐ Significant portion of hour interpolated. ☐ No record; or no values available because of faulty record. * Derived from <u>STORM</u>															
SIGNS REVIEWED BY	JEP			☐ Scaling uncertain because of magnetic storm. ☐ Record all sheets for part or all of hour; if value is given, curve was estimated for missing part. Mgph., converted to Normal Mgph.																											
PUNCHED BY				MONTHLY SUM 226,492																											
				MONTHLY MEAN 304																											
				DATES WITH GAPS:																											

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 ELE-
CO 83 MAY HValues are in tenths of mm. and are averages for successive periods of one hour beginning at midnight. Hour 01 of local day (150 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	U	Ten	TH	01	02	03	04	05	06	07	08	09	10	11	12	TH	13	14	15	16	17	18	19	20	21	22	23	24	SUM	
					01	240	300	274	365	266	248	317	382	241	288	93	-269	01	-66	278	232	306	281	267	252	81	94	255	213	212	5152
					02	222	287	309	277	274	295	308	299	276	241	210	233	02	205	121	-80	-99	-116	127	211	191	246	281	261	249	4828
					03	242	248	244	252	258	264	268	286	277	287	320	304	03	301	275	283	293	295	287	268	243	246	248	251	245	6485
					04	265	192	250	450	526	611	530	228	276	88	-117	-72	04	-117	-474	-524	-55	122	271	260	270	269	236	280	239	4004
					05	265	255	276	263	279	288	260	286	266	256	-84	180	05	128	-451	61	-423	74	247	278	248	209	212	239	241	3853
					06	250	276	241	260	418	378	403	473	200	1	234	174	06	151	0	189	120	197	234	252	241	259	242	244	226	5663
					07	238	247	259	292	280	294	307	265	259	257	243	131	07	80	263	260	258	260	232	245	234	236	232	232	245	5849
					08	244	215	244	262	284	300	285	250	261	275	175	166	08	272	264	234	209	228	223	195	200	236	250	246	258	5776
					09	218	250	258	238	328	279	274	260	256	258	263	255	09	250	237	254	258	256	252	247	226	217	226	216	238	6014
					10	252	237	232	244	232	245	249	256	259	243	260	250	10	89	207	257	229	241	273	261	245	242	233	244	244	5724
					11	264	225	248	298	268	276	284	370	80	115	260	196	11	141	271	264	-236	-327	-683	177	108	265	244	238	296	3642
					12	481	414	664	726	491	477	471	309	86	-15	272	-219	12	-214	-58	151	-119	-412	-72	217	190	112	126	231	322	4631
					13	323	286	307	291	352	416	323	-242	351	80	93	82	13	-59	17	-152	-231	-117	281	206	176	206	192	248	271	3700
					14	301	471	624	434	488	378	292	344	330	60	166	230	14	171	90	-120	84	6	-114	63	197	215	200	195	212	5317
					15	296	384	391	386	461	391	322	293	278	276	259	-214	15	-134	28	99	52	183	168	208	212	199	180	214	230	5162
					16	244	242	244	251	261	301	330	330	271	278	84	194	16	238	114	-43	133	137	198	226	229	205	226	212	216	5121
					17	305	258	349	249	275	259	292	287	319	328	316	229	17	132	-235	-710	-450	-670	-653	-291	-124	122	148	209	276	1220
					18	208	212	225	225	245	287	331	214	302	284	303	239	18	152	25	176	257	242	224	231	223	217	213	220	221	5476
					19	214	226	253	220	272	340	292	373	271	206	294	246	19	242	249	246	260	266	261	258	252	256	234	237	215	6183
					20	217	207	218	250	234	256	265	259	264	265	266	263	20	272	213	273	297	290	294	289	249	180	153	174	220	5868
					21	212	198	211	240	281	274	278	300	340	336	281	262	21	114	24	-144	-241	137	286	220	248	228	216	221	221	4743
					22	232	263	282	351	613	478	325	368	172	243	81	-371	22	-281	-133	-274	-348	-376	-139	28	154	219	245	252	419	2803
					23	461	507	623	505	564	517	480	246	438	92	257	-189	23	-26	124	144	-399	-461	-20	-19	171	249	219	279	311	4197
					24	279	363	478	489	309	290	343	233	354	258	153	135	24	140	-7	142	234	-133	-184	-897	-11	158	281	214	176	2897
					25	207	331	282	244	215	201	195	202	222	238	230	220	25	230	230	235	237	231	222	220	215	208	196	185	190	5386
					26	210	222	242	242	239	235	233	248	245	263	276	270	26	266	263	247	239	204	194	186	175	163	211	175	245	5493
					27	192	272	390	398	309	341	368	296	275	255	215	246	27	213	126	-21	-98	-35	38	231	254	211	183	186	199	5044
					28	209	214	303	378	314	242	239	240	252	245	249	244	28	247	259	250	250	225	221	226	224	219	210	211	216	5867
					29	217	230	249	240	264	252	248	243	252	257	258	286	29	191	234	270	273	268	258	250	235	230	210	211	228	5854
					30	224	231	244	248	272	264	278	268	267	267	260	260	30	258	268	268	264	190	211	207	225	223	204	210	208	5819
					31	267	235	257	244	306	342	417	354	324	314	268	216	31	252	259	226	195	156	221	235	236	226	208	204	222	6184

SCALED BY: LYT, TAC

CHECKED BY: TAC, JEP

SIGNS REVIEWED BY: JEP

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 Mgbph., converted to Normal Mgbph.

[] Scaling uncertain because of magnetic storm.

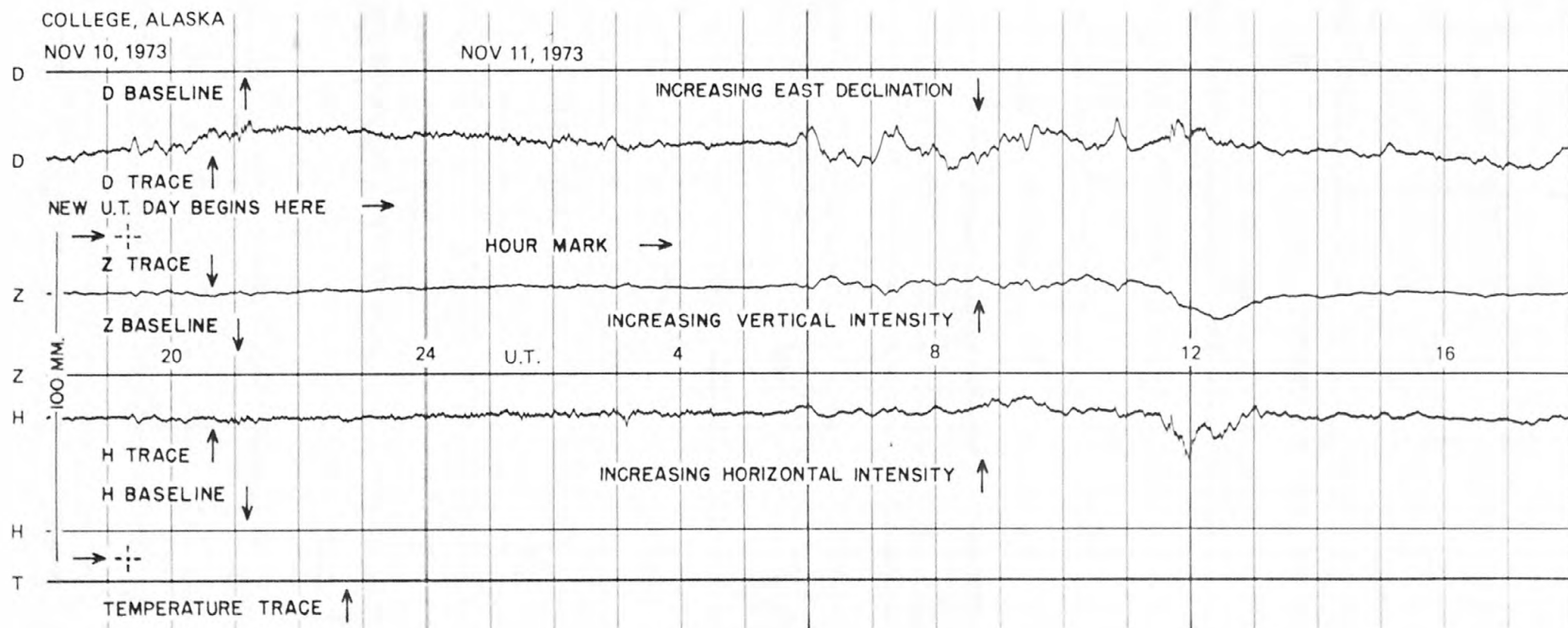
<> Record off sheet for part or all of hour; if value is given, curve was estimated for missing part.

MONTHLY SUM: 152,975

MONTHLY MEAN: 207

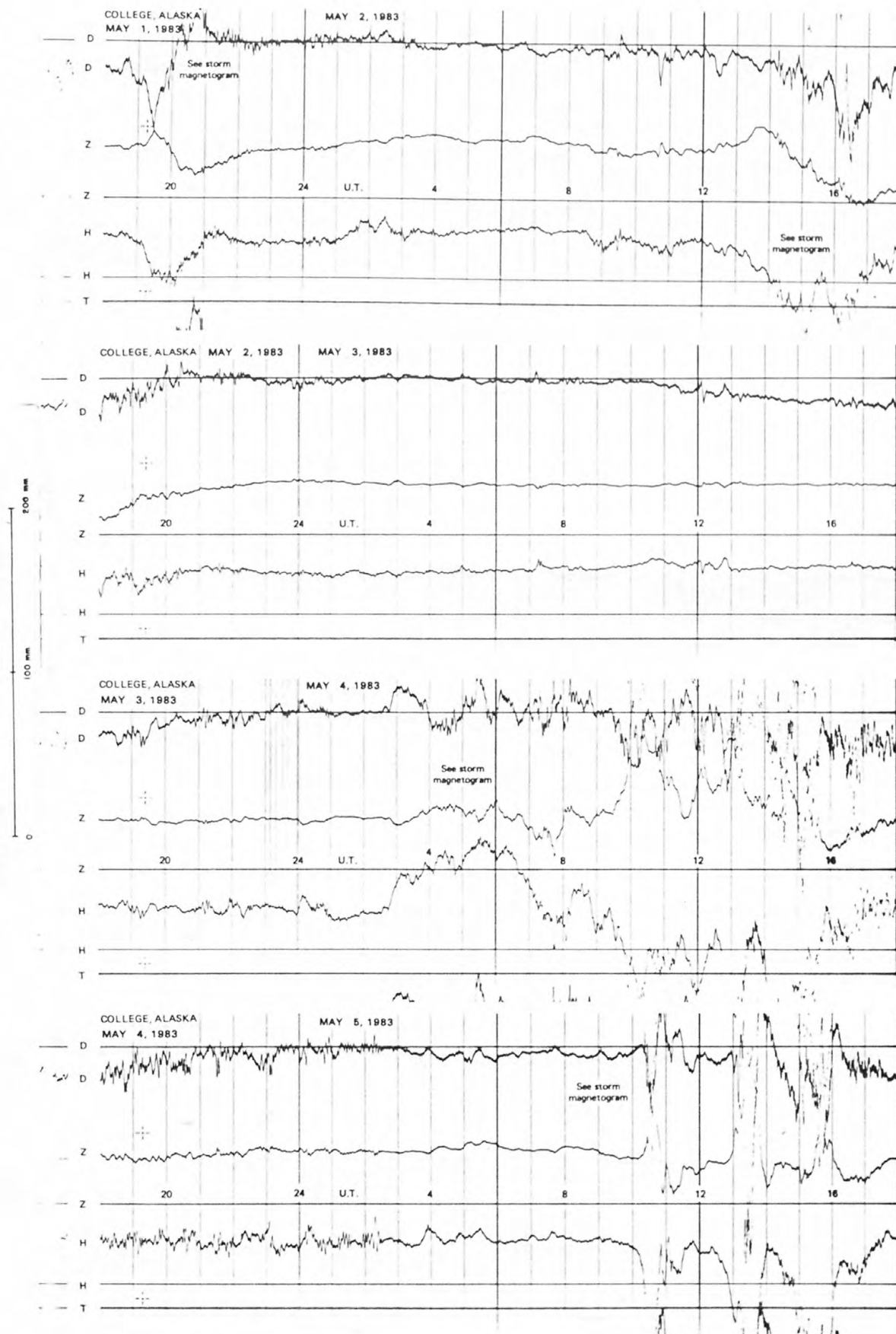
DATES WITH GAPS:

FORMAT FOR NORMAL & STORM MAGNETOGRAMS (SAMPLE ONLY)

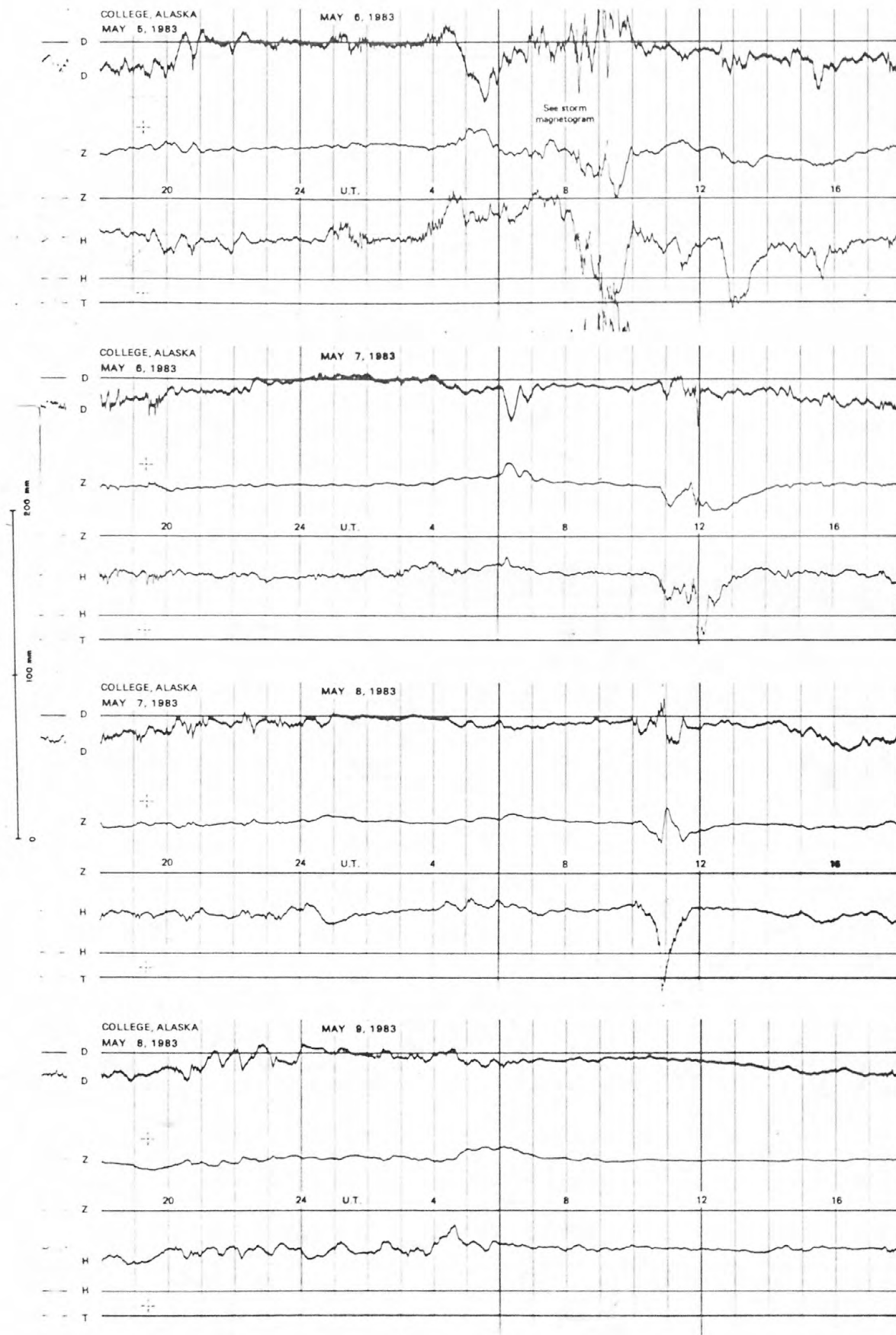


SEE PRELIMINARY CALIBRATION DATA FOR SCALE VALUES & BASELINE VALUES

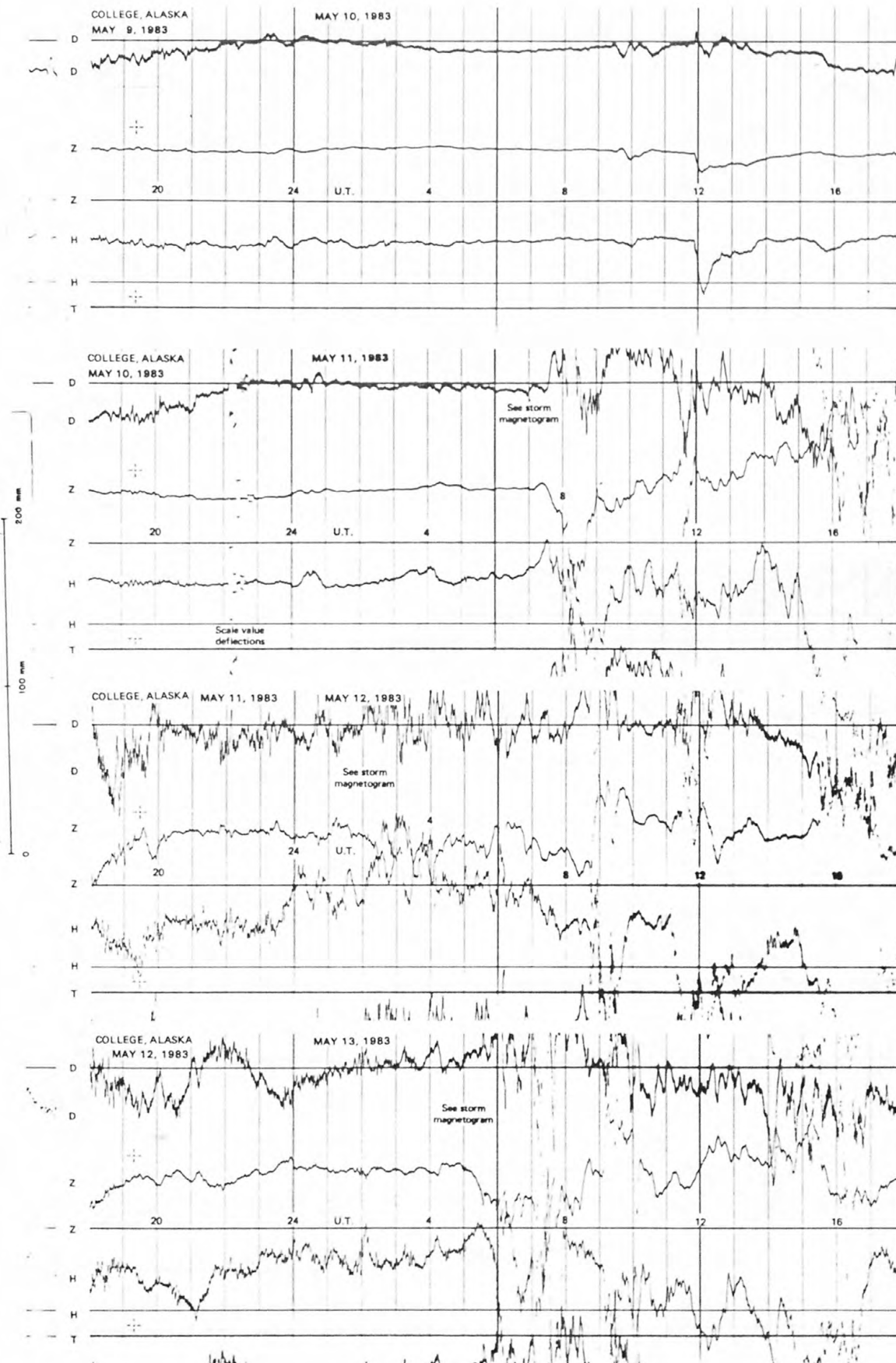
NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



NORMAL MAGNETOGRAMS



COLLEGE, ALASKA MAY 13, 1983

MAY 14, 1983

COLLEGE, ALASKA MAY 14, 1983 MAY 15, 1983

See storm magnetogram

See storm magnetogram

COLLEGE, ALASKA MAY 15, 1983 MAY 16, 1983

See storm magnetogram

COLLEGE, ALASKA MAY 16, 1983 MAY 17, 1983

See storm magnetogram

See storm magnetogram

200 nT

100 nT

0

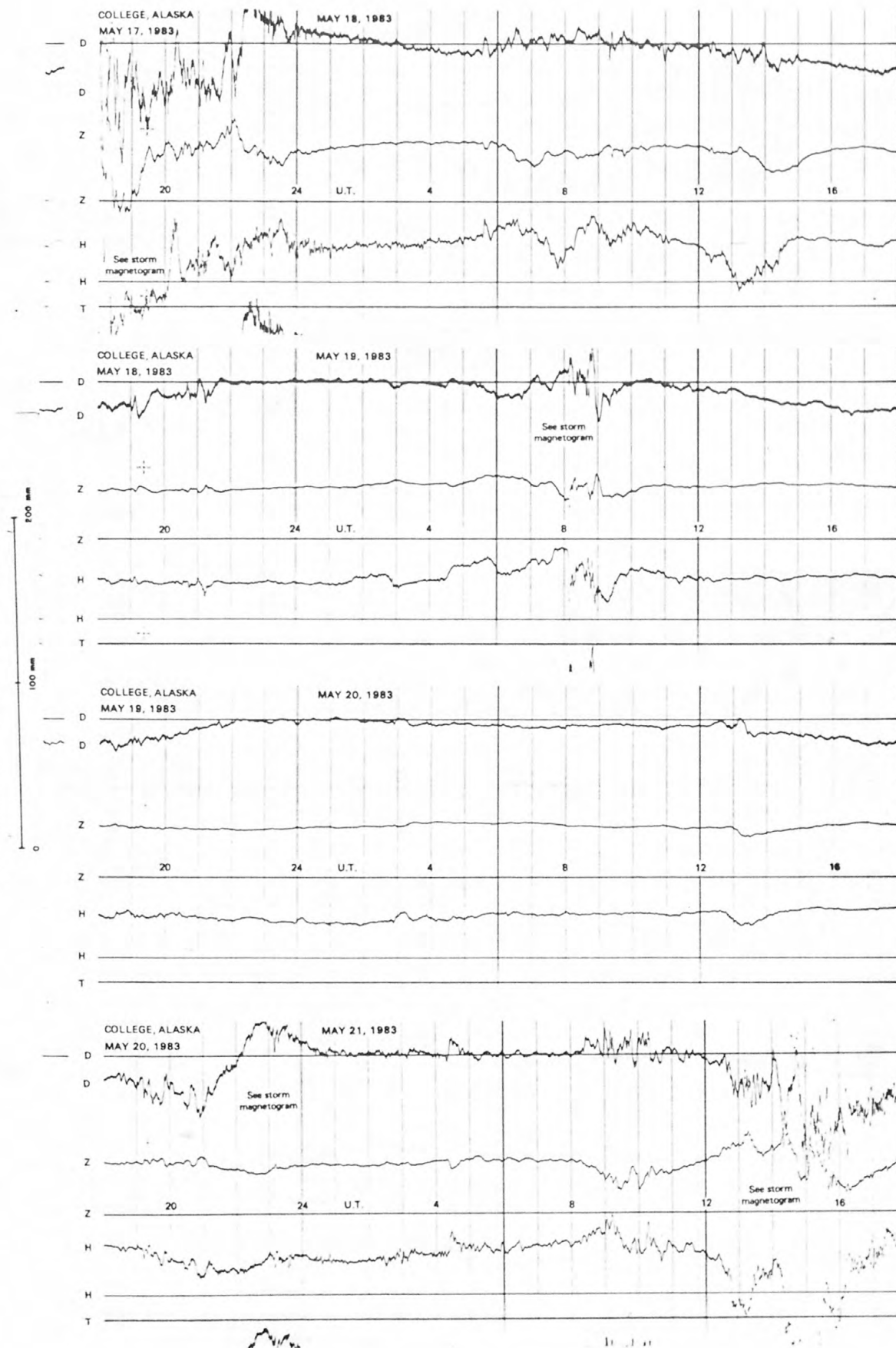
20 24 U.T. 4 8 12 16

20 24 U.T. 4 8 12 16

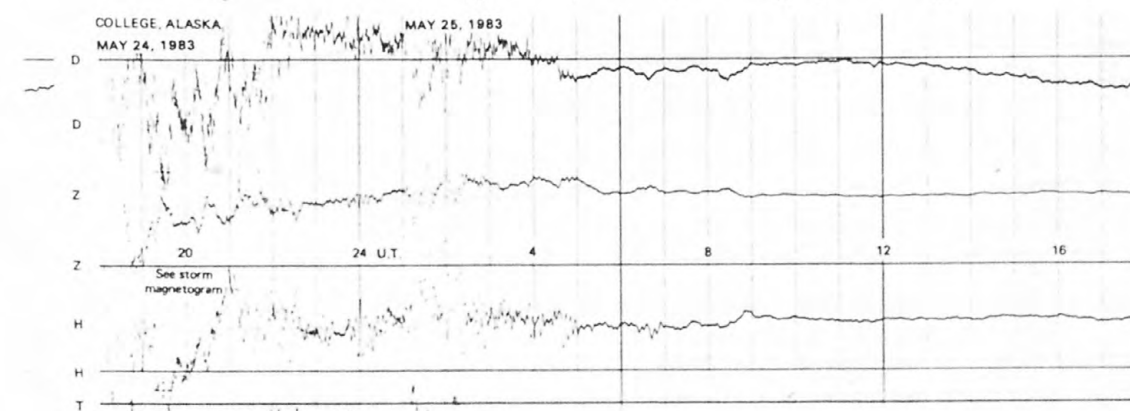
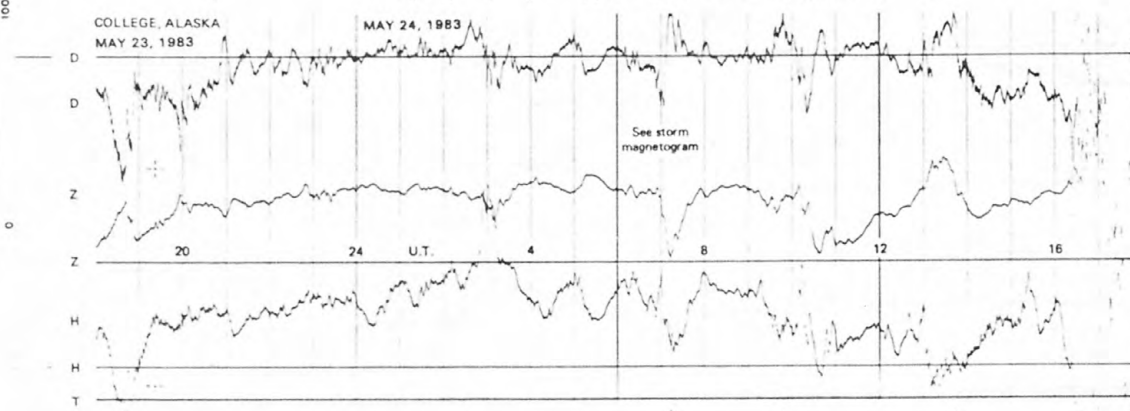
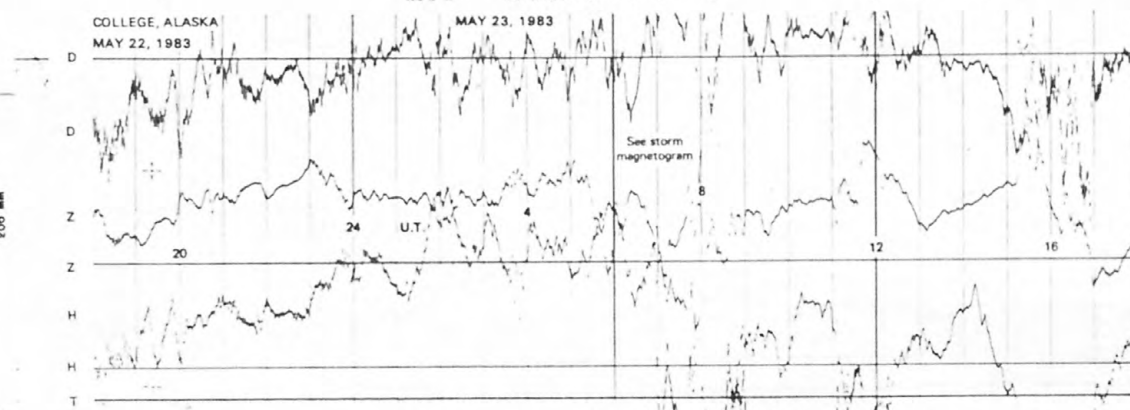
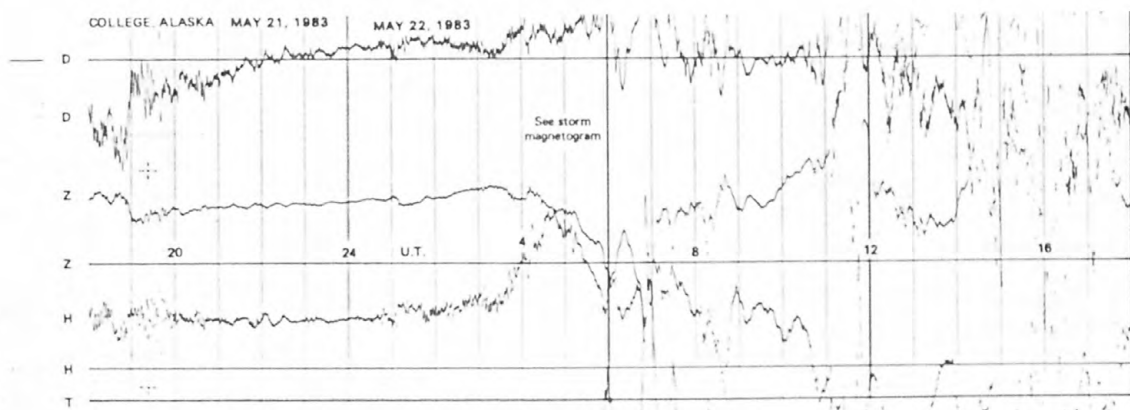
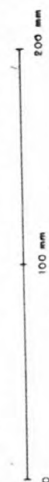
20 24 U.T. 4 8 12 16

20 24 U.T. 4 8 12 16

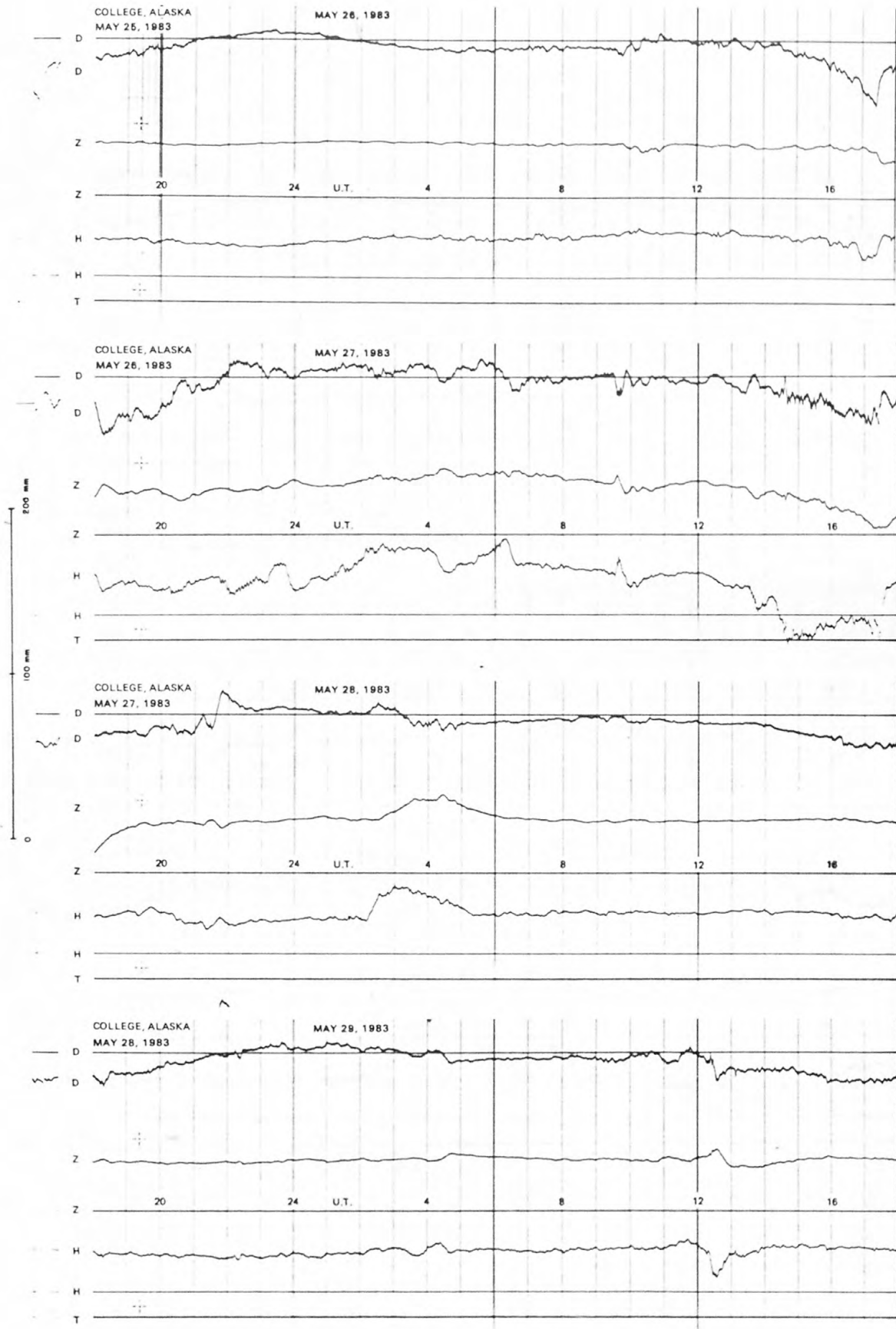
NORMAL MAGNETOGRAMS



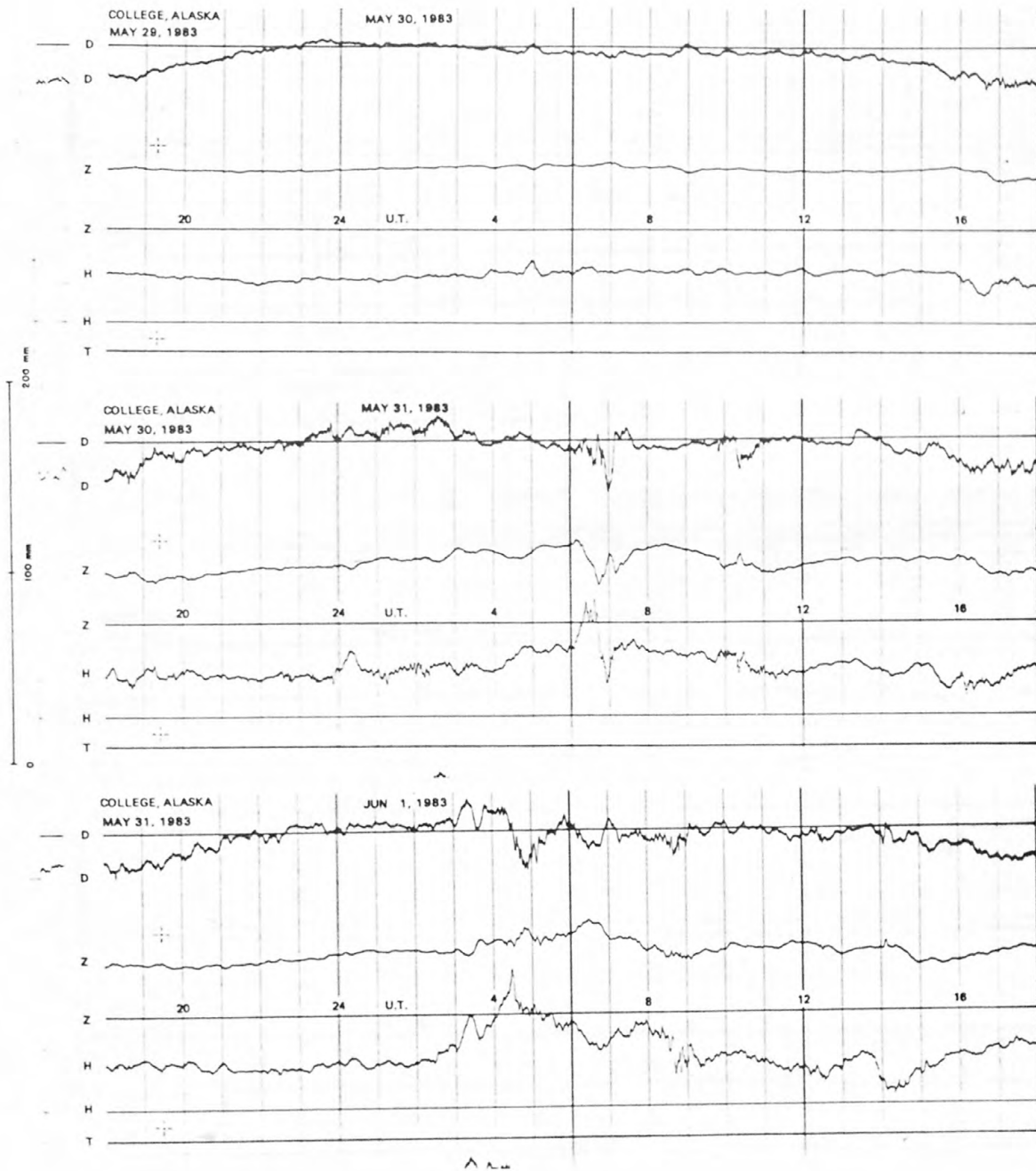
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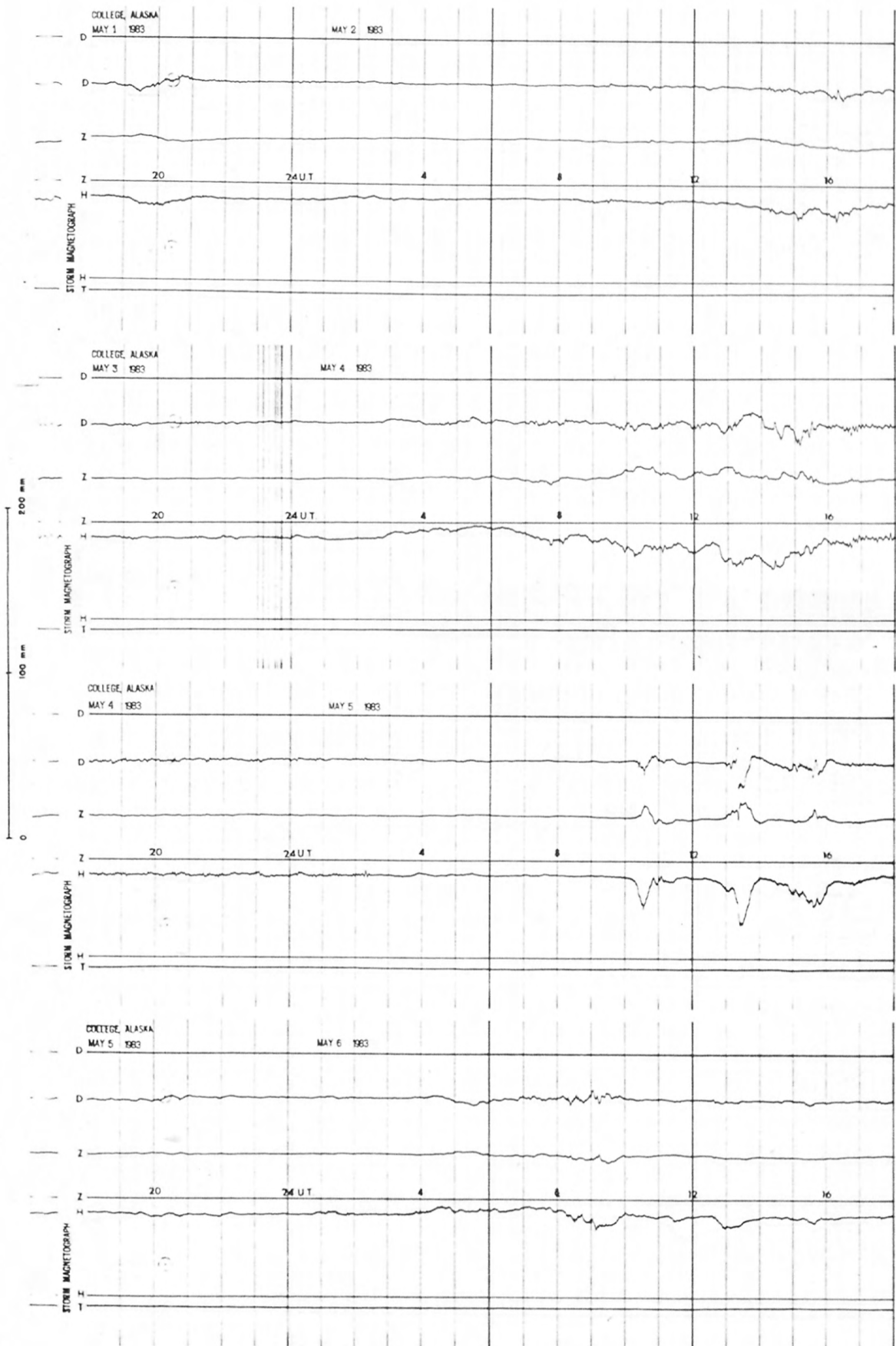
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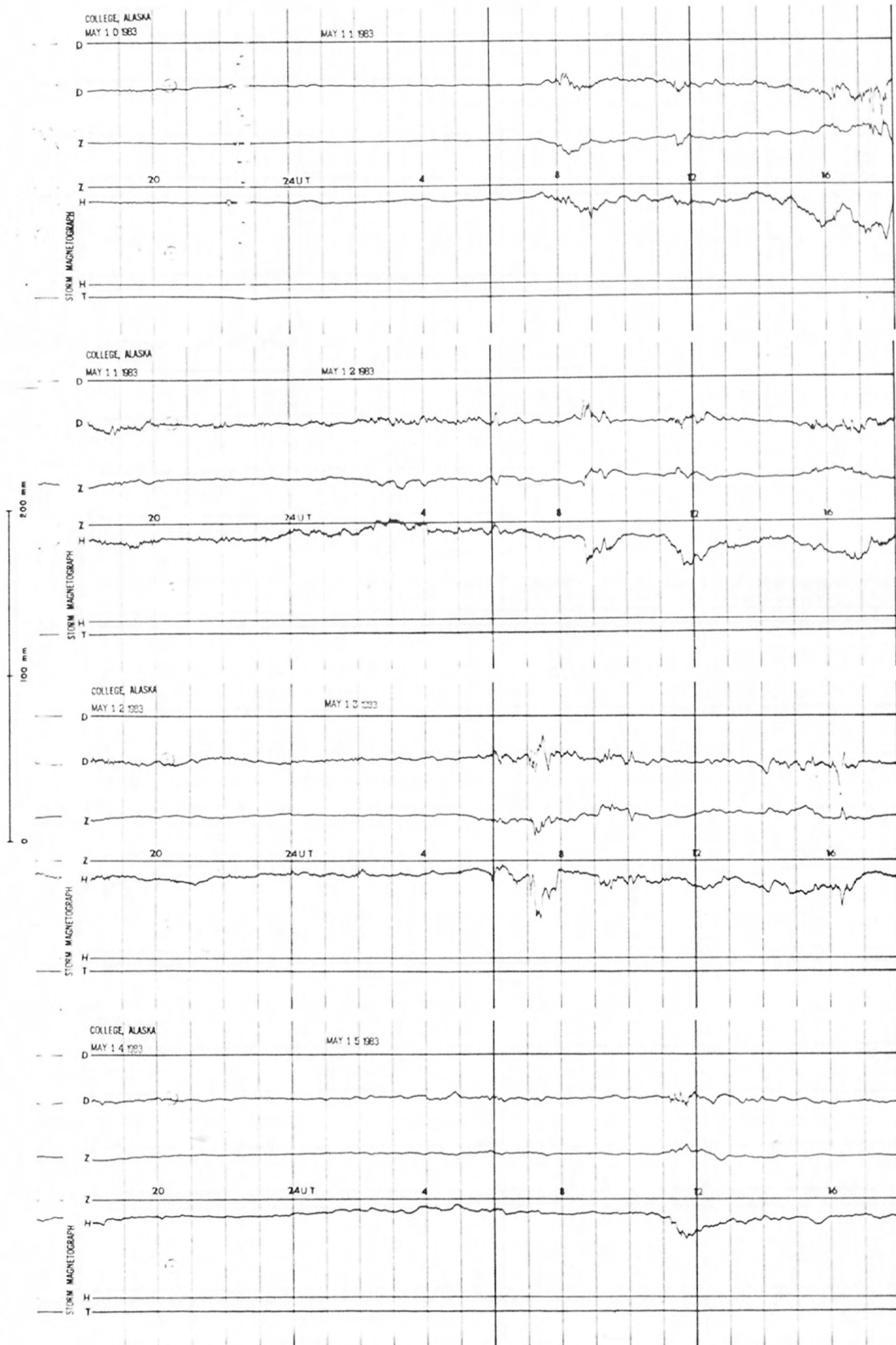
NORMAL MAGNETOGRAMS



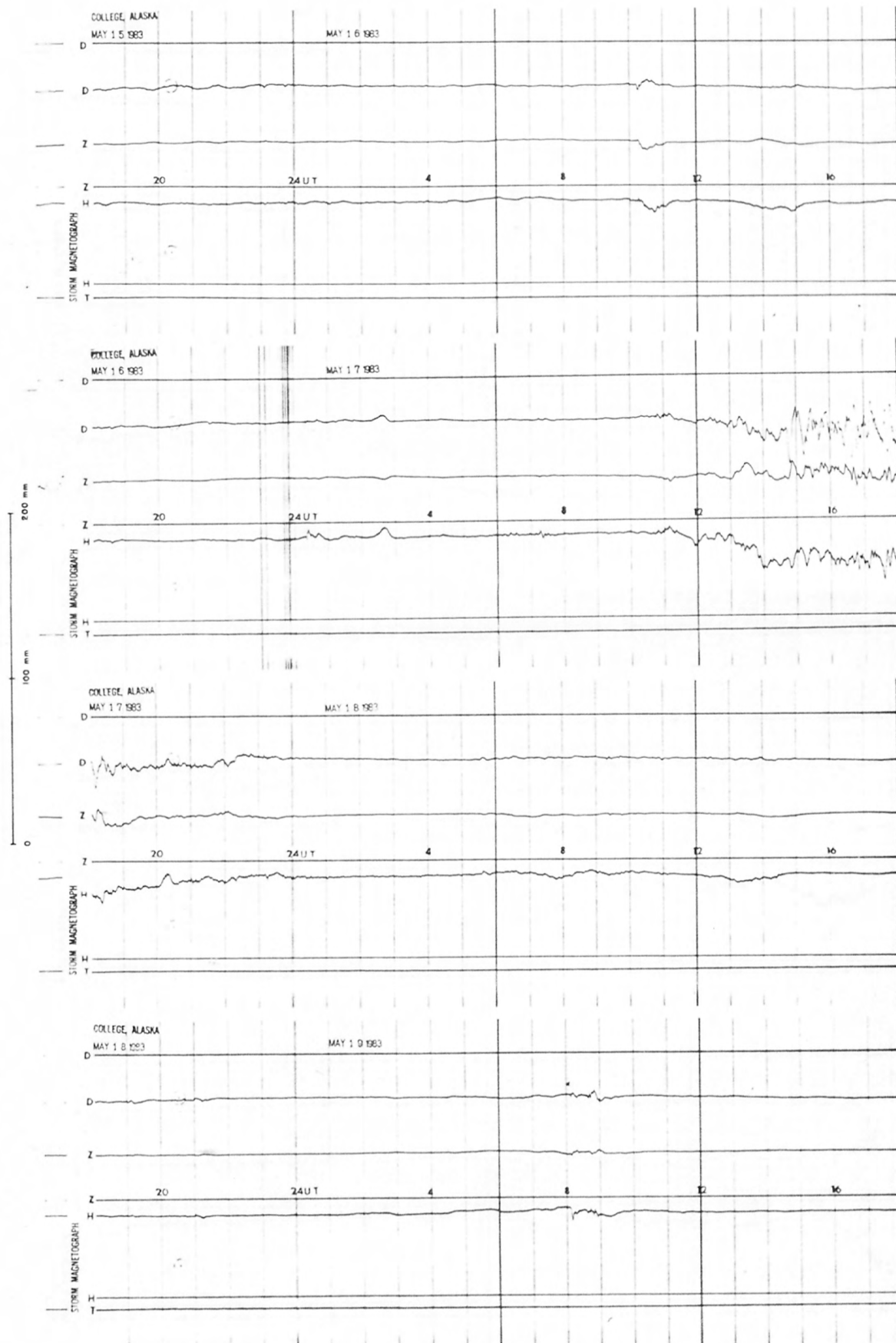
STORM MAGNETOGRAMS



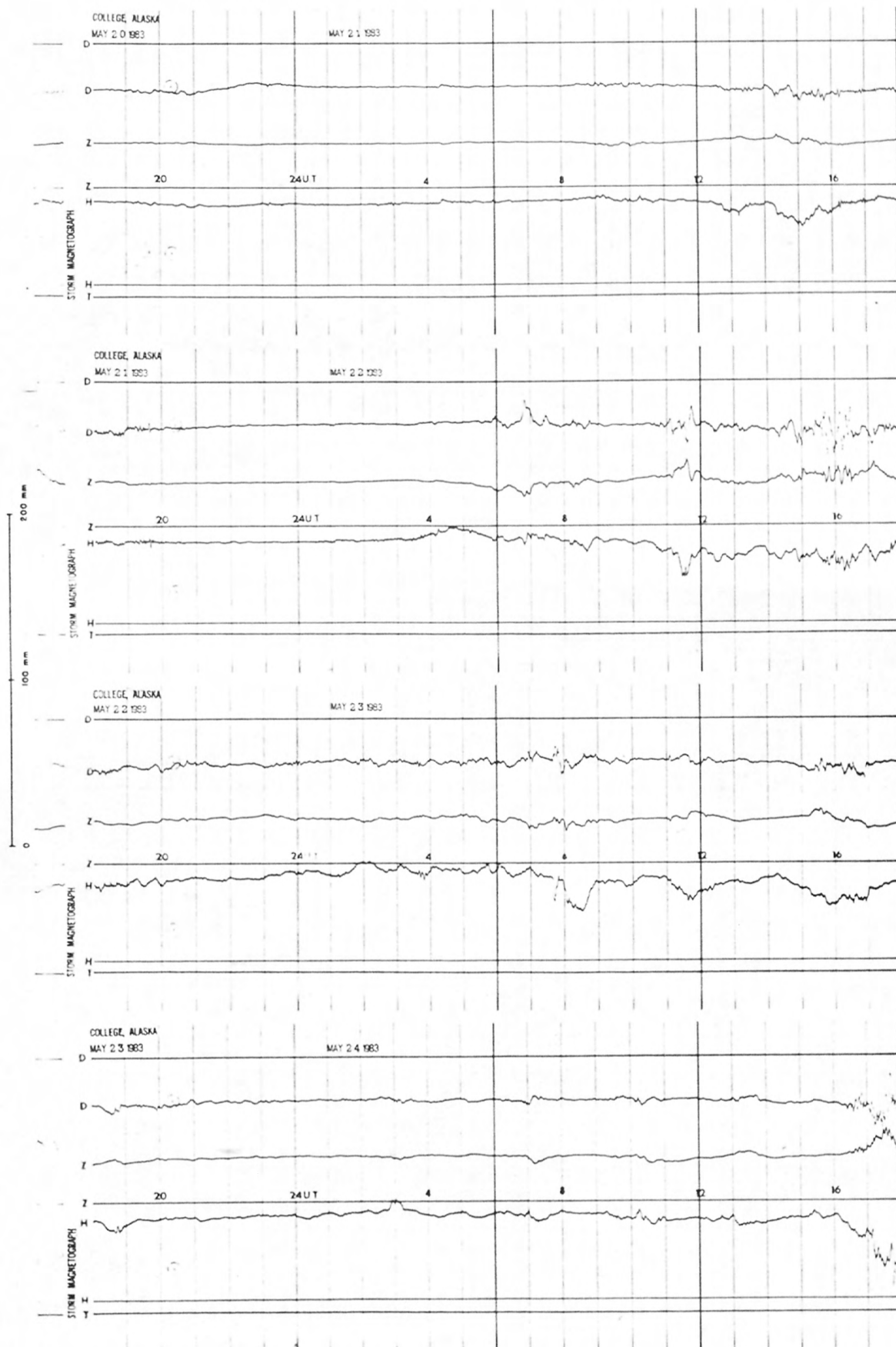
STORM MAGNETOGRAMS



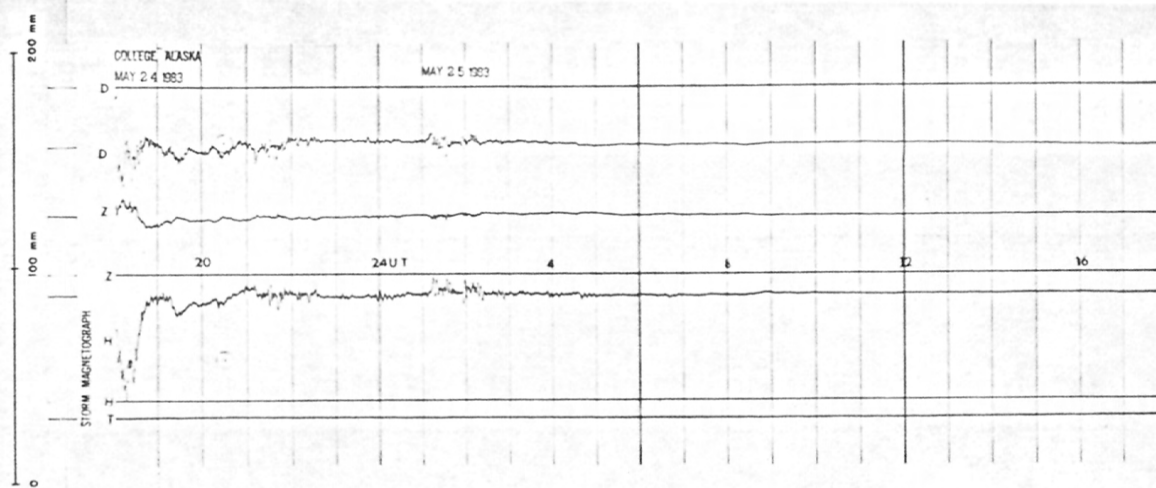
STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



STORM MAGNETOGRAMS



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